
Trial Transcript [December 7, 1993]

Transwestern v. Monsanto

CONDENSED TRANSCRIPT AND CONCORDANCE

PREPARED BY:

PREUSS, WALKER & SHANAGHER

Attorneys at Law

595 Market Street, 16th Floor

San Francisco, CA 94105

Phone: [415] 978-2600

FAX: [415] 978-2613

Page 1883

- (1) LOS ANGELES, CALIFORNIA; TUESDAY, DECEMBER 7, 1993
- (2) 9:30 A.M.
- (3) DEPARTMENT NO. 31 G. KEITH WISOT, JUDGE
- (4) ---0---
- (5) (APPEARANCES AS HERETOFORE NOTED.)
- (6) (DAVID A. SALTER, OFFICIAL REPORTER.)
- (7)
- (8) THE COURT: AND GOOD MORNING, LADIES AND
- (9) GENTLEMEN.
- (10) RESUMING TRIAL PROCEEDINGS IN
- (11) TRANSWESTERN VERSUS MONSANTO WITH ALL OF THE
- (12) APPROPRIATE PARTICIPANTS IN THEIR RESPECTIVE PLACES.
- (13) MR. TALLON, YOU MAY CONTINUE.
- (14)
- (15) WILLIAM B. PAPAGEORGE,
- (16) CALLED AS A WITNESS BY THE PLAINTIFF, TRANSWESTERN,
- (17) UNDER THE PROVISIONS OF EVIDENCE CODE 776, HAVING
- (18) BEEN PREVIOUSLY SWORN TESTIFIED AS FOLLOWS:
- (19)
- (20) DIRECT EXAMINATION (CONTINUED.)
- (21) BY MR. TALLON:
- (22) Q GOOD MORNING, MR. PAPAGEORGE.
- (23) A GOOD MORNING, MR. TALLON.
- (24) Q WE LEFT OFF YESTERDAY TALKING ABOUT THE
- (25) CORPORATE MANAGEMENT COMMITTEE IN THE SPRING OF
- (26) 1970.
- (27) A I REMEMBER THAT.
- (28) Q ALL RIGHT. AND, IN FACT, WE WERE LOOKING

Page 1884

- (1) AT TRANSWESTERN EXHIBIT NUMBER 144-A.
- (2) DO YOU HAVE IT?
- (3) A I DO.
- (4) Q OKAY. 144-A WERE THE MINUTES OF THE
- (5) CORPORATE MANAGEMENT COMMITTEE MEETING OF APRIL 20,
- (6) 1970?
- (7) A THEY ARE.
- (8) THEY ARE COPIES.
- (9) Q AND THAT WAS THE CORPORATE MANAGEMENT
- (10) COMMITTEE MEETING WHERE THE DIVISION OR THE BUSINESS
- (11) GROUP WAS MAKING A RECOMMENDATION TO THE CMC ON HOW
- (12) TO DEAL WITH THE PCB ENVIRONMENTAL PROBLEM?
- (13) A YES.
- (14) Q OKAY. AND WE SAID YESTERDAY, AS I THINK
- (15) YOU WILL RECALL, IF YOU LOOK AT THE BOTTOM OF PAGE 2,
- (16) THE CMC REACHED A CONCLUSION, CORRECT?
- (17) A YES.
- (18) Q AND ONE OF THE CONCLUSIONS WAS, "A
- (19) REPLACEMENT PRODUCT SHOULD BE DEVELOPED ON A CRASH
- (20) BASIS FOR THE NCR APPLICATION," RIGHT?
- (21) A YES.
- (22) Q AND ALSO THE COMMITTEE REQUESTED THAT THE
- (23) DIVISION REPORT ITS SPECIFIC PLANS, FURTHER PLANS BY
- (24) JUNE 1ST?
- (25) A YES.
- (26) Q THERE WAS ANOTHER CORPORATE MANAGEMENT
- (27) MEETING THAT FOLLOWED THE APRIL 20 MEETING,

RIGHT?

(28) A YES.

Page 1885

- (1) Q AND YOU WEREN'T THERE.
- (2) A THAT IS CORRECT.
- (3) Q MR. MASON WENT AND MADE A PRESENTATION ON
- (4) BEHALF OF THE BUSINESS GROUP?
- (5) A YES.
- (6) Q THAT IS THE FUNCTIONAL FLUIDS GROUP, ORGANICS?
- (7)
- (8) A AND THE PLASTICIZERS GROUP.
- (9) Q WOULD YOU REFER TO THAT AS THE ORGANIC
- (10) DIVISION?
- (11) A THOSE ARE GROUPS WITHIN THE DIVISION.
- (12) Q OKAY. IF YOU WERE TALKING ABOUT THE
- (13) FUNCTIONAL FLUIDS GROUP AND THE PLASTICIZER GROUP
- (14) TOGETHER, HOW WOULD YOU REFER TO THEM?
- (15) A I DON'T KNOW IF THERE IS A TERM THAT
- (16) APPLIES TO THE TWO OF THEM.
- (17) THESE ARE TWO OF ABOUT SIX GROUPS THAT MADE UP THE DIVISION.
- (18)
- (19) Q UH-HUH.
- (20) WERE THERE OTHER GROUPS IN THE ORGANIC
- (21) DIVISION THAT MADE AND SOLD PCB PRODUCTS?
- (22) A NO.
- (23) Q OKAY. SO IF I USED THE TERM "BUSINESS GROUP," WOULD YOU UNDERSTAND THAT TO REFER TO
- (24)
- (25) PLASTICIZER AND FUNCTIONAL FLUIDS, BECAUSE WE ARE
- (26) TALKING ABOUT PCB PRODUCTS, RIGHT?
- (27) A YES, WE ARE.
- (28) BUT THERE WAS A TIME WHEN THE PLASTICIZER

Page 1886

- (1) GROUP WAS NO LONGER INVOLVED.
- (2) SO THE TIMING IS OF IMPORTANCE.
- (3) Q RIGHT AT THIS POINT, APRIL OF 1970, WE
- (4) ARE TALKING ABOUT PLASTICIZERS AND FUNCTIONAL FLUIDS
- (5) AS THE EFFECTIVE GROUPS?
- (6) A THAT'S CORRECT.
- (7) Q MR. MASON DID REPORT TO YOU ON WHAT
- (8) HAPPENED AT THE NEXT CMC MEETING?
- (9) A YES, HE DID.
- (10) Q AND YOU HAVE SEEN THE MINUTES OF THE CMC
- (11) MEETING AND THE PROGRAM THAT THEY ADOPTED THERE,
- (12) RIGHT?
- (13) A I HAVE.
- (14) Q ALL RIGHT. WHY DON'T YOU LOOK AT 152,
- (15) PLEASE.
- (16) A I HAVE IT.
- (17) Q NOW, 152 IS A COPY OF THE MINUTES OF A
- (18) MEETING OF THE CORPORATE MANAGEMENT COMMITTEE FOR MAY
- (19) 11, '70, RIGHT?
- (20) A THAT IS CORRECT.
- (21) Q AND AT THAT MEETING THE CMC ADOPTED THE
- (22) PLAN WHICH IS ON THE FRONT PAGE OF THAT EXHIBIT; IS
- (23) THAT RIGHT?
- (24) A THAT IS CORRECT.
- (25) Q OKAY. AND THE PLAN WAS ONE, TWO, THREE,
- (26) FOUR, FIVE, SIX POINTS?
- (27) A YES.
- (28) Q ALL RIGHT.

Page 1887

- (1) PLAN, POINT ONE, "DISCONTINUE SALES OF
- (2) AROCLOR 1242 TO NCR AND REPLACE WITH A NON-PCB

(3) **PRODUCT," RIGHT?**
(4) **A YES.**
(5) **Q CLOSE THE LOOP ON HEAT TRANSFER**
(6) **APPLICATIONS SO THAT POINT TWO RELATES TO HEAT**
(7) **TRANSFER APPLICATIONS.**
(8) **A IT DOES.**
(9) **Q OKAY. POINT THREE, "REPLACE ALL**
(10) **NON-BIODEGRADABLE CHLORINATED BIPHENYLS IN HYDRAULIC**
(11) **APPLICATIONS," RIGHT?**
(12) **A THAT IS CORRECT.**
(13) **Q THAT POINT THREE, HYDRAULIC APPLICATIONS,**
(14) **THAT WAS THE PYDRAUL LINE?**
(15) **A YES.**
(16) **Q OKAY. HYDRAULIC APPLICATIONS, THE**
(17) **PYDRAUL FLUIDS WERE FLUIDS USED IN HIGH-PRESSURE**
(18) **HYDRAULIC SYSTEMS?**
(19) **A GENERALLY, YES, UH-HUH.**
(20) **Q AND THERE IS A SCHEDULE SET THERE FOR**
(21) **WHEN THE PYDRAULS, THE HYDRAULIC FLUIDS, WOULD BE**
(22) **CHANGED OUT, REPLACE ALL**
(23) **NON-BIODEGRADABLE**
(24) **CHLORINATED BIPHENYLS IN THOSE PRODUCTS?**
(25) **A YES.**
(26) **Q OKAY. AND THE FOURTH POINT REFERS TO**
(27) **TRANSFORMERS?**
(28) **A IT DOES.**
(29) **Q AND THE FIFTH POINT RELATES TO**

Page 1888

(1) **CAPACITORS?**
(2) **A IT DOES.**
(3) **Q SPECIFIC TO CAPACITORS, RIGHT?**
(4) **A YES.**
(5) **Q AND THE SIXTH POINT IS, "TERMINATE SALES**
(6) **OF ALL NON-BIODEGRADABLE CHLORINATED BIPHENYLS IN**
(7) **VARIOUS NON-CONTROLLABLE END USES, COMPLETE AUGUST**
(8) **30, 1970."**
(9) **SO THREE, FOUR MONTHS AFTER THE DATE OF**
(10) **THIS MEETING?**
(11) **A YES.**
(12) **Q OKAY. WHERE DOES TURBINOL FIT IN HERE?**
(13) **A IT DOESN'T FIT ANY OF THESE CATEGORIES.**
(14) **BECAUSE IT WAS MADE WITH A BIPHENYL THAT WAS**
(15) **CONSIDERED, AT THIS POINT IN TIME, AS DEGRADABLE.**
(16) **IS IT NOT A HYDRAULIC FLUID BY MONSANTO'S**
(17) **THINKING.**
(18) **IT IS NOT USED IN TRANSFORMERS OR**
(19) **CAPACITORS SO I WOULD SUGGEST THAT NONE OF THESE**
(20) **POINTS APPLY TO TURBINOL.**
(21) **SO THAT BUSINESS IS LEFT ALONE.**
(22) **Q OKAY. NOW, DIDN'T YOU WRITE TO JOHN**
(23) **DURLAND ON MAY 27TH, ABOUT A WEEK OR SO AFTER THIS**
(24) **MEETING, AND TELL HIM THAT THE ONLY AROCLORS, THIS IS**
(25) **NOW 160, MR. PAPAGEORGE, THE ONLY AROCLORS WHICH AT**
(26) **THIS TIME ARE CONSIDERED BIODEGRADABLE ARE AROCLOR**
(27) **1221 AND A FRACTIONALLY DISTILLED AROCLOR 1242?**
(28) **A YES, SIR, THAT'S THE TECHNICAL.**

Page 1889

(1) **Q SO TURBINOL WAS MADE WITH A**
(2) **NON-BIODEGRADABLE AROCLOR, IT WAS MADE**

WITH 1242?

(3) **A YEAH, BUT IT DIDN'T FIT THE**
(4) **NON-CONTROLLABLE DEFINITION HERE.**
(5) **Q I JUST WANTED TO GO BACK ON POINTS YOU**
(6) **LISTED.**
(7) **THE FIRST POINT YOU SAID WAS THE REASON**
(8) **THAT TURBINOL WAS NOT ON THIS LIST WAS BECAUSE IT WAS**
(9) **MADE WITH A BIODEGRADABLE AROCLOR. THAT IS NOT RIGHT**
(10) **BECAUSE IT WAS MADE WITH 1242, CORRECT?**
(11) **A WELL, IT'S A FINE POINT BETWEEN THE 10**
(12) **PERCENT OR SO OF THAT 1242 THAT WASN'T DEGRADABLE AND**
(13) **THE 90 PLUS PERCENT THAT WAS.**
(14) **Q RIGHT.**
(15) **A AND THIS MADE IT A SITUATION WHERE IT WAS**
(16) **PERCEIVED THAT UNDER CONTROLLED CONDITIONS WHAT**
(17) **LITTLE DID GET OUT THERE, THAT 10 PERCENT,**
(18) **UNFORTUNATELY IT'S THERE.**
(19) **LET'S CONTROL IT IF IT DOES GET OUT.**
(20) **IF IT DOES, NATURE CAN COPE WITH THE 90**
(21) **PERCENT.**
(22) **Q WHEN YOU WROTE TO JOHN DURLAND IN TOKYO**
(23) **ON MAY 27TH, WHICH FOLLOWED THE CMC MEETING BY 16**
(24) **DAYS, YOU SAID THE ONLY ONES THAT WERE NOT DEGRADABLE**
(25) **WERE 1221 AND 1242-B, THE DISTILLED 1242?**
(26) **A I WAS THINKING OF THE LABORATORY**
(27) **EXPERIMENTS IN WHICH THE MATERIALS DISAPPEARED,**
(28) **TOTALLY, WITHOUT ANY OF THIS 10-PERCENT PORTION THAT**

Page 1890

(1) **I TALKED ABOUT.**
(2) **Q WHAT YOU DIDN'T TELL HIM WAS THE ONLY**
(3) **AROCLORS WHICH AT THIS TIME ARE CONSIDERED**
(4) **BIODEGRADABLE ARE AROCLOR 1221 AND 1242 BECAUSE AT**
(5) **THAT TIME 1242 WAS NOT CONSIDERED BIODEGRADABLE,**
(6) **RIGHT?**
(7) **A WELL, IT'S A MATTER, REALLY, OF**
(8) **TERMINOLOGY AND COMMON USE WHEN PEOPLE INVOLVED WITH**
(9) **THIS ISSUE COMMUNICATE TO EACH OTHER.**
(10) **AND WHEN I TALKED IN THAT PARAGRAPH OR**
(11) **REFERRED IN THAT PARAGRAPH TO DEGRADATION, I HAD IN**
(12) **MIND THE LABORATORY TESTS THAT WERE DONE WITH THOSE**
(13) **TWO MATERIALS THAT DEMONSTRATED TO US THAT THEY DID**
(14) **DEGRADE.**
(15) **WHEN I TALKED TO JOHN DURLAND, THAT IS**
(16) **THE MESSAGE I GAVE JOHN DURLAND.**
(17) **BUT IN THE APPLICATION OF OUR PROGRAM,**
(18) **THE 1242 WAS CONSIDERED TO BE 90-PERCENT DEGRADABLE**
(19) **AND UNDER CONTROLLED CONDITIONS IT WAS ACCEPTABLE.**
(20) **THAT WAS THE MESSAGE WE WERE TRYING TO CONVEY.**
(21) **I DON'T KNOW IF WE EVER USED THOSE WORDS,**
(22) **BUT IT WAS UNDERSTOOD.**
(23) **Q IF YOU WERE WRITING A MEMO TO JOHN**
(24) **DURLAND TODAY IN 1993 RATHER THAN BACK IN MAY OF 1970**
(25) **WHEN YOU WROTE IT TO HIM, WHAT YOU WOULD WANT TO DO**

(26) IS SAY THE ONLY KNOWN AROCLORS WHICH AT THIS TIME ARE
(27) CONSIDERED TO BE BIODEGRADABLE ARE 1221, A
(28) FRACTIONALLY DISTILLED 1242 AND PARTS OF REGULAR

Page 1891

(1) 1242?
(2) A YES, AS DEMONSTRATED BY OUR RESEARCH WORK
(3) IN THE LABORATORY.
(4) Q AND WHAT THE RESEARCH FROM THE LAB
(5) DEMONSTRATED BY MAY OF 1970 WAS THAT THE
(6) HIGHER-CHLORINATED PORTIONS OF 1242
WEREN'T
(7) DEGRADING?
(8) A THEY WEREN'T DEGRADING AS RAPIDLY AS WE
(9) WOULD LIKE TO SEE THEM DEGRADE.
(10) Q LOOK IF YOU WOULD, PLEASE, AT THIS MEMO,
(11) AGAIN.
(12) AND YOU SAID THAT TURBINOL DIDN'T FIT
(13) INTO ANY OF THESE APPLICATIONS.
(14) HOW DID TURBINOL DIFFER FROM HYDRAULIC
(15) APPLICATIONS?
(16) WHY DID YOU WANT TO PUT NON-CHLORINATED
(17) CHLORINATED BIPHENYLS IN HYDRAULIC
APPLICATIONS?
(18) HOW DOES TURBINOL DIFFER FROM THE
(19) HYDRAULIC APPLICATIONS?
(20) A IN THE MONSANTO ORGANIZATION THAT SOLD
(21) BOTH OF THESE PRODUCTS IN ORDER TO
COMMUNICATE AND BE
(22) UNDERSTOOD BETWEEN THE PEOPLE INVOLVED
WHEN THEY
(23) REFER TO HYDRAULIC FLUIDS IT AUTOMATICALLY
MEANT TO
(24) THEM PYDRAULS.
(25) Q SURE. PYDRAULS THAT WERE MADE AT QUEENY?
(26) A CORRECT.
(27) NOW, WHEN WE REFER TO TURBINOL, THAT WAS
(28) CONSIDERED - YES, THAT IS ANOTHER PRODUCT WE
HANDLE,

Page 1892

(1) BUT IT FITS IN THE CATEGORY, IN AND OF ITSELF,
ALONG
(2) WITH THE VACUUM FLUIDS AND OTHER TYPES OF
FLUIDS THEY
(3) WERE ALSO RESPONSIBLE FOR.
(4) SO WITHIN MONSANTO WHENEVER THE WORD
(5) "HYDRAULIC FLUID" WAS USED, IT WAS NOT
ASSOCIATED IN
(6) A BUSINESS SENSE WITH TURBINOL.
(7) Q OKAY. WHAT IS THE DIFFERENCE BETWEEN
(8) TURBINOL AND HYDRAULIC FLUIDS?
(9) A YOU MEAN CHEMICALLY?
(10) Q NO, I MEAN, WHAT IS THE DIFFERENCE IN
(11) YOUR MIND AS TO WHY THE CMC SAID REPLACE
ALL
(12) NON-BIODEGRADABLE CHLORINATED BIPHENYLS
AND IN
(13) HYDRAULIC APPLICATIONS BUT TURBINOL ISN'T
COVERED BY
(14) ANY POINT ON THIS LIST?
(15) WHAT IS THE FUNCTIONAL DIFFERENCE BETWEEN
(16) TURBINOL AND HYDRAULIC FLUIDS?
(17) A I'M NOT AN EXPERT IN THAT KIND OF
(18) MACHINERY. SO I CAN'T REALLY ADDRESS THE
FUNCTIONAL
(19) DIFFERENCE.
(20) THEY DO - THEY ARE USED IN EQUIPMENT.
(21) THERE IS LUBRICATION INVOLVED.
(22) THAT IS REALLY ALL I KNOW.
(23) I DON'T KNOW THAT I CAN ADDRESS IT
(24) PROPERLY.

(25) Q OKAY. THE HYDRAULIC FLUIDS WHICH ARE
(26) REFERRED TO IN POINT THREE OF THIS PLAN WERE
MADE,
(27) SOME OF THEM, WITH 1242, RIGHT?
(28) A YES.

Page 1893

(1) Q AND YOU KNEW THAT THERE WAS A CONCERN
(2) THAT HYDRAULIC FLUIDS WHICH ARE UNDER HIGH
PRESSURE
(3) IN HOSES COULD LEAK OUT BECAUSE THE HOSES
MIGHT
(4) BREAK?
(5) A THAT IS ONE IMPORTANT APPLICATION, YES,
(6) SIR.
(7) Q SO YOU BELIEVE THAT IT WAS IMPORTANT TO
(8) CONTROL THAT AND TO REPLACE THE
NON-BIODEGRADABLE
(9) PCB'S WITH SOMETHING ELSE BECAUSE YOU
WANTED TO AVOID
(10) THE CONTAMINATION CAUSED BY THOSE LEAKS,
RIGHT?
(11) A YES.
(12) Q OKAY. AND YOU KNEW THAT TURBINOL WAS
(13) USED IN A HIGH-PRESSURE MACHINE, RIGHT?
(14) A YES, BUT THERE WEREN'T HOSES AND
(15) COUPLINGS AND THESE KINDS OF THINGS, AS I
UNDERSTOOD
(16) THE SYSTEM.
(17) Q SO FOR YOUR UNDERSTANDING OF THE SYSTEM
(18) YOU RELIED ON NORM JOHNSON?
(19) A YES.
(20) Q OKAY. AND DIDN'T NORM JOHNSON TELL YOU
(21) THAT IN ORDER TO MOVE THE TURBINOL AROUND
THIS BIG
(22) TURBINE AND COMPRESSOR THERE WERE HOSES
AND PIPES AND
(23) FLANGES?
(24) A I DIDN'T GET INTO THAT KIND OF DISCUSSION
(25) AT ALL.
(26) Q OKAY. SO LOOK AT THE LAST POINT ON THAT
(27) SIX-POINT PLAN.
(28) IT SAYS, "TERMINATE SALES OF ALL

Page 1894

(1) NON-BIODEGRADABLE CHLORINATED BIPHENYLS
TO VARIOUS
(2) NON-CONTROLLABLE END USES, COMPLETE
AUGUST 30,
(3) 1970."
(4) WHAT USES WERE REFERRED TO IN POINT SIX?
(5) A THOSE WERE THE USES THAT WE HAD TALKED
(6) EARLIER ABOUT.
(7) FOR EXAMPLE, THE USE IN PAINTS AND
(8) VARNISHES, ADHESIVES, CALKING AND SEALANTS,
(9) PLASTICIZER FOR PLASTICS AND RUBBER.
(10) I'M SURE THERE ARE OTHERS. I CAN'T THINK
(11) OF THEM AT THE MOMENT.
(12) Q IS TURBINOL THE ONLY MONSANTO PRODUCT
NOT
(13) COVERED BY THAT SIX-POINT PLAN?
(14) A I CAN'T REMEMBER AT THE MOMENT.
(15) I'M THINKING OF THE VACUUM FLUID,
(16) SANTOVAC.
(17) I CAN'T RECALL ANY OTHER.
(18) Q SO YOU THINK SANTOVAC MIGHT BE A PRODUCT
(19) NOT COVERED BY THIS AND TURBINOL. ANYTHING
ELSE?
(20) A I CAN'T RECALL ANY OTHER.
(21) Q SO OUT OF THE PRODUCTS THAT MONSANTO
MADE
(22) AS OF MAY, 1970, YOU CAN'T RECALL ANY OTHER
PRODUCTS
(23) NOT COVERED BY THE SIX-POINT PLAN EXCEPT

SANTOVAC AND

- (24) **TURBINOL?**
(25) **A THAT'S CORRECT.**
(26) **Q LET'S TALK ABOUT SANTOVAC FOR JUST A**
(27) **MOMENT.**
(28) **SANTOVAC, VACUUM PUMP FLUIDS?**

Page 1895

- (1) **A RIGHT.**
(2) **Q EACH PUMP WOULD USE ANYWHERE FROM A**
QUART
(3) **TO A GALLON OF THE FLUID IN ITS PROCESS?**
(4) **A TO MY UNDERSTANDING.**
(5) **Q IN THAT PROCESS THE VACUUM PUMP WOULD**
(6) **DRAW THE FLUID IN. NOT MUCH OF A RISK OF IT**
GETTING
(7) **OUT, RIGHT?**
(8) **A IT'S CONSIDERED CONTROLLABLE. THAT HELPS**
(9) **CONTROL IT.**
(10) **Q AND A CHARGE OF SANTOVAC IN A VACUUM**
PUMP
(11) **YOU THINK WOULD LAST ONE TO TWO YEARS,**
RIGHT?
(12) **A YES.**
(13) **Q NOT MUCH OF AN OPPORTUNITY FOR**
(14) **REPLACEMENT SALES BECAUSE THE INITIAL STUFF**
YOU PUT
(15) **IN THE VACUUM PUMP WOULD STAY THERE FOR**
ONE OR TWO
(16) **YEARS?**
(17) **A THAT'S TRUE.**
(18) **Q YOU KNEW THAT MONSANTO KEPT SELLING**
MORE
(19) **AND MORE TURBINOL EVERY YEAR, RIGHT?**
(20) **A YES.**
(21) **Q SO YOU KNEW THAT IT WAS GETTING USED UP?**
(22) **A YOU WILL HAVE TO HELP ME WITH THE WORD**
(23) **"USED UP."**
(24) **THIS DOESN'T TELL ME ANYTHING.**
(25) **ALL I KNOW IS THAT THEY NEEDED MORE**
(26) **FLUID.**
(27) **THIS DOESN'T TELL ME THAT THE REASON FOR**
(28) **THAT IS INVOLVED WITH SOME PART OF THE**
OPERATION IN

Page 1896

- (1) **WHICH IT'S COVERED AND PROPERLY HANDLED.**
(2) **IT DOESN'T TELL ME IT RESULTED IN A**
(3) **REPAIR WHERE THE PARTS OF THE SYSTEM HAD TO**
BE
(4) **DRAINED.**
(5) **IT WAS COLLECTED PROPERLY AND DISPOSED OF**
(6) **PROPERLY.**
(7) **IT REALLY DOESN'T TELL YOU AN AWFUL LOT**
(8) **ABOUT WHERE THE MATERIAL WENT.**
(9) **Q OKAY. BUT I TAKE IT YOU WOULD**
(10) **ACKNOWLEDGE, MR. PAPAGEORGE, IF YOU**
CONTINUED TO SELL
(11) **A PRODUCT EVERY YEAR TO A CUSTOMER THAT**
ONE OF THE
(12) **POSSIBILITIES IS YOU ARE SELLING IT BECAUSE**
THEY HAVE
(13) **TO REPLACE STUFF THAT YOU HAVE ALREADY**
SOLD THEM?
(14) **A WELL, THAT ISN'T A POSSIBILITY.**
(15) **THAT IS AN ACTUALITY.**
(16) **YOU HAVE SOLD MATERIAL, NOW YOU ARE**
(17) **SELLING MATERIAL. NO NEW SYSTEM IS INVOLVED,**
SO IT
(18) **MUST BE A REPLACEMENT.**
(19) **Q LET'S LOOK AT 162, IF YOU WOULD, PLEASE,**
(20) **MR. PAPAGEORGE.**
(21) **A I HAVE IT.**
(22) **Q THAT IS A - BASICALLY WOULD YOU CALL**

- (23) **THAT A SALES BROCHURE THAT MONSANTO PUT**
OUT REGARDING
(24) **TURBINOL, A FIRE-RESISTANT LUBRICANT?**
(25) **A I WOULD - THAT IS ONE TERMINOLOGY THAT**
(26) **COULD BE USED.**
(27) **IT COULD BE CALLED A TECHNICAL BULLETIN.**
(28) **IT COULD BE JUST A PRODUCT BULLETIN**

Page 1897

- (1) **RATHER THAN JUST SALES BULLETIN.**
(2) **Q OKAY. BASED ON YOUR EXPERIENCE WITH**
(3) **MONSANTO, WOULD YOU EXPECT THAT SALESMEN**
WOULD
(4) **PROVIDE THIS TO CUSTOMERS TO ASSIST IN**
MAKING A SALE?
(5) **A CERTAINLY, TO ANSWER QUESTIONS A CUSTOMER**
(6) **MIGHT HAVE.**
(7) **Q TO YOUR KNOWLEDGE, THIS BULLETIN WAS**
(8) **FIRST USED BY MONSANTO STARTING IN ABOUT**
SEPTEMBER OF
(9) **1970?**
(10) **A SEPTEMBER?**
(11) **I DON'T RECALL THE DATE.**
(12) **Q DO YOU THINK IT WAS IN 1970?**
(13) **A I BELIEVE SO, BUT I'M NOT CERTAIN.**
(14) **MR. TALLON: YOUR HONOR, AT THIS TIME**
(15) **TRANSWESTERN WOULD LIKE TO READ AN**
INTERROGATORY AND
(16) **ITS RESPONSE WITH RESPECT TO THIS EXHIBIT.**
(17) **THE COURT: LADIES AND GENTLEMEN, AN**
(18) **INTERROGATORY IS A WRITTEN STATEMENT OR A**
QUESTION,
(19) **ACTUALLY, PUT TO A PARTY BEFORE THE TRIAL AND**
(20) **ANSWERED BY THAT PARTY UNDER OATH.**
(21) **YOU MAY CONSIDER THE QUESTION AND ANSWER**
(22) **JUST AS IF IT HAD BEEN GIVEN HERE IN TRIAL AND**
THE
(23) **PARTY INVOLVED BEING MONSANTO, THE**
DEFENDANT IN THE
(24) **MATTER.**
(25) **GIVE COUNSEL THE INTERROGATORY CITATION**
(26) **SO THEY CAN REFERENCE IT.**
(27) **MR. TALLON: THIS IS INTERROGATORY NUMBER 336.**
(28) **EXHIBIT 80 IS A COPY OF THE DOCUMENT PRODUCED**
BY

Page 1898

- (1) **MONSANTO TO TRANSWESTERN IN THIS ACTION AS**
TRAN
(2) **001387 THROUGH TRAN 001394 ENTITLED "FACTS**
ABOUT FIRE
(3) **RESISTANT LUBRICANTS."**
(4) **(READING.)**
(5) **"QUOTE: STATE THE DATE WHEN**
(6) **EXHIBIT 80 WAS FIRST DISSEMINATED**
(7) **OUTSIDE OF MONSANTO.**
(8) **"RESPONSE: MONSANTO RESPONDS**
(9) **THAT IT BELIEVES THAT THIS**
(10) **DOCUMENT WAS FIRST DISSEMINATED**
(11) **OUTSIDE MONSANTO SOMETIME ON OR**
(12) **ABOUT SEPTEMBER, 1970 AFTER TEXAS**
(13) **EASTERN AUTHORIZED THE USE OF**
(14) **EXPERIMENTS FROM THE EARL FARMER**
(15) **ARTICLE THAT APPEARED IN THE**
(16) **JOURNAL OF THE SOCIETY OF THE**
(17) **AMERICAN LUBRICATION ENGINEERS**
(18) **REFERENCED IN RESPONSE TO ANOTHER**
(19) **INTERROGATORY."**
(20) **Q MR. PAPAGEORGE, WHILE I WAS TALKING, DID**
(21) **YOU GET AN OPPORTUNITY TO LOOK THROUGH**
THIS?
(22) **A A LITTLE BIT, YES.**
(23) **Q OKAY. LET ME ASK YOU A QUESTION.**
(24) **THERE IS NOT ONE WORD IN THIS TECHNICAL**

(25) BULLETIN ABOUT ENVIRONMENTAL
CONTAMINATION, RIGHT?
(26) A THAT IS CORRECT.
(27) Q AND THE WORDS "POLYCHLORINATED BIPHENYL"
(28) ARE NOT USED IN THIS TECHNICAL BULLETIN OR
SALES

Page 1899

(1) BROCHURE, RIGHT?
(2) A THAT IS CORRECT.
(3) Q IN FACT, THE WORD "CHLORINATED" DOESN'T
(4) APPEAR IN THIS BROCHURE?
(5) A YOU ARE RIGHT.
(6) Q OKAY. THERE IS NOTHING IN HERE ABOUT THE
(7) TERM "AROCOR OR AROCLOR 1242," RIGHT?
(8) A THAT IS RIGHT.
(9) Q THE INFORMATION THAT IS IN THIS DOCUMENT
(10) IS INFORMATION THAT YOU WOULD EXPECT A
BUYER OF THIS
(11) PRODUCT TO WANT TO KNOW ABOUT LIKE ITS
VISCOSITY AND
(12) ITS POUR POINT, RIGHT?
(13) A SURE.
(14) Q BUT NOTHING ABOUT PCB'S?
(15) A NOT IN THIS PARTICULAR DOCUMENT, NO.
(16) Q DO YOU KNOW WHAT W-A-R-F STANDS FOR,
(17) MR. PAPAGEORGE?
(18) A YES, SIR.
(19) Q IT'S WARF, RIGHT?
(20) A THAT IS THE PRONUNCIATION OF THE ACRONYM,
(21) YES, SIR.
(22) Q WHAT DOES IT STAND FOR?
(23) A WISCONSIN ALUMNI RESEARCH FOUNDATION.
(24) Q AND IN JULY OF 1970 YOU HAD A DISCUSSION
(25) WITH MR. JOHN BIRDSALL FROM WARF OR THE
WISCONSIN
(26) ALUMNI RESEARCH FOUNDATION?
(27) A YES, IN JULY, YES.
(28) Q LOOK FOR A MOMENT, IF YOU WOULD, PLEASE,

Page 1900

(1) AT TRANSWESTERN 171.
(2) A I HAVE REVIEWED THE DOCUMENT.
(3) Q THAT IS A COPY OF A MEMO THAT YOU SENT TO
(4) JOHN MASON IN JULY OF 1970, RIGHT?
(5) A YES.
(6) Q AND IN THIS MEMO YOU ARE DISCUSSING WITH
(7) MR. MASON THE CONTACT THAT YOU GOT FROM
JOHN BIRDSALL
(8) AT WARF, RIGHT?
(9) A RIGHT.
(10) Q NOW, WHAT MR. BIRDSALL TOLD YOU WAS A
(11) TANK TRUCK THAT HAD BEEN CARRYING SOME
MILK HAD
(12) TURNED BLUE, RIGHT?
(13) A YES.
(14) Q AND THE BLUE MILK WAS TESTED AND IT
(15) TESTED POSITIVE FOR PCB'S, RIGHT?
(16) A YES.
(17) Q AND MR. BIRDSALL DID SOME DETECTIVE WORK
(18) AND HE FOUND OUT THAT THAT SAME TANK TRUCK
THAT HAD
(19) CARRIED THE MILK ALSO WAS USED TO CARRY THE
BLUE
(20) STUFF THAT NCR USED TO MAKE CARBONLESS
COPY PAPER,
(21) RIGHT?
(22) A WELL, IT CARRIED THE MATERIAL THAT FORMS
(23) THE COATING ON THE PAPER.
(24) WITHIN THAT MATERIAL WAS THE BLUE INK.
(25) Q AND THAT MATERIAL CONTAINED AROCLOR 1242,
(26) RIGHT?
(27) A THAT IS RIGHT.
(28) Q OKAY. AND MR. BIRDSALL WAS REPORTING TO

Page 1901

(1) YOU THAT HE WASN'T SURE WHETHER OR NOT THESE PEOPLE
 (2) KNEW THEY WERE DEALING WITH PCB'S AT THE COATING
 (3) PLANT, RIGHT?
 (4) A THAT'S MR. BIRDSALL'S CONCLUSION, YES.
 (5) Q AND WHAT YOU WERE TELLING MR. MASON IN
 (6) YOUR MEMO TO HIM OF JULY, 1970, WAS THAT YOU DIDN'T
 (7) THINK THAT BIRDSALL REALIZED HE HAD STUMBLED ON NCR'S
 (8) AROCLOR APPLICATION AS A MAJOR ONE, NOR DID HE
 (9) INDICATE IN ANY WAY THAT HE HAD ACCIDENTLY DISCOVERED
 (10) A USE THAT MONSANTO WAS KEEPING SECRET, RIGHT?
 (11) A YEAH, I WAS QUOTING MR. BIRDSALL.
 (12) Q WERE YOU QUOTING MR. BIRDSALL WHEN YOU
 (13) SAID THAT - NOR DID HE INDICATE IN ANY WAY THAT HE
 (14) HAD ACCIDENTALLY DISCOVERED A USE THAT MONSANTO WAS
 (15) KEEPING SECRET?
 (16) A YEAH, HE DIDN'T TELL ME, "HEY, I THINK
 (17) YOU GUYS ARE KEEPING IT A SECRET. YOU ARE NOT
 (18) TELLING PEOPLE." HE DIDN'T SAY THAT.
 (19) Q RIGHT. YOU SAID THAT TO MR. MASON?
 (20) A I SAID THAT MR. BIRDSALL DIDN'T PERCEIVE
 (21) THE SITUATION IN THAT LIGHT, AS SOMETHING MONSANTO IS
 (22) KEEPING A SECRET AND NOT TELLING PEOPLE.
 (23) Q I SEE.
 (24) LET'S TALK ABOUT LABELS FOR A SECOND,
 (25) MR. PAPAGEORGE.
 (26) AT THE CMC MEETING IN FALL OF 1969, THAT
 (27) WAS THE MEETING WHERE THE CMC DECIDED TO GIVE YOU
 (28) YOUR JOB, RIGHT?

Page 1902

(1) A YES, SIR.
 (2) Q OKAY. THE FOLKS WHO WERE REPRESENTING
 (3) THE AFFECTED BUSINESS GROUPS, THE PCB BUSINESS
 (4) GROUPS, SAID, "WE ARE GOING TO RE-LABEL PRODUCTS IN
 (5) 60 DAYS," RIGHT?
 (6) A NO, THAT WAS BROUGHT UP YESTERDAY IN OUR
 (7) DISCUSSION.
 (8) I HAVE PERSONALLY A DIFFICULTY
 (9) REMEMBERING A 60-DAY TARGET. I NEED SOME HELP
 IN
 (10) REFRESHING MY MEMORY ON THAT.
 (11) Q LET ME SEE IF WE CAN FIND A DOCUMENT
 (12) WHILE I AM ASKING YOU SOME QUESTIONS.
 (13) IN ANY EVENT, NO LABEL CHANGES WERE MADE
 (14) UNTIL YOU GOT IN THE JOB.
 (15) AND IN APRIL YOU STARTED TALKING TO
 (16) PEOPLE ABOUT ACTUALLY MAKING SOME LABEL CHANGES?
 (17) A IN EARLY APRIL THE DECISION WAS MADE AND
 (18) WE STARTED DURING APRIL TO COME UP WITH THE PROPER
 (19) WORDS, PROPER EXPRESSIONS.
 (20) IT WAS MAY BY THE TIME THE LABELS WERE
 (21) PRINTED AND AVAILABLE AT THE FACTORIES TO PUT ON THE
 (22) CONTAINERS.
 (23) Q OKAY. YOU TALKED TO PHOCIAN PARK AND YOU
 (24) AND HE WORKED ON SOME WORDING?
 (25) A WE WAS ONE PERSON I TALKED TO, YES.

(26) Q MR. PAPAGEORGE, I WANT TO TOUCH ON THAT
 (27) POINT ABOUT THE 60-DAY PERIOD FOR A SECOND.
 (28) I'M GOING TO SHOW YOU EXHIBIT 112, PAGE

Page 1903

(1) 733, AND JUST ASK YOU WHETHER THAT REFRESHES YOUR
 (2) RECOLLECTION THAT IN THE FALL OF '69, NOVEMBER OF
 (3) '69, THE CMC WAS TOLD THAT LABEL CHANGES WOULD BE
 (4) MADE WITHIN 60 DAYS.
 (5) A THIS IS A COPY OF THE INFORMATION THAT
 (6) WAS SHARED WITH THE CMC IN NOVEMBER.
 (7) I DON'T RECALL THAT SPECIFIC 60 DAYS
 (8) BEING MENTIONED IN THE CONCLUSION THAT IS REFLECTED
 (9) IN THE MINUTES OF THE MEETING WHERE THE CMC AGREED TO
 (10) THIS 12-POINT PROGRAM.
 (11) THAT IS THE KEY DOCUMENT.
 (12) THIS IS ONLY A RECOMMENDATION.
 (13) Q UH-HUH.
 (14) DOES LOOKING AT THAT EXHIBIT REFRESH YOUR
 (15) RECOLLECTION THAT A RECOMMENDATION WAS MADE TO THE
 (16) CMC THAT LABELS BE CHANGED WITHIN 60 DAYS?
 (17) A IT DOES.
 (18) BUT THE EMPHASIS WAS PLACED ON THE
 (19) LETTER, THE FIRST PART OF THAT, WITHIN THE 60-DAY
 (20) PERIOD.
 (21) Q THANK YOU.
 (22) SO IN APRIL YOU STARTED WORKING ON
 (23) LABELING AND TURN, IF YOU WOULD, PLEASE,
 (24) MR. PAPAGEORGE, TO EXHIBIT 139.
 (25) THAT IS YOUR MEMO TO A GROUP OF PEOPLE
 (26) DATED APRIL 13, 1970, TITLED "AROCLOR LABELING,"
 (27) RIGHT?
 (28) A THAT IS CORRECT.

Page 1904

(1) Q THAT IS YOUR SIGNATURE DOWN AT THE
 (2) BOTTOM?
 (3) A IT IS.
 (4) Q OKAY. THAT IS TRANSWESTERN 139, AS I
 (5) THINK I MAY HAVE SAID.
 (6) IN YOUR MEMO YOU REFER TO - WAIT A
 (7) MINUTE.
 (8) BY THE WAY, ONE OF THE PERSONS WHO GETS
 (9) THIS MEMO IS D. A. OLSON. IS THAT DON OLSON?
 (10) A YES.
 (11) Q WHAT WAS HIS JOB THEN?
 (12) A HE WAS THE DIRECTOR OF MARKETING FOR
 (13) FUNCTIONAL FLUIDS.
 (14) Q AND WHAT YOU ARE REPORTING TO THE FOLKS
 (15) THAT YOU ARE SENDING THIS MEMO TO IS THAT THERE WAS A
 (16) MEETING ON APRIL 3RD, PHOCIAN PARK HAS PROPOSED SOME
 (17) WORDING FOR A PARAGRAPH AND HERE IT IS, PLEASE
 (18) COMMENT.
 (19) A IN ESSENCE, YES.
 (20) WHAT HAPPENED AT THE APRIL 3RD MEETING
 (21) THE GROUP WHICH CONSISTED OF THE PEOPLE WHO RECEIVED
 (22) THIS MEMORANDUM PLUS THEIR LIEUTENANTS ATTEMPTED AS A
 (23) LARGE GROUP TO COME UP WITH A STATEMENT AND THIS WAS
 (24) WRITTEN ON THE BLACKBOARD.
 (25) BECAUSE THE GROUP WAS SO LARGE IT REALLY

- (26) NEEDED SOME IMPROVEMENT.
(27) IT GOT TOO GARBLED.
(28) SO MR. PARK OFFERED TO TAKE THE WORDING

Page 1905

- (1) THAT WAS GENERATED AT THE MEETING AND IN THE QUIET OF
(2) HIS OFFICE SIT DOWN AND PUT A SHORTER STATEMENT
(3) TOGETHER. OTHERWISE, WE WOULD NEED TOO BIG A PIECE
(4) OF PAPER TO PUT IT ALL ON.
(5) THAT IS WHAT I REFERRED TO WHEN I SAID
(6) PHOCIAN PARK OFFERED TO WORK ON THE APPROPRIATE
(7) WORDING.
(8) AND HE DID THAT AND CAME UP WITH THIS
(9) PARAGRAPH AND THEN I WAS ASKING FOR, REALLY FOR
(10) COMMENTS ON THIS WORDING AS EACH INDIVIDUAL PERCEIVED
(11) IT.
(12) Q THIS PARAGRAPH YOU SAY, THIS ADDITIONAL
(13) WORDING INTENDED FOR PACKAGES CONTAINING AROCLORS
(14) 1242, 1248, 12 - AND SO ON AND SOME MONTARS, RIGHT?
(15) A YES.
(16) Q IT DOESN'T SAY IT'S INTENDED FOR
(17) PRODUCTS, RIGHT?
(18) A NO, IT'S PACKAGES CONTAINING, WHETHER IT
(19) WAS A HUNDRED-PERCENT 1242 OR SOME LOWER PERCENT, FOR
(20) EXAMPLE.
(21) Q TURN THE PAGE THERE FOR A SECOND,
(22) MR. PAPAGEORGE.
(23) THAT IS A LABEL FOR AROCLOR 1260, RIGHT?
(24) A IT IS.
(25) Q THE BARREL WITH THIS LABEL ON IT WOULD BE
(26) A PACKAGE CONTAINING AROCLOR 1260, RIGHT?
(27) A YES.
(28) Q SO YOU WERE SOLICITING COMMENTS FROM THE

Page 1906

- (1) PERSONS TO WHOM YOU SENT THAT MEMO, YOU KNOW, WHAT DO
(2) YOU THINK, DO YOU HAVE ANY FURTHER CHANGES?
(3) A CORRECT.
(4) Q TAKE A LOOK AT TRANSWESTERN 143, IF YOU
(5) WOULD, MR. PAPAGEORGE.
(6) ONE OF THE PEOPLE WHO REPLIED TO YOUR
(7) MEMO ASKING FOR COMMENTS WAS MR. OLSON, THE DIRECTOR
(8) OF MARKETING?
(9) A YES.
(10) Q HE SENT YOU A MEMO DATED APRIL 20 ABOUT
(11) AROCLOR LABELING, RIGHT?
(12) A YES.
(13) Q AND HE SAYS, "WE ARE IN AGREEMENT WITH
(14) THE PROPOSED ADDITIONAL LABEL PARAGRAPH RELATING TO
(15) PCB'S FOR ELECTRICAL GRADE AND NON-ELECTRICAL GRADE
(16) AROCLORS," RIGHT?
(17) A YES.
(18) Q AND HE GOES ON TO SAY, "WE WOULD NOT LIKE
(19) TO SEE THIS LABEL ADAPTED TO THE PYDRAUL LINE."
(20) HE SAYS TO YOU, "I THINK THIS IS A
(21) REASONABLE APPROACH SINCE WE ARE GOING THROUGH A
(22) REFORMULATION OF ALL OF OUR PRODUCTS WHICH, OVER A

- (23) PERIOD OF TIME, WILL ELIMINATE THE NECESSITY FOR THIS
(24) PARAGRAPH."
(25) A HE DOES SAY THAT, YES, SIR.
(26) Q AND AT THIS PERIOD OF TIME MONSANTO WAS
(27) WORKING ON REFORMULATING OR REMAKING THE PYDRAULS TO
(28) ELIMINATE THE PCB COMPONENTS, RIGHT?

Page 1907

- (1) A THAT IS RIGHT.
(2) Q AND SO WHAT YOU UNDERSTOOD DON OLSON TO
(3) BE TELLING YOU IS, "LET'S NOT PUT THE LABEL ON HERE
(4) BECAUSE WE ARE GOING TO MAKE THESE NON-PCB PRODUCTS
(5) PRETTY SOON," RIGHT?
(6) A NO, HE IS NOT SAYING THAT.
(7) HE IS SAYING, LET US USE THE STOCK OF
(8) LABELS WE HAVE ON THE PYDRAUL PRODUCTS WHILE THEY ARE
(9) UNDERGOING CHANGE AND PUT ON A STICK-ON LABEL WITH
(10) THE MESSAGE - IN OTHER WORDS, HE IS TALKING THERE
(11) ABOUT REDESIGNING THE LABEL IN TOTAL, NOT ADDING
(12) ADDITIONAL INFORMATION ON THE PRODUCT'S PACKAGE.
(13) Q SO WHEN YOU READ THIS PARAGRAPH, IT SAYS,
(14) "WE WOULD NOT LIKE TO SEE THIS LABEL ADOPTED TO THE
(15) PYDRAUL LINE," WHAT YOU THINK HE IS SAYING IS, "LET'S
(16) NOT REDESIGN THE LABEL. LET'S USE THE STICK-ON LABEL
(17) OR A STICK-ON LABEL?"
(18) A YES, YES.
(19) Q YOU DON'T READ THIS TO SAY, "LET'S NOT
(20) PUT THAT STUFF, THAT WORDING, ON THERE BECAUSE THAT
(21) COULD SCARE AWAY CUSTOMERS?"
(22) A NO, NO, SIR.
(23) Q OKAY. SO WOULD YOU EXPECT THAT AFTER
(24) MR. OLSON'S MEMO, STICK-ON LABELS WERE PUT ON
(25) PYDRAULS?
(26) A YES, DEFINITELY.
(27) Q TAKE A LOOK AT TRANSWESTERN 159 FOR A
(28) MOMENT, WOULD YOU?

Page 1908

- (1) A I HAVE REVIEWED THE DOCUMENT.
(2) Q THAT IS YOUR MEMO DATED MAY 27, 1970
(3) TITLED "PCB ENVIRONMENTAL PROBLEM, MAY SUMMARY,"
(4) RIGHT?
(5) A YES.
(6) Q AND YOU SENT IT TO YOUR BOSSES, HOWARD
(7) BERGEN, AND IS IT JIM OR JAMES SPRINGGATE?
(8) A JAMES.
(9) Q AND TAKE A LOOK AT THE LAST PARAGRAPH ON
(10) PAGE 1, WOULD YOU.
(11) WHAT YOU TELL THEM IN THIS MEMO, AMONG
(12) OTHER THINGS IN THAT PARAGRAPH, "PYDRAUL LABELS WILL
(13) NOT BE CHANGED SINCE ALL WILL BE REFORMULATED,"
(14) RIGHT?
(15) A THAT'S RIGHT.
(16) Q YOU DIDN'T TELL THEM, HOWEVER, WE ARE
(17) GOING TO PUT ON A STICKER LABEL?
(18) A OH, THEY KNEW THAT ALREADY.
(19) Q YOU DIDN'T SAY IT IN THE MEMO, DID YOU?

(20) A NOT IN THIS MEMO, NO.
(21) Q DID YOU EVER SEE A MEMO WHERE YOU SAID
(22) THAT?
(23) A NO. IT MUST HAVE BEEN A MEMORANDUM WHERE
(24) INSTRUCTIONS WERE GIVEN TO THE PLANTS TO
APPLY THIS
(25) PARAGRAPH LABEL ON ALL PACKAGES LEAVING THE
PLANT OF
(26) MATERIAL THAT CONTAINED PCB'S.
(27) Q TAKE A LOOK AT 145, PLEASE,
(28) MR. PAPAGEORGE.

Page 1909

(1) A I HAVE IT.
(2) Q ON THE LOWER LEFT-HAND CORNER OF THE
(3) DOCUMENT AND GOING OVER TO THE SECOND
PAGE OF THE
(4) EXHIBIT THERE IS SOME HANDWRITING.
(5) CAN YOU IDENTIFY THAT?
(6) A IDENTIFY IN WHAT WAY?
(7) Q DO YOU KNOW WHOSE HANDWRITING IT IS?
(8) A NO, I DON'T.
(9) Q THEN WHY DON'T YOU LOOK AT 146 INSTEAD.
(10) A I HAVE IT.
(11) Q OKAY. THAT IS YOUR MEMO TO ROBERT SIDO.
(12) LET'S SEE IF WE CAN BACK THAT UP A LITTLE BIT,
ROBERT
(13) SIDO DATED APRIL 28, 1970, RIGHT?
(14) A CORRECT.
(15) Q AND WHAT YOU ARE TELLING MR. SIDO IN THIS
(16) MEMO IS, ADD THIS ADDITIONAL WORDING THAT IS
IN THIS
(17) PARAGRAPH FOR PACKAGES CONTAINING THE
AROCLORS WHICH
(18) ARE LISTED AND MONSANTO, RIGHT?
(19) A YES.
(20) Q IT DOESN'T SAY PUT IT ON THE PYDRAULS OR
(21) PUT IT ON SANTOVAC, IT SAYS, "PUT IT ON
PACKAGES
(22) CONTAINING THE AROCLORS," RIGHT?
(23) A THE PYDRAULS AND ALL OF THESE CONTAINED
(24) THESE MATERIALS.
(25) THESE ARE THE BASIC MATERIALS THAT
(26) REQUIRED THAT LABEL.
(27) AND WHETHER THEY ARE THERE AT A HUNDRED
(28) PERCENT OR 10 PERCENT, THIS LABEL WAS TO BE
APPLIED.

Page 1910

(1) Q WHAT WAS MR. SIDO'S JOB?
(2) A HE WAS MONSANTO'S - I'M GOING TO CALL
(3) HIM THE CUSTODIAN OF THE LABEL LIBRARY, THE
RECORDS
(4) OF ALL MONSANTO PRODUCT LABELS.
(5) Q HOW WOULD MR. SIDO KNOW WHAT PRODUCTS
TO
(6) PUT THE LABELS ON?
(7) A HE WOULD KNOW.
(8) HE WOULD SUPPLY THE STICK-ON LABEL TO THE
(9) PLANTS AND THEY WOULD KNOW WHICH PACKAGE
TO PUT IT
(10) ON.
(11) WHEN IT CAME TIME TO USE THE WORDING HERE
(12) TO IMPRINT IT ON A LABEL OF A PRODUCT THAT WAS
SOLD
(13) UNDER A DIFFERENT TRADE NAME, I'M THINKING,
NOW, SAY,
(14) OF THERMINOLS, THE HEAT TRANSFER FLUIDS, HE
WOULD BE
(15) TOLD THIS BELONGS ON THE THERMINOL LABEL.
(16) Q SO WOULD YOU EXPECT HIM TO KNOW WHAT
(17) PRODUCTS IT SHOULD GO ON?
(18) A EVENTUALLY, YES.
(19) THAT IS PART OF HIS JOB.

(20) Q IN FACT, THE TURBINOL LABEL WAS NEVER
(21) REPRINTED TO CONTAIN THAT STATEMENT WE
SAW; ISN'T
(22) THAT RIGHT?
(23) A THAT'S TRUE.
(24) BECAUSE THE SUPPLY OF LABELS FAR EXCEEDED
(25) THE NUMBER OF PACKAGES THAT WERE BEING
FILLED.
(26) Q TAKE A LOOK AT TRANSWESTERN 41, IF YOU
(27) WOULD, PLEASE, MR. PAPAGEORGE.
(28) A WHAT IS THAT NUMBER AGAIN, SIR?

Page 1911

(1) Q 41.
(2) A 41.
(3) Q IT'S PROBABLY IN THE FIRST BINDER.
(4) THAT IS THE LABEL PRINTING HISTORY FOR
(5) TURBINOL, RIGHT?
(6) A I DON'T KNOW IF IT'S A LABEL HISTORY.
(7) IT'S A DOCUMENT THAT REFERS TO SOME
(8) PROPOSED WORDING FOR A LABEL.
(9) Q OKAY. IT'S DATED 10-19-67.
(10) IT SAYS TURBINOL-153. IT DESCRIBES THE
(11) LABEL, RIGHT?
(12) A YES.
(13) Q AND IT SAYS, IT WAS PRINTED 12-2-69,
(14) RIGHT?
(15) A YES.
(16) Q AND THERE IS NO RECORD THAT THAT TURBINOL
(17) LABEL WAS EVER REPRINTED TO INCLUDE THAT
LANGUAGE
(18) THAT WE LOOKED AT A FEW MOMENTS AGO,
RIGHT?
(19) A IT WAS NEVER INTENDED TO.
(20) IT WAS THE STICK-ON LABEL THAT WAS
(21) INTENDED TO SERVE THAT PURPOSE.
(22) Q THE STICK-ON LABEL, DO YOU CALL THAT THE
(23) SUPPLEMENTAL LABEL, AT ALL?
(24) A THAT IS ANOTHER EXPRESSION WE USED,
(25) YES.
(26) Q IN FACT, WASN'T THE SUPPLEMENTAL LABEL
(27) FOR A ONE-TIME USE?
(28) A NO.

Page 1912

(1) Q DIDN'T YOU INSTRUCT THAT 6,000 COPIES OF
(2) THE SUPPLEMENTAL LABEL SHOULD BE MADE TO
PUT ON GOODS
(3) AT INVENTORY AND THAT WAS A ONE-TIME USE?
(4) A I THINK I KNOW THE MEMORANDUM YOU HAVE IN
(5) MIND.
(6) THAT IS A MISUNDERSTANDING OF WHAT WAS
(7) INTENDED.
(8) Q WHY DON'T YOU LOOK AT IT?
(9) A THE ONE-TIME USE REFERRED TO THE FACT
(10) THAT THIS WILL BE A ONE-TIME SITUATION WHERE
THERE IS
(11) PACKAGES OF PRODUCT IN THE WAREHOUSES THAT
MONSANTO
(12) PLANS AND ELSEWHERE THAT WERE PACKAGED
BEFORE THIS
(13) NEW LABEL WAS AVAILABLE.
(14) THE IDEA WAS TO GO OUT AND FIND THOSE
(15) PACKAGES AND PUT THIS NEW LABEL ON THEM.
(16) THAT IS WITH THE ONE-TIME EXERCISE.
(17) THIS DOES NOT SAY THAT THAT ADDITIONAL
(18) LABEL WOULD NOT BE USED FOR PRODUCTS WHOSE
OLD LABELS
(19) WOULD STILL BE USED WHICH DIDN'T CONTAIN THIS
(20) MESSAGE.
(21) Q WHY NOT JUST REPRINT IT?
(22) WHY NOT JUST REPRINT THE TURBINOL LABEL
(23) AND PUT THE ENVIRONMENTAL STICKER ON IT?
(24) A WHY NOT JUST USE THOSE LABELS WITH THE

- (25) STICK-ON IF IT ACCOMPLISHES THE SAME PURPOSE?
 (26) **Q IT SURE WASN'T COST, WAS IT?**
 (27) A NO, IT'S NOT A COST.
 (28) **YOU HAVE TO BE CAREFUL WITH LABELS**

Page 1913

- (1) BECAUSE THE OPERATORS WHO DO ALL THE LABELING AND
 (2) DRUM FILLING AND WHAT HAVE YOU DEAL WITH SO MANY
 (3) LABELS, YOU WANT TO AVOID AN ACCIDENTAL SITUATION
 (4) WHERE A WRONG LABEL IS PUT ON A PACKAGE AND THE MORE
 (5) YOU BURDEN THAT SYSTEM WITH CHANGES AND COMPLICATIONS
 (6) THE GREATER THE RISK FOR AN ERROR OCCURRING.
 (7) SO IF YOU CAN ACCOMPLISH THE MESSAGE BY
 (8) AN ADDITIONAL STICK-ON USING THE AVAILABLE LABEL,
 (9) THAT IS THE WISEST WAY TO GO.
 (10) **Q HELP ME ON THAT, MR. PAPAGEORGE.**
 (11) **WHY IS IT EASIER TO HAVE A TURBINOL LABEL**
 (12) **WITH NO ENVIRONMENTAL STICKER ON IT AND A**
 (13) **SUPPLEMENTAL STICKER THAN IT IS TO JUST REPRINT THE**
 (14) **TURBINOL LABEL?**
 (15) **NOW YOU ARE DEALING WITH TWO LABELS**
 (16) **RATHER THAN ONE?**
 (17) A NO. I'M ALSO DEALING WITH THE
 (18) POSSIBILITY THAT THE PACKAGE OF THE OLD LABELS IS
 (19) STILL AROUND, WILL BE GRABBED BY SOME MIDNIGHT-SHIFT
 (20) PERSON, OPENED AND USED WITHOUT THAT MESSAGE ON
 (21) BECAUSE HE'S NOT TOLD ANYMORE TO PUT TWO LABELS ON.
 (22) **Q OKAY. HOW ABOUT IF YOU THROW THE OLD**
 (23) **TURBINOL LABELS OUT AND YOU HAVE A NEW STACK OF THEM**
 (24) **WITH THE ENVIRONMENTAL STICKER ON IT?**
 (25) A THAT'S IDEAL.
 (26) **Q WHY NOT DO THAT?**
 (27) A WE WOULD LOVE TO BE ASSURED THAT THAT
 (28) COULD BE DONE.

Page 1914

- (1) **Q WHAT WAS WRONG WITH DOING THAT? PRINTING**
 (2) **YOU 6,000 COPIES OF THIS STICK-ON LABEL ONLY COST YOU**
 (3) **\$10 SO IT WASN'T THE MONEY.**
 (4) A IT'S NOT MONEY.
 (5) IT'S AN ATTEMPT TO REDUCE THE OPPORTUNITY
 (6) FOR MISTAKES BEING MADE WHEN WORKERS ARE IN THE PLANT
 (7) WITHOUT ANY SUPERVISOR AROUND ON A VERY IMPORTANT
 (8) MATTER THAT CAN BE EASILY DONE WITH A TWO-STEP
 (9) PROCESS, PUT ONE LABEL ON AND ANOTHER, PERIOD.
 (10) **Q WHAT I WANT TO KNOW, MR. PAPAGEORGE, IS**
 (11) **HOW COME IT'S NOT EASIER TO JUST USE ONE LABEL THAN**
 (12) **TWO?**
 (13) A IF THERE WEREN'T THE OPPORTUNITY FOR A
 (14) MISTAKE, IT WOULD BE EASIER.
 (15) I AGREE WITH YOU.
 (16) **Q DOESN'T THE FACT - WOULDN'T IT BE MORE**
 (17) **LIKELY THAT YOU WOULD ELIMINATE MISTAKES BY HAVING A**
 (18) **SINGLE LABEL THAN BY HAVING A WORKMAN HAVE**

A PILE OF

- (19) **TURBINOL LABELS HERE AND A PILE OF STICK-ON LABELS**
 (20) **HERE?**
 (21) A I DON'T KNOW THAT THAT IS - IT IS
 (22) EASIER, BUT NOT THAT SIGNIFICANT.
 (23) THAT IS A SIMPLE STEP, REALLY.
 (24) THEY STORE THE TURBINOL, THE OLD TURBINOL
 (25) LABEL IN A LITTLE BOX LIKE IN THE POST OFFICE.
 (26) RIGHT NEXT TO THEM ARE THESE STICK-ON
 (27) LABELS. THEY GRAB BOTH BUNDLES AND PUT THEM ON THEIR
 (28) WORK TABLE.

Page 1915

- (1) AS THE DRUMS ARE FILLING OR BEING FILLED,
 (2) THEY APPLY THEM, NO PROBLEM.
 (3) **Q AND YOU COULD ELIMINATE THE PROBLEM OF**
 (4) **ACCIDENT ALL TOGETHER IF THEY DIDN'T HAVE TO PUT TWO**
 (5) **LABELS ON.**
 (6) THE COURT: YOU SHOULD MOVE TO A DIFFERENT
 (7) AREA.
 (8) **Q BY MR. TALLON: LET'S SEE.**
 (9) **LET'S LOOK BACK AT - DID WE LOOK AT**
 (10) **545?**
 (11) **NO.**
 (12) **LET'S LOOK AT 545.**
 (13) **IT'S IN THE BLACK BINDER.**
 (14) A I HAVE IT.
 (15) **Q OKAY. NOW, 545 IS A COPY OF YOUR MEMO**
 (16) **DATED APRIL 30, 1970 TO MR. SIDO, RIGHT?**
 (17) A IT IS.
 (18) **Q REGARDING AROCLOR LABELING?**
 (19) A YES.
 (20) **Q WHAT YOU TELL HIM IS THAT A REVIEW OF**
 (21) **INVENTORY INDICATES ABOUT 6,000 UNITS OF PACKAGED**
 (22) **AROCLOR PRODUCTS ARE IN THE WAREHOUSES?**
 (23) A I DID.
 (24) **Q OKAY. DID YOU UNDERTAKE A REVIEW TO**
 (25) **FIGURE OUT HOW MUCH WAS IN INVENTORY? DID SOMEBODY**
 (26) **DO THAT FOR YOU?**
 (27) A OH, I HAD IT DONE FOR ME.
 (28) **Q OKAY. AND YOU WERE TELLING MR. SIDO IN**

Page 1916

- (1) **THIS MEMO THAT THOSE 6,000 UNITS IN INVENTORY WILL**
 (2) **REQUIRE A SUPPLEMENTARY LABEL WHICH WILL CONTAIN THE**
 (3) **PCB STATEMENT, RIGHT?**
 (4) A YES.
 (5) **Q AND YOU ARE ASKING HIM TO ARRANGE TO GET**
 (6) **THE LABELS TO TAKE CARE OF THIS, QUOTE, "ONE-TIME**
 (7) **NEED"?**
 (8) A YES.
 (9) **Q AND HE DOES THAT?**
 (10) A YES.
 (11) **Q NOW YOU NEED, MR. PAPAGEORGE, TO TURN**
 (12) **BACK TO THE BLUE BINDERS, PARTICULARLY TO EXHIBIT**
 (13) **240.**
 (14) A I HAVE IT.
 (15) **Q TURN TO THE SECOND PAGE, IF YOU WOULD,**
 (16) **PLEASE, MR. PAPAGEORGE, THE ONE THAT SAYS AT THE TOP,**
 (17) **"MONSANTO COMPANY PURCHASING DEPARTMENT."**
 (18) A I SEE IT.
 (19) **Q OKAY. THAT IS THE PURCHASE ORDER USED TO**
 (20) **GET THE 6,000 LABELS THAT WE JUST SAW THAT**

YOU ASKED

- (21) **MR. SIDO TO GET FOR THE INVENTORY, CORRECT?**
 (22) **A I DIDN'T SEE A LABEL.**
 (23) **YOU JUST SAID WE SAW A LABEL.**
 (24) **Q WE JUST SAW A MEMO WHERE YOU ASKED**
 (25) **MR. SIDO TO OBTAIN, TO BUY 6,000 LABELS TO PUT**
ON
 (26) **INVENTORY.**
 (27) **A OH, WE ARE REFERRING TO THAT REQUEST.**
 (28) **Q AND THIS IS THE PURCHASE ORDER USED TO**

Page 1917

- (1) **ACTUALLY BUY THE LABELS?**
 (2) **A IT APPEARS TO BE, YES, SIR.**
 (3) **Q OKAY. AND WHAT IT CALLS FOR IS 6,000**
 (4) **ENVIRONMENTAL LABELS 1020/53 AT A COST OF**
ABOUT \$11
 (5) **PLUS SHIPPING AND HANDLING?**
 (6) **A YES.**
 (7) **Q AND THAT IS, IF WE LOOK AT THE BOTTOM OF**
 (8) **THAT SAME PAGE, THAT IS THE STICK-ON THAT**
YOU WERE
 (9) **REFERRING TO, RIGHT?**
 (10) **A YES.**
 (11) **Q IN FACT YOU CAN SEE DOWN THERE AT THE**
 (12) **CORNER, IT SAYS, "1020/53," RIGHT?**
 (13) **A YES.**
 (14) **Q NOW, THOSE LABELS WERE PRINTED AND THEY**
 (15) **WERE SENT TO ANNISTON AND KRUMMRICH,**
RIGHT?
 (16) **A AND OUTSIDE WAREHOUSES AND THE QUEENY**
 (17) **PLANT AND WHEREVER THIS MATERIAL SHOWED UP**
ON THE
 (18) **INVENTORY.**
 (19) **Q OKAY. TURBINOL WAS A BATCH PRODUCT,**
 (20) **RIGHT?**
 (21) **A I DON'T UNDERSTAND YOUR DEFINITION OF A**
 (22) **"BATCH PRODUCT".**
 (23) **Q TURBINOL WAS MADE UP WHEN THERE WAS A**
 (24) **CUSTOMER ORDER FOR IT, RIGHT?**
 (25) **A WELL, THERE WAS SOME INVENTORY. NOT VERY**
 (26) **MUCH.**
 (27) **Q DID YOU EVER SEE A DOCUMENT THAT SAID**
 (28) **THERE WAS AN INVENTORY OF TURBINOL?**

Page 1918

- (1) **A NO.**
 (2) **I DIDN'T SEE ANY DOCUMENT, NO.**
 (3) **Q OKAY. ARE YOU WITH ME ON PAGE 88259 OF**
 (4) **THAT SAME EXHIBIT, MR. PAPAGEORGE, 240?**
 (5) **A 88259. I HAVE IT.**
 (6) **Q OKAY. AND THERE IS A HANDWRITTEN**
 (7) **CALCULATION THERE, CORRECT?**
 (8) **FOR EXAMPLE, IT SAYS AT THE TOP,**
 (9) **"4-30-70, 6,000 ORDERED FOR VARIOUS**
WAREHOUSES AND
 (10) **TWO PLANTS, ANNISTON AND KRUMMRICH,"**
RIGHT?
 (11) **A YES.**
 (12) **Q THIS WOULD INDICATE TO YOU THAT THE 6,000**
 (13) **LABELS WE JUST SAW WERE SENT TO ANNISTON**
AND
 (14) **KRUMMRICH, RIGHT?**
 (15) **A YEAH, FOR SURE, YES.**
 (16) **Q IT DOESN'T SAY THEY WERE SENT TO QUEENY,**
 (17) **RIGHT?**
 (18) **A VARIOUS WAREHOUSES.**
 (19) **Q AT WHAT WAREHOUSE WAS TURBINOL KEPT?**
 (20) **A THE QUEENY WAREHOUSE.**
 (21) **Q OKAY. DID THAT HAVE A NAME?**
 (22) **A THE JOHN F. QUEENY PLANT WAREHOUSE ON**
 (23) **SECOND STREET IN ST. LOUIS.**
 (24) **I DON'T KNOW HOW ELSE TO DESCRIBE IT.**
 (25) **Q ANNISTON AND KRUMMRICH WERE WHERE THE**

- (26) **PCB'S WERE MADE, RIGHT?**
 (27) **A CORRECT.**
 (28) **Q THEY WEREN'T MADE AT QUEENY?**

Page 1919

- (1) **A TRUE.**
 (2) **Q THEY WERE BLENDED AT QUEENY?**
 (3) **A YES.**
 (4) **Q AND TURBINOL WAS NOT MADE AT ANNISTON?**
 (5) **A RIGHT.**
 (6) **Q AND TURBINOL WAS NOT MADE AT KRUMMRICH?**
 (7) **A TRUE.**
 (8) **Q IT WAS BLENDED AT QUEENY?**
 (9) **A CORRECT.**
 (10) **Q AND THIS DOCUMENT SHOWS THAT ALL OF**
THOSE
 (11) **6,000 LABELS WENT TO WAREHOUSES,**
KRUMMRICH AND
 (12) **ANNISTON?**
 (13) **A THAT IS WHAT THIS PERSON UNDERSTOOD,**
 (14) **YES.**
 (15) **Q AND THIS DOCUMENT SHOWS THAT THE**
BALANCE,
 (16) **SOME WERE SENT TO ANNISTON, IT SAYS, "1,000**
WERE SENT
 (17) **TO ANNISTON," RIGHT?**
 (18) **A YES.**
 (19) **Q AND BALANCE OF 4500 SENT TO KRUMMRICH**
 (20) **PLANT, 5-22-70, TO BE PUT ON ALL AROCLORS**
CANS AND
 (21) **INVENTORY, RIGHT?**
 (22) **A YES.**
 (23) **Q AND THEN IT LISTS 1232, 1242 AND SO ON,**
 (24) **RIGHT?**
 (25) **A RIGHT.**
 (26) **Q NO MENTION OF ANY PRODUCTS?**
 (27) **A IN THIS DOCUMENT? YES.**
 (28) **Q GO AHEAD.**

Page 1920

- (1) **A THIS WHOLE LISTING OF AROCLORS ARE**
 (2) **LISTED.**
 (3) **THEY ARE PRODUCT NAMES.**
 (4) **Q YES. YOU DID SELL AROCLOR 1242, RIGHT?**
 (5) **A CERTAINLY.**
 (6) **Q AND, IN FACT, WE SAW A LABEL BEFORE FOR A**
 (7) **BARREL OF 1260?**
 (8) **A CORRECT, UH-HUH.**
 (9) **Q BUT IT DOESN'T SAY "TO BE PUT ON**
 (10) **TURBINOL," RIGHT?**
 (11) **A NOT IN THIS PARTICULAR SUMMARY.**
 (12) **Q IN FACT, MR. PAPAGEORGE, THERE IS NO**
 (13) **RECORD THAT THAT SUPPLEMENTAL STICKER WE**
WERE JUST
 (14) **LOOKING AT EVER WENT TO THE QUEENY PLANT,**
RIGHT?
 (15) **A I HAVEN'T SEEN ANY.**
 (16) **THAT DOESN'T MEAN THE QUEENY PLANT PEOPLE**
 (17) **DIDN'T GO ACROSS THE PLANT AND GET IT.**
 (18) **THEY DID THAT MANY TIMES, YOU KNOW OR I**
 (19) **KNOW.**
 (20) **MR. TALLON: YOUR HONOR, I WOULD AT THIS TIME**
 (21) **LIKE TO READ A REQUEST FOR ADMISSION AND A**
RESPONSE.
 (22) **THE COURT: LADIES AND GENTLEMEN, A REQUEST**
FOR
 (23) **ADMISSION LIKE AN INTERROGATORY OR A**
DEPOSITION IS A
 (24) **PROCEEDING TAKING PLACE BEFORE THE TRIAL.**
 (25) **IT MEANS THAT ONE PARTY HAS ANSWERED A**
 (26) **REQUEST FOR ADMISSION BY ADMITTING THAT**
CERTAIN FACTS
 (27) **ARE TRUE.**
 (28) **YOU MAY CONSIDER THE ANSWERS - THAT THE**

Page 1921

- (1) FACTS ARE TRUE AND BINDING UPON YOU.
(2) **Q BY MR. TALLON: THIS IS REQUEST FOR**
(3) **ADMISSION NUMBER 48: "ADMIT THAT MONSANTO**
HAD NO
(4) **RECORD THAT SUPPLEMENTAL ENVIRONMENTAL**
LABELS WERE
(5) **EVER SENT TO MONSANTO'S J.F. QUEENY PLANT.**
THE TERM
(6) **"SUPPLEMENTAL ENVIRONMENTAL LABEL" REFERS TO**
THE,
(7) **QUOTE, "SUPPLEMENTAL ENVIRONMENTAL LABEL,"**
CLOSE
(8) **QUOTE, REFERENCED IN MONSANTO'S RESPONSE TO**
(9) **TRANSWESTERN'S SPECIALLY DRAFTED**
INTERROGATORIES."
(10) **RESPONSE: "MONSANTO ADMITS THAT IT HAS**
(11) **BEEN UNABLE TO LOCATE ANY CURRENTLY**
AVAILABLE
(12) **DOCUMENTARY RECORD EXPLICITLY NAMING THE J.F.**
QUEENY
(13) **PLANT AS RECEIVING SUPPLEMENTAL**
ENVIRONMENTAL LABELS,
(14) **1020. EXCEPT FOR THIS ADMISSION MONSANTO**
DENIES THIS
(15) **REQUEST."**
(16) **TURN, IF YOU WOULD, PLEASE,**
(17) **MR. PAPAGEORGE, TO TRANSWESTERN EXHIBIT 150.**
(18) **A I HAVE IT.**
(19) **Q OKAY. THAT IS A MEMO DATED MAY 7, 1970**
(20) **FROM MR. SAVAGE TO MR. NAGEL AND IS IT**
MULLALEY?
(21) **A MULLALEY.**
(22) **Q AND YOU'RE COPIED ON THIS MEMO?**
(23) **A I AM.**
(24) **Q OKAY. AND IN THE MEMO THAT YOU GOT A**
(25) **COPY OF, MR. SAVAGE IS COMMUNICATING WITH**
MR. NAGEL
(26) **AND MR. MULLALEY.**
(27) **MR. NAGEL HAD A JOB AT THE KRUMMRICH**
(28) **PLANT, RIGHT?**

Page 1922

- (1) **A YES.**
(2) **Q AND MR. MULLALEY HAD A JOB AT THE**
(3) **ANNISTON PLANT?**
(4) **A CORRECT.**
(5) **Q AND WHAT MR. SAVAGE TELLS MESSRS. NAGEL**
(6) **AND MULLALEY IS THAT MR. SIDO IS SENDING**
THEM
(7) **STICK-ON ENVIRONMENTAL WARNING LABELS FOR**
AROCOR
(8) **1221 THROUGH 1268, RIGHT?**
(9) **A YES.**
(10) **Q THIS DOCUMENT INDICATES TO YOU THAT NO**
(11) **LABELS WERE SENT TO THE QUEENY PLANT,**
RIGHT?
(12) **A IT IS SILENT ON THE QUEENY PLANT.**
(13) **IT DOESN'T SPECIFICALLY SAY, "NO LABELS**
(14) **WERE SENT."**
(15) **Q IT SAYS THAT THE LABELS WERE SENT TO**
(16) **KRUMMRICH AND ANNISTON WHERE THE PCB'S**
WERE MADE?
(17) **A CORRECT, AND PACKAGED.**
(18) **Q OKAY. AND IT SAYS THAT THE SUPPLEMENTAL**
(19) **STICK-ON - EXCUSE ME, THE STICK-ON**
ENVIRONMENTAL
(20) **WARNING LABELS WERE FOR AROCLOR 1221**
THROUGH 1268,
(21) **CORRECT?**
(22) **A CORRECT.**
(23) **Q OKAY. LOOK AT 151 WHICH SHOULD BE THE**
(24) **VERY NEXT.**

- (25) A I HAVE IT.
 (26) Q NOW, MR. GORDON HANDLED SENDING THE
 (27) LABELS OUT TO WAREHOUSES, RIGHT?
 (28) A YES.

Page 1923

- (1) Q OKAY. LOOK AT THAT DOCUMENT.
 (2) THAT IS A MEMO FROM M. J. QUIRK, THE
 (3) WAREHOUSE COORDINATOR FOR THE
 WAREHOUSES, ISN'T IT?
 (4) A TO SOME OF THE WAREHOUSES.
 (5) Q AND THERE IS COTTER, LOS ANGELES, SANTA
 (6) CLARA, ELIZABETH AND DURO, DURO INDIANA?
 (7) A CORRECT.
 (8) Q THE SUBJECT OF THE MEMO IS AROCLORS 1232,
 (9) 1242, 1248, 1254 AND 1260, RIGHT?
 (10) A THAT IS RIGHT.
 (11) Q LET'S SEE. AND WHAT M. J. QUIRK IS
 (12) TELLING THE WAREHOUSES IS, "BEFORE YOU SHIP
 PUT THE
 (13) LABEL ON IT," RIGHT?
 (14) A RIGHT.
 (15) Q BUT SHE REFERS TO AROCLOR.
 (16) SHE DOESN'T GIVE A LIST OF ANY PRODUCTS,
 (17) RIGHT?
 (18) A THAT'S RIGHT.
 (19) Q AND SHE SAID - I'M SAYING "SHE."
 (20) M. J. QUIRK SAYS, "BEFORE SHIPPING ANY
 (21) CONTAINERS OF THE SUBJECT PRODUCTS TO A
 CUSTOMER,
 (22) PLEASE APPLY THE LABEL," RIGHT?
 (23) A THIS IS SPECIFIC TO THE PACKAGES OF
 (24) AROCLORS.
 (25) Q OKAY. LOOK AT 158, IF YOU WOULD,
 (26) PLEASE.
 (27) A I HAVE READ IT.
 (28) Q THAT IS A MEMO FROM YOU, NOW, TO MR. SIDO

Page 1924

- (1) AGAIN BUT THIS ONE IS MAY 27, 1970?
 (2) A YES.
 (3) Q OKAY. AND YOU ARE COMMUNICATING FURTHER
 (4) WITH MR. SIDO ABOUT LABELING?
 (5) A YES.
 (6) Q AND WHAT YOU ARE SAYING TO HIM IN THE
 (7) FIRST PARAGRAPH IS, "IT'S MY UNDERSTANDING
 THAT LABEL
 (8) REVISIONS OF MONSANTO AND PCB-CONTAINING
 AROCLORS
 (9) HAVE BEEN ACCOMPLISHED AND ARE NOW BEING
 IMPLEMENTED
 (10) AT THE PLANTS AND WAREHOUSES," RIGHT?
 (11) A RIGHT.
 (12) Q OKAY. AND WHAT YOU SEE IN THE THIRD
 (13) PARAGRAPH IS, "PYDRAUL LABELS WILL NOT BE
 ALTERED
 (14) SINCE REFORMULATIONS WILL BE MADE," RIGHT?
 (15) A RIGHT.
 (16) Q LOOK AT THE FOURTH PARAGRAPH THERE,
 (17) MR. PAPAGEORGE.
 (18) IT REFERS TO THERMINOL, CORRECT?
 (19) A IT DOES.
 (20) Q NOW, THAT IS A BLENDED PRODUCT?
 (21) A ONLY ONE OF THE THERMINOLS WAS BLENDED.
 (22) THE OTHERS WERE PCB MIXTURES SIMILAR TO
 (23) THE AROCLORS.
 (24) Q SO THE THERMINOLS HAD PCB'S IN THEM?
 (25) A CERTAINLY.
 (26) Q AND YOU WERE SAYING TO MR. SIDO, IT'S NOW
 (27) APPROPRIATE TO REVISE THE THERMINOL LABELS?
 (28) A YES, TO REPLACE THE STICK-ON LABEL

Page 1925

- (1) APPROACH.
 (2) Q WHY SPECIAL MENTION FOR THERMINOL?
 (3) A IT WAS AN ACTIVE PRODUCT LINE, MANY
 (4) CUSTOMERS.
 (5) THERE WERE NO ALTERNATIVES AVAILABLE AT
 (6) THAT TIME SO WE DIDN'T SEE THE SITUATION THAT
 EXISTED
 (7) FOR THE PYDRAULS.
 (8) Q THE PYDRAULS WERE A PRETTY ACTIVE LINE,
 (9) RIGHT?
 (10) A YES, BUT THEY WERE BEING MODIFIED,
 (11) CHANGED.
 (12) Q ALL RIGHT. TAKE A LOOK, IF YOU WOULD,
 (13) PLEASE, AT 172.
 (14) NOW, AT ABOUT THIS TIME TURBINOL WAS
 (15) UNDERGOING REFORMULATION, TOO?
 (16) A I'M SORRY?
 (17) Q AT ABOUT THIS TIME TURBINOL WAS
 (18) UNDERGOING REFORMULATION, TOO?
 (19) A THERE WERE STUDIES BEING CONDUCTED TO TRY
 (20) TO FIND THE RIGHT MIXTURE THAT WOULD PASS ALL
 THE
 (21) TESTS, YES.
 (22) Q LOOK AT 172, ALL RIGHT?
 (23) A I HAVE IT.
 (24) Q OKAY. THAT IS A MEMO FROM MR. SIDO AND
 (25) YOU ARE COPIED ON IT, CORRECT?
 (26) A IT IS.
 (27) Q OKAY. AND MR. SIDO IS WRITING YOU,
 (28) AGAIN, ABOUT LABELS, RIGHT?

Page 1926

- (1) A YES.
 (2) Q AND -
 (3) A NOT WRITING ME, NO.
 (4) HE IS WRITING TO HIS OWN FILE.
 (5) Q AND COPYING YOU?
 (6) A YES.
 (7) Q AND HE, IN THIS MEMO TO HIS OWN FILES, HE
 (8) IS RECORDING A CONVERSATION HE HAD WITH
 YOU AND NORM
 (9) JOHNSON, RIGHT?
 (10) A HE IS.
 (11) Q AND NORM JOHNSON AND YOU CALLED MR. -
 (12) EXCUSE ME, CALLED MR. SIDO?
 (13) A AS I RECALL, MR. SIDO CAME OVER TO
 (14) MR. JOHNSON'S OFFICE AND WHILE THERE THEY
 CALLED ME
 (15) AND ASKED ME TO JOIN THEM.
 (16) THAT IS WHERE THE CONVERSATION TOOK
 (17) PLACE.
 (18) Q LET'S TAKE A CLOSE LOOK AT THAT FIRST
 (19) PARAGRAPH.
 (20) IN HIS MEMO - AND YOU WERE COPIED ON
 (21) IT, RIGHT?
 (22) A YES, UH-HUH.
 (23) Q OKAY. IN THIS MEMO MR. SIDO SAYS, THIS
 (24) NOTE CONFIRMS - THAT IT'S LIKE A FILE MEMO
 FOR
 (25) HISTORICAL PURPOSES?
 (26) A YES.
 (27) Q THIS NOTE CONFIRMS MY CONVERSATION WITH
 (28) BILL PAPAGEORGE AND NORM JOHNSON
 REGARDING CHEMICAL

Page 1927

- (1) COMPOSITION OF PYDRAUL PRODUCTS, RIGHT?
- (2) A IT DOES.
- (3) Q HE SAYS, "ALL OF THE DOMESTIC PYDRAUL PRODUCTS ARE BEING REFORMULATED AND NONE WILL CONTAIN
- (5) PCB," CORRECT?
- (6) A CORRECT.
- (7) Q SO HE SAYS, "THEY MAY CONTAIN AROCLORS
- (8) LOWER THAN 1232 OR CHLORINATED TERPHENYLS, SO THEY
- (9) WILL REQUIRE THE CHLORINATED HYDROCARBON STANDARD
- (10) PARAGRAPH," RIGHT?
- (11) A YES, SIR.
- (12) Q THE CHLORINATED HYDROCARBON STANDARD
- (13) PARAGRAPH IS NOT THE ENVIRONMENTAL STICK-ON LABEL
- (14) THAT WE HAVE BEEN TALKING ABOUT, RIGHT?
- (15) A THAT IS CORRECT.
- (16) Q IT'S A STATEMENT THAT SAYS, "PRODUCT
- (17) CONTAINS CHLORINATED HYDROCARBONS," RIGHT?
- (18) A IT IS.
- (19) Q PCB'S ARE CHLORINATED HYDROCARBONS?
- (20) A YES.
- (21) Q BUT THERE ARE MANY OTHER KINDS OF
- (22) CHLORINATED HYDROCARBONS?
- (23) A YES.
- (24) Q AND THEN IN HIS MEMO TO YOU MR. SIDO
- (25) NOTES, IN THE EXPORT MARKET OR IN HIS MEMO ON WHICH
- (26) YOU WERE COPIED, MR. SIDO NOTES, IN THE EXPORT MARKET
- (27) ONE OR TWO PYDRAUL PRODUCTS MAY CONTAIN SOME PCB BUT
- (28) THE ENVIRONMENTAL STATEMENT SHOULD NOT BE USED.

Page 1928

- (1) HE SAYS, "THESE SAFETY HYDRAULIC FLUIDS
- (2) ARE USED IN COAL MINE EQUIPMENT AND MONSANTO HOPES TO
- (3) GET OUR COMPETITORS TO AGREE TO USE OF THE PCB
- (4) MESSAGE IF SUBSTITUTE FORMULATIONS ARE NOT
- (5) ACCEPTABLE."
- (6) SO A BUSINESS DECISION WAS MADE, DON'T
- (7) PUT THE STICKER ON PYDRAUL PRODUCTS GOING OVERSEAS?
- (8) A FOR MINING EQUIPMENT.
- (9) Q WELL, FOR MINING EQUIPMENT A BUSINESS
- (10) DECISION WAS MADE, LET'S NOT PUT THAT STICKER ON?
- (11) A THAT'S RIGHT.
- (12) Q AND MR. SIDO CLOSES BY SAYING, "NONE OF
- (13) THESE PYDRAUL PRODUCTS SHOULD CARRY THE PCB
- (14) ENVIRONMENTAL STATEMENT"?
- (15) A HE DOES SAY THAT.
- (16) Q OKAY. AND WHEN HE USED THOSE WORDS, IT
- (17) SAYS, "NONE OF THESE PYDRAUL PRODUCTS SHOULD CARRY
- (18) THE PCB ENVIRONMENTAL STATEMENT."
- (19) HE DIDN'T SAY "STICKER," RIGHT?
- (20) A NO.
- (21) HE IS REFERRING TO THE FULL LABEL, THE
- (22) PRODUCT LABEL.
- (23) Q YOU DIDN'T WRITE HIM A MEMO TO CLARIFY
- (24) THAT, RIGHT?
- (25) A WHY WOULD I?
- (26) I KNEW WHAT HE WAS THINKING EXACTLY.
- (27) I HAD NO NEED TO WRITE A MEMO.

(28) HE IS TALKING THERE ABOUT A LABEL FOR

Page 1929

- (1) PYDRAUL PRODUCTS AND WHAT THAT LABEL HAS ON IT.
- (2) Q RIGHT.
- (3) AND HE SAYS, "NONE SHOULD CARRY THE PCB
- (4) ENVIRONMENTAL STATEMENT"?
- (5) A THAT'S RIGHT.
- (6) IN OTHER WORDS, "KEEP THE OLD LABEL."
- (7) IT DOESN'T SAY ANYTHING ABOUT NOT USING A
- (8) STICK-ON.
- (9) THAT IS AN ONGOING THING BY NOW.
- (10) Q OKAY. WOULDN'T YOU AGREE WITH ME,
- (11) MR. PAPAGEORGE, THAT YOU CAN READ THIS SENTENCE TO
- (12) SAY "NONE OF THE PYDRAUL PRODUCTS SHOULD CARRY THE
- (13) PCB ENVIRONMENTAL STATEMENT," MEANING NOT ON THE
- (14) REGULAR LABEL AND NOT ON THE STICK-ON?"
- (15) A I SUPPOSE A PERSON COULD READ IT, DEFINE
- (16) IT THAT WAY.
- (17) BUT THIS IS FOR THE LABELING DEPARTMENT
- (18) OF MONSANTO'S REFERENCE.
- (19) AND THEY KNOW, WITHIN THAT LITTLE GROUP,
- (20) EXACTLY WHAT WAS MEANT BY THAT STATEMENT.
- (21) Q OKAY.
- (22) A IT MEANT A LOT TO THEM IN TERMS OF WHAT
- (23) APPEARS ON THE PRODUCT LABEL.
- (24) Q OKAY. BUT HE DOESN'T SAY, "NONE OF THESE
- (25) PCB LABELS SHOULD CARRY THE PCB ENVIRONMENTAL
- (26) STATEMENT," HE SAYS, "NONE OF THE PRODUCTS SHOULD,"
- (27) RIGHT?
- (28) A NONE OF THE PYDRAUL PRODUCT.

Page 1930

- (1) IT IS QUITE SPECIFIC.
- (2) Q OKAY. LET'S LOOK AT TRANSWESTERN 174 FOR
- (3) A MOMENT, PLEASE.
- (4) A I HAVE IT.
- (5) Q AS PART OF YOUR JOB YOU STARTED TO WRITE
- (6) STATUS REPORTS TO THE INTERESTED GROUP?
- (7) A I DID.
- (8) Q AND TRANSWESTERN 174 IS A COPY OF YOUR
- (9) AUGUST 18, 1970 STATUS REPORT, RIGHT?
- (10) A OH, IT'S THE JULY STATUS REPORT WHICH WAS
- (11) ISSUED IN AUGUST.
- (12) Q ALL RIGHT. SO IN AUGUST 1970 YOU WROTE A
- (13) REPORT COVERING WHAT HAD HAPPENED IN JULY?
- (14) A CORRECT.
- (15) Q OKAY. AND YOU BRIEFED THE FOLKS WHO ARE
- (16) THE RECIPIENTS OF THIS MEMO ON A VARIETY OF TOPICS,
- (17) MARKETING, AS ON THE FIRST PAGE, RIGHT?
- (18) A YES.
- (19) Q ENGINEERING?
- (20) A YES.
- (21) Q YOU KEEP THEM UP TO DATE AT THE TOP OF
- (22) PAGE 2, ENGINEERING IS STILL BEING DISCUSSED,
- (23) MCS-1016 DISTILLATION, RIGHT?
- (24) A RIGHT.
- (25) Q THAT IS WORKING TO TRY TO MAKE 1242
- (26) WITHOUT THE MORE HIGHLY CHLORINATED?
- (27) A THAT IS CORRECT.
- (28) Q EUROPE, JAPAN, MEDICAL, PUBLIC

Page 1931

- (1) RELATIONS.
- (2) YOU TALK ABOUT THE REPLACEMENT OF AROCLOR
- (3) 1242 FOR NCR, RIGHT?
- (4) A RIGHT.
- (5) Q AND THEN ON PAGE 5 YOU GET TO INDUSTRIAL

(6) FLUIDS.
 (7) A YES.
 (8) Q YOU TALK ABOUT PYDRAUL F-9A?
 (9) A YES.
 (10) Q AND AROCLOR SUBSTITUTES, RIGHT?
 (11) A RIGHT.
 (12) Q OKAY. AND LOOK AT THE CENTER OF PAGE 6.
 (13) YOU ARE DOING TESTING ON AROCLOR 1242,
 (14) STILL FOR BIODEGRADATION, RIGHT?
 (15) A YES.
 (16) Q AND THEN TURN - JUST A COUPLE MORE, TO
 (17) 176.
 (18) A I HAVE IT.
 (19) Q THAT IS A COPY OF A MEMO DATED SEPTEMBER
 (20) 21, 1970 WHICH YOU USED, RIGHT, OR YOU
 RECEIVED?
 (21) A I RECEIVED, YES, SIR.
 (22) Q AND ITS SUBJECT IS "AROCOR USE AT THE
 (23) JOHN F. QUEENY PLANT"?
 (24) A YES.
 (25) Q THAT IS WHERE TURBINOL WAS MADE?
 (26) A YES.
 (27) Q AND TURBINOL WAS KNOWN ALSO AS MCS-153,
 (28) RIGHT?

Page 1932

(1) A CORRECT.
 (2) Q OKAY. SO LET'S SEE.
 (3) THE DISCUSSION IN THIS MEMO IS ABOUT
 (4) AROCLORS AND THEIR USE AT THE QUEENY PLANT,
 CORRECT?
 (5) A CORRECT.
 (6) Q AND IF WE LOOK AT PAGE 2 AT THE BOTTOM,
 (7) THAT IS A LIST MADE BY THE AUTHOR OF THIS
 DOCUMENT
 (8) SHOWING THE PRODUCTS CONTAINING AROCLORS
 BLENDED AT
 (9) QUEENY?
 (10) A YES.
 (11) Q AND IT LISTS, STARTS WITH PYDRAUL 625 AND
 (12) GOES THROUGH AC AND F-9.
 (13) RIGHT THERE IN THE MIDDLE IT'S MCS-153?
 (14) A CORRECT.
 (15) Q AND THAT IS A REFERENCE TO TURBINOL?
 (16) A YES.
 (17) Q AND AS THE RIGHT-HAND COLUMN SHOWS,
 (18) TURBINOL IS MADE WITH AROCLOR 1232 AND 1242
 AT THIS
 (19) TIME?
 (20) A AT THAT TIME, YES.
 (21) Q THAT NEVER CHANGED, RIGHT?
 (22) A THERE WAS A CHANGE IN THE RECIPE, YES,
 (23) SIR.
 (24) Q 1242 IS STILL IN IT?
 (25) A YES.
 (26) Q TAKE A LOOK AT 180, IF YOU WOULD,
 (27) PLEASE.
 (28) A I HAVE IT.

Page 1933

(1) Q THAT IS YOUR SEPTEMBER STATUS REPORT ON
 (2) THE PCB ENVIRONMENTAL PROBLEM THAT YOU
 WROTE IN
 (3) OCTOBER OF 1970, RIGHT?
 (4) A CORRECT.
 (5) Q AND YOU SENT IT TO THE SAME GROUP OF
 (6) PEOPLE OR SAME FUNCTIONS?
 (7) A THE FUNCTIONS ARE REPRESENTED, YES.
 (8) Q OKAY. TURN TO PAGE 7, IF YOU WOULD,
 (9) PLEASE.
 (10) THE COURT: BEFORE WE DO THAT, MR. TALLON.
 (11) WE HAVE REACHED THE TIME FOR THE MORNING
 (12) BREAK.
 (13) LADIES AND GENTLEMEN, WE WILL BE IN

(14) RECESS UNTIL 11 O'CLOCK.
 (15) PLEASE RETURN AT THAT TIME SO WE CAN
 (16) RESUME.
 (17) (RECESS.)
 (18) THE COURT: AND RESUMING.
 (19) GO AHEAD, MR. TALLON.
 (20) MR. TALLON: THANK YOU, YOUR HONOR.
 (21) Q MR. PAPAGEORGE, THIS IS ACTUALLY NOT THE
 (22) FIRST TIME YOU HAVE TESTIFIED ON BEHALF OF
 MONSANTO;
 (23) IS THAT RIGHT?
 (24) A THAT IS CORRECT.
 (25) Q IN FACT, THIS IS ABOUT YOUR SEVENTH TRIAL
 (26) APPEARANCE, WOULDN'T YOU SAY?
 (27) A CLOSE TO THAT.
 (28) I HAVEN'T KEPT A SCORE SHEET, BUT IT'S

Page 1934

(1) ABOUT THAT.
 (2) Q AND I THINK YOU TOLD ME ABOUT 24
 (3) DEPOSITIONS; IS THAT RIGHT?
 (4) A ROUGHLY, OVER A 20-YEAR PERIOD, YES,
 (5) UH-HUH.
 (6) Q LET'S TAKE A MOMENT AND LOOK AT
 (7) TRANSWESTERN 180.
 (8) IS THAT THE ONE YOU HAVE IN FRONT OF YOU?
 (9) A YES.
 (10) Q AND THIS WAS ANOTHER ONE IN YOUR SERIES
 (11) OF PCB ENVIRONMENTAL PROBLEM STATUS
 REPORTS?
 (12) A CORRECT.
 (13) Q OKAY.
 (14) TURN TO PAGE 5, IF YOU WOULD, PLEASE.
 (15) ARE YOU WITH ME?
 (16) A YES.
 (17) Q IS THE CAPTION "INDUSTRIAL HYDRAULICS"?
 (18) IN YOUR REPORT YOU WROTE, "THE REMOVAL OF
 (19) AROCLOR 1242 FROM ALL PYDRAULS WILL
 REQUIRE
 (20) REFORMULATION OF A 200, 281, 540, 312, 230, 135,
 150,
 (21) MCS-153 AND MC 6974," RIGHT?
 (22) A IT SAYS THAT, UH-HUH.
 (23) Q ALL RIGHT. SO MCS-153, THAT WAS
 (24) TURBINOL?
 (25) A YES.
 (26) Q AND TURBINOL OR MCS-153 IS ONE OF THE
 (27) PRODUCTS YOU LIST WHEN YOU SAY, "THE
 REMOVAL OF
 (28) AROCLOR 1242 FROM ALL PYDRAULS WILL
 REQUIRE

Page 1935

(1) REFORMULATION OF THESE PRODUCTS,
 INCLUDING TURBINOL,"
 (2) RIGHT?
 (3) A IT SAYS THAT, YES, SIR, UH-HUH.
 (4) Q BY THE WAY, THIS IS YOUR SEPTEMBER REPORT
 (5) WHICH YOU ARE WRITING IN OCTOBER.
 (6) ARE YOU STILL USING TWO LABELS FOR ALL OF
 (7) THESE PRODUCTS RATHER THAN ONE?
 (8) A YES, UH-HUH.
 (9) Q IT WASN'T EASIER IN FOUR-MONTHS' TIME TO
 (10) JUST PRINT ONE LABEL?
 (11) A IT ALL DEPENDS HOW YOU LOOK AT IT.
 (12) WE THOUGHT THAT IT'S APT TO BE MORE
 (13) ACCURATE IF WE KEPT IT SIMPLE AND JUST ASKED
 FOR AN
 (14) ADDITIONAL LABEL TO BE ADDED TO THE PACKAGE.
 (15) Q OKAY. TURN WITH ME FOR A MOMENT, IF YOU
 (16) WOULD, TO 182, TRANSWESTERN 182.
 (17) A I HAVE IT.
 (18) Q ARE YOU WITH ME?
 (19) THAT IS A COPY OF YOUR DECEMBER 7, 1970

(20) ENVIRONMENTAL STATUS REPORT, RIGHT?
 (21) A CORRECT.
 (22) Q REPORTING ON NOVEMBER?
 (23) A CORRECT.
 (24) Q OKAY. TURN WITH ME, IF YOU WOULD,
 (25) PLEASE, MR. PAPAGEORGE, TO PAGE 7. OKAY?
 (26) A YES.
 (27) Q NOW, THAT DISCUSSION IS CAPTIONED
 (28) "PYDRAUL REFORMULATION" STARTING THERE,
 RIGHT?

Page 1936

(1) A YES.
 (2) Q AND THE FIRST THING DISCUSSED IS THE
 (3) FACTORY MUTUAL VISIT?
 (4) A YES.
 (5) Q AND FACTORY MUTUAL WAS A TESTING GROUP
 OR
 (6) INSURANCE GROUP. WHAT DID THEY DO?
 (7) A AS I UNDERSTAND IT, THEY ARE A TESTING
 (8) GROUP THAT IS SPONSORED BY INSURANCE
 COMPANIES.
 (9) Q AND THEY VISITED WITH MONSANTO IN
 (10) NOVEMBER AND APPROVED OR GAVE TENTATIVE
 APPROVAL FOR
 (11) PYDRAUL 625-A, F-9A, MCS-1063, WHICH WAS ALSO
 (12) TURBINOL-153A?
 (13) A THAT IS THE MODIFIED TURBINOL-153, YES,
 (14) SIR.
 (15) Q SO THAT WAS A RE-MIX OF TURBINOL-153?
 (16) A WELL, IT WAS AN ATTEMPT TO FIND AN
 (17) ALTERNATIVE, YES.
 (18) Q THAT PRODUCT, TURBINOL-153A WAS NEVER
 (19) MADE FOR SALE OR SOLD?
 (20) A THAT IS CORRECT.
 (21) IT WAS NEVER, AS I UNDERSTOOD IT,
 (22) APPROVED BY THE MANUFACTURER OF TURBINES.
 (23) Q GE?
 (24) A UH-HUH.
 (25) Q TURN TO THE TOP OF EIGHT, WOULD YOU,
 (26) PLEASE.
 (27) A I HAVE IT.
 (28) Q THERE IS A CAPTION THAT READS

Page 1937

(1) "TURBINOL-153A"?
 (2) A YES.
 (3) Q AND YOU ARE REPORTING IN YOUR MEMO ON
 (4) SOME TESTS THAT HAD BEEN DONE ON
 TURBINOL-153A?
 (5) A YES.
 (6) Q LIKE A LUBRICITY TEST?
 (7) A YES, THAT IS ONE TEST, YES, SIR.
 (8) Q AND A T-A-N TEST?
 (9) A YES.
 (10) Q AND ALCOR DEPOSITION TEST?
 (11) A YES.
 (12) Q AND BASICALLY WHAT YOU ARE SAYING HERE IS
 (13) THAT THE TESTS WERE FAVORABLE?
 (14) A YES.
 (15) Q AND THE NEXT PRODUCT IS PYDRAUL A-200B?
 (16) A YES.
 (17) Q NOW, MR. PAPAGEORGE, YOU ARE AWARE THAT
 (18) THE CORPORATE MANAGEMENT COMMITTEE
 CONTINUED TO
 (19) MONITOR THE PCB SITUATION, RIGHT?
 (20) A YES.
 (21) Q AND PERIODICALLY THERE WERE FURTHER
 (22) REPORTS BY YOU AND/OR MR. MASON?
 (23) A BY MR. MASON.
 (24) Q AND YOU ARE AWARE THAT MR. MASON GAVE
 ONE
 (25) SUCH REPORT TO THE CORPORATE MANAGEMENT
 COMMITTEE IN

(26) MARCH OF 1971?
 (27) A YES.
 (28) Q OKAY. TURN TO TRANSWESTERN 193, PLEASE.

Page 1938

(1) A I HAVE IT.
 (2) Q OKAY. IF YOU WOULD LOOK AT THE PAGE -
 (3) NOW, THAT IS MR. MASON'S PRESENTATION FOR A
 CMC
 (4) MEETING IN MARCH OF '71, RIGHT?
 (5) A THESE ARE COPIES OF TRANSPARENCIES USED
 (6) BY MR. MASON AS HE MADE HIS PRESENTATION.
 (7) Q OKAY. AND THERE ON THE FIRST PAGE OF THE
 (8) EXHIBIT IT LOOKS LIKE THERE IS A LITTLE PIECE OF
 NOTE
 (9) PAPER OR SOMETHING. IT SAYS, "FROM THE DESK
 OF W. B.
 (10) PAPAGEORGE"?
 (11) A THAT IS ME.
 (12) Q AND THAT IS YOUR HANDWRITING?
 (13) A YES.
 (14) Q SAYING, "WHAT WE ARE SEEING HERE IS THE
 (15) PRESENTATION THAT MR. MASON MADE TO THE
 CMC IN MARCH
 (16) OF '71"?
 (17) A IT DOES.
 (18) Q TURN TO THE PAGE THAT HAS GOT THE NUMBER
 (19) ON THE BOTTOM 86386.
 (20) A I HAVE IT.
 (21) Q THIS WAS A SLIDE THAT MR. MASON USED AT
 (22) THE CMC MEETING IN MARCH OF '71?
 (23) A IT IS.
 (24) Q AND IT IS CAPTIONED "HYDRAULIC
 (25) APPLICATIONS"?
 (26) A YES.
 (27) Q AND PARAGRAPH 2 SAYS, "AROCOR 1242 IS
 (28) STILL PRESENT IN TWO FLUIDS USED IN GAS
 TRANSMISSION

Page 1939

(1) (CLOSED) SYSTEMS."
 (2) AND THE CLOSED IS IN PARENS, RIGHT?
 (3) A YES.
 (4) Q MCS-974 AND TURBINOL-153?
 (5) A IT SAYS THAT.
 (6) Q AND IT SAYS, "PLAN TO TRY MCS-1016 WHEN
 (7) IT IS AVAILABLE"?
 (8) A YES.
 (9) Q DID THAT MEAN THAT WHEN MCS-1016 WAS
 (10) READY YOU ARE GOING TO TRY THAT AS A
 SUBSTITUTE?
 (11) A THAT WAS THE INTENT AT THAT TIME, YES,
 (12) SIR.
 (13) Q BUT THAT DIDN'T HAPPEN?
 (14) A THAT IS CORRECT.
 (15) Q OKAY. TURN TO THE PAGE THAT HAS THE
 (16) NUMBER AT THE BOTTOM 86397.
 (17) A I HAVE IT.
 (18) Q OKAY. AND THAT IS A SLIDE THAT MR. MASON
 (19) USED AT THE CMC MEETING TO SHOW THAT IN
 1970 MONSANTO
 (20) HAD SOLD 333,000 POUNDS OF TURBINOL, RIGHT?
 (21) A CORRECT.
 (22) Q AND PROJECTED MORE SALES FOR 1971?
 (23) A THAT IS WHAT IT SAYS, UH-HUH.
 (24) Q AND COULD YOU DRAW THE INFERENCE FROM
 (25) THAT THAT YOU EXPECTED TO CONTINUE SELLING
 THIS
 (26) PRODUCT IN 1971?
 (27) A CERTAINLY, UH-HUH.
 (28) Q OKAY. MR. PAPAGEORGE, DID YOU COME TO

Page 1940

(1) USE A TERM CALLED A "CUSTOMER-APPROVED
 LIST" IN 1971?

(2) A YES.
 (3) Q AND AT A POINT IN TIME CUSTOMERS BUYING
 (4) PCB PRODUCTS FROM MONSANTO HAD TO BE
 LISTED IN ORDER
 (5) TO BUY IT?
 (6) A CORRECT.
 (7) Q OKAY. TURBINOL WAS A PRODUCT THAT WAS
 (8) APPROVED FOR SALE TO CUSTOMERS ON THAT
 LIST, RIGHT?
 (9) A YES.
 (10) Q LOOK AT 209, TRANSWESTERN 209, PLEASE.
 (11) A I HAVE IT.
 (12) Q THAT IS A MEMO TO YOU FROM C. L. BRADFORD
 (13) DATED SEPTEMBER 16, 1971, RIGHT?
 (14) A RIGHT.
 (15) Q AND THAT IS LARRY BRADFORD?
 (16) A HE PREFERRED THE USE OF THE FIRST NAME
 (17) LARRY, YES.
 (18) Q OKAY. WHAT WAS HIS JOB IN SEPTEMBER OF
 (19) 1971?
 (20) A I AM NOT CERTAIN OF THE EXACT TITLE.
 (21) IT WAS SOMETHING LIKE PRODUCT MANAGER
 (22) REPORTING TO MR. JOHNSON AND THE GROUP THAT
 MARKETED
 (23) AND SOLD HYDRAULIC FLUIDS WHICH INCLUDED THE
 TURBINOL
 (24) LINE, THE SANTOVAC AND SO FORTH.
 (25) Q ALL RIGHT. THE TURBINOL LINE.
 (26) THERE IS JUST ONE PRODUCT, TURBINOL,
 (27) RIGHT?
 (28) A YEAH, BUT - DID I USE THAT WORD,

Page 1941

(1) "TURBINOL LINE"?
 (2) Q YEAH?
 (3) A ACTUALLY I SHOULD HAVE SAID THE
 (4) "HYDRAULIC FLUIDS LINE" WHICH INCLUDED NOT
 ONLY THE
 (5) PYDRAULS BUT TURBINOL AND SANTOVAC AND
 OTHER MACHINE
 (6) FLUID TYPE FLUIDS.
 (7) Q OKAY. IN SEPTEMBER, 1971 MONSANTO WAS
 (8) STILL WORKING ON TRYING TO REMAKE TURBINOL
 WITH LOWER
 (9) CHLORINATED OR BIODEGRADABLE PCB'S, RIGHT?
 (10) A YES.
 (11) Q IN FACT, IF YOU TURN TO PAGE 2,
 (12) MR. BRADFORD IS TELLING YOU ABOUT SOME OF
 THE TESTING
 (13) WORK THAT IS GOING ON WITH RESPECT TO
 TURBINOL,
 (14) RIGHT?
 (15) A IN PAGE 2?
 (16) Q YEAH, PARAGRAPH 4.
 (17) A THAT PARAGRAPH DOES REFER TO THE USE OF
 (18) DIFFERENT INGREDIENTS IN THE REFORMULATION OF
 (19) TURBINOL AND REFERS TO THE APPROVAL REQUIRED
 FROM
 (20) GENERAL ELECTRIC.
 (21) IT IS MENTIONED THAT NO APPROACH WILL BE
 (22) MADE TO TEXAS EASTERN UNTIL THAT APPROVAL IS
 (23) RECEIVED.
 (24) Q SO AT THIS TIME YOU WERE TRYING TO REMAKE
 (25) TURBINOL WITH BIODEGRADABLE PCB'S, RIGHT?
 (26) A NO, NO.
 (27) THIS IS - THIS APPROACH WAS THE USE OF
 (28) MATERIALS THAT DIDN'T CONTAIN ANY CHLORINE AT
 ALL.

Page 1942

(1) Q SO TOTALLY PCB FREE?
 (2) A CORRECT.
 (3) Q OKAY. AND BEFORE YOU MADE THAT AVAILABLE
 (4) OR WANTED TO MAKE IT AVAILABLE FOR SALE, YOU

WANTED

(5) TO GET GENERAL ELECTRIC TO APPROVE IT?
 (6) A CORRECT.
 (7) THEY WERE THE EXPERTS ON TURBINES.
 (8) Q GENERAL ELECTRIC WAS THE COMPANY THAT
 (9) ACTUALLY MADE THE TURBINES THAT DROVE THE
 GAS
 (10) COMPRESSORS?
 (11) A YES.
 (12) Q AND THE TURBINES WERE THE ENGINES THAT
 (13) ACTUALLY MADE THE GAS COMPRESSORS WORK?
 (14) A CORRECT.
 (15) Q OKAY. AND IT WAS YOUR EXPECTATION THAT
 (16) IF GE SIGNED OFF ON YOUR NEW FLUID, THAT
 WOULD HELP
 (17) THE SALE?
 (18) ACTUALLY, IT WAS NECESSARY FOR THE SALE?
 (19) A IT WAS ABSOLUTELY NECESSARY, YES, SIR.
 (20) Q AND TEXAS EASTERN WAS A BUYER OF
 (21) TURBINOL-153, RIGHT?
 (22) A CORRECT.
 (23) Q WHAT MR. BRADFORD IS REPORTING TO YOU IS,
 (24) WE ARE NOT PLANNING ON APPROACHING TEXAS
 EASTERN WITH
 (25) OUR NEW FLUID UNTIL GE SIGNS OFF?
 (26) A CORRECT.
 (27) Q NOW, AT THE END OF '71 THERE WAS A CHANGE
 (28) IN POLICY WITH RESPECT TO SELLING PCB
 PRODUCTS,

Page 1943

(1) CORRECT?
 (2) A CORRECT.
 (3) Q AND IT WAS DETERMINED BY MONSANTO THAT IF
 (4) MONSANTO WAS GOING TO SELL PRODUCT TO
 CUSTOMERS, IT
 (5) WAS GOING TO SHIFT THE RISK OF THE PCB
 PROBLEM TO THE
 (6) CUSTOMERS, RIGHT?
 (7) A THAT WAS PART OF THE PLAN, YES, SIR.
 (8) Q OKAY. THERE WERE A SERIES OF INCIDENTS
 (9) WHICH WERE DRAWING INCREASING ATTENTION
 TO MONSANTO
 (10) AS A MAKER OF PCB PRODUCTS IN THE LAST HALF
 OF 1971,
 (11) CORRECT?
 (12) A YES, THERE WERE SEVERAL.
 (13) I DON'T KNOW THAT THEY WERE A SERIES
 (14) WHERE ONE DEPENDED ON THE OTHER.
 (15) Q BUT THERE WERE SEVERAL UNRELATED
 (16) INCIDENTS BUT NOT ALL LINKED?
 (17) A CORRECT.
 (18) Q ONE OF THOSE INCIDENTS WAS THE GOVERNOR
 (19) OR SOME OFFICIAL IN MICHIGAN PROHIBITED
 FISHING FOR
 (20) COHO SALMON IN LAKE MICHIGAN, RIGHT?
 (21) A I JUST DON'T - I REMEMBER A REFERENCE TO
 (22) FISH FROM THE GREAT LAKES, BUT THAT WAS, GOSH,
 '78 OR
 (23) SO, NOT '71.
 (24) Q WHAT ABOUT THE EAST COAST TERMINAL
 (25) INCIDENT?
 (26) A YES, THAT WAS AN UNFORTUNATE INCIDENT.
 (27) Q IS THAT THE SAME AS HOLLY FARMS OR IS
 (28) HOLLY FARMS DIFFERENT?

Page 1944

- (1) A HOLLY FARMS WAS ONE OF THE COMPANIES
- (2) AFFECTED BY THE INCIDENT AT EAST COAST TERMINALS.
- (3) Q WHAT DID HOLLY FARMS DO AT THAT TIME?
- (4) WHAT WAS HOLLY FARMS BUSINESS?
- (5) A THEY WERE IN THE POULTRY BUSINESS.
- (6) Q AND WHAT HAPPENED IN THE EAST COAST
- (7) TERMINAL INCIDENT IN 1971?
- (8) A EAST COAST TERMINAL IS A FISH MEAL
- (9) PASTEURIZING COMPANY WHERE FISH MEAL MADE FROM
- (10) ANCHOVIES FROM THE PERU OCEAN AREA WERE BROUGHT INTO
- (11) THIS COUNTRY AND GROUND AND PUT THROUGH A UNIT THAT
- (12) EXPOSED THEM TO HIGH HEAT, TO PASTEURIZE IT, TO KILL
- (13) THE GERMS, BACTERIA AND SO ON.
- (14) THIS HEATING UNIT HAD IN IT AS THE
- (15) MATERIAL THAT CARRIED THE HEAT PCB FLUID.
- (16) THERE WAS A LEAK THAT DEVELOPED INSIDE
- (17) THE UNIT SO THAT IT WASN'T VISIBLE ON THE OUTSIDE
- (18) WHERE THE PCB, THE HOT PCB, GOT INTO THE FISH MEAL.
- (19) THAT FISH MEAL WAS LATER SOLD TO
- (20) COMPANIES THAT MADE CHICKEN FEED AS AN INGREDIENT.
- (21) REPORTS THEN WERE MADE THAT FLOCKS OF
- (22) CHICKENS AND OTHER POULTRY WERE BEING AFFECTED.
- (23) SOME OF THEM WERE SICK AND THEY - THE
- (24) EGGS WOULDN'T HATCH.
- (25) SO THAT IS THE EAST COAST TERMINAL'S
- (26) INCIDENT.
- (27) AND HOLLY FARMS WAS ONE OF THE COMPANIES
- (28) AFFECTED.

Page 1945

- (1) Q OKAY. AND MONSANTO GOT SUED BECAUSE OF
- (2) THAT INCIDENT?
- (3) A YES.
- (4) Q SO BY THIS TIME IT WAS DECIDED IF WE ARE
- (5) GOING TO STILL SELL PCB'S WHAT WE HAVE TO DO HERE AS
- (6) A COMPANY, IF THE CUSTOMER WANTS TO USE THEM, IT'S
- (7) OKAY BY US. IT'S THEIR RISK, NOT OUR RISK, MONSANTO?
- (8) A AT A CERTAIN POINT.
- (9) Q OKAY.
- (10) A IT'S NOT THEIR RISK BACK AT OUR PLANT.
- (11) THE MINUTE THE MATERIAL IS IN THEIR HANDS
- (12) IT'S THEIR RESPONSIBILITY.
- (13) Q IT WOULD BE THEIR RESPONSIBILITY IF THEY
- (14) WANTED TO USE IT?
- (15) A CORRECT.
- (16) Q AND MONSANTO WOULD BE HELD HARMLESS?
- (17) A IN A LEGAL SENSE, YES.
- (18) Q YES.
- (19) IN A LEGAL SENSE, MONSANTO STARTED ASKING
- (20) CUSTOMERS FOR SOMETHING CALLED A "HOLD-HARMLESS
- (21) AGREEMENT," RIGHT?
- (22) A YES.
- (23) Q AND WHAT THAT WAS ABOUT WAS A DOCUMENT
- (24) THAT MONSANTO GAVE TO CUSTOMERS, RIGHT?
- (25) A WELL, IT OFFERED THE DOCUMENT FOR
- (26) SIGNING.
- (27) Q YES.
- (28) MONSANTO WOULD OFFER THE DOCUMENT FOR

Page 1946

- (1) SIGNING TO A CUSTOMER AND SAY, IF YOU WANT TO
- (2) CONTINUE TO BUY OUR STUFF YOU MUST SIGN THIS
- (3) DOCUMENT.
- (4) A CORRECT.
- (5) Q AND WHAT THE DOCUMENT SAID WAS, "IF YOU
- (6) SIGN THIS DOCUMENT, YOU CAN'T SUE US."
- (7) IF YOU HAVE ANY PROBLEMS RELATED TO
- (8) PCB'S.
- (9) YOU WILL HOLD US HARMLESS, RIGHT?
- (10) MR. PREUSS: OBJECTION, CALLING FOR A LEGAL
- (11) CONCLUSION.
- (12) THE COURT: OVERRULED.
- (13) YOU MAY ANSWER IF THAT WAS THE EFFECT YOU
- (14) UNDERSTOOD.
- (15) THE WITNESS: THAT WAS MY UNDERSTANDING.
- (16) Q BY MR. TALLON: IF THE CUSTOMER DID AGREE
- (17) TO SIGN THE DOCUMENT, THEN MONSANTO WOULD CONTINUE TO
- (18) SELL, THAT WAS THE PLAN?
- (19) A YES.
- (20) Q WAS THAT DISCUSSED AT A BOARD OF
- (21) DIRECTORS' MEETING?
- (22) A I DON'T KNOW.
- (23) Q DID YOU EVER SEE ANY BOARD MINUTES
- (24) TOUCHING ON THAT?
- (25) A NO, NO.
- (26) Q SO THAT THE PROGRAM THEN WAS TO TAKE THE
- (27) RISK AWAY FROM MONSANTO AND PUT IT WITH THE CUSTOMER?
- (28) A WELL, THAT WAS ONE PART OF THE INTENT OF

Page 1947

- (1) THAT DOCUMENT.
- (2) Q ALL RIGHT. OKAY.
- (3) A THE OTHER WAS TO EMPHASIZE TO THE - LET
- (4) ME BACK OFF.
- (5) THE PERSON SIGNING THAT DOCUMENT HAD TO
- (6) BE A TOP OFFICIAL OF THE CUSTOMER'S COMPANY.
- (7) IT WAS A HOPED-FOR EFFECT WHERE WHEN WE
- (8) FIND A VICE-PRESIDENT OR PRESIDENT SIGNING THE
- (9) DOCUMENT, HE IS THEN IN A POSITION WHERE HE CAN
- (10) PROVIDE THE NECESSARY MONEY AND PEOPLE AND WHAT HAVE
- (11) YOU TO CONTROL THAT USE OF THE PCB'S THAT HIS COMPANY
- (12) IS HAVING AND THAT WAS REALLY A MAJOR BENEFIT THAT
- (13) MONSANTO HOPED TO GET OUT OF THIS HOLD HARMLESS
- (14) DOCUMENT.
- (15) Q OKAY. AND IF THE PRESIDENT OR REALLY
- (16) SENIOR OFFICER OF A COMPANY SIGNED IT, THEN YOU WERE
- (17) REALLY SURE THAT THEY WERE STUCK, RIGHT?
- (18) MR. PREUSS: OBJECTION, ARGUMENTATIVE.
- (19) THE COURT: SUSTAINED.
- (20) Q BY MR. TALLON: MR. PAPAGEORGE,
- (21) THROUGHOUT THE PERIOD THAT YOU GOT INVOLVED WITH
- (22) PCB'S AT MONSANTO, THERE WAS INTEREST BY GOVERNMENTS
- (23) AND GOVERNMENTAL AGENCIES IN THE PCB QUESTION,
- (24) CORRECT?
- (25) A CERTAINLY.
- (26) Q OKAY. AND, IN FACT, THERE WAS INTEREST
- (27) WE HAVE SEEN FROM OFFICIALS IN GEORGIA ABOUT THOSE
- (28) DAIRY HERDS, RIGHT?

Page 1948

- (1) A CERTAINLY.
- (2) Q AND OFFICIALS IN OHIO?
- (3) A YES.
- (4) Q AND WE SAW THE DEPARTMENT OF THE INTERIOR
- (5) HAD WRITTEN TO MONSANTO?
- (6) A YES.
- (7) Q OKAY. AND THE STATE OF CONNECTICUT?
- (8) A YES.
- (9) Q AND ALSO, LET'S SEE, AT ONE POINT,
- (10) ACTUALLY, THE DEPARTMENT OF JUSTICE, THE FEDERAL
- (11) DEPARTMENT OF JUSTICE IN WASHINGTON, THREATENED SUIT
- (12) AGAINST MONSANTO ABOUT PCB'S LEAVING MONSANTO'S
- (13) PLANTS INTO THE ENVIRONMENT, RIGHT?
- (14) A GOSH, I DON'T REMEMBER THAT ONE.
- (15) IF I HAD SOME DOCUMENTS TO REFRESH MY
- (16) MEMORY.
- (17) Q WE WILL TRY DO THAT RIGHT NOW.
- (18) WHILE WE ARE DOING THAT, IN MARCH OF 1969
- (19) THE GOVERNMENT OF SWITZERLAND BANNED PCB'S FOR USE IN
- (20) THAT COUNTRY ALTOGETHER, RIGHT?
- (21) A I DON'T THINK IT WAS A TOTAL BAN.
- (22) IT WAS A RESTRICTED USE.
- (23) IT SEEMS TO ME ON ELECTRICAL APPLICATIONS
- (24) IT WAS PERMITTED UNDER THE PROPER CONDITIONS.
- (25) THAT IS MY RECOLLECTION.
- (26) Q MR. PAPAGEORGE, I JUST WANT TO SHOW YOU A
- (27) DOCUMENT.
- (28) I PARTICULARLY WANT YOU TO TAKE AS MUCH

Page 1949

- (1) TIME AS YOU WANT TO READ IT.
- (2) I WANT TO KNOW IF YOU CAN LOOK AT PAGE 2
- (3) AND TELL ME WHETHER THAT REFRESHES YOUR RECOLLECTION
- (4) WHETHER OR NOT THE GOVERNMENT OF SWITZERLAND PUT A
- (5) TOTAL BAN OF USING PCB'S IN THAT COUNTRY IN 1969.
- (6) MR. PREUSS: OBJECTION, WITHOUT FOUNDATION.
- (7) THE COURT: IS THERE AN EXHIBIT NUMBER,
- (8) MR. TALLON?
- (9) MR. TALLON: WE WILL HAVE TO GIVE IT ONE, YOUR
- (10) HONOR.
- (11) THE COURT: THE OBJECTION IS SUSTAINED.
- (12) MR. TALLON: TO REFRESH?
- (13) THE COURT: SUSTAINED.
- (14) MR. TALLON: OKAY.
- (15) MAY I HAVE THAT BACK, PLEASE?
- (16) Q MR. PAPAGEORGE, CONGRESSMAN RYAN STARTED
- (17) WRITING TO MONSANTO IN APRIL, 1970. WE SAW THAT
- (18) LETTER YESTERDAY?
- (19) A YES.
- (20) Q AND IN APRIL, 1970 THE FDA, THE FOOD AND
- (21) DRUG ADMINISTRATION, ANNOUNCED THAT IT WAS COMMENCING
- (22) A TOXICITY STUDY OF PCB'S?
- (23) A THEY WERE INTERESTED IN IMPLEMENTING A
- (24) TOXICITY STUDY.
- (25) THERE WAS SOME PLANNING REGARDING THAT.
- (26) I DON'T RECALL THEM EVER CONDUCTING ONE.
- (27) Q AND IN APRIL OF 1970 CONGRESSMAN RYAN
- (28) TOOK THE FLOOR OF THE HOUSE TO MAKE A SPEECH ABOUT

Page 1950

- (1) PCB'S, RIGHT?
- (2) A HE DID.
- (3) Q AND IN JUNE, 1970 CONGRESSMAN RYAN WROTE
- (4) AGAIN TO MONSANTO?
- (5) A YES.
- (6) Q IN SEPTEMBER, 1970 THE PARLIAMENT OF
- (7) FINLAND PROPOSED A RESTRICTION ON PCB'S?
- (8) A YES.
- (9) Q AND IN OCTOBER AND DECEMBER OF 1970
- (10) CONGRESSMAN RYAN WAS IN CONGRESS MAKING
- ADDITIONAL
- (11) SPEECHES CALLING FOR REGULATION OF PCB'S?
- (12) A I BELIEVE THAT'S RIGHT, YES.
- (13) Q OKAY. IN FEBRUARY, 1970, THE STATE OF
- (14) MASSACHUSETTS BANNED ANY DISCHARGE OF
- PCB'S INTO THE
- (15) ENVIRONMENT, RIGHT?
- (16) A THAT I DON'T RECALL.
- (17) Q IN FEBRUARY OF 1971 THE SWEDISH
- (18) ENVIRONMENT PRESERVATION AUTHORITY ASKED
- FOR A PCB
- (19) BAN, RIGHT?
- (20) A YES.
- (21) Q AND IN APRIL OF 1971, THE U.S. COUNSEL ON
- (22) ENVIRONMENTAL QUALITY SPECIFICALLY CITED
- PCB'S AS AN
- (23) ENVIRONMENTAL HAZARD, AM I RIGHT?
- (24) A I DON'T REMEMBER THAT ONE.
- (25) I JUST DON'T REMEMBER.
- (26) Q IN MAY OF 1971 CONGRESSMAN RYAN
- (27) INTRODUCED A BILL IN CONGRESS TO BAN PCB'S
- COMPLETELY
- (28) IN THE UNITED STATES, RIGHT?

Page 1951

- (1) A CONGRESSMAN RYAN INTRODUCED TWO BILLS.
- (2) ONE WAS TO RESTRICT THE USE AND FINALLY
- (3) THE SECOND ONE, AS I RECALL, WAS THE TOTAL BAN
- ON
- (4) USE, MANUFACTURE, SHIPPING.
- (5) THAT IS ABOUT THE RIGHT DATE FOR THE
- (6) SECOND ONE, AS I REMEMBER.
- (7) Q IN MAY OF 1971 MONSANTO RESEARCHERS AND
- (8) OLA PALME MET WITH THE SWEDISH
- ENVIRONMENTAL
- (9) PROTECTION BOARD AND REPORTED BACK TO YOU
- THAT SWEDEN
- (10) WAS EXPECTED TO BAN PCB'S EFFECTIVE
- JANUARY, 1972?
- (11) A YES.
- (12) Q AND BY THE SUMMER OF 1971 THE FIRST
- (13) VERSION OF THE TOXIC SUBSTANCES CONTROL
- ACT HAD BEEN
- (14) INTRODUCED IN CONGRESS?
- (15) A YES.
- (16) Q IN AUGUST, 1971 YOU HAD -- WELL, CONGRESS
- (17) HELD THE FIRST HEARINGS ON TSCA?
- (18) A I DON'T RECALL THE EXACT TIMING.
- (19) THAT SOUNDS RIGHT.
- (20) Q DO YOU REMEMBER THAT IN AUGUST, 1971
- (21) SENATOR FONG ON THE FIRST HEARING ON TSCA
- DECLARED
- (22) THE NEED FOR FURTHER PROTECTION FROM
- PCB'S?
- (23) A I DO.
- (24) Q DO YOU REMEMBER THAT IN OCTOBER OF 1971
- (25) THAT THE GOVERNMENT OF THE COUNTRY OF
- HOLLAND WAS
- (26) CONSIDERING A COMPLETE BAN ON PCB'S?
- (27) A YES.
- (28) Q SO WOULD YOU AGREE WITH ME THAT THERE
- WAS

Page 1952

- (1) A GREAT DEAL OF GOVERNMENTAL ATTENTION BEING GIVEN TO
(2) PCB'S AND IT WAS INCREASING?
(3) A YES.
(4) Q WASN'T THE REASON THAT MONSANTO GOT OUT
(5) OF THE PCB BUSINESS, MR. PAPAGEORGE, THE REASON THAT
(6) THE HANDWRITING WAS ON THE WALL?
(7) A I DON'T KNOW THAT WHEN MONSANTO ANNOUNCED
(8) IT WAS READY TO GET OUT OF THE BUSINESS THAT A TOTAL
(9) BAN WAS NECESSARILY IMMINENT.
(10) WE COULD SEE CONTROLLED USE AS THE
(11) REALISTIC APPROACH, BUT NOT A TOTAL BAN.
(12) I JUST DON'T - I DID NOT PERCEIVE THAT
(13) THAT WAS THE REASON FOR MONSANTO GETTING OUT
(14) TOTALLY.
(15) Q NOW, IN YOUR EXPERIENCE WITH PCB'S YOU
(16) KNEW THAT THEY HAD A STICKY CHARACTERISTIC; IS THAT
(17) RIGHT?
(18) A WELL, THEY WERE SORT OF OILY AND GUMMY.
(19) Q WOULD YOU AGREE WITH ME THAT PCB'S HAVE A
(20) TENDENCY TO CLING TO SOLID SURFACES?
(21) A OH, YES, LIKE MANY OILY PRODUCTS.
(22) Q YEAH.
(23) A THAT ARE WATER INSOLUBLE.
(24) Q IN FACT, MONSANTO RESEARCHERS FOUND THAT
(25) PCB'S WERE CLINGING TO THE GLASS TEST TUBES AND
(26) BEAKERS WHICH THEY WERE USING IN THE LAB, RIGHT?
(27) A YES, JUST LIKE OTHER WAXES AND OILS,
(28) UH-HUH.

Page 1953

- (1) Q NOW, AS I RECALL YOU STARTED CONTROLLING
(2) THE PLANT DISCHARGES AT MONSANTO DOWN TO THE LEVEL OF
(3) PARTS PER BILLION WHEN, 1970?
(4) A WE ESTABLISHED IN 1970 A TARGET TO REACH
(5) 10 PARTS PER BILLION OF PCB'S IN THE WASTE WATER.
(6) DISCHARGED FROM THE PLANT TO THE TREATMENT PLANTS.
(7) Q OKAY. NOW, YOU TOLD ME A LITTLE EARLIER
(8) THAT FOR YOUR INFORMATION ON HOW TURBINOL WAS USED
(9) YOU RELIED ON NORM JOHNSON?
(10) A YES.
(11) Q AND IN YOUR EXPERIENCE MONSANTO'S
(12) SALESMEN WERE PRETTY KNOWLEDGEABLE ABOUT THE WAY
(13) THEIR CUSTOMERS USED MONSANTO PRODUCTS, RIGHT?
(14) A YES.
(15) Q IN FACT, IT HELPED THE SALESMEN TO SELL
(16) THE PRODUCT IF THEY UNDERSTOOD THE CUSTOMER'S
(17) BUSINESS?
(18) A CORRECT.
(19) Q OKAY. YOU PUT TURBINOL-153 ON THE
(20) APPROVED CUSTOMER LIST SOMETIME IN 1971?
(21) A CORRECT.
(22) Q AND YOU WERE AWARE THAT THE CUSTOMERS FOR
(23) PCB, TURBINOL-153, WERE BUYING IT IN 1971?
(24) A YES.
(25) Q OKAY. AND YOU BECAME AWARE THAT A PLAN

- (26) WAS DEVELOPED AT THE END OF 1971 TO GO TO THE
(27) CUSTOMERS FOR TURBINOL LIKE TEXAS EASTERN AND SAY,
(28) "IF YOU WANT TO CONTINUE TO BUY IT YOU GOT TO SIGN

Page 1954

- (1) THE HOLD HARMLESS LETTER?"
(2) A YOU USED THE PLURAL, "CUSTOMERS."
(3) I DON'T RECALL ANY OTHER THAN TEXAS
(4) EASTERN, ONE CUSTOMER.
(5) YES, WE DID GO TO THEM WITH THAT
(6) NOTIFICATION.
(7) Q YOU KNOW THAT IN JANUARY OF 1972 THERE
(8) WAS A MEETING IN HOUSTON TEXAS, RIGHT, BETWEEN
(9) MONSANTO AND PEOPLE FROM TEXAS EASTERN?
(10) A I LEARNED AFTER IT WAS HELD, YES.
(11) Q DID YOU KNOW THAT THERE WAS A
(12) REPRESENTATIVE THERE FROM TRANSWESTERN PIPELINE
(13) COMPANY?
(14) A I FOUND THAT OUT YEARS LATER, YES.
(15) Q AND AT THAT MEETING YOU LEARNED THAT THE
(16) MONSANTO REPRESENTATIVES WHO ATTENDED TOLD TEXAS
(17) EASTERN AND TRANSWESTERN THAT "YOU HAVE TO SIGN THIS
(18) HOLD HARMLESS LETTER IF YOU WANT TO CONTINUE TO BUY
(19) THE PRODUCT," RIGHT?
(20) A I WASN'T AWARE OF TRANSWESTERN, AT ALL,
(21) UNTIL THIS CASE CAME UP.
(22) SO I HAVE TO SAY, YEAH, WITH TEXAS
(23) EASTERN.
(24) Q SO WOULD YOU SAY AT THE MEETING IN
(25) JANUARY OF 1972 IN HOUSTON MONSANTO REPS WENT DOWN
(26) AND SAID TO THE PEOPLE FROM TEXAS EASTERN, "IF YOU
(27) WANT TO CONTINUE TO BUY THIS PRODUCT YOU HAVE TO SIGN
(28) THE HOLD HARMLESS LETTER?"

Page 1955

- (1) A THAT IS MY UNDERSTANDING, YES, SIR.
(2) Q IT WAS YOUR UNDERSTANDING THAT MONSANTO
(3) WAS WILLING TO CONTINUE SELLING THE PRODUCT IF THE
(4) LETTER HAD BEEN SIGNED?
(5) A FOR A SIX-MONTH PERIOD.
(6) IT WASN'T A FOREVER KIND OF ARRANGEMENT.
(7) Q DID YOU KNOW, MR. PAPAGEORGE, THAT AT THE
(8) TIME MONSANTO WAS SELLING TURBINOL TO TEXAS EASTERN
(9) THAT THERE WERE ALTERNATIVE PRODUCTS AVAILABLE?
(10) A CERTAINLY.
(11) Q DID YOU KNOW THAT ONE OF THE ALTERNATIVE
(12) PRODUCTS WAS CALLED CELLULUBE?
(13) A I DON'T RECALL THAT NAME.
(14) Q DID YOU KNOW ABOUT SOMETHING CALLED
(15) FYRQUEL?
(16) A YES.
(17) Q AND THEY DIDN'T CONTAIN PCB'S?
(18) A THAT IS CORRECT.
(19) Q AND YOU KNEW THAT THAT WAS APPROPRIATE
(20) FOR USING IN TURBINES JUST LIKE TURBINOL?
(21) A THAT WAS AN UNDERSTANDING I HAD.
(22) Q NOW, MR. JOHNSON, WHEN HE WAS BRIEFING
(23) YOU ON HOW TURBINOL WAS USED, TOLD YOU THAT LEAKS
(24) COULD OCCUR WITH FLUIDS IN THE GAS TURBINE

SYSTEM,

(25) RIGHT?

(26) A HE ALSO TOLD ME THAT IT COULD BE MANAGED,

(27) CONTROLLED.

(28) Q AND YOU KNEW TURBINOL WAS GETTING INTO

Page 1956

(1) THE GAS STREAM?

(2) A I KNEW THAT THE LIQUID COLLECTED FROM THE
(3) SYSTEM CONTAINED SOME TURBINOL.

(4) Q THE LIQUID COLLECTED FROM THE SYSTEM.

(5) BY THAT, DO YOU MEAN THE LIQUIDS INSIDE

(6) THE PIPELINE?

(7) A AS I UNDERSTAND IT, ALONG WITH THE GAS

(8) THERE ARE MATERIALS IN THAT GAS STREAM THAT
COME OUT

(9) AS A LIQUID.

(10) AND IT IS COLLECTED ALONG THIS PIPELINE

(11) AND PROPERLY HANDLED.

(12) THAT WAS THE MESSAGE I GOT.

(13) Q AND THE MESSAGE YOU GOT WAS THAT THERE

(14) WERE PCB'S INSIDE THE PIPELINE WITH THAT

LIQUID; IS

(15) THAT RIGHT?

(16) A I DON'T KNOW IF - IT WAS WITH THE

(17) LIQUID.

(18) I CAN'T DESCRIBE WHAT IT DID WITH IT

(19) INSIDE THE PIPELINE.

(20) Q OKAY. BUT IN ORDER FOR THE LIQUIDS TO

(21) HAVE PCB'S IN THEM YOU UNDERSTOOD THAT THE

TURBINOL

(22) HAD TO BE INSIDE THE PIPELINE?

(23) A IT GOT INTO THE GAS STREAM, YES.

(24) Q OKAY.

(25) MR. TALLON: NOTHING FURTHER.

(26) THE COURT: ALL RIGHT.

(27) MR. PREUSS?

(28) ///

Page 1957

(1) CROSS EXAMINATION

(2) BY MR. PREUSS:

(3) Q GOOD MORNING, MR. PAPAGEORGE.

(4) A GOOD MORNING.

(5) Q IT'S STILL MORNING, ISN'T IT?

(6) A IT IS STILL MORNING.

(7) Q CAN YOU TELL US WHERE YOU LIVE, SIR?

(8) A MY ADDRESS IS 321 PEBBLE VALLEY DRIVE,

(9) ST. LOUIS, MISSOURI, 63141.

(10) Q AND WHEN WERE YOU BORN, SIR?

(11) A SEPTEMBER 7TH, 1922.

(12) Q AND WHERE WERE YOU BORN?

(13) A ST. LOUIS.

(14) Q AND WHERE YOU WERE RAISED?

(15) A ST. LOUIS.

(16) Q AND ARE YOU MARRIED?

(17) A YES.

(18) Q HOW LONG HAVE YOU BEEN MARRIED?

(19) A OVER 45 YEARS.

(20) Q DO YOU HAVE ANY CHILDREN?

(21) A YES.

(22) Q HOW MANY?

(23) A TWO, A BOY AND A GIRL.

(24) Q THEIR AGES?

(25) A LATE THIRTIES.

(26) I HAVE TO SUBTRACT HERE.

(27) 39 AND 38.

(28) THE BOY IS 39. THE DAUGHTER IS 38.

Page 1958

(1) Q HOW DO THEY OCCUPY THEIR TIME AT PRESENT?

(2) A THE SON, THE OLDER ONE, IS A PHYSICIAN,

(3) DOCTOR.

(4) THE DAUGHTER IS AN ATTORNEY.

(5) Q AND DO THEY RESIDE IN THE ST. LOUIS AREA?

(6) A THE DAUGHTER DOES.

(7) Q AND THE SON?

(8) A THE SON IS IN BOWLING GREEN, KENTUCKY.

(9) Q NOW, YOU RECEIVED YOUR COLLEGE EDUCATION

(10) AT WASHINGTON UNIVERSITY?

(11) A YES.

(12) Q THAT IS IN ST. LOUIS?

(13) A YES.

(14) Q AND YOUR YEAR OF GRADUATION, SIR?

(15) A MY FIRST DEGREE, THE BACHELOR'S DEGREE,

(16) WAS 1943.

(17) Q AND AFTER RECEIVING YOUR BACHELOR'S

(18) DEGREE YOU SOUGHT FURTHER EDUCATION?

(19) A I DID.

(20) Q AND IN WHAT SUBJECT?

(21) A CHEMICAL ENGINEERING.

(22) Q WAS THAT YOUR MAJOR AS AN
UNDERGRADUATE?

(23) A YES.

(24) Q AND WHERE DID YOU SEEK YOUR GRADUATE

(25) WORK?

(26) A THE SAME UNIVERSITY, WASHINGTON

(27) UNIVERSITY.

(28) Q AND DID YOU OBTAIN A DEGREE?

Page 1959

(1) A YES, MASTER OF SCIENCE IN CHEMICAL

(2) ENGINEERING.

(3) Q AND THE YEAR YOU OBTAINED YOUR DEGREE?

(4) A 1947.

(5) Q ANY FURTHER EDUCATION BEYOND THAT?

(6) A I HAVE EARNED CREDITS AT OKLAHOMA A AND M

(7) TOWARD A DOCTOR OF SCIENCE DEGREE.

(8) Q IN WHAT SUBJECT?

(9) A CHEMICAL ENGINEERING.

(10) Q DID YOU EVER RECEIVE YOUR DOCTORATE?

(11) A NO.

(12) Q WITH RESPECT TO YOUR COLLEGE EDUCATION,

(13) YOUR MASTER'S WORK AND YOUR COURSE

STUDIES TOWARD A

(14) DOCTORATE, DID YOU EVER INTERRUPT THOSE
STUDIES AT

(15) ANY TIME?

(16) A I DID, YES, BETWEEN THE BACHELORS AND

(17) MASTERS.

(18) Q BETWEEN THE BACHELORS AND MASTERS?

(19) A YES.

(20) Q FOR WHAT REASON?

(21) A MILITARY SERVICE.

(22) Q IN WHAT YEARS WERE YOU IN THE MILITARY?

(23) A WELL, IT WOULD BE '43 TO '46.

(24) Q WORLD WAR II?

(25) A WORLD WAR II, YES.

(26) Q AND WAS THE NATURE OF YOUR SERVICE IN ANY

(27) WAY RELATED TO YOUR EDUCATIONAL

BACKGROUND IN

(28) CHEMICAL ENGINEERING?

Page 1960

- (1) A I SUPPOSE - THERE WAS A PERIOD OF TIME
 (2) WHEN I COULD AND DID USE MY TRAINING IN
 CHEMICAL
 (3) ENGINEERING.
 (4) **Q WHAT PART OF THE SERVICE WERE YOU IN?**
 (5) A I STARTED OUT IN THE ANTI-AIRCRAFT
 (6) ARTILLERY, WAS TRANSFERRED TO INFANTRY AND
 EVENTUALLY
 (7) ENDED UP IN THE CORPS OF ENGINEERS.
 (8) **Q AND WHAT WORK DID YOU DO IN THE CORPS OF**
 (9) **ENGINEERS, SIR?**
 (10) A WELL, MY INITIAL ASSIGNMENT WITH THAT
 (11) PART OF THE SERVICE WAS IN JAPAN.
 (12) I HAD A TEAM AND WE WERE TO INSPECT
 (13) FACILITIES IN A PREFECTURE, WHICH IS LIKE A
 COUNTY
 (14) OR - A LITTLE PORTION OF THE COUNTRY, AND LOOK
 FOR
 (15) CHEMICAL WARFARE SUPPLIES AND EQUIPMENT.
 (16) **Q ANY OTHER ASSIGNMENTS WHERE YOU SERVED**
IN
 (17) **THE MILITARY AS PART OF THE CORPS OF**
ENGINEERS?
 (18) A FOR THE CORPS OF ENGINEERS, NO.
 (19) FOLLOWING THAT CHEMICAL WARFARE
 (20) ASSIGNMENT I WAS IN CHARGE OF A CONSTRUCTION
 FOR A
 (21) MILITARY CAMP FOR UNITED STATES SOLDIERS,
 ARMY.
 (22) **Q ARE YOU A REGISTERED ENGINEER AT THIS**
 (23) **TIME?**
 (24) A YES, UH-HUH.
 (25) **Q A CHEMICAL ENGINEER?**
 (26) A THEY DON'T REGISTER BY ANY PARTICULAR
 (27) TITLE.
 (28) IT'S JUST A TOTAL -

Page 1961

- (1) **Q A GENERAL?**
 (2) A GENERAL ENGINEERING, YES, SIR.
 (3) **Q WHAT IS THE WORK OF A CHEMICAL ENGINEER?**
 (4) **WHAT IS THE NATURE OF THAT WORK?**
 (5) A I WILL TRY TO DESCRIBE IT.
 (6) IT'S THE USE OF KNOWLEDGE ABOUT
 (7) MATERIALS, SUBSTANCES, CHEMICALS, HOW THEY
 BEHAVE
 (8) UNDER PRESSURE AND TEMPERATURE, HOW THEY
 REACT WITH
 (9) EACH OTHER, AND THE INTENT IS TO START WITH
 MATERIAL
 (10) OR MATERIALS AND END UP WITH A DIFFERENT
 MATERIAL
 (11) THAT SOMEBODY THINKS IS USEFUL TO THEM.
 (12) AND YOU COMBINE THAT WITH KNOWLEDGE THAT
 (13) YOU GAIN BY TRAINING IN MATHEMATICS, IN
 PHYSICS,
 (14) MECHANICAL KINDS OF THINGS.
 (15) USING ALL OF THAT KNOWLEDGE, YOU END UP
 (16) WITH THE ABILITY TO PUT TOGETHER THE
 NECESSARY
 (17) EQUIPMENT TO GO FROM ONE SUBSTANCE TO
 ANOTHER AND DO
 (18) IT SAFELY AND ECONOMICALLY.
 (19) **Q HOW LONG HAVE YOU BEEN A REGISTERED**
 (20) **ENGINEER, SIR?**
 (21) A 30 YEARS NOW, '63.
 (22) **Q AND WAS AN EXAMINATION REQUIRED TO OBTAIN**
 (23) **THAT REGISTRATION?**
 (24) A YES, PLUS GRADUATION FROM A CERTIFIED
 (25) ENGINEERING SCHOOL.
 (26) **Q ARE YOU A MEMBER OF ANY PROFESSIONAL**
 (27) **SOCIETIES AT THE PRESENT?**

(28) A I AM.

Page 1962

- (1) **Q AND WHAT SOCIETIES?**
 (2) A THE AMERICAN INSTITUTE OF CHEMICAL
 (3) ENGINEERING - ENGINEERS, AND AMERICAN
 CHEMICAL
 (4) SOCIETY.
 (5) **Q AND IS YOUR REGISTRATION AS AN ENGINEER**
 (6) **STILL ACTIVE, SIR?**
 (7) A YES.
 (8) **Q LET'S TURN TO YOUR EMPLOYMENT.**
 (9) **WHAT WAS YOUR FIRST JOB AFTER RECEIVING**
 (10) **YOUR EDUCATION, SIR?**
 (11) A AFTER I GOT MY MASTER OF SCIENCE DEGREE I
 (12) WAS HIRED BY PHILLIPS PETROLEUM COMPANY -
 AFTER I
 (13) RECEIVED MY MASTER'S DEGREE I WAS HIRED BY
 PHILLIPS
 (14) PETROLEUM COMPANY IN BARTLESVILLE,
 OKLAHOMA.
 (15) **Q WHAT WAS YOUR JOB TITLE, FIRST JOB?**
 (16) A MY INITIAL JOB ASSIGNMENT WAS RESEARCH
 (17) CHEMICAL ENGINEER IN THEIR RESEARCH
 DEPARTMENT.
 (18) **Q OKAY. AND HOW LONG DID YOU REMAIN IN**
 (19) **THAT CAPACITY?**
 (20) A TWO YEARS.
 (21) **Q AND WHAT WAS YOUR NEXT ASSIGNMENT?**
 (22) A I WAS THEN A DESIGN ENGINEER, A PROCESS
 (23) ENGINEER IN THE COMPANY'S REFINING
 DEPARTMENT.
 (24) **Q AND CAN YOU TELL US JUST BRIEFLY WHAT**
 (25) **A - WHAT A RESEARCH CHEMIST DOES AS**
OPPOSED TO A
 (26) **DESIGN ENGINEER?**
 (27) A WELL, IN MY ASSIGNMENT AS A RESEARCH
 (28) ENGINEER I WAS INVOLVED WITH PROJECTS THAT
 HAD TO DO

Page 1963

- (1) WITH THE DRILLING MUGS USED BY DRILLING RIGS
 LOOKING
 (2) FOR OIL OR TAPPING THE OIL AND ALSO WITH THE
 (3) TECHNOLOGY NEEDED TO USE WATER TO INJECT
 INTO OLD
 (4) WELLS TO DRIVE OFF THE REMAINING OIL IN AN OIL
 SYSTEM
 (5) AND PUSH IT UP TO THE SURFACE WHERE IT COULD
 BE USED.
 (6) SO THAT WAS CALLED SECONDARY RECOVERY.
 (7) WHEN THE OIL FIELD IS PRETTY WELL EXHAUSTED,
 YOU PUT
 (8) WATER IN THERE TO PRESSURE OUT THE REST OF
 THE OIL.
 (9) SO I WAS INVOLVED WITH THAT KIND OF
 (10) WORK.
 (11) **Q ALL RIGHT. ANY OTHER JOBS THAT YOU HAD**
 (12) **WHILE YOU WORKED AT PHILLIPS, SIR?**
 (13) A NO.
 (14) **Q AND HOW LONG WERE WITH YOU PHILLIPS?**
 (15) A FOUR YEARS.
 (16) **Q THAT TAKES US TO WHAT YEAR?**
 (17) A '51.
 (18) **Q IN 1951 DID YOU FIND OTHER EMPLOYMENT?**
 (19) A I DID.
 (20) **Q AND WHERE?**
 (21) A WITH MONSANTO COMPANY IN ST. LOUIS.
 (22) **Q AND CAN YOU SUMMARIZE THE TIME PERIODS**
 (23) **THROUGH VARIOUS JOBS AT MONSANTO FOR US.**
 (24) A I WILL TRY.
 (25) FROM 1951 TO 1964 I WAS EMPLOYED AT THE
 (26) JOHN F. QUEENY PLANT OF MONSANTO WHICH IS
 LOCATED IN

(27) ST. LOUIS.

(28) DURING THAT PERIOD OF TIME I HAD VARIOUS

Page 1964

(1) ASSIGNMENTS RANGING FROM DESIGN ENGINEER TO
(2) MANUFACTURING SUPERVISOR TO MAINTENANCE
SUPERVISOR

(3) AND SUPERINTENDENT TO ENGINEERING
SUPERINTENDENT AND

(4) FINALLY REACHED THE LEVEL OF GENERAL
SUPERINTENDENT

(5) OF PLANT SERVICES.

(6) IN '64 I WAS TRANSFERRED TO THE MONSANTO

(7) PLANT IN SAUGET, ILLINOIS, S-A-U-G-E-T, AS A
GENERAL

(8) SUPERINTENDENT RESPONSIBLE FOR A GIVEN
GROUP OF

(9) PRODUCTS.

(10) Q IS SAUGET ALSO REFERRED TO AS THE

(11) KRUMMRICH PLANT?

(12) A IT IS, YES.

(13) Q SO WE CAN USE THOSE INTERCHANGEABLY?

(14) A CORRECT.

(15) Q AND HOW LONG WERE YOU AT THE SAUGET

(16) PLANT?

(17) A ABOUT A YEAR.

(18) Q AND YOU WERE GENERAL SUPERINTENDENT OF

(19) MANUFACTURING?

(20) A YES.

(21) Q AND WHAT WAS THE MANUFACTURING

(22) RESPONSIBILITY YOU HAD THERE?

(23) A I WAS RESPONSIBLE FOR THE MANUFACTURE

(24) OF - I NEVER REALLY DID COUNT, A DOZEN OR SO

(25) PRODUCTS.

(26) I WAS EXPECTED TO DO THAT AND MEET

(27) CERTAIN TARGETS REGARDING HOW MANY POUNDS
WERE MADE

(28) AND WERE THEY OF THE RIGHT QUALITY AND WERE
THEY MADE

Page 1965

(1) AT THE PROPER COSTS.

(2) Q WHILE YOU WERE AT QUEENY, THE 13 YEARS AT
QUEENY BETWEEN '51 AND '64, DID YOU WORK WITH
PCB

(4) PRODUCTS?

(5) A YES.

(6) Q CAN YOU DESCRIBE THE NATURE OF YOUR

(7) CONTACT WITH PCB PRODUCTS AT QUEENY?

(8) A I WILL TRY TO REMEMBER SOME OF THEM.

(9) OF COURSE, I WAS INVOLVED WITH

(10) MANUFACTURING UNITS THAT USED PCB'S IN THEIR

(11) COMPRESSORS.

(12) THEY USED PCB'S IN HEAT SYSTEMS.

(13) THEY USED PCB'S IN THE CAPACITORS AND

(14) TRANSFORMERS.

(15) WHILE I WAS WITH THE MAINTENANCE

(16) FUNCTION, THE MECHANICS WHO REPORTED TO ME
WERE

(17) INVOLVED WITH REPAIRING EQUIPMENT THAT
HANDLED PCB'S

(18) LIKE THE PUMPS AND THE AIR COMPRESSORS AND
THE

(19) TRANSFORMERS.

(20) ALSO, WHEN I WAS THE GENERAL

(21) SUPERINTENDENT OF THE SERVICES, I WAS
RESPONSIBLE FOR

(22) THE USE OF PCB'S IN THE BLENDING OPERATION,
WHERE THE

(23) PYDRAULS AND TURBINOL WERE BLENDED.

(24) THAT WAS MY EXPOSURE AT THE QUEENY PLANT.

(25) Q SO AT QUEENY, THEN, YOU HAD

(26) RESPONSIBILITY FOR BLENDING CERTAIN
MONSANTO

(27) PRODUCTS?

(28) A YES, STARTING IN 1963.

Page 1966

(1) Q AND TURBINOL WAS A PRODUCT THAT WAS
(2) BLENDED AT THE QUEENY PLANT?

(3) A YES, SIR.

(4) Q AND DID YOU HAVE ANY PCB INVOLVEMENT, AT

(5) ALL, AT THE KRUMMRICH PLANT, SIR?

(6) A AGAIN, ONLY AS A USER OF EQUIPMENT

(7) CONTAINING THE PCB'S.

(8) Q OKAY. AFTER KRUMMRICH YOU WENT WHERE,

(9) SIR?

(10) A I WAS APPOINTED PLANT MANAGER OF THE

(11) ANNISTON, ALABAMA MONSANTO PLANT.

(12) Q AND WHAT WAS MANUFACTURED AT THE
ANNISTON

(13) PLANT, SIR?

(14) A WELL, OF COURSE, PCB'S WERE MANUFACTURED

(15) THERE AND ANOTHER PRODUCT LINE THAT WE
CALLED PCT'S.

(16) THAT IS POLYCHLORINATED TERPHENYLS WERE
MANUFACTURED

(17) THERE.

(18) WE HAD A PRODUCT LINE WE CALLED HB-40

(19) WHICH IS A NON-CHLORINATED BIPHENYL PRODUCT.

(20) WE MADE HYDROCHLORIC ACID WHICH IS

(21) MURIATIC ACID. YOU MAY HAVE HEARD IT
DESCRIBED AS

(22) SUCH.

(23) WE MADE CHLORINE WHICH WE USED IN THE

(24) PLANT.

(25) WE ALSO MADE AN AGRICULTURAL CHEMICAL

(26) USED IN THE COTTON FIELDS FOR BOLL WEEVIL
CONTROL.

(27) WE MADE SOME OF THE MATERIALS USED IN THE

(28) MANUFACTURE OF THIS AGRICULTURAL MATERIAL.

Page 1967

(1) Q HOW LONG WERE YOU THE PLANT MANAGER AT

(2) ANNISTON?

(3) A UNTIL THE END OF 1969.

(4) SO IT'S '65 THROUGH '69.

(5) Q ABOUT A FOUR-YEAR PERIOD?

(6) A ABOUT, YES, SIR.

(7) Q AND ABOUT HOW MANY EMPLOYEES WERE
UNDER

(8) YOUR SUPERVISION AT THE ANNISTON PLANT
DURING THOSE

(9) FOUR YEARS?

(10) A WHEN I FIRST ARRIVED WE HAD ABOUT 150.

(11) WHEN I LEFT IT WAS ABOUT 350.

(12) Q AFTER ANNISTON, WHAT WAS YOUR NEXT JOB,

(13) SIR?

(14) A I WAS APPOINTED MANAGER ENVIRONMENTAL

(15) CONTROL, ASSIGNED THE RESPONSIBILITY FOR
MONITORING

(16) AND BEING FAMILIAR WITH THE PCB ENVIRONMENTAL
ISSUE

(17) THAT WAS GROWING ON MONSANTO AT THE TIME.

(18) Q AND YOU WERE INTERVIEWED FOR THAT JOB?

(19) A I WAS, YES, SIR.

(20) Q AND THE JOB WAS GIVEN TO YOU?

(21) A YES.

(22) Q AND WHEN DID YOU COMMENCE THAT JOB?

(23) A OH, OFFICIALLY THE FIRST OF JANUARY, EVEN

(24) THOUGH IT WAS A HOLIDAY.

(25) Q THE FIRST OF JANUARY, 1970?

(26) A 1970, YES.

(27) Q AND YOUR JOB TITLE WAS SPECIFICALLY WHAT,

(28) SIR?

Page 1968

(1) A IT STARTED OUT AS MANAGER, ENVIRONMENTAL

(2) CONTROL WAS THE OFFICIAL TITLE.

(3) **Q AND HOW LONG DID YOU REMAIN IN THAT JOB, EVEN THOUGH I UNDERSTAND YOUR TITLE CHANGED?**

(5) A OH, I HAD RESPONSIBILITIES FOR THE PCB
(6) ENVIRONMENTAL ISSUE FROM THE JANUARY 1ST, 1970 UNTIL
(7) THE END OF FEBRUARY, 1976.
(8) **Q AND IN 1976 DID YOU SWITCH YOUR JOBS?**
(9) A I DID.
(10) **Q AND WHAT WAS YOUR NEXT JOB?**
(11) A I WAS THEN - I CARRIED THE TITLE OF THE
(12) MANAGER PRODUCT ACCEPTABILITY, RESPONSIBLE FOR 30 OR
(13) SO PRODUCTS THAT MONSANTO MADE IN ANOTHER PART OF
(14) MONSANTO, NOT THE GROUP THAT HAD THE PCB'S.
(15) **Q OKAY. AND YOU WERE IN THAT JOB HOW LONG, ABOUT TEN YEARS?**
(16) A NO.
(17) IN 1977.
(19) SO THAT WOULD BE A LITTLE OVER A YEAR I
(20) WAS APPOINTED A DIRECTOR OF ENVIRONMENTAL OPERATIONS
(21) FOR ONE OF MONSANTO'S OPERATING UNITS.
(22) THERE MUST HAVE BEEN, I FORGET NOW, FOUR
(23) OR FIVE OPERATING UNITS IN MONSANTO.
(24) I BELONGED TO ONE OF THE FIVE.
(25) **Q AND FROM 1977 TO WHAT TIME DID YOU STAY IN THAT JOB?**
(26) A WELL, I HAD THAT TITLE UNTIL THE
(28) BEGINNING OF 1985.

Page 1969

(1) BUT WITH SEVERAL MONSANTO REORGANIZATIONS
(2) THE UNIT THAT I WAS ASSIGNED TO HAD A DIFFERENT
(3) TITLE. BUT MY JOB ESSENTIALLY REMAINED THE SAME.
(4) **Q OKAY. AND THEN YOU HAD ANOTHER JOB BEFORE YOU RETIRED?**
(5) A I HAD A ONE-YEAR ASSIGNMENT AS MANAGER OF
(7) OCCUPATIONAL HEALTH FOR MONSANTO CHEMICAL COMPANY,
(8) AFTER ANOTHER REORGANIZATION.
(9) **Q OKAY. AND SO YOU WERE IN THAT JOB ABOUT A YEAR, THEN?**
(11) A ABOUT A YEAR, YES, SIR.
(12) **Q AND YOU RETIRED IN '86?**
(13) A MY LAST WORKING DAY WAS DECEMBER 31ST, 1986.
(14) **Q OKAY. AND HAVE YOU HAD ANY EMPLOYMENT SINCE YOUR RETIREMENT, SIR?**
(15) A OH, I KIND OF CONSIDER MYSELF
(16) SELF-EMPLOYED.
(19) I DO A LITTLE CONSULTING FOR MONSANTO IN
(20) PCB MATTERS.
(21) **Q HAVE YOU CONSULTED FOR OTHER COMPANIES AS WELL?**
(22) A ON OCCASION, ALTHOUGH I DON'T GO LOOKING
(23) FOR IT.
(25) **Q I WOULD LIKE TO GO BACK A LITTLE BIT TO THE TIME FRAME '70 TO '76, SIR. HAVE YOU GIVEN US A FULL DESCRIPTION OF YOUR JOB RESPONSIBILITIES IN THE CAPACITY OF MANAGER**

Page 1970

(1) **OF ENVIRONMENTAL CONTROL?**
(2) A THE PRINCIPAL CONTRIBUTION I MADE ON THAT
(3) JOB WAS TO SERVE AS THE GUY IN MONSANTO THAT ALL THE
(4) PCB INFORMATION WOULD FLOW TO.
(5) IT WAS MY JOB TO THEN PASS THIS ON TO
(6) PEOPLE WITHIN MONSANTO, IN A WAY TO LET THE

LEFT-HAND

(7) KNOW WHAT THE RIGHT WAS DOING, AND TO PASS THAT KIND
(8) OF INFORMATION TO CUSTOMERS, TO GOVERNMENT REPRESENTATIVES, TO THE VARIOUS TECHNICAL
(10) LABORATORIES, WHETHER THEY BE PRIVATE OR UNIVERSITY.
(11) THIS WAS WORLDWIDE.
(12) IT WAS A - SO I BELIEVE THAT WAS THE
(13) PRINCIPAL JOB THAT I HAD.
(14) IN ADDITION TO THAT, I SERVED AS EYES AND EARS FOR MY BOSSES TO SEE THAT THINGS WERE ON TRACK
(16) AND WERE BEING DONE PROPERLY.
(17) I HAD A RESPONSIBILITY FOR REPORTING
(18) PROGRESS, ALSO TO MAKE SUGGESTIONS ON WHAT I THOUGHT
(19) WAS THE RESPONSIBLE WAY TO GO, THE PROPER WAY TO GO.
(20) AND I SERVED AS REALLY A PERSON TO KEEP THINGS MOVING AND GET THE APPROVAL - APPROVED
(22) PROGRAMS THAT WE HEARD ABOUT THAT CMC APPROVED, TO
(23) MAKE SURE THOSE PROGRAMS WERE ON TRACK AND THAT THE
(24) TARGET DATES WERE MET AND ALL OF THIS WAS DONE
(25) WITHOUT BEING OBNOXIOUS OR, IN OTHER WORDS, THE
(26) INTENT WAS TO DO IT AND DO IT RESPONSIBLY AND
(27) MAINTAIN A RESPECTED IMAGE.
(28) THAT WAS IMPORTANT.

Page 1971

(1) **Q OKAY. AND IF I UNDERSTAND, THEN, YOU WERE THE FUNNEL OF INFORMATION WORLDWIDE ON PCB'S**
(3) **COMING INTO THE COMPANY AS WELL AS GOING OUT, THEN,**
(4) **CORRECT?**
(5) A WELL, CORRECT, YES. THAT DOESN'T MEAN I
(6) DID IT ONLY.
(7) THERE WERE MANY PEOPLE AT MONSANTO DOING
(8) IT, ALSO.
(9) **Q AND WHO WERE YOUR BOSSES DURING THAT PERIOD OF TIME?**
(10) A THE INITIAL SUPERVISOR WAS HOWARD BERGEN,
(12) B-E-R-G-E-N.
(13) ABOUT 1973 - I'M TRYING TO RECALL THE
(14) DATES, MR. W. R. COREY, C-O-R-E-Y.
(15) LATER ON, ABOUT 1975 OR SO, IT WAS R. G
(16) POTTER, P-O-T-T-E-R.
(17) I BELIEVE THAT COVERS THEM ALL.
(18) **Q MR. BERGEN, THEN, WAS YOUR BOSS DURING THE EARLY 70'S?**
(20) A YES.
(21) **Q ALL RIGHT. MR. PAPAGEORGE, SO FAR AS YOU KNOW, IS THERE ANY INDIVIDUAL EITHER PRESENT EMPLOYED**
(23) **OR PAST EMPLOYED WHO IS STILL LIVING THAT IS MORE**
(24) **KNOWLEDGEABLE ABOUT MONSANTO'S INVOLVEMENT WITH PCB'S**
(25) **THAN YOURSELF?**
(26) A I'M NOT AWARE OF ANY OTHER PERSON THAT
(27) WAS AS INVOLVED, IN THE VERY BROAD SENSE.
(28) NOW, WITHIN EACH AREA, LIKE A RESEARCHER,

Page 1972

- (1) HE WOULD KNOW MORE ABOUT IT THAN I WOULD.
 (2) BUT IF YOU COVER THE ENTIRE THING, I
 (3) SUSPECT I'M THE ONE WHO HAS THE MOST
 KNOWLEDGE.
 (4) **Q NOW, WHILE YOU WERE WORKING FOR
 MONSANTO**
 (5) **AS AN EMPLOYEE, YOU INDICATED YOU WORKED
 AROUND PCB'S**
 (6) **IN CONNECTION WITH YOUR JOBS AT QUEENY,
 KRUMMRICH AND**
 (7) **ANNISTON; IS THAT CORRECT?**
 (8) A THAT IS CORRECT.
 (9) **Q WHAT HANDLING TECHNIQUES DID YOU USE
 WITH**
 (10) **RESPECT TO PCB'S?**
 (11) A NOTHING REALLY STRANGE OR EXOTIC.
 (12) IT WAS THE - THE LESSON THAT WE ALWAYS
 (13) TAUGHT OUR EMPLOYEES WAS TO RESPECT ALL
 CHEMICALS.
 (14) PCB'S WAS AN INDUSTRIAL CHEMICAL. IT WAS
 (15) TO BE HANDLED IN A MANNER THAT DIDN'T EXPOSE
 PEOPLE
 (16) NEEDLESSLY.
 (17) THERE WERE TIMES, HOWEVER, WHEN A LEAK
 (18) WOULD OCCUR, A SPILL, FUMES WOULD BE
 RELEASED.
 (19) THE EMPLOYEES WERE PROVIDED WITH A FACE
 (20) MASK, A RESPIRATOR. THEY WERE TAUGHT HOW TO
 USE IT
 (21) AND WHEN TO USE IT.
 (22) AND IT WAS THEIR JUDGMENT THAT WHEN THE
 (23) CONDITIONS WERE TO THEM INTOLERABLE, GO GET
 YOUR
 (24) RESPIRATOR, PUT IT ON AND THEN CORRECT THE
 PROBLEM.
 (25) THERE WAS AN ADEQUATE SUPPLY OF GLOVES
 (26) PROVIDED. AND THE GLOVES WERE NOT THE KIND
 JUST TO
 (27) THE WRIST. THEY WOULD GO PRETTY CLOSE TO THE
 ELBOW.
 (28) AND WHEN THEY GOT ANY MATERIAL ON THEM,

Page 1973

- (1) THEY WERE TO GO WASH THEIR HANDS, THEIR FACE
 OR
 (2) WHEREVER, THEIR CLOTHES IF THEY DID GET ANY ON
 THEIR
 (3) CLOTHING, DEPENDING ON HOW MUCH.
 (4) IF IT WAS A SPOT OR TWO, YOU WAIT UNTIL
 (5) YOU GET EVERYTHING SAFE, IF THAT WAS A
 PROBLEM, AND
 (6) THEN GO CHANGE.
 (7) OF COURSE, DON'T WEAR SOILED CLOTHES DAY
 (8) IN AND DAY OUT.
 (9) THEY WERE PROVIDED WITH ORDINARY WORK
 (10) CLOTHES, A SHIRT-AND-TROUSERS COMBINATION.
 (11) I THINK THAT PRETTY WELL DESCRIBES IT.
 (12) **Q ANY HANDLING PROCEDURES THAT WERE
 UNIQUE**
 (13) **TO PCB'S AS OPPOSED TO OTHER PRODUCTS THAT
 WERE BEING**
 (14) **MANUFACTURED OR USED AROUND THE PLANTS
 THAT YOU**
 (15) **WORKED AT?**
 (16) A NOT UNIQUE, NO.
 (17) **Q ANY SPECIAL CLOTHING?**
 (18) **YOU HAVE MENTIONED GLOVES AND**
 (19) **OCCASIONALLY, DEPENDING UPON THE SITUATION,
 SOME**
 (20) **RESPIRATORS.**
 (21) **ANY SPECIAL CLOTHES?**
 (22) A NO.

- (23) **Q AND HOW DID YOU LEARN ABOUT THESE**
 (24) **SAFE-HANDLING PROCEDURES?**
 (25) A THERE ARE SEVERAL WAYS.
 (26) EACH MANUFACTURING PROCESS HAS AVAILABLE
 (27) A REPORT IN WHICH THE WORKERS AND THE
 SUPERVISORS AND
 (28) EVEN THE PLANT MANAGERS SHOULD AND DO READ
 ON THE

Page 1974

- (1) KINDS OF CHEMICALS BEING HANDLED AND WHAT
 HARM CAN
 (2) HAPPEN IF THEY ARE MISHANDLED.
 (3) THAT WAS ONE SOURCE OF INFORMATION.
 (4) ANOTHER WAS MY CONTACTS, PERSONAL
 (5) CONTACTS, WITH THE PLANT SAFETY MANAGERS,
 THE PLANT
 (6) INDUSTRIAL HYGIENISTS AND THE PLANT DOCTORS.
 (7) AND THEY WERE VALUABLE SOURCES OF WHAT
 (8) HAPPENED IN THE PAST AND WHAT COULD HAPPEN
 UNDER WHAT
 (9) CONDITIONS.
 (10) SO I GOT MY COACHING AND TRAINING FROM
 (11) PEOPLE AS WELL AS BOOKS AND PAMPHLETS.
 (12) THE COURT: MR. PREUSS, WE WILL TAKE THE NOON
 (13) RECESS AT THIS POINT.
 (14) LADIES AND GENTLEMEN, WE WILL BE IN
 (15) RECESS UNTIL 1:30.
 (16) PLEASE DO RETURN JUST BEFORE THEN SO WE
 (17) CAN RESUME.
 (18) (AT 12:00 NOON, A RECESS WAS TAKEN
 (19) UNTIL 1:30 P.M. OF THE SAME DAY.)
 (20)
 (21)
 (22)
 (23)
 (24)
 (25)
 (26)
 (27)
 (28)

Page 1975

- (1) LOS ANGELES, CALIFORNIA; TUESDAY, DECEMBER 7,
 1993
 (2) 1:30 P.M.
 (3) DEPARTMENT NO. 31 G. KEITH WISOT, JUDGE
 (4) --0--
 (5) (APPEARANCES AS HERETOFORE NOTED.)
 (6) (DAVID A. SALYER, OFFICIAL REPORTER.)
 (7)
 (8)
 (9) THE COURT: AND RESUMING.
 (10) GO AHEAD, MR. PREUSS.
 (11) MR. PREUSS: THANK YOU, YOUR HONOR.
 (12)
 (13) WILLIAM B. PAPAGEORGE,
 (14) CALLED AS A WITNESS BY THE PLAINTIFF,
 TRANSWESTERN,
 (15) UNDER THE PROVISIONS OF EVIDENCE CODE
 SECTION 776,
 (16) HAVING BEEN PREVIOUSLY SWORN, TESTIFIED AS
 FOLLOWS:
 (17)
 (18) CROSS EXAMINATION (CONTINUED.)
 (19) BY MR. PREUSS:
 (20) **Q GOOD AFTERNOON, MR. PAPAGEORGE.**
 (21) A GOOD AFTERNOON.
 (22) **Q WHEN WE BROKE OFF WE WERE TALKING ABOUT**
 (23) **HANDLING PROCEDURES FOR PCB'S, AS YOU**
 (24) **UNDERSTOOD THEM**
 (25) **TO BE AND AS YOU PRACTICED THEM WHILE YOU**
 (26) **WERE**
 (27) **WORKING FOR MONSANTO.**

(26) A I REMEMBER THAT.
(27) Q WHAT WERE THE PRINCIPAL HEALTH CONCERNS
(28) THAT YOU HAD AS PLANT MANAGER AT ANNISTON
OR IN

Page 1976

(1) WHATEVER JOB YOU HAD AT MONSANTO
CONCERNING THE
(2) WORKERS AND THEIR INVOLVEMENT WITH PCB?
(3) A WELL, MY REAL CONCERN WAS I DIDN'T WANT
(4) THEM OVEREXPOSED TO THE POINT WHERE THEY
HAD SOME
(5) HEALTH EFFECTS.
(6) THE PRIMARY HEALTH EFFECTS HAD TO DO WITH
(7) THOSE THAT RESULT FROM BREATHING FUMES OR
THOSE THAT
(8) RESULT FROM GETTING IT ON YOUR SKIN.
(9) AND AS SORT OF AN EARLY-WARNING SIGNAL WE
(10) WERE ALL TAUGHT TO LOOK FOR TWO THINGS.
(11) IN A PERSON THAT WAS WORKING WITH PCB'S
(12) AND WAS EXPOSED TO TOO MANY FUMES, THERE
ARE TIMES
(13) WHEN IT GOT TO THE POINT WHERE HE FELT LIKE HE
HAD A
(14) SEVERE CHEST COLD AND PROBLEMS WITH HIS
BREATHING,
(15) THAT WOULD TELL EVERYONE THAT HE DIDN'T USE A
(16) RESPIRATOR WHEN HE SHOULD HAVE.
(17) ANOTHER SYMPTOM, THE REDDENING OF THE
(18) SKIN, LOOKED AN AWFUL LOT LIKE CHAPPED HANDS.
IT WAS
(19) SO BAD SOMETIMES YOU COULD GET LITTLE
CRACKS,
(20) BLEEDING, THAT MEANS AN INDIVIDUAL DIDN'T WEAR
HIS
(21) GLOVES WHEN HE SHOULD HAVE.
(22) AS LONG AS WE AVOIDED THOSE TWO SYMPTOMS,
(23) WE WERE VERY CERTAIN THAT THE WORKER WAS
NOT GETTING
(24) OVEREXPOSED.
(25) Q IN ADDITION TO ADVISING WORKERS THAT WERE
(26) UNDER YOUR CHARGE AT MONSANTO, DID
MONSANTO ALSO
(27) INFORM CUSTOMERS OF ITS PCB PRODUCTS
CONCERNING THESE
(28) SAFE-HANDLING TECHNIQUES?

Page 1977

(1) A YES, HE DID.
(2) Q HOW DID MONSANTO DO THAT, SIR?
(3) A WELL, THERE ARE SEVERAL WAYS.
(4) I WILL TRY TO RECALL A FEW OF THEM.
(5) THERE IS, OF COURSE, THE PRODUCT
(6) LITERATURE WHICH CONTAINED A SECTION
CARRYING TITLES
(7) LIKE "TOXICITY" AND "SAFE HANDLING."
(8) Q THAT WOULD BE THE BULLETIN, FOR EXAMPLE?
(9) A THAT IS A GOOD EXAMPLE.
(10) Q WHY DON'T WE TURN TO EXHIBIT 18, IF YOU
(11) WOULD, PLEASE.
(12) A I HAVE IT.
(13) Q ALL RIGHT. NOW, THAT IS A BULLETIN FOR A
(14) PARTICULAR PRODUCT KNOWN AS OS-81 WHICH IS
WHY WE ARE
(15) HERE TODAY, RIGHT?
(16) A YES.
(17) Q AND THIS TYPE OF BULLETIN WAS PREPARED IN
(18) CONNECTION WITH ALL OF MONSANTO'S PCB
PRODUCTS?
(19) A YES.
(20) Q AND THIS IS THE INFORMATION THAT WAS
(21) PROVIDED TO CUSTOMERS?
(22) A YES.
(23) Q AND THEN COULD YOU READ FOR US JUST THE

(24) FIRST PARAGRAPH OF THIS BULLETIN ON OS-81,
PLEASE.

(25) A "OS-81 IS A WHOLLY SYNTHETIC
(26) FIRE-RESISTANT FLUID DESIGNED SPECIFICALLY AS A
(27) TURBINE AND COMPRESSOR LUBRICANT.
LABORATORY TESTS
(28) AND FIELD EXPERIENCE INDICATE IT TO BE A
SATISFACTORY

Page 1978

(1) REPLACEMENT FOR THE NORMALLY USED
PETROLEUM OIL
(2) LUBRICANTS IN THESE APPLICATIONS. OS-81 IS USED
(3) PRIMARILY FOR ITS FIRE RESISTANCE WHICH
GREATLY
(4) REDUCES OR ELIMINATES THE HAZARD OF FIRE
WHICH IS
(5) EVER PRESENT WHEN PETROLEUM LUBRICANTS ARE
USED."
(6) Q AS YOU UNDERSTOOD THIS PRODUCT, IS THAT A
(7) FAIRLY GOOD SUMMARY OF THE PURPOSE FOR
THIS PRODUCT?
(8) A IT IS.
(9) Q AND IF YOU TURN TO THE LAST SECTION OF
(10) THIS PARTICULAR BULLETIN, ENTITLED "TOXICITY
AND
(11) SAFE-HANDLING INFORMATION," SIR.
(12) A I FOUND IT.
(13) Q AND DOES THIS SECTION THEN RELATE TO THE
(14) SAFE-HANDLING PROCEDURES THAT WE WERE
DISCUSSING IN
(15) CONNECTION WITH MONSANTO IN THE WORKING
ENVIRONMENT?
(16) A YES.
(17) Q I WOULD ASK YOU TO READ THE FIRST
(18) PARAGRAPH FOR US, PLEASE.
(19) A "ANIMAL TOXICITY STUDIES WITH OS-81
(20) INDICATE THAT THIS PRODUCT DOES NOT PRESENT
SERIOUS
(21) TOXICITY PROBLEMS IN INTENDED USE OR
RECOMMENDED
(22) APPLICATIONS.
(23) "THE LIQUID MAY CAUSE A SOLVENT OR
(24) DEFATTING ACTION ON THE SKIN AND FOR THIS
REASON IT
(25) IS RECOMMENDED THAT PROLONGED OR REPEATED
SKIN
(26) CONTACT BE AVOIDED."
(27) Q AND THEN THE LAST SENTENCE OF THIS
(28) SECTION, PLEASE, IF WOULD YOU READ THAT FOR
US.

Page 1979

(1) A "IF, HOWEVER, THE MATERIAL IS USED AT
(2) ELEVATED TEMPERATURES, REPEATED OR
CONTINUOUS
(3) BREATHING OF FUMES MUST BE AVOIDED BY
WORKMEN."
(4) Q THANK YOU, SIR.
(5) AND THEN IN ADDITION TO THE BULLETIN, HOW
(6) ELSE DID MONSANTO INFORM ITS CUSTOMERS OF
(7) SAFE-HANDLING PROCEDURES?
(8) A THERE WAS, OF COURSE, THE PERSONAL
(9) CONTACT MADE BY MONSANTO SALES
REPRESENTATIVES.
(10) THERE WAS AVAILABLE TO CUSTOMERS THE
(11) MEDICAL DEPARTMENT OF MONSANTO FOR
CONSULTATION AND,
(12) OF COURSE, THE PACKAGE THAT THE PRODUCT IS
SHIPPED IN
(13) HAD PRECAUTIONARY STATEMENTS REGARDING
BREATHING,
(14) SKIN CONTACT AND SO ON.
(15) Q THAT WOULD BE THE LABEL ON THE PRODUCT?

(16) A THE LABEL, YES, SIR.
 (17) Q ALL RIGHT.
 (18) I WOULD LIKE TO SHOW YOU EXHIBIT 721,
 (19) PLEASE.
 (20) IF YOU WANT TO, YOU CAN EITHER LOOK ON
 (21) THE SCREEN, IF YOU WOULD LIKE, IF YOU CAN
 READ IT, OR
 (22) WE CAN GO TO WHICHEVER IS EASIER FOR YOU
 THERE.
 (23) A I CAN READ IT.
 (24) Q OKAY. NOW, FIRST OF ALL, THE BULLETIN
 (25) THAT WE DISCUSSED WAS OS-81.
 (26) DO YOU RECALL THAT?
 (27) A YES.
 (28) Q AND HOW IS MCS-153 RELATED TO OS-81?

Page 1980

(1) A QUITE SIMILAR.
 (2) IT'S THE SAME TYPE OF INGREDIENTS, SAME
 (3) APPLICATION, SAME USE.
 (4) Q AND WHAT DOES THIS LABEL SAY WITH RESPECT
 (5) TO SAFE HANDLING, SIR?
 (6) A "CONTAINS CHLORINATED HYDROCARBONS, AVOID
 (7) PROLONGED BREATHING OF VAPORS OR MIST -
 AVOID
 (8) CONTACT WITH EYES OR PROLONGED CONTACT
 WITH SKIN.
 (9) "IF SKIN CONTACT OCCURS, REMOVE BY
 (10) WASHING WITH SOAP AND WATER. FOLLOWING EYE
 CONTACT
 (11) FLUSH WITH WATER.
 (12) "IF CLOTHING BECOMES SOAKED WITH FLUID,
 (13) LAUNDER BEFORE USING AGAIN."
 (14) Q FOR WEARING AGAIN OR USING AGAIN?
 (15) A BEFORE WEARING AGAIN, YES, SIR.
 (16) Q OKAY. AND IN THE FIRST PART OF THAT
 (17) CAUTION SECTION IT SAYS, "CONTAINS
 CHLORINATED
 (18) HYDROCARBONS?
 (19) A "I SEE THAT.
 (20) Q HOW DOES THAT RELATE TO PCB'S, IF YOU
 (21) WILL?
 (22) A PCB'S ARE ONE GROUP OF CHEMICALS THAT
 (23) FITS IN THIS CHLORINATED HYDROCARBON
 GROUPING.
 (24) Q AND DOES THIS CAUTIONARY INSTRUCTION FOR
 (25) INDIVIDUALS WHO MAY COME IN CONTACT WITH
 THIS PRODUCT
 (26) APPLY TO ALL CHLORINATED HYDROCARBONS?
 (27) IN OTHER WORDS, IS THIS ADVICE THAT WOULD
 (28) BE GOOD FOR ANYBODY USING ANY CHLORINATED
 HYDROCARBON

Page 1981

(1) TO USE?
 (2) A YES.
 (3) THOSE CAUTIONARY STATEMENTS APPLY TO
 (4) CHLORINATED HYDROCARBONS, IN GENERAL.
 (5) Q OKAY. THEN LET ME SHOW YOU 722 AND YOU
 (6) WILL NOTE - IS THE CAUTIONARY INSTRUCTION
 THE SAME
 (7) AS THE ONE FOR MCS-153?
 (8) A IT'S THE SAME WORDING, YES.
 (9) Q ALL RIGHT. AND DO YOU UNDERSTAND - WHAT
 (10) IS YOUR UNDERSTANDING OF TURBINOL-153
 RELATIVE TO
 (11) MCS-153?
 (12) A IT'S THE SAME MATERIAL WITH A NEW NAME.
 (13) Q OKAY. NOW, DID MONSANTO FROM TIME TO
 (14) TIME RECEIVE INQUIRIES FROM ITS CUSTOMERS
 CONCERNING
 (15) HEALTH ISSUES OR POTENTIAL HEALTH ISSUES
 WITH ITS
 (16) PRODUCTS?

(17) A OH, YES, IT'S VERY COMMON.
 (18) Q HOW WERE THEY HANDLED?
 (19) A IT VARIES A LITTLE BIT WITH - IN THE
 (20) MANNER IN WHICH THAT QUESTION WAS RAISED.
 (21) IF IT'S RAISED WITH THE SALESMAN, HE
 (22) WOULD ANSWER IT IF HE KNEW THE ANSWER.
 (23) IF IT WAS BEYOND HIS ABILITY, HE WOULD
 (24) OFFER TO HAVE SOMEONE BACK AT MONSANTO'S
 OFFICES MAKE
 (25) THE CONTACT.
 (26) FOR EXAMPLE, IF IT'S A COMPLICATED
 (27) MEDICAL QUESTION, YOU GO TO THE MEDICAL
 DIRECTOR AND
 (28) HAVE HIM RESPOND.

Page 1982

(1) IF IT'S AN INDUSTRIAL HYGIENE KIND OF
 (2) QUESTION, THEN YOU GO TO THE CORPORATE
 INDUSTRIAL
 (3) HYGIENIST.
 (4) SO HE WOULD TRY TO FIND THE PERSON HE
 (5) FELT WAS MOST CAPABLE TO GIVE THE PROPER
 ANSWER.
 (6) Q OKAY. I WOULD LIKE TO SHOW YOU EXHIBIT
 (7) 14.
 (8) YOU MIGHT WANT TO GET THAT.
 (9) I THINK THAT WOULD BE EASIER FOR YOU,
 (10) SIR.
 (11) MR. PAPAGEORGE, THIS IS A LETTER DATED
 (12) AUGUST 13, 1958 TO DR. KELLY AND THAT IS THE
 SAME
 (13) DR. KELLY THAT IS - THAT YOU UNDERSTOOD TO
 BE THE
 (14) MEDICAL DIRECTOR OF MONSANTO WHILE YOU
 WORKED THERE,
 (15) SIR?
 (16) A IT IS.
 (17) Q FROM AN E.E. EDMONDSON, A JUNIOR SAFETY
 (18) DIRECTOR?
 (19) A YES.
 (20) MR. PREUSS: AND I THINK COUNSEL WOULD AGREE
 (21) THIS IS A TEXAS EASTERN LETTER THAT WAS COPIED
 SO IT
 (22) COULD BE MADE READABLE.
 (23) MR. TALLON: READABLE, YES.
 (24) Q BY MR. PREUSS: ALL RIGHT. SO I WANT YOU
 (25) TO ASSUME THAT IT'S A TEXAS EASTERN
 LETTERHEAD UP
 (26) THERE?
 (27) A I UNDERSTAND.
 (28) Q ALL RIGHT. AND IS THIS THE TYPE OF

Page 1983

(1) CORRESPONDENCE THAT YOU ARE FAMILIAR WITH
 THAT
 (2) MONSANTO WOULD RECEIVE FROM CUSTOMERS
 ABOUT A CERTAIN
 (3) PRODUCT?
 (4) A YES, THIS IS VERY TYPICAL.
 (5) Q AND THE FIRST PARAGRAPH THERE INDICATES
 (6) WHAT, SIR?
 (7) A IT INDICATES THAT THE WRITER OF THIS
 (8) LETTER IS REFERRING TO A LETTER THAT DR. KELLY
 HAD
 (9) SENT ON AUGUST 12TH TO A MR. O. M. FLETCHER.
 (10) HE INDICATES, ALSO, HIS INTEREST IN THE
 (11) FLUID OS-81 WHICH IS THE SUBJECT OF THIS LETTER
 FROM
 (12) A HEALTH AND SAFETY STANDPOINT.
 (13) Q OKAY. AND IF YOU WOULD, SIR, PLEASE TURN
 (14) TO EXHIBIT 15, WHICH IS, FOR THE RECORD, A
 LETTER
 (15) DATED AUGUST 18, 1958 FROM MR. EDMONDSON
 TO

(16) DR. KELLY.
 (17) IT HAS FAINTLY A MONSANTO CHEMICAL
 (18) COMPANY LETTERHEAD?
 (19) A IT DOES.
 (20) Q DOES THAT APPEAR TO BE THE RESPONSE TO
 (21) EXHIBIT 14, SIR?
 (22) A IT DOES.
 (23) IT IS THE RESPONSE.
 (24) Q AND COULD YOU READ THE SECOND PARAGRAPH
 (25) OF THAT FOR US, DR. KELLY'S RESPONSE.
 (26) A "AS I UNDERSTAND YOUR USE OF THIS FLUID,
 (27) IT WILL BE AS AN INSIDE LUBRICANT FOR A GAS
 (28) COMPRESSOR AND THE ONLY EXPOSURE TO YOUR
 MEN WILL BE

Page 1984

(1) FROM LEAKS, BREAKS IN THE LINE AND DURING THE
 REPAIR
 (2) OF COMPRESSORS. THESE LEAKS OR BREAKS
 SHOULD ALLOW
 (3) THE MEN - WOULD ALLOW THE MEN TO BE EXPOSED
 TO THIS
 (4) MATERIAL AT 120 TO 180 DEGREES, PRESUMABLY, F.
 (5) "I'M QUITE CERTAIN THAT FROM THE
 (6) OCCASIONAL LEAKS THAT WOULD BE EXPECTED
 FROM A
 (7) LUBRICANT AT THIS TEMPERATURE NO HAZARD WILL
 BE
 (8) INVOLVED. SHOULD A MAJOR ERUPTION OCCUR AND
 A LARGE
 (9) AMOUNT OF THE FLUID BE LIBERATED AT THIS
 TEMPERATURE,
 (10) I'M SURE THERE WOULD BE EYE AND NOSE
 IRRITATION.
 (11) "IF THE MATERIAL WOULD BE INHALED FOR A
 (12) CONSIDERABLE PERIOD OF TIME, AS FOR EXAMPLE
 ONE TO
 (13) TWO HOURS, SOME SYSTEMIC COMPLICATIONS
 MIGHT RESULT.
 (14) "THERE CERTAINLY WOULD BE A HAZARD IN THE
 (15) EXPOSURE ATTENDANT UPON SHUTTING OFF THE
 LEAK IN THE
 (16) LINE WITHOUT ANY PROTECTION. BUT FOR
 PROLONGED
 (17) CLEAN-UP OPERATIONS A MASK WITH AN ORGANIC
 VAPOR
 (18) CARTRIDGE SHOULD BE WORN."
 (19) Q THEN HE GOES ON TO COMPARE IN THE SECOND
 (20) PARAGRAPH THE PRODUCT TO A PAINT REMOVER?
 (21) DO YOU SEE THAT?
 (22) A HE DOES.
 (23) Q AND THEN WOULD YOU READ THE NEXT
 (24) SENTENCE, PLEASE.
 (25) A "I AM SURE THERE WILL BE NO SYSTEMIC
 (26) COMPLICATIONS FROM SUCH OCCASIONAL SKIN
 CONTACT AND
 (27) ACCORDING TO OUR PLANT DATA AS WELL AS OUR
 ANIMAL
 (28) EXPERIMENTS, THE MATERIAL WOULD BE CLASSIFIED
 AS A

Page 1985

(1) VERY MILD SKIN IRRITANT."
 (2) Q AND A COPY OF THAT LETTER WAS SENT TO
 (3) WHOM?
 (4) A TO MR. FLETCHER.
 (5) Q ALL RIGHT. WOULD YOU TURN TO
 (6) TRANSWESTERN NUMBER 16, PLEASE.
 (7) A I HAVE IT.
 (8) Q AGAIN, MR. PAPAGEORGE, THIS IS A TYPED OR
 (9) RETYPED VERSION OF A LETTER TO MAKE IT MORE
 (10) READABLE.
 (11) IS THIS ALSO A LETTER FROM DR. KELLY TO
 (12) MR. FLETCHER?

(13) A YES.
 (14) Q AND THE DATE OF IT?
 (15) A AUGUST THE 26TH, 1958.
 (16) Q AND WHAT IS DR. KELLY INDICATING TO
 (17) MR. FLETCHER, SIR?
 (18) A HE'S INDICATING TO MR. FLETCHER THAT
 (19) MONSANTO'S MR. DAVIS HAD REPORTED TO DR.
 KELLY THAT
 (20) SOME OF MR. FLETCHER'S MEN HAVE EXHIBITED
 BURNING AND
 (21) SKIN IRRITATIONS USING OR DURING THE USE OF
 FLUID
 (22) OS-81 AND HE ASKED FOR FURTHER DETAILS.
 (23) Q AND THEN IN THE THIRD PARAGRAPH DOES
 (24) DR. KELLY PROVIDE SOME ADVICE?
 (25) A HE DOES.
 (26) Q AND INDICATES WHAT?
 (27) A WELL, HE GOES ON TO SAY, IF SKIN CONTACT
 (28) CANNOT BE AVOIDED, THEN I WOULD RECOMMEND
 THE PRIOR

Page 1986

(1) APPLICATION OF A SILICON-BASED OINTMENT SUCH
 AS
 (2) COVICONE OR THE USE OF RUBBER GLOVES.
 (3) Q THANK YOU, SIR.
 (4) NEXT I WOULD LIKE TO SHOW YOU EXHIBIT
 (5) 507, IF YOU WOULD TURN TO THAT.
 (6) THAT IS IN THE BLACK BINDERS.
 (7) A I HAVE IT.
 (8) Q AND IS THIS A LETTER THAT APPEARS TO BE
 (9) ON TEXAS EASTERN LETTERHEAD?
 (10) A IT LOOKS LIKE A LETTER.
 (11) IT INDICATES IT'S AN INTEROFFICE
 (12) CORRESPONDENCE.
 (13) Q FROM WITHIN THE TEXAS EASTERN
 (14) ORGANIZATION?
 (15) A THAT IS MY UNDERSTANDING.
 (16) Q AND THE DATE?
 (17) A MAY 15TH, 1962.
 (18) Q AND ADDRESSED TO?
 (19) A IT'S ADDRESSED TO ALL SAFETY ENGINEERS.
 (20) Q AND THE SUBJECT?
 (21) A FIRE-RESISTANT TURBINE LUBRICANT, OS-81.
 (22) Q AND WOULD YOU READ THE FIRST SENTENCE OF
 (23) THAT, PLEASE.
 (24) A "WE ARE LISTING BELOW BY SOURCE OF
 (25) INFORMATION THE TOXICITY AND IRRITANT
 PROPERTIES OF
 (26) THE OS-81 TURBINOL."
 (27) Q AND THE FIRST ITEM LISTED THERE IS?
 (28) A THE MONSANTO TECHNICAL BULLETIN DATED

Page 1987

(1) NOVEMBER 11, 1958.
 (2) Q AND THAT IS THE EXHIBIT 18 THAT WE JUST
 (3) LOOKED AT?
 (4) A YES.
 (5) Q AND THEN THE NEXT ITEM LISTED IS WHAT?
 (6) A IS A LETTER AUGUST 12, 1958 FROM
 (7) DR. KELLY, MONSANTO COMPANY.
 (8) Q AND WAS THAT THE ONE REFERENCED IN
 (9) MR. EDMONDSON'S LETTER TO DR. KELLY IN
 TRANSWESTERN
 (10) 14?
 (11) A IT WAS. IT IS.
 (12) Q AND THEN THE THIRD ITEM IS WHAT?
 (13) A A LETTER, AUGUST 26, 1958 FROM DR. KELLY,
 (14) MONSANTO CHEMICAL COMPANY.
 (15) Q AND THE LAST EXHIBIT WE JUST LOOKED AT,
 (16) TRANSWESTERN 16?
 (17) A YES.
 (18) Q AND IF YOU TURN TO THE LAST PAGE OF THAT
 (19) LETTER, PLEASE.

(20) A I HAVE IT.
(21) Q IT INDICATES THE LETTER WAS WRITTEN BY
(22) WHOM, SIR?
(23) A MR. H. M. WILLIAMS, SAFETY ENGINEER.
(24) Q AND WHAT DID MR. WILLIAMS TELL HIS SAFETY
(25) ENGINEERS THERE ON THE LAST PAGE?
(26) WOULD YOU JUST READ THAT FOR US, PLEASE.
(27) A "WHILE THE ABOVE INFORMATION CONSISTS
(28) PRIMARILY OF QUOTES FROM LETTERS, WE HAVE
ALSO

Page 1988

(1) OBTAINED THE FOLLOWING RECOMMENDATIONS IN
REGARD TO
(2) PERSONNEL PROTECTION WHILE HANDLING THIS
PRODUCT.
(3) "IT IS ADVISABLE THAT GOGGLES, GASFOE
(4) RESPIRATORS, MSA CATALOGUE CM 73194 OR
ALL-SERVICE
(5) GAS MASKS BE PROVIDED FOR EYE AND PULMONARY
TRACT
(6) PROTECTION. MSA FEND "S" CREAM SHOULD BE
APPLIED TO
(7) HANDS AND WRISTS WHEN PROLONGED CONTACT
ON THE SKIN
(8) IS ANTICIPATED. THIS WILL PREVENT DEFATTING AND
(9) IRRITATION OF THE SKIN. LIGHTWEIGHT NEOPRENE
GLOVES
(10) WOULD ALSO SERVE THE SAME PURPOSE. THE
GASFOE MASK
(11) SHOULD BE USED FOR EXPOSURES OF SHORT
DURATION ONLY.
(12) FOR PROLONGED EXPOSURE WE RECOMMEND THE
ALL-SERVICE
(13) GAS MASK WHICH IS PROVIDED AT EACH
COMPRESSOR
(14) STATION.
(15) "SHOULD THIS OIL OR ITS VAPORS ENTER THE
(16) EYE, THE EYE SHOULD BE PROMPTLY WASHED WITH
MILK OR
(17) WATER. SHOULD THIS FAIL TO RELIEVE THE
IRRITATION,
(18) OR SHOULD THE PAIN BECOME MORE SEVERE,
MEDICAL
(19) ATTENTION SHOULD BE OBTAINED."
(20) Q THANK YOU, SIR.
(21) NOW WHILE YOU WERE PLANT MANAGER AT
(22) ANNISTON, SIR, DID ANY OF YOUR WORKER
SUFFER ANY
(23) PCB-RELATED HEALTH PROBLEMS?
(24) A I SAW ONLY ONE INCIDENT OF A SKIN-CONTACT
(25) REDDENING IN ABOUT THE FIVE YEARS I WAS THERE.
(26) Q DID THAT PARTICULAR INDIVIDUAL THAT HAD
(27) THE REDDENING OF THE SKIN LOSE ANY TIME
FROM WORK,
(28) SIR?

Page 1989

(1) A NO, NO.
(2) Q AS THE MANAGER OF ENVIRONMENTAL CONTROL
(3) BEGINNING IN 1970, SIR, DID YOU FAMILIARIZE
YOURSELF
(4) WITH THE HISTORY OF PCB MANUFACTURE AND
SALE?
(5) A YES, AS BEST I COULD, UH-HUH.
(6) Q AND DID YOU SEEK INFORMATION FROM YOUR
(7) FELLOW EMPLOYEES TO GAIN SOME OF THE
HISTORY ON
(8) PCB'S?
(9) A OH, I CERTAINLY DID.
(10) Q AND WHO WERE SOME OF THE PRINCIPAL
(11) INDIVIDUALS THAT YOU SPOKE TO TO GATHER
THAT HISTORY?
(12) A MR. WHEELER FROM MONSANTO'S MEDICAL

(13) DEPARTMENT WAS A VERY GOOD SOURCE OF
INFORMATION.
(14) AND DR. BILL RICHARD FROM THE RESEARCH
(15) DEPARTMENT.
(16) Q OKAY. ARE THOSE INDIVIDUALS STILL
(17) LIVING?
(18) A NO, THEY ARE NOT.
(19) Q OKAY. AND AS PART OF THIS
(20) FAMILIARIZATION PROCESS THAT YOU BEGAN
WHEN YOU
(21) STARTED YOUR JOB IN JANUARY OF 1970 AS
MANAGER OF
(22) ENVIRONMENTAL CONTROL, DID YOU INVESTIGATE
AS TO
(23) WHETHER THERE WAS ANY HISTORY OF
PCB-RELATED HEALTH
(24) PROBLEMS AMONG MONSANTO WORKERS?
(25) A I DID.
(26) Q AND WHY DID YOU DO?
(27) A WELL, I WAS CERTAINLY INTERESTED IN WHAT
(28) MIGHT HAVE HAPPENED AT TIMES AND PLACES THAT
I HAD

Page 1990

(1) NOT BEEN PERSONALLY INVOLVED WITH.
(2) I WANTED TO ASSURE MYSELF THAT WE WERE
(3) HANDLING THE MATERIAL PROPERLY.
(4) Q AND WHAT WAS THE RESULT OF YOUR
(5) INVESTIGATION ON THAT ASPECT?
(6) A I FOUND THAT AFTER DECADES OF USE OR
(7) MANUFACTURE AND SHIPPING, MONSANTO'S
EXPERIENCE WAS
(8) EXCELLENT.
(9) Q DID YOU HAVE ANY DISCUSSIONS WITH
(10) DR. KELLY ON THAT SUBJECT?
(11) A OH, YES.
(12) HE WAS MY PRINCIPAL SOURCE OF INFORMATION
(13) REGARDING THIS.
(14) Q AND IN YOUR REVIEW OF THE HISTORY ON THE
(15) MEDICAL ISSUES, SIR, DID YOU FIND THAT THERE
WERE
(16) CUSTOMERS THAT INQUIRED AND REPORTED
INCIDENTS FROM
(17) TIME TO TIME?
(18) A THERE WERE. THROUGH THE DECADES OF USE,
(19) THERE WERE.
(20) Q AND IN YOUR DISCUSSIONS AND REVIEW OF THE
(21) DOCUMENTS, DID YOU FIND ANY SITUATIONS IN
WHICH THERE
(22) WERE LONG-TERM PERMANENT HEALTH EFFECTS
FROM ANY
(23) WORKERS OF CUSTOMERS RELATING TO THEIR
USE OF PCB?
(24) A NO, NO LONG-TERM PERMANENT, NO.
(25) Q I WOULD LIKE TO TURN YOUR ATTENTION A
(26) LITTLE BIT TO THE COMPANY, MONSANTO
COMPANY.
(27) COULD YOU, SINCE YOU HAVE HAD 35 YEARS
(28) WITH THE COMPANY, GIVE US A BRIEF THUMBNAIL
SKETCH OF

Page 1991

- (1) **THE COMPANY?**
- (2) A WELL, IT'S A CHANGING COMPANY.
- (3) IT'S A MULTI-PRODUCT MANUFACTURING
- (4) COMPANY.
- (5) IT STARTED OUT MAKING PRIMARILY
- (6) CHEMICALS.
- (7) THE BEGINNING PRODUCTS, INTERESTINGLY
- (8) ENOUGH, INCLUDE SUCH POPULAR THINGS AS ASPIRIN AND
- (9) SACCHARIN AND CAFFEINE.
- (10) THEY WENT, THEN, INTO THE MORE INDUSTRIAL
- (11) TYPE CHEMICALS LIKE BATTERY ACID AND PLASTICS AND
- (12) FINALLY GOT INTO THE FIBERS BUSINESS WITH ACRYLON AND
- (13) MADE NYLON. THEY STILL DO.
- (14) THEY MADE SPECIALITY PRODUCTS. ONE THAT
- (15) COMES TO MIND IS THIS MATERIAL THAT IS PUT IN AUTO
- (16) WINDSHIELD GLASS CALLED SAFEPLEX TO KEEP THE GLASS
- (17) FROM BREAKING INTO SHARP PIECES THAT DO A LOT OF
- (18) HARM.
- (19) THEY ARE ALSO NOW OWNERS OF THE SEARLE
- (20) DRUG COMPANY.
- (21) THEY ALSO HAVE THE COMPANY THAT MAKES THE
- (22) NUTRASWEET SWEETENER AND THE EQUAL SWEETENER IN THE
- (23) BLUE ENVELOPES.
- (24) THEY ALSO MAKE CHEMICALS FOR THE
- (25) AGRICULTURAL BUSINESS.
- (26) **Q HOW MANY PLANTS DOES MONSANTO OPERATE**
- (27) **TODAY, SIR, APPROXIMATELY?**
- (28) A ABOUT - THE LAST NUMBER I WAS AWARE OF

Page 1992

- (1) WAS 34 PLANTS IN EIGHT COUNTRIES WORLDWIDE.
- (2) **Q AND HOW MANY WORKERS DOES MONSANTO HAVE?**
- (3) A A LITTLE OVER 32,000 PEOPLE WORK FOR
- (4) MONSANTO.
- (5) **Q LET'S LOOK AT THE HISTORY OF MONSANTO AND**
- (6) **PCB'S, MR. PAPAGEORGE.**
- (7) **WHEN DID MONSANTO FIRST START**
- (8) **MANUFACTURING PCB'S?**
- (9) A MONSANTO STARTED MANUFACTURING IN 1935.
- (10) **Q ALL RIGHT. AND HOW DID MONSANTO GET INTO**
- (11) **THE PCB BUSINESS?**
- (12) A AT THAT TIME MONSANTO BOUGHT A SMALL
- (13) CHEMICAL COMPANY CALLED THE SWANN CHEMICAL COMPANY,
- (14) WHICH HAD THREE PLANTS.
- (15) ONE OF THOSE PLANTS WAS THE PLANT IN
- (16) ANNISTON, ALABAMA WHERE PCB'S WERE BEING
- (17) MANUFACTURED.
- (18) **Q AND THAT IS THE SAME PLANT THAT YOU WERE**
- (19) **THE MANAGER BETWEEN '65 AND '69?**
- (20) A IT IS.
- (21) **Q OKAY. AND HOW DID SWANN GET INTO THE**
- (22) **BUSINESS?**
- (23) A WELL, I UNDERSTAND THAT MR. SWANN HAD AN
- (24) INTEREST IN CHLORINATING SOME CHEMICALS.
- (25) AND HE APPROACHED THE GENERAL ELECTRIC
- (26) PEOPLE AS TO WHETHER THEY HAD A NEED FOR SUCH
- (27) CHEMICALS AND THEY, GENERAL ELECTRIC COMPANY, SHOWED
- (28) AN INTEREST IN A CHLORINATED, AT THAT TIME CALLED

Page 1993

- (1) DIPHENYL, MATERIAL THAT THEY PLANNED TO USE IN
- (2) ELECTRIC EQUIPMENT.
- (3) AND THAT WAS THE BEGINNING OF THE
- (4) INDUSTRIAL MANUFACTURE AND USE OF PCB'S.
- (5) **Q WHAT ARE PCB'S, SIR?**
- (6) A THEY ARE A MIXTURE OF CHEMICALS MADE BY
- (7) BUBBLING CHLORINE THROUGH A BATH OF BIPHENYL IN THE
- (8) PRESENCE OF IRON AND AS A RESULT OF THIS CHLORINE AND
- (9) BIPHENYL COMBINATION YOU END UP WITH A MIXTURE OF
- (10) INDIVIDUAL CHEMICALS THAT ARE CALLED PCB'S.
- (11) **Q AND IS THE CHLORINE USED IN THE**
- (12) **MANUFACTURE OF PCB'S THE SAME CHLORINE YOU WOULD USE**
- (13) **TO - IN A PUBLIC SWIMMING POOL OR SWIMMING POOL OF**
- (14) **ANY KIND?**
- (15) A EXACTLY, THE SAME MATERIAL.
- (16) **Q AND THE SAME MATERIAL USED IN CERTAIN**
- (17) **HOUSEHOLD DETERGENTS?**
- (18) A WELL, IT'S THE SAME INGREDIENT THAT YOU
- (19) WOULD FIND IN HOUSEHOLD BLEACH, FOR EXAMPLE.
- (20) **Q WHAT DO PCB'S LOOK LIKE?**
- (21) A THEIR APPEARANCE VARIES WITH THE AMOUNT
- (22) OF CHLORINE OR THE TIME THAT THE BIPHENYL IS EXPOSED
- (23) TO CHLORINE.
- (24) AT VERY LOW CHLORINE LEVELS IT'S VERY
- (25) THIN LIQUID, VERY MUCH LIKE WATER. AND IT'S CLEAR,
- (26) NO COLOR, COLORLESS, JUST LIKE WATER, GOOD WATER.
- (27) AS YOU INCREASE THE AMOUNT OF CHLORINE,
- (28) IT BECOMES THICKER AND THICKER.

Page 1994

- (1) SO THAT BY THE TIME YOU REACHED THE 1260
- (2) TYPE, IT'S LIKE THICK PANCAKE SYRUP. IT HARDLY
- (3) POURS.
- (4) IF YOU GO BEYOND THE 60 POINT, YOU END UP
- (5) WITH SOLID MATERIAL AT ROOM TEMPERATURES.
- (6) IT LOOKS LIKE, WHEN YOU GRIND IT, LIKE
- (7) TABLE SALT.
- (8) **Q WHAT DO THEY SMELL LIKE, IF THEY SMELL AT**
- (9) **ALL?**
- (10) A I HAVE A DIFFICULT TIME ANSWERING THAT
- (11) BECAUSE PEOPLE SMELL THINGS DIFFERENTLY.
- (12) TO ME IT REMINDS ME OF A DISINFECTANT, A
- (13) MILD DISINFECTANT TYPE OF ODOR.
- (14) IT'S NOT TOO OBNOXIOUS. YOU KNOW IT'S
- (15) THERE.
- (16) **Q DID MONSANTO HAVE A TRADE NAME FOR ITS**
- (17) **PCB'S?**
- (18) A YES, THEY DID.
- (19) **Q AND THAT WAS WHAT?**
- (20) A AROCLOR, A-R-O-C-L-O-R.
- (21) **Q AS YOU KNOW, THIS CASE INVOLVES THE USE**
- (22) **OF AROCLOR 1242 AS AN INGREDIENT IN THE TURBINOL,**
- (23) **RIGHT?**
- (24) A YES, THAT IS CORRECT.
- (25) **Q AND WHAT DOES THE 1242 MEAN?**
- (26) A THE 12 SAYS THAT THIS MATERIAL IS A
- (27) CHLORINATED BIPHENYL, A PCB.
- (28) THE 42 INDICATES THAT OF THIS TOTAL

Page 1995

- (1) MATERIAL, 42 PERCENT OF THAT, WHEN YOU WEIGH IT, IS
- (2) CHLORINE.
- (3) THE REST IS CARBON AND HYDROGEN.
- (4) Q SO IF YOU WERE TO SEPARATE, IF IT WERE
- (5) POSSIBLE TO SEPARATE THE CHLORINE AWAY AND PUT THAT
- (6) IN A SEPARATE CAN, THAT WOULD REPRESENT 42 PERCENT OF
- (7) THE WEIGHT OF THE TOTAL THAT YOU STARTED WITH?
- (8) A EXACTLY.
- (9) Q NOW, 1242 CONSISTS OF A VARIETY OF PCB'S,
- (10) CORRECT?
- (11) A THAT IS CORRECT.
- (12) Q ALL RIGHT. I WOULD LIKE TO SHOW YOU
- (13) TRANSWESTERN 352, PLEASE.
- (14) NOW, YOU SEE THE COLUMN THERE THAT SAYS,
- (15) "PERCENTAGE OF PCB'S WITH FOUR OR MORE CHLORINES PER
- (16) MOLECULE"?
- (17) A I DO.
- (18) Q WHAT PERCENTAGE OF AROCLOR 1242 IS
- (19) REPRESENTED BY FOUR OR FEWER CHLORINES PER MOLECULE?
- (20) A 90 PERCENT OR MORE.
- (21) Q AND PERCENTAGE OF PCB'S WITH FIVE OR MORE
- (22) WOULD STILL BE THE 10 PERCENT, CORRECT?
- (23) A 10 PERCENT OR LESS, UH-HUH.
- (24) Q DID MONSANTO AND OTHER SCIENTISTS REGARD
- (25) 1242 AS A, QUOTE, "LOWER CHLORINATED PCB"?
- (26) A YES.
- (27) Q AND WHERE WAS THE LINE OF DEMARCATION IN
- (28) THE SCIENTIFIC WORLD BETWEEN LOWER CHLORINATED AND

Page 1996

- (1) HIGHER CHLORINATED?
- (2) MR. TALLON: OBJECTION, FOUNDATION.
- (3) THE COURT: SUSTAINED.
- (4) Q BY MR. PREUSS: WHERE DID MONSANTO DRAW
- (5) THE LINE BETWEEN A LOWER-CHLORINATED AND
- (6) HIGHER-CHLORINATED PCB?
- (7) A FIVE CHLORINES AND MORE WERE CONSIDERED
- (8) THE HIGHER CHLORINATED.
- (9) ANYTHING LESS THAN FIVE WAS CONSIDERED
- (10) THE LOWER CHLORINATED.
- (11) Q COULD YOU TAKE A LOOK AT TRANSWESTERN
- (12) 241, PLEASE.
- (13) A I HAVE IT.
- (14) Q FOR THE RECORD 241 IS A PRESENTATION TO
- (15) THE INTERDEPARTMENTAL TASK FORCE ON PCB'S?
- (16) THE COURT: MR. PREUSS, JUST HAVE HIM DESCRIBE
- (17) WHATEVER HE RECOGNIZES IT TO BE AS YOU GO INTO
- (18) QUESTIONING.
- (19) MR. PREUSS: CERTAINLY.
- (20) Q WOULD YOU TURN, PLEASE, MR. PAPAGEORGE,
- (21) TO THE FIRST EXHIBIT, IF YOU WILL, OR THE FIRST
- (22) DIAGRAM AFTER PAGE 9, WHICH HAS MR. DR. TUCKER'S
- (23) NAME THERE.
- (24) A I HAVE IT.
- (25) Q YOU FOUND THAT.
- (26) ALL RIGHT. CAN YOU IDENTIFY THIS FOR US,
- (27) PLEASE.
- (28) A THIS IS A TABLE WHICH LISTS THE TYPES OF

Page 1997

- (1) BIPHENYLS BY CHLORINE NUMBER IN THE LEFT COLUMN AND
- (2) ACROSS THE PAGE IT LISTS THE TYPES OF AROCLORS THAT
- (3) ARE BEING SHOWN HERE, AND UNDER EACH TITLE THE
- (4) PERCENT OF THE PCB IN THE LEFT-HAND COLUMN THAT IS
- (5) PRESENT IN THAT PARTICULAR MIXTURE.
- (6) Q ALL RIGHT. THE LEFT COLUMN IS ENTITLED
- (7) HOMOLOG?
- (8) A IT IS.
- (9) Q AND IS THAT THE SAME AS AN ISOMER OR NOT?
- (10) A THEY ARE USED INTERCHANGEABLY.
- (11) Q WHEN WE TALK ABOUT A FIVE CHLORINE, WE
- (12) WOULD GO DOWN TO THE LEFT-HAND COLUMN TO FIVE?
- (13) A WE WOULD.
- (14) Q AND THREE, GO DOWN TO THREE?
- (15) A CORRECT.
- (16) Q AND IF I WANTED TO FIND OUT PERCENTAGES,
- (17) THEN, OF THESE IN ONE OF THESE FOUR PRODUCTS LISTED,
- (18) THEN I WOULD JUST MOVE TO THE RIGHT, TO THE
- (19) RESPECTIVE COLUMN; IS THAT RIGHT?
- (20) A THAT IS CORRECT.
- (21) Q LET'S TAKE AROCLOR 1242.
- (22) DO YOU SEE THAT COLUMN THERE?
- (23) A YES.
- (24) Q AND IF I WERE TO DRAW A LINE BETWEEN THE
- (25) FOUR AND FIVE, WHAT PERCENTAGE, ACCORDING TO THIS
- (26) DOCUMENT, WOULD BE REPRESENTED BY FOUR OR FEWER
- (27) CHLORINES OR HOMOLOGS?
- (28) A '91 PERCENT.

Page 1998

- (1) Q AND THEN ON THE OTHER SIDE OF THE LINE
- (2) WOULD BE WHAT, SIR?
- (3) A NINE PERCENT.
- (4) Q NOW, ARE THERE ANY EIGHTS IN 1242, SIR?
- (5) A THERE ARE NONE.
- (6) Q THANK YOU.
- (7) WITH RESPECT TO PCB PRODUCTS, SIR, WHAT
- (8) WAS THE COMMERCIAL APPEAL, IF YOU WILL, OF THIS
- (9) PRODUCT TO INDUSTRY OR CUSTOMERS?
- (10) A THE OUTSTANDING PROPERTY THAT APPEALED
- (11) WAS THE ABILITY TO RESIST BURNING, THE FIRE-RESISTANT
- (12) FEATURE.
- (13) Q "BURNING," LIKE FLAME AND FIRE?
- (14) A RIGHT.
- (15) THAT ALSO REFLECTS THE FACT THAT THESE
- (16) MATERIALS ARE WHAT ARE CONSIDERED TO BE VERY STABLE.
- (17) THEY DON'T REACT WITH MANY THINGS.
- (18) IT TAKES A LOT TO MAKE OTHER CHEMICALS
- (19) WITH THEM, FOR EXAMPLE.
- (20) SO THEY ARE VERY STABLE.
- (21) AS A RESULT THEY BRING THESE PROPERTIES
- (22) TO THE PRODUCTS THEY ARE IN.
- (23) Q BOTH STABILITY AND HEAT AND FIRE
- (24) RESISTANCE?
- (25) A CORRECT.
- (26) Q WHAT WERE THE INITIAL APPLICATIONS OF
- (27) PCB'S?
- (28) A THEY WERE USED AS LIQUIDS IN ELECTRICAL

Page 1999

- (1) APPARATUSES TO COOL THE ELECTRICAL EQUIPMENT AND TO
(2) PREVENT ARCING ACROSS THE PARTS INSIDE THE
(3) CONTAINER.
(4) **Q OVER TIME WERE APPLICATIONS FOUND APART FROM THE ELECTRICAL INDUSTRY, SIR?**
(5) **A YES, THEY WERE, OH YES.**
(6) **Q AND WHAT WERE SOME OF THE APPLICATIONS THAT WERE FOUND BEYOND THE ELECTRICAL INDUSTRY?**
(7) **A WELL, BUILDING ON THE FIRE RETARDANCY OF THESE MATERIALS THEY, OF COURSE, WERE VERY ATTRACTIVE**
(8) **IN, LET'S SAY HEAT TRANSFER SYSTEMS WHERE YOU HAVE A**
(9) **GAS OR OIL FLAME AT ONE CORNER OF THE PLANT AWAY FROM**
(10) **EXPLOSIVE ENVIRONMENTS AND YOU TRANSFER THE HEAT IN**
(11) **PIPELINES USING A LIQUID TO DO THE COOKING, IF YOU**
(12) **WILL, OF THE VARNISH OR WHAT HAVE YOU AND YOU AVOID**
(13) **THE POTENTIAL FOR HAVING AN EXPLOSION OVER HERE WHERE**
(14) **YOU ARE COOKING THE VARNISH AND THE GAS FLAME THAT IS**
(15) **HEATING THE PCB FLUID.**
(16) **THAT WAS A VERY IMPORTANT ADVANCE IN HEAT TRANSFER.**
(17) **AND IT ALSO PROVIDED FOR THE SITUATION WHERE THE USER OF THAT SYSTEM COULD GO TO HIGH**
(18) **TEMPERATURES WITHOUT HAVING THE - TO PUT UP WITH THE**
(19) **RISKS THAT ARE THERE WHEN YOU HAVE HIGH PRESSURE**
(20) **STEAM, AND YOU NEED A LICENSED OPERATOR AROUND THE**
(21) **CLOCK AND SO ON.**
(22) **SO THAT WAS ONE BIG ADVANTAGE.**
(23) **ANOTHER ONE WAS THE USE OF - IN FLUIDS**

Page 2000

- (1) **THAT ARE USED IN, SAY, DIE CASTING MACHINES WHERE IN**
(2) **HIGH PRESSURE THE MOLDS ARE PUSHED THROUGH SYSTEMS**
(3) **AND THE CASTING MOLDING IS SEPARATED AND ALL.**
(4) **AND YOU HAVE A SITUATION WHERE YOU HAVE**
(5) **RED HOT METAL AND A FLUID.**
(6) **AND IT'S OBVIOUS THERE THAT YOU DON'T**
(7) **WANT A FIRE BECAUSE OF THE HOT METAL TOUCHING THAT**
(8) **FLUID.**
(9) **THEN IT WAS FOUND USEFUL IN SUCH THINGS**
(10) **AS ADHESIVES AND PAINTS BECAUSE OF ITS DURABILITY WE**
(11) **TALKED ABOUT.**
(12) **YOU COULD PUT THAT ON A ROAD TRAFFIC LINE**
(13) **AND IT LASTED AN AWFUL LOT LONGER THAN THOSE WE SEE**
(14) **TODAY THAT VANISH ALMOST THE MOMENT THEY ARE APPLIED.**
(15) **I CAN'T THINK OF ALL THE EXAMPLES, BUT**
(16) **THE WHOLE INTENT WAS TO USE THESE TWO PROPERTIES,**
(17) **FIRE RESISTANCE AND STABILITY, TO IMPROVE A PRODUCT.**
(18) **Q WHAT PRODUCTS DID MONSANTO HAVE TOWARDS**
(19) **THE LATE 60'S?**

- (20) **A YOU MEAN BY TRADEMARKS AND SO ON?**
(21) **Q NO, THE PRODUCT LINES. YOU MENTIONED**
(22) **HEAT-TRANSFER FLUIDS AS AN APPLICATION.**
(23) **DID IT HAVE HEAT-TRANSFER FLUIDS, AS AN**
(24) **EXAMPLE?**
(25) **A NO. THE FLUIDS FOR HEAT TRANSFER USE**
(26) **WERE CALLED THERMINOLS AND WE HAD USED SEVERAL OF THE**
(27) **AROCLORS IN THEM.**
(28) **THEY HAD PYDRAULS WHICH REFERRED TO THE**

Page 2001

- (1) **KIND OF FLUID USED IN THESE CASTING MACHINES.**
(2) **THEY HAD, WELL, TURBINOL-153 IS AN**
(3) **EXAMPLE OF A LUBRICANT.**
(4) **THEY HAD SANTOVAC WHICH WAS THE NAME FOR**
(5) **THE FLUID USED IN VACUUM MACHINERY.**
(6) **Q WHAT DO YOU MEAN BY "VACUUM MACHINERY"?**
(7) **A THESE ARE REALLY - IT HELPS ME TO THINK**
(8) **OF IT AS KIND OF A REVERSE PUMP.**
(9) **WHERE INSTEAD OF PUSHING SOMETHING INTO A**
(10) **CONTAINER YOU ARE SUCKING OUT FROM IT TO CREATE A**
(11) **VACUUM.**
(12) **Q ANY OTHER PRODUCTS YOU CAN THINK OF AT THIS TIME?**
(13) **A WELL, THERE WERE THE DIELECTRIC FLUIDS THAT WERE USED RATHER EXTENSIVELY.**
(14) **THAT WAS THE BIGGEST USE, FOR USE IN TRANSFORMERS AND CAPACITORS.**
(15) **Q OKAY. WHO WERE THE PRINCIPAL CUSTOMERS OF MONSANTO PRODUCTS?**
(16) **A OF THE PCB PRODUCTS?**
(17) **Q YES, SIR.**
(18) **A THE ELECTRICAL PEOPLE, WESTINGHOUSE AND GENERAL ELECTRIC CAME TO MIND.**
(19) **Q ALL RIGHT. AND WAS THE GOVERNMENT A CUSTOMER?**
(20) **A OH, YES, OH, YES.**
(21) **Q WAS MONSANTO THE ONLY U.S. PRODUCER OF PCB'S?**

Page 2002

- (1) **A FOR ALL PRACTICAL PURPOSES, YES, UH-HUH.**
(2) **Q WHY DIDN'T MONSANTO HAVE ANY DOMESTIC**
(3) **COMPETITION?**
(4) **A WELL, IT WAS A CASE OF BEING THERE FIRST**
(5) **AND HAVING THE KNOW-HOW AND THE EQUIPMENT AND EXTRA**
(6) **CAPACITY WHEN NEEDED.**
(7) **AND BEING IN THAT POSITION, THEY WERE**
(8) **ABLE TO PRICE IT AT SUCH A LEVEL THAT THE COMPETITION**
(9) **DIDN'T FIND IT ATTRACTIVE TO GET INTO IT.**
(10) **THAT IS MY UNDERSTANDING.**
(11) **PLUS THE FACT THAT THEY REALLY HAD THIS**
(12) **EXPERTISE FROM DECADES OF MANUFACTURE THAT THE**
(13) **PRINCIPAL CUSTOMERS LIKE AND THE ELECTRICAL PEOPLE**
(14) **RELIED UPON.**
(15) **Q WERE THERE FOREIGN PRODUCERS OF PCB'S?**
(16) **A YES, THERE WERE.**
(17) **Q AND WHAT COUNTRIES OR AREAS CAME TO MIND?**
(18) **A THERE WERE PRODUCERS IN GERMANY, FRANCE,**
(19) **ITALY, SPAIN, JAPAN, AND I UNDERSTAND THERE WERE**
(20) **PRODUCERS IN POLAND, CZECHOSLOVAKIA AND RUSSIA.**
(21) **Q WHAT - TAKING EUROPE, THE COUNTRIES YOU MENTIONED IN EUROPE, SIR, WHAT PERCENTAGE OF THE**
(22) **EUROPEAN MARKET DID MONSANTO HAVE?**
(23) **EUROPEAN MARKET DID MONSANTO HAVE?**

(24) A IT'S HARD TO ESTIMATE BECAUSE WE DON'T
(25) KNOW THE EASTERN COUNTRIES, POLAND,
CZECHOSLOVAKIA
(26) AND RUSSIA'S CONTRIBUTION.
(27) BUT OF THE KNOWN PRODUCTION, GERMANY,
(28) FRANCE, ITALY, IT WAS LESS THAN 20 PERCENT.

Page 2003

(1) **Q WITH RESPECT TO MONSANTO'S DOMESTIC
(2) BUSINESS, SIR, WHAT PERCENTAGE OF THAT
BUSINESS WAS
(3) REPRESENTED BY THE SALE OF PCB-RELATED
PRODUCTS?**
(4) A WELL, OF THE TOTAL MONSANTO BUSINESS?
(5) **Q RIGHT.**
(6) A OH, LESS THAN 1 PERCENT.
(7) **Q NOW, MR. PAPAGEORGE, WHAT I WOULD LIKE TO
(8) TURN YOUR ATTENTION TO IS 1966 AND THE
JENSEN WIDMARK
(9) FINDINGS -**
(10) A UH-HUH.
(11) **Q - THAT WE HAVE DISCUSSED HERE.**
(12) **WHEN DID MONSANTO FIRST LEARN THAT PCB'S
(13) HAD BEEN FOUND IN THE ENVIRONMENT, SIR?**
(14) A ABOUT NOVEMBER, DECEMBER OF 1966.
(15) **Q WHO WITHIN THE MONSANTO ORGANIZATION
(16) FIRST RECEIVED THIS INFORMATION, TO YOUR
KNOWLEDGE?**
(17) A WELL, DAVID WOOD RECEIVED A LETTER FROM A
(18) REPRESENTATIVE IN SWEDEN THAT WE SAW HERE
THE OTHER
(19) DAY.
(20) **Q AND WHAT WAS YOUR UNDERSTANDING OF THE
(21) INFORMATION RECEIVED BY MR. WOOD?**
(22) A INVESTIGATORS WIDMARK AND JENSEN IN
(23) WORKING WITH DDT AND ENVIRONMENTAL SAMPLES
KEPT
(24) SEEING SOME OTHER CHEMICAL IN THEIR STUDY
AND IT TOOK
(25) THEM A WHILE TO IDENTIFY THAT MATERIAL AND
THEY HAD,
(26) AT THAT TIME, TENTATIVELY IDENTIFIED IT AS A PCB.
(27) THEY WERE PRETTY SURE OF THAT IDENTITY.
(28) THEY HAD SOME QUESTION ABOUT THEIR

Page 2004

(1) ABILITY TO DETERMINE HOW MUCH WAS PRESENT.
(2) **Q THE QUANTITY?**
(3) A THE QUANTITY, HOW MUCH IN THAT SAMPLE
(4) WHICH THEY LATER IMPROVED UPON.
(5) **Q WHAT TYPE OF PCB'S WERE REPORTED BY THE
(6) SWEDISH SCIENTISTS?**
(7) A THIS IS THE TYPE WE TALKED ABOUT EARLIER,
(8) THE FIVE CHLORINE AND HIGHER TYPE.
(9) **Q SO THE HIGHER CHLORINATED PCB'S?**
(10) A THAT IS WHAT MONSANTO CALLED THE HIGHER
(11) CHLORINATED.
(12) **Q AND 1242, WAS THAT CONSIDERED A HIGHER
(13) CHLORINATED PCB?**
(14) A NOT AT THAT TIME, NO.
(15) **Q AND WHAT LEVELS WERE JENSEN AND WIDMARK
(16) REPORTING OF PCB'S?**
(17) A AS I REMEMBER, SOME SAMPLES HAD PARTS PER
(18) MILLION, SOME PARTS PER BILLION.
(19) IT VARIED.
(20) **Q CAN YOU GIVE US IN LAY TERMS WHAT A PART
(21) PER MILLION OR PART PER BILLION WOULD BE?**
(22) A WELL, IT HELPS ME TO - PART PER MILLION,
(23) JUST PICTURE A HUGE FOOTBALL STADIUM WITH A
MILLION
(24) SEATS.
(25) PICK ONE SEAT IN THAT STADIUM, THAT IS A
(26) PART PER MILLION. THAT HELPS ME GET AN
(27) UNDERSTANDING.

(28) A PART PER BILLION, YOU TAKE A STADIUM

Page 2005

(1) WITH A BILLION SEATS WHICH IS A THOUSAND
MILLION AND
(2) TAKE ONE SEAT OUT OF THAT THOUSAND MILLION,
THAT IS
(3) ONE PART PER BILLION.
(4) YOU CAN SEE HOW SENSITIVE THESE
(5) INSTRUMENTS HAVE BECOME.
(6) **Q THAT BRINGS UP THE QUESTION, WHAT TYPE OF
(7) EQUIPMENT DID THE SWEDISH SCIENTISTS REPORT
THAT THEY
(8) WERE USING WHEN THEY MADE THIS FINDING, SIR?**
(9) A WELL, IT'S EQUIPMENT KNOWN BY THE
(10) CHEMISTS AS A GAS CHROMATOGRAM, COUPLED
WITH A MASS
(11) SPECTROMETER.
(12) WHAT THAT MEANS IS ONE INSTRUMENT
(13) SEPARATES THE PARTS OF THE SAMPLE AND TRIES
TO
(14) IDENTIFY EACH PART AND REPRESENTS THAT ON A
CHART OF
(15) PAPER-LIKE PEAKS AND VALLEYS, EACH PEAK
REPRESENTS
(16) THAT PARTICULAR CHEMICAL.
(17) AND THE SPECTROMETER IS THE INSTRUMENT
(18) THAT TAKES EACH PEAK AND TELLS YOU HOW BIG IT
IS, HOW
(19) BIG IS THAT MOLECULE, GIVES IT A WEIGHT NUMBER.
(20) THEN THE CHEMIST SITS DOWN AND CALIBRATES
(21) AND SAYS WITH THIS KIND OF WEIGHT THAT
MATERIAL IS SO
(22) MUCH CARBON, SO MUCH HYDROGEN, SO MUCH
CHLORINE. SO
(23) IT CLOSELY RESEMBLES A FIVE CHLORINE OR A FOUR
(24) CHLORINE OR WHAT HAVE YOU, WHATEVER THE
NUMBER WOULD
(25) INDICATE.
(26) SO THIS IS - A MASS SPEC IS USED TO
(27) CONFIRM WHAT THE FINGERPRINT IS INDICATING.
(28) **Q AND WAS THIS EQUIVALENT TO SOMETHING THAT**

Page 2006

(1) **WAS COMMERCIALY AVAILABLE?**
(2) A WELL, IT WAS COMMERCIALY AVAILABLE, BUT
(3) NOT THE KIND THAT IS LIKE ON THE SHELF WHERE
YOU WALK
(4) IN AND BUY IT AND WALK OUT.
(5) YOU HAVE TO ORDER IT AND THEY WILL BUILD
(6) IT TO YOUR SPECIFICATION AND I REMEMBER
MONSANTO
(7) PEOPLE HAD TO DEVISE A UNIT TO PUT THE TWO
PIECES
(8) TOGETHER THAT THEY HAD.
(9) AND THEN LATER ON THEY ORDERED ANOTHER
(10) MORE SOPHISTICATED, NEWER PIECE.
(11) **Q WHAT WAS KNEW ABOUT THE ANALYTIC
(12) EQUIPMENT THAT THE SWEDES WERE USING AT
THE TIME THEY
(13) MADE THIS CLAIM?**
(14) A I THINK THE MASS SPEC WAS THE PRINCIPAL
(15) ADDITION.
(16) **Q DID THE SWEDISH SCIENTISTS REPORT THE
(17) BIOLOGIC SIGNIFICANCE OF WHAT THEIR FINDINGS
WERE,
(18) SIR?**
(19) A NO.
(20) AS I REMEMBER, THEY WERE FRUSTRATED IN
(21) THAT THEY - NOW THAT THEY HAD ESTABLISHED
PRESENCE
(22) THEY HAD NO IDEA OF WHAT IT WAS DOING OUT
THERE.
(23) THEY HAD NO BIOLOGICAL INFORMATION.

(24) **Q WOULD YOU TURN TO TRANSWESTERN 33,**
 (25) **PLEASE.**
 (26) **A I HAVE IT.**
 (27) **Q WOULD YOU IDENTIFY IT FOR US, PLEASE.**
 (28) **A THIS IS A LETTER WITH THE LETTERHEAD OF**

Page 2007

(1) INSTITUTE OF ANALYTICAL CHEMISTRY OF STOCKHOLM, DATED
 (2) DECEMBER 29, 1966 AND IT'S AUTHORED BY A GUNNAR
 (3) WIDMARK.
 (4) **Q AND ADDRESSED TO WHOM?**
 (5) **A ADDRESSED TO MR. FORD AT MONSANTO.**
 (6) **Q AND CAN YOU TAKE A LOOK AT - AND READ**
 (7) **FOR US THE FIRST SENTENCE OF THE FOURTH PARAGRAPH**
 (8) **THERE, SIR.**
 (9) **A I HAVE IT.**
 (10) **Q COULD YOU READ IT FOR US, PLEASE.**
 (11) **A "AT PRESENT WE HAVE NO KNOWLEDGE OF THE**
 (12) **BIOLOGICAL SIGNIFICANCE OF THE PRESENCE OF THESE**
 (13) **COMPOUNDS IN LIVING ORGANISMS."**
 (14) **Q THANK YOU, SIR. NOW, HOW DID MONSANTO**
 (15) **REACT TO THIS NEWS THAT CAME FROM SWEDEN REPORTING**
 (16) **THE PRESENCE OF PCB'S IN THE ENVIRONMENT?**
 (17) **A I GUESS THE BEST WORD I CAN USE IS TOTAL**
 (18) **SURPRISE.**
 (19) **IT JUST DIDN'T FIT WITH THE UNDERSTANDING**
 (20) **THAT MONSANTO HAD OF THESE MATERIALS OVER FOUR**
 (21) **DECADES.**
 (22) **Q WHY IS THAT?**
 (23) **A PRIMARILY BECAUSE OF THEIR STABILITY AND**
 (24) **THEIR USES.**
 (25) **WE KIND OF PICTURED THE OVERWHELMING**
 (26) **AMOUNT OF MATERIALS SOLD THROUGH THESE DECADES WAS**
 (27) **STILL IN STEEL TANKS, IN SERVICE.**
 (28) **AS I INDICATED BEFORE, IT WAS VERY**

Page 2008

(1) DIFFICULT TO GO FROM THAT TRANSFORMER OR OTHER
 (2) MACHINE TO THE PINE NEEDLE WITH OUR UNDERSTANDING OF
 (3) HOW STABLE THESE THINGS WERE.
 (4) **Q YOU WERE HAVING DIFFICULTY OR MONSANTO**
 (5) **WAS HAVING DIFFICULTY IN LINKING WHAT IT UNDERSTOOD**
 (6) **IT USED TO BE TO HAVING PCB'S FOUND IN PINE NEEDLES?**
 (7) **A YES, THAT DESCRIBES THE IMPRESSION THAT**
 (8) **MONSANTO HAD.**
 (9) **Q AND HOW DID MONSANTO RESPOND AFTER**
 (10) **RECEIVING THIS SURPRISING INFORMATION?**
 (11) **A WELL -**
 (12) **Q INITIALLY -**
 (13) **A INITIALLY THEY DECIDED WE HAD BETTER**
 (14) **LEARN A LOT MORE THAN WE KNOW.**
 (15) **LET'S GET THE ANALYTICAL PROCEDURE.**
 (16) **LET'S GET THE NECESSARY INSTRUMENTS. LET'S LOOK AT**
 (17) **SAMPLES.**
 (18) **LET'S COMPARE NOTES WITH DR. WIDMARK AND**
 (19) **JENSEN AND OTHER LABORATORIES.**
 (20) **Q "OTHER LABORATORIES" MEANING WHAT, SIR?**
 (21) **A EXAMPLES INCLUDE GOVERNMENT LABS LIKE THE**
 (22) **ONE THAT - THE COMMERCIAL LABORATORY IN GULF BREEZE,**
 (23) **FLORIDA, THE ONE IN COLUMBIA, MISSOURI, I MENTIONED**

(24) CORVALLIS, OREGON, DULUTH, DR. RISEBROUGH AT THE
 (25) UNIVERSITY OF CALIFORNIA, BERKELEY, DR. PEAKALL AT
 (26) CORNELL, THE FDA LABORATORIES IN ROCKVILLE, MARYLAND.
 (27) **Q DID MONSANTO HAVE CONTACT WITH ALL OF**

Page 2009

(1) **THOSE LABORATORIES?**
 (2) **A AND MANY MORE THAT I CAN'T REMEMBER AT**
 (3) **THE MOMENT.**
 (4) **Q DID MONSANTO PROVIDE SAMPLES OF ITS PCB**
 (5) **PRODUCTS -**
 (6) **A OH, YES.**
 (7) **Q - TO THESE LABORATORIES?**
 (8) **A OH, YES, YES, BY THE BARRELS FULL.**
 (9) **Q DID MONSANTO STAY WITH THESE**
 (10) **LABORATORIES, BOTH GOVERNMENTAL AND PRIVATE, IN TERMS**
 (11) **OF WHAT THEY WERE FINDING IN TERMS OF THEIR ANALYSIS**
 (12) **OF PCB'S?**
 (13) **A YES, THEY COMPARED NOTES. THEY HAD ROUND**
 (14) **ROBIN WHICH MEANS SAMPLES WERE PREPARED, IDENTICAL**
 (15) **SAMPLES AND SENT TO THE LABS.**
 (16) **THEY WOULD RUN THEIR ANALYSES AND THEY**
 (17) **COULD COMPARE THEIR ANSWERS.**
 (18) **THEY DID THIS VERY OFTEN, JUST TO STAY**
 (19) **TUNED IN.**
 (20) **Q TO SEE IF PEOPLE WERE FINDING THE SAME**
 (21) **THINGS WITH THE SAME SUBSTANCES?**
 (22) **A YES, THAT WAS THE INTENT.**
 (23) **Q THIS DIALOGUE BETWEEN MONSANTO AND**
 (24) **PRIVATE AND GOVERNMENTAL LABORATORIES CONTINUES FROM**
 (25) **THE TIME THAT YOU UNDERSTOOD HISTORICALLY AS WELL AS**
 (26) **FROM THE TIME THAT YOU TOOK OVER IN 1970 AS MANAGER**
 (27) **OF ENVIRONMENTAL CONTROL?**
 (28) **A AND EVEN BEYOND.**

Page 2010

(1) **Q DID MONSANTO HIRE ANYBODY TO ASSIST IN**
 (2) **THE ANALYTIC APPROACH TO THIS ISSUE?**
 (3) **A YES, THEY DID.**
 (4) **Q AND WHO DID THEY HIRE?**
 (5) **A DR. SCOTT TUCKER WAS HIRED TO HEAD UP A**
 (6) **TEAM TO SPEND ALL OF HIS TIME ON PCB ANALYSIS**
 (7) **RESEARCH.**
 (8) **Q WAS HE INVOLVED IN THE ANALYTIC ENDEAVOR?**
 (9) **A YES, UH-HUH.**
 (10) **Q AND WHAT, IN PARTICULAR, DID HE FOCUS HIS**
 (11) **WORK ON?**
 (12) **A WELL, IT WAS CENTERED ON REFINING THE**
 (13) **METHODS USED TO ANALYZE FOR PCB'S IN ALL KINDS OF**
 (14) **SAMPLES, WHETHER THEY BE WATER, VAPORS, SOLID**
 (15) **MATERIALS, AND TO USE THAT LATER WHEN THEY BECAME**
 (16) **RELIABLE, THE RESULTS BECAME RELIABLE, IN CONDUCTING**
 (17) **SUCH STUDIES AS HOW MUCH IS LEFT IN A SAMPLE AFTER IT**
 (18) **HAS BEEN EXPOSED TO BACTERIA, FOR EXAMPLE, THE**
 (19) **DEGRADATION STUDIES AND BIODEGRADATION.**
 (20) **IN ORDER TO CONDUCT BIODEGRADATION, YOU**
 (21) **NEED ANALYTICAL EXPERTISE, OTHERWISE YOU DON'T KNOW**
 (22) **WHAT YOU'VE GOT. YOU DON'T KNOW WHERE**

YOU'RE HEADED

(23) AND WHERE YOU STARTED.

(24) **Q WHAT IS INVOLVED IN ANALYTIC TECHNIQUE,**

(25) **YOU NEED EQUIPMENT. IS THAT THE FIRST THINNING YOU**

(26) **NEED?**

(27) **A CERTAINLY YOU NEED GOOD EQUIPMENT THAT**

(28) **WILL GIVE YOU RELIABLE ANSWERS.**

Page 2011

(1) BUT EQUALLY AS IMPORTANT IS HOW IS THE
(2) SAMPLE HANDLED UP FRONT SO YOU GET ALL OF
THE PCB OUT

(3) OF IT WITHOUT ALTERING IT, CHANGING IT INTO
SOMETHING

(4) DIFFERENT OR WITHOUT LOSING IT, AS YOU TRY TO

(5) CONCENTRATE IT.

(6) THAT WAS VERY CHALLENGING. THIS SAMPLE

(7) PREPARATION IN ITSELF WAS FULLY TRIAL AND
ERROR AT

(8) FIRST.

(9) **Q THAT SUBJECT MATTER COULD BE REFERRED TO**

(10) **AS THE ANALYTIC METHODOLOGY?**

(11) A YES.

(12) **Q WAS THAT AVAILABLE IN THE 1966-1970 TIME**

(13) **FRAME?**

(14) A THE ONLY METHOD AVAILABLE IN '66 WAS

(15) JENSEN WIDMARK'S METHOD, WHICH REALLY
CONCENTRATED ON

(16) SOLID MATERIALS, ANIMAL TISSUE, FISH TISSUE, PINE

(17) NEEDLES.

(18) THAT HAD TO BE ADOPTED TO WATER WHICH IS

(19) A LITTLE DIFFERENT, AGAIN.

(20) AND WATER IN AND OF ITSELF IS NOT JUST

(21) WATER. THERE IS A LOT OF SEDIMENT IN IT,
WHETHER YOU

(22) CAN SEE IT OR NOT.

(23) YOU HAVE TO GET IT AWAY FROM ALL THE

(24) LITTLE PARTICLES FLOATING IN IT.

(25) AND COLLECTING VAPORS WAS DIFFICULT. IT

(26) WAS JUST VERY DIFFICULT TO CAPTURE ALL THE
PCB'S AND

(27) MAKE SURE YOU HAVE GOT PCB'S AND NOTHING
ELSE OR THAT

(28) YOU ARE NOT CONVERTING PCB'S INTO SOMETHING
ELSE.

Page 2012

(1) **Q AS WELL AS WHAT THE LEVEL OF THE PCB'S IS**
(2) **GOING TO BE?**

(3) A THEN THE PROBLEM BECAME HOW DO I MEASURE

(4) WHAT I'VE GOT.

(5) THEY WENT THROUGH - WHEN I SAY "THEY,"

(6) THE RESEARCH COMMUNITY, MONSANTO AND

OTHERS WENT

(7) THROUGH ALMOST A COUPLE OF YEARS DEBATING
WHAT IS THE

(8) BEST WAY TO QUANTIFY.

(9) THERE WAS A SCHOOL OF SCIENTISTS THAT

(10) SAID WE WILL MEASURE THE HEIGHTS OF THE PEAKS
AND ADD

(11) THEM UP AND THEN ARRIVE AT A NUMBER.

(12) THERE IS ANOTHER SCHOOL THAT SAYS, NO,

(13) YOU MEASURE THE AREA UNDER THE WHOLE CURVE.

(14) I THINK THE AREA UNDER THE CURVE

(15) DOMINATED, BUT I'M NOT CERTAIN TODAY.

(16) THE COURT: MR. PREUSS, I WANT TO ALTER OUR

(17) SCHEDULE A LITTLE BIT TO TAKE THE AFTERNOON
BREAK AT

(18) THIS POINT.

(19) LADIES AND GENTLEMEN, I NEED TO ATTEND TO

(20) SOME OTHER WORK DURING THE BREAK SO WITH
YOUR

(21) INDULGENCE, PLEASE.

(22) WE WILL BE IN RECESS UNTIL FIVE BEFORE

(23) THREE.

(24) RESUMING AT FIVE BEFORE THREE.

(25) WE ARE IN RECESS NOW.

(26) (RECESS.)

(27) THE COURT: AND RESUMING.

(28) GO AHEAD, MR. PREUSS.

Page 2013

(1) MR. PREUSS: THANK YOU, YOUR HONOR.

(2) **Q MR. PAPAGEORGE, BEFORE THE BREAK WE HAD**

(3) **DISCUSSED THE WIDMARK, JENSEN FINDINGS AND**
MONSANTO'S

(4) **REACTION TO THAT AND INITIAL RESPONSE.**

(5) **IN 1968 WAS THERE ANOTHER REPORT OF PCB'S**

(6) **BEING FOUND IN THE ENVIRONMENT, SIR?**

(7) A YES, THERE WAS.

(8) **Q AND WHAT WAS THAT REPORT, SIR?**

(9) A THIS WAS A REPORT THAT INDICATED THAT

(10) WILD BIRDS WERE FOUND TO CONTAIN PCB'S BY

(11) DR. RISEBROUGH FROM THE UNIVERSITY OF
CALIFORNIA

(12) BERKELEY.

(13) **Q AND WHEN WAS THAT REPORT RECEIVED?**

(14) A LATE '68, AS BEST I RECALL.

(15) **Q AND THE REPORT INCLUDED INFORMATION**
ABOUT

(16) **THE EGGS AND EGGSHELL THINNING?**

(17) A YES.

(18) IT REPORTED THAT EGGS WERE FOUND THAT

(19) DIDN'T HAVE SHELLS, THAT THOSE THAT DID HAVE
SHELLS

(20) HAD VERY THIN - THEY WERE SO THIN THAT THE
MOTHER

(21) HEN WOULD BREAK THEM AS SHE TRIED TO SIT ON
THEM.

(22) THERE WERE REPRODUCTION PROBLEMS WITH

(23) THESE WILD BIRDS.

(24) **Q AND DR. RISEBROUGH'S REPORT WAS THAT EGG**

(25) **SHELL THINNING WAS ASSOCIATED WITH PCB'S AS**
WELL AS

(26) **OTHER SUBSTANCES?**

(27) A YES, DDT AND IT'S WHAT THEY CALLED A

(28) METABOLATE, DDE, AND PCB'S WERE ALL FOUND IN
SAMPLES.

Page 2014

(1) **Q DID SUBSEQUENT RESEARCH BARREL OUT THE**

(2) **RELATIONSHIP BETWEEN THE EGGSHELL THINNING**
AND PCB'S?

(3) A FOR WILD BIRDS?

(4) **Q YES.**

(5) A YES.

(6) EVENTUALLY, AND I THINK THIS WAS ABOUT

(7) 1972 OR SO, '73, THE DEPARTMENT OF INTERIOR

(8) LABORATORIES, PAWTUXET, MARYLAND, CONCLUDED
THAT WHAT

(9) HAD BEEN OBSERVED AS AN EGG AND
REPRODUCTION PROBLEM

(10) IN WILD BIRDS WITH THE PRESENCE OF BOTH DDT
AND PCB,

(11) THAT IT WAS THE DDT THAT WAS THE CULPRIT.

(12) **Q AND NOT PCB'S?**

(13) A THAT'S RIGHT.

(14) **Q SO SUBSEQUENT RESEARCH ON**

(15) **DR. RISEBROUGH'S INITIAL FINDINGS DID NOT LINK**
PCB'S,

(16) **THEN, TO THE EGGSHELL THINNING?**

(17) A THAT IS TRUE.

(18) **Q ALL RIGHT. AND YOU WERE SHOWN EARLIER IN**

(19) **YOUR EXAMINATION, SIR, AN ARTICLE IN THE**
CHRONICLE OR

(20) **THAT WAS REFERRED TO, DO YOU RECALL THAT?**

(21) A I DO.

(22) Q AND THE REPORT ON DR. RISEBROUGH'S
(23) INITIAL FINDINGS?
(24) A I REMEMBER THAT, YES.
(25) Q AND MONSANTO ISSUED A PRESS RELEASE
AFTER
(26) THAT?
(27) A YES.
(28) Q COULD YOU TURN TO THAT PRESS RELEASE,

Page 2015

(1) PLEASE, EXHIBIT 74.
(2) A I HAVE IT.
(3) Q I WOULD LIKE TO TURN YOUR ATTENTION TO A
(4) PORTION THAT WAS NOT DISCUSSED WITH YOU
EARLIER,
(5) SIR.
(6) THAT IS ON PAGE 3.
(7) WOULD YOU GO TO THAT.
(8) THERE WE ARE.
(9) I WOULD LIKE YOU TO READ, IF YOU WOULD,
(10) PLEASE, PARAGRAPHS THREE AND FOUR ON PAGE
3.
(11) A "IT HAS ALSO BEEN IMPLIED THAT
(12) POLYCHLORINATED BIPHENYLS ARE 'HIGHLY TOXIC'
(13) CHEMICALS.
(14) "THIS IS NOT TRUE. THE TOXICITY OF ANY
(15) MATERIAL WHETHER IT BE CHEMICALS, DRUGS,
NATURAL
(16) PLANTS OR EVEN FOODS IS RELATIVE. JUST LIKE
OTHER
(17) INDUSTRIAL CHEMICALS AND KNOWN PRODUCTS
NOW IN
(18) WIDESPREAD USE, PCB'S ARE NOT HAZARDOUS
WHEN PROPERLY
(19) HANDLED AND USED. DURING MORE THAN 30 YEARS
OF U.S.
(20) PRODUCTION AND USE, CASES OF ANY TOXIC
EFFECT HAVE
(21) BEEN EXTREMELY RARE AND THEN ONLY WHERE THE
SIMPLE
(22) PRECAUTIONS RECOMMENDED WERE NOT
FOLLOWED."
(23) Q NOW, SIR, LET ME STOP YOU THERE.
(24) WAS THAT PARAGRAPH CONSISTENT WITH WHAT
(25) YOUR PERSONAL EXPERIENCE HAD BEEN AT
MONSANTO IN
(26) WORKING WITH PCB'S?
(27) A EXACTLY, YES.
(28) Q AND WAS THAT ALSO CONSISTENT WITH THE

Page 2016

(1) INVESTIGATION YOU DID AFTER TAKING OVER AS
MANAGER OF
(2) ENVIRONMENTAL CONTROL IN JANUARY OF 1970?
(3) A IT WAS CONSISTENT.
(4) Q AND WOULD YOU GO AHEAD AND READ THE NEXT
(5) PARAGRAPH.
(6) A "TO OUR KNOWLEDGE, POLYCHLORINATED
(7) BIPHENYLS ARE NOT SPRAYED OR DUSTED ON
CROPS,
(8) WOODLANDS OR ANY OTHER AREAS AS ARE
PESTICIDES.
(9) "IT IS THEREFORE NOT ONLY PUZZLING BUT
(10) EXTREMELY DIFFICULT TO CONCEIVE HOW
COMMERCIALY
(11) PRODUCED PCB CAN SHOW UP IN WILDLIFE IN THE
(12) QUANTITIES REPORTED. THIS RAISES THE QUESTION
(13) WHETHER THE SUBSTANCES IDENTIFIED IN THE
SWEDISH WORK
(14) AND NOW IN CALIFORNIA ARE ACTUALLY PCB'S OR
WHETHER
(15) THEY ARE COMPOUNDS WHICH DUE TO METABOLISM
OF OTHER
(16) MATERIALS IN THE MARINE ENVIRONMENT APPEAR

TO BE
(17) PCB'S."
(18) Q ALL RIGHT. AND DOES THIS PARAGRAPH
(19) REFLECT YOUR UNDERSTANDING, BASED ON YOUR
(20) INVESTIGATION, OF THE HISTORY BEFORE YOU
TOOK OVER IN
(21) JANUARY OF THE REASON FOR MONSANTO'S
SURPRISE AT THE
(22) FINDINGS OF WIDMARK AND JENSEN?
(23) A YES.
(24) THIS IS PART OF THE ELEMENT OF SURPRISE,
(25) YES, SIR.
(26) Q AND THE LAST TWO LINES THERE SAY, "DUE TO
(27) THE METABOLISM OF OTHER MATERIALS IN THE
MARINE
(28) ENVIRONMENT APPEARING TO BE PCB'S."

Page 2017

(1) WHAT DOES THAT MEAN, AS YOU UNDERSTAND
(2) IT, SIR?
(3) A THE THOUGHT WAS RAISED THAT COULD THE
(4) MATERIAL THAT THE CHEMISTS NOW IDENTIFY AS
BEING
(5) SIMILAR TO AROCLOR 1254, FOR EXAMPLE, COULD IT
HAVE
(6) ENTERED THE ENVIRONMENT AS SOME OTHER
CHLORINATED
(7) CHEMICAL AND WENT THROUGH THE FEEDING CHAIN
AND ENDED
(8) UP IN THESE BIRDS AND ANALYZED AS APPEARING
TO BE AN
(9) EQUIVALENT TO A PCB.
(10) IT COULD HAVE STARTED OUT AS CHLORINATED
(11) SOMETHING ELSE. THAT IS JUST A THOUGHT. THAT
IS ALL
(12) IT WAS.
(13) Q AS FAR AS YOU KNEW, NOBODY REALLY KNEW
(14) THE ANSWER AT THAT POINT?
(15) A THAT IS TRUE.
(16) Q THEN TURN TO THE NEXT PAGE AND IF YOU
(17) WOULD READ THE LAST PARAGRAPH.
(18) LET ME GET IT ON HERE BEFORE YOU READ
(19) IT.
(20) JUST A MINUTE, PLEASE.
(21) ALL RIGHT, IF YOU WOULD GO AHEAD,
(22) PLEASE.
(23) A "THE SOURCE OF THE MARINE LIFE RESIDUE
(24) IDENTIFIED AS PCB IS NOT YET KNOWN. IT WILL TAKE
(25) EXTENSIVE RESEARCH ON A WORLDWIDE BASIS TO
CONFIRM OR
(26) DENY THESE INITIAL SCIENTIFIC CONCLUSIONS."
(27) Q HAD THAT RESEARCH AS OF MARCH OF 1969
(28) BEEN COMMENCED AT MONSANTO, SIR?

Page 2018

- (1) A CERTAINLY.
(2) **Q ALL RIGHT. AND BRIEFLY WHAT WAS UNDERWAY**
(3) **AT THAT POINT?**
(4) A WELL, IN ADDITION TO CONTINUING TO
(5) IMPROVE THE ANALYTICAL ABILITY, MORE AND MORE
SAMPLES
(6) WERE BEING COLLECTED AND MORE AND MORE
LABORATORIES
(7) WERE GETTING INVOLVED AND MORE INTERCHANGE
WAS TAKING
(8) PLACE BETWEEN LABORATORIES TO PROVIDE SOME
MORE
(9) ANSWERS HERE AS TO WHAT IS IT WE ARE SEEING
AND WHAT
(10) CAUSES IT.
(11) **Q DID DR. RISEBROUGH'S NEW FINDINGS CAUSE**
(12) **ANY CHANGE IN MONSANTO'S INVESTIGATION OF**
(13) **THIS ISSUE?**
(14) A NO.
(15) THE PROGRAM WAS ALREADY CONCEIVED AND
(16) UNDERWAY.
(17) ALL THIS DID WAS CONFIRM WHAT THE SWEDISH
(18) INVESTIGATORS HAD POINTED OUT.
(19) **Q I BELIEVE YOU TESTIFIED EARLIER ABOUT**
(20) **CONTACT, INITIAL CONTACT WITH DR. WIDMARK BY**
(21) **MONSANTO'S LONDON REPRESENTATIVES.**
(22) **WAS CONTACT MAINTAINED WITH DR. WIDMARK**
(23) **DURING THIS TIME FRAME, '68-'69?**
(24) A OH, YES, YES, IT WAS BY EUROPEAN
(25) REPRESENTATIVES AND ALSO BY MONSANTO U.S.
(26) REPRESENTATIVES.
(27) **Q AND TELL US ABOUT THE FURTHER CONTACT BY**
(28) **MONSANTO U.S. REPRESENTATIVES WITH DR.**
WIDMARK.
(29) MR. TALLON: OBJECTION, FOUNDATION.

Page 2019

- (1) THE COURT: SUSTAINED.
(2) **Q BY MR. PREUSS: DO YOU HAVE KNOWLEDGE**
(3) **BASED UPON YOUR INVESTIGATION OF THE PCB**
(4) **SITUATION AT**
(5) **MONSANTO CONCERNING THE NATURE OF**
(6) **CONTACT BY MONSANTO**
(7) **IN 1969 WITH DR. WIDMARK?**
(8) A YES, I DO.
(9) **Q AND IF YOU WOULD, TURN TO EXHIBIT 90 AND**
(10) **TELL US WHETHER YOU ARE FAMILIAR WITH THAT**
(11) **DOCUMENT,**
(12) **AS WELL, SIR.**
(13) A I AM FAMILIAR WITH THIS DOCUMENT.
(14) **Q AND A REVIEW OF THIS DOCUMENT FORMS A**
(15) **PART OF THE BASIS OF YOUR KNOWLEDGE AS OF**
(16) **THE TIME**
(17) **YOU TOOK OVER IN JANUARY OF 1970; ISN'T THAT**
(18) **CORRECT?**
(19) A IT DOES.
(20) **Q AND YOUR UNDERSTANDING IS WHAT AS TO WHO**
(21) **IN THE MONSANTO ORGANIZATION VISITED DR.**
(22) **WIDMARK IN**
(23) **1969?**
(24) A OF DR. ROBERT KELLER, MR. ELMER WHEELER
(25) AND DR. BILL RICHARD.
(26) **Q ALL RIGHT.**
(27) A FROM THE UNITED STATES.
(28) **Q ALL RIGHT. AND REFRESH US, AGAIN, AS TO**
(29) **THE JOB RESPONSIBILITIES OF THESE THREE**
(30) **INDIVIDUALS**
(31) **AT MONSANTO AT THE TIME IN 1969.**
(32) A DR. ROBERT KELLER WAS THE SUPERVISOR OF
(33) THE GROUP IN MONSANTO'S RESEARCH
(34) DEPARTMENT THAT
(35) CONCENTRATED ON ANALYTICAL RESEARCH, NEW

METHODS OF

(28) ANALYZING FOR CHEMICALS.

Page 2020

- (1) DR. RICHARD WAS THE DIRECTOR OF RESEARCH
(2) FOR THE BUSINESS GROUP THAT WAS RESPONSIBLE
FOR
(3) FUNCTIONAL FLUIDS.
(4) AND MR. WHEELER WAS IN MONSANTO'S
(5) CORPORATE MEDICAL DEPARTMENT WHO WAS
INVOLVED WITH
(6) ANIMAL TOXICITY AND OCCUPATIONAL HEALTH AND
THE LIKE.
(7) **Q WERE THESE THREE INDIVIDUALS INVOLVED**
(8) **BEFORE THEIR TRIP IN MONSANTO'S**
(9) **INVESTIGATION OF THE**
(10) **FINDINGS OF WIDMARK AND JENSEN?**
(11) A YES, THEY WERE, UH-HUH.
(12) **Q I WOULD LIKE YOU TO TURN TO PAGE 7 OF**
(13) **THIS EXHIBIT, PLEASE.**
(14) **AND MAY 5TH THERE INDICATES THE VISIT TO**
(15) **DR. WIDMARK?**
(16) A IT DOES.
(17) **Q AND THIS IS DR. KELLER'S REPORTING OF**
(18) **THEIR VISIT WITH DR. WIDMARK?**
(19) A IT IS.
(20) **Q AND IF YOU TURN, WOULD YOU READ THE**
(21) **SECOND SENTENCE THERE THAT I HAVE**
(22) **HIGHLIGHTED ON THE**
(23) **SCREEN.**
(24) A "WIDMARK WHILE BASICALLY AN ANALYTICAL
(25) CHEMIST HAS CONSIDERABLE KNOW-HOW ABOUT
THE TOTAL
(26) PROBLEM RELATED TO ENVIRONMENTAL
CONTAMINATION AND
(27) THE ECOLOGICAL SYSTEM IN GENERAL."
(28) **Q AND THEN TURN TO PAGE 8, IF YOU WOULD,**
(29) **PLEASE.**
(30) A I HAVE IT.

Page 2021

- (1) **Q AND WOULD YOU READ THE FIRST HIGHLIGHTED**
(2) **OR THE TOPMOST HIGHLIGHTED SECTION ON PAGE**
(3) **8.**
(4) **YOU CAN START AT THE BEGINNING OF THE**
(5) **SENTENCE. IT LOOKS LIKE I DIDN'T QUITE DO**
(6) **THAT.**
(7) A OH, HERE IT IS. I HAVE IT.
(8) **Q I'M SORRY. YOURS ISN'T HIGHLIGHTED.**
(9) A "HIS POSITION BEING THAT IT IS VERY
(10) DIFFICULT TO QUANTIFY THE PCB RESULTS BECAUSE
OF THE
(11) MANY ISOMERIC SPECIES AND THAT WE REALLY
DON'T KNOW
(12) WHICH GROUP WE ARE WORKING WITH UNDER
THESE
(13) CONDITIONS."
(14) **Q AND IS IT YOUR UNDERSTANDING THAT HIS**
(15) **POSITION, DR. WIDMARK'S POSITION IS RELATED**
(16) **TO**
(17) **DR. KELLY AND REFLECTED IN DR. - EXCUSE ME,**
(18) **DR. KELLER'S MEMORANDUM?**
(19) A WOULD YOU REPEAT THE QUESTION, SIR?
(20) **Q YES, I'M SORRY.**
(21) **IS IT YOUR UNDERSTANDING THAT THE "HIS"**
(22) **OF "HIS POSITION" IS DR. WIDMARK AS REPORTED**
(23) **BY**
(24) **DR. KELLER IN THIS MEMORANDUM?**
(25) A YES.
(26) **Q AND WHAT IS YOUR UNDERSTANDING OF THE**
(27) **REFERENCE TO ISOMERIC SPECIES?**
(28) A HE IS TALKING ABOUT THE GROUPS THAT WE
(29) TALKED ABOUT EARLIER AS THE THREE CHLORINE
GROUPING

(26) AND THE FOUR CHLORINE AND THE FIVE CHLORINE.
(27) EACH GROUP OF THAT TYPE, THE MEMBERS OF
(28) THE GROUP ARE CALLED ISOMERS TO EACH OTHER.

Page 2022

(1) Q AND THEN IF YOU TURN LOWER THERE, AND,
(2) AGAIN, I'M GOING TO GIVE YOU A HINT AS TO
WHERE IT IS
(3) HERE, SINCE YOURS ISN'T HIGHLIGHTED, WOULD
YOU READ
(4) THAT SENTENCE FOR US, PLEASE.
(5) A "HIS THEORY ON FINDINGS OBSERVED IS THAT
(6) THE FIVE, SIX AND EIGHT CHLORINATED BIPHENYLS
ARE NOT
(7) METABOLIZED BECAUSE NOT MANY BELOW FIVE ARE
FOUND.
(8) FOR HIS WORK THE GERMAN CHLORINATED 50
PERCENT
(9) BIPHENYL WAS USED AS A REFERENCE STANDARD."
(10) Q AND A 50-PERCENT BIPHENYL, THE ONE WHOSE
(11) WEIGHT IS 50-PERCENT CHLORINE?
(12) A YES.
(13) Q AND THE "REFERENCE STANDARD" MEANS WHAT,
(14) SIR, AS YOU UNDERSTAND IT?
(15) A IT'S A MATERIAL THAT IS PUT INTO THE
(16) INSTRUMENT THAT IS A KNOWN. IT IS A SAMPLE OF
THE
(17) COMMERCIAL MATERIAL THAT WE KNOW THE
ANALYSIS OF.
(18) IT PRODUCES A FINGERPRINT AND THAT
(19) FINGERPRINT IS MATCHED TO THE UNKNOWN TO SEE
WHICH IT
(20) RESEMBLES.
(21) Q SO YOU DEAL WITH A KNOWN SUBSTANCE AND
(22) YOU DETERMINE IF THE UNKNOWN SUBSTANCE IS
THE SAME?
(23) A CORRECT.
(24) Q THEN THE BOTTOM REFERENCE ON THAT PAGE,
(25) WOULD YOU READ THAT, BEGINNING WITH DR.
STICKLES?
(26) A "DR. STICKLES AT THE PAWTUXET LABORATORY
(27) IN MARYLAND WHO IS OUR REPRESENTATIVE WITH
THE OECD
(28) GROUP IS PARTICIPATING IN A JOINT ANALYTICAL
PROGRAM

Page 2023

(1) WITH WIDMARK."
(2) Q AND "OECD" REFERS TO WHO OR WHAT?
(3) A AS I REMEMBER, THAT IS THE ORGANIZATION
(4) OF ECONOMIC COOPERATION AND DEVELOPMENT.
(5) THIS IS A GROUP OF EUROPEAN COUNTRIES
(6) THAT WERE ORIGINALLY PART OF THE MARSHALL
PLAN.
(7) THEY KEPT TOGETHER UNDER THIS TITLE.
(8) Q I SEE.
(9) DO YOU KNOW DR. STICKLES?
(10) A YES, I KNEW HIM.
(11) Q WAS HE A SCIENTIST?
(12) A YES. HE WAS AN AVIAN SCIENTIST OF SOME
(13) SORT.
(14) Q IF YOU WOULD TURN TO THE NEXT PAGE,
(15) PLEASE, PAGE 9.
(16) A I HAVE IT.
(17) Q AND THE TOP SENTENCE I WOULD LIKE YOU TO
(18) READ BEGINNING WITH "ONE OBJECTIVE."
(19) A "ONE OBJECTIVE OUT OF THIS WORK IS TO
(20) BUILD A BACKGROUND OF INFORMATION ABOUT
PCB'S AND
(21) RESIDUES IN BIRDS AND FISH IN NONINDUSTRIAL
AREAS."
(22) Q LET ME BACK YOU UP ONE SENTENCE THAT ALSO
(23) STARTS THE SAME WAY, SIR, THAT I SHOULD HAVE
HELPED

(24) YOU OUT ON, "ONE OBJECTIVE."
(25) A OH, I SEE IT.
(26) "ONE OBJECTIVE OF THIS EXCHANGE IS TO
(27) DETERMINE ANALYTICAL DIFFICULTIES BETWEEN
(28) LABORATORIES AND DIFFERENT PROCEDURES."

Page 2024

(1) Q AND WHAT IS YOUR UNDERSTANDING OF WHAT
(2) THAT REFERS TO?
(3) A THAT REFERS TO THE INSTRUMENTS AND
(4) ACTIVITIES CONDUCTED IN THE LABORATORIES IN AN
(5) ATTEMPT TO ANALYZE FOR PCB'S.
(6) THERE ARE DIFFERENT METHODS FOR GETTING
(7) THE RIGHT SAMPLE, HOW TO TREAT THAT SAMPLE,
HOW TO
(8) PUT IT IN THE RIGHT MACHINE AND HOW TO
INTERPRET WHAT
(9) THE MACHINE IS SAYING.
(10) AND THERE WAS SOME EXCHANGE OF
(11) INFORMATION SO ALL THE LABORATORIES WOULD
USE THE
(12) SAME METHODS, AS MUCH AS POSSIBLE.
(13) Q SO THAT IF A FINDING IN ONE LABORATORY IS
(14) X, THEN THERE IS SOME CONFIDENCE THAT WHEN
ANOTHER
(15) LABORATORY DOES THE SAME STUDY AND GETS X
THAT THEY
(16) ARE LOOKING AT THE SAME THING?
(17) A THAT IS THE INTENT, YES, SIR.
(18) Q AND THEN THE NEXT SENTENCE I WOULD LIKE
(19) YOU TO READ IS A LITTLE WAYS DOWN, BEGINNING
"TO
(20) DATE."
(21) A "TO DATE NO REAL TOXICOLOGICAL (SIC) WORK
(22) HAS BEEN DONE IN WIDMARK'S OPINION WHICH HE,
AT
(23) LEAST, CAN UNDERSTAND."
(24) Q AND TOXICOLOGICAL (SIC) STUDIES AT THAT
(25) TIME HAD BEEN COMMENCED BY MONSANTO?
(26) A OH YES, YES.
(27) Q AND THAT WAS ONGOING AT THAT TIME?
(28) A CORRECT.

Page 2025

(1) Q THEN PULL DOWN A LITTLE FURTHER TO THREE
(2) INCHES DOWN THERE BEGINNING WITH
"WIDMARK."
(3) A "WIDMARK TAKES THE POSITION THAT WE MUST
(4) KNOW WHERE THE PCB COMPOUNDS COME FROM
AND MORE ABOUT
(5) THE TOXICOLOGICAL (SIC) EFFECTS."
(6) Q AND AT THAT POINT HE HADN'T ARRIVED AT
(7) ANY OPINION AS TO WHERE, INDEED, THE PCB
COMPOUNDS
(8) WERE COMING FROM THAT HE WAS LOOKING AT?
(9) A CORRECT.
(10) Q THEN IF YOU TURN TO THE NEXT PAGE,
(11) PLEASE.
(12) I WOULD LIKE YOU TO READ THE PORTION
(13) WHICH I HAVE HIGHLIGHTED AND BEGINS THE
THIRD -
(14) ACTUALLY THE SECOND LINE DOWN WITH THE
WORDS "WHEN
(15) ASKED."
(16) A "WHEN ASKED WHAT HE WOULD DO IF HE WERE
(17) IN A MANUFACTURER'S POSITION INVOLVING PCB,
WIDMARK
(18) COMMENTED AS FOLLOWS: ONE, RESTRICT PCB'S TO
CLOSED
(19) SYSTEMS."
(20) "TWO, FIND A SUBSTITUTE FOR PCB'S.
(21) "THREE, COME UP WITH A POSITIVE
(22) ANALYTICAL DATA SO THAT BIOLOGISTS,
ECOLOGISTS,

(23) CANNOT MISUSE IT."
(24) Q WAS IT YOUR UNDERSTANDING THAT THIS
(25) QUESTION WAS POSED BY ONE OF THE THREE
INDIVIDUALS
(26) THAT WAS VISITING HIM AT THE TIME?
(27) A YES, DEFINITELY.
(28) Q AND WERE THE COMMENTS OF DR. WIDMARK, IN

Page 2026

(1) FACT, TAKEN TO HEART BY MONSANTO?
(2) A YES, THEY WERE.
(3) IN FACT, THEY WERE INCORPORATED IN
(4) PROGRAMS LATER.
(5) Q OKAY. NOW, YOU MENTIONED, SIR, THAT IN
(6) ADDITION TO AMERICAN REPRESENTATIVES OF
MONSANTO
(7) CONTACTING RESEARCHERS AND DR. WIDMARK,
IN
(8) PARTICULAR, THERE WERE SOME
REPRESENTATIVES OF
(9) MONSANTO FROM EUROPE THAT ALSO WERE
CONTACTING
(10) RESEARCHERS IN THE EUROPEAN AREA -
(11) A YES.
(12) Q - TO OBTAIN THEIR FINDINGS?
(13) A YES, THERE WERE.
(14) Q AND WAS DR. HARDY INVOLVED IN THAT
(15) EFFORT, SIR?
(16) A YES.
(17) Q ALL RIGHT. I BELIEVE YOU WERE QUESTIONED
(18) YESTERDAY ON AN EXHIBIT 87, WHICH IS A REPORT
OF
(19) DR. HARDY ENTITLED "PRODUCT TOXICOLOGY,
AROCLORS."
(20) YOU ARE FAMILIAR WITH THIS?
(21) A YES, I AM.
(22) Q I WOULD LIKE YOU TO TURN TO THE SUMMARY
(23) PAGE, IF YOU WILL.
(24) YOU WERE QUESTIONED ON PART ON THIS THE
(25) OTHER DAY.
(26) I THINK IT'S PAGE 4, MR. PAPAGEORGE.
(27) A YES, I FOUND IT.
(28) Q ALL RIGHT. AND I WANT TO GO TO THAT

Page 2027

(1) STATEMENT IN THAT SUMMARY PAGE.
(2) AGAIN, MR. HARDY IS AN EMPLOYEE OF
(3) MONSANTO OR WAS AT THE TIME IN THE LONDON
OFFICE?
(4) A AT WHICH TIME, SIR?
(5) Q AT THE TIME OF THIS MEMO.
(6) A NO.
(7) AT THE TIME OF THIS MEMO HE WAS A RETIRED
(8) EMPLOYEE AND SERVING AS A CONSULTANT TO
MONSANTO IN
(9) EUROPE.
(10) Q YOU ARE CORRECT.
(11) ON THE TITLE PAGE IT SAYS, "NOW
(12) CONSULTANT"?
(13) A YES.
(14) Q "IN THE AREA OF PRODUCT TOXICOLOGY AND
(15) SAFETY"?
(16) A YES.
(17) Q IS IT YOUR UNDERSTANDING THAT HE VISITED
(18) A NUMBER OF SCIENTISTS AND PUT TOGETHER
THIS REPORT
(19) AND THIS IS A SUMMARY OF WHAT HE FOUND,
BASED ON
(20) THOSE VISITS?
(21) A THAT IS MY UNDERSTANDING.
(22) Q NOW, NUMBER ONE SAYS, "THERE CAN BE NO
(23) DOUBT THAT TRACES OF PCB'S, AROCLORS, ARE
TO BE FOUND
(24) IN WILDLIFE, FISH AND CERTAIN ITEMS OF HUMAN

DIET."

(25) WHAT WAS YOUR UNDERSTANDING OF THE WORD
(26) "TRACES," SIR?
(27) A IN THE PART PER MILLION, PART PER BILLION
(28) RANGE.

Page 2028

(1) Q AND NUMBER TWO, COULD YOU READ THAT FOR
(2) US, PLEASE.
(3) A "THERE IS LITTLE EVIDENCE TO SHOW HOW
(4) SERIOUS THIS MINOR CONTAMINATION WILL PROVE
TO BE.
(5) BUT WHAT EVIDENCE THERE IS IS REASSURING."
(6) Q WHAT WAS YOUR UNDERSTANDING OF THAT
(7) PARTICULAR PARAGRAPH, BASED ON YOUR
REVIEW OF THAT
(8) AND THE OTHER INFORMATION THAT YOU HAVE
OBTAINED?
(9) A WELL, FROM WHAT WAS OBSERVED HAPPENING IN
(10) THE ENVIRONMENT IT DIDN'T APPEAR THAT SERIOUS
DAMAGE
(11) WAS WIDESPREAD AND ATTRIBUTABLE TO A PCB
SITUATION SO
(12) FAR.
(13) Q ALL RIGHT. AND NUMBER 3, COULD YOU READ
(14) THAT FOR US, PLEASE.
(15) A "THERE IS LITTLE EVIDENCE TO SHOW HOW THE
(16) PCB CONTAMINATION ARISES.
(17) "IT MAY BE RUNOFF OF WASTE INTO RIVERS OR
(18) BY BURNING OF INDUSTRIAL WASTE WITH
SUBSEQUENT
(19) WASHING DOWN BY RAIN.
(20) "IT IS REMOTELY POSSIBLE THAT THE PCB'S
(21) MIGHT ARISE BY BIOCHEMICAL REACTION ON
INSECTICIDES
(22) AND OTHER CHLORINE-CONTAINING CHEMICALS
WHICH ARE
(23) SIMILARLY DISCHARGED INTO THE RIVERS, SEAS AND
(24) OCEANS.
(25) "IT COULD BE THAT AMONG THE VAST QUANTITY
(26) OF MATERIALS DESTROYED ON LAND AND AT SEA
DURING THE
(27) 1939-'45 WAR, SIGNIFICANT QUANTITIES OF
AROCLORS AND
(28) AROCLOR-CONTAINING MATERIALS FOUND THEIR
WAY INTO THE

Page 2029

(1) RIVERS, SEAS, ET CETERA, AND ARE BEING SLOWLY
(2) RELEASED BY CORROSION, EXTRACTION AND SO
FORTH.
(3) "SEE FOOTNOTE AT THE END OF REPORT."
(4) Q AND THESE WERE JUST POSSIBILITIES OR, IF
(5) YOU WILL, SPECULATION AS TO WHAT MIGHT BE
THE CASE BY
(6) DR. HARDY?
(7) A THIS IS SOME QUESTIONING RAISED BY A
(8) TECHNICAL PERSON IN THIS FIELD.
(9) HE IS OFFERING THOSE FOR THOUGHT HERE,
(10) FOR CONSIDERATION.
(11) Q HE DIDN'T KNOW AT THE TIME?
(12) A THAT'S TRUE.
(13) Q AND NUMBER 4, WOULD YOU READ THAT?
(14) A "A CONSIDERABLE MONSANTO EFFORT WILL BE
(15) NECESSARY TO OBTAIN THE NECESSARY
ANALYTICAL AND
(16) TOXICOLOGICAL INFORMATION FOR DEALING WITH
THIS
(17) THREAT TO OUR COMMERCIAL OPERATIONS."
(18) Q ALL RIGHT. AND YOU HAVE SPOKEN ALREADY
(19) OF EFFORTS IN THIS COUNTRY IN BOTH THE
ANALYTIC AREA
(20) AS WELL AS THE TOXICOLOGIC AREA.
(21) WAS THAT ALSO GOING ON IN EUROPE, IN

(22) **MONSANTO'S EUROPEAN OPERATION?**
 (23) **A IN MONSANTO EUROPE THE ANALYTICAL**
 (24) **RESEARCH AND STUDY WAS UNDERGOING.**
 (25) **THEY WERE ALSO CONDUCTING BIODEGRADATION**
 (26) **STUDIES.**
 (27) **THEY WERE NOT CONDUCTING ANY**
 (28) **TOXICOLOGICAL STUDIES.**

Page 2030

(1) **Q THE TOX STUDIES WERE DONE IN THIS**
 (2) **COUNTRY?**
 (3) **A THAT IS CORRECT.**
 (4) **Q NOW, DID MONSANTO AFTER GETTING THE**
 (5) **WIDMARK FINDINGS IN THE LATER FINDINGS OF**
 (6) **DR. RISEBROUGH TAKE A LOOK AT ITS OWN**
MANUFACTURING
 (7) **OPERATIONS TO SEE IF PCB'S MIGHT BE ESCAPING**
IN THAT
 (8) **MANNER?**
 (9) **A CERTAINLY.**
 (10) **Q AND WHAT STEPS DID MONSANTO TAKE IN THAT**
 (11) **REGARD, SIR?**
 (12) **A OH, THE INITIAL STEPS WAS ONE OF TRYING**
 (13) **TO FIND OUT WHERE AND HOW MUCH IN THE WAY OF**
PCB
 (14) **MATERIALS WERE BEING INTRODUCED INTO PLACES**
WHERE IT
 (15) **SHOULDN'T BE.**
 (16) **Q ALL RIGHT. AND WHO WAS IN CHARGE OF THAT**
 (17) **EFFORT DOMESTICALLY, SIR?**
 (18) **I GUESS WHO DID THE HANDS-ON WORK.**
 (19) **A THE HANDS-ON WORK, THERE IS NO ONE**
 (20) **PERSON, REALLY.**
 (21) **THE PLANT PERSONNEL PARTICIPATED IN**
 (22) **GATHERING SAMPLES.**
 (23) **Q AND WHO DID THE ANALYSIS?**
 (24) **A THE ANALYSES, THE SAMPLES WERE SENT TO**
 (25) **ST. LOUIS TO BE CONDUCTED BY DR. TUCKER'S**
TEAM.
 (26) **Q SO DR. TUCKER'S TEAM WAS INVOLVED IN THE**
 (27) **ANALYSIS OF THESE SAMPLES?**
 (28) **A YES, THEY WERE.**

Page 2031

(1) **Q COULD YOU PLEASE TAKE A LOOK AT EXHIBIT**
 (2) **71, WHICH IS ONE THAT YOU WERE QUESTIONED**
ON THE
 (3) **OTHER DAY.**
 (4) **A I HAVE IT.**
 (5) **Q AND THIS IS A MEMO TO BOTH MR. RICHARD**
 (6) **AND MR. WHEELER FROM MR. TUCKER.**
 (7) **AND THE DATE OF THAT IS FEBRUARY 25,**
 (8) **1969?**
 (9) **A IT IS.**
 (10) **Q SO THAT WOULD BE RIGHT AFTER THE**
 (11) **DR. RISEBROUGH NEWS AND BEFORE THE PRESS**
RELEASE THAT
 (12) **WE DISCUSSED?**
 (13) **A YES.**
 (14) **Q AND WHAT IS MR. TUCKER REPORTING IN THIS**
 (15) **MEMO, SIR?**
 (16) **A HE IS REPORTING THE ANALYTICAL RESULTS**
 (17) **THAT HE OBTAINED ANALYZING SOME WATER AND**
SEDIMENT
 (18) **SAMPLES FROM THE ANNISTON, ALABAMA PLANT**
AREA.
 (19) **Q ALL RIGHT. AND WHERE WAS HE IN TERMS OF**
 (20) **DEVELOPING BOTH THE ANALYTIC EQUIPMENT AND**
HIS
 (21) **METHODOLOGY AT THIS TIME?**
 (22) **A BY FEBRUARY '69 IT WAS PRETTY FAR ALONG.**
 (23) **BUT THERE IS - EXCUSE ME, THERE IS STILL**
 (24) **SOME STUDYING NEEDED TO IMPROVE ON THE**
QUANTIFICATION

(25) **PROBLEM.**
 (26) **Q ALL RIGHT. AND IN THE SECOND HIGHLIGHTED**
 (27) **PARAGRAPH THERE, DOES HE MAKE A**
RECOMMENDATION IN
 (28) **TERMS OF FURTHER EVALUATION OF THE**
EFFLUENCE FROM THE

Page 2032

(1) **MONSANTO PLANT IN ANNISTON?**
 (2) **A THAT IS THE NEXT TO LAST PARAGRAPH?**
 (3) **Q YES, SIR.**
 (4) **A YES, SIR. UH-HUH.**
 (5) **Q YESTERDAY YOU WERE QUESTIONED ABOUT -**
 (6) **MR. RICHARD HERE IS ONE OF THE RECIPIENTS OF**
THIS
 (7) **MEMO.**
 (8) **YOU WERE QUESTIONED ABOUT MR. RICHARD'S**
 (9) **OPINION CONCERNING THE LIKELIHOOD OF A BAN**
ON PCB'S.
 (10) **DO YOU RECALL THAT?**
 (11) **A I DO.**
 (12) **Q AFTER TAKING OVER YOUR JOB IN JANUARY OF**
 (13) **1970, SIR, AND ACQUAINTING YOURSELF WITH THE**
 (14) **SITUATION AS YOU FOUND IT, WHAT WAS YOUR**
VIEW OF THAT
 (15) **ISSUE?**
 (16) **A I HAD A PERSONAL SUSPICION, THE BEST I**
 (17) **COULD CALL IT, AT THE TIME. BECAUSE I DIDN'T**
HAVE
 (18) **ALL THE INFORMATION I WOULD HAVE LIKED TO HAVE**
HAD.
 (19) **WHAT I KNEW AT THAT TIME AND THE**
 (20) **ASSOCIATION WITH DDT AND FRANKLY SOME OF THE**
EMOTIONS
 (21) **THAT WERE BEING GENERATED, THAT THE**
POSSIBILITY FOR A
 (22) **PERHAPS NOT A TOTAL BAN BUT A RESTRICTED**
REGULATION
 (23) **OF PCB'S WAS POSSIBLE.**
 (24) **I USED THAT CONCEPT TO KIND OF GUIDE ME**
 (25) **IN THE KINDS OF THINGS MONSANTO MIGHT DO TO**
MEET THAT
 (26) **SITUATION.**
 (27) **Q MR. TALLON I BELIEVE QUESTIONED YOU AT OR**
 (28) **ABOUT THE TIME YOU WERE DISCUSSING DR.**
RICHARD'S VIEW

Page 2033

(1) **ON THE POSSIBILITY OF A BAN ABOUT SALMON**
FISHING, I
 (2) **BELIEVE, IN LAKE MICHIGAN AND THE GOVERNOR.**
 (3) **WHEN DID THAT ISSUE ARISE, TO YOUR**
 (4) **RECOLLECTION, SIR?**
 (5) **A THE BEST I CAN RECALL, AND I HAVE GIVEN**
 (6) **THIS SOME THOUGHT, THE GOVERNOR HIMSELF**
WASN'T
 (7) **INVOLVED.**
 (8) **BUT THERE WAS AN AGENCY WITHIN THE STATE,**
 (9) **IT MIGHT HAVE BEEN THE PUBLIC HEALTH**
DEPARTMENT.
 (10) **THEY ISSUED SOME ADVISORIES, NOT**
 (11) **REGULATIONS. THEY WERE ADVISING THE PUBLIC,**
 (12) **ESPECIALLY THOSE WHO CAUGHT A LOT OF FISH**
AND ATE
 (13) **THERE CATCH, TO LIMIT THE INTAKE OF FISH**
THROUGH
 (14) **THEIR DIETS.**
 (15) **THIS HAPPENED - OH, THIS WAS AFTER I WAS**
 (16) **RELIEVED OF THE PCB ASSIGNMENT.**
 (17) **SO IT WAS ABOUT '78 OR SO.**
 (18) **Q SO IT WASN'T IN THE TIME FRAME OF LATE**
 (19) **60'S OR EARLY 70'S?**
 (20) **A NO, NO.**
 (21) **THAT WAS MUCH LATER, ALTHOUGH THERE WAS A**

(22) LOT OF TALK AT THE TIME ABOUT PCB'S IN LAKE MICHIGAN,
(23) NOTHING LIKE THIS CAME UP.
(24) Q OKAY. NOW, WITH RESPECT TO THE
(25) RECOMMENDATIONS HERE ABOUT FURTHER EVALUATION, WAS
(26) THAT, IN FACT, CARRIED OUT TO YOUR UNDERSTANDING?
(27) A OH, YES, DEFINITELY.
(28) Q I WOULD LIKE TO TURN YOUR ATTENTION TO

Page 2034

(1) EXHIBIT 103, WHICH IS AN OCTOBER 8TH, 1969 MEMO FROM
(2) MR. TUCKER TO MR. VODDEN; IS THAT CORRECT?
(3) A VODDEN?
(4) Q AND RUABON.
(5) AND WHAT IS RUABON OR WHERE IS RUABON?
(6) A RUABON IS A CITY IN WALES WHERE A
(7) MONSANTO FACILITY WAS LOCATED, A RESEARCH AND
(8) PRODUCTION FACILITY.
(9) Q AND SOME ANALYSIS WAS DONE THERE ABOUT
(10) THE PRESENCE OF PCB'S?
(11) A NO.
(12) THE ANALYSES WERE DONE IN ST. LOUIS BY
(13) DR. TUCKER.
(14) Q OF SAMPLES -
(15) A OF MATERIALS SENT FROM THAT LOCATION.
(16) Q ALL RIGHT. AND THEN THERE IS A MAP
(17) ATTACHED TO THAT?
(18) A YES.
(19) Q AND THOSE SAMPLES WERE TAKEN WITHIN
(20) PROXIMITY TO THE OUTFLOW, IS THAT WHAT YOU WOULD CALL
(21) IT?
(22) A YES. IT WAS NEAR THE PLANT THERE.
(23) Q NEAR THE PLANT?
(24) A YES.
(25) Q ALL RIGHT. AND FOUR DIFFERENT LOCATIONS
(26) AND THOSE ARE REPORTED IN THIS MEMORANDUM?
(27) A YES. THOSE WERE LOCATIONS OF WHERE THE
(28) SAMPLE WAS TAKEN?

Page 2035

(1) Q YES.
(2) A NOT THE PLANT LOCATION?
(3) Q NO, NO.
(4) THE CIRCLED AREAS ON PAGE 2, I GUESS I
(5) SHOULD SHOW THAT, THERE ARE FOUR CIRCLES THERE.
(6) IS THAT YOUR UNDERSTANDING AS TO WHERE
(7) THE SAMPLES WERE TAKEN?
(8) A YEAH.
(9) THE CIRCLES ARE AROUND THE CONCENTRATION
(10) OF PCB'S DETECTED.
(11) ABOVE THAT IS THE NAME OF THE SITE.
(12) Q THE CITY?
(13) A THE CITY, TOWN OR VILLAGE.
(14) Q AND THEN THE PLANT IS LOCATED WHERE, IF
(15) YOU KNOW?
(16) A AS BEST I RECALL, IT ISN'T SHOWN ON THAT
(17) CHART, BUT IT'S BELOW THE AREA THERE THAT IS DENOTED
(18) AS THE CITY OF NEWPORT.
(19) Q SOMEWHERE IN THIS AREA?
(20) A YES, ON THAT WATER ESTUARY THAT LEADS -
(21) THE RIVER THAT LEADS INTO NEWPORT.
(22) Q WHY DON'T YOU USE THE POINTER THERE.
(23) A THE PLANT IS ABOUT HERE, AS BEST I
(24) RECALL.
(25) AT THE PLANT YOU COULD SEE THIS
(26) WATERWAY.

(27) Q OKAY.
(28) A IT WAS - NEVER MEASURED, OF COURSE, BUT

Page 2036

(1) IT LOOKED TO ME TO BE ABOUT THE SIZE OF A FOOTBALL
(2) FIELD AND A HALF.
(3) Q AND COULD YOU POINT OUT THE FOUR
(4) LOCATIONS WHERE THE SAMPLES WERE TAKEN?
(5) A TWO, THREE AND FOUR.
(6) Q OKAY. AND THESE WERE MUD SAMPLES, RIGHT?
(7) A MUD, YES.
(8) Q AND IN PARTICULAR THERE IS, IF YOU LOOK
(9) AT THE FIRST PAGE, AGAIN - BY THE WAY, DO MUD
(10) SAMPLES TEND TO GIVE YOU HIGHER READINGS THAN YOU
(11) WOULD FIND IF YOU ARE JUST TAKING IT OUT OF WATER?
(12) A OH, YES.
(13) Q WHY IS THAT?
(14) A BECAUSE THE PCB'S ARE NOT VERY SOLUBLE IN
(15) WATER AND THEY ARE HEAVY. SO THEY WILL SINK TO THE
(16) BOTTOM AND FIND THEMSELVES IN THE MUD LAYER.
(17) THAT IS WHERE THEY WILL CONCENTRATE.
(18) Q AND THERE IS ONE FINDING HERE OF 2068
(19) PARTS PER BILLION?
(20) A PARTS PER BILLION.
(21) Q HOW WOULD THAT TRANSLATE INTO PARTS PER
(22) MILLION?
(23) A 2.068 PARTS PER MILLION.
(24) Q OKAY. NEXT I WOULD LIKE YOU TO, IF YOU
(25) WOULD, PLEASE, TURN TO EXHIBIT 110.
(26) A I HAVE IT.
(27) Q CAN YOU IDENTIFY THIS FOR US, BRIEFLY,
(28) WHO THE AUTHOR IS?

Page 2037

(1) A THE AUTHOR, DR. E. S. TUCKER.
(2) IT'S -
(3) Q I THINK YOU HAVE TO GO TO THE THIRD PAGE
(4) TO GET THE DATE.
(5) A THE DATE IS NOVEMBER 10TH, 1969.
(6) AND IT'S A SUMMARY REPORT BY DR. TUCKER
(7) OF WHAT WAS KNOWN ABOUT PCB CONTENT IN SAMPLES.
(8) Q ALL RIGHT. AND WHAT WAS YOUR
(9) UNDERSTANDING OF WHAT DR. TUCKER DID TO COMPILE THE
(10) ATTACHMENT TO HIS MEMO THAT YOU DISCUSSED AT SOME
(11) LENGTH YESTERDAY?
(12) A OF COURSE HE LOOKED IN HIS PERSONAL FILES
(13) OF INFORMATION THAT HE HAD GATHERED SINCE ARRIVING ON
(14) THE JOB.
(15) HE, OF COURSE, HAD PERSONAL CONTACT WITH
(16) SOME OF THE LABORATORIES THAT ARE LISTED.
(17) AND HE, OF COURSE, INITIATED THE TAKING
(18) OF MANY SAMPLES, PRIMARILY WITHIN MONSANTO, THAT ARE
(19) SEEN ON THIS LISTING.
(20) Q OKAY. I HAVE THE FIRST PAGE UP THERE OF
(21) THE ATTACHMENT.
(22) DO YOU HAVE THAT IN FRONT OF YOU AS WELL,
(23) NOW?
(24) A I DO.
(25) Q LET'S GO THROUGH THAT TOGETHER, IF WE
(26) COULD.
(27) I WANT YOU TO LOOK FOR 1242, ALL RIGHT?
(28) A ALL RIGHT.

Page 2038

(1) Q AND - TELL ME WHAT YOUR UNDERSTANDING IS
(2) AS TO WHAT IS BEING MEASURED HERE.

(3) IS THIS PCB'S IN, WHAT?
 (4) A THEY ARE MEASURING THE AMOUNT OF PCB
 (5) FOUND IN THE SAMPLE AS DESCRIBED IN THE 4TH COLUMN.
 (6) Q ALL RIGHT. THE MATRIX COLUMN?
 (7) A THE MATRIX COLUMN.
 (8) Q OKAY. AND THEN THE COLUMN TO THE LEFT OF
 (9) THAT WOULD BE THE TECHNIQUE USED TO MAKE THE
 (10) MEASUREMENT?
 (11) A THE TECHNIQUE, PRIMARILY RELATING TO --
 (12) POINTING OUT TWO KINDS OF INSTRUMENTS THAT WERE
 (13) AVAILABLE TO THAT LABORATORY TO DO THIS WORK.
 (14) Q ALL RIGHT. AND THEN MOVING LEFT FURTHER,
 (15) WE HAVE THE AMOUNT OF PCB FOUND, CORRECT?
 (16) A WHERE IT IS STATED.
 (17) THEN THERE ARE -- SHOWN WHICH INDICATE
 (18) THAT THE QUANTIFICATION WAS EITHER NOT PERFORMED OR
 (19) QUESTIONABLE.
 (20) Q ALL RIGHT. AND THE TYPE, THEN, WOULD BE
 (21) TO THE LEFT OF THAT?
 (22) A CORRECT.
 (23) Q SO TYPE, IF KNOWN, WOULD BE INDICATED
 (24) HERE.
 (25) FOR EXAMPLE, THE FIRST ONE WHERE IT IS
 (26) INDICATED WOULD BE 1254?
 (27) A YES.
 (28) Q DO YOU SEE THAT?

Page 2039

(1) AND THEN A 1242?
 (2) A YES.
 (3) Q BELOW THAT.
 (4) OKAY. NOW, LET'S GET THE REST OF THE
 (5) COLUMNS STRAIGHT.
 (6) THE GEOGRAPHIC LOCATION, THAT WOULD BE
 (7) WHERE THE SAMPLE WAS TAKEN UP HERE?
 (8) A YES.
 (9) Q ALL RIGHT. AND WHO DID THE TAKING OF THE
 (10) SAMPLE OR THE ANALYSIS, I SHOULD SAY?
 (11) A WHO DID THE ANALYTICAL WORK IS THE WHO
 (12) COLUMN.
 (13) Q AND WHERE THE ANALYSIS WAS PERFORMED IS
 (14) THE NEXT COLUMN?
 (15) A CORRECT.
 (16) Q AND THEN WE HAVE DATE HERE WHICH I --
 (17) DATE COLUMN, RIGHT?
 (18) A THAT IS THE DATE AT WHICH THE RESULTS OF
 (19) THAT STUDY WERE REPORTED.
 (20) Q OKAY. NOW, WITH RESPECT TO
 (21) IDENTIFICATION ON 1254 THERE, WE HAVE 89
 (22) PARTS PER
 (23) MILLION?
 (24) A YES.
 (25) Q FOUND IN CHICKEN AND IN EGGS IN BRITAIN;
 (26) IS THAT RIGHT?
 (27) A THAT IS RIGHT.
 (28) Q ALL RIGHT. AND THEN THE FIRST 1242
 THERE, DO YOU SEE THAT?

Page 2040

(1) A I DO.
 (2) Q ALL RIGHT. THAT IS IN GOLDFISH?
 (3) A YES.
 (4) Q NOW IS THAT TEST, TO YOUR UNDERSTANDING,
 (5) ONE THAT WAS A GOLDFISH IN A LABORATORY
 STUDY OR A
 (6) SAMPLE TAKEN OUT OF NATURE OR THE
 ENVIRONMENT?
 (7) A THIS WAS A SITUATION WHERE GOLDFISH IN A
 (8) LABORATORY AQUARIUM WERE EXPOSED TO
 AROCLOR 1242.

(9) Q SO THAT WAS PART OF AN EXPERIMENT, A
 (10) LABORATORY TEST?
 (11) A YES.
 (12) Q AND THEN THE RESULTS OF THE PCB'S IN THE
 (13) GOLDFISH WAS MADE; IS THAT RIGHT?
 (14) A CORRECT.
 (15) Q AND THEN THE FIRST 1254 SAMPLE THAT WE
 (16) LOOKED AT, THAT WAS, WE INDICATED, CHICKEN
 AND EGGS,
 (17) RIGHT?
 (18) DO YOU KNOW, WAS THAT A LABORATORY STUDY?
 (19) A IT'S MY UNDERSTANDING IT WAS, YES.
 (20) Q HOW ABOUT THE 1260 AND 1254 ON THE BOTTOM
 (21) OF THE FIRST PAGE THERE, WAS THAT --
 (22) A THE 1260 WAS REALLY A DESIGNATION BY THE
 (23) INVESTIGATOR, DR. KOEMAN, OF WHAT HE THOUGHT
 THE PCB
 (24) FOUND IN THE RIVER RHINE LOOKED LIKE.
 (25) Q ALL RIGHT. AND HE FOUND THE 1260, THAT
 (26) WAS HIS I.D.
 (27) A THAT IS WHAT HIS INTERPRETATION WAS.
 (28) THE LAST ENTRY THERE, AROCLOR 1254, IS

Page 2041

(1) DR. RISEBROUGH'S OPINION REGARDING WHAT HE
 FOUND IN
 (2) THE SEA BIRD AND SEA BIRD EGGS.
 (3) Q SO THOSE WERE BOTH THE HEAVIER
 (4) CHLORINATED PCB'S?
 (5) A THEY ARE.
 (6) Q ALL RIGHT. NOW, TURNING THE PAGE, IF YOU
 (7) WOULD.
 (8) A YES.
 (9) Q ALL RIGHT. THE FIRST THREE THERE
 (10) INVOLVED 1242?
 (11) A THEY DO.
 (12) Q NOW, WHERE WERE THESE TAKEN?
 (13) A THESE WERE TAKEN FROM A NATURAL DRAINAGE
 (14) DITCH, I CALLED IT, REFERRED TO AS SNOW CREEK
 THAT
 (15) RUNS RIGHT BY THE FENCE LINE OF THE MONSANTO
 (16) ANNISTON, ALABAMA PLANT.
 (17) Q SO THESE THREE, THESE WERE SAMPLED BY
 (18) DR. TUCKER?
 (19) A THEY WERE SAMPLED BY PLANT PERSONNEL AND
 (20) SHIPPED TO DR. TUCKER'S LABORATORY.
 (21) Q I WILL GET IT RIGHT.
 (22) BUT THESE WERE -- ANNISTON IS WHERE THE
 (23) MONSANTO FACILITY WAS AND THE SAMPLES
 WERE TAKEN IN
 (24) THE IMMEDIATE VICINITY OF THE MONSANTO
 FACILITY?
 (25) A JUST ALMOST OUTSIDE THE PLANT FENCE.
 (26) Q THE NEXT TWO 1242'S, THOSE SAMPLES WERE
 (27) ALSO EXAMINED BY DR. TUCKER AND TAKEN FROM
 WGK, WHICH
 (28) IS WHAT?

Page 2042

- (1) A THAT IS THE W. G. KRUMMRICH PLANT AT
- (2) SAUGET, ILLINOIS.
- (3) Q OKAY. AND NEXT, 1242 AND THE NEXT ONE
- (4) AFTER THAT, THOSE WERE ALSO IN THE VICINITY OF THE
- (5) KRUMMRICH PLANT?
- (6) A YES, DOWN TO THE WORK DONE BY MR. PRESS.
- (7) THAT IS SEPARATE.
- (8) Q OKAY. NOW, SO THOSE ARE ALL, AGAIN,
- (9) KRUMMRICH, THOSE FIVE OR FOUR, I'M SORRY, ARE ALL THE
- (10) KRUMMRICH FACILITY SO WE HAVE THE ANNISTON AND
- (11) KRUMMRICH SO FAR?
- (12) A CORRECT.
- (13) Q AND THEN WHAT IS YOUR UNDERSTANDING OF
- (14) WHAT L. PRESS AT HARTFORD WAS EXAMINING?
- (15) A MR. PRESS WAS INVOLVED IN SAMPLING AIR IN
- (16) THE WORKPLACE TO DETERMINE THE AMOUNT OF PCB'S IN
- (17) AROCLOR 1242, IN THIS CASE, THAT WERE PRESENT IN THE
- (18) WORKPLACE TO SEE IF THERE WAS COMPLIANCE WITH THE
- (19) RECOMMENDED EXPOSURE LIMIT, WHICH, INCIDENTLY, IS, AS
- (20) I RECALL, ONE MILLIGRAM PER CUBIC METER WHICH IS 100
- (21) MICROGRAMS.
- (22) Q SO THE 26.5 TO 56.5 MICROGRAMS WOULD BE
- (23) WITHIN THIS STANDARD?
- (24) A WITHIN THAT STANDARD.
- (25) THAT STANDARD IS THE ONE THAT IS OSHA
- (26) ADOPTED, CURRENTLY.
- (27) Q SO THAT IS STILL THE CURRENT STANDARD FOR
- (28) AIRBORNE?

Page 2043

- (1) A YES.
- (2) Q AND THEN GOING LOWER TO 1254, THAT IS A
- (3) SAMPLE FOUND IN HUMAN FAT?
- (4) A YES.
- (5) Q AND THE FINDING WAS FOR, AGAIN, THE
- (6) HIGHER CHLORINATED?
- (7) A YES.
- (8) Q ALL RIGHT. LET'S GO TO PAGE 3.
- (9) ALL RIGHT. NOW, YOU SEE THE FIRST SIX
- (10) ARE ALL BIO-TEST?
- (11) A YES.
- (12) Q AND WAS BIO-TEST INVOLVED AT ALL IN
- (13) MONSANTO'S RESEARCH EFFORT?
- (14) A BIO-TEST REFERS TO THE INDUSTRY BIO-TEST
- (15) LABORATORIES WHICH IS A TOXICOLOGY
- (16) LABORATORY WHICH
- (17) WAS CONDUCTING STUDIES ON PCB'S ON SEVERAL SPECIES OF
- (18) WILDLIFE AND TEST ANIMALS.
- (19) Q SO THIS WAS PART OF MONSANTO'S TOX STUDY PROGRAM?
- (20) A YES.
- (21) Q AND THEY HAD CONTACTED WITH BIO-TEST AS
- (22) AN OUTSIDE LAB; IS THAT CORRECT?
- (23) A THAT IS CORRECT.
- (24) Q AND THESE ARE THE RESULTS OF THOSE TESTS?
- (25) A OF SOME OF THE TEST WORK, YES.
- (26) Q SOME OF THEM?
- (27) A THIS IS ORIENTED TO THE FISH STUDY.
- (28) Q AND BELOW THE BIO-TEST ARE ALL FINDINGS

Page 2044

- (1) IN THE HIGHER CHLORINATED PCB'S IN PARTICULAR 1254,
- (2) CORRECT?
- (3) A EXCEPT FOR THE FIRST TWO, YES.
- (4) Q THE FIRST BEING WHAT BIO-TEST WAS DOING AS A LABORATORY, RIGHT?
- (5) A WELL, ALL SIX ARE LABORATORY STUDIES.
- (6) THE FIRST TWO INVOLVE AROCLOR 1242.
- (7) THE NEXT TWO ARE 54.
- (8) AND THE FINAL TWO ARE 60.
- (9) Q OKAY. NOW, THE NEXT PAGE, AGAIN, THESE
- (10) ARE ALL TESTS PERFORMED BY DR. TUCKER?
- (11) A YES.
- (12) Q AND WE ARE DEALING WITH 12 - HE IS,
- (13) AGAIN, FINDING 1242 IN WATER AND SEDIMENT IN THE
- (14) VICINITY OF ANNISTON?
- (15) A YES.
- (16) Q AND YOU WILL SEE LOWER THERE, THERE IS A
- (17) REFERENCE THERE TO PENSACOLA AND ESCAMBIA.
- (18) IS THAT ALSO A MONSANTO FACILITY?
- (19) A YES.
- (20) I'M LOOKING FOR -
- (21) Q I'M SORRY.
- (22) IT'S DOWN NEAR THE BOTTOM THERE?
- (23) A YES, I SEE IT.
- (24) 1242, REFERENCE TO PENSACOLA.
- (25) THAT IS A MONSANTO PLANT LOCATION.
- (26) Q AND YOUR UNDERSTANDING IS THAT THOSE
- (27) SAMPLES WERE TAKEN IN IS IMMEDIATE VICINITY OF THAT

Page 2045

- (1) PLANT?
- (2) A YES.
- (3) Q AND THEN IN THE BOTTOM THERE THERE ARE
- (4) THREE SAMPLES FROM NEWPORT, UK OR FOUR WHICH WE JUST
- (5) DISCUSSED A SHORT TIME AGO?
- (6) A CORRECT.
- (7) Q AND ALL OF THESE WERE PERFORMED AS PART
- (8) OF MONSANTO'S EFFORT TO FIND OUT WHAT WAS IN THE
- (9) VICINITY OF ITS PLANTS; IS THAT RIGHT?
- (10) A CORRECT.
- (11) Q TO MEASURE SEDIMENT AND WATER IN THE
- (12) IMMEDIATE VICINITY OF ITS PLANTS, PENSACOLA,
- (13) KRUMMRICH, ANNISTON?
- (14) A CORRECT.
- (15) Q AND THE SAME WOULD BE TRUE ON THE NEXT
- (16) PAGE, THE LAST PAGE?
- (17) A FOR THE KRUMMRICH PLANT?
- (18) Q RIGHT. DOWN TO THE MARYLAND COOP?
- (19) A YES.
- (20) Q AND MARYLAND COOP WERE SAMPLES THAT THE
- (21) DOCTOR OBTAINED AND EXAMINED ALSO?
- (22) A YES.
- (23) Q AND WHAT DOES A FINDING OF LESS THAN ONE
- (24) PART PER BILLION MEAN?
- (25) A THAT TELLS THE READER THAT - THAT IS THE
- (26) LIMITS OF THE INSTRUMENT.
- (27) IF THERE IS ANY THERE, IT'S
- (28) NON-DETECTABLE.

Page 2046

- (1) IF THERE IS ANY THERE, IT CAN'T SEE IT.
(2) Q OKAY. SO AS OF WHAT DR. TUCKER WAS ABLE
(3) TO FIND AS OF THAT TIME, WERE THERE ANY, TO
YOUR
(4) KNOWLEDGE, ANY FINDINGS OF 1242, OTHER THAN
IN
(5) LABORATORY STUDIES OR IN THE IMMEDIATE
VICINITY OF
(6) PLANTS THAT WERE FOUND OUT IN THE GREATER
ENVIRONMENT
(7) AND REPORTED?
(8) A THAT IS CORRECT.
(9) Q THERE WERE NONE; IS THAT CORRECT?
(10) A THAT IS CORRECT.
(11) Q THE FINDINGS WERE ALL OF THE HIGHER
(12) CHLORINATED?
(13) A YES.
(14) Q COULD YOU TAKE A LOOK AT 121, PLEASE.
(15) WHILE YOU ARE LOOKING FOR THAT, JUST
(16) TO -- THE REPORT HERE, OF DR. TUCKER WAS AT
THE END
(17) OF 1969; IS THAT CORRECT?
(18) A THAT IS CORRECT.
(19) THAT IS THE SUMMARY OF EVERYTHING KNOWN
(20) IN THE WAY OF ANALYTICAL RESULTS.
(21) Q AS OF THAT TIME THAT -- OF DR. TUCKER?
(22) A FROM '66 TO '69.
(23) Q THAT DR. TUCKER WAS ABLE TO ASSEMBLE?
(24) A CORRECT.
(25) WHAT WAS THE NUMBER?
(26) Q TRANSWESTERN EXHIBIT 121, PLEASE.
(27) A I HAVE IT.
(28) Q ALL RIGHT. AND YOU WERE QUESTIONED ON

Page 2047

- (1) THIS YESTERDAY.
(2) DO YOU RECALL THAT?
(3) A I DO.
(4) Q AND THIS WAS WHAT TYPE OF STUDY THAT
(5) DR. TUCKER AND HIS GROUP WERE PERFORMING
AT THE TIME?
(6) A THIS IS A STATUS REPORT THAT COVERS, FROM
(7) WHAT I -- REFRESHING MY MEMORY HERE,
DETERMINED ARE
(8) THREE DIFFERENT KINDS OF STUDIES.
(9) Q OKAY.
(10) A TO DETERMINE THE FATE OF PCB'S IN
(11) ANALYSIS TERMS.
(12) Q OKAY. SO THAT WOULD BE THE
(13) BIODEGRADATION?
(14) A YES.
(15) Q ALL RIGHT. AND LET'S JUST FOCUS ON THAT
(16) FOR A MINUTE.
(17) AND HOW LONG HAD THE BIODEGRADATION WORK
(18) BEEN GOING ON AS OF JANUARY, 1970, WHICH
WAS ALMOST,
(19) YOU KNOW, THE FIRST MONTH ON THE JOB FOR
YOU?
(20) A OH, STARTING IN ABOUT '69 OR SO.
(21) LET'S SAY EIGHT MONTHS OR SO.
(22) Q ALL RIGHT. AND THE TITLE OF THIS IS
(23) "AROCOR WILDLIFE MONTHLY SUMMARY."
(24) WAS DR. TUCKER PREPARING STATUS REPORTS
(25) ON A MONTHLY BASIS?
(26) A HE WAS TO HIS SUPERVISOR DR. KELLER.
(27) Q AND COPIES WERE SENT TO MR. WHEELER AND
(28) DR. RICHARD, YOURSELF, AND A MR. FERRAR?

Page 2048

- (1) A YES.
(2) Q ALL RIGHT. AND SO PERIODICALLY HE WOULD
(3) SEND YOU ONE AND TELL YOU WHERE HE WAS ON
THE
(4) BIODEGRADATION STUDY?
(5) A THAT IS THE PURPOSE YES.
(6) Q AND WHAT WAS THE FINDING WITH RESPECT TO
(7) THE STUDY DISCUSSED IN THE FIRST PARAGRAPH
THAT YOU
(8) WERE QUESTIONED ON YESTERDAY?
(9) I WILL HIGHLIGHT IT.
(10) A HIS STUDY ON RIVER WATER -- I WILL JUST
(11) READ IT THE WAY IT'S WRITTEN.
(12) Q THAT WILL BE FINE.
(13) A "AROCOR 1242, 1248 AND 1254 REMAIN
(14) UNAFFECTED AFTER AN EXPOSURE PERIOD OF FIVE
WEEKS."
(15) Q AND WHAT IS YOUR UNDERSTANDING OF WHAT
(16) DR. TUCKER WAS DOING WITH RESPECT TO THIS
PARTICULAR
(17) ANALYSIS OR EXAMPLE?
(18) A HE WAS INTRODUCING THESE PCB'S MENTIONED
(19) INTO SAMPLES OF NATURAL RIVER WATER THAT HE
HAD
(20) COLLECTED FROM A RIVER NEAR THE ST. LOUIS
PLANT THAT
(21) WAS NOT IN AN INDUSTRIAL AREA.
(22) AND HE WAS HOPING THAT WHEN HE PUT THE
(23) PCB'S IN THIS RIVER WATER THAT HE MIGHT NOTE
SOME
(24) CHANGE.
(25) AFTER FIVE WEEKS HE DIDN'T SEE ANY.
(26) Q AND THEN IT GOES ON IN THE NEXT SENTENCE
(27) TO SAY WHAT?
(28) A "THE SAMPLES FROM THE LAST EXPOSURE

Page 2049

- (1) PERIOD, HE HAD DONE THE TEST BEFORE, EIGHT
WEEKS, ARE
(2) PRESENTLY IN THE PROCESS OF BEING ANALYZED."
(3) Q SO AS FAR AS THIS MEMO GOES ON THIS
(4) STATUS REPORT, AFTER FIVE WEEKS IN THE RIVER
WATER,
(5) HE HADN'T SEEN ANY CHANGE?
(6) A SO FAR, YES.
(7) Q SO FAR.
(8) NOW, LET'S SAY IN THE TIME FRAME OF
(9) JANUARY, 1970.
(10) IF YOU WOULD TAKE A LOOK AT 122, WHICH I
(11) THINK IS THE NEXT IN ORDER ON YOUR BOOK
THERE.
(12) THAT IS A MEMO FROM MR. WHEELER TO
(13) MR. CAMERON.
(14) YOU RECEIVED A COPY.
(15) YOU WERE EXAMINED ON THIS YESTERDAY.
(16) THIS INVOLVES TOXICOLOGIC STUDIES; IS
(17) THAT CORRECT?
(18) A YES.
(19) Q AND WITH RESPECT TO THESE STUDIES, WOULD
(20) YOU TAKE A LOOK AT THE SECOND PARAGRAPH.
(21) WOULD YOU READ THAT FOR US, PLEASE.
(22) A IT'S A LITTLE BIT ILLEGIBLE, BUT I WILL
(23) TRY.
(24) Q I WILL HELP YOU IF I CAN.
(25) A WE HAVE GIVEN COPIES OF THIS DATA TO ONE
(26) U.S. CUSTOMER, THE USFDA, AND ONE OR TWO
OTHER STATE
(27) AGENCIES.
(28) Q ALL RIGHT. GO AHEAD.

Page 2050

- (1) A "I DON'T SEE WHY THIS INFORMATION CANNOT
(2) BE RELEASED WITH DISCRETION IN BRITAIN OR
EUROPE."
(3) Q SO WAS IT YOUR UNDERSTANDING IN JANUARY
(4) WHEN YOU FIRST STARTED ON YOUR JOB THAT
RESULTS OF
(5) THESE STUDIES WERE BEING SHARED WITH
CUSTOMERS, THE
(6) U.S. GOVERNMENT IN THE FORM OF THE FDA, AND
WHAT IS
(7) THE FDA BY THE WAY?
(8) A THE FOOD AND DRUG ADMINISTRATION.
(9) Q AND STATE AGENCIES?
(10) A STATE AGENCIES USUALLY REPRESENT EITHER
(11) PUBLIC HEALTH DEPARTMENTS LIKE THE DAIRY
PEOPLE OR
(12) WATER POLLUTION CONTROL AGENCIES.
(13) Q AND IF YOU TURN THE PAGE THERE, SIR, IS
(14) THIS A STATUS REPORT, THEN?
(15) A IT IS.
(16) Q NOW, WAS THE ACTUAL STATUS REPORT GIVEN
(17) TO THE FDA, THE STATE AGENCIES AND THIS
CUSTOMER?
(18) A YES, A COPY OF THIS DOCUMENT, UH-HUH.
(19) Q AND WERE STATUS REPORTS ON THE TOX
(20) STUDIES PREPARED FROM TIME TO TIME?
(21) A YES, THEY WERE.
(22) Q AND WITH WHAT FREQUENCY AS YOU RECALL?
(23) A AS I RECALL WE TRIED TO HAVE SIX-MONTH
(24) STATUS REPORTS, UPDATE THE COPIES ON HAND
WITH A NEW
(25) REPORT EVERY SIX MONTHS.
(26) ONCE IN A WHILE WE MIGHT MISS THE
(27) SIX-MONTH PERIOD AND GO OVER TO THE SEVENTH
OR EIGHTH
(28) MONTH. WE TRIED TO KEEP IT CLOSE TO SIX
MONTHS.

Page 2051

- (1) Q WERE THESE REPORTS SHARED -
(2) A YES.
(3) Q - WITH PEOPLE OUTSIDE THE MONSANTO
(4) ORGANIZATION?
(5) A YES.
(6) Q WE HAVE BEEN FOCUSING IN SINCE THE LATE
(7) '66, '67, '68 AND '69 ON SORT OF THE SCIENTIFIC
(8) SIDE.
(9) WHO WITHIN THE MANAGEMENT GROUP AT
(10) MONSANTO WERE DEALING WITH THE VARIOUS
ASPECTS OF THE
(11) PCB ENVIRONMENTAL ISSUE THAT WE HAVE BEEN
DISCUSSING
(12) ASIDE FROM THE SCIENTIFIC TO MANAGEMENT
TEAM, MANY
(13) YEARS BEFORE YOU STARTED IN JANUARY OF '70?
(14) A OF COURSE THERE WAS MR. BERGEN AND
(15) MR. SPRINGGATE.
(16) THEY WERE THE KEY PEOPLE.
(17) Q ALL RIGHT. WAS A PARTICULAR GROUP
(18) APPOINTED TO FOCUS THEIR ATTENTION ON THE
PCB
(19) ENVIRONMENTAL ISSUE IN THE LATE 60'S?
(20) A YES.
(21) IN AN ATTEMPT TO UNDERSTAND THIS PCB
(22) ISSUE, THERE WAS AN INFORMAL GATHERING OF
PEOPLE FROM
(23) THE TWO BUSINESS GROUPS AND THE MEDICAL
DEPARTMENT OF
(24) MONSANTO AND ENGINEERING DEPARTMENT,
MANUFACTURING
(25) AND THE LIKE.
(26) THEY WERE MEETING INFORMALLY.

- (27) THEY HAD NO TITLE FOR ANY APPOINTED
(28) CHAIRMAN.

Page 2052

- (1) MR. WHEELER AND DR. RICHARD SORT OF
(2) ASSUMED SOME OF THE LEADERSHIP.
(3) MR. BERGEN AND MR. SPRINGGATE SELECTED,
(4) AS I RECALL, FIVE INDIVIDUALS FROM THAT GROUP
TO FORM
(5) WHAT WAS LATER TERMED AS THE AD HOC
COMMITTEE ON
(6) PCB'S AND ASKED THESE FIVE PEOPLE TO PUT
TOGETHER ALL
(7) THE INFORMATION THEY COULD IN A FORM THAT
THEY, AS
(8) MANAGERS, COULD UNDERSTAND AND USE.
(9) AND THE INTENT WAS TO -
(10) MR. TALLON: OBJECTION AS TO THE INTENT.
(11) THE COURT: SUSTAINED.
(12) Q BY MR. PREUSS: WHAT WAS YOUR
(13) UNDERSTANDING OF THE INTENT?
(14) A TO USE THIS WORK DOCUMENT FROM THIS AD
(15) HOC COMMITTEE AS A BASIS FOR PREPARING A
PRESENTATION
(16) TO THE CORPORATE MANAGEMENT COMMITTEE
LATER ON THAT
(17) YEAR, 1969.
(18) Q ALL RIGHT. REFRESH US, AGAIN, WHO
(19) MR. SPRINGGATE AND MR. BERGEN ARE AND THE
TWO GROUPS
(20) THAT YOU MADE REFERENCE TO.
(21) A THE TWO BUSINESS GROUPS INVOLVED WERE
(22) KNOWN IN MONSANTO AS THE FUNCTIONAL FLUIDS
GROUP AND
(23) THE PLASTICIZERS GROUP.
(24) MR. HOWARD BERGEN WAS THE DIRECTOR OF THE
(25) FUNCTIONAL FLUIDS GROUP.
(26) MR. JAMES SPRINGGATE WAS THE DIRECTOR OF
(27) THE PLASTICIZER GROUP.
(28) Q AND THOSE WERE THE TWO GROUPS THAT WERE

Page 2053

- (1) INVOLVED WITH MONSANTO'S PCB PRODUCTS?
(2) A CORRECT.
(3) Q ALL RIGHT. WOULD YOU TURN TO EXHIBIT 92,
(4) PLEASE.
(5) A I HAVE IT.
(6) Q ALL RIGHT. AND THIS IS A MONSANTO MEMO.
(7) CAN YOU INDICATE FOR US WHAT IT SHOWS IN
(8) TERMS OF THE TASK FORCE THAT YOU
REFERENCED?
(9) A IT SHOWS THE LISTING OF THE MEMBERS OF
(10) THAT TASK FORCE BEING INFORMED BY MR. JOHN,
THE
(11) AUTHOR OF THIS MEMORANDUM, THAT THEY ARE
MEMBERS OF
(12) A - AT THAT TIME WAS CALLED A TASK FORCE.
(13) Q OKAY. AND THAT LATER BECAME KNOWN AS THE
(14) AD HOC COMMITTEE?
(15) A YES.
(16) Q AND THE INDIVIDUALS WHO WERE MEMBERS,
WHO
(17) WERE THEY?
(18) A DR. FERRAR, PAUL HODGES, DR. RICHARDS AND
(19) ELMER WHEELER.
(20) Q AND THE DATE OF THIS?
(21) A AUGUST 25, 1969.
(22) THE COURT: MR. PREUSS, WE HAVE REACHED THE
(23) HOUR OF ADJOURNMENT.
(24) LADIES AND GENTLEMEN, LET ME REMIND YOU
(25) NOT TO FORM ANY IMPRESSION OR SAY ANYTHING
TO ANY
(26) OTHER PERSON.
(27) HAVE A NICE EVENING.

(28) WE WILL SEE YOU TOMORROW MORNING AT

Page 2054

- (1) 9:30.
- (2)
- (3) (AT 4:00 P.M., THE PROCEEDINGS WERE ADJOURNED
- (4) UNTIL WEDNESDAY, DECEMBER 8, 1993 AT 9:30 A.M.)
- (5)
- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)
- (13)
- (14)
- (15)
- (16)
- (17)
- (18)
- (19)
- (20)
- (21)
- (22)
- (23)
- (24)
- (25)
- (26)
- (27)
- (28)

Page 24476

- (1) SUPERIOR COURT OF THE STATE OF CALIFORNIA
- (2) FOR THE COUNTY OF LOS ANGELES
- (3) DEPARTMENT NO. 31 HON. G. KEITH WISOT, JUDGE
- (4)
- (5) TRANSWESTERN PIPELINE COMPANY,)
- (6) A DELAWARE CORPORATION,)
- (7))
- (8))
- (9))
- (10))
- (11))
- (12))
- (13))
- (14))
- (15))
- (16))
- (17))
- (18))
- (19))
- (20))
- (21))
- (22))
- (23))
- (24))
- (25))
- (26))
- (27))
- (28))

Page 0

- (1) INDEX FOR VOLUME 14 PAGES 1883 THROUGH 2054
- (2)
- (3) DECEMBER 7, 1993 A.M. 1883
- (4) P.M. 1975
- (5)
- (6) PLF'S WITNESSES DIRECT CROSS REDIRECT
RE CROSS
- (7)
- (8) PAPAGEORGE, WILLIAM 1883 1957
- (9) (UNDER 776) (CONTINUED.)
- (10)
- (11) EXHIBITS FOR IDENTIFICATION IN EVIDENCE
- (12) 152 - MEMO 1886
- (13) 171 - MEMO 1900
- (14) 162 - BROCHURE 1896
- (15) 139 - MEMO 1903
- (16) 143 - MEMO 1906
- (17) 159 - MEMO 1908
- (18) 146 - MEMO 1909
- (19) 41 - DOCUMENT 1911
- (20) 545 - MEMO 1915
- (21) 240 - DOCUMENT 1916
- (22) 150 - MEMO 1921
- (23) 151 - DOCUMENT 1922
- (24) 158 - MEMO 1923
- (25) (EXHIBITS CONTINUED ON NEXT PAGE.)
- (26)
- (27)
- (28)

Page 0

- (1) INDEX FOR VOLUME 14 (CONTINUED.)
- (2)
- (3) EXHIBITS (CONT'D) FOR IDENTIFICATION IN EVIDENCE
- (4) 172 - MEMO 1925
- (5) 174 - REPORT 1930
- (6) 176 - MEMO 1931
- (7) 180 - REPORT 1932
- (8) 182 - REPORT 1935
- (9) 193 - DOCUMENT 1938
- (10) 209 - MEMO 1940
- (11) 14 - LETTER 1982
- (12) 15 - LETTER 1983
- (13) 16 - LETTER 1985
- (14) 507 - DOCUMENT 1486
- (15) 241 - DOCUMENT 1496
- (16) 90 - DOCUMENT 2019
- (17) 92 - MEMO 2053
- (18)
- (19)
- (20)
- (21)
- (22)
- (23)
- (24)
- (25)
- (26)
- (27)
- (28)

Look-See Concordance Report

 UNIQUE WORDS: 2,505
 TOTAL OCCURRENCES: 9,945
 NOISE WORDS: 385
 TOTAL WORDS IN FILE: 29,733

SINGLE FILE CONCORDANCE

CASE SENSITIVE

PHRASE WORD LIST(S):

NOISE WORD LIST(S): NOISE.NOI

INCLUDES ONLY TEXT OF:

QUESTIONS
 ANSWERS
 COLLOQUY
 PARENTHETICALS
 EXHIBITS

DATES OFF

IGNORES PURE NUMBERS

POSSESSIVE FORMS OFF

MAXIMUM TRACKED OCCURRENCE
 THRESHOLD: 50

NUMBER OF WORDS SURPASSING
 OCCURRENCE THRESHOLD: 15

LIST OF THRESHOLD WORDS:

DR [77]
 FIRST [53]
 LABEL [69]
 MEMO [53]
 MONSANTO [189]
 OKAY [119]
 PAGE [54]
 PCB [197]
 PLANT [62]
 PLEASE [60]
 PRODUCT [53]
 PRODUCTS [61]
 RIGHT [252]
 SIR [98]
 TURBINOL [68]

--- \$ ---

\$10 [1]
 1914:3
 \$11 [1]
 1917:4

--- 1 ---

10-PERCENT [1]
 1889:28
 1020/53 [2]
 1917:4, 12
 10TH [1]
 2037:5
 12-2-69 [1]
 1911:13
 12-POINT [1]
 1903:10
 1242-B [1]
 1889:25
 12:00 [1]
 1974:18
 12TH [1]
 1983:9
 144-A [2]
 1884:1, 4

15TH [1]
 1986:17
 16TH [1]
 2055:25
 19-67 [1]
 1911:9
 1966-1970 [1]
 2011:12
 1:30 [3]
 1974:15, 19; 1975:2
 1ST [2]
 1884:24; 1968:6

--- 2 ---

20-YEAR [1]
 1934:4
 21ST [1]
 2055:21
 26TH [1]
 1985:15
 27TH [2]
 1888:23; 1889:23

--- 3 ---

31ST [1]
 1969:13
 3RD [2]
 1904:16, 20

--- 4 ---

4-30-70 [1]
 1918:9
 4:00 [1]
 2054:3
 4TH [1]
 2038:5

--- 5 ---

5-22-70 [1]
 1919:20
 50-PERCENT [2]
 2022:10, 11
 5TH [1]
 2020:13

--- 6 ---

60-DAY [3]
 1902:9, 27; 1903:19
 625-A [1]
 1936:11

--- 7 ---

7TH [1]
 1957:11

--- 8 ---

8TH [1]
 2034:1

--- 9 ---

90-PERCENT [1]
 1890:18
 9:30 [2]
 2054:1, 4

--- A ---

A-200B [1]
 1937:15
 A-R-O-C-L-O-R [1]
 1994:20
 A.M. [2]
 2054:4; 2056:3
 ABILITY [5]

1961:16; 1981:23; 1998:11;
 2004:1; 2018:5
 ABLE [3]
 2002:8; 2046:2, 23
 ABSOLUTELY [1]
 1942:19
 AC [1]
 1932:12
 ACCEPTABILITY [1]
 1968:12
 ACCEPTABLE [2]
 1890:19; 1928:5
 ACCIDENT [1]
 1915:4
 ACCIDENTAL [1]
 1913:3
 ACCIDENTALLY [1]
 1901:14
 ACCIDENTLY [1]
 1901:9
 ACCOMPLISH [1]
 1913:7
 ACCOMPLISHED [1]
 1924:9
 ACCOMPLISHES [1]
 1912:25
 ACCORDING [2]
 1984:27; 1997:25
 ACCURATE [1]
 1935:13
 ACID [3]
 1966:20, 21; 1991:11
 ACKNOWLEDGE [1]
 1896:10
 ACQUAINTING [1]
 2032:13
 ACRILON [1]
 1991:12
 ACRONYM [1]
 1899:20
 ACT [1]
 1951:13
 ACTION [2]
 1898:1; 1978:24
 ACTIVE [3]
 1925:3, 8; 1962:6
 ACTIVITIES [1]
 2024:4
 ACTUAL [1]
 2050:16
 ACTUALITY [1]
 1896:15
 AD [3]
 2052:5, 14; 2053:14
 ADAPTED [1]
 1906:19
 ADD [2]
 1909:16; 2012:10
 ADDED [1]
 1935:14
 ADDING [1]
 1907:11
 ADDITION [6]
 1970:14; 1976:25; 1979:5;
 2006:15; 2018:4; 2026:6
 ADDITIONAL [8]
 1905:12; 1906:14; 1907:12;
 1909:16; 1912:17; 1913:8;
 1935:14; 1950:10
 ADDRESS [3]
 1892:18, 23; 1957:8
 ADDRESSED [4]
 1986:18, 19; 2007:4, 5
 ADEQUATE [1]
 1972:25
 ADHESIVES [2]
 1894:8; 2000:10
 ADJOURNED [1]
 2054:3
 ADJOURNMENT [1]

2053:23
 ADMINISTRATION [2]
 1949:21; 2050:8
 ADMISSION [5]
 1920:21, 23, 26; 1921:3, 14
 ADMIT [1]
 1921:3
 ADMITS [1]
 1921:10
 ADMITTING [1]
 1920:26
 ADOPTED [5]
 1886:11, 21; 1907:14; 2011:18;
 2042:26
 ADVANCE [1]
 1999:19
 ADVANTAGE [1]
 1999:27
 ADVICE [2]
 1980:27; 1985:24
 ADVISABLE [1]
 1988:3
 ADVISING [2]
 1976:25; 2033:11
 ADVISORIES [1]
 2033:10
 AFFECTED [4]
 1902:3; 1944:2, 22, 28
 AFTERNOON [3]
 1975:20, 21; 2012:17
 AGENCIES [6]
 1947:23; 2049:27; 2050:9, 10,
 12, 17
 AGENCY [1]
 2033:8
 AGES [1]
 1957:24
 AGREE [7]
 1914:15; 1928:3; 1929:10;
 1946:16; 1951:28; 1952:19;
 1982:20
 AGREED [1]
 1903:9
 AGREEMENT [2]
 1906:13; 1945:21
 AGRICULTURAL [3]
 1966:25, 28; 1991:25
 AIR [2]
 1965:18; 2042:15
 AIRBORNE [1]
 2042:28
 ALABAMA [4]
 1966:11; 1992:16; 2031:18;
 2041:16
 ALAN [1]
 2055:24
 ALCOR [1]
 1937:10
 ALL-SERVICE [2]
 1988:4, 12
 ALLOW [2]
 1984:2, 3
 ALONE [1]
 1888:21
 ALTER [1]
 2012:16
 ALTERED [1]
 1924:13
 ALTERING [1]
 2011:3
 ALTERNATIVE [3]
 1936:17; 1955:9, 11
 ALTERNATIVES [1]
 1925:5
 ALTOGETHER [1]
 1948:20
 ALUMNI [2]
 1899:23, 26
 AMERICAN [4]
 1898:17; 1962:2, 3; 2026:6

AMOUNT [7]
1984:9; 1993:21, 27; 2007:26;
2038:4, 15; 2042:16

ANALYSES [3]
2009:16; 2030:24; 2034:12

ANALYSIS [10]
2009:11; 2010:6; 2022:17;
2030:23, 27; 2034:9; 2039:10,
13; 2047:11; 2048:17

ANALYTIC [7]
2006:11; 2010:2, 8, 24;
2011:10; 2029:19; 2031:20

ANALYTICAL [14]
2007:1; 2008:15; 2010:21;
2018:5; 2019:27; 2020:22;
2022:28; 2023:27; 2025:22;
2029:15, 23; 2031:16; 2039:11;
2046:20

ANALYZE [2]
2010:13; 2024:5

ANALYZED [2]
2017:8; 2049:2

ANALYZING [2]
2019:28; 2031:17

ANCHOVIES [1]
1944:10

ANGELES [3]
1923:5; 1975:1; 2055:22

ANIMAL [4]
1978:19; 1984:27; 2011:16;
2020:6

ANIMALS [1]
2043:17

ANNISTON [26]
1917:15; 1918:10, 13, 25;
1919:4, 12, 16, 17; 1922:3, 16;
1966:11, 12; 1967:2, 8, 12;
1972:7; 1975:28; 1988:22;
1992:16; 2031:18; 2032:1;
2041:16, 22; 2042:10; 2044:15;
2045:13

ANNOUNCED [2]
1949:21; 1952:7

ANSWER [7]
1897:5, 21; 1946:13; 1981:22;
1982:5; 2017:14

ANSWERED [2]
1897:20; 1920:25

ANSWERING [1]
1994:10

ANSWERS [4]
1920:28; 2009:17; 2010:28;
2018:9

ANTI-AIRCRAFT [1]
1960:5

ANTICIPATED [1]
1988:8

ANYBODY [2]
1980:28; 2010:1

ANYMORE [1]
1913:21

ANYWHERE [1]
1895:2

APART [1]
1999:4

APPARATUSES [1]
1999:1

APPEAL [1]
1998:8

APPEALED [1]
1998:10

APPEAR [4]
1899:4; 1983:20; 2016:16;
2028:10

APPEARANCE [2]
1933:26; 1993:21

APPEARANCES [3]
1883:5; 1975:5; 2055:18

APPEARED [1]
1898:15

APPEARING [2]
2016:28; 2017:8

APPEARS [3]
1917:2; 1929:23; 1986:8

APPLICATION [7]
1884:20; 1890:17; 1893:5;
1901:8; 1980:3; 1986:1;
2000:22

APPLICATIONS [17]
1887:6, 7, 11, 13, 16; 1891:13,
15, 17, 19; 1892:13; 1938:25;
1948:23; 1978:2, 22; 1998:26;
1999:4, 7

APPLIED [3]
1909:28; 1988:6; 2000:14

APPLIES [1]
1885:16

APPLY [6]
1888:20; 1908:24; 1915:2;
1923:22; 1980:26; 1981:3

APPOINTED [5]
1966:10; 1967:14; 1968:20;
2051:18, 27

APPROACH [6]
1906:21; 1925:1; 1941:21, 27;
1952:11; 2010:2

APPROACHED [1]
1992:25

APPROACHING [1]
1942:24

APPROPRIATE [4]
1883:12; 1905:6; 1924:27;
1955:19

APPROVAL [4]
1936:10; 1941:19, 22; 1970:21

APPROVE [1]
1942:5

APPROVED [6]
1936:10, 22; 1940:8; 1953:20;
1970:21, 22

APPROXIMATELY [1]
1991:27

APRIL [17]
1884:5, 27; 1886:3; 1902:15,
17, 18; 1903:22, 26; 1904:16,
20; 1906:10; 1909:13; 1915:16;
1949:17, 20, 27; 1950:21

APT [1]
1935:12

AQUARIUM [1]
2040:8

ARACLORS [1]
1923:8

ARCING [1]
1999:2

AREA [14]
1915:7; 1944:10; 1958:5;
1971:28; 2012:13, 14; 2026:10;
2027:14; 2029:19, 20; 2031:18;
2035:17, 19; 2048:21

AREAS [4]
2002:17; 2016:8; 2023:21;
2035:4

ARGUMENTATIVE [1]
1947:18

ARISE [2]
2028:21; 2033:3

ARISES [1]
2028:16

ARMY [1]
1960:21

AROCLORE [39]
1887:2; 1888:26, 27; 1889:2, 9;
1890:4; 1899:7; 1900:25;
1901:8; 1903:26; 1905:23, 26;
1906:11; 1915:18, 22; 1920:4;
1922:7, 20; 1923:15; 1931:2,
10, 13, 22; 1932:18; 1934:19,
28; 1938:27; 1994:20, 22;
1995:18; 1997:21; 2017:5;

2040:8, 28; 2042:17; 2044:7;
2047:23; 2048:13

AROCLORE-CONTAINING [1]
2028:28

AROCLORE [21]
1888:24, 25; 1890:3, 26;
1905:13; 1906:16; 1909:17, 22;
1919:20; 1920:1; 1923:24;
1924:8, 23; 1927:7; 1932:4, 8;
1997:2; 2000:27; 2026:19;
2027:23; 2028:27

ARRANGE [1]
1916:5

ARRANGEMENT [1]
1955:6

ARRIVE [1]
2012:11

ARRIVED [2]
1967:10; 2025:6

ARRIVING [1]
2037:13

ARTICLE [2]
1898:15; 2014:19

ARTILLERY [1]
1960:6

ASIDE [1]
2051:12

ASKING [5]
1902:12; 1905:9; 1906:7;
1916:5; 1945:19

ASPECT [1]
1990:5

ASPECTS [1]
2051:10

ASPIRIN [1]
1991:8

ASSEMBLE [1]
2046:23

ASSIGNED [2]
1967:15; 1969:2

ASSIGNMENT [7]
1960:10, 20; 1962:16, 21, 27;
1969:6; 2033:16

ASSIGNMENTS [2]
1960:16; 1964:1

ASSIST [2]
1897:4; 2010:1

ASSOCIATED [2]
1892:5; 2013:25

ASSOCIATION [1]
2032:20

ASSUME [1]
1982:25

ASSUMED [1]
2052:2

ASSURE [1]
1990:2

ASSURED [1]
1913:27

ATE [1]
2033:12

ATTACHED [1]
2034:17

ATTACHMENT [2]
2037:10, 21

ATTEMPT [4]
1914:5; 1936:16; 2024:5;
2051:21

ATTEMPTED [1]
1904:22

ATTEND [1]
2012:19

ATTENDANT [1]
1984:15

ATTENDED [1]
1954:16

ATTENTION [8]
1943:9; 1952:1; 1988:19;
1990:25; 2003:8; 2015:3;
2033:28; 2051:18

ATTORNEY [1]
1958:4

ATTRACTIVE [2]
1999:10; 2002:9

ATTRIBUTABLE [1]
2028:11

AUGUST [14]
1888:7; 1894:2; 1930:9, 11, 12;
1951:16, 20; 1982:12; 1983:9,
15; 1985:15; 1987:6, 13;
2053:21

AUTHOR [4]
1932:7; 2036:28; 2037:1;
2053:11

AUTHORED [1]
2007:2

AUTHORITY [1]
1950:18

AUTHORIZED [1]
1898:13

AUTO [1]
1991:15

AUTOMATICALLY [1]
1891:23

AVAILABLE [16]
1902:21; 1912:13; 1913:8;
1921:11; 1925:5; 1939:7;
1942:3, 4; 1955:9; 1973:26;
1979:10; 2006:1, 2; 2011:12,
14; 2038:13

AVIAN [1]
2023:12

AVOID [5]
1893:9; 1913:3; 1980:6, 7;
1999:15

AVOIDED [4]
1976:22; 1978:26; 1979:3;
1985:28

AWARE [7]
1937:17, 24; 1953:22, 25;
1954:20; 1971:26; 1991:28

AWFUL [3]
1896:7; 1976:18; 2000:13

- B -

B-E-R-G-E-N [1]
1971:12

BACHELOR [2]
1958:15, 17

BACHELORS [2]
1959:16, 18

BACKGROUND [2]
1959:27; 2023:20

BACTERIA [2]
1944:13; 2010:18

BALANCE [2]
1919:15, 19

BAN [12]
1948:21; 1949:5; 1950:19, 27;
1951:3, 10, 26; 1952:9, 11;
2032:9, 22; 2033:1

BANNED [2]
1948:19; 1950:14

BARREL [3]
1905:25; 1920:7; 2014:1

BARRELS [1]
2009:8

BARTLESVILLE [1]
1962:14

BASED [5]
1897:2; 2016:19; 2019:3;
2027:19; 2028:7

BASIC [1]
1909:25

BASICALLY [3]
1896:22; 1937:12; 2020:22

BASIS [5]
1884:20; 2017:25; 2019:12;
2047:25; 2052:15

BATCH [2] 1917:19, 22	1899:25; 1900:7, 10, 17, 28; 1901:4, 7, 11, 12, 20	1999:9	CARRY [6] 1900:19; 1928:13, 17; 1929:3, 12, 25
BATH [1] 1993:7	BIT [7] 1898:22; 1909:12; 1969:25; 1981:19; 1990:26; 2012:17; 2049:22	BULLETIN [14] 1896:27, 28; 1897:1, 7; 1898:25, 28; 1977:8, 13, 17, 24; 1978:10; 1979:5, 24; 1986:28	CARRYING [2] 1900:11; 1977:6
BATTERY [1] 1991:11	BLACK [2] 1915:13; 1986:6	BUNDLES [1] 1914:27	CARTRIDGE [1] 1984:18
BEAKERS [1] 1952:26	BLACKBOARD [1] 1904:24	BURDEN [1] 1913:5	CASE [5] 1954:21; 1994:21; 2002:4; 2029:5; 2042:17
BECOMES [2] 1980:12; 1993:28	BLEACH [1] 1993:19	BURNING [4] 1985:20; 1998:11, 13; 2028:18	CASES [1] 2015:20
BEGINS [1] 2025:13	BLEEDING [1] 1976:20	BUSINESS [24] 1884:10; 1885:4, 23; 1888:21; 1892:6; 1902:3; 1928:6, 9; 1944:4, 5; 1952:5, 8; 1953:17; 1991:12, 25; 1992:11, 22; 2003:2, 4; 2020:2; 2051:23; 2052:21	CASTING [3] 2000:1, 3; 2001:1
BEHALF [2] 1885:4; 1933:22	BLENDED [7] 1919:2, 8; 1924:20, 21; 1932:8; 1965:23; 1966:2	BUY [8] 1916:25; 1917:1; 1940:5; 1946:2; 1953:28; 1954:18, 27; 2006:4	CATALOGUE [1] 1988:4
BEHAVE [1] 1961:7	BLENDING [2] 1965:22, 26	BUYER [2] 1899:10; 1942:20	CATCH [1] 2033:13
BELIEVE [9] 1893:7; 1897:13; 1950:12; 1970:12; 1971:17; 2018:18; 2026:17; 2032:27; 2033:2	BLUE [6] 1900:12, 14, 19, 24; 1916:12; 1991:23	BUYING [2] 1940:3; 1953:23	CATEGORIES [1] 1888:13
BELIEVES [1] 1898:9	BOARD [3] 1946:20, 23; 1951:9	- C -	
BELONGED [1] 1968:24	BOLL [1] 1966:26		
BELONGS [1] 1910:15	BOOK [1] 2049:11	C-O-R-E-Y [1] 1971:14	CAUGHT [1] 2033:12
BENEFIT [1] 1947:12	BOOKS [1] 1974:11	CA [2] 2055:22, 26	CAUSED [1] 1893:10
BERGEN [7] 1908:7; 1971:11, 18; 2051:14; 2052:3, 19, 24	BORN [2] 1957:10, 12	CAFFEINE [1] 1991:9	CAUTION [1] 1980:17
BERKELEY [2] 2008:25; 2013:12	BOSS [1] 1971:18	CALCULATION [1] 1918:7	CAUTIONARY [3] 1980:24; 1981:3, 6
BIGGEST [1] 2001:16	BOSSSES [3] 1908:6; 1970:15; 1971:9	CALIBRATES [1] 2005:20	CELLULOSE [1] 1955:12
BILL [4] 1926:28; 1950:27; 1989:14; 2019:19	BOUGHT [1] 1992:12	CALIFORNIA [4] 1975:1; 2008:25; 2013:11; 2016:14	CENTER [1] 1931:12
BILLION [11] 1953:3, 5; 2004:18, 21, 28; 2005:1, 3; 2027:27; 2036:19, 20; 2045:24	BOWLING [1] 1958:8	CALKING [1] 1894:8	CENTERED [1] 2010:12
BILLS [1] 1951:1	BOX [1] 1914:25	CALL [5] 1896:22; 1910:2; 1911:22; 2032:17; 2034:20	CERTIFIED [1] 1961:24
BINDER [2] 1911:3; 1915:13	BOY [2] 1957:23, 28	CALLING [2] 1946:10; 1950:11	CETERA [1] 2029:1
BINDERS [2] 1916:12; 1986:6	BRADFORD [4] 1940:12, 15; 1941:12; 1942:23	CALLS [1] 1917:3	CHAIN [1] 2017:7
BINDING [1] 1921:1	BREAK [6] 1893:4; 1933:12; 2012:17, 20; 2013:2, 21	CAMERON [1] 2049:13	CHAIRMAN [1] 2051:28
BIO-TEST [7] 2043:10, 12, 14, 21, 28; 2044:4	BREAKING [1] 1991:17	CAMP [1] 1960:21	CHALLENGING [1] 2011:6
BIOCHEMICAL [1] 2028:21	BREAKS [2] 1984:1, 2	CANS [1] 1919:20	CHANGE [7] 1907:9; 1932:22; 1942:27; 1973:6; 2018:12; 2048:24; 2049:5
BIODEGRADABLE [7] 1888:26; 1889:9; 1890:4, 5, 27; 1941:9, 25	BREATHING [5] 1976:7, 14; 1979:3, 13; 1980:7	CAPABLE [1] 1982:5	CHANGED [6] 1887:22; 1903:16; 1908:13; 1925:11; 1932:21; 1968:4
BIODEGRADATION [7] 1931:14; 2010:19, 20; 2029:25; 2047:13, 17; 2048:4	BREEZE [1] 2008:22	CAPACITORS [5] 1888:1, 3, 19; 1965:13; 2001:17	CHANGES [5] 1902:13, 16; 1903:3; 1906:2; 1913:5
BIOLOGIC [1] 2006:17	BRIEF [1] 1990:28	CAPACITY [3] 1962:19; 1969:28; 2002:6	CHANGING [2] 1991:2; 2011:3
BIOLOGICAL [2] 2006:23; 2007:12	BRIEFED [1] 1930:15	CAPTION [2] 1934:17; 1936:28	CHAPPED [1] 1976:18
BIOLOGISTS [1] 2025:22	BRIEFING [1] 1955:22	CAPTIONED [2] 1935:27; 1938:24	CHARACTERISTIC [1] 1952:16
BIPHENYL [9] 1888:14; 1898:27; 1966:19; 1993:7, 9, 22; 1994:27; 2022:9, 10	BRIEFLY [3] 1962:24; 2018:2; 2036:27	CAPTURE [1] 2011:26	CHARGE [4] 1895:10; 1960:20; 1976:26; 2030:16
BIPHENYLS [10] 1887:10, 23; 1888:6; 1891:17; 1892:12; 1894:1; 1997:1; 2015:12; 2016:7; 2022:6	BRINGS [1] 2005:6	CARBON [2] 1995:3; 2005:22	CHARLES [1] 2055:23
BIRD [2] 2041:2	BRITAIN [2] 2039:24; 2050:2	CARBONLESS [1] 1900:20	CHART [2] 2005:14; 2035:17
BIRDS [6] 2013:10, 23; 2014:3, 10; 2017:8; 2023:21	BROAD [1] 1971:27	CARE [1] 1916:6	CHEMICAL [23] 1926:28; 1958:21; 1959:1, 9, 28; 1960:2, 15, 19, 25; 1961:3; 1962:2, 3, 17; 1966:25; 1969:7; 1972:14; 1983:17; 1987:14; 1992:13; 2003:24; 2005:16; 2017:7
BIRDSALL [10]	BROKE [1] 1975:22	CAREFUL [1] 1912:28	CHEMICALLY [1] 1892:9
	BUBBLING [1] 1993:7	CARRIED [5] 1900:19, 22; 1944:15; 1968:11; 2033:26	CHEMICALS [17] 1961:7; 1972:13; 1974:1;
	BUILD [2] 2006:5; 2023:20		
	BUILDING [1]		

1980:22; 1991:6, 11, 24;
1992:24, 27; 1993:6, 10;
1998:18; 2015:13, 15, 17;
2019:28; 2028:22
CHEMIST [3]
1962:25; 2005:20; 2020:23
CHEMISTRY [1]
2007:1
CHEMISTS [2]
2005:10; 2017:4
CHEST [1]
1976:14
CHICKEN [3]
1944:20; 2039:24; 2040:16
CHICKENS [1]
1944:22
CHILDREN [1]
1957:20
CHLORINATED [39]
1887:10, 23; 1888:6; 1891:17;
1892:12; 1894:1; 1899:3;
1927:8, 9, 12, 17, 19, 22;
1930:26; 1941:9; 1980:6, 17,
23, 26, 28; 1981:4; 1992:28;
1994:27; 1995:25, 28; 1996:1,
8, 10; 2004:9, 11, 13; 2017:6,
10; 2022:6, 8; 2041:4; 2043:6;
2044:1; 2046:12
CHLORINATING [1]
1992:24
CHLORINE [22]
1941:28; 1966:23; 1993:7, 8,
11, 12, 22, 23, 24, 27; 1995:2,
5; 1997:1, 11; 2004:8; 2005:22,
23, 24; 2021:25, 26; 2022:11
CHLORINE-CONTAINING [1]
2028:22
CHLORINES [4]
1995:15, 19; 1996:7; 1997:27
CHROMATOGRAM [1]
2005:10
CHRONICLE [1]
2014:19
CIRCLED [1]
2035:4
CIRCLES [2]
2035:5, 9
CITATION [1]
1897:25
CITED [1]
1950:22
CITY [4]
2034:6; 2035:12, 13, 18
CLAIM [1]
2006:13
CLARA [1]
1923:6
CLARIFY [1]
1928:23
CLASSIFIED [1]
1984:28
CLEAN-UP [1]
1984:17
CLEAR [1]
1993:25
CLING [1]
1952:20
CLINGING [1]
1952:25
CLOCK [1]
1999:26
CLOSED [3]
1939:1, 2; 2025:18
CLOSES [1]
1928:12
CLOTHES [4]
1973:2, 7, 10, 21
CLOTHING [3]
1973:3, 17; 1980:12
CM [1]

1988:4
CMC [18]
1884:11, 16; 1886:8, 10, 21;
1889:23; 1892:11; 1901:26, 27;
1903:3, 6, 9, 16; 1938:3, 15, 22;
1939:19; 1970:22
COACHING [1]
1974:10
COAL [1]
1928:2
COAST [5]
1943:24; 1944:2, 6, 8, 25
COATING [2]
1900:23; 1901:2
CODE [2]
1883:17; 1975:15
COHO [1]
1943:20
COLD [1]
1976:14
COLLECTED [6]
1896:5; 1956:2, 4, 10; 2018:6;
2048:20
COLLECTING [1]
2011:25
COLLEGE [2]
1958:9; 1959:12
COLOR [1]
1993:26
COLORLESS [1]
1993:26
COLUMBIA [1]
2008:23
COLUMN [15]
1932:17; 1995:14; 1997:1, 4, 6,
12, 19, 22; 2038:5, 6, 7, 8;
2039:12, 14, 17
COLUMNS [1]
2039:5
COMBINATION [2]
1973:10; 1993:9
COMBINE [1]
1961:12
COMING [2]
1971:3; 2025:8
COMMENCE [1]
1967:22
COMMENCED [2]
2017:28; 2024:25
COMMENCING [1]
1949:21
COMMENT [1]
1904:18
COMMENTED [1]
2025:18
COMMENTS [4]
1905:10, 28; 1906:7; 2025:28
COMMERCIAL [4]
1998:8; 2008:22; 2022:17;
2029:17
COMMERCIALLY [3]
2006:1, 2; 2016:10
COMMITTEE [11]
1883:25; 1884:5, 10, 22;
1886:18; 1937:18, 25; 2052:5,
15, 16; 2053:14
COMMON [2]
1890:8; 1981:17
COMMUNICATE [2]
1890:9; 1891:21
COMMUNICATING [2]
1921:25; 1924:3
COMMUNITY [1]
2012:6
COMPANIES [5]
1936:8; 1944:1, 20, 27; 1969:21
COMPANY [28]
1916:17; 1942:8; 1944:9;
1945:6; 1947:6, 11, 16;
1954:13; 1962:12, 14, 23;

1963:21; 1969:7; 1971:3;
1983:18; 1987:7, 14; 1990:26,
28; 1991:1, 2, 4, 20, 21;
1992:13, 27
COMPARE [3]
1984:19; 2008:18; 2009:17
COMPARED [1]
2009:13
COMPETITION [2]
2002:3, 8
COMPETITORS [1]
1928:3
COMPILE [1]
2037:9
COMPLETE [3]
1888:7; 1894:2; 1951:26
COMPLETELY [1]
1950:27
COMPLIANCE [1]
2042:18
COMPLICATED [1]
1981:26
COMPLICATIONS [3]
1913:5; 1984:13, 26
COMPONENTS [1]
1906:28
COMPOSITION [1]
1927:1
COMPOUNDS [4]
2007:13; 2016:15; 2025:4, 7
COMPRESSOR [4]
1893:22; 1977:27; 1983:28;
1988:13
COMPRESSORS [5]
1942:10, 13; 1965:11, 18;
1984:2
CONCEIVE [1]
2016:10
CONCEIVED [1]
2018:14
CONCENTRATE [2]
2011:5; 2036:17
CONCENTRATED [2]
2011:15; 2019:27
CONCENTRATION [1]
2035:9
CONCEPT [1]
2032:24
CONCERN [2]
1893:1; 1976:3
CONCERNING [5]
1976:1, 27; 1981:14; 2019:4;
2032:9
CONCERNS [1]
1975:27
CONCLUDED [1]
2014:8
CONCLUSION [4]
1884:16; 1901:4; 1903:8;
1946:11
CONCLUSIONS [2]
1884:18; 2017:26
CONDITIONS [6]
1889:16; 1890:19; 1948:24;
1972:23; 1974:9; 2021:11
CONDUCT [1]
2010:20
CONDUCTED [3]
1925:19; 2024:4; 2030:25
CONDUCTING [5]
1949:26; 2010:16; 2029:25, 27;
2043:16
CONFIDENCE [1]
2024:14
CONFIRM [3]
2005:27; 2017:25; 2018:16
CONFIRMS [2]
1926:24, 27
CONGRESS [4]
1950:10, 27; 1951:14, 16

CONGRESSMAN [6]
1949:16, 27; 1950:3, 10, 26;
1951:1
CONNECTICUT [1]
1948:7
CONNECTION [3]
1972:6; 1977:18; 1978:15
CONSIDER [3]
1897:21; 1920:28; 1969:17
CONSIDERABLE [3]
1984:12; 2020:23; 2029:14
CONSIDERATION [1]
2029:10
CONSIDERED [12]
1888:15, 26; 1890:3, 5, 18, 27;
1891:28; 1895:8; 1996:7, 9;
1998:16; 2004:12
CONSIDERING [1]
1951:26
CONSISTED [1]
1904:21
CONSISTENT [3]
2015:24, 28; 2016:3
CONSISTS [2]
1987:27; 1995:9
CONSTRUCTION [1]
1960:20
CONSULTANT [2]
2027:8, 12
CONSULTATION [1]
1979:11
CONSULTED [1]
1969:21
CONSULTING [1]
1969:19
CONTACT [21]
1900:7; 1965:7; 1978:26;
1979:9, 14; 1980:8, 9, 10, 25;
1981:25; 1984:26; 1985:27;
1988:7; 2008:28; 2018:19, 21,
26; 2019:4; 2037:15
CONTACTED [1]
2043:21
CONTACTING [2]
2026:7, 9
CONTACTS [2]
1974:4, 5
CONTAIN [9]
1910:21; 1912:19; 1916:2;
1927:4, 7, 27; 1941:28;
1955:17; 2013:10
CONTAINED [5]
1900:25; 1908:26; 1909:23;
1956:3; 1977:6
CONTAINER [2]
1999:3; 2001:10
CONTAINERS [2]
1902:22; 1923:21
CONTAINING [7]
1905:13, 18, 26; 1909:17, 22;
1932:8; 1966:7
CONTAINS [3]
1927:17; 1980:6, 17
CONTAMINATION [5]
1893:10; 1898:25; 2020:24;
2028:4, 16
CONTENT [1]
2037:7
CONTINUE [8]
1883:13; 1939:25; 1946:2, 17;
1953:28; 1954:18, 27; 1955:3
CONTINUED [6]
1883:20; 1896:10; 1937:18;
1975:18; 2056:9, 25
CONTINUES [1]
2009:24
CONTINUING [1]
2018:4
CONTINUOUS [1]
1979:2

CONTRIBUTION [2]
1970:2; 2002:26

CONTROL [14]
1889:19; 1893:8; 1895:9;
1947:11; 1951:13; 1966:26;
1967:15; 1968:2; 1970:1;
1989:2, 22; 2009:27; 2016:2;
2050:12

CONTROLLABLE [1]
1895:8

CONTROLLED [4]
1889:16; 1890:19; 1952:10;
1955:27

CONTROLLING [1]
1953:1

CONVERSATION [3]
1926:8, 16, 27

CONVERTING [1]
2011:28

CONVEY [1]
1890:20

COOKING [2]
1999:14, 17

COOL [1]
1999:1

COOP [2]
2045:18, 20

COOPERATION [1]
2023:4

COORDINATOR [1]
1923:3

COPE [1]
1889:20

COPIED [5]
1921:22; 1925:25; 1926:20;
1927:26; 1982:21

COPIES [7]
1884:8; 1912:1; 1914:2; 1938:5;
2047:27; 2049:25; 2050:24

COPY [13]
1886:17; 1897:28; 1900:3, 20;
1903:5; 1915:15; 1921:25;
1930:8; 1931:19; 1935:19;
1985:2; 2049:14; 2050:18

COPYING [1]
1926:5

COREY [1]
1971:14

CORNELL [1]
2008:26

CORNER [3]
1909:2; 1917:12; 1999:12

CORPORATE [10]
1883:25; 1884:5, 9, 26;
1886:18; 1937:18, 25; 1982:2;
2020:5; 2052:16

CORPS [4]
1960:7, 8, 17, 18

CORRESPONDENCE [2]
1983:1; 1986:12

CORROSION [1]
2029:2

CORVALLIS [1]
2008:24

COST [4]
1912:26, 27; 1914:2; 1917:4

COSTS [1]
1965:1

COTTER [1]
1923:5

COTTON [1]
1966:26

COUNSEL [3]
1897:25; 1950:21; 1982:20

COUNT [1]
1964:24

COUNTRIES [5]
1992:1; 2002:17, 21, 25; 2023:5

COUNTRY [7]
1944:11; 1948:20; 1949:5;

1951:25; 1960:14; 2029:19;
2030:2

COUNTY [1]
1960:13

COUPLE [2]
1931:16; 2012:7

COUPLED [1]
2005:10

COUPLINGS [1]
1893:15

COURSE [13]
1959:13; 1965:9; 1966:14;
1973:7; 1977:5; 1979:8, 12;
1999:10; 2035:28; 2037:12, 15,
17; 2051:14

COURT [22]
1883:8; 1897:17; 1915:6;
1920:22; 1933:10, 18; 1946:12;
1947:19; 1949:7, 11, 13;
1956:26; 1974:12; 1975:9;
1996:3, 16; 2012:16, 27;
2019:1; 2052:11; 2053:22;
2055:27

COVER [1]
1972:2

COVERED [5]
1892:13; 1894:13, 19, 23;
1896:1

COVERING [1]
1930:13

COVERS [2]
1971:17; 2047:6

COVICONE [1]
1986:2

CRACKS [1]
1976:19

CRASH [1]
1884:19

CREAM [1]
1988:6

CREATE [1]
2001:10

CREDITS [1]
1959:6

CREEK [1]
2041:14

CROPS [1]
2016:7

CROSS [3]
1957:1; 1975:18; 2056:6

CSR [1]
2055:27

CUBIC [1]
2042:20

CULPRIT [1]
2014:11

CURRENT [1]
2042:27

CURRENTLY [2]
1921:11; 2042:26

CURVE [2]
2012:13, 14

CUSTODIAN [1]
1910:3

CUSTOMER [15]
1896:11; 1897:5; 1917:24;
1923:21; 1945:6; 1946:1, 16,
27; 1947:6; 1953:16, 20;
1954:4; 2001:25; 2049:26;
2050:17

CUSTOMER-APPROVED [1]
1940:1

CUSTOMERS [26]
1897:4; 1907:21; 1925:4;
1940:3, 8; 1943:4, 6; 1945:20,
24; 1953:13, 22, 27; 1954:2;
1970:8; 1976:27; 1977:21;
1979:6, 10; 1981:14; 1983:2;
1990:16, 23; 1998:9; 2001:18;
2002:13; 2050:5

CZECHOSLOVAKIA [2]
2002:20, 25

- D -

DAIRY [2]
1947:28; 2050:11

DAMAGE [1]
2028:10

DATA [3]
1984:27; 2025:22; 2049:25

DATE [16]
1888:9; 1897:11; 1898:5;
1930:21; 1951:5; 1985:14;
1986:16; 2024:20, 21; 2031:7;
2037:4, 5; 2039:16, 17, 18;
2053:20

DATED [13]
1903:26; 1906:10; 1908:2;
1909:13; 1911:9; 1915:16;
1921:19; 1931:19; 1940:13;
1982:11; 1983:15; 1986:28;
2007:1

DATES [2]
1970:24; 1971:14

DAUGHTER [3]
1957:28; 1958:4, 6

DAVID [4]
1883:6; 1975:6; 2003:17;
2055:27

DAVIS [1]
1985:19

DAY [7]
1969:13; 1973:7, 8; 1974:19;
2003:19; 2026:25; 2031:3

DAYS [5]
1889:24; 1902:5; 1903:4, 7, 16

DDE [1]
2013:28

DDT [5]
2003:23; 2013:27; 2014:10, 11;
2032:20

DEAL [4]
1884:12; 1913:2; 1952:1;
2022:21

DEALING [6]
1901:2; 1913:15, 17; 2029:16;
2044:13; 2051:10

DEBATING [1]
2012:7

DECADES [5]
1990:6, 18; 2002:12; 2007:21,
26

DECEMBER [8]
1935:19; 1950:9; 1969:13;
1975:1; 2003:14; 2007:2;
2054:4; 2056:3

DECIDED [3]
1901:27; 1945:4; 2008:13

DECISION [3]
1902:17; 1928:6, 10

DECLARED [1]
1951:21

DEFATTING [2]
1978:24; 1988:8

DEFENDANT [2]
1897:23; 2055:23

DEFINE [1]
1929:15

DEFINITELY [3]
1907:26; 2025:27; 2033:27

DEFINITION [2]
1889:4; 1917:21

DEGRADABLE [4]
1888:15; 1889:12, 24; 1890:18

DEGRADATION [2]
1890:11; 2010:19

DEGRADE [2]
1890:14; 1891:9

DEGRADING [2]

1891:7, 8

DEGREE [8]
1958:15, 18, 28; 1959:3, 7;
1962:11, 13

DEGREES [1]
1984:4

DEMARCATON [1]
1995:27

DEMONSTRATED [3]
1890:13; 1891:2, 5

DENIES [1]
1921:14

DENOTED [1]
2035:17

DENY [1]
2017:26

DEPARTMENT [17]
1916:17; 1929:17; 1948:4, 10,
11; 1962:17, 23; 1975:3;
1979:11; 1989:13, 15; 2014:7;
2019:26; 2020:5; 2033:9;
2051:23, 24

DEPARTMENTS [1]
2050:11

DEPENDENT [1]
1943:14

DEPENDING [2]
1973:3, 19

DEPENDS [1]
1935:11

DEPOSITION [2]
1920:23; 1937:10

DEPOSITIONS [1]
1934:3

DESCRIBE [5]
1918:24; 1956:18; 1961:5;
1965:6; 1996:16

DESCRIBED [2]
1966:21; 2038:5

DESCRIBES [3]
1911:10; 1973:11; 2008:7

DESCRIPTION [1]
1969:27

DESIGN [3]
1962:22, 26; 1964:1

DESIGNATION [1]
2040:22

DESIGNED [1]
1977:26

DESK [1]
1938:9

DESTROYED [1]
2028:26

DETAILS [1]
1985:22

DETECTED [1]
2035:10

DETECTIVE [1]
1900:17

DETERGENTS [1]
1993:17

DETERMINE [5]
2004:1; 2022:22; 2023:27;
2042:16; 2047:10

DETERMINED [2]
1943:3; 2047:7

DEVELOPED [3]
1884:19; 1944:16; 1953:26

DEVELOPING [1]
2031:20

DEVELOPMENT [1]
2023:4

DEVISE [1]
2006:7

DIAGRAM [1]
1996:22

DIALOGUE [1]
2009:23

DIE [1]
2000:1

DIELECTRIC [1] 2001:14	1908:1; 1909:3; 1911:7; 1917:27; 1918:2; 1919:10, 15, 27; 1922:10; 1923:1; 1932:7; 1945:23, 25, 28; 1946:3, 5, 6, 17; 1947:1, 5, 9, 14; 1948:27; 1997:26; 2019:8, 10, 11; 2050:18; 2052:14	EARLY-WARNING [1] 1976:9	1912:12
DIET [1] 2027:24		EARNED [1] 1959:6	EMOTIONS [1] 2032:20
DIETS [1] 2033:14		EARS [1] 1970:15	EMPHASIS [1] 1903:18
DIFFER [2] 1891:14, 18		EASIER [7] 1913:11; 1914:11, 14, 22; 1935:9; 1979:22; 1982:9	EMPHASIZE [1] 1947:3
DIFFERENCE [4] 1892:7, 10, 15, 19	DOCUMENTARY [1] 1921:12	EASILY [1] 1914:8	EMPLOYED [3] 1963:25; 1971:22, 23
DIFFERENTLY [1] 1994:11	DOCUMENTS [2] 1948:15; 1990:21	EAST [5] 1943:24; 1944:2, 6, 8, 25	EMPLOYEE [3] 1972:5; 2027:2, 8
DIFFICULT [6] 1994:10; 2008:1; 2011:25, 26; 2016:10; 2021:8	DOESN'T [17] 1888:13; 1895:24, 27; 1896:2, 7; 1899:3; 1905:16; 1909:20; 1914:16; 1918:16; 1920:9, 16; 1922:13; 1923:16; 1929:7, 24; 1971:5	EASTERN [16] 1898:13; 1941:22; 1942:20, 24; 1953:27; 1954:4, 9, 17, 23, 26; 1955:8; 1982:21, 25; 1986:9, 13; 2002:25	EMPLOYEES [4] 1967:7; 1972:13, 19; 1989:7
DIFFICULTIES [1] 2023:27	DOMESTIC [3] 1927:3; 2002:2; 2003:1	ECOLOGICAL [1] 2020:25	EMPLOYMENT [3] 1962:8; 1963:18; 1969:15
DIFFICULTY [3] 1902:8; 2008:4, 5	DOMESTICALLY [1] 2030:17	ECOLOGISTS [1] 2025:22	END [12] 1888:7; 1894:2; 1942:27; 1953:26; 1961:10, 15; 1967:3; 1968:7; 1993:9; 1994:4; 2029:3; 2046:16
DIPHENYL [1] 1993:1	DOMINATED [1] 2012:15	ECONOMIC [1] 2023:4	ENDEAVOR [1] 2010:8
DIRECT [2] 1883:20; 2056:6	DON [2] 1904:9; 1907:2	ECONOMICALLY [1] 1961:18	ENDED [2] 1960:7; 2017:7
DIRECTOR [9] 1904:12; 1906:7; 1968:20; 1981:27; 1982:14, 18; 2020:1; 2052:24, 26	DONALD [1] 2055:24	EDMONDSON [3] 1982:17; 1983:15; 1987:9	ENGINEER [12] 1960:22, 25; 1961:3, 20; 1962:5, 17, 22, 23, 26, 28; 1964:1; 1987:23
DIRECTORS [1] 1946:21	DOUBT [1] 2027:23	EDUCATION [5] 1958:9, 18; 1959:5, 12; 1962:10	ENGINEERING [12] 1930:19, 22; 1958:21; 1959:2, 9, 28; 1960:3; 1961:2, 25; 1962:3; 1964:3; 2051:24
DISAPPEARED [1] 1889:27	DOZEN [1] 1964:24	EDUCATIONAL [1] 1959:27	ENGINEERS [8] 1898:17; 1960:7, 9, 17, 18; 1962:3; 1986:19; 1987:25
DISCHARGE [1] 1950:14	DRAFTED [1] 1921:9	EFFECT [3] 1946:13; 1947:7; 2015:20	ENGINES [1] 1942:12
DISCHARGED [2] 1953:6; 2028:23	DRAINAGE [1] 2041:13	EFFECTIVE [2] 1886:5; 1951:10	ENTER [1] 1988:15
DISCHARGES [1] 1953:2	DRAW [4] 1895:6; 1939:24; 1996:4; 1997:24	EFFECTS [4] 1976:5, 6; 1990:22; 2025:5	ENTERED [1] 2017:6
DISCONTINUE [1] 1887:1	DRAWING [1] 1943:9	EFFLUENCE [1] 2031:28	ENTITLED [4] 1898:2; 1978:10; 1997:6; 2026:19
DISCOVERED [2] 1901:9, 14	DRILLING [2] 1963:1	EFFORT [5] 2026:15; 2029:14; 2030:17; 2043:13; 2045:8	ENTRY [1] 2040:28
DISCRETION [1] 2050:2	DRIVE [2] 1957:8; 1963:4	EFFORTS [1] 2029:19	ENVELOPES [1] 1991:23
DISCUSSED [11] 1930:22; 1936:2; 1946:20; 1979:25; 2003:11; 2013:3; 2015:4; 2031:12; 2037:10; 2045:5; 2048:7	DROVE [1] 1942:9	EGG [2] 2013:24; 2014:9	ENVIRONMENT [13] 1948:13; 1950:15, 18; 1978:15; 2003:13; 2007:16; 2013:6; 2016:16, 28; 2017:6; 2028:10; 2040:6; 2046:6
DISCUSSING [4] 1900:6; 1978:14; 2032:28; 2051:11	DRUG [3] 1949:21; 1991:20; 2050:8	EGGS [6] 1944:24; 2013:16, 18; 2039:24; 2040:16; 2041:2	ENVIRONMENTAL [40] 1884:12; 1898:25; 1908:3; 1912:23; 1913:12, 24; 1917:4; 1921:4, 6, 7, 13; 1922:7, 19; 1927:13, 28; 1928:14, 18; 1929:4, 13, 25; 1933:2; 1934:11; 1935:20; 1950:22, 23; 1951:8; 1967:14, 16; 1968:1, 6, 20; 1970:1; 1989:2, 22; 2003:23; 2009:27; 2016:2; 2020:24; 2051:11, 19
DISCUSSION [5] 1893:24; 1899:24; 1902:7; 1932:3; 1935:27	DRUGS [1] 2015:15	EGGSHELL [3] 2013:16; 2014:2, 16	ENVIRONMENTS [1] 1999:13
DISCUSSIONS [2] 1990:9, 20	DRUM [1] 1913:2	EIGHT [5] 1936:25; 1992:1; 2022:6; 2047:21; 2049:1	EQUAL [1] 1991:22
DISINFECTANT [2] 1994:12, 13	DRUMS [1] 1915:1	EIGHTH [1] 2050:27	EQUALLY [1] 2011:1
DISPOSED [1] 1896:5	DUE [2] 2016:15, 26	EIGHTS [1] 1998:4	EQUIPMENT [17] 1892:20; 1928:2, 8, 9; 1960:15; 1961:17; 1965:17; 1966:6; 1993:2; 1999:1; 2002:5; 2005:7, 9; 2006:12; 2010:25, 27; 2031:20
DISSEMINATED [2] 1898:6, 10	DULUTH [1] 2008:24	ELBOW [1] 1972:27	EQUIVALENT [2] 2005:28; 2017:9
DISTILLATION [1] 1930:23	DURABILITY [1] 2000:10	ELECTRIC [7] 1941:20; 1942:5, 8; 1992:25, 27; 1993:2; 2001:23	ERROR [2] 1913:6; 2011:7
DISTILLED [3] 1888:27; 1889:25; 1890:28	DURATION [1] 1988:11	ELECTRICAL [8] 1906:15; 1948:23; 1998:28; 1999:1, 5, 8; 2001:22; 2002:13	
DITCH [1] 2041:14	DURLAND [5] 1888:23; 1889:22; 1890:15, 16, 24	ELEMENT [1] 2016:24	
DIVISION [6] 1884:10, 23; 1885:10, 11, 18, 21	DURO [2] 1923:6	ELEVATED [1] 1979:2	
DOCTOR [3] 1958:3; 1959:7; 2045:21	DUSTED [1] 2016:7	ELIMINATE [4] 1906:23, 28; 1914:17; 1915:3	
DOCTORATE [2] 1959:10, 14		ELIMINATES [1] 1978:4	
DOCTORS [1] 1974:6		ELIZABETH [1] 1923:6	
DOCUMENT [36] 1897:28; 1898:10; 1899:9, 15; 1900:2; 1902:11; 1903:11;		ELMER [2] 2019:18; 2053:19	
		ELSEWHERE [1]	

- E -

ERUPTION [1]
1984:8
ESCAMBIA [1]
2044:18
ESCAPING [1]
2030:7
ESQ [6]
2055:19, 20, 23, 24
ESSENCE [1]
1904:19
ESSENTIALLY [1]
1969:3
ESTABLISHED [2]
1953:4; 2006:21
ESTIMATE [1]
2002:24
ESTUARY [1]
2035:20
ET [1]
2029:1
EUROPE [8]
1930:28; 2002:21, 22; 2026:9;
2027:9; 2029:21, 23; 2050:2
EUROPEAN [5]
2002:23; 2018:23; 2023:5;
2026:10; 2029:22
EVALUATION [2]
2031:28; 2033:25
EVENING [1]
2053:27
EVENT [1]
1902:13
EVENTUALLY [3]
1910:18; 1960:6; 2014:6
EVIDENCE [5]
1883:17; 1975:15; 2028:3, 5, 15
EXACT [2]
1940:20; 1951:18
EXACTLY [5]
1928:26; 1929:20; 1993:15;
1995:8; 2015:27
EXAMINATION [5]
1883:20; 1957:1; 1961:22;
1975:18; 2014:19
EXAMINED [3]
2041:27; 2045:21; 2049:15
EXAMINING [1]
2042:14
EXAMPLE [15]
1894:7; 1905:20; 1918:8;
1977:8, 9; 1981:26; 1984:12;
1993:19; 1998:19; 2000:24;
2001:3; 2010:18; 2017:5;
2038:25; 2048:17
EXAMPLES [2]
2000:15; 2008:21
EXCEEDED [1]
1910:24
EXCELLENT [1]
1990:8
EXCEPT [3]
1894:23; 1921:14; 2044:3
EXCHANGE [2]
2023:26; 2024:10
EXCUSE [4]
1922:19; 1926:12; 2021:14;
2031:23
EXERCISE [1]
1912:16
EXHAUSTED [1]
1963:7
EXHIBIT [32]
1884:1; 1886:22; 1897:16, 28;
1898:6; 1902:28; 1903:14, 24;
1909:4; 1916:12; 1918:4;
1921:17; 1938:8; 1949:7;
1977:10; 1979:18; 1982:6;
1983:14, 21; 1986:4; 1987:2,
15; 1996:21; 2015:1; 2019:7;
2020:12; 2026:18; 2031:1;

2034:1; 2036:25; 2046:26;
2053:3
EXHIBITED [1]
1985:20
EXHIBITS [1]
2056:25
EXISTED [1]
1925:6
EXOTIC [1]
1972:11
EXPECT [4]
1897:3; 1899:10; 1907:23;
1910:16
EXPECTATION [1]
1942:15
EXPECTED [4]
1939:25; 1951:10; 1964:26;
1984:6
EXPERIENCE [6]
1897:2; 1952:15; 1953:11;
1977:28; 1990:7; 2015:25
EXPERIMENT [1]
2040:9
EXPERIMENTS [3]
1889:27; 1898:14; 1984:28
EXPERT [1]
1892:17
EXPERTISE [2]
2002:12; 2010:21
EXPERTS [1]
1942:7
EXPLICITLY [1]
1921:12
EXPLOSION [1]
1999:16
EXPLOSIVE [1]
1999:13
EXPORT [2]
1927:25, 26
EXPOSE [1]
1972:15
EXPOSED [6]
1944:12; 1976:12; 1984:3;
1993:22; 2010:18; 2040:8
EXPOSURE [7]
1965:24; 1983:28; 1984:15;
1988:12; 2042:19; 2048:14, 28
EXPOSURES [1]
1988:11
EXPRESSION [1]
1911:24
EXPRESSIONS [1]
1902:19
EXTENSIVE [1]
2017:25
EXTENSIVELY [1]
2001:15
EXTRA [1]
2002:5
EXTRACTION [1]
2029:2
EXTREMELY [2]
2015:21; 2016:10
EYE [5]
1980:10; 1984:10; 1988:5, 16
EYES [2]
1970:14; 1980:8

- F -

F-9 [1]
1932:12
F-9A [2]
1931:8; 1936:11
FACE [2]
1972:19; 1973:1
FACILITIES [1]
1960:13
FACILITY [6]
2034:7, 8; 2041:23, 24;
2042:10; 2044:19
FACT [19]
1883:28; 1899:3; 1910:20;
1911:26; 1912:9; 1914:16;
1917:11; 1920:6, 12; 1933:25;
1941:11; 1947:26; 1952:24;
1953:15; 1998:15; 2002:11;
2026:1, 3; 2033:26
FACTORIES [1]
1902:21
FACTORY [2]
1936:3, 5
FACTS [3]
1898:2; 1920:26; 1921:1
FAIL [1]
1988:17
FAINTLY [1]
1983:17
FAIRLY [1]
1978:7
FALL [2]
1901:26; 1903:2
FAMILIAR [5]
1967:16; 1983:1; 2019:8, 10;
2026:20
FAMILIARIZATION [1]
1989:20
FAMILIARIZE [1]
1989:3
FARMER [1]
1898:14
FARMS [6]
1943:27, 28; 1944:1, 3, 4, 27
FAT [1]
2043:3
FATE [1]
2047:10
FAVORABLE [1]
1937:13
FDA [5]
1949:20; 2008:26; 2050:6, 7, 17
FEATURE [1]
1998:12
FEBRUARY [5]
1950:13, 17; 1968:7; 2031:7, 22
FEDERAL [1]
1948:10
FEED [1]
1944:20
FEEDING [1]
2017:7
FELLOW [1]
1989:7
FELT [2]
1976:13; 1982:5
FENCE [2]
2041:15, 25
FEND [1]
1988:6
FERRAR [2]
2047:28; 2053:18
FEWER [2]
1995:19; 1997:26
FIBERS [1]
1991:12
FIELD [4]
1963:7; 1977:28; 2029:8;
2036:2
FIELDS [1]
1966:26
FIFTH [1]
1887:28
FIGUEROA [1]
2055:21
FIGURE [1]
1915:25
FILE [2]
1926:4, 24
FILES [2]
1926:7; 2037:12

FILLED [2]
1910:25; 1915:1
FILLING [2]
1913:2; 1915:1
FINAL [1]
2044:9
FIND [18]
1902:11; 1912:14; 1925:20;
1936:16; 1947:8; 1963:18;
1982:4; 1990:15, 21; 1993:19;
1997:16; 2002:9; 2025:20;
2030:13; 2036:11, 16; 2045:8;
2046:3
FINDING [9]
2005:8; 2009:11, 20; 2024:13;
2036:18; 2043:5; 2044:14;
2045:23; 2048:6
FINDINGS [15]
2003:9; 2006:17; 2013:3;
2014:15, 23; 2016:22; 2018:11;
2020:9; 2022:5; 2026:12;
2030:5; 2043:28; 2046:4, 11
FINE [2]
1889:11; 2048:12
FINGERPRINT [3]
2005:27; 2022:18, 19
FINLAND [1]
1950:7
FIRE [8]
1898:2; 1978:3, 4; 1998:13, 23;
1999:9; 2000:7, 17
FIRE-RESISTANT [4]
1896:24; 1977:26; 1986:21;
1998:11
FISH [11]
1943:22; 1944:8, 9, 18, 19;
2011:16; 2023:21; 2027:24;
2033:12, 13; 2043:27
FISHING [2]
1943:19; 2033:1
FIT [5]
1888:12, 13; 1889:3; 1891:12;
2007:19
FITS [2]
1892:1; 1980:23
FIVE [23]
1886:26; 1968:23, 24; 1988:25;
1995:21; 1996:7, 9; 1997:11,
12, 25; 2004:8; 2005:23;
2012:22, 24; 2021:26; 2022:6,
7; 2042:9; 2048:14, 25; 2049:4;
2052:4, 6
FLAME [3]
1998:13; 1999:12, 17
FLANGES [1]
1893:23
FLETCHER [6]
1983:9; 1985:4, 12, 17, 18, 20
FLOATING [1]
2011:24
FLOCKS [1]
1944:21
FLOOR [3]
1949:28; 2055:21, 25
FLORIDA [1]
2008:23
FLOW [1]
1970:4
FLUID [21]
1888:16; 1892:5; 1894:15;
1895:3, 6, 26; 1941:6; 1942:16,
25; 1944:15; 1977:26; 1980:12;
1983:11, 26; 1984:9; 1985:21;
1999:18; 2000:5, 8; 2001:1, 5
FLUIDS [32]
1885:6, 13, 25; 1886:4;
1887:17, 21; 1891:23; 1892:2,
8, 16, 25; 1893:2; 1894:28;
1904:13; 1910:14; 1928:1;
1931:6; 1938:28; 1940:23;

1941:4, 6; 1955:24; 1999:28;
2000:22, 23, 25; 2001:14;
2020:3; 2052:22, 25

FLUSH [1]
1980:11

FOCUS [3]
2010:10; 2047:15; 2051:18

FOCUSING [1]
2051:6

FOLKS [3]
1902:2; 1904:14; 1930:15

FOLLOWED [3]
1884:27; 1889:23; 2015:22

FOLLOWING [3]
1960:19; 1980:10; 1988:1

FOLLOWS [3]
1883:18; 1975:16; 2025:18

FONG [1]
1951:21

FOOD [2]
1949:20; 2050:8

FOODS [1]
2015:16

FOOTBALL [2]
2004:23; 2036:1

FOOTNOTE [1]
2029:3

FORCE [4]
1996:15; 2053:8, 10, 12

FORD [1]
2007:5

FOREIGN [1]
2002:15

FOREVER [1]
1955:6

FORGET [1]
1968:22

FORM [4]
2050:6; 2052:4, 7; 2053:25

FORMS [2]
1900:22; 2019:11

FORMULATIONS [1]
1928:4

FORTH [2]
1940:24; 2029:2

FOUND [29]
1900:18; 1952:24; 1954:14;
1978:12; 1990:6; 1996:25;
1999:4, 8; 2000:9; 2003:13;
2008:6; 2013:6, 10, 18, 28;
2022:7; 2026:27; 2027:19, 23;
2028:28; 2032:14; 2038:5, 15;
2039:24; 2040:24, 25; 2041:1;
2043:3; 2046:6

FOUNDATION [5]
1899:23, 26; 1949:6; 1996:2;
2018:28

FOUR [20]
1886:26; 1888:9; 1963:15;
1967:9; 1968:22; 1995:15, 19;
1997:17, 25, 26; 2005:23;
2007:20; 2015:10; 2021:26;
2034:25; 2035:5; 2036:3, 5;
2042:9; 2045:4

FOUR-MONTHS [1]
1935:9

FOUR-YEAR [1]
1967:5

FOURTH [3]
1887:25; 1924:16; 2007:7

FRACTIONALLY [2]
1888:27; 1890:28

FRAME [5]
1969:26; 2011:13; 2018:22;
2033:18; 2049:8

FRANCE [2]
2002:18, 28

FRANCISCO [1]
2055:26

FRANKLY [1]

2032:20

FREE [1]
1942:1

FREQUENCY [1]
2050:22

FRONT [4]
1886:22; 1934:8; 2011:2;
2037:22

FRUSTRATED [1]
2006:20

FULL [3]
1928:21; 1969:27; 2009:8

FULLY [1]
2011:7

FUMES [4]
1972:18; 1976:7, 12; 1979:3

FUNCTION [1]
1965:16

FUNCTIONAL [10]
1885:6, 13, 25; 1886:4;
1892:15, 18; 1904:13; 2020:3;
2052:22, 25

FUNCTIONS [2]
1933:6, 7

FUNNEL [1]
1971:2

FYRQUEL [1]
1955:15

- G -

GAIN [2]
1961:13; 1989:7

GALLON [1]
1895:3

GARBLED [1]
1904:27

GAS [14]
1938:28; 1942:9, 13; 1955:24;
1956:1, 7, 8, 23; 1983:27;
1988:5, 13; 1999:12, 17;
2005:10

GASFOE [2]
1988:3, 10

GATHER [1]
1989:11

GATHERED [1]
2037:13

GATHERING [2]
2030:22; 2051:22

GAVE [4]
1890:16; 1936:10; 1937:24;
1945:24

GE [3]
1936:23; 1942:16, 25

GENERATED [2]
1905:1; 2032:21

GENTLEMEN [7]
1883:9; 1897:17; 1920:22;
1933:13; 1974:14; 2012:19;
2053:24

GEOGRAPHIC [1]
2039:6

GEORGIA [1]
1947:27

GERMAN [1]
2022:8

GERMANY [2]
2002:18, 27

GERMS [1]
1944:13

GETS [2]
1904:8; 2024:15

GIRL [1]
1957:23

GIVE [10]
1897:25; 1901:27; 1923:16;
1949:9; 1982:5; 1990:28;
2004:20; 2010:28; 2022:2;
2036:10

GIVEN [9]
1897:22; 1908:24; 1952:1;
1964:8; 1967:20; 1969:27;
2033:5; 2049:25; 2050:16

GIVES [1]
2005:19

GLASS [3]
1952:25; 1991:16

GLOVES [6]
1972:25, 26; 1973:18; 1976:21;
1986:2; 1988:9

GOES [6]
1906:18; 1932:12; 1984:19;
1985:27; 2048:26; 2049:3

GOGGLES [1]
1988:3

GOLDFISH [4]
2040:2, 5, 7, 13

GOODS [1]
1912:2

GORDON [1]
1922:26

GOSH [2]
1943:22; 1948:14

GOVERNMENT [7]
1948:19; 1949:4; 1951:25;
1970:8; 2001:24; 2008:21;
2050:6

GOVERNMENTAL [4]
1947:23; 1952:1; 2009:10, 24

GOVERNMENTS [1]
1947:22

GOVERNOR [3]
1943:18; 2033:2, 6

GRAB [1]
1914:27

GRABBED [1]
1913:19

GRADE [2]
1906:15

GRADUATE [1]
1958:24

GRADUATION [2]
1958:14; 1961:24

GRADY [1]
2055:20

GREAT [2]
1943:22; 1952:1

GREATER [2]
1913:6; 2046:6

GREATLY [1]
1978:3

GREEN [1]
1958:8

GRIND [1]
1994:6

GROUND [1]
1944:11

GROUP [37]
1884:11; 1885:4, 6, 8, 13, 24;
1886:1; 1903:25; 1904:21, 23,
25; 1929:19; 1930:6; 1933:5;
1936:5, 6, 8; 1940:22; 1964:8;
1968:14; 1980:22; 2019:26;
2020:2; 2021:10, 27, 28;
2022:28; 2023:5; 2047:5;
2051:9, 17; 2052:4, 22, 23, 25,
27

GROUPING [2]
1980:23; 2021:25

GROUPS [11]
1885:11, 17, 20; 1886:5;
1902:3, 4; 2021:24; 2051:23;
2052:19, 21, 28

GROWING [1]
1967:17

GUESS [3]
2007:17; 2030:18; 2035:4

GUIDE [1]
2032:24

GULF [1]
2008:22

GUMMY [1]
1952:18

GUNNAR [1]
2007:2

GUY [1]
1970:3

GUYS [1]
1901:17

- H -

HADN'T [2]
2025:6; 2049:5

HALF [2]
1943:10; 2036:2

HAND [1]
2050:24

HANDLE [1]
1891:28

HANDLED [9]
1896:1; 1922:26; 1956:11;
1965:17; 1972:15; 1974:1;
1981:18; 2011:2; 2015:19

HANDLING [8]
1917:5; 1972:9; 1973:12;
1975:23; 1977:7; 1980:5;
1988:2; 1990:3

HANDS [4]
1945:11; 1973:1; 1976:18;
1988:7

HANDS-ON [2]
2030:18, 19

HANDWRITING [4]
1909:4, 7; 1938:12; 1952:6

HANDWRITTEN [1]
1918:6

HAPPENING [1]
2028:9

HARD [1]
2002:24

HARDLY [1]
1994:2

HARDY [4]
2026:14, 19; 2027:2; 2029:6

HARM [2]
1974:1; 1991:18

HARMLESS [6]
1945:16; 1946:9; 1947:13;
1954:1, 18, 28

HARTFORD [1]
2042:14

HATCH [1]
1944:24

HAVEN'T [2]
1920:15; 1933:28

HAZARD [4]
1950:23; 1978:4; 1984:7, 14

HAZARDOUS [1]
2015:18

HB-40 [1]
1966:18

HEAD [1]
2010:5

HEADED [1]
2010:22

HEALTH [13]
1969:7; 1975:27; 1976:5, 6;
1981:15; 1983:12; 1988:23;
1989:23; 1990:22; 2020:6;
2033:9; 2050:11

HEARD [2]
1966:21; 1970:22

HEARING [1]
1951:21

HEARINGS [1]
1951:17

HEART [1]
2026:1

HEAT [11] 1887:5, 6; 1910:14; 1944:12, 15; 1965:12; 1998:23; 1999:11, 13, 19; 2000:25	HOMOLOGS [1] 1997:27	2036:27	INDULGENCE [1] 2012:21
HEAT-TRANSFER [2] 2000:22, 23	HONOR [6] 1897:14; 1920:20; 1933:20; 1949:10; 1975:11; 2013:1	IDENTITY [1] 2003:27	INDUSTRIAL [11] 1931:5; 1934:17; 1972:14; 1974:6; 1982:1, 2; 1991:10; 1993:4; 2015:17; 2028:18; 2048:21
HEATING [2] 1944:14; 1999:18	HOPED [1] 1947:13	II [2] 1959:24, 25	INDUSTRY [4] 1998:9; 1999:5, 8; 2043:14
HEAVIER [1] 2041:3	HOPED-FOR [1] 1947:7	ILLEGIBLE [1] 2049:22	INFANTRY [1] 1960:6
HEAVY [1] 2036:15	HOPES [1] 1928:2	ILLINOIS [2] 1964:7; 2042:2	INFERENCE [1] 1939:24
HEIGHTS [1] 2012:10	HOPING [1] 2048:22	IMAGE [1] 1970:27	INFORM [2] 1976:27; 1979:6
HELD [3] 1945:16; 1951:17; 1954:10	HOSES [4] 1893:3, 14, 22	IMMEDIATE [4] 2041:24; 2044:28; 2045:12; 2046:5	INFORMAL [1] 2051:22
HELP [5] 1895:22; 1902:9; 1913:10; 1942:16; 2049:24	HOT [3] 1944:18; 2000:5, 7	IMMINENT [1] 1952:9	INFORMALLY [1] 2051:26
HELPED [2] 1953:15; 2023:23	HOURLY [1] 2053:23	IMPLEMENTED [1] 1924:9	INFORMATION [29] 1899:9, 10; 1903:5; 1907:12; 1953:8; 1970:4, 8; 1971:2; 1974:3; 1977:20; 1978:11; 1986:25; 1987:27; 1989:6, 13; 1990:12; 2003:16, 21; 2006:23; 2008:10; 2013:15; 2023:20; 2024:11; 2028:8; 2029:16; 2032:18; 2037:13; 2050:1; 2052:7
HELPS [4] 1895:8; 2001:7; 2004:22, 26	HOURS [1] 1984:13	IMPLEMENTING [1] 1949:23	INFORMED [1] 2053:10
HEN [1] 2013:21	HOUSE [1] 1949:28	IMPLIED [1] 2015:11	INGREDIENT [3] 1944:20; 1993:18; 1994:22
HERDS [1] 1947:28	HOUSEHOLD [2] 1993:17, 19	IMPORTANCE [1] 1886:2	INGREDIENTS [2] 1941:18; 1980:2
HERETOFORE [2] 1883:5; 1975:5	HOUSTON [2] 1954:8, 25	IMPORTANT [6] 1893:5, 7; 1914:7; 1970:28; 1999:19; 2011:1	INHALED [1] 1984:11
HEY [1] 1901:16	HOWARD [3] 1908:6; 1971:11; 2052:24	IMPRESSION [2] 2008:7; 2053:25	INITIAL [11] 1895:14; 1960:10; 1962:16; 1971:11; 1998:26; 2013:4; 2014:15, 23; 2017:26; 2018:19; 2030:12
HIGH [5] 1893:2; 1944:12; 1999:22, 24; 2000:2	HUGE [1] 2004:23	IMPRINT [1] 1910:12	INITIALLY [2] 2008:12, 13
HIGH-PRESSURE [2] 1887:17; 1893:13	HUMAN [2] 2027:24; 2043:3	IMPROVE [3] 2000:17; 2018:5; 2031:24	INITIATED [1] 2037:17
HIGHER [11] 1996:1, 8; 2004:8, 9, 10, 12; 2010:4; 2036:10; 2043:6; 2044:1; 2046:11	HUNDRED [1] 1909:27	IMPROVED [1] 2004:4	INJECT [1] 1963:3
HIGHER-CHLORINATED [2] 1891:6; 1996:6	HUNDRED-PERCENT [1] 1905:19	IMPROVEMENT [1] 1904:26	INK [1] 1900:24
HIGHLIGHT [1] 2048:9	HYDRAULIC [20] 1887:10, 13, 16, 18, 21; 1888:16; 1891:14, 17, 19, 23; 1892:5, 8, 13, 16, 25; 1893:2; 1928:1; 1938:24; 1940:23; 1941:4	INCHES [1] 2025:2	INQUIRED [1] 1990:16
HIGHLIGHTED [7] 2020:20; 2021:1, 2, 6; 2022:3; 2025:13; 2031:26	HYDRAULICS [1] 1934:17	INCIDENT [7] 1943:25, 26; 1944:2, 7, 26; 1945:2; 1988:24	INQUIRIES [1] 1981:14
HIGHLY [2] 1930:26; 2015:12	HYDROCARBON [4] 1927:9, 12; 1980:23, 28	INCIDENTLY [1] 2042:19	INSECTICIDES [1] 2028:21
HILL [1] 2055:28	HYDROCARBONS [7] 1927:17, 19, 22; 1980:6, 18, 26; 1981:4	INCIDENTS [4] 1943:8, 16, 18; 1990:16	INSIDE [7] 1944:16; 1956:5, 14, 19, 22; 1983:27; 1999:2
HINT [1] 2022:2	HYDROCHLORIC [1] 1966:20	INCLUDE [3] 1911:17; 1991:8; 2008:21	INSOLUBLE [1] 1952:23
HIRE [1] 2010:1	HYDROGEN [2] 1995:3; 2005:22	INCLUDED [3] 1940:23; 1941:4; 2013:15	INSPECT [1] 1960:12
HIRED [3] 1962:12, 13; 2010:5	HYGIENE [1] 1982:1	INCORPORATED [1] 2026:3	INSTITUTE [2] 1962:2; 2007:1
HISTORICAL [1] 1926:25	HYGIENIST [1] 1982:3	INCREASE [1] 1993:27	INSTRUCT [1] 1912:1
HISTORICALLY [1] 2009:25	HYGIENISTS [1] 1974:6	INCREASING [2] 1943:9; 1952:2	INSTRUCTION [2] 1980:24; 1981:6
HISTORY [9] 1911:4, 6; 1989:4, 7, 11, 23; 1990:14; 1992:5; 2016:20		INDEX [1] 2056:1	INSTRUCTIONS [1] 1908:24
HOC [3] 2052:5, 15; 2053:14		INDIANA [1] 1923:6	INSTRUMENT [4] 2005:12, 17; 2022:16; 2045:26
HODGES [1] 2053:18		INDICATE [8] 1901:9, 13; 1918:12; 1977:28; 1978:20; 2005:25; 2038:17; 2053:7	INSTRUMENTS [4] 2005:5; 2008:16; 2024:3; 2038:12
HOLD [5] 1946:9; 1947:13; 1954:1, 18, 28		INDICATED [6] 1972:5; 2007:28; 2013:9; 2038:23, 26; 2040:16	INSURANCE [2] 1936:6, 8
HOLD-HARMLESS [1] 1945:20		INDICATES [10] 1915:21; 1922:10; 1983:5, 7, 10; 1985:26; 1986:11; 1987:21; 1994:28; 2020:13	INTAKE [1] 2033:13
HOLIDAY [1] 1967:24		INDICATING [3] 1985:16, 18; 2005:27	
HOLLAND [1] 1951:25		INDIVIDUAL [5] 1905:10; 1971:22; 1976:20; 1988:26; 1993:10	
HOLLY [6] 1943:27, 28; 1944:1, 3, 4, 27		INDIVIDUALS [8] 1980:25; 1989:11, 16; 2019:23; 2020:7; 2025:25; 2052:4; 2053:16	
HOMOLOG [1] 1997:7			

INTENDED [6]
1905:13, 16; 1911:19, 21;
1912:7; 1978:21

INTENT [10]
1939:11; 1946:28; 1961:9;
1970:26; 2000:16; 2009:22;
2024:17; 2052:9, 10, 13

INTERCHANGE [1]
2018:7

INTERCHANGEABLY [2]
1964:13; 1997:10

INTERDEPARTMENTAL [1]
1996:15

INTEREST [5]
1947:22, 26; 1983:10; 1992:24,
28

INTERESTED [3]
1930:6; 1949:23; 1989:27

INTERESTINGLY [1]
1991:7

INTERIOR [2]
1948:4; 2014:7

INTEROFFICE [1]
1986:11

INTERPRET [1]
2024:8

INTERPRETATION [1]
2040:27

INTERROGATORIES [1]
1921:9

INTERROGATORY [6]
1897:15, 18, 25, 27; 1898:19;
1920:23

INTERRUPT [1]
1959:14

INTERVIEWED [1]
1967:18

INTOLERABLE [1]
1972:23

INTRODUCED [4]
1950:27; 1951:1, 14; 2030:14

INTRODUCING [1]
2048:18

INVENTORY [10]
1912:3; 1915:21, 25; 1916:1,
21, 26; 1917:18, 25, 28;
1919:21

INVESTIGATE [1]
1989:22

INVESTIGATION [6]
1990:5; 2016:1, 20; 2018:12;
2019:3; 2020:8

INVESTIGATOR [1]
2040:23

INVESTIGATORS [2]
2003:22; 2018:17

INVOLVE [1]
2044:7

INVOLVED [28]
1886:1; 1890:8; 1891:22;
1892:21; 1895:28; 1896:17;
1897:23; 1947:21; 1962:28;
1963:9; 1965:9, 17; 1971:27;
1984:8; 1990:1; 2010:8, 24;
2018:7; 2020:5, 7; 2026:14;
2030:26; 2033:7; 2041:10;
2042:15; 2043:12; 2052:21;
2053:1

INVOLVEMENT [3]
1966:4; 1971:24; 1976:2

INVOLVES [2]
1994:21; 2049:16

INVOLVING [1]
2025:17

IRON [1]
1993:8

IRRITANT [2]
1985:1; 1986:25

IRRITATION [3]
1984:10; 1988:9, 17

IRRITATIONS [1]
1985:21

ISOMER [1]
1997:9

ISOMERIC [2]
2021:9, 23

ISOMERS [1]
2021:28

ISSUE [10]
1890:9; 1967:16; 1968:6;
2010:2; 2018:12; 2032:15;
2033:3; 2051:11, 19, 22

ISSUED [3]
1930:11; 2014:25; 2033:10

ISSUES [3]
1981:15; 1990:15

ITALY [2]
2002:19, 28

ITEM [3]
1986:27; 1987:5, 12

ITEMS [1]
2027:24

- J -

J.F. [2]
1921:5, 12

JAMES [4]
1908:7, 8; 2052:26; 2055:19

JANET [1]
2055:20

JANUARY [15]
1951:10; 1954:7, 25; 1967:23,
25; 1968:6; 1989:21; 2016:2,
21; 2019:13; 2032:12; 2047:18;
2049:9; 2050:3; 2051:13

JAPAN [3]
1930:28; 1960:11; 2002:19

JENSEN [8]
2003:8, 22; 2004:15; 2008:19;
2011:15; 2013:3; 2016:22;
2020:9

JERRY [1]
2055:20

JIM [1]
1908:7

JOB [36]
1901:28; 1902:14; 1904:11;
1910:1, 19; 1921:27; 1922:2;
1930:5; 1940:18; 1962:9, 15,
16; 1967:12, 18, 20, 22, 27;
1968:3, 10, 15, 26; 1969:3, 4, 9,
28; 1970:3, 5, 13; 1976:1;
1989:21; 2019:23; 2032:12;
2037:14; 2047:19; 2050:4

JOBS [4]
1963:11, 23; 1968:8; 1972:6

JOHN [12]
1888:22; 1889:22; 1890:15, 16,
23; 1899:25; 1900:4, 7;
1918:22; 1931:23; 1963:26;
2053:10

JOHNSON [9]
1893:18, 20; 1926:9, 11, 14, 28;
1940:22; 1953:9; 1955:22

JOIN [1]
1926:15

JOINT [1]
2022:28

JOURNAL [1]
1898:16

JUDGE [1]
1975:3

JUDGMENT [1]
1972:22

JULY [6]
1899:24, 27; 1900:4; 1901:6;
1930:10, 13

JUNE [2]
1884:24; 1950:3

JUNIOR [1]
1982:17

JUSTICE [2]
1948:10, 11

- K -

KEEP [5]
1929:6; 1930:21; 1970:20;
1991:16; 2050:28

KEEPING [4]
1901:10, 15, 17, 22

KEITH [1]
1975:3

KELLER [6]
2019:18, 25; 2020:16; 2021:15,
20; 2047:26

KELLY [14]
1982:12, 13; 1983:8, 16, 25;
1985:11, 16, 19, 24; 1987:7, 9,
13; 1990:10; 2021:14

KENTUCKY [1]
1958:8

KEPT [6]
1895:18; 1918:19; 1933:28;
1935:13; 2003:23; 2023:7

KEY [2]
1903:11; 2051:16

KILL [1]
1944:12

KINDS [8]
1893:15; 1927:21; 1961:14;
1974:1; 2010:13; 2032:25;
2038:12; 2047:8

KNOW-HOW [2]
2002:5; 2020:23

KNOWLEDGE [11]
1897:7; 1961:6, 12, 15; 1972:3;
2003:16; 2007:11; 2016:6;
2019:2, 12; 2046:4

KNOWLEDGEABLE [2]
1953:12; 1971:24

KOEMAN [1]
2040:23

KRUMMRICH [20]
1917:15; 1918:10, 14, 25;
1919:6, 11, 19; 1921:27;
1922:16; 1964:11; 1966:5, 8;
1972:6; 2042:1, 5, 9, 10, 11;
2045:13, 17

- L -

LAB [3]
1891:4; 1952:26; 2043:22

LABELING [7]
1903:23, 26; 1906:11; 1913:1;
1915:18; 1924:4; 1929:17

LABELS [42]
1901:24; 1902:20; 1903:16;
1907:8, 24; 1908:12; 1910:4, 6,
24; 1912:18, 24, 28; 1913:3, 15,
18, 21, 23; 1914:19, 27; 1915:5;
1916:6, 20, 25; 1917:1, 4, 14;
1918:13; 1919:11; 1921:4, 13;
1922:7, 11, 13, 15, 20, 27;
1924:13, 27; 1925:28; 1929:25;
1935:6

LABORATORIES [16]
1970:10; 2008:19, 20, 26;
2009:1, 7, 10, 24; 2014:8;
2018:6, 8; 2023:28; 2024:4, 11;
2037:16; 2043:15

LABORATORY [18]
1889:26; 1890:12; 1891:3;
1977:27; 2008:22; 2022:26;
2024:13, 15; 2038:13; 2040:5,
8, 10, 18; 2041:20; 2043:15;
2044:5, 6; 2046:5

LABS [2]

2008:21; 2009:15

LADIES [7]
1883:8; 1897:17; 1920:22;
1933:13; 1974:14; 2012:19;
2053:24

LAKE [3]
1943:20; 2033:2, 22

LAKES [1]
1943:22

LAND [1]
2028:26

LANGUAGE [1]
1911:17

LARGE [3]
1904:23, 25; 1984:8

LARRY [2]
1940:15, 17

LAST [17]
1893:26; 1895:11; 1908:9;
1943:10; 1969:13; 1978:9, 27;
1987:15, 18, 25; 1991:28;
2016:26; 2017:17; 2032:2;
2040:28; 2045:16; 2048:28

LASTED [1]
2000:13

LATE [6]
1957:25; 2000:19; 2013:14;
2033:18; 2051:6, 19

LAUNDER [1]
1980:13

LAY [1]
2004:20

LAYER [1]
2036:16

LAZARUS [1]
2055:24

LEADERSHIP [1]
2052:2

LEADS [2]
2035:20, 21

LEAK [4]
1893:3; 1944:16; 1972:17;
1984:15

LEAKS [5]
1893:10; 1955:23; 1984:1, 2, 6

LEARN [3]
1973:23; 2003:12; 2008:14

LEARNED [2]
1954:10, 15

LEAVING [2]
1908:25; 1948:12

LEFT-HAND [4]
1909:2; 1970:6; 1997:4, 12

LEGAL [3]
1945:17, 19; 1946:10

LENGTH [1]
2037:11

LESSON [1]
1972:12

LETTER [24]
1903:19; 1949:18; 1954:1, 18,
28; 1955:4; 1982:11, 21;
1983:8, 11, 14; 1985:2, 9, 11;
1986:8, 10; 1987:6, 9, 13, 19,
21; 2003:17; 2006:28

LETTERHEAD [4]
1982:25; 1983:18; 1986:9;
2006:28

LETTERS [1]
1987:28

LEVEL [4]
1953:2; 1964:4; 2002:8; 2012:1

LEVELS [2]
1993:24; 2004:15

LIBERATED [1]
1984:9

LIBRARY [1]
1910:3

LICENSED [1]
1999:25

LIEUTENANTS [1]

1904:22

LIFE [1]

2017:23

LIGHT [1]

1901:21

LIGHTWEIGHT [1]

1988:9

LIKED [1]

2032:18

LIKELIHOOD [1]

2032:9

LIMIT [2]

2033:13; 2042:19

LIMITS [1]

2045:26

LINE [20]1887:14; 1906:19; 1907:15;
1925:3, 8; 1940:24, 25; 1941:1,
4; 1966:15, 18; 1984:1, 16;
1995:27; 1996:5; 1997:24;
1998:1; 2000:12; 2025:14;
2041:15**LINES** [2]

2000:21; 2016:26

LINK [1]

2014:15

LINKED [1]

1943:16

LINKING [1]

2008:5

LIQUID [8]1956:2, 4, 9, 14, 17; 1978:23;
1993:25; 1999:14**LIQUIDS** [3]

1956:5, 20; 1998:28

LIST [8]1889:8; 1892:14; 1923:16;
1932:7; 1934:27; 1940:1, 8;
1953:20**LISTED** [8]1889:6; 1909:18; 1920:2;
1940:4; 1986:27; 1987:5;
1997:17; 2037:16**LISTING** [4]1920:1; 1986:24; 2037:19;
2053:9**LISTS** [4]1919:23; 1932:11; 1996:28;
1997:2**LITERATURE** [1]

1977:6

LIVE [1]

1957:7

LIVING [3]

1971:23; 1989:17; 2007:13

LOCATE [1]

1921:11

LOCATED [3]

1963:26; 2034:7; 2035:14

LOCATION [4]2034:15; 2035:2; 2039:6;
2044:26**LOCATIONS** [3]

2034:25, 27; 2036:4

LONDON [2]

2018:20; 2027:3

LONG-TERM [2]

1990:22, 24

LOOKS [4]1938:8; 1986:10; 1994:6;
2021:4**LOOP** [1]

1887:5

LOS [3]

1923:5; 1975:1; 2055:22

LOSE [1]

1988:27

LOSING [1]

2011:4

LOT [10]1896:7; 1929:22; 1976:18;
1991:17; 1998:18; 2000:13;
2008:14; 2011:21; 2033:12, 22**LOUIS** [11]1918:23; 1957:9, 13, 15;
1958:5, 12; 1963:21, 27;
2030:25; 2034:12; 2048:20**LOVE** [1]

1913:27

LOW [1]

1993:24

LOWER [10]1905:19; 1909:2; 1927:8;
1941:8; 1995:25, 28; 1996:10;
2022:1; 2043:2; 2044:17**LOWER-CHLORINATED** [1]

1996:5

LUBRICANT [6]1896:24; 1977:27; 1983:27;
1984:7; 1986:21; 2001:3**LUBRICANTS** [3]

1898:3; 1978:2, 5

LUBRICATION [2]

1892:21; 1898:17

LUBRICITY [1]

1937:6

- M -**MACHINE** [5]1893:13; 1941:5; 2008:2;
2024:8, 9**MACHINERY** [3]

1892:18; 2001:5, 6

MACHINES [2]

2000:1; 2001:1

MAINTAIN [1]

1970:27

MAINTAINED [1]

2018:21

MAINTENANCE [2]

1964:2; 1965:15

MAJOR [4]1901:8; 1947:12; 1958:22;
1984:8**MAKER** [1]

1943:10

MANAGED [1]

1955:26

MANAGEMENT [10]1883:25; 1884:5, 9, 26;
1886:18; 1937:18, 25; 2051:9,
12; 2052:16**MANAGER** [15]1940:21; 1966:10; 1967:1, 14;
1968:1, 12; 1969:6, 28;
1975:28; 1988:21; 1989:2, 21;
1992:19; 2009:26; 2016:1**MANAGERS** [3]

1973:28; 1974:5; 2052:8

MANNER [3]

1972:15; 1981:20; 2030:8

MANUFACTURE [8]1951:4; 1964:23; 1966:28;
1989:4; 1990:7; 1993:4, 12;
2002:12**MANUFACTURED** [5]1966:12, 14, 16; 1973:14;
1992:17**MANUFACTURER** [2]

1936:22; 2025:17

MANUFACTURING [10]1964:2, 19, 21; 1965:10;
1973:26; 1991:3; 1992:8, 9;
2030:6; 2051:24**MAP** [1]

2034:16

MARCH [6]

1937:26; 1938:4, 15, 22;

1948:18; 2017:27

MARINE [3]

2016:16, 27; 2017:23

MARKET [4]

1927:25, 26; 2002:23; 2055:25

MARKETED [1]

1940:22

MARKETING [3]

1904:12; 1906:8; 1930:17

MARKS [1]

2055:20

MARRIED [2]

1957:16, 18

MARSHALL [1]

2023:6

MARYLAND [5]2008:27; 2014:8; 2022:27;
2045:18, 20**MASK** [4]

1972:20; 1984:17; 1988:10, 13

MASKS [1]

1988:5

MASON [14]1885:3; 1886:7; 1900:4, 7;
1901:5, 19; 1937:22, 23, 24;
1938:3, 6, 15, 21; 1939:18**MASS** [3]

2005:10, 26; 2006:14

MASSACHUSETTS [1]

1950:14

MASTER [4]

1959:1, 13; 1962:11, 13

MASTERS [2]

1959:17, 18

MATCHED [1]

2022:19

MATERIAL [33]1896:8, 16, 17; 1900:22, 24, 25;
1908:26; 1917:17; 1944:15;
1945:11; 1961:9, 10; 1966:28;
1972:28; 1979:1; 1981:12;
1984:4, 11, 28; 1990:3;
1991:15; 1993:1, 15, 16;
1994:5, 26; 1995:1; 2003:25;
2005:21; 2015:15; 2017:4;
2022:15, 17**MATERIALS** [21]1889:27; 1890:13; 1909:24, 25;
1941:28; 1956:8; 1961:7, 10;
1966:27; 1998:16; 1999:10;
2007:20, 26; 2010:15; 2011:16;
2016:16, 27; 2028:26, 28;
2030:14; 2034:15**MATHEMATICS** [1]

1961:13

MATRIX [2]

2038:6, 7

MATTER [4]1890:7; 1897:24; 1914:8;
2011:9**MATTERS** [1]

1969:20

MAY [26]1883:13; 1886:18; 1888:23;
1889:23; 1890:24; 1891:5;
1894:22; 1897:21; 1902:20;
1904:5; 1908:2, 3; 1920:28;
1921:19; 1924:1; 1927:7, 27;
1946:13; 1950:26; 1951:7;
1966:21; 1978:23; 1980:25;
1986:17; 2020:13; 2028:17**MC** [1]

1934:21

MCS-1016 [3]

1930:23; 1939:6, 9

MCS-1063 [1]

1936:11

MCS-153 [8]1931:27; 1932:13; 1934:21, 23,
26; 1979:28; 1981:7, 11**MCS-974** [1]

1939:4

MEAL [4]

1944:8, 9, 18, 19

MEAN [11]1892:9, 10; 1920:16; 1939:9;
1956:5; 1971:5; 1994:25;
2000:20; 2001:6; 2017:1;
2045:24**MEANING** [2]

1929:13; 2008:20

MEANS [5]1920:25; 1976:20; 2005:12;
2009:14; 2022:13**MEANT** [3]

1891:23; 1929:20, 22

MEASURE [4]

2012:3, 10, 13; 2045:11

MEASURED [2]

2035:28; 2038:2

MEASUREMENT [1]

2038:10

MEASURING [1]

2038:4

MECHANICAL [1]

1961:14

MECHANICS [1]

1965:16

MEDICAL [10]1930:28; 1979:11; 1981:27;
1982:14; 1988:18; 1989:12;
1990:15; 2020:5; 2051:23**MEET** [2]

1964:26; 2032:25

MEETING [25]1884:5, 10, 27; 1886:8, 11, 18,
21; 1888:10, 24; 1889:23;
1901:26, 27; 1903:9; 1904:16,
20; 1905:1; 1938:4, 22;
1939:19; 1946:21; 1954:8, 15,
24; 2051:26**MEMBER** [1]

1961:26

MEMBERS [4]

2021:27; 2053:9, 11, 16

MEMORANDUM [7]1904:22; 1908:23; 1912:4;
2021:15, 20; 2034:26; 2053:11**MEMORY** [3]

1902:10; 1948:16; 2047:7

MEN [4]

1983:28; 1984:3; 1985:20

MENTION [2]

1919:26; 1925:2

MENTIONED [8]1903:8; 1941:21; 1973:18;
2000:21; 2002:22; 2008:23;
2026:5; 2048:18**MESSAGE** [9]1890:16, 20; 1907:10; 1912:20;
1913:7, 20; 1928:4; 1956:12, 13**MESSRS** [1]

1922:5

METABOLATE [1]

2013:28

METABOLISM [2]

2016:15, 27

METABOLIZED [1]

2022:7

METAL [2]

2000:5, 7

METER [1]

2042:20

METHOD [2]

2011:14, 15

METHODOLOGY [2]

2011:10; 2031:21

1943:19, 20; 2033:2, 22
MICROGRAMS [2]
 2042:21, 22
MIDDLE [1]
 1932:13
MIDNIGHT-SHIFT [1]
 1913:19
MILD [2]
 1985:1; 1994:13
MILITARY [4]
 1959:21, 22; 1960:17, 21
MILK [4]
 1900:11, 14, 19; 1988:16
MILLIGRAM [1]
 2042:20
MILLION [11]
 2004:18, 21, 22, 23, 26; 2005:1,
 2; 2027:27; 2036:22, 23;
 2039:22
MIND [6]
 1890:12; 1892:11; 1912:5;
 1991:15; 2001:23; 2002:17
MINE [1]
 1928:2
MINING [2]
 1928:8, 9
MINOR [1]
 2028:4
MINUTE [4]
 1904:7; 1945:11; 2017:20;
 2047:16
MINUTES [5]
 1884:4; 1886:10, 17; 1903:9;
 1946:23
MISHANDLED [1]
 1974:2
MISS [1]
 2050:26
MISSOURI [2]
 1957:9; 2008:23
MIST [1]
 1980:7
MISTAKE [1]
 1914:14
MISTAKES [2]
 1914:6, 17
MISUNDERSTANDING [1]
 1912:6
MISUSE [1]
 2025:23
MIXTURE [4]
 1925:20; 1993:6, 9; 1997:5
MIXTURES [1]
 1924:22
MODIFIED [2]
 1925:10; 1936:13
MOLDING [1]
 2000:3
MOLDS [1]
 2000:2
MOLECULE [3]
 1995:16, 19; 2005:19
MOMENT [10]
 1894:11, 14, 27; 1899:28;
 1907:28; 1930:3; 1934:6;
 1935:15; 2000:14; 2009:3
MOMENTS [1]
 1911:18
MONEY [3]
 1914:3, 4; 1947:10
MONITOR [1]
 1937:19
MONITORING [1]
 1967:15
MONTARS [1]
 1905:14
MONTH [2]
 2047:19; 2050:28
MONTHLY [2]
 2047:23, 25

MONTHS [4]
 1888:9; 2047:21; 2050:25, 28
MORNING [9]
 1883:8, 22, 23; 1933:11;
 1957:3, 4, 5, 6; 2053:28
MOTHER [1]
 2013:20
MOVE [3]
 1893:21; 1915:6; 1997:18
MOVING [2]
 1970:21; 2038:14
MSA [2]
 1988:4, 6
MUD [4]
 2036:6, 7, 9, 16
MUGS [1]
 1963:1
MULLALEY [5]
 1921:20, 21, 26; 1922:2, 6
MULTI-PRODUCT [1]
 1991:3
MURIATIC [1]
 1966:21
MUTUAL [2]
 1936:3, 5
MYSELF [2]
 1969:17; 1990:2

- N -

NAGEL [4]
 1921:20, 25, 27; 1922:5
NAME [9]
 1910:13; 1918:21; 1940:16;
 1955:13; 1981:12; 1994:16;
 1996:23; 2001:4; 2035:11
NAMES [1]
 1920:3
NAMING [1]
 1921:12
NATURAL [3]
 2015:15; 2041:13; 2048:19
NATURE [6]
 1889:20; 1959:26; 1961:4;
 1965:6; 2019:4; 2040:6
NCR [5]
 1884:20; 1887:2; 1900:20;
 1901:7; 1931:3
NECESSITY [1]
 1906:23
NEEDLE [1]
 2008:2
NEEDLES [2]
 2008:6; 2011:17
NEEDLESSLY [1]
 1972:16
NEOPRENE [1]
 1988:9
NEWER [1]
 2006:10
NEWPORT [3]
 2035:18, 21; 2045:4
NEWS [2]
 2007:15; 2031:11
NICE [1]
 2053:27
NINE [1]
 1998:3
NOBODY [1]
 2017:13
NON-BIODEGRADABLE [7]
 1887:10, 22; 1888:6; 1889:2;
 1892:12; 1893:8; 1894:1
NON-CHLORINATED [2]
 1891:16; 1966:19
NON-CONTROLLABLE [3]
 1888:7; 1889:4; 1894:2
NON-DETECTABLE [1]
 2045:28
NON-ELECTRICAL [1]

1906:15
NON-PCB [2]
 1887:2; 1907:4
NONINDUSTRIAL [1]
 2023:21
NOON [2]
 1974:12, 18
NORM [6]
 1893:18, 20; 1926:8, 11, 28;
 1953:9
NORMALLY [1]
 1978:1
NORTH [1]
 2055:28
NOSE [1]
 1984:10
NOTE [5]
 1926:24, 27; 1938:8; 1981:6;
 2048:23
NOTED [2]
 1883:5; 1975:5
NOTES [4]
 1927:25, 26; 2008:18; 2009:13
NOTIFICATION [1]
 1954:6
NOVEMBER [7]
 1903:2, 6; 1935:22; 1936:10;
 1987:1; 2003:14; 2037:5
NUMBER [20]
 1884:1; 1897:27; 1910:25, 28;
 1921:3; 1938:18; 1939:16;
 1949:7; 1985:6; 1991:28;
 1997:1; 2005:19, 24; 2012:11;
 2027:18, 22; 2028:1, 13;
 2029:13; 2046:25
NUTRASWEET [1]
 1991:22
NYLON [1]
 1991:13

- O -

O'CLOCK [1]
 1933:14
OATH [1]
 1897:20
OBJECTION [7]
 1946:10; 1947:18; 1949:6, 11;
 1996:2; 2018:28; 2052:10
OBJECTIVE [4]
 2023:18, 19, 24, 26
OBNOXIOUS [2]
 1970:25; 1994:14
OBSERVED [3]
 2014:9; 2022:5; 2028:9
OBTAIN [5]
 1916:25; 1958:28; 1961:22;
 2026:12; 2029:15
OBTAINED [6]
 1959:3; 1988:1, 19; 2028:8;
 2031:17; 2045:21
OBVIOUS [1]
 2000:6
OCCASION [1]
 1969:23
OCCASIONAL [2]
 1984:6, 26
OCCASIONALLY [1]
 1973:19
OCCUPATIONAL [2]
 1969:7; 2020:6
OCCUPY [1]
 1958:1
OCCUR [3]
 1955:24; 1972:18; 1984:8
OCCURRING [1]
 1913:6
OCCURS [1]
 1980:9
OCEAN [1]

1944:10
OCEANS [1]
 2028:24
OCTOBER [5]
 1933:3; 1935:5; 1950:9;
 1951:24; 2034:1
ODOR [1]
 1994:13
OECD [2]
 2022:27; 2023:2
OFFER [2]
 1945:28; 1981:24
OFFERED [3]
 1904:28; 1905:6; 1945:25
OFFERING [1]
 2029:9
OFFICE [4]
 1905:2; 1914:25; 1926:14;
 2027:3
OFFICER [1]
 1947:16
OFFICES [1]
 1981:24
OFFICIAL [6]
 1883:6; 1943:19; 1947:6;
 1968:2; 1975:6; 2055:27
OFFICIALLY [1]
 1967:23
OFFICIALS [2]
 1947:27; 1948:2
OH [26]
 1908:18; 1915:27; 1916:27;
 1930:10; 1952:21; 1967:23;
 1968:5; 1969:17; 1981:17;
 1989:9; 1990:11; 1999:6;
 2001:26; 2003:6; 2009:6, 8;
 2018:23; 2021:5; 2023:25;
 2024:26; 2030:12; 2033:15, 27;
 2036:12; 2047:20
OHIO [1]
 1948:2
OIL [9]
 1963:2, 4, 7, 8; 1978:1;
 1988:15; 1999:12
OILS [1]
 1952:27
OILY [2]
 1952:18, 21
OINTMENT [1]
 1986:1
OKLAHOMA [2]
 1959:6; 1962:14
OLA [1]
 1951:8
OLD [6]
 1912:18; 1913:18, 22; 1914:24;
 1929:6; 1963:3
OLDER [1]
 1958:2
OLSON [5]
 1904:9; 1906:7; 1907:2, 24
ONE-TIME [6]
 1911:27; 1912:3, 9, 10, 16;
 1916:6
ONE-YEAR [1]
 1969:6
ONES [1]
 1889:24
ONGOING [2]
 1929:9; 2024:27
OPENED [1]
 1913:20
OPERATE [1]
 1991:26
OPERATING [2]
 1968:21, 23
OPERATION [3]
 1895:28; 1965:22; 2029:22
OPERATIONS [4]
 1968:20; 1984:17; 2029:17;

2030:7
OPERATOR [1]
 1999:25
OPERATORS [1]
 1913:1
OPINION [4]
 2024:22; 2025:7; 2032:9;
 2041:1
OPPORTUNITY [4]
 1895:13; 1898:21; 1914:5, 13
OPPOSED [2]
 1962:25; 1973:13
ORDER [10]
 1891:21; 1893:21; 1916:19, 28;
 1917:24; 1940:4; 1956:20;
 2006:5; 2010:20; 2049:11
ORDERED [2]
 1918:9; 2006:9
ORDINARY [1]
 1973:9
OREGON [1]
 2008:24
ORGANIC [3]
 1885:9, 20; 1984:17
ORGANICS [1]
 1885:7
ORGANISMS [1]
 2007:13
ORGANIZATION [6]
 1891:20; 1986:14; 2003:15;
 2019:16; 2023:3; 2051:4
ORIENTED [1]
 2043:27
ORIGINALLY [1]
 2023:6
OS-81 [11]
 1977:14, 24, 25; 1978:2, 19;
 1979:25; 28; 1983:11; 1985:22;
 1986:21, 26
OSHA [1]
 2042:25
OUTFLOW [1]
 2034:20
OUTSIDE [7]
 1898:7, 11; 1917:16; 1944:17;
 2041:25; 2043:22; 2051:3
OUTSTANDING [1]
 1998:10
OVEREXPOSED [2]
 1976:4, 24
OVERRULED [1]
 1946:12
OVERSEAS [1]
 1928:7
OVERWHELMING [1]
 2007:25
OWNERS [1]
 1991:19

- P -

P-O-T-T-E-R [1]
 1971:16
P.M. [4]
 1974:19; 1975:2; 2054:3;
 2056:4
PACKAGE [7]
 1905:26; 1907:12; 1910:9;
 1913:4, 18; 1935:14; 1979:12
PACKAGED [3]
 1912:12; 1915:21; 1922:17
PACKAGES [9]
 1905:13, 18; 1908:25; 1909:17,
 21; 1910:25; 1912:11, 15;
 1923:23
PAGES [1]
 2056:1
PAIN [1]
 1988:18
PAINT [1]

1984:20
PAINTS [2]
 1894:7; 2000:10
PALME [1]
 1951:8
PAMPHLETS [1]
 1974:11
PANCAKE [1]
 1994:2
PAPAGEORGE [46]
 1883:15, 22; 1888:25; 1896:10,
 20; 1898:20; 1899:17; 1901:25;
 1902:26; 1903:24; 1905:22;
 1906:5; 1908:28; 1910:27;
 1913:10; 1914:10; 1916:11, 16;
 1918:4; 1920:12; 1921:17;
 1924:17; 1926:28; 1929:11;
 1933:21; 1935:25; 1937:17;
 1938:10; 1939:28; 1947:20;
 1948:26; 1949:16; 1952:5;
 1955:7; 1957:3; 1971:21;
 1975:13, 20; 1982:11; 1985:8;
 1992:6; 1996:20; 2003:7;
 2013:2; 2026:26; 2056:8
PAPER [4]
 1900:20, 23; 1905:4; 1938:9
PAPER-LIKE [1]
 2005:15
PARAGRAPH [37]
 1890:10, 11; 1904:17; 1905:9,
 12; 1906:14, 24; 1907:13;
 1908:9, 12, 25; 1909:17;
 1924:7, 13, 16; 1926:19;
 1927:10, 13; 1938:27; 1941:16,
 17; 1977:24; 1978:18; 1983:5,
 24; 1984:20; 1985:23; 2007:7;
 2015:24; 2016:5, 18; 2017:17;
 2028:7; 2031:27; 2032:2;
 2048:7; 2049:20
PARAGRAPHS [1]
 2015:10
PARENS [1]
 1939:2
PARK [4]
 1902:23; 1904:16, 28; 1905:6
PARLIAMENT [1]
 1950:6
PART [29]
 1895:28; 1903:19; 1910:19;
 1930:5; 1943:7; 1946:28;
 1960:4, 11, 17; 1968:13;
 1980:16; 1989:19; 2004:20, 21,
 22, 26, 28; 2005:3, 14; 2016:24;
 2019:12; 2023:6; 2026:24;
 2027:27; 2040:9; 2043:18;
 2045:7, 24
PARTICIPANTS [1]
 1883:12
PARTICIPATED [1]
 2030:21
PARTICIPATING [1]
 2022:28
PARTICLES [1]
 2011:24
PARTS [13]
 1890:28; 1896:3; 1953:3, 5;
 1999:2; 2004:17, 18; 2005:13;
 2036:19, 20, 21, 23; 2039:21
PARTY [4]
 1897:19, 20, 23; 1920:25
PASS [3]
 1925:20; 1970:5, 7
PASTEURIZE [1]
 1944:12
PASTEURIZING [1]
 1944:9
PAUL [1]
 2053:18
PAWTUXET [2]
 2014:8; 2022:26

PCB-CONTAINING [1]
 1924:8
PCB-RELATED [3]
 1988:23; 1989:23; 2003:3
PCT [1]
 1966:15
PEAK [2]
 2005:15, 18
PEAKALL [1]
 2008:25
PEAKS [2]
 2005:15; 2012:10
PEBBLE [1]
 1957:8
PENSACOLA [3]
 2044:18, 25; 2045:12
PEOPLE [30]
 1890:8; 1891:22; 1901:1, 18,
 22; 1902:16; 1903:25; 1904:21;
 1906:6; 1920:16; 1933:6;
 1947:10; 1954:9, 26; 1970:6;
 1971:7; 1972:15; 1974:11;
 1992:3, 26; 1994:11; 2001:22;
 2002:13; 2006:7; 2009:20;
 2050:11; 2051:3, 16, 22; 2052:6
PERCEIVE [2]
 1901:20; 1952:12
PERCEIVED [2]
 1889:16; 1905:10
PERCENT [18]
 1889:12, 13, 17, 21; 1905:19;
 1909:28; 1995:1, 6, 20, 22, 23;
 1997:4, 28; 1998:3; 2002:28;
 2003:6; 2022:8
PERCENTAGE [6]
 1995:15, 18, 21; 1997:25;
 2002:22; 2003:2
PERCENTAGES [1]
 1997:16
PERFORMED [4]
 2038:18; 2039:13; 2044:11;
 2045:7
PERFORMING [1]
 2047:5
PERIOD [16]
 1902:27; 1903:20; 1906:23, 26;
 1914:9; 1934:4; 1947:21;
 1955:5; 1960:1; 1963:28;
 1967:5; 1971:10; 1984:12;
 2048:14; 2049:1; 2050:27
PERIODICALLY [2]
 1937:21; 2048:2
PERIODS [1]
 1963:22
PERMANENT [2]
 1990:22, 24
PERMITTED [1]
 1948:24
PERSON [12]
 1902:25; 1913:20; 1919:13;
 1929:15; 1947:5; 1970:20;
 1971:26; 1976:11; 1982:4;
 2029:8; 2030:20; 2053:26
PERSONAL [6]
 1974:4; 1979:8; 2015:25;
 2032:16; 2037:12, 15
PERSONALLY [2]
 1902:8; 1990:1
PERSONNEL [3]
 1988:2; 2030:21; 2041:19
PERSONS [2]
 1904:8; 1906:1
PERU [1]
 1944:10
PESTICIDES [1]
 2016:8
PETROLEUM [4]
 1962:12, 14; 1978:1, 5
PHILLIPS [4]
 1962:12, 13; 1963:12, 14

PHOCIAN [3]
 1902:23; 1904:16; 1905:6
PHYSICIAN [1]
 1958:2
PHYSICS [1]
 1961:13
PICK [1]
 2004:25
PICTURE [1]
 2004:23
PICTURED [1]
 2007:25
PIECE [3]
 1905:3; 1938:8; 2006:10
PIECES [2]
 1991:17; 2006:7
PILE [2]
 1914:18, 19
PINE [3]
 2008:2, 6; 2011:16
PIPELINE [6]
 1954:12; 1956:6, 10, 14, 19, 22
PIPELINES [1]
 1999:14
PIPES [1]
 1893:22
PLACE [3]
 1920:24; 1926:17; 2018:8
PLACED [1]
 1903:18
PLACES [3]
 1883:12; 1989:28; 2030:14
PLAINTIFF [3]
 1883:16; 1975:14; 2055:19
PLAN [12]
 1886:22, 25; 1887:1; 1892:26;
 1893:27; 1894:13, 23; 1939:6;
 1943:7; 1946:18; 1953:25;
 2023:6
PLANNED [1]
 1993:1
PLANNING [2]
 1942:24; 1949:25
PLANS [3]
 1884:23; 1912:12
PLANTS [15]
 1908:24; 1910:9; 1918:10;
 1924:10; 1948:13; 1953:6;
 1973:14; 1991:26; 1992:1, 14,
 15; 2015:16; 2045:9, 12; 2046:6
PLASTICIZER [5]
 1885:13, 25, 28; 1894:9;
 2052:27
PLASTICIZERS [3]
 1885:8; 1886:4; 2052:23
PLASTICS [2]
 1894:9; 1991:11
PLF [1]
 2056:6
PLURAL [1]
 1954:2
PLUS [5]
 1889:13; 1904:22; 1917:5;
 1961:24; 2002:11
POINT [29]
 1886:3; 1887:1, 6, 9, 13, 25, 28;
 1888:5, 15; 1889:7, 11;
 1892:14, 26; 1893:26; 1894:4;
 1899:12; 1902:27; 1940:3;
 1945:8; 1948:9; 1974:13;
 1976:4, 13; 1994:4; 2012:18;
 2017:14; 2018:3; 2025:6;
 2036:3
POINTED [1]
 2018:17
POINTER [1]
 2035:22
POINTING [1]
 2038:12
POINTS [3]

1886:26; 1888:20; 1889:5
POLAND [2]
 2002:20, 25
POLICY [1]
 1942:28
POLLUTION [1]
 2050:12
POLYCHLORINATED [4]
 1898:27; 1966:16; 2015:12;
 2016:6
POOL [2]
 1993:13
POPULAR [1]
 1991:8
PORTION [4]
 1889:28; 1960:14; 2015:4;
 2025:12
PORTIONS [1]
 1891:6
POSED [1]
 2025:25
POSITION [8]
 1947:9; 2002:7; 2021:7, 13, 19;
 2025:3, 17
POSITIVE [2]
 1900:15; 2025:21
POSSIBILITIES [2]
 1896:12; 2029:4
POSSIBILITY [4]
 1896:14; 1913:18; 2032:21;
 2033:1
POST [1]
 1914:25
POTENTIAL [2]
 1981:15; 1999:16
POTTER [1]
 1971:16
POULTRY [2]
 1944:5, 22
POUNDS [2]
 1939:20; 1964:27
POUR [1]
 1899:12
POURS [1]
 1994:3
PRACTICAL [1]
 2002:1
PRACTICED [1]
 1975:24
PRECAUTIONARY [1]
 1979:13
PRECAUTIONS [1]
 2015:22
PREFECTURE [1]
 1960:13
PREFERRED [1]
 1940:16
PREPARATION [1]
 2011:7
PREPARED [3]
 1977:17; 2009:14; 2050:20
PREPARING [2]
 2047:24; 2052:15
PRESENCE [6]
 1993:8; 2006:21; 2007:12, 16;
 2014:10; 2034:10
PRESENT [10]
 1938:28; 1958:1; 1961:27;
 1971:22; 1978:5, 20; 1997:5;
 2004:1; 2007:11; 2042:17
PRESENTATION [6]
 1885:3; 1938:3, 6, 15; 1996:14;
 2052:15
PRESENTLY [1]
 2049:2
PRESERVATION [1]
 1950:18
PRESIDENT [2]
 1947:8, 15
PRESS [6]

2014:25, 28; 2031:11; 2042:6,
 14, 15
PRESSURE [5]
 1893:2; 1961:8; 1963:8;
 1999:24; 2000:2
PRESUMABLY [1]
 1984:4
PRETTY [8]
 1907:5; 1925:8; 1953:12;
 1963:7; 1972:27; 1973:11;
 2003:27; 2031:22
PREUSS [22]
 1946:10; 1947:18; 1949:6;
 1956:27; 1957:2; 1974:12;
 1975:10, 11, 19; 1982:20, 24;
 1996:4, 16, 19; 2012:16, 28;
 2013:1; 2019:2; 2052:12;
 2053:22; 2055:23
PREVENT [2]
 1988:8; 1999:2
PREVIOUSLY [2]
 1883:18; 1975:16
PRICE [1]
 2002:8
PRIMARILY [6]
 1978:3; 1987:28; 1991:5;
 2007:23; 2037:18; 2038:11
PRIMARY [1]
 1976:6
PRINCIPAL [8]
 1970:2, 13; 1975:27; 1989:10;
 1990:12; 2001:18; 2002:13;
 2006:14
PRINT [1]
 1935:10
PRINTED [3]
 1902:21; 1911:13; 1917:14
PRINTING [2]
 1911:4; 1914:1
PRIOR [1]
 1985:28
PRIVATE [3]
 1970:10; 2009:10, 24
PROBLEM [13]
 1884:12; 1908:3; 1915:2, 3;
 1933:2; 1934:11; 1943:5;
 1972:24; 1973:5; 2012:3;
 2014:9; 2020:24; 2031:25
PROBLEMS [6]
 1946:7; 1976:14; 1978:21;
 1988:23; 1989:24; 2013:22
PROCEDURE [1]
 2008:15
PROCEDURES [6]
 1973:12, 24; 1975:23; 1978:14;
 1979:7; 2023:28
PROCEEDING [1]
 1920:24
PROCEEDINGS [2]
 1883:10; 2054:3
PROCESS [7]
 1895:3, 5; 1914:9; 1962:22;
 1973:26; 1989:20; 2049:2
PRODUCED [2]
 1897:28; 2016:11
PRODUCER [1]
 2001:27
PRODUCERS [3]
 2002:15, 18, 20
PRODUCES [1]
 2022:18
PRODUCTION [3]
 2002:27; 2015:20; 2034:8
PROFESSIONAL [1]
 1961:26
PROGRAM [7]
 1886:11; 1890:17; 1903:10;
 1946:26; 2018:14; 2022:28;
 2043:19
PROGRAMS [3]

1970:22, 23; 2026:4
PROGRESS [1]
 1970:18
PROHIBITED [1]
 1943:19
PROJECTED [1]
 1939:22
PROJECTS [1]
 1962:28
PROLONGED [6]
 1978:25; 1980:7, 8; 1984:16;
 1988:7, 12
PROMPTLY [1]
 1988:16
PRONUNCIATION [1]
 1899:20
PROPER [6]
 1902:18, 19; 1948:24; 1965:1;
 1970:19; 1982:5
PROPERLY [8]
 1892:24; 1896:1, 5, 6; 1956:11;
 1970:16; 1990:3; 2015:18
PROPERTIES [3]
 1986:25; 1998:21; 2000:16
PROPERTY [1]
 1998:10
PROPOSED [4]
 1904:16; 1906:14; 1911:8;
 1950:7
PROTECTION [5]
 1951:9, 22; 1984:16; 1988:2, 6
PROVE [1]
 2028:4
PROVIDE [5]
 1897:4; 1947:10; 1985:24;
 2009:4; 2018:8
PROVIDED [7]
 1972:19, 26; 1973:9; 1977:21;
 1988:5, 13; 1999:21
PROVISIONS [2]
 1883:17; 1975:15
PROXIMITY [1]
 2034:20
PUBLIC [5]
 1930:28; 1993:13; 2033:9, 11;
 2050:11
PULL [1]
 2025:1
PULMONARY [1]
 1988:5
PUMP [6]
 1894:28; 1895:2, 5, 10, 15;
 2001:8
PUMPS [1]
 1965:18
PURCHASE [2]
 1916:19, 28
PURCHASING [1]
 1916:17
PURPOSE [5]
 1911:21; 1912:25; 1978:7;
 1988:10; 2048:5
PURPOSES [2]
 1926:25; 2002:1
PUSH [1]
 1963:5
PUSHED [1]
 2000:2
PUSHING [1]
 2001:9
PUZZLING [1]
 2016:9
PYDRAUL [21]
 1887:14, 17; 1906:19; 1907:8,
 15; 1908:12; 1924:13; 1927:1,
 3, 27; 1928:7, 13, 17; 1929:1,
 12, 28; 1931:8; 1932:11;
 1935:28; 1936:11; 1937:15
PYDRAULS [14]
 1887:21; 1891:24, 25; 1906:27;

1907:25; 1909:20, 23; 1925:7,
 8; 1934:19, 28; 1941:5;
 1965:23; 2000:28

— Q —

QUALITY [2]
 1950:22; 1964:28
QUANTIFICATION [2]
 2031:24; 2038:18
QUANTIFY [2]
 2012:8; 2021:8
QUANTITIES [2]
 2016:12; 2028:27
QUANTITY [3]
 2004:2, 3; 2028:25
QUART [1]
 1895:2
QUEENY [25]
 1891:25; 1917:16; 1918:16, 20,
 22, 28; 1919:2, 8; 1920:14, 16;
 1921:5, 12; 1922:11, 12;
 1931:23; 1932:4, 9; 1963:26;
 1965:2, 3, 7, 24, 25; 1966:2;
 1972:6
QUESTION [12]
 1897:18, 21; 1898:23; 1947:23;
 1981:20, 27; 1982:2; 2003:28;
 2005:6; 2016:12; 2021:16;
 2025:25
QUESTIONABLE [1]
 2038:19
QUESTIONED [8]
 2026:17, 24; 2031:2; 2032:5, 8,
 27; 2046:28; 2048:8
QUESTIONING [2]
 1996:18; 2029:7
QUESTIONS [2]
 1897:5; 1902:12
QUIET [1]
 1905:1
QUIRK [3]
 1923:2, 11, 20
QUOTE [5]
 1898:5; 1916:6; 1921:7, 8;
 1995:25
QUOTES [1]
 1987:28
QUOTING [2]
 1901:11, 12

— R —

RAIN [1]
 2028:19
RAISED [5]
 1957:14; 1981:20, 21; 2017:3;
 2029:7
RAISES [1]
 2016:12
RANGE [1]
 2027:28
RANGING [1]
 1964:1
RAPIDLY [1]
 1891:8
RARE [1]
 2015:21
RE-LABEL [1]
 1902:4
RE-MIX [1]
 1936:15
REACH [1]
 1953:4
REACT [3]
 1961:8; 1998:17; 2007:15
REACTION [2]
 2013:4; 2028:21
READ [36]
 1897:15; 1907:13, 19; 1920:21;

1923:27; 1929:11, 15; 1949:1; 1973:28; 1977:23; 1978:17, 28; 1979:21, 23; 1983:24; 1984:23; 1986:22; 1987:26; 2007:6, 10; 2015:9; 2016:4; 2017:17, 18; 2020:19; 2021:1; 2022:3, 25; 2023:18; 2024:19; 2025:12; 2028:1, 13; 2029:13; 2048:11; 2049:21	2056:6 RED [1] 2000:5 REDDENING [3] 1976:17; 1988:25, 27 REDESIGN [1] 1907:16 REDESIGNING [1] 1907:11 REDIRECT [1] 2056:6 REDUCE [1] 1914:5 REDUCES [1] 1978:4 REFER [7] 1885:9, 14, 24; 1891:23, 27; 1904:6; 1941:17 REFERENCE [11] 1897:26; 1929:18; 1932:15; 1943:21; 2021:23; 2022:9, 13, 24; 2044:18, 25; 2052:20 REFERENCED [4] 1898:18; 1921:8; 1987:8; 2053:8 REFERRED [10] 1890:11; 1892:26; 1894:4; 1905:5; 1912:9; 1964:10; 2000:28; 2011:9; 2014:20; 2041:14 REFERRING [4] 1916:27; 1917:9; 1928:21; 1983:8 REFERS [10] 1887:25; 1911:7; 1921:6; 1923:15; 1924:18; 1941:19; 2023:2; 2024:2, 3; 2043:14 REFINING [2] 1962:23; 2010:12 REFLECT [1] 2016:19 REFLECTED [2] 1903:8; 2021:14 REFLECTS [1] 1998:15 REFORMULATED [2] 1908:13; 1927:4 REFORMULATING [1] 1906:27 REFORMULATION [7] 1906:22; 1925:15, 18; 1934:20; 1935:1, 28; 1941:18 REFORMULATIONS [1] 1924:14 REFRESH [5] 1903:14; 1948:15; 1949:12; 2019:22; 2052:18 REFRESHES [2] 1903:1; 1949:3 REFRESHING [2] 1902:10; 2047:7 REGARD [3] 1988:1; 1995:24; 2030:11 REGARDING [8] 1896:23; 1915:18; 1926:28; 1949:25; 1964:27; 1979:13; 1990:13; 2041:1 REGISTER [1] 1960:26 REGISTERED [2] 1960:22; 1961:19 REGISTRATION [2] 1961:23; 1962:5 REGULAR [2] 1890:28; 1929:14 REGULATION [2] 1950:11; 2032:22 REGULATIONS [1] 2033:11 RELATE [2]	1978:13; 1980:20 RELATED [5] 1946:7; 1959:27; 1979:28; 2020:24; 2021:13 RELATES [2] 1887:6, 28 RELATING [3] 1906:14; 1990:23; 2038:11 RELATIONS [1] 1931:1 RELATIONSHIP [1] 2014:2 RELATIVE [2] 1981:10; 2015:16 RELEASE [3] 2014:25, 28; 2031:11 RELEASED [3] 1972:18; 2029:2; 2050:2 RELIABLE [3] 2010:16, 28 RELIED [3] 1893:18; 1953:9; 2002:14 RELIEVE [1] 1988:17 RELIEVED [1] 2033:16 REMAIN [3] 1962:18; 1968:3; 2048:13 REMAINED [1] 1969:3 REMAINING [1] 1963:4 REMAKE [2] 1941:8, 24 REMAKING [1] 1906:27 REMEMBER [17] 1883:27; 1894:14; 1943:21; 1948:14; 1950:24, 25; 1951:6, 20, 24; 1965:8; 1975:26; 2004:17; 2006:6, 20; 2009:2; 2014:24; 2023:3 REMEMBERING [1] 1902:9 REMIND [1] 2053:24 REMINDS [1] 1994:12 REMOTELY [1] 2028:20 REMOVAL [2] 1934:18, 27 REMOVE [1] 1980:9 REMOVER [1] 1984:20 REORGANIZATION [1] 1969:8 REORGANIZATIONS [1] 1969:1 REPAIR [2] 1896:3; 1984:1 REPAIRING [1] 1965:17 REPEAT [1] 2021:16 REPEATED [2] 1978:25; 1979:2 REPLACE [7] 1887:2, 9, 22; 1892:11; 1893:8; 1896:13; 1924:28 REPLACEMENT [5] 1884:19; 1895:14; 1896:18; 1931:2; 1978:1 REPLIED [1] 1906:6 REPORT [30] 1884:23; 1886:7; 1930:9, 10, 13; 1933:1; 1934:18; 1935:4, 20; 1937:25; 1973:27; 2005:7;	2006:16; 2013:5, 8, 9, 13, 15, 24; 2014:22; 2026:18; 2027:18; 2029:3; 2037:6; 2046:16; 2047:6; 2049:4; 2050:14, 16, 25 REPORTED [11] 1951:9; 1965:16; 1985:19; 1990:16; 2004:5; 2013:18; 2016:12; 2021:19; 2034:26; 2039:19; 2046:7 REPORTER [3] 1883:6; 1975:6; 2055:27 REPORTING [12] 1900:28; 1904:14; 1935:22; 1937:3; 1940:22; 1942:23; 1970:17; 2004:16; 2007:15; 2020:16; 2031:14, 16 REPORTS [8] 1930:6; 1934:11; 1937:22; 1944:21; 2047:24; 2050:19, 24; 2051:1 REPRESENT [2] 1995:6; 2050:10 REPRESENTATIVE [3] 1954:12; 2003:18; 2022:27 REPRESENTATIVES [9] 1954:16; 1970:9; 1979:9; 2018:20, 24, 25, 27; 2026:6, 8 REPRESENTED [4] 1933:7; 1995:19; 1997:26; 2003:3 REPRESENTING [1] 1902:2 REPRESENTS [2] 2005:14, 15 REPRINT [3] 1912:21, 22; 1913:13 REPRINTED [2] 1910:21; 1911:17 REPRODUCTION [2] 2013:22; 2014:9 REPS [1] 1954:25 REQUEST [6] 1916:27; 1920:21, 22, 26; 1921:2, 15 REQUESTED [1] 1884:22 REQUIRE [4] 1916:2; 1927:9; 1934:19, 28 REQUIRED [3] 1909:26; 1941:19; 1961:22 RESEARCH [21] 1891:2, 4; 1899:23, 26; 1962:16, 17, 25, 27; 1989:14; 2010:7; 2012:6; 2014:1, 14; 2017:25, 27; 2019:26, 27; 2020:1; 2029:24; 2034:7; 2043:13 RESEARCHER [1] 1971:28 RESEARCHERS [4] 1951:7; 1952:24; 2026:7, 10 RESEMBLES [2] 2005:23; 2022:20 RESIDE [1] 1958:5 RESIDUE [1] 2017:23 RESIDUES [1] 2023:21 RESIST [1] 1998:11 RESISTANCE [3] 1978:3; 1998:24; 2000:17 RESISTANT [1] 1898:3 RESPECT [14] 1897:16; 1941:13; 1942:28; 1959:12; 1972:10, 13; 1980:4; 1998:7; 2003:1; 2033:24;
--	--	---	--

2039:20; 2048:6, 16; 2049:19
RESPECTED [1]
 1970:27
RESPECTIVE [2]
 1883:12; 1997:19
RESPIRATOR [3]
 1972:20, 24; 1976:16
RESPIRATORS [2]
 1973:20; 1988:4
RESPOND [2]
 1981:28; 2008:9
RESPONDS [1]
 1898:8
RESPONSE [10]
 1897:16; 1898:8, 18; 1920:21;
 1921:8, 10; 1983:20, 23, 25;
 2013:4
RESPONSIBILITIES [3]
 1968:5; 1969:28; 2019:23
RESPONSIBILITY [6]
 1945:12, 13; 1964:22; 1965:26;
 1967:15; 1970:17
RESPONSIBLE [7]
 1892:3; 1964:8, 23; 1965:21;
 1968:12; 1970:19; 2020:2
RESPONSIBLY [1]
 1970:26
REST [3]
 1963:8; 1995:3; 2039:4
RESTRICT [2]
 1951:2; 2025:18
RESTRICTED [2]
 1948:22; 2032:22
RESTRICTION [1]
 1950:7
RESULT [6]
 1976:7, 8; 1984:13; 1990:4;
 1993:8; 1998:21
RESULTED [1]
 1896:2
RESULTS [8]
 2010:16; 2021:8; 2031:16;
 2038:18; 2040:12; 2043:24;
 2046:20; 2050:4
RESUME [2]
 1933:16; 1974:17
RESUMING [5]
 1883:10; 1933:18; 1975:9;
 2012:24, 27
RETARDANCY [1]
 1999:9
RETIRED [3]
 1969:5, 12; 2027:7
RETIREMENT [1]
 1969:16
RETURN [2]
 1933:15; 1974:16
RETYPED [1]
 1985:9
REVERSE [1]
 2001:8
REVIEW [6]
 1915:20, 24; 1990:14, 20;
 2019:11; 2028:7
REVIEWED [2]
 1900:2; 1908:1
REVISE [1]
 1924:27
REVISIONS [1]
 1924:8
RHINE [1]
 2040:24
RICHARD [9]
 1989:14; 2019:19; 2020:1;
 2031:5; 2032:6, 8, 28; 2047:28;
 2052:1
RICHARDS [1]
 2053:18
RIGHT-HAND [1]
 1932:17

RIGS [1]
 1963:1
RISEBROUGH [9]
 2008:24; 2013:11, 24; 2014:15,
 22; 2018:11; 2030:6; 2031:11;
 2041:1
RISK [7]
 1895:6; 1913:6; 1943:5; 1945:7,
 10; 1946:27
RISKS [1]
 1999:24
RIVER [7]
 2035:21; 2040:24; 2048:10, 19,
 20, 23; 2049:4
RIVERS [3]
 2028:17, 23; 2029:1
ROAD [1]
 2000:12
ROBERT [4]
 1909:11, 12; 2019:18, 25
ROBIN [1]
 2009:14
ROCKVILLE [1]
 2008:26
ROOM [1]
 1994:5
ROUGHLY [1]
 1934:4
ROUND [1]
 2009:13
RUABON [4]
 2034:4, 5, 6
RUBBER [2]
 1894:9; 1986:2
RUN [1]
 2009:16
RUNOFF [1]
 2028:17
RUNS [1]
 2041:15
RUSSIA [2]
 2002:20, 26
RYAN [6]
 1949:16, 27; 1950:3, 10, 26;
 1951:1

- S -

S-A-U-G-E-T [1]
 1964:7
SACCHARIN [1]
 1991:9
SAFE [3]
 1973:5; 1977:7; 1980:5
SAFE-HANDLING [5]
 1973:24; 1976:28; 1978:11, 14;
 1979:7
SAFELY [1]
 1961:18
SAFEPLEX [1]
 1991:16
SAFETY [8]
 1928:1; 1974:5; 1982:17;
 1983:12; 1986:19; 1987:23, 24;
 2027:15
SALE [8]
 1897:4; 1936:19; 1940:8;
 1942:4, 17, 18; 1989:4; 2003:3
SALES [9]
 1887:1; 1888:5; 1893:28;
 1895:14; 1896:23; 1897:1;
 1898:28; 1939:22; 1979:9
SALESMAN [1]
 1981:21
SALESMEN [3]
 1897:3; 1953:12, 15
SALMON [2]
 1943:20; 2033:1
SALT [1]
 1994:7

SALYER [3]
 1883:6; 1975:6; 2055:27
SAMPLE [15]
 2004:3; 2005:13; 2010:17;
 2011:2, 6; 2022:16; 2024:7;
 2034:28; 2038:5; 2039:7, 10;
 2040:6, 15; 2043:3
SAMPLED [2]
 2041:17, 19
SAMPLES [28]
 2003:23; 2004:17; 2008:17;
 2009:4, 14, 15; 2010:14;
 2013:28; 2018:5; 2030:22, 24,
 27; 2031:18; 2034:14, 19;
 2035:7; 2036:4, 6, 10; 2037:7,
 18; 2041:23, 26; 2044:28;
 2045:4, 20; 2048:19, 28
SAMPLING [1]
 2042:15
SAN [1]
 2055:26
SANTA [1]
 1923:5
SANTOVAC [10]
 1894:16, 18, 23, 26, 28;
 1895:10; 1909:21; 1940:24;
 1941:5; 2001:4
SATISFACTORY [1]
 1977:28
SAUGET [4]
 1964:7, 10, 15; 2042:2
SAVAGE [3]
 1921:20, 25; 1922:5
SAYING [10]
 1907:6, 7, 15; 1923:19; 1924:6,
 26; 1928:12; 1937:12; 1938:14;
 2024:9
SCARE [1]
 1907:21
SCHEDULE [2]
 1887:20; 2012:17
SCHOOL [3]
 1961:25; 2012:9, 12
SCIENCE [3]
 1959:1, 7; 1962:11
SCIENTIFIC [4]
 1995:28; 2017:26; 2051:7, 12
SCIENTIST [2]
 2023:11, 12
SCIENTISTS [6]
 1995:24; 2004:6; 2005:7;
 2006:16; 2012:9; 2027:18
SCORE [1]
 1933:28
SCOTT [1]
 2010:5
SCREEN [2]
 1979:21; 2020:21
SEA [3]
 2028:26; 2041:2
SEALANTS [1]
 1894:8
SEARLE [1]
 1991:19
SEAS [2]
 2028:23; 2029:1
SEAT [2]
 2004:25; 2005:2
SEATS [2]
 2004:24; 2005:1
SECOND [14]
 1901:24; 1902:27; 1905:21;
 1909:3; 1916:15; 1918:23;
 1951:3, 6; 1983:24; 1984:19;
 2020:20; 2025:14; 2031:26;
 2049:20
SECONDARY [1]
 1963:6
SECRET [4]
 1901:10, 15, 17, 22

SECTION [7]
 1975:15; 1977:6; 1978:9, 13,
 28; 1980:17; 2021:2
SEDIMENT [4]
 2011:21; 2031:17; 2044:14;
 2045:11
SEEK [2]
 1958:24; 1989:6
SELECTED [1]
 2052:3
SELF-EMPLOYED [1]
 1969:18
SELL [6]
 1896:10; 1920:4; 1943:4;
 1945:5; 1946:18; 1953:15
SELLING [7]
 1895:18; 1896:12, 17; 1939:25;
 1942:28; 1955:3, 8
SENATOR [1]
 1951:21
SEND [1]
 2048:3
SENDING [3]
 1904:15; 1922:6, 26
SENIOR [1]
 1947:16
SENSE [4]
 1892:6; 1945:17, 19; 1971:27
SENSITIVE [1]
 2005:4
SENTENCE [12]
 1929:11; 1978:27; 1984:24;
 1986:22; 2007:7; 2020:20;
 2021:4; 2022:4; 2023:17, 22;
 2024:18; 2048:26
SEPARATE [4]
 1995:4, 5, 6; 2042:7
SEPARATED [1]
 2000:3
SEPARATES [1]
 2005:13
SEPTEMBER [11]
 1897:8, 10; 1898:12; 1931:19;
 1933:1; 1935:4; 1940:13, 18;
 1941:7; 1950:6; 1957:11
SERIES [3]
 1934:10; 1943:8, 13
SERIOUS [3]
 1978:20; 2028:4, 10
SERVE [3]
 1911:21; 1970:3; 1988:10
SERVED [3]
 1960:16; 1970:14, 20
SERVICE [5]
 1959:21, 26; 1960:4, 11;
 2007:27
SERVICES [2]
 1964:5; 1965:21
SERVING [1]
 2027:8
SEVENTH [2]
 1933:25; 2050:27
SEVERE [2]
 1976:14; 1988:18
SHANAGHER [1]
 2055:23
SHARED [3]
 1903:6; 2050:5; 2051:1
SHARP [1]
 1991:17
SHEARMAN [1]
 2055:19
SHEET [1]
 1933:28
SHELF [1]
 2006:3
SHELL [1]
 2013:25
SHELLS [2]
 2013:19

SHIFT [1] 1943:5	1893:27; 1894:13, 23	1991:14	1897:18; 1904:23; 1905:2;
SHIP [1] 1923:12	SIXTH [1] 1888:5	SPECIALLY [1] 1921:9	1910:21; 1916:3; 1927:16, 28;
SHIPPED [2] 1979:12; 2041:20	SIZE [1] 2036:1	SPECIES [3] 2021:9, 23; 2043:16	1928:14, 18; 1929:4, 13, 20, 26;
SHIPPING [4] 1917:5; 1923:20; 1951:4;	SKETCH [1] 1990:28	SPECIFIC [5] 1884:23; 1888:3; 1903:7;	2027:1
1990:7	SKIN [14] 1976:8, 18; 1978:24, 25;	1923:23; 1930:1	STATEMENTS [2] 1979:13; 1981:3
SHIRT-AND-TROUSERS [1] 1973:10	1979:14; 1980:8, 9; 1984:26;	SPECIFICALLY [4] 1922:13; 1950:22; 1967:27;	STATES [3] 1950:28; 1960:21; 2019:21
SHOW [12] 1902:28; 1939:19; 1948:26;	1985:1, 21, 27; 1988:7, 9, 27	1977:26	STATION [1] 1988:14
1979:18; 1981:5; 1982:6;	SKIN-CONTACT [1] 1988:24	SPECIFICATION [1] 2006:6	STATUS [13] 1930:6, 9, 10; 1933:1; 1934:11;
1986:4; 1995:12; 2016:11;	SLIDE [2] 1938:21; 1939:18	SPECTROMETER [2] 2005:11, 17	1935:20; 2047:6, 24; 2049:4;
2028:3, 15; 2035:5	SLOWLY [1] 2029:1	SPECULATION [1] 2029:5	2050:14, 16, 19, 24
SHOWING [1] 1932:8	SMELL [3] 1994:8, 11	SPEECH [1] 1949:28	STAY [4] 1895:15; 1968:25; 2009:9, 18
SHOWS [5] 1919:10, 15; 1932:17; 2053:7, 9	SNOW [1] 2041:14	SPEECHES [1] 1950:11	STEAM [1] 1999:25
SHUTTING [1] 1984:15	SOAKED [1] 1980:12	SPEND [1] 2010:6	STEEL [1] 2007:27
SIC [3] 2024:21, 24; 2025:5	SOAP [1] 1980:10	SPILL [1] 1972:18	STEP [1] 1914:23
SICK [1] 1944:23	SOCIETIES [2] 1961:27; 1962:1	SPOKE [1] 1989:11	STEPS [2] 2030:10, 12
SIDO [21] 1909:11, 13, 15; 1910:1, 5;	SOCIETY [2] 1898:16; 1962:4	SPOKEN [1] 2029:18	STERLING [1] 2055:19
1915:16, 28; 1916:21, 25;	SOILED [1] 1973:7	SPONSORED [1] 1936:8	STICK-ON [20] 1907:9, 16, 17, 24; 1910:8;
1922:6; 1923:28; 1924:4, 26;	SOLD [10] 1885:21; 1891:20; 1896:13, 16;	SPOT [1] 1973:4	1911:20, 22; 1912:25; 1913:8;
1925:24, 27; 1926:12, 13, 23;	1910:12; 1936:19; 1939:20;	SPRAYED [1] 2016:7	1914:2, 19, 26; 1917:8; 1922:7,
1927:24, 26; 1928:12	1940:23; 1944:19; 2007:26	SPRING [1] 1883:25	19; 1924:28; 1927:13; 1929:8,
SIGN [6] 1946:2, 6, 17; 1953:28;	SOLDIERS [1] 1960:21	SPRINGGATE [5] 1908:7; 2051:15; 2052:3, 19, 26	14
1954:17, 27	SOLICITING [1] 1905:28	ST [11] 1918:23; 1957:9, 13, 15;	STICKER [9] 1908:17; 1912:23; 1913:12, 13,
SIGNAL [1] 1976:9	SOLID [4] 1952:20; 1994:5; 2010:14;	1958:5, 12; 1963:21, 27;	24; 1920:13; 1928:7, 10, 19
SIGNATURE [1] 1904:1	2011:16	2030:25; 2034:12; 2048:20	STICKLES [3] 2022:25, 26; 2023:9
SIGNED [3] 1942:16; 1947:16; 1955:4	SOLUBLE [1] 2036:14	STABILITY [3] 1998:23; 2000:17; 2007:23	STICKY [1] 1952:16
SIGNIFICANCE [2] 2006:17; 2007:12	SOLVENT [1] 1978:23	STABLE [3] 1998:16, 20; 2008:3	STOCK [1] 1907:7
SIGNIFICANT [2] 1914:22; 2028:27	SOMEBODY [2] 1915:25; 1961:11	STACK [1] 1913:23	STOCKHOLM [1] 2007:1
SIGNING [4] 1945:26; 1946:1; 1947:5, 8	SOMEONE [1] 1981:24	STADIUM [3] 2004:23, 25, 28	STOP [1] 2015:23
SIGNS [1] 1942:25	SOMEWHERE [1] 2035:19	STAND [1] 1899:22	STORE [1] 1914:24
SILENT [1] 1922:12	SON [3] 1958:2, 7, 8	STANDARD [8] 1927:9, 12; 2022:9, 13;	STRAIGHT [1] 2039:5
SILICON-BASED [1] 1986:1	SOPHISTICATED [1] 2006:10	2042:23, 24, 25, 27	STRANGE [1] 1972:11
SIMPLE [3] 1914:23; 1935:13; 2015:21	SORRY [5] 1925:16; 2021:6, 17; 2042:9;	STANDPOINT [1] 1983:12	STREAM [3] 1956:1, 8, 23
SINGLE [1] 1914:18	2044:22	STANDS [1] 1899:16	STREET [4] 1918:23; 2055:21, 25, 28
SINK [1] 2036:15	SORT [5] 1952:18; 1976:9; 2023:13;	START [3] 1961:9; 1992:7; 2021:3	STUCK [1] 1947:17
SIT [2] 1905:2; 2013:21	2051:7; 2052:1	STARTED [17] 1902:15, 18; 1903:22; 1930:5;	STUDIES [18] 1925:19; 1959:13, 14; 1978:19;
SITE [1] 2035:11	SOUGHT [1] 1958:18	1945:19; 1949:16; 1953:1;	2010:17, 19; 2024:24; 2029:26,
SITS [1] 2005:20	SOUNDS [1] 1951:19	1960:5; 1968:1; 1989:21;	28; 2030:1; 2043:16; 2044:6;
SITUATION [14] 1889:15; 1901:21; 1912:10;	SOURCE [5] 1974:3; 1986:24; 1989:13;	1991:5; 1992:9; 1995:7;	2046:5; 2047:8; 2049:16, 19;
1913:3; 1925:6; 1937:19;	1990:12; 2017:23	2010:23; 2017:10; 2050:4;	2050:5, 20
1973:19; 1999:21; 2000:4;	SOURCES [1] 1974:7	2051:13	STUDY [14] 1949:22, 24; 2003:24; 2024:15;
2019:3; 2028:11; 2032:14, 26;	SOUTH [1] 2055:21	STARTING [4] 1897:8; 1935:28; 1965:28;	2029:24; 2039:19; 2040:5, 18;
2040:7	SPAIN [1] 2002:19	2047:20	2043:18, 27; 2047:4; 2048:4, 7,
SITUATIONS [1] 1990:21	SPEC [2] 2005:26; 2006:14	STARTS [2] 1932:11; 2023:23	10
SIX [8] 1885:17; 1886:26; 1894:4;	SPECIAL [3] 1925:2; 1973:17, 21	STATE [8] 1898:5; 1948:7; 1950:13;	STUDYING [1] 2031:24
2022:6; 2043:9; 2044:6;	SPECIALITY [1]	2033:8; 2049:26; 2050:9, 10, 17	STUFF [5] 1895:14; 1896:13; 1900:20;
2050:25, 28		STATED [1] 2038:16	1907:20; 1946:2
SIX-MONTH [3] 1955:5; 2050:23, 27		STATEMENT [14]	STUMBLED [1] 1901:7
SIX-POINT [3]			SUBJECT [9] 1923:8, 21; 1931:22; 1958:20;

2014:1, 14; 2028:18
SUBSTANCE [3]
 1961:17; 2022:21, 22
SUBSTANCES [5]
 1951:13; 1961:7; 2009:21;
 2013:26; 2016:13
SUBSTITUTE [3]
 1928:4; 1939:10; 2025:20
SUBSTITUTES [1]
 1931:10
SUBTRACT [1]
 1957:26
SUCKING [1]
 2001:10
SUE [1]
 1946:6
SUED [1]
 1945:1
SUFFER [1]
 1988:22
SUGGEST [1]
 1888:19
SUGGESTIONS [1]
 1970:18
SUIT [1]
 1948:11
SUMMARIZE [1]
 1963:22
SUMMARY [9]
 1908:3; 1920:11; 1978:7;
 2026:22; 2027:1, 19; 2037:6;
 2046:19; 2047:23
SUMMER [1]
 1951:12
SUPERINTENDENT [6]
 1964:3, 4, 8, 18; 1965:21
SUPERVISION [1]
 1967:8
SUPERVISOR [6]
 1914:7; 1964:2; 1971:11;
 2019:25; 2047:26
SUPERVISORS [1]
 1973:27
SUPPLEMENTAL [10]
 1911:23, 26; 1912:2; 1913:13;
 1920:13; 1921:4, 6, 7, 13;
 1922:18
SUPPLEMENTARY [1]
 1916:2
SUPPLIES [1]
 1960:15
SUPPLY [3]
 1910:8, 24; 1972:25
SUPPOSE [2]
 1929:15; 1960:1
SURFACE [1]
 1963:5
SURFACES [1]
 1952:20
SURPRISE [3]
 2007:18; 2016:21, 24
SURPRISING [1]
 2008:10
SUSPECT [1]
 1972:3
SUSPICION [1]
 2032:16
SUSTAINED [6]
 1947:19; 1949:11, 13; 1996:3;
 2019:1; 2052:11
SWANN [3]
 1992:13, 21, 23
SWEDEN [3]
 1951:9; 2003:18; 2007:15
SWEDES [1]
 2006:12
SWEDISH [7]
 1950:17; 1951:8; 2004:6;
 2005:7; 2006:16; 2016:13;
 2018:16

SWEETENER [2]
 1991:22
SWIMMING [2]
 1993:13
SWITCH [1]
 1968:8
SWITZERLAND [2]
 1948:19; 1949:4
SWORN [2]
 1883:18; 1975:16
SYMPTOM [1]
 1976:17
SYMPTOMS [1]
 1976:22
SYNTHETIC [1]
 1977:25
SYRUP [1]
 1994:2
SYSTEM [11]
 1893:16, 17; 1896:3, 17;
 1913:5; 1955:24; 1956:3, 4;
 1963:4; 1999:22; 2020:25
SYSTEMIC [2]
 1984:13, 25
SYSTEMS [6]
 1887:18; 1939:1; 1965:12;
 1999:11; 2000:2; 2025:19

- T -

T-A-N [1]
 1937:8
TABLE [3]
 1914:28; 1994:7; 1996:28
TAKES [4]
 1963:16; 1998:18; 2005:18;
 2025:3
TALK [6]
 1894:26; 1901:24; 1931:2, 8;
 1997:11; 2033:22
TALKED [9]
 1890:1, 10, 15; 1894:5;
 1902:23, 25; 2000:11; 2004:7;
 2021:25
TALKING [11]
 1883:24; 1885:12, 26; 1886:4;
 1898:20; 1902:15; 1907:10;
 1927:14; 1928:28; 1975:22;
 2021:24
TALLON [24]
 1883:13, 21, 23; 1897:14, 27;
 1915:8; 1920:20; 1921:2;
 1933:10, 19, 20; 1946:16;
 1947:20; 1949:8, 9, 12, 14;
 1956:25; 1982:23; 1996:2;
 2018:28; 2032:27; 2052:10;
 2055:19
TANK [2]
 1900:11, 18
TANKS [1]
 2007:27
TAPPING [1]
 1963:2
TARGET [3]
 1902:9; 1953:4; 1970:24
TARGETS [1]
 1964:27
TASK [4]
 1996:15; 2053:8, 10, 12
TAUGHT [3]
 1972:13, 20; 1976:10
TEAM [5]
 1960:12; 2010:6; 2030:25, 26;
 2051:12
TECHNICAL [7]
 1888:28; 1896:27; 1898:24, 28;
 1970:9; 1986:28; 2029:8
TECHNIQUE [3]
 2010:24; 2038:9, 11
TECHNIQUES [2]

1972:9; 1976:28
TECHNOLOGY [1]
 1963:3
TELLING [8]
 1901:5, 18, 22; 1907:3;
 1909:15; 1915:28; 1923:12;
 1941:12
TELLS [3]
 1922:5; 2005:18; 2045:25
TEMPERATURE [3]
 1961:8; 1984:7, 9
TEMPERATURES [3]
 1979:2; 1994:5; 1999:23
TEN [1]
 1968:16
TEND [1]
 2036:10
TENDENCY [1]
 1952:20
TENTATIVE [1]
 1936:10
TENTATIVELY [1]
 2003:26
TERM [5]
 1885:15, 23; 1899:7; 1921:5;
 1940:1
TERMED [1]
 2052:5
TERMINAL [4]
 1943:24; 1944:7, 8, 25
TERMINALS [1]
 1944:2
TERMINATE [2]
 1888:5; 1893:28
TERMINOLOGY [2]
 1890:8; 1896:25
TERMS [8]
 1929:22; 2004:20; 2009:10, 11;
 2031:19, 28; 2047:11; 2053:8
TERPHENYLS [2]
 1927:8; 1966:16
TEST [10]
 1937:6, 7, 8, 10; 1952:25;
 2040:4, 10; 2043:17, 25; 2049:1
TESTED [2]
 1900:14, 15
TESTIFIED [4]
 1883:18; 1933:22; 1975:16;
 2018:18
TESTING [4]
 1931:13; 1936:5, 7; 1941:12
TESTS [7]
 1890:12; 1925:21; 1937:4, 13;
 1977:27; 2043:24; 2044:11
TEXAS [16]
 1898:12; 1941:22; 1942:20, 24;
 1953:27; 1954:3, 8, 9, 16, 22,
 26; 1955:8; 1982:21, 25;
 1986:9, 13
THANK [9]
 1903:21; 1933:20; 1975:11;
 1979:4; 1986:3; 1988:20;
 1998:6; 2007:14; 2013:1
THEORY [1]
 2022:5
THERMINOL [4]
 1910:15; 1924:18, 27; 1925:2
THERMINOLS [4]
 1910:14; 1924:21, 24; 2000:26
THICK [1]
 1994:2
THICKER [2]
 1993:28
THIN [3]
 1993:25; 2013:20
THINKING [5]
 1888:17; 1889:26; 1894:15;
 1910:13; 1928:26
THINNING [5]
 2010:25; 2013:16, 25; 2014:2,

16
THIRD [5]
 1924:12; 1985:23; 1987:12;
 2025:13; 2037:3
THIRTIES [1]
 1957:25
THOUSAND [2]
 2005:1, 2
THREAT [1]
 2029:17
THREATENED [1]
 1948:11
THREE [22]
 1886:25; 1887:9, 13; 1888:9;
 1892:26; 1992:14; 1997:14;
 2012:23, 24; 2015:10; 2019:23;
 2020:7; 2021:25; 2025:1, 21,
 25; 2036:5; 2041:9, 17; 2045:4;
 2047:8
THROW [1]
 1913:22
THUMBNAI [1]
 1990:28
TIMES [4]
 1920:18; 1972:17; 1976:12;
 1989:28
TIMING [2]
 1886:2; 1951:18
TISSUE [2]
 2011:16
TITLE [14]
 1940:20; 1960:27; 1962:15;
 1967:27; 1968:2, 4, 11, 27;
 1969:3; 1997:3; 2023:7;
 2027:11; 2047:22; 2051:27
TITLED [2]
 1903:26; 1908:3
TITLES [1]
 1977:6
TOKYO [1]
 1889:22
TOMORROW [1]
 2053:28
TOPICS [1]
 1930:16
TOPMOST [1]
 2021:2
TOTAL [13]
 1907:11; 1948:21; 1949:5;
 1951:3; 1952:8, 11; 1960:28;
 1994:28; 1995:7; 2003:4;
 2007:17; 2020:23; 2032:22
TOTALLY [3]
 1889:28; 1942:1; 1952:14
TOUCH [1]
 1902:26
TOUCHING [2]
 1946:24; 2000:7
TOWARDS [1]
 2000:18
TOWN [1]
 2035:13
TOX [3]
 2030:1; 2043:18; 2050:19
TOXIC [3]
 1951:13; 2015:12, 20
TOXICITY [9]
 1949:22, 24; 1977:7; 1978:10,
 19, 21; 1986:25; 2015:14;
 2020:6
TOXICOLOGIC [2]
 2029:20; 2049:16
TOXICOLOGICAL [2]
 2029:16, 28
TOXICOLOGY [3]
 2026:19; 2027:14; 2043:15
TOXILOGICAL [3]
 2024:21, 24; 2025:5
TRACES [2]
 2027:23, 26

TRACK [2]
1970:15, 23
TRACT [1]
1988:5
TRADE [2]
1910:13; 1994:16
TRADEMARKS [1]
2000:20
TRAFFIC [1]
2000:12
TRAINING [3]
1960:2; 1961:13; 1974:10
TRAN [2]
1898:1, 2
TRANSFER [7]
1887:5, 7; 1910:14; 1999:11,
13, 20; 2000:25
TRANSFERRED [2]
1960:6; 1964:6
TRANSFORMER [1]
2008:1
TRANSFORMERS [5]
1887:26; 1888:18; 1965:14, 19;
2001:17
TRANSLATE [1]
2036:21
TRANSMISSION [1]
1938:28
TRANSPARENCIES [1]
1938:5
TRANSWESTERN [29]
1883:11, 16; 1884:1; 1897:15;
1898:1; 1900:1; 1904:4; 1906:4;
1907:27; 1910:26; 1921:9, 17;
1930:2, 8; 1934:7; 1935:16;
1937:28; 1940:10; 1954:12, 17,
20; 1975:14; 1985:6; 1987:9,
16; 1995:13; 1996:11; 2006:24;
2046:26
TREAT [1]
2024:7
TREATMENT [1]
1953:6
TRIAL [6]
1883:10; 1897:19, 22; 1920:24;
1933:25; 2011:7
TRIES [1]
2005:13
TRIP [1]
2020:8
TRUCK [2]
1900:11, 18
TRUE [11]
1895:17; 1910:23; 1919:1, 7;
1920:27; 1921:1; 2014:17;
2015:14; 2017:15; 2029:12;
2045:15
TSCA [2]
1951:17, 21
TUBES [1]
1952:25
TUCKER [22]
1996:22; 2010:5; 2030:25, 26;
2031:6, 14; 2034:2, 13; 2037:1,
6, 9; 2041:18, 20, 27; 2044:11;
2046:2, 16, 21, 23; 2047:5, 24;
2048:16
TUESDAY [1]
1975:1
TUNED [1]
2009:19
TURBINE [4]
1893:22; 1955:24; 1977:27;
1986:21
TURBINES [5]
1936:22; 1942:7, 9, 12; 1955:20
TURBINOL-153 [9]
1911:10; 1936:13, 15; 1939:4;
1942:21; 1953:19, 23; 1981:10;
2001:2

TURBINOL-153A [4]
1936:12, 18; 1937:1, 4
TURNING [1]
2041:6
TWO-STEP [1]
1914:8
TYPE [15]
1941:6; 1977:17; 1980:2;
1982:28; 1991:11; 1994:2, 13;
2004:5, 7, 8; 2005:6; 2021:27;
2038:20, 23; 2047:4
TYPED [1]
1985:8
TYPES [3]
1892:2; 1996:28; 1997:2
TYPICAL [1]
1983:4

- U -

U.S. [7]
1950:21; 2001:27; 2015:19;
2018:24, 27; 2049:26; 2050:6
UH-HUH [22]
1885:19; 1887:19; 1903:13;
1920:8; 1926:22; 1934:5, 22;
1935:3, 8; 1936:24; 1939:23,
27; 1952:28; 1960:24; 1989:5;
1995:23; 2002:1; 2003:10;
2010:9; 2020:10; 2032:4;
2050:18
UK [1]
2045:4
UNABLE [1]
1921:11
UNAFFECTED [1]
2048:14
UNDERGOING [4]
1907:9; 1925:15, 18; 2029:24
UNDERGRADUATE [1]
1958:22
UNDERSTAND [16]
1885:24; 1917:21; 1936:7;
1956:7; 1968:4; 1971:1; 1981:9;
1982:27; 1983:26; 1992:23;
2002:19; 2017:1; 2022:14;
2024:23; 2051:21; 2052:8
UNDERSTANDING [36]
1893:17; 1895:4; 1924:7;
1946:15; 1955:1, 2, 21;
1981:10; 1986:15; 2002:10;
2003:20; 2004:27; 2007:19;
2008:2; 2016:19; 2019:15;
2021:12, 18, 22; 2024:1;
2025:24; 2027:17, 21, 25;
2028:6; 2033:26; 2035:6;
2037:9; 2038:1; 2040:4, 19;
2042:13; 2044:27; 2048:15;
2050:3; 2052:13
UNDERSTOOD [14]
1890:22; 1891:22; 1893:15;
1907:2; 1919:13; 1936:21;
1946:14; 1953:16; 1956:21;
1975:23; 1978:6; 1982:13;
2008:5; 2009:25
UNDERTAKE [1]
1915:24
UNDERWAY [2]
2018:2, 15
UNFORTUNATE [1]
1943:26
UNFORTUNATELY [1]
1889:18
UNIQUE [2]
1973:12, 16
UNIT [5]
1944:11, 14, 17; 1969:2; 2006:7
UNITED [3]
1950:28; 1960:21; 2019:21
UNITS [5]

1915:21; 1916:1; 1965:10;
1968:21, 23
UNIVERSITY [6]
1958:10, 26, 27; 1970:10;
2008:25; 2013:11
UNKNOWN [2]
2022:19, 22
UNRELATED [1]
1943:15
UPDATE [1]
2050:24
USEFUL [2]
1961:11; 2000:9
USER [2]
1966:6; 1999:22
USES [5]
1888:7; 1894:2, 4, 5; 2007:24
USFDA [1]
2049:26

- V -

VACUUM [9]
1892:2; 1894:15, 28; 1895:5,
10, 15; 2001:5, 6, 11
VALLEY [1]
1957:8
VALLEYS [1]
2005:15
VALUABLE [1]
1974:7
VANISH [1]
2000:14
VAPOR [1]
1984:17
VAPORS [4]
1980:7; 1988:15; 2010:14;
2011:25
VARIED [1]
2004:19
VARIES [2]
1981:19; 1993:21
VARIETY [2]
1930:16; 1995:9
VARNISH [2]
1999:15, 17
VARNISHES [1]
1894:8
VAST [1]
2028:25
VERSION [2]
1951:13; 1985:9
VERSUS [1]
1883:11
VICE-PRESIDENT [1]
1947:8
VICINITY [7]
2041:24; 2042:4; 2044:15, 28;
2045:9, 12; 2046:5
VIEW [2]
2032:14, 28
VILLAGE [1]
2035:13
VISCOSITY [1]
1899:11
VISIBLE [1]
1944:17
VISIT [3]
1936:3; 2020:13, 17
VISITED [3]
1936:9; 2019:16; 2027:17
VISITING [1]
2025:26
VISITS [1]
2027:20
VODDEN [2]
2034:2, 3
VOLUME [1]
2056:1

- W -

W-A-R-F [1]
1899:16
WAIT [2]
1904:6; 1973:4
WALES [1]
2034:6
WALK [2]
2006:3, 4
WALKER [1]
2055:23
WALL [1]
1952:6
WANTED [7]
1889:5; 1893:9; 1942:4;
1945:14; 1990:2; 1997:16
WANTS [1]
1945:6
WAR [3]
1959:24, 25; 2028:27
WAREHOUSE [4]
1918:19, 20, 22; 1923:3
WAREHOUSES [11]
1912:11; 1915:22; 1917:16;
1918:9, 18; 1919:11; 1922:27;
1923:3, 4, 12; 1924:10
WARF [3]
1899:19, 25; 1900:8
WARFARE [2]
1960:15, 19
WARNING [2]
1922:7, 20
WASH [1]
1973:1
WASHED [1]
1988:16
WASHING [2]
1980:10; 2028:19
WASHINGTON [3]
1948:11; 1958:10, 26
WASTE [3]
1953:5; 2028:17, 18
WATER [25]
1952:23; 1953:5; 1963:3, 8;
1980:10, 11; 1988:17; 1993:25,
26; 2010:14; 2011:18, 20, 21;
2031:17; 2035:20; 2036:11, 15;
2044:14; 2045:11; 2048:10, 19,
23; 2049:4; 2050:12
WATERWAY [1]
2035:26
WAXES [1]
1952:27
WAYS [3]
1973:25; 1977:3; 2024:19
WEAR [2]
1973:7; 1976:20
WEARING [2]
1980:14, 15
WEDNESDAY [1]
2054:4
WEEK [1]
1888:23
WEEKS [4]
2048:14, 25; 2049:1, 4
WEEVIL [1]
1966:26
WEIGH [1]
1995:1
WEIGHT [4]
1995:7; 2005:19, 21; 2022:11
WELLS [1]
1963:4
WEREN'T [6]
1885:1; 1891:6, 8; 1893:14;
1914:13; 1918:28
WESTINGHOUSE [1]
2001:22
WGK [1]

2041:27
WHEELER [8]
1989:12; 2019:18; 2020:4;
2031:6; 2047:27; 2049:12;
2052:1; 2053:19
WHENEVER [1]
1892:4
WHEREVER [2]
1917:17; 1973:2
WHICHEVER [1]
1979:22
WHOLLY [1]
1977:25
WIDESPREAD [2]
2015:18; 2028:11
WIDMARK [27]
2003:8, 22; 2004:15; 2007:3;
2008:18; 2011:15; 2013:3;
2016:22; 2018:19, 21, 27;
2019:5, 16; 2020:9, 14, 17, 22;
2021:13, 19; 2023:1; 2024:22;
2025:2, 3, 17, 28; 2026:7;
2030:5
WILD [4]
2013:10, 23; 2014:3, 10
WILDLIFE [4]
2016:11; 2027:24; 2043:17;
2047:23
WILLIAM [3]
1883:15; 1975:13; 2056:8
WILLIAMS [2]
1987:23, 24
WILLING [1]
1955:3
WINDSHIELD [1]
1991:16
WISCONSIN [2]
1899:23, 25
WISEST [1]
1913:9
WISOT [1]
1975:3
WITNESS [3]
1883:16; 1946:15; 1975:14
WITNESSES [1]
2056:6
WOOD [2]
2003:17, 21
WOODLANDS [1]
2016:8
WORD [7]
1892:4; 1895:22; 1898:24;
1899:3; 1940:28; 2007:17;
2027:25
WORDING [11]
1902:24; 1904:17, 28; 1905:7,
10, 13; 1907:20; 1909:16;
1910:11; 1911:8; 1981:8
WORDS [9]
1890:21; 1898:27; 1902:19;
1907:10; 1928:16; 1929:6;
1970:25; 1980:27; 2025:14
WORK [30]
1891:2; 1900:17; 1905:6;
1914:28; 1941:13; 1942:13;
1958:25; 1959:13; 1960:8;
1961:3, 4; 1963:10; 1965:3;
1973:9; 1988:27; 1992:3;
2010:11; 2012:20; 2016:13;
2022:8; 2023:19; 2024:21;
2030:18, 19; 2038:13; 2039:11;
2042:6; 2043:25; 2047:17;
2052:14
WORKED [5]
1902:24; 1963:12; 1972:5;
1973:15; 1982:14
WORKER [2]
1976:23; 1988:22
WORKERS [7]
1914:6; 1973:27; 1976:2, 25;

1989:24; 1990:23; 1992:2
WORKING [12]
1903:22; 1906:27; 1930:25;
1941:8; 1969:13; 1972:4;
1975:25; 1976:11; 1978:15;
2003:23; 2015:26; 2021:10
WORKMAN [1]
1914:18
WORKMEN [1]
1979:3
WORKPLACE [2]
2042:16, 18
WORLD [3]
1959:24, 25; 1995:28
WORLDWIDE [4]
1970:11; 1971:2; 1992:1;
2017:25
WORN [1]
1984:18
WOULDN'T [4]
1914:16; 1929:10; 1933:26;
1944:24
WRIST [1]
1972:27
WRISTS [1]
1988:7
WRITE [4]
1888:22; 1928:23, 27; 1930:5
WRITER [1]
1983:7
WRITING [6]
1890:23; 1925:27; 1926:3, 4;
1935:5; 1949:17
WRITTEN [5]
1897:18; 1904:24; 1948:5;
1987:21; 2048:11
WRONG [2]
1913:4; 1914:1
WROTE [6]
1889:22; 1890:25; 1930:12;
1933:2; 1934:18; 1950:3

- Y -

YEAH [10]
1889:3; 1901:11, 16; 1918:15;
1940:28; 1941:2, 16; 1952:22;
1954:22; 2035:8
YEAR [10]
1895:19; 1896:11; 1958:14;
1959:3; 1963:16; 1964:17;
1968:19; 1969:10, 11; 2052:17
YEARS [16]
1895:11, 16; 1954:14; 1957:19;
1959:22; 1961:21; 1962:20;
1963:15; 1965:2; 1967:9;
1968:16; 1988:25; 1990:27;
2012:7; 2015:19; 2051:13
YESTERDAY [10]
1883:24; 1884:14; 1902:6;
1949:18; 2026:18; 2032:5;
2037:11; 2047:1; 2048:8;
2049:15
YOU'VE [1]
2010:22
YOURS [2]
2021:6; 2022:3
YOURSELF [4]
1971:25; 1989:3; 2032:13;
2047:28

- Z -

ZIMMER [1]
2055:24