

09.08-07/27/94-01519

PUBLIC HEARING

ON THE

PROPOSED CLEANUP PLAN FOR OPERABLE UNITS ONE AND FIVE

SITES 21, 24, AND 78

JULY 27, 1994

HELD AT
TARAWA TERRACE ELEMENTARY SCHOOL
CORBIN STREET
JACKSONVILLE, NORTH CAROLINA

REPORTED BY: STACY TONE, CCR

CAPE FEAR COURT REPORTING
P.O. BOX 1256
WILMINGTON, NORTH CAROLINA 28402

(910) 763-0576

COPY

A P P E A R A N C E S

PRESENTED BY:

MR. RAYMOND WATTRAS and
MR. TOM BIXIE
BAKER ENVIRONMENTAL, INC.
AIRPORT OFFICE PARK, BUILDING 3
420 ROUSER ROAD
CORAOPOLIS, PENNSYLVANIA 15108
(412) 269-6000

P R O C E E D I N G S

7:18 P.M.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

MR. PAUL: GOOD EVENING. TONIGHT WE'RE GOING TO DISCUSS THE PROPOSED REMEDIAL ACTION PLANS FOR OPERABLE UNIT ONE AND FIVE, NOT TEN WE DISCUSSED THAT LAST NIGHT. THE PUBLIC COMMENT PERIOD WILL BEGIN TODAY, JULY 27TH, AND EXTEND THROUGH AUGUST 27TH OF 1994. I WILL SAVE INTRODUCTIONS TONIGHT BECAUSE YOU GUYS WERE HERE LAST NIGHT AND KNOW PROBABLY WHO EVERYONE IS AND I'LL TURN IT OVER NOW TO MR. RAY WATTRAS FROM BAKER.

MR. WATTRAS: THANK YOU. PRETTY MUCH THE SAME FORMAT AS LAST NIGHT. FEEL FREE TO INTERRUPT ME AT ANY TIME TO DISCUSS SOMETHING THAT MIGHT NOT BE CLEAR AND WE'LL GO FROM THERE; A PRETTY CASUAL FORMAT HERE.

WE'RE FIRST GOING TO BE TALKING ABOUT OPERABLE UNIT NUMBER ONE. THIS OPERABLE UNIT CONSISTS OF THREE SITES. THE MOST NOTABLE SITE MIGHT BE SITE 78, THE HADNOT POINT INDUSTRIAL AREA. IT'S THE MAIN PART OF CAMP LEJEUNE, ONE OF THE FIRST PORTIONS OF THE BASE THAT WAS CONSTRUCTED.

THE OTHER TWO SITES -- SITE 21 IS ACTUALLY LOCATED WITHIN THE BOUNDARY OF HADNOT POINT. IT'S A TRANSFORMER STORAGE LOT. AND SITE 24 IS KNOWN AS THE INDUSTRIAL AREA FLY ASH DUMP. IT'S LOCATED RIGHT OFF OF THE HADNOT POINT AREA.

SITE 21 IS THE SMALLEST OF THE SITES. IT'S ROUGHLY TEN ACRES IN SIZE. THE HISTORY OF THAT SITE TELLS US THAT AT ONE TIME PART OF THIS SITE WAS USED AS A PESTICIDE HANDLING AND MIXING

FORM LASER BOND A PENGAD/INDY 1-800-631-6989

1 AREA. AND ANOTHER PORTION OF THE SITE WAS USED TO EMPTY
2 TRANSFORMER FLUIDS INTO IT. AND, OF COURSE, AT THAT TIME PCB'S
3 WERE USED IN THOSE TRANSFORMERS.

4 THIS IS A SLIDE SHOWING THE -- THE SITE 21. THERE'S
5 SOME BETTER PICTURES HERE. IN THIS AREA -- THIS IS THE AREA WHERE
6 THEY DISPOSED OF THE PCB. YOU CAN TELL WHEN YOU'RE OUT THERE --
7 YOU CAN'T REALLY SEE THIS ON THE FIGURE, BUT WHEN YOU GO OUT THERE
8 THERE IS A SMALL DEPRESSION IN THE GROUND SURFACE, AND THAT'S
9 WHERE WE STARTED WITH OUR SAMPLING. WE TOOK OUR SAMPLES IN THE
10 CENTER OF THAT PIT AND WE WORKED OUR WAY OUTWARD. THIS IS JUST
11 ANOTHER ANGLE. AGAIN, IT'S VERY DIFFICULT TO TELL, BUT IT'S RIGHT
12 BEHIND THIS DARK MOUND IS WHERE THIS SMALL PIT IS.

13 MR. PAUL: IT'S ABOUT THREE OR FOUR FEET
14 DEEP OR?

15 MR. WATTRAS: NO, PROBABLY AT BEST A FOOT, I
16 WOULD SAY, THE DEPRESSION. NOT BEING -- NO, NOT THAT NOTICEABLE.
17 MAYBE A FOOT IN THE CENTER. YOU CAN BARELY TELL. THIS IS A
18 PORTION OF THE SITE, AND BY THE WAY, THE SITE IS FENCED IN. AND
19 IT IS ACTIVELY USED FOR STORAGE WITH THE EXCEPTION OF THIS
20 DISPOSAL PIT AREA THAT PART IS OUTSIDE OF THE FENCE. BUT THIS IS
21 THE -- WHAT WE KNOW AS THE PESTICIDE HANDLING AND MIXING AREA OF
22 THE SITE. IT'S JUST ANOTHER VIEW OF THAT SAME AREA. A LOT OF THE
23 LOT IS COVERED WITH GRAVEL. AS YOU CAN SEE IT'S STILL USED TO
24 STORE DIFFERENT THINGS.

25 SITE 24 IS THE FLY ASH DUMP. IT'S APPROXIMATELY 100

July 27, 1994

1 ACRES IN SIZE. IT WAS REPORTED THAT NUMEROUS THINGS WERE TAKEN
2 OUT THERE, INCLUDING FLY ASH, SLUDGE, SOLVENTS, CIDERS, PAINT
3 STRIPPING COMPOUNDS AND CONSTRUCTION DEBRIS.

4 WE LOOKED AT FIVE AREAS WITHIN THIS 100 ACRE AREA. WE
5 CALL THESE AREAS OF CONCERN. WE NOTED THIS AREAS USING HISTORICAL
6 AERIAL PHOTOGRAPHS. AND ALSO WE DID A GEOPHYSICAL INVESTIGATION
7 OUT THERE, WHICH WAS USED TO TRY TO DEFINE THE BOUNDARIES TO SEE
8 IF THERE WAS ANY BURIED METAL OR BURIED DRUMS OR WHATEVER OUT
9 THERE SO WE USED GEOPHYSICAL TECHNIQUES TO LOOK AT THAT. AND WE
10 NAMED THESE AREAS THE SPIRATOR SLUDGE DISPOSAL AREA, THE FLY ASH
11 DISPOSAL AREA, THE BORROW AND DEBRIS DISPOSAL AREA, AND TWO BURIED
12 METAL AREAS.

13 NOW, THE BURIED METAL AREAS WERE NOTED DURING THE
14 GEOPHYSICAL INVESTIGATION WHERE WE LOOKED AT SOME ANOMALIES THAT
15 WE THOUGHT COULD BE ASSOCIATED WITH BURIED METAL; POSSIBLY DRUMS.

16 THIS IS SOME OF THE FIELD ACTIVITIES AT THE SITE. THIS
17 IS MORE OF THE -- ONE OF THE OPEN AREAS. A LOT OF THE SITES ARE
18 HEAVILY VEGETATED. AS YOU'LL SEE IN THIS PHOTO HERE, IT'S GROWN
19 OVER. THAT'S A PICTURE OF A MONITORING WELL IN THE MIDDLE, BUT
20 IT'S VERY THICK IN MOST OF THE AREAS OF THE SITE.

21 THIS IS ANOTHER AREA. THIS IS ONE OF THE BURIED METAL
22 AREAS THAT WE WERE LOOKING AT. ANY TIME WE DO TEST PITTING
23 ACTIVITIES WE HAVE TO TAKE PRECAUTIONS AND DON WHAT'S CALLED LEVEL
24 B PROTECTION WHERE OUR FIELD PEOPLE WILL ACTUALLY USE SCBA'S;
25 SELF-CONTAINED BREATHING APPARATUSES IN CASE THEY WOULD ENCOUNTER

July 27, 1994

1 SOMETHING AND THEY WOULD EXPOSED TO SOMETHING.

2 IN THIS CASE, BY THE WAY, WE FOUND THAT WHAT WAS BURIED
3 THERE WAS JUST CONSTRUCTION DEBRIS. SO, THE GEOPHYSICAL
4 INVESTIGATION SAW SOMETHING IN THE SUBSURFACE; WE THOUGHT IT COULD
5 BE DRUMS AND WE CHECKED IT OUT AND IN THIS CASE IT WAS PRETTY MUCH
6 JUST CONSTRUCTION DEBRIS.

7 MRS. WOOD: WE WENT OVER THAT BECAUSE I
8 THOUGHT WE PRETTY MUCH DISCOUNTED 24 AS NO PROBLEM, BUT YOU WENT
9 BACK AND WENT OVER IT ANYWAY.

10 MR. WATTRAS: I DON'T BELIEVE -- THIS IS THE
11 FIRST TIME WE'VE -- THERE WERE FIVE EXISTING MONITORING WELLS AT
12 SITE 24 --

13 MRS. WOOD: YEAH. YEAH, THEY HAD --

14 MR. WATTRAS: -- THAT WERE PUT IN IN THE MID-
15 80S AND THEY LOOKED AT GROUNDWATER ONLY. THEY NEVER LOOKED AT
16 ANYTHING ELSE. THEY PUT IN FIVE MONITORING WELLS. AND IN THOSE
17 FIVE MONITORING WELLS IF I RECALL THEY REALLY DIDN'T FIND ANY
18 PROBLEMS. THEY HAD A LITTLE BIT OF ELEVATED METALS IN THE SHALLOW
19 GROUNDWATER, BUT AS I REMEMBER THEY DID NOT HAVE ANY VOLATILE
20 ORGANICS OR ANY OTHER TYPE OF ORGANIC COMPOUNDS. BUT THIS IS THE
21 FIRST EXTENSIVE STUDY THAT HAS BEEN DONE AT SITE 24 WHERE WE
22 ACTUALLY DID SOIL SAMPLING AND I'LL DISCUSS A LITTLE BIT LATER WE
23 TOOK SOME SURFACE WATER SEDIMENT SAMPLES AND SO FORTH.

24 A LITTLE BIT ABOUT THE HADNOT POINT INDUSTRIAL AREA;
25 THIS IS A HUGE AREA, AS YOU PROBABLY KNOW, IT'S ABOUT 590 ACRES.

July 27, 1994

1 A LOT OF MAINTENANCE SHOPS AND WAREHOUSES AND ADMINISTRATIVE
2 BUILDINGS. WE KNOW BECAUSE OF ALL THE UNDERGROUND STORAGE TANKS,
3 MOST OF THEM USED FOR HEATING FUEL, THAT THERE HAVE BEEN SPILLS
4 AND LEAKS IN THE PAST.

5 THERE IS ANOTHER SITE, WHICH I HAVE NOT DISCUSSED YET.
6 SITE 22 IS A FUEL FARM. THIS FUEL FARM SITS RIGHT IN THE CENTER
7 OF THE SITE. THE TANKS HAVE BEEN REMOVED. THIS IS FLOATING
8 PRODUCT ON THE GROUNDWATER, BUT THERE IS A -- THERE IS AN ACTIVE
9 REMEDIATION SYSTEM THAT'S COLLECTING THIS FLOATING PRODUCT. WE
10 ARE NOT GOING TO DISCUSS SITE 22 TONIGHT BECAUSE ACTION IS ALREADY
11 BEING TAKEN AT THIS SITE.

12 MRS. WOOD: IS THAT UNDER YOUR PURVIEW OR
13 IS THAT UNDER THE UST PROGRAM?

14 MR. WATTRAS: THAT IS ACTUALLY UNDER THE UST
15 PROGRAM. EXACTLY.

16 MRS. WOOD: HAVE THEY CHANGED THE
17 LEGISLATION ON THAT AT ALL? THEY DON'T DO THE PUBLIC HEARINGS.
18 I HAVEN'T EVEN SEEN ANYTHING. THEY JUST GO AHEAD AND THAT'S THAT.
19 IS THAT -- IS IT --

20 MR. WATTRAS: I DON'T KNOW HOW THAT GOES TO
21 BE QUITE HONEST WITH YOU. I'M NOT SURE IF NEAL COULD HELP ANSWER
22 THAT QUESTION.

23 MR. PAUL: THERE IS A CORRECTIVE -- WHEN
24 YOU GO INTO A CORRECTIVE ACTION PLAN THERE IS A PUBLIC MEETING
25 THAT YOU HAVE TO HAVE BEFORE YOU --

July 27, 1994

1 MRS. WOOD: ONCE YOU'RE UNDERWAY THERE
2 SEEMS TO BE A DIFFERENT --

3 MR. PAUL: YOU MEAN FOR HADNOT POINT?

4 MRS. WOOD: WELL, NO, FOR THIS SITE 22
5 UNDER UST. THEY MAY HAVE THE SAME RESPONSIBILITIES.

6 MR. PAUL: THERE ARE SOME PUBLIC RELATIONS
7 REQUIREMENTS AND THIS PREDATES ME. SO, I WASN'T HERE WHEN THIS
8 SYSTEM STARTED.

9 MRS. WOOD: WELL, NOTHING IS MENTIONED IN
10 THIS LETTER TO -- THAT WENT OUT TO THE EPA. AND IT WAS AN
11 EVALUATION THAT YOU ALL -- NOT YOU PER SE --

12 MR. PAUL: RIGHT.

13 MRS. WOOD: -- BUT WHOEVER WAS HERE THEN
14 HAD NOT INCLUDED 22 IN THIS DATA BECAUSE IF FELL UNDER THE UST
15 PROGRAM AND THEY GOT A VERY NASTY LETTER BACK FROM THE EPA SAYING
16 "HEY, SOME OF YOUR CONTAMINANTS ARE COMING OUT OF THIS.
17 THEREFORE, YOU DO NOT -- YOU MUST INCLUDE IT AS PART OF THE
18 CLEANING FACTOR GOING ON. BUT IT DID INDICATE --

19 MS. BERRY: SINCE THAT PREDATED HIM, THEN
20 WE'LL TAKE A LOOK AT IT AND SEE IF THERE'S OTHER CONTAMINANTS THAT
21 MUST BE TREATED UNDER THERE.

22 MRS. WOOD: I THOUGHT IT WOULD BE THERE
23 BETWEEN THE TWO.

24 MS. BERRY: EXACTLY.

25 MRS. WOOD: IN THE MAJORITY OF THE THINGS

1 IN THE LIBRARY YOU JUST DON'T SEE THAT. NONE OF THAT'S UNDER YOUR
2 PROGRAM.

3 MR. PAUL: WELL, WE HAVE -- I HAVE --

4 MRS. WOOD: NONE OF THAT'S UNDER YOUR
5 PROGRAM.

6 MR. PAUL: WELL, IT IS UNDER MY PROGRAM
7 BECAUSE I HAVE I.R. SITES AND I ALSO HAVE OTHER PROGRAM SITES.
8 BUT IT HAS TO BE INCLUDED AS PART OF THE RECORD BECAUSE THE STATE
9 OF NORTH CAROLINA ACTUALLY ADDRESSES THE RECORD. THEREFORE, THEY
10 ARE CERCLA REGULATED SITES, WHERE THE STATE HAS JURISDICTION NOT
11 EPA. SO, WE SEND THOSE GUYS QUARTERLY REPORTS, QUARTERLY REPORTS
12 OF HOW MUCH WE PULL OUT OF THE GROUND; WATER WE'VE ACTUALLY
13 TREATED. AND TO DATE THERE'S LIKE 25,000 GALLONS OF GASOLINE FROM
14 THE INVENTORY RECORDS THAT WERE SHOWN TO BE MISSING. AND TO DATE
15 WE HAVE RECOVERED ABOUT 20,000 OF GASOLINE AND WE'VE TREATED OVER
16 3 MILLION GALLONS OF WATER AND THAT'S BEEN SINCE OCTOBER OF '91.
17 SO, THAT SYSTEM HAS JUST ABOUT DONE EVERYTHING YOU CAN DO. AND
18 WE'LL PROBABLY GO BACK IN A YEAR OR TWO AND ADDRESS THE SOILS
19 THERE, BUT THE PLUME TREATMENT IS PRETTY CLOSE TO BEING
20 REMEDIATED. THE REST OF THE WATER IS DISSOLVING. WE'RE PROBABLY
21 NOT GOING TO BE TAKING ANY FREE PRODUCT, WE'LL JUST BE TREATING
22 THE CONTAMINATED GROUNDWATER. GAS HAS BEEN ACTUALLY DISSOLVED.
23 SO IT REALLY HAS BEEN AN EFFECTIVE SYSTEM. AND IF YOU WANT TO
24 KNOW ANYTHING ABOUT IT FEEL FREE TO GIVE WALT OR MYSELF A CALL.

25 MRS. WOOD: OH, I WAS --

July 27, 1994

1 MR. PAUL: AND THAT IS REALLY ONE OF OUR
2 BIG SUCCESS STORIES.

3 MRS. WOOD: JUST TO GO ON, WHAT WOULD YOU
4 EXPECT THE -- WHAT PERCENTAGE WOULD YOU EXPECT TO GET OUT?

5 MR. PAUL: WITH THE PLUME TREATMENT
6 OPERATING FOR FREE PRODUCT?

7 MRS. WOOD: NO, IF YOU'VE GOT GASOLINE.

8 MR. PAUL: AND SOME OF THIS IS STRAIGHT
9 FROM RICH BONNELLI, IS THAT IF YOU GET 75 PERCENT OF THE FREE
10 PRODUCT THAT YOU THINK YOU SPILLED INTO THE GROUNDWATER THEN
11 YOU'RE DOING A GREAT JOB, AND 20 OUT OF 25 IS ALMOST 80 PERCENT.
12 SO, WE DONE PROBABLY AS GOOD AS WE CAN DO. AND EVEN 75 PERCENT IS
13 A GREAT RECOVERY RATE. BUT FROM THE PEOPLE I'VE TALK TO IN THE
14 STATE AGREE IT IS A SUCCESS.

15 MRS. WOOD: I'M SORRY. GO AHEAD.

16 MR. WATTRAS: NO, THAT'S FINE. THIS IS
17 HADNOT POINT. CAN I ASK, HAVE YOU BEEN DOWN TO HADNOT POINT OR
18 HAVE YOU EVER BEEN BASE?

19 MRS. WOOD: OH, FOR YEARS. OH, I HAVE --

20 MR. WATTRAS: OKAY. SO, YOU HAVE SOME IDEA
21 OF WHAT THIS PLACE LOOKS LIKE?

22 MRS. WOOD: YEAH, I KNOW THIS WHOLE AREA.

23 MR. WATTRAS: OKAY. THESE ARE JUST RANDOM
24 PHOTOS IT WASN'T ANYTHING PARTICULAR; JUST GOING AROUND THE HADNOT
25 POINT AREA AND TAKING SOME PICTURES. I WILL SAY MOST OF THIS --

July 27, 1994

1 HADNOT POINT IS -- YOU KNOW, IT'S VERY INDUSTRIAL IN NATURE FROM
2 THE STANDPOINT THAT MOST OF THE AREA IS GRAVEL COVERED OR COVERED
3 WITH CONCRETE OR ASPHALT. THERE'S NOT THAT MANY OPEN AREAS WITHIN
4 THE MAIN INDUSTRIAL AREA.

5 MRS. WOOD: WHAT WERE YOUR INDUSTRIAL
6 BUILDINGS? BUILDING 900 OR --

7 MR. WATTRAS: YES, WE'RE GOING TO TALK ABOUT
8 THIS RIGHT NOW. BUILDING 900 AREA IS A FORMER MAINTENANCE AREA.
9 AND THAT'S WHERE WE KNOW WE HAVE A CONTAMINATE PLUME OF SOLVENTS
10 IN THE GROUNDWATER AND THAT'S WHERE WE CURRENTLY ARE CONSTRUCTING
11 A REMEDIATION SYSTEM TO CONTAIN THE MIGRATION OF THIS PLUME AND
12 WE'RE READY TO -- THEY'RE BUILDING IT RIGHT NOW IN FACT. THIS --
13 WE DISCUSSED THIS EFFORT ABOUT TWO YEARS AGO. I THINK BACK IN
14 1992 THE DECISION WAS MADE TO PUT IN SOME CONTAINMENT WELLS TO
15 CONTAIN ANY MIGRATING OF THIS PLUME BY THE 900 BUILDING AREA AND
16 ALSO BY THE 1600 BUILDING AREA.

17 MRS. WOOD: 1600, YES.

18 MR. WATTRAS: NOW, THERE'S ANOTHER BUILDING
19 1502, WHICH WE'LL TALK ABOUT. THAT'S A DIFFERENT PROBLEM. THIS
20 IS JUST THE 900 BUILDING AREA. UNDERNEATH THIS AREA IS WHERE WE
21 PROBABLY HAVE THE HIGHEST LEVELS OF SOLVENTS IN GROUNDWATER.

22 MRS. WOOD: SO, YOU'RE TALKING ABOUT THE
23 TCE'S?

24 MR. WATTRAS: THE TCE'S, YES. WE ALSO HAVE
25 A LITTLE BIT OF BENZENE WHICH IS ASSOCIATED WITH FUELS, BUT THE

July 27, 1994

1 TCE IS THE MAIN -- THE SOLVENTS TCE AND OTHER THINGS LIKE THAT ARE
2 THE MAIN CONTAMINANTS IN THIS PLUME.

3 MRS. WOOD: WELL, NOW, HOW DO YOU -- WHEN
4 YOU SAY "CONTAINING IT" IS IT JUST PULLED OUT OR WHAT? WHAT ARE
5 YOU DOING?

6 MR. WATTRAS: WHEN I SAY CONTAINED WE HAVE A
7 PLUME -- IT'S PROBABLY ON ONE OF THESE FIGURES OVER HERE. I DON'T
8 KNOW -- LET ME JUST MOVE AHEAD REAL QUICK HERE. I DON'T THINK
9 IT'S ON THE SLIDE.

10 WE WILL PUT WELLS AT THE EDGE WHERE WE BELIEVE THE EDGE
11 OF THE PLUME TO BE, THE OUTER LIMITS OF THE PLUME, AND WE KNOW
12 THAT MY SAMPLING MONITORING WELLS. AND IN THE SOURCE AREA, FOR
13 EXAMPLE, WE MIGHT HAVE 10,000 PARTS PER BILLION OF THE SOLVENTS.
14 AS WE PUT IN WELLS AWAY FROM THAT ALONG THE OUTER EDGES WE MIGHT
15 50 OR A HUNDRED PARTS PER BILLION. SO WE SEE A NICE PATTERN GOING
16 FROM HIGH CONCENTRATION DOWN TO LOW CONCENTRATION AND IT FOLLOWS
17 THE FLOW. GROUNDWATER AT HADNOT POINT PRETTY MUCH FLOWS IN A, I
18 BELIEVE, A SOUTHWEST DIRECTION -- SOUTHWEST OR SOUTHEAST
19 DIRECTION, AND WE CAN FOLLOW THAT. AND WE PUT IN WELLS. THE
20 WELLS ARE BEING CONSTRUCTED RIGHT NOW TO PUMP GROUNDWATER AT A
21 RATE OF ABOUT FIVE GALLONS PER MINUTE, AND THE WELLS ARE AT THE
22 EDGES OF THIS PLUME TO PREVENT IT FROM GOING ANY FURTHER AND
23 THAT'S WHAT WE CALL CONTAINMENT.

24 MRS. WOOD: NOW, WHAT HAPPENS IF YOU GET,
25 YOU KNOW, HEAVY EXTENDED RAINS?

July 27, 1994

1 MR. WATTRAS: NOT ONE OR TWO TIME EVENTS OF
2 RAIN, IT WILL NOT EFFECT -- OTHER THAN THE WATER LEVEL RISING A
3 LITTLE BIT.

4 MRS. WOOD: YEAH.

5 MR. WATTRAS: BUT IT REALLY WOULD NOT DO MUCH
6 TO THE CONCENTRATIONS. I MEAN, THESE PROBLEMS AT HADNOT POINT
7 HAVE BEEN AROUND FOR YEARS.

8 IN FACT, THIS PLUME THAT I'M TALKING ABOUT RIGHT NOW WAS
9 FIRST STUDIED IN THE MID 1980'S AND THE CONCENTRATIONS HAVEN'T
10 DIFFERED THAT MUCH. YOU KNOW, WE -- FOR EXAMPLE BACK IN THE
11 1980'S THEY SAW VERY SIMILAR LEVELS. IT'S NOT LIKE IN 1985 THEY
12 SAMPLED IT AND MEASURED 10,000 AND THEN IN 1994 WE SAMPLED IT AND
13 SAW 1,000. THAT WOULD BE A PRETTY DRASTIC CHANGE IN CONCENTRATION
14 OVER SUCH A SHORT PERIOD. WE'VE SEEN VERY SIMILAR LEVELS.

15 MRS. WOOD: NOW, ARE THEY SAYING THAT -- I
16 MEAN, WHAT ARE THEY DOING NOW TO CONTROL THIS?

17 MR. WATTRAS: CONTROL?

18 MRS. WOOD: I MEAN, DO THEY HAVE
19 UNDERGROUND TANKS WHERE THESE SOLVENTS ARE OR IS IT JUST --

20 MR. WATTRAS: NO, THE SOLVENTS, THEY'RE -- WE
21 BELIEVE THERE MAY HAVE BEEN ONE TANK THAT WAS USED FOR SPENT
22 SOLVENTS. THAT TANK AS FAR AS WE KNOW HAS SINCE BEEN REMOVED.

23 THERE ARE OTHER UNDERGROUND STORAGE TANKS RELATED TO
24 FUEL. I MEAN, THAT -- WE DON'T BELIEVE THOSE TANKS ARE ASSOCIATED
25 WITH THIS PROBLEM.

July 27, 1994

1 BUT WE DID LOOK AT SOIL AND FOUND VERY LITTLE OF THE
2 SOLVENTS IN THE SOIL IN THE HIGHEST AREA THAT WE KNOW OF
3 GROUNDWATER CONTAMINATION WE PULLED SOIL SAMPLES AND FOUND VERY
4 LOW LEVELS WHICH GOES BACK TO SOMETHING WHERE I SAID -- WHAT I WAS
5 TALKING ABOUT LAST NIGHT. I THOUGHT I MAYBE SAID IT HERE AT THIS
6 MEETING WHERE OVER TIME, YOU KNOW, KNOWING THAT THESE SPILLS
7 HAPPENED MANY YEARS AGO THROUGH TIME WITH PRECIPITATION AND
8 EVERYTHING IT SORT OF -- THE SOLVENTS WILL MOVE OUT OF THIS
9 FRONTAL ZONE. AND THAT MIGHT BE THE CASE HERE WHERE WE HAVE VERY
10 LOW LEVELS IN SOIL AND VERY FEW SAMPLES HAVE SOLVENTS IN THEM.

11 SO, THE TANK HAS -- AS FAR AS WE KNOW HAS BEEN PULLED
12 THAT HAD SPENT SOLVENTS. AND EVEN THAT INFORMATION TO BE QUITE
13 HONEST WITH YOU IS SKETCHY. IF WASN'T CONCRETE THAT THE TANK THAT
14 THEY PULLED WAS USED FOR SPENT SOLVENTS; ONE REPORT SAID THAT IT
15 DID AND ANOTHER REPORT DID NOT SAY THAT. BUT WE HAVE TO THAT FOR
16 WHAT --

17 MRS. WOOD: YEAH, WE'VE GOT THE MATERIAL
18 THERE.

19 MR. WATTRAS: WE AGREE, YOU KNOW, WE SUSPECT
20 THAT THERE WAS A TANK THAT WAS USED TO COLLECT SPENT SOLVENTS.

21 I'LL TALK A LITTLE BIT ABOUT THE PAST INVESTIGATIONS.
22 I JUST MENTIONED -- YOU KNOW, WE -- THERE HAVE BEEN A LOT OF
23 INVESTIGATIONS ESPECIALLY AT HADNOT POINT SINCE THE MID-80S. ~~NO~~
24 THIS INTERIM REMEDIAL ACTION OF THE SHALLOW AQUIFER, THIS IS WHAT
25 I WAS JUST TALKING ABOUT THE CONTAINMENT WALLS AND WE MADE THE

July 27, 1994

1 DECISION BACK IN 1992 -- WHEN I SAY "WE" I SOMETIMES TALK AS A
2 GROUP HERE -- THE DEPARTMENT OF THE NAVY AND THE MARINE CORPS
3 MAKES THE DECISION.

4 MRS. WOOD: MARINE CORPS.

5 MR. WATTRAS: THEY MADE THE DECISION TO GO
6 WITH THE CONTAINMENT ALTERNATIVE WHICH WAS ACCEPTED BY THE EPA AND
7 THE STATE OF NORTH CAROLINA.

8 WHAT WE'RE DOING NOW WE STARTED IN 1993/1994. WE'RE NOW
9 LOOKING AT THE ENTIRE HADNOT POINT AREA. SEE, THE DIFFERENCE
10 BETWEEN THIS STUDY OF 1993 AND 1994 VERSUS 1991 AND 1992, IN THAT
11 INTERIM STUDY WE WERE JUST FOCUSING ON "LET'S DO SOMETHING ABOUT
12 THIS PROBLEM NOW. LET'S CONTAIN IT." AND THAT WAS THE
13 ALTERNATIVE CHOSEN. BUT IT JUST FOCUSED ON SHALLOW GROUNDWATER.
14 THE STUDY OF 1993 AND 1994 LOOKED AT OTHER PORTIONS OF THE
15 AQUIFER, LOOKED AT SURFACE WATER AND SEDIMENT AND LOOKED AT SOIL.
16 THAT'S THE DIFFERENCE BETWEEN THESE TWO INVESTIGATION.

17 MRS. WOOD: WHAT ABOUT THE DEEP AQUIFER,
18 YOU DIDN'T FIND ANY --

19 MR. WATTRAS: ABOUT THE?

20 MRS. WOOD: THE DEEP AQUIFER.

21 MR. WATTRAS: WE'LL TALK ABOUT THAT IN A
22 MINUTE HERE.

23 BASICALLY, TO THROW OUT THE TERM REMEDIAL INVESTIGATION,
24 THIS IS DONE UNDER CERCLA. THE OBJECTIVE OF REMEDIAL
25 INVESTIGATION IS TO FIND OUT WHAT IS THE PROBLEM AT THE SITE. HOW

July 27, 1994

1 BAD IS THE PROBLEM, WHAT KIND OF CONTAMINANTS ARE THERE, AT WHAT
2 CONCENTRATIONS. AND ONCE WE COLLECT ALL THAT DATA THE MAIN PART
3 OF REMEDIAL INVESTIGATION IS TO DETERMINE WHAT IS THE IMPACT TO
4 HUMAN HEALTH AND THE ENVIRONMENT.

5 SO, IN A NUTSHELL THE REMEDIAL INVESTIGATION LOOKS AT
6 WHAT'S AT THE SITE, TRIES TO FIGURE OUT WHERE IS IT GOING, HOW
7 DEEP HAS IT MIGRATED, HOW FAR OFF-SITE HAS IT MIGRATED VERTICALLY
8 -- OR HORIZONTALLY AND WHAT DOES THIS MEAN TO THE PEOPLE WORKING
9 THERE OR THE ENVIRONMENT.

10 NOW, HERE'S WHAT WE FOUND AND THIS IS WHERE I'LL GET
11 INTO THESE DIFFERENT AQUIFERS. WE CONFIRMED -- WE KNEW RIGHT THEN
12 WE HAD TWO MAIN PLUMES TO LOOK AT. WE PUT IN A FEW MORE WELLS TO
13 MAKE SURE WE KNEW THE EXTENT -- THE HORIZONTAL EXTENT OF THESE
14 PLUMES. WE DEFINED THE HORIZONTAL EXTENT OF THE PLUMES. WE FEEL
15 VERY COMFORTABLE THAT WE HAVE A GOOD IDEA OF HOW FAR THE
16 CONTAMINATION HAS MIGRATED HORIZONTALLY. AND AS I MENTIONED
17 BEFORE THE TWO PLUMES ARE AT THE 900 BUILDING AREA AND THE 1600
18 BUILDING AREA.

19 WE ALSO RECOGNIZED THE BTEX PLUME AT SITE 22 WHICH NEAL
20 TALKED ABOUT EARLIER. WE HAD TOTAL METALS -- WE HAD SOME METALS
21 THROUGHOUT HADNOT POINT AND AT NO SPECIFIC PATTEN. PRETTY MUCH
22 RANDOM HITS OF LEAD, CHROMIUM, MANGANESE, IRON, BUT NO PARTICULAR
23 PATTERN THAT YOU CAN ASSOCIATE IT WITH A PLUME. WE FOUND THIS AT
24 OTHER SITES TOO. WE'RE NOT SO SURE THESE METALS ARE NECESSARILY
25 DUE TO DISPOSAL ACTIVITIES. THEY COULD BE DUE TO A LOT OF OTHER

July 27, 1994

1 THINGS SUCH AS THE GEOLOGIC CONDITIONS OF THE SHALLOW AQUIFER AND
2 POSSIBLY --

3 MRS. WOOD: WOULD YOU EXPAND ON THAT A
4 LITTLE BIT BECAUSE I DON'T UNDERSTAND THAT.

5 MR. WATTRAS: OKAY.

6 MRS. WOOD: YOU KNOW, THE CHROMIUM I DON'T
7 UNDERSTAND.

8 MR. WATTRAS: THAT'S FINE.

9 MRS. WOOD: WHERE WOULD THEY COME FROM IN
10 YOUR --

11 MR. WATTRAS: FROM THE SOIL ITSELF. THE SOIL
12 SAMPLES WILL HAVE CHROMIUM AND LEAD.

13 MRS. WOOD: YEAH, I MEAN --

14 MR. WATTRAS: AND THAT'S NATURALLY OCCURRING.
15 I MEAN --

16 MRS. WOOD: MANGANESE, I --

17 MR. WATTRAS: MANGANESE -- EVEN LEAD -- YOU
18 HAVE SOME LEAD IN SOILS, AND SOME LEAD FROM PARTICULATES AND SO
19 FORTH.

20 WHEN WE PUT IN A SHALLOW WELL THE SHALLOW AQUIFER IS
21 IMPOUNDED ABOUT FIVE TO TEN FEET BELOW GROUND SURFACE HERE AT
22 HADNOT POINT DEPENDING UPON WHERE YOU'RE AT.

23 THE CHARACTERISTICS OF THE AQUIFER, IT'S VERY LOOSELY
24 COMPACTED, VERY SANDY; IT'S NOT TIGHTLY COMPACTED. WE PUT IN A
25 WELL, WE HAVE A SCREEN IN THE WELL THAT TRIES TO GET OUT THESE

July 27, 1994

1 SILTS AND SANDS FROM THE SAMPLE, BUT YOU STILL HAVE SOME THAT GO
2 THROUGH THE SLOTS OF THE SCREEN.

3 WHEN WE SAMPLE WE TRY TO TAKE PRECAUTIONS WHEN WE PULL
4 A SAMPLE NOT TO HAVE ANY SUSPENDED SOLIDS IN THAT WATER SAMPLE.
5 IT'S VERY HARD TO DO THAT IN THIS GEOLOGIC FRAMEWORK BECAUSE OF
6 THE LOOSELY COMPACTED SILTS AND SANDS.

7 NOW, OUR DEEP WELLS, AND HERE'S THE ONLY PATTERNING THAT
8 WE'RE SEEING, WE'RE SEEING THESE TOTAL METALS AND TOTAL METALS
9 MEANS JUST THAT; IT'S A SAMPLE OF THE WATER IT'S TAKEN STRAIGHT TO
10 THE LABORATORY, IT'S NOT FILTERED.

11 SO, WITH THE -- THE ANALYSIS MIGHT BE BIASED HIGH A
12 LITTLE BIT BECAUSE OF THE FINDS OR PARTICULATES IN THE SAMPLE. I
13 CAN TELL YOU THIS THAT WE ALSO LOOK AT DISSOLVED METALS. AND WHEN
14 WE LOOK AT DISSOLVED METALS THAT WATER SAMPLE IS PUT THROUGH A
15 FILTER FIRST, AND ALL THE FINDS ARE TAKEN OUT OR ANY MATTER, YOU
16 KNOW, IT COULD BE SOME BACTERIA OR WHATEVER THAT COLLECTS IN THE
17 WELL, THAT'S SCREENED AWAY AND THEN THAT SAMPLE IS SENT TO THE
18 LABORATORY.

19 NOW, WHEN WE LOOK AT DISSOLVED WATER SAMPLES WE REALLY
20 DON'T FIND A METALS PROBLEM. ANOTHER PLACE WHERE WE REALLY DON'T
21 FIND A METALS PROBLEM IS IN DEEP GROUNDWATER AND WE BELIEVE THE
22 REASON IS -- WE USE THE SAME SAMPLING TECHNIQUES, BUT IN THE DEEP
23 GROUNDWATER THE WAY THE GEOLOGY IS YOU HAVE VERY TIGHTLY COMPACTED
24 SILTS AND SANDS. THEY'RE VERY TIGHT AS OPPOSED TO THE SHALLOW
25 WHERE THEY'RE LOOSE. AND IN THE DEEP AQUIFER WE DON'T REALLY HAVE

July 27, 1994

1 MUCH OF A METALS PROBLEMS. WE HAVE THE MANGANESE. WE HAVE FOUND
2 THIS MANGANESE IN SOME OF THE DEEP WELLS AND I BELIEVE OUT OF ALL
3 OF OUR DEEP WELLS, I THINK, WE HAD ONE HIT OF LEAD THAT WAS JUST
4 ABOVE THE DRINKING WATER STANDARDS AND IT -- THE DRINKING WATER
5 STANDARDS FOR LEAD -- IT'S 15.

6 MRS. WOOD: 15, YEAH.

7 MR. WATTRAS: WE FOUND ONE HIT OF LEAD AT 16
8 IN ONE DEEP WELL. SO, FOR THE MOST PART THE PATTEN THAT WE'RE
9 SEEING IS THE SHALLOW HAS CONSISTENTLY SHOWN US HIGH TOTAL METALS,
10 NOT JUST AT HADNOT POINT, EVEN IN SOME OF OUR BACKGROUND WELLS
11 THAT WE HAVE THROUGHOUT THE BASE, AND EVEN AT SOME OFF-BASE WELLS.
12 WE'VE LOOKED AT SOME STUDIES THAT WERE DONE -- I'M NOT SURE IF IT
13 WAS MENTIONED HERE LAST NIGHT ABOUT CAMP LEJEUNE ACQUIRING 40,000
14 ACRES OF LAND.

15 MRS. WOOD: OH, YEAH. YEAH. RIGHT.

16 MR. WATTRAS: SO THERE'S BEEN A COUPLE OF
17 STUDIES DONE THERE WHERE THE SAME PATTERN HAS OCCURRED WHERE THE
18 SHALLOW AQUIFER EVERY TIME WE LOOK AT TOTAL METALS IT SHOWS US
19 SOME ELEVATED LEVELS WHICH WOULD BE ABOVE DRINKING WATER
20 STANDARDS.

21 MRS. WOOD: WELL, THEY HAVE NOT DONE A SOIL
22 STUDY ON THIS AREA THAT WOULD HAVE DEFINED WHAT TO EXPECT IN YOUR
23 TOTAL METALS. I MEAN, BEFORE YOU STARTED THIS PROGRAM THERE ISN'T
24 SOME --

25 MR. WATTRAS: WELL, WE LOOKED AT THE SOIL

July 27, 1994

1 RESULTS. WE COMPARED THE SOIL RESULTS, IF I'M UNDERSTANDING YOUR
2 QUESTION --

3 MRS. WOOD: NO, I'M JUST SAYING --

4 MR. PAUL: DIDN'T THE STATE STUDY THIS
5 AREA?

6 MRS. WOOD: -- JUST A GENERAL STUDY.

7 MR. WATTRAS: NO, NOT BEFORE THIS. WE JUST
8 LOOKED AT THIS, WE DID A PRELIMINARY STUDY PROBABLY ABOUT TWO
9 MONTHS AGO AND BAKER LOOKED AT 21 SITES AT CAMP LEJEUNE AND THESE
10 WERE -- THE 21 SITES MAKE UP DIFFERENT INVESTIGATIONS THAT WE'RE
11 LOOKING AT, DIFFERENT PHASES AND SO FORTH. AND AT ALL 21 SITES WE
12 HAD HIGH TOTAL METALS AND WE HAD A NUMBER OF WHAT WE CALL
13 BACKGROUND WELLS. THESE ARE WELLS THAT ARE INSTALLED OFF-SITE,
14 UPGRADIENT, WITH RESPECT TO FLOW THAT WE WOULDN'T EXPECT THAT WELL
15 TO BE CONTAMINATED FROM THIS SITE. FOR EXAMPLE, IF THIS SITE IS
16 SITTING HERE AND THERE'S A HILL COMING UP THIS WAY, WE MIGHT PUT
17 A WELL UP HERE, WHICH WE HOPE IS GOING TO TELL US WHAT IS OUR
18 BACKGROUND CONCENTRATIONS.

19 WELL, I THINK WE LOOKED AT 14 BACKGROUND WELLS, AND I
20 BELIEVE -- I'M GOING TO SAY EITHER SIX OR NINE OF THE BACKGROUND
21 WELLS ALSO HAD THIS SAME TOTAL METALS PATTERN IN THE SHALLOW
22 AQUIFER.

23 SO, THE OTHER THING WE DID TOO TO LOOK AT THIS TOTAL
24 METALS PROBLEM IS WE LOOKED AT THE SOIL RESULTS TO SEE IF THERE
25 WAS A CORRELATION BETWEEN WHAT WE SEE IN THE SOIL AND HIGH LEVELS

July 27, 1994

1 IN THE SHALLOW GROUNDWATER. AND WE LOOKED AT SOIL RESULTS FROM
2 I'LL SAY A CLEAN WELL, A WELL THAT SHOWED NO REAL ELEVATED LEVELS
3 OF METALS AND THE SOIL RESULTS WE LOOKED AT THAT, AND WE COMPARED
4 THOSE SOIL RESULTS WITH SOIL RESULTS TAKEN FROM ANOTHER AREA THAT
5 EXHIBITED HIGH TOTAL METALS AND THERE WAS NO DIFFERENCE. SO, WE
6 SAID THERE'S NO SOURCE.

7 I MEAN, WHEN YOU HAVE A GROUNDWATER PROBLEM YOU HAVE TO
8 ASSOCIATE IT WITH A SOURCE. WE COULD NOT CORRELATE THESE TOTAL
9 METALS IN SHALLOW GROUNDWATER WITH A SOURCE IN SOIL. SO, WE
10 PRETTY MUCH PRELIMINARILY -- WE'VE ONLY CONDUCTED ONE STUDY AND
11 THIS IS SOMETHING THAT WE'RE GOING TO LOOK AT ON AND ON BECAUSE
12 WE'RE FACING THIS PROBLEM WITH EVERY SITE OF TOTAL METALS. AND WE
13 HAVE TO -- OBVIOUSLY THE STATE OF NORTH CAROLINA AND EPA STANDARDS
14 ARE BASED ON TOTAL METALS AND THAT'S A PROBLEM BECAUSE WE'RE NOT
15 SO SURE WHETHER THESE TOTAL METALS ARE NECESSARILY RELATED TO
16 DISPOSAL ACTIVITIES OR WHETHER THEY'RE RELATED TO A COMBINATION OF
17 THE GEOLOGIC FRAMEWORK AND SAMPLING TECHNIQUES.

18 MRS. WOOD: NOW, AS A CORPORATION ARE YOU
19 RESPONSIBLE FOR MAKING -- I MEAN, YOU ALL ARE DOING THIS WORK AND
20 GETTING PAID FOR IT, BUT I THINK THE STATE WOULD HAVE TO COME IN
21 AND DO COMPLEMENTARY STUDIES. I DON'T SEE WHY YOU WOULD HAVE TO
22 BE RESPONSIBLE IF IT IS A GEOLOGICAL CONDITION OR A NATURAL
23 CONDITION TO FIND THAT.

24 MR. WATTRAS: WE ARE -- WE'RE --

25 MR. WATTERS: NOT -- NOT --

July 27, 1994

1 MR. WATTRAS: SORRY GO AHEAD, PATRICK.

2 MR. WATTERS: NOT NECESSARILY. THE STATE
3 WOULDN'T HAVE TO COME IN AND DEAL WITH THAT. IT'S JUST THAT IN
4 THIS PARTICULAR CASE THE STATE WILL TELL WHOEVER IS WORKING ON THE
5 PROBLEM TO SHOW US WHETHER OR NOT THIS IS REAL OR WHETHER OR NOT
6 THIS IS --

7 MRS. WOOD: SO, IN OTHER WORDS THEY'RE THE
8 ONES THAT COME IN --

9 MR. WATTERS: IT'S UP TO WHOEVER OWNS THE
10 PROPERTY.

11 MRS. WOOD: THEY HAVE TO REVEAL THOSE
12 STANDARDS. I MEAN, THEY COULD COME IN AND SAY THIS IS A NATURAL
13 CONDITION THAT THEY ARE FINDING AND YOU WOULD HAVE TO MAKE THAT
14 DETERMINATION. SO, IF THIS CAME UP SOMEWHERE DOWN THE LINE IF
15 THEY ARE FINDING, YOU KNOW, IT AS A NATURAL PHENOMENON.

16 MR. WATTERS: IF THERE'S SOMETHING TO PAY
17 WELL I GUESS IT GOES BACK TO THE GENERAL ASSEMBLY AND WE NEED TO
18 DEAL WITH THE STANDARD, BUT IN THE MEAN TIME WE HAVE TO DEAL WITH
19 THE INITIAL --

20 MRS. WOOD: COULDN'T YOU DO A WAIVER?

21 MR. WATTERS: WE COULD DO THE WAIVER SYSTEM
22 BUT --

23 COURT REPORTER: WAIT I CAN'T HEAR HER.

24 MR. WATTRAS: CAN YOU SPEAK UP?

25 MS. TOWNSEND: WE MET WITH THE GROUNDWATER

1 SECTION UP IN WILMINGTON AND THIS ISSUE CAME UP AND RAY AND HIS
2 GROUP HELPED PRESENT THE FACTS OF WHAT WE WERE FINDING AND THE
3 CONCLUSION WAS LIKE IN THIS EVENT. AND WE'RE TRYING TO SEE WHAT'S
4 ACTUALLY GOING ON, WHAT WE THINK IS GOING ON. YOU KNOW, WE PROVED
5 IT ON PAPER, BUT WE NEED TO SEE WHAT'S ACTUALLY IN THE ACTUAL
6 SAMPLE AND WE HAVEN'T DONE THAT IN THE PAST. THAT'S WHERE WE'RE
7 HEADING.

8 MR. WATTRAS: ANOTHER THING THAT WE'RE DOING
9 -- TOM BIXIE HERE WORKS FOR BAKER AND HE'S INVOLVED WITH A PROJECT
10 FOR AN INDUSTRIAL CLIENT WHERE THEY HAD THE SAME SITUATION WHERE
11 THEIR TOTAL METALS WERE VERY HIGH AND THEY WEREN'T REALLY
12 CONVINCED THAT THESE METALS WERE DUE TO WHAT WAS DISPOSED OF AT
13 THIS SITE HE WAS WORKING AT AND THERE'S NOW DIFFERENT SAMPLING
14 TECHNIQUES THAT WE'RE GOING TO TRY IN THE FUTURE TO ELIMINATE THE
15 SUSPENDED PARTICLES, YOU KNOW, TRY TO REDUCE THAT DOWN. SO, WE'RE
16 GOING TO TRY THAT IN OUR NEXT INVESTIGATION, A LITTLE BIT
17 DIFFERENT SAMPLING TECHNIQUES. SO, THERE'S SOME THINGS THAT WE'RE
18 LOOKING AT BECAUSE, YOU KNOW, IT COULD BE PARTLY DUE TO THE
19 SAMPLING TECHNIQUE.

20 MRS. WOOD: YEAH.

21 MR. WATTRAS: I MEAN, THERE'S NO DOUBT ABOUT
22 IT.

23 MRS. WOOD: YEAH.

24 MR. WATTRAS: NOW, THE GEOLOGIC FRAMEWORK IS
25 ONE THING, BUT WE'VE GOT TO TRY TO DEAL WITH THAT AND THAT'S WHAT

July 27, 1994

1 WE'RE GOING TO TRY TO.

2 CORRECT ME IF I'M WRONG GINA, BUT I WAS TALKING TO
3 N.U.S., YOU KNOW, AT THE MEETING THE OTHER DAY AND THEY'RE WORKING
4 AT CHERRY POINT, WHICH IS ABOUT AN HOUR AWAY, AND THEY -- THEY'RE
5 RUNNING INTO SIMILAR PROBLEMS ALSO AND IT'S BECAUSE OF THIS
6 LOOSELY COMPACTED SANDS AND SILTS OF THE SHALLOW AQUIFER AND
7 THEY'RE ALSO GOING TO BE TRYING THIS LOW FLOW TECHNIQUE --

8 MRS. WOOD: TO SEE --

9 MR. WATTRAS: -- TO SEE.

10 MRS. WOOD: -- WHAT CHANGES.

11 MR. WATTRAS: NOW, THE INTERMEDIATE
12 GROUNDWATER AND THE DEEP GROUNDWATER WERE ALSO STUDIED. WE SAW A
13 DRASTIC CHANGE IN CONCENTRATION COMPARED TO THE SHALLOW, WHICH IS
14 GOOD. THE INTERMEDIATE I'M TALKING ABOUT DEPTHS OF ABOUT 75 FEET;
15 ROUGHLY 75 FEET. THE DEEP, I'M REFERRING TO DEPTHS OF ABOUT 150
16 TO 175.

17 NOW, THE SUPPLY WELLS IN THE HADNOT POINT AREA, AND
18 THERE ARE QUITE A FEW. THERE ARE ABOUT -- AT LEAST SIX SUPPLY
19 WELLS SURROUNDING THE HADNOT POINT AREA. THEY ARE SCREENED IN
20 SEVERAL INTERVALS. THESE SUPPLY WELLS AND THEY'RE ALL -- THEY ARE
21 SHUT DOWN. THEY'VE BEEN SHUT DOWN FOR A NUMBER OF YEARS, BUT THEY
22 ARE SCREENED AT ABOUT 75 FEET AND THEN DOWN BELOW FURTHER AT ABOUT
23 150 UP TO 200 FEET AND THAT'S WHY THE INTERMEDIATE WELLS WERE
24 INSTALLED, AND THESE WERE INSTALLED BY ANOTHER FIRM, BUT THEY
25 INSTALLED THEM, I BELIEVE, TO MATCH THE SCREENING INTERVALS OF THE

July 27, 1994

1 SUPPLY WELLS.

2 AGAIN, WHAT WE SAW WAS A DRASTIC CHANGE IN CONCENTRATION
3 BETWEEN WHAT WE ARE SEEING IN THE SHALLOW AND THEN WHAT WE'RE
4 SEEING IN THE INTERMEDIATE AND EVEN LOWER IN THE DEEP. AND IN THE
5 DEEP I WOULD ALMOST SAY WE HAVE NOT MUCH OF A PROBLEM AT ALL.
6 THERE WAS JUST BENZENE AND, IN FACT, IT WAS AT A WELL NEAR HADNOT
7 POINT FUEL FARM. THAT WAS AT ABOUT FIVE PARTS PER BILLION, WHICH
8 IS JUST AT THE M.C.L., MAYBE FIVE, MAYBE SIX; IT WAS RIGHT AROUND
9 THE M.C.L. EVERYTHING ELSE IN THE DEEP WAS PRETTY -- WHAT WE
10 WOULD CALL CLEAN; MEANING, BELOW THE DRINKING WATER STANDARDS.

11 MRS. WOOD: NOW, THESE WERE THE FIGURES YOU
12 GOT AND YOU'RE NOT RELYING ON THE ONES THAT WERE TAKEN FROM THE
13 PREVIOUS STUDIES?

14 MR. WATTRAS: YEAH. OH, YEAH. WE RE-SAMPLED
15 THESE WELLS. THESE WELLS HAVE BEEN SAMPLED SEVERAL TIMES. WE ARE
16 SEEING SOME PATTERN OVER TIME THAT THE CONCENTRATIONS IN THE
17 INTERMEDIATE AND DEEP HAVE BEEN DECREASING.

18 WE DID TAKE ONE MORE SAMPLE -- OR ANOTHER ROUND OF
19 SAMPLES LATE IN THE INVESTIGATION AND THEY SLIGHTLY INCREASED.
20 SO, OVERALL THERE HAS BEEN A TREND OF DECREASE IN CONCENTRATIONS
21 WITH THE EXCEPTION OF THE LAST ROUND; THEY INCREASED SLIGHTLY.
22 NOT -- I MEAN, I'M NOT TALKING A MAJOR INCREASE, BUT I CAN'T SAY
23 THAT EVERY SAMPLING ROUND THEY WENT DOWN, DOWN, DOWN, DOWN IN
24 CONCENTRATION, BUT THE LAST ONE WAS SLIGHTLY HIGHER THAN THE
25 PREVIOUS ONE.

July 27, 1994

1 WE'LL TALK A LITTLE BIT ABOUT THE SOIL. AS EXPECTED
2 WITHIN SITE 21 WE HAD SOME HIGH LEVELS OF PESTICIDES IN THAT
3 MIXING AREA AND ALSO IN THE PCB DISPOSAL PIT. WE FOUND PCB'S AT
4 4.6 PARTS PER MILLION. THAT IS A LITTLE BIT ELEVATED. I WOULDN'T
5 -- YOU HAVE A -- WHAT'S CALLED A TSCA WASTE WHEN YOU HIT 50 PARTS
6 PER MILLION AND THAT'S WHEN YOU REALLY HAVE A PROBLEM. SO, WE'RE
7 -- WE DO HAVE SOME ELEVATED LEVELS. THEY'RE AT FOUR -- ROUGHLY
8 FOUR AND A HALF PARTS PER MILLION AND THAT WAS THE MAXIMUM
9 CONCENTRATION. IN FACT, THAT WAS RIGHT FROM THE CENTER CORE OF
10 THE PIT.

11 AT SITE 24 WE HAD SOME METALS THAT WERE ABOVE WHAT WE
12 CALL BACKGROUND CONCENTRATIONS IN THE SOIL. AGAIN, AS WE
13 INVESTIGATE EACH SITE WE ALWAYS TAKE BACKGROUND SAMPLES OF EACH
14 SITE AND WE'VE BEEN -- WE HAVE A DATABASE THAT HAS BEEN
15 ACCUMULATING OVER TIME. THE METALS IN -- AT SITE 24 WERE SLIGHTLY
16 ABOVE THOSE BACKGROUND CONCENTRATIONS, BUT I WILL SAY WHEN WE
17 COMPARED THE SOIL RESULTS AT SITE 24 WITH SITE 21 AND 78 THEY WERE
18 PRETTY COMPARABLE. AND SEE, AT SITE 24 THAT'S A FLY ASH DUMP, WE
19 THOUGHT WE WOULD SEE SOME ELEVATED LEVELS OF METALS.

20 SO, IN ONE SENSE, I'LL SAY THAT YES, THEY WERE ELEVATED
21 BECAUSE THEY WERE ABOVE BACKGROUND, BUT WHEN WE COMPARED THEM TO
22 SITES 21 AND 24 THEY WERE COMPARABLE. SO, WE DIDN'T SEE MUCH OF
23 A PATTERN BETWEEN THE THREE SITES IS WHAT I WOULD SAY.

24 MRS. WOOD: YOU'VE GOT A PROBLEM GENERALLY.

25 MR. WATTRAS: WE DON'T BELIEVE IT WAS MUCH OF

July 27, 1994

1 A PROBLEM THERE. WE HAD A PESTICIDE THAT WAS DETECTED IN ONE SOIL
2 SAMPLE, THIS HEPTACHLOR EPOXIDE IT WAS AT A LOW CONCENTRATION DOWN
3 AT SITE 24. IT WAS ALSO -- AND I'M KIND OF JUMPING AHEAD OF
4 MYSELF, BUT THE REASON WE PUT IT UP ON THE SLIDE THAT PESTICIDE
5 WAS ALSO FOUND IN GROUNDWATER IN THE SHALLOW AQUIFER AT SITE 24.

6 HERE'S A CASE WHERE, AGAIN, WE FOUND IT AT LOW LEVELS IN
7 THE GROUNDWATER, BUT IN OUR SOIL WE REALLY DIDN'T SEE MUCH OF IT.
8 WE CAN'T -- WE'RE REALLY NOT TOO CLEAR ON WHAT HAPPENED THERE.
9 YOU KNOW, DID WE MISS THE SOURCE OR IS THE SOURCE DEPLETED FROM
10 THE SOIL, OR -- I MEAN, ANOTHER POSSIBILITY WOULD BE THE SAME
11 SITUATION WITH THE METALS, DID WE GET A GROUNDWATER SAMPLE THAT
12 HAD SOME FINDS IN IT OF SOME PESTICIDES THAT WAS REALLY MORE OR
13 LESS RELATED TO THE SEDIMENT AS OPPOSED TO BEING IN GROUNDWATER.
14 BECAUSE ONE THING ABOUT PESTICIDES THEY'RE NOT -- NUMBER ONE,
15 THEY'RE NOT THAT MOBILE IN THE ENVIRONMENT. THEY DON'T MIGRATE
16 LIKE A SOLVENT WILL. IF YOU HAVE A GASOLINE SPILL OR A SOLVENT
17 SPILL AND IT WOULD RAIN OVER TIME THAT WOULD PRETTY MUCH GO TO THE
18 GROUNDWATER PRETTY QUICK. PESTICIDES STAY WITH THE SOILS. THEY
19 DON'T MIGRATE THAT READILY. SO, WE WERE A LITTLE BIT SURPRISED TO
20 SEE IT IN THE GROUNDWATER ESPECIALLY WHEN WE SAW THAT OUR HIGHEST
21 LEVEL IN SOIL WAS VERY, VERY LOW. THAT'S FIVE PARTS PER BILLION.
22 THAT'S EXTREMELY LOW TO SEE IT -- THINKING THAT IT MIGHT BE PART
23 OF THE GROUNDWATER PROBLEM.

24 SO, I'M GOING TO JUMP AHEAD OF MYSELF A LITTLE BIT RIGHT
25 HERE. WE ARE GOING TO MONITOR THAT. WE'RE GOING TO LOOK AT THOSE

July 27, 1994

1 WELLS SOME MORE TO TRY TO FIGURE OUT, IS THERE REALLY A
2 GROUNDWATER PROBLEM ASSOCIATED WITH PESTICIDES. AGAIN, IT WAS AT
3 VERY LOW LEVELS OR WAS THAT A SAMPLE THAT MIGHT HAVE BEEN BIASED
4 HIGH DUE TO SOME PARTICULATES THAT MAY HAVE ACCUMULATED IN THE
5 SAMPLE ITSELF.

6 SITE 78 -- AT SITE 78 WE FOUND SOME HIGH LEVELS OF
7 PESTICIDES AROUND BUILDING 1502 AND THE HISTORY OF THAT BUILDING
8 AS FAR AS WE KNOW AND WHAT WE CAN TELL WAS NEVER USED FOR
9 PESTICIDE MIXING AND HANDLING. SO, ALTHOUGH THE HISTORY DOESN'T
10 TELL US ANYTHING WE DO KNOW WE HAVE SOME HIGH LEVELS OF PESTICIDES
11 THAT WILL BE TAKEN CARE OF.

12 NOW, VOC'S, THESE ARE THE VOLATILES, WE DID FIND THEM AT
13 SEVERAL BUILDING AREAS AND WE ALSO FOUND PAH'S, WHICH ARE ANOTHER
14 GROUP OF CONTAMINANTS, MAINLY IN THE 900 BUILDING AREA AS I
15 MENTIONED. THEY WERE AT LOW LEVELS THOUGH. SO, WE SHOULD OF
16 MAYBE ADDED THAT TO THE SLIDE, THAT THEY WERE DETECTED, BUT AT
17 PRETTY LOW LEVELS. NOTHING WHERE WE WOULD SAY THERE IS A
18 CONTINUING SOURCE OF A GROUNDWATER PROBLEM. I MEAN, WE'RE TALKING
19 IN THE PARTS PER BILLION RANGE.

20 COLONEL WOOD: WHAT SIDE OF THE MAIN ROAD IS
21 1502 ON AS YOU GO IN?

22 MR. WATTRAS: PARDON ME?

23 COLONEL WOOD: WHAT SIDE OF THE ROAD IS IT ON?
24 THE RIGHT SIDE OR THE LEFT SIDE?

25 MR. WATTRAS: OF BUILDING --

1 COLONEL WOOD: IN THE INDUSTRIAL AREA?
2 MR. WATTRAS: I DON'T RECALL.
3 MR. HAVEN: IT'S IN THE INDUSTRIAL AREA.
4 COLONEL WOOD: IT'S IN THE INDUSTRIAL AREA?
5 MR. HAVEN: YES, SIR. YES, SIR. IT WOULD
6 BE MORE IN THE SOUTHWESTERLY END.
7 MS. BERRY: IT'S RIGHT HERE. YOU CAN SEE
8 IT HERE.
9 COLONEL WOOD: I'M SORRY, I THOUGHT IT WAS --
10 MIGHT BE ASSOCIATED WITH THE WASH TOWER AND THE HARDSTAND WHERE
11 THEY USED TO WASH DOWN VEHICLES AND THINGS LIKE THAT. AND --
12 MR. HAVEN: NO, SIR; IT'S --
13 MS. BERRY: IT'S RIGHT OFF GIBB STREET,
14 RIGHT HERE.
15 COLONEL WOOD: I'M WITH YOU. OKAY, THANK YOU.
16 THANK YOU. I'M SORRY.
17 MR. WATTRAS: FROM A STANDPOINT OF HUMAN
18 HEALTH RISK WE COLLECT ALL THIS INFORMATION. LOOKING AT THE
19 ACTIVITIES AT HADNOT POINT WE LOOK AT, YOU KNOW, THE PEOPLE
20 WORKING THERE AND HOW THEY WOULD BE EXPOSED TO THIS. THE RISK
21 ASSESSMENT RESULTS SHOWED THAT THERE IS -- THAT THE NUMBERS -- THE
22 INCREMENTAL CANCER RISKS OR THE CHANCE OF ACQUIRING CANCER DUE TO
23 EXPOSURE ARE WITHIN ACCEPTABLE RANGE AS DEFINED BY EPA. CAN I SAY
24 THAT?
25 MS. TOWNSEND: (NODS HEAD.)

1 MR. WATTRAS: OKAY. WHICH IS THE RANGE OF
2 ONE IN 10,000 TO ONE IN ONE MILLION. WE ALSO LOOK AT OTHER THINGS
3 SUCH AS WHAT'S CALLED THE HAZARD INDEX, AND THAT'S AN INDEX OF
4 ONE. THAT HAZARD INDEX TAKES INTO ACCOUNT THINGS LIKE LIVER
5 DAMAGE, THINGS THAT ARE OBVIOUSLY NOT CANCER RELATED, BUT IMPACTS
6 THE BODY; SUCH AS THE KIDNEY OR THE LIVER OR OTHER THINGS. AND IT
7 WAS ACCEPTABLE FOR SOIL, BUT NOT FOR GROUNDWATER WHICH WE EXPECTED
8 AT THOSE HIGH LEVELS SOMEBODY -- YOU KNOW, WE DON'T WANT SOMEBODY
9 DRINKING THAT SHALLOW AQUIFER. THAT WOULD GIVE THEM AN
10 UNACCEPTABLE RISK.

11 NOW, YOU HAVE TO REMEMBER TOO ABOUT THE GROUNDWATER WHEN
12 WE DO A RISK ASSESSMENT CURRENTLY THERE'S REALLY NO EXPOSURE.
13 PEOPLE OBTAIN THEIR WATER FROM SUPPLY WELLS -- FROM CLEAN SUPPLY
14 WELLS. SO, UNDER CURRENT SITUATIONS THERE'S NO RISK TO HUMAN
15 HEALTH WITH THE GROUNDWATER.

16 NOW, IF HADNOT POINT OR CAMP LEJEUNE WOULD SHUT DOWN ONE
17 DAY AND SOMEONE DECIDED TO TURN IT INTO A COMPLEX AND THEY
18 INSTALLED THEIR WELLS IN THE SHALLOW AQUIFER THEY WOULD HAVE AN
19 UNACCEPTABLE RISK.

20 SO, WHEN WE DO A RISK ASSESSMENT YOU LOOK AT THE CURRENT
21 SITUATION AND YOU ALWAYS HAVE TO PROJECT OUT, AND WE CALL THAT THE
22 FUTURE POTENTIAL RISK. IT'S A CONSERVATIVE WAY OF LOOKING AT
23 THINGS, BUT YOU KNOW, THINGS OVER TIME CHANGE. IT COULD BE
24 REALISTIC IN A LOT OF CASES. AND AT CAMP LEJEUNE WE THINK RIGHT
25 NOW THAT WOULD BE PRETTY UNREALISTIC.

July 27, 1994

1 I'LL HAVE TOM BIXIE TALK A LITTLE BIT ABOUT ECOLOGICAL
2 RISKS BECAUSE THAT'S THE OTHER PART OF THE RISK ASSESSMENT WHICH
3 PLAYS A GREAT IMPORTANCE IS LOOKING AT, YOU KNOW, DO THESE
4 CONTAMINANTS IMPACT THE TERRESTRIAL HABITAT OR THE AQUATIC
5 HABITAT.

6 MR. BIXIE: AT THE SITE WE DID LOOK AT WHAT
7 WOULD BE THE IMPACTS FROM -- FROM THE SITE AND THE CONTAMINANTS ON
8 BOTH THE AQUATIC, ENVIRONMENT AND THE TERRESTRIAL. WE TOOK SOME
9 SURFACE WATER AND SEDIMENT SAMPLES AND COMPARED THESE TO STANDARDS
10 THAT HAVE ESTABLISHED FOR SCREENING VALUES TO SEE IF -- IF THERE
11 WERE ANY EXCEEDANTS OF THESE VALUES, AND NOT ONLY IF THERE WERE
12 ANY EXCEEDANTS; WHERE WERE THEY, WERE THEY UP STREAM OR WERE THEY
13 DOWN STREAM, WAS THERE ANY PATTERN TO THEM.

14 IN TERMS OF THE SURFACE SOILS WHAT WE HAVE BEEN DOING IS
15 GOING THROUGH A SCENARIO WHERE WE MODEL THE UPTAKE OF THE
16 CONTAMINANTS ENTERING PLANTS THAT SOME TYPE OF TERRESTRIAL
17 WILDLIFE WOULD BE FOR EXAMPLE, A RABBIT; WE USED A RABBIT, AND WE
18 USED A BIRD AND WE USED A DEER.

19 SO, WE GO THROUGH A SCENARIO JUST AS YOU GO THROUGH THE
20 HUMAN HEALTH SCENARIO AS A SMALL CHILD USES DRINKING WATER. WE GO
21 THROUGH AND WE HAVE THE DEER EATING SOME SOIL WHILE HE'S GRAZING
22 ON THE PLANTS; HE'S EATING THE PLANTS AND DRINKING THE WATER FROM
23 THE AREAS. SO, WE GO THROUGH THOSE TYPE OF SCENARIOS. IN LOOKING
24 AT THIS PARTICULAR SITE IT LOOKS LIKE THE PESTICIDES SEEM TO
25 REPRESENT THE MOST POTENTIAL FOR ANY TYPE OF ADVERSE IMPACT TO THE

July 27, 1994

1 ECOLOGICAL ENVIRONMENT. AND --

2 MRS. WOOD: OKAY, NOW, I'M THINKING GREAT
3 VAST AREAS OF CEMENT THAT YOU HAVE AROUND BURGER KING. YOU'VE GOT
4 THAT FIELD UP THERE AND YOU'RE GOT THE STEAM PLANT. WHERE IS THIS
5 WATER GOING TO BE?

6 MR. BIXIE: IT'S -- IT'S IN THE TWO CREEKS
7 THAT ARE LOCATED ON EITHER SIDE.

8 MRS. WOOD: I'M TRYING TO VIEW THIS.

9 MR. BIXIE: IT'S COGDELS CREEK AND BEAVER
10 DAM.

11 MR. WATTRAS: YES, BEAVER DAM AND COGDELS
12 CREEK.

13 MR. BIXIE: BEAVER DAM IS SOUTHEAST --

14 MR. WATTRAS: TO THE WEST OF HOLCOMB
15 BOULEVARD. COGDELS CREEK IS TO THE EAST OF THE HADNOT POINT
16 INDUSTRIAL AREA. MAYBE BRING THAT --

17 MRS. WOOD: NO, I'LL GET OVER THERE.
18 THAT'S FINE.

19 (MR. WATTRAS AND MR. BIXIE SHOW MRS. WOOD A MAP
20 OF THE LOCATION IN QUESTION.)

21 (PAUSE.)

22 MR. BIXIE: LOOKING AT THE IMPACTS OF
23 TERRESTRIAL WILDLIFE IS NOT AS ADVANCED AS IT IS -- AS WHAT WE'RE
24 LOOKING AT WITH IMPACTS TO FISH AND THINGS THAT LIVE IN THE WATER
25 JUST BECAUSE WATER IMPACTS HAVE BEEN A LOT MORE WELL STUDIED OVER

1 THE YEARS.

2 WE'VE DEVELOPED THIS MODEL THAT LOOKS AT WHAT TYPE OF
3 DOSAGE THIS PARTICULAR WILDLIFE COULD GET. JUST AS YOU COMPARE
4 FOR HUMANS WHAT THE ALLOWABLE INTAKE EPA HAS ESTABLISHED FOR LEAD
5 AND MERCURY OR WHATEVER THERE'S ALSO LEVELS THAT EPA HAS
6 ESTABLISHED IN THE LITERATURE FOR DEER AND FOR RABBIT THAT MAY BE
7 EXPOSED TO ZINC OR -- SO WE GO THROUGH THAT TYPE OF ANALYSIS AND
8 BASED ON THAT WE CAME UP WITH PESTICIDES ARE -- SEEM LIKE THEY
9 HAVE THE MOST IMPACT.

10 MRS. WOOD: THAT'S INTERESTING. THANK YOU.

11 MR. WATTRAS: ONCE ALL THESE THINGS ARE TAKEN
12 INTO ACCOUNT AND WE KNOW WHAT THE POTENTIAL RISKS ARE TO BOTH
13 HUMANS AND WILDLIFE WE WILL LOOK AT WHAT ARE THE PROBLEMS OUT
14 THERE THAT ARE CAUSING A HIGH RISK SUCH AS THE GROUNDWATER, SUCH
15 AS PESTICIDES OF THE SOIL OR WHATEVER. AND WE LOOK AT WHAT ARE
16 THE BEST CLEANUP METHODS OR ALTERNATIVES IN DEALING WITH THESE
17 PROBLEMS.

18 FOR THE GROUNDWATER, THERE ARE TWO PRIMARY PLUMES WHICH
19 WE'RE LOOKING AT. AND FOR SOIL THERE ARE FOUR AREAS OF CONCERN.
20 THREE OF THE AREAS OF CONCERN ARE WITHIN SITE 21 AND THE FOURTH
21 ONE IS AT THIS BUILDING 1502.

22 I CAN TELL YOU -- NOW, THOSE AREAS OF CONCERN ARE
23 MEASURED THERE IN SQUARE FEET. IT WOULD HAVE BEEN MAYBE A LITTLE
24 BIT BETTER TO SHOW IT IN CUBIC YARDS. IT'S A LOT EASIER, I THINK,
25 TO PICTURE THINGS IN CUBIC YARDS THAN SQUARE FEET, BUT I'LL TELL

July 27, 1994

1 YOU THAT THE PESTICIDES AND PCB'S ARE PRIMARILY UP IN THE TOP TWO
2 FEET OF SOIL. BELOW THAT OUR SOIL SAMPLES REALLY DIDN'T FIND ANY
3 SIGNIFICANT CONTAMINATION.

4 SO, DURING REMEDIATION IT WOULD PRETTY MUCH INVOLVE
5 TAKING OUT ABOUT TWO FEET OF SOIL OVER THAT AREA. THEY ARE SMALL
6 AREAS. NONE OF THESE AREAS ARE WHAT I WOULD CALL A HUGE AREA OF
7 CONTAMINATION. THEY'RE PRETTY -- YOU KNOW, YOU'RE TALKING ABOUT
8 800 SQUARE FEET, THAT'S NOT VERY BIG. SAME THING WHERE THE
9 HIGHEST ONE IS AT SITE 21 IS ABOUT 8,100 SQUARE FEET. THAT'S NOT
10 THAT LARGE OF AN AREA.

11 THE GROUNDWATER ALTERNATIVES THAT WE LOOKED AT WOULD BE
12 THE NO ACTION ALTERNATIVE, WHICH EVERYBODY KNOWS WE LOOK AT.
13 INSTITUTIONAL CONTROLS WHICH WOULD BE SHUTTING WELLS DOWN, NOT
14 ALLOWING NEW WELLS TO BE PUT IN. THE THIRD ALTERNATIVE IS
15 REFERRED TO AS SOURCE CONTROL. AS I MENTIONED BEFORE THE ACTION
16 THAT'S GOING ON RIGHT NOW IS CONTAINMENT ALTERNATIVE. WE'RE
17 CONTAINING MIGRATION.

18 ALTERNATIVE THREE FOCUSES ON GOING TO THE HOT SPOT AND
19 DEALING WITH THAT HOT SPOT; PUMPING FROM THAT AREA. AND IN
20 ALTERNATIVE THREE IT WOULD SIMPLY BE ADDING ADDITIONAL WELLS IN
21 THE HOTTEST, THE MOST CONTAMINATED PORTION OF THAT PLUME, TYING IT
22 INTO THE EXISTING TREATMENT SYSTEM THAT IS BEING CONSTRUCTED. ■
23 FOURTH ALTERNATIVE WOULD ALSO BE SOURCE CONTROL, BUT IT WOULD USE
24 A DIFFERENT TECHNIQUE OF AIR SPARGING.

25 AIR SPARGING IS SIMPLY PULLING AIR -- PULLING AIR OUT OF

July 27, 1994

1 THE GROUND. BY DOING THIS IT'S ALMOST LIKE A VACUUM WHERE YOU'RE
2 PULLING THE VOLATILES, AND VOLATILES READILY MOVE AND IT WOULD GO
3 THROUGH AN AIR PATHWAY AND IT WOULD BE COLLECTED. THE AIR WOULD
4 BE -- EMISSIONS WOULD BE COLLECTED.

5 IN THAT ALTERNATIVE THE ADVANTAGES -- YOU DON'T REALLY
6 TREAT ANY -- YOU DON'T HAVE TO PULL ANY GROUND WATER OUT. YOU DO
7 EVERYTHING -- WHAT WOULD BE IN SITU. YOU'RE NOT PULLING OUT
8 ANYTHING. EVERYTHING STAYS THE SAME, IT'S JUST THAT YOU'RE
9 SUCKING AIR OUT AND THE VOLATILES WOULD FOLLOW THAT AIR PATHWAY.

10 THE FIFTH ALTERNATIVE ADDRESSES THE DEEPER GROUNDWATER.
11 THE FIRST FOUR -- OF COURSE, ONE AND TWO DON'T DO ANYTHING WITH
12 THE GROUNDWATER, BUT THE THIRD AND FOURTH ALTERNATIVE FOCUSES JUST
13 ON THE SHALLOW GROUNDWATER.

14 THE FIFTH ONE CONSIDERS WHAT WOULD HAPPEN IF -- OR WHAT
15 WOULD BE THE COST AND OUTCOME IF WE PUT IN SOME DEEP EXTRACTION
16 WELLS AND WENT AFTER THE CONTAMINATION IN THE INTERMEDIATE AQUIFER
17 AND IN THE DEEP AQUIFER.

18 LET ME MOVE AHEAD A LITTLE BIT HERE AND I'LL GO BACK TO
19 THAT. LET'S LOOK AT THE COST OF THESE ALTERNATIVES TOO. THE
20 COST OF --

21 COLONEL WOOD: COULD YOU FOCUS THAT JUST A
22 LITTLE BIT?

23 MR. WATTRAS: I'LL TELL YOU THE COST. I'M
24 SORRY IF YOU CAN'T TELL WHAT THEY ARE. THEY ARE A LITTLE BIT HARD
25 TO SEE.

July 27, 1994

1 THE ALTERNATIVES FOR GROUNDWATER RANGE ANYWHERE FROM
2 ZERO, IF WE DID NOTHING ELSE OUT THERE, UP TO 690,000 AND THAT WAS
3 FOR THE AIR SPARGING. THE OTHER COSTS IF WE JUST IMPLEMENTED MORE
4 INSTITUTIONAL CONTROLS AND DID MORE MONITORING IT WOULD COST
5 ROUGHLY \$260,000.

6 THE THIRD ALTERNATIVE IS TO ADDRESS THE SHALLOW
7 GROUNDWATER IN THE MOST CONTAMINATED AREA TIE THAT INTO THE
8 EXISTING TREATMENT SYSTEM AND IT'S AT \$460,000. THE OTHER
9 TREATMENT ALTERNATIVE INVOLVING SOME REMEDIATION OF THE
10 INTERMEDIATE AND DEEP AQUIFER IS \$615,000.

11 I'LL TALK ABOUT SOIL LATER. I FIGURE IT'S BEST MAYBE TO
12 GO THROUGH THE GROUNDWATER THEN WE'LL MOVE BACK AND TALK ABOUT
13 SOIL.

14 THE ALTERNATIVE THAT THE DEPARTMENT OF NAVY AND MARINE
15 CORPS IS PROPOSING WOULD BE ALTERNATIVE THREE, AND THAT'S JUST TO
16 ADDRESS MORE CLEANUP OF THE SHALLOW GROUNDWATER IN THE HOTTEST
17 AREA OF CONTAMINATION. AGAIN, THAT'S WHERE WE WOULD JUST ADD ON
18 TO THE EXISTING TREATMENT SYSTEM. THE REASON ALTERNATIVE SIX WAS
19 NOT SELECTED WAS BECAUSE WHAT WE'RE AFRAID OF IS INSTALLING SOME
20 EXTRACTION WELLS IN THE INTERMEDIATE PORTION OF THE AQUIFER AS
21 WELL AS THE DEEP PORTION COULD POTENTIALLY MAKE THINGS WORSE
22 DEEPER.

23 MRS. WOOD: I WAS WONDERING ABOUT THAT. IF
24 IT WOULDN'T CREATE A PULL.

25 MR. WATTRAS: WE'RE WORRIED ABOUT THAT

July 27, 1994

1 BECAUSE THERE IS NO CONFINING LAYER. YOU KNOW LAST NIGHT WE
2 TALKED ABOUT A SEMI-CONFINING LAYER OUT AT SITE 35. AT HADNOT
3 POINT THE GEOLOGY IS TOTALLY DIFFERENT. IT'S ON THE OTHER SIDE OF
4 THE NEW RIVER. THERE IS NO CONFINING LAYER AT HADNOT POINT UNTIL
5 ABOUT 220 FEET.

6 WHAT WOULD PROBABLY -- WHAT COULD POSSIBLY HAPPEN WOULD
7 BE IF WE WOULD ADDRESS THE INTERMEDIATE AND DEEP IS YOU WOULD
8 START PUMPING OVER TIME AND YOU COULD ACTUALLY DRAW CONTAMINATES
9 DOWNWARD.

10 GIVEN THAT THE CONTAMINATION LEVELS IN THE INTERMEDIATE
11 AND DEEP ARE PRETTY LOW TO BEGIN WITH WE FELT THAT WOULD NOT BE --
12 THAT WE'D ACTUALLY END UP WITH A WORSE RESULT. SO, THAT'S WHY
13 THAT ALTERNATIVE WASN'T SELECTED. IT'S NOT, YOU KNOW, BECAUSE
14 THEY DON'T FEEL LIKE CLEANING UP THE DEEP AQUIFER. WE FEEL IT'S
15 BEST TO JUST ADDRESS THE SHALLOW, WHICH IS THE HOT SPOT AND THAT'S
16 THE SOURCE OF THE DEEP. I MEAN, THE SHALLOW IS THE SOURCE OF
17 OBVIOUSLY THE DEEP. WE FEEL LET'S CLEAN THAT UP SEE WHAT HAPPENS
18 TO THE LEVELS DOWN BELOW. WHILE WE'RE CLEANING UP THAT SHALLOW
19 AQUIFER OVER TIME AND AT CERTAIN INTERVALS, USUALLY IT'S QUARTERLY
20 AND THEN SOMETIMES THEY'LL BACK IT OFF TO MAYBE TWICE A YEAR, WE
21 WILL TAKE SAMPLES FROM OUR MONITORING WELLS TO SEE HOW EFFECTIVE
22 THE SOLUTION IS. WE WILL ALSO TAKE SAMPLES FROM THE DEEP. WE
23 WANT TO SEE IF OVER TIME THE DEEP AQUIFER IS SLOWLY DECREASING IN
24 CONCENTRATION AS WELL AS THE INTERMEDIATE. WE THINK THAT WILL
25 HAPPEN OVER TIME IF WE ADDRESS THE SOURCE AREA.

July 27, 1994

1 MRS. WOOD: WHERE WOULD THAT WATER IN THE
2 DEEP BE MIGRATING TO?

3 MR. WATTRAS: IN THE DEEP?

4 MRS. WOOD: YEAH.

5 MR. WATTRAS: IT'S HEADING TOWARDS THE NEW
6 RIVER. THE DEEP AQUIFER --

7 MRS. WOOD: WELL, AT THAT RATE WOULD IT
8 INTERSECT -- ACTUALLY INTERSECT OR IS IT GOING RIGHT OUT INTO THE
9 OCEAN?

10 MR. WATTRAS: SOME OF IT -- YOU KNOW, AGAIN,
11 THIS CASTLE HAYNE AQUIFER GOES DOWN TO 220 FEET. YOU KNOW, AT A
12 HUNDRED FEET SOME OF THAT GROUNDWATER AS IT HEADS TOWARDS THE NEW
13 RIVER IS GOING TO START GOING UPWARDS TOWARDS THE RIVER. THE
14 WATER AT 220 FEET IS PROBABLY GOING TO GO RIGHT UNDERNEATH THE NEW
15 RIVER.

16 BY THE WAY, WE HAVE SAMPLED THE NEW RIVER JUST TO SEE IF
17 THERE IS ANY IMPACT. THERE WAS NO VOLATILE CONTAMINATION OF THAT
18 SURFACE WATER. CHANCES ARE AT LEVELS -- AND I MENTIONED BEFORE WE
19 HAD A LITTLE BIT OF BENZENE IN THE DEEP AQUIFER AT ABOUT FIVE
20 PARTS PER BILLION. MY BEST JUDGEMENT WOULD BE THAT ONCE THAT
21 WOULD REACH THE NEW RIVER AND ENTER THE NEW RIVER YOU WOULD NOT
22 EVEN BE ABLE TO MEASURE IT BECAUSE OF DELUSIONAL EFFECTS. THAT
23 WOULD BE -- YOU'D HAVE TO HAVE A PRETTY GOOD SLUG OF GROUNDWATER
24 FOR IT TO ACTUALLY SHOW UP IN THE NEW RIVER; YOU WOULD HAVE A
25 PRETTY GOOD PROBLEM.

July 27, 1994

1 COLONEL WOOD: IN YOUR TESTING OF THE NEW
2 RIVER DID YOU FIND ANY METALS THERE?

3 MR. WATTRAS: WE DO FIND METALS.

4 COLONEL WOOD: DID YOU FIND MERCURY?

5 MR. WATTRAS: OH, MERCURY? I DON'T ACTUALLY
6 RECALL. CAN YOU -- I DON'T -- IT DOESN'T RING A BELL.

7 MR. BIXIE: IT WASN'T ANYTHING THAT WAS
8 ABOVE ANY STANDARDS. I MEAN, YOU ALWAYS FIND VERY, VERY LOW
9 LEVELS OF METALS, BUT NOTHING THAT WAS ABOVE STANDARD.

10 MR. PAUL: DO YOU ASK THAT FOR ANY
11 SPECIFIC REASON?

12 COLONEL WOOD: WHAT IT DOES TO THE FISH.

13 MR. PAUL: WHAT'S THAT?

14 COLONEL WOOD: WHAT IT DOES TO THE FISH.

15 MR. PAUL: BUT NO KNOWN PRACTICE THAT YOU
16 KNOW ABOUT?

17 COLONEL WOOD: NO, NO, NO, NO.

18 MR. PAUL: THAT WAS THE SITE OF THE AIR
19 STATION THAT WE EXPECTED TO FIND MERCURY, BUT WE DIDN'T FIND IT.

20 MR. WATTRAS: YEAH, SAMPLED -- DID YOU ASK
21 ABOUT THE FISH?

22 COLONEL WOOD: YEAH.

23 MR. WATTRAS: OKAY. I'M SORRY, I COULDN'T
24 HEAR YOU. YEAH, WE DID --

25 MR. PAUL: NO, HE JUST SAID WHAT IT DOES

July 27, 1994

1 TO THE FISH.

2 MR. WATTRAS: OH.

3 MR. PAUL: WHAT IT DOES TO THE FISH.

4 MR. WATTRAS: OH, I SEE.

5 MR. PAUL: I DIDN'T KNOW IF THERE WAS SOME
6 HISTORY THERE THAT HE COULD SHED SOME LIGHT ON?

7 COLONEL WOOD: NO, NOT AT ALL.

8 MR. WATTRAS: SO, THAT'S THE PROPOSED
9 ALTERNATIVE TO GROUNDWATER. TO SIMPLY -- WE ARE CONTAINING IT AT
10 PRESENT. NOW, WE'RE GOING TO GO OUT TO THE HOT SPOT AND TIE IN
11 WITH THE EXISTING SYSTEM.

12 I'M GOING TO BACK UP AND GO OVER THE SOIL ALTERNATIVES.
13 WE CAME UP WITH FOUR ALTERNATIVES. OBVIOUSLY, THE NO ACTION
14 ALTERNATIVE IS ALWAYS CONSIDERED. THE SECOND ALTERNATIVE WOULD BE
15 TO LEAVE THE SOIL IN PLACE AND POSSIBLY CAP IT. YOU CAN CAP IT
16 WITH ASPHALT. YOU CAN CAP IT WITH CLAY. YOU CAN CAP IT WITH
17 SOIL, PUT TWO FEET OF SOIL ON IT AND PLANT GRASS. THAT WOULD BE
18 CONSIDERED CAPPING.

19 THE THIRD ALTERNATIVE IS ON-SITE TREATMENT. THAT WOULD
20 BE EXCAVATION OF THE SOIL, POSSIBLY BRINGING ON -- YOU CAN BRING
21 ON AN INCINERATOR OR ANOTHER TYPE OF TREATMENT TECHNIQUE THAT
22 WOULD BE APPLICABLE TO PESTICIDES AND PCB'S.

23 THE FOURTH ALTERNATIVE WOULD BE JUST TO EXCAVATE IT AND
24 TO TAKE IT OFF-SITE TO A PERMITTED FACILITY FOR DISPOSAL.

25 I'LL GO OVER THE COSTS AGAIN; YOU PROBABLY CAN'T SEE

July 27, 1994

1 THEM VERY WELL. THE COSTS RANGE ANYWHERE, OBVIOUSLY, FROM ZERO
2 ALL THE WAY UP TO 1.4 MILLION.

3 1.4 MILLION WOULD BE THE COST OF BRINGING AN ON-SITE
4 INCINERATOR ACTUALLY TO THE BASE. THE REASON IT'S SO HIGH -- I
5 MENTIONED BEFORE ABOUT THE QUANTITIES OF SOIL. WE DON'T REALLY
6 HAVE A -- YOU KNOW, THESE ARE SMALL AREAS. AND HERE'S WHERE YOU
7 RUN INTO THE COST OF, BECAUSE YOU'RE DEALING WITH SUCH A SMALL
8 AMOUNT OF SOIL, IT REALLY DOES NOT MAKE IT COST-EFFECTIVE TO BRING
9 A TREATMENT SYSTEM ON-SITE, BECAUSE OF ALL THE CAPITAL COSTS
10 ASSOCIATED WITH JUST A SMALL AMOUNT OF SOIL. THAT'S WHY THE COST
11 IS SO HIGH; IT'S REALLY NOT THAT COST-EFFECTIVE TO DO ON-SITE
12 TREATMENT FOR SUCH A SMALL COST OF SOIL.

13 NOW, MAYBE IF YOU HAD A PROBLEM WHERE YOU HAD A VERY
14 LARGE AREA OF SOIL CONTAMINATION, THAT MIGHT BE FEASIBLE, INSTEAD
15 OF EXCAVATING AND TRUCKING EVERYTHING OFF-SITE FOR TREATMENT OR
16 FOR OFF-SITE DISPOSAL, THAT MIGHT BE A CASE WHERE IT'S MORE
17 FEASIBLE TO SAY LET'S BRING THE TREATMENT SYSTEM ON-SITE, BECAUSE
18 WE HAVE PLENTY OF SOIL AND IT'S GOING TO BE COST-EFFECTIVE.

19 SO, THERE'S A LITTLE BIT OF -- THE LESS CONTAMINATION
20 YOU HAVE, IT SEEMS LIKE THE MORE EXPENSIVE IT IS TO BRING THE
21 TREATMENT ON-SITE. THAT MIGHT NOT -- NOW, FOR PETROLEUM -- AGAIN,
22 WE'RE TALKING PESTICIDES AND PCB'S. LAST NIGHT WE TALKED ABOUT
23 THE PETROLEUM PRODUCT. THAT'S A LITTLE BIT DIFFERENT. IT'S A LOT
24 EASIER TO TREAT, TOO.

25 PESTICIDES AND PCB'S, THERE AREN'T THAT MANY TREATMENT

1 TECHNOLOGIES IN DEALING WITH THEM. YOU'RE ALMOST LIMITED TO --
2 INCINERATION IS PROBABLY THE MOST NOTED AND THE LEAST AMOUNT OF
3 RISK WE KNOW THAT IT'S GOING TO GET RID OF IT. THERE ARE SOME
4 OTHER TECHNOLOGIES THAT ARE WHAT THEY CALL INNOVATIVE, AND THEY
5 HAVE MORE RISKS. YOU WON'T BE -- THERE IS --

6 MRS. WOOD: DEFINE "INNOVATIVE"?

7 MR. WATTRAS: FOR EXAMPLE --

8 MRS. WOOD: DEFINE IT.

9 MR. BIXIE: SOIL WASHING.

10 MR. WATTRAS: SOIL WASHING. THEY CAN ADD
11 SOME -- I WANT TO -- ACTUALLY LIKE A SOLVENT TO THE SOIL TO
12 EXTRACT THE PCB'S OR PESTICIDES. THEN, ALL THOSE PCB'S AND
13 PESTICIDES ARE --

14 MRS. WOOD: YOU STILL HAVE THEM.

15 MR. WATTRAS: -- IN THE SOLVENT, AND THEN
16 THEY WOULD JUST GET RID OF THE SOLVENT, AND THE SOIL WOULD BE USED
17 AS BACK FILL.

18 SO, THE COST RANGE, AGAIN, THIS IS -- THAT ONE ON-SITE
19 TREATMENT -- THIS IS A TYPOGRAPHICAL ERROR. THE COSTS RANGE FROM
20 \$650,000 TO 1.4 MILLION.

21 FOR THE OFF-SITE DISPOSAL, THE COSTS WOULD RANGE FROM
22 \$480,000 UP TO 1.3 MILLION. THE REASON IS \$480,000 REPRESENTS
23 TAKING IT OFF-SITE AND TAKING IT TO A PERMITTED LANDFILL. THE 1.3
24 MILLION DOLLAR RANGE REPRESENTS TAKING IT OFF-SITE, TREATING IT
25 VIA INCINERATION.

July 27, 1994

1 NOW, THE SOIL -- THERE'S OUR TREATMENT SYSTEM, BY THE
2 WAY. WE CAN TALK ABOUT THAT LATER ON.

3 THE PROPOSED ALTERNATIVE FOR SOIL IS TO CHOOSE
4 ALTERNATIVE FOUR AND SIMPLY EXCAVATE THE SOIL AND TAKE IT TO AN
5 OFF-SITE LANDFILL. IN THIS CASE -- IT HAS A LOT TO DO WITH THE
6 QUANTITY OF SOIL. WE'RE NOT TALKING HIGH QUANTITIES OF SOIL. IN
7 THIS CASE, IT'S MOST FEASIBLE TO JUST TAKE IT TO AN OFF-SITE
8 LANDFILL. THE PESTICIDE AND PCB CONTAMINATED SOIL IS NOT
9 CONSIDERED A HAZARDOUS WASTE. IT'S CONSIDERED -- IT HAS HAZARDOUS
10 SUBSTANCES IN IT, BUT IT DOES NOT FALL UNDER THE CATEGORY OF
11 HAZARDOUS WASTE.

12 ONCE A SOIL OR A LIQUID FALLS UNDER THE CATEGORY OF A
13 HAZARDOUS WASTE, IT HAS TO GO TO A VERY SPECIAL TYPE OF LANDFILL,
14 AND THAT DOES RUN INTO A LOT OF MONEY. IN THIS CASE, BECAUSE IT'S
15 NOT HAZARDOUS, IT COULD BE TAKEN TO A PERMITTED, WHAT THEY CALL A
16 TITLE C LANDFILL, IF I'M NOT MISTAKEN. BUT IT COULD BE TAKEN TO
17 A LANDFILL THAT DOES NOT -- IT HAS A LOT OF PRECAUTIONS, YOU KNOW,
18 IT'S NOT JUST A DUMP.

19 MS. WOOD: IT'S LINED.

20 MR. WATTRAS: BUT IT'S DIFFERENT THAN A
21 HAZARDOUS WASTE LANDFILL AND IT BECOMES MORE COST-EFFECTIVE JUST
22 TO TAKE THIS PESTICIDE AND PCB SOIL TO AN OFF-SITE LANDFILL.

23 THAT'S THE CONCLUSION OF THE HADNOT POINT PROPOSED
24 ALTERNATIVES.

25 WE'RE GOING TO TALK ABOUT ANOTHER OPERABLE UNIT. BUT

July 27, 1994

1 BEFORE WE GET INTO THAT, ARE THERE ANY OTHER QUESTIONS THAT YOU
2 MIGHT HAVE THAT YOU WANT TO TALK ABOUT NOW OR -- WE COULD -- WE
3 CAN ADDRESS THEM.

4 MRS. WOOD: JUST, IN OTHER WORDS, YOU'RE
5 CONCENTRATING ON THE WATER AND THE SOILS THAT ARE CONTAMINATED
6 WITH THE PESTICIDES.

7 MR. WATTRAS: RIGHT, PESTICIDES AND PCB'S.

8 MRS. WOOD: THERE'S NO PROBLEMS WITH
9 PETROLEUM PRODUCTS --

10 MR. WATTRAS: NO, THAT --

11 MRS. WOOD: -- OR SOLVENTS?

12 MR. WATTRAS: THAT WAS NOT INCLUDED AS PART
13 OF THIS STUDY. YOU'RE TALKING ABOUT SITE 22 OR?

14 MRS. WOOD: WELL, I MEAN -- YEAH, OR UP
15 THERE BY BUILDING 900, THERE'S NO GROUND PROBLEM?

16 MR. WATTRAS: OH, NO. NO, NO, NO. AGAIN, WE
17 LOOKED AT THOSE SOIL RESULTS. THAT'S WHAT I WAS SAYING BEFORE,
18 WHERE WE REALLY DIDN'T SEE VERY HIGH LEVELS OF SOLVENTS THAT WE
19 COULD ASSOCIATE WITH A CONTINUING SOURCE.

20 IF WOULD HAVE, AND THAT WOULD HAVE, YOU KNOW -- THAT
21 WOULD HAVE BEEN A GREAT THING TO SAY THAT THERE'S STILL A SOURCE
22 THERE AND WE'RE GOING TO DO SOMETHING WITH IT. BUT IF WE WOULD
23 HAVE FOUND SOME VERY HIGH LEVELS OF SOLVENTS IN SOILS THAT ARE
24 ASSOCIATED WITH THAT PLUME, THEY WOULD HAVE BEEN TAKEN CARE OF.
25 I MEAN, WE WOULD -- I DON'T BELIEVE --

July 27, 1994

1 MRS. WOODS: SO, IT'S JUST THE PLUME.

2 MR. WATTRAS: -- A SOURCE WOULD HAVE BEEN
3 LEFT THERE. I DON'T BELIEVE EPA OR THE STATE WOULD HAVE EVER
4 PERMITTED A SOURCE OF CONTAMINATION TO THE SOIL TO REMAIN THERE.
5 IT CERTAINLY WOULD HAVE BEEN ADDRESSED. BUT IT APPEARS THAT THE
6 SOURCE HAS BEEN DEPLETED FROM THAT SOIL MATRIX AT THIS TIME AND IS
7 PRETTY MUCH SITTING IN THE SHALLOW GROUNDWATER.

8 OKAY. OPERABLE UNIT NUMBER FIVE IS A VERY SMALL
9 OPERABLE UNIT. IT CONSISTS OF ONE SITE: SITE TWO. SITE TWO IS
10 CALLED THE FORMER NURSERY DAY CARE CENTER. IT INVOLVES TWO AREAS;
11 ONE IS -- WE CALL THE BUILDING 712 AREA. THAT WAS THE BUILDING
12 THAT USED TO HOUSE THE PESTICIDES AND STORED THEM. AND WE HAVE
13 ANOTHER AREA CALLED THE FORMER STORAGE AREA. THIS IS ACROSS A SET
14 OF RAILROAD TRACKS THAT WAS ONCE OPENED -- THAT'S AN OPEN FIELD
15 THAT WAS ONCE USED TO STORE BULK MATERIALS.

16 THIS IS A PICTURE OF BUILDING 712, AND BEHIND IT THAT'S
17 A PARKING LOT AREA. IT'S CURRENTLY USED AS AN ADMINISTRATIVE
18 OFFICE. AND I CAN SHOW YOU ON ANOTHER SLIDE, BUT OVER IN THIS
19 AREA, THERE ARE TWO CONCRETE PADS, CEMENT PADS OR CONCRETE PADS,
20 WHICH WE BELIEVE THEY USED TO STORE DRUMS OF PESTICIDES. WE
21 LOOKED AT SOME AERIAL PHOTOGRAPHS WHERE WE COULD SEE THESE DRUMS
22 OF PESTICIDES SITTING ON THESE PADS. AND THEY PROBABLY, YOU KNOW
23 -- THEY WERE 55 GALLON DRUMS THAT WERE TURNED ON THEIR SIDE. THEY
24 PROBABLY HAD THE SPIGOT THERE AND WOULD POUR OUT THE PESTICIDES AS
25 THEY NEED THEM AND FILL UP THEIR SPRAYERS AND APPLY THEM.

July 27, 1994

1 COLONEL WOOD: DID THEY OPERATE THOSE
2 PADS COINCIDENTALLY WITH THE -- OR AT THE SAME TIME THAT THE PLACE
3 WAS OPERATING AS A DAY CARE CENTER?

4 MR. WATTRAS: AS FAR AS I KNOW, NO.

5 MR. HAVEN: NO, SIR.

6 MR. PAUL: NO, SIR.

7 MR. HAVEN: AS A MATTER OF FACT, SITE TWO,
8 IF I'M NOT MISTAKEN, WAS OPERATING FROM 1945 TO 1958 AS A
9 PESTICIDE MIXING AREA. AND THE DAY CARE CENTER WAS PROBABLY A
10 COUPLE OF DECADES LATER.

11 MRS. WOOD: OH, NO. NO.

12 MR. HAVEN: IT CAME ABOUT THE '60S.

13 MRS. WOOD: NO, THAT CAME ABOUT -- YEAH, IT
14 WAS THERE FOR YEARS BEFORE YOU WERE BORN REALLY. I HAD IT IN
15 HERE, BUT IT CAME IN SHORTLY AFTER '58.

16 MR. HAVEN: IN THE '60S.

17 MRS. WOOD: AND THEY CLOSED IT DOWN IN THE
18 '70S, '78 OR SOMETHING LIKE THAT.

19 MR. WATTRAS: I THINK IT'S ONE ON OF THOSE
20 SLIDES. LET ME SEE. FROM 1945 TO 1958 IS WHAT WE HAVE THROUGH
21 OUR RECORDS OR IN LOOKING AT INFORMATION, THAT'S WHEN IT OPERATED.

22 MRS. WOOD: THE DAY CARE CENTER WENT IN
23 ALMOST IMMEDIATELY AFTER THAT.

24 MR. PAUL: I WANT TO SAY '63 FOR THE DAY
25 CARE.

July 27, 1994

1 MRS. WOOD: THAT SOUNDS AWFULLY CLOSE.

2 MR. PAUL: YEAH, IT WAS IN THE EARLY '60S,
3 BUT I DON'T THINK IT WAS A YEAR OR TWO AFTER.

4 MRS. WOOD: THEY DIDN'T MOVE ONE OUT AND
5 PUT ONE IN.

6 MR. WATTRAS: THESE ARE THE CONCRETE PADS.
7 THE OBJECT IN THE BACKGROUND IS A MONITORING WELL WHICH WE
8 INSTALLED. ON THE OTHER SIDE OF THE MONITORING WELL RIGHT UP HERE
9 IS ANOTHER CONCRETE PAD. SO, WE HAVE A MONITORING WELL RIGHT IN
10 THE MIDDLE OF THIS AREA.

11 WE TOOK A LOT OF SAMPLES THROUGHOUT HERE, A LOT OF SOIL
12 SAMPLES. WE STARTED AT THE SURFACE AND WORKED OUR WAY DOWN TO THE
13 WATER TABLE, WHICH IS PROBABLY ABOUT SIX OR SEVEN FEET UP HERE.
14 AND WE ALSO LOOKED AT THE OTHER AREA AROUND THE BUILDING, JUST TO
15 MAKE SURE, YOU KNOW, THERE WEREN'T HIGH LEVELS OF PESTICIDES BACK
16 THERE.

17 THIS IS THE SECOND PAD THAT I WAS SHOWING YOU IN THAT
18 PREVIOUS FIGURE. THIS PAD'S PRETTY --

19 MRS. WOOD: NOW, IS THAT A DITCH OVER THERE
20 TO THE RIGHT?

21 MR. WATTRAS: YES, THERE IS A DRAINAGE DITCH,
22 AND THERE'S A SET OF -- THERE'S RAILROAD TRACKS THAT RUN IN THIS
23 DIRECTION. AND THAT DRAINAGE DITCH RECEIVES SURFACE RUN-OFF.
24 RARELY IS THERE WATER IN THAT DITCH EXCEPT AFTER A RAINFALL. SO,
25 IT'S NOT AN INTERMITTENT STREAM; IT'S SIMPLY A DITCH.

July 27, 1994

1 THIS IS THE OPEN AREA, THE STORAGE AREA, I WAS TALKING
2 ABOUT. NOW, TYPICALLY IT'S JUST AN OPEN FIELD. THE EQUIPMENT YOU
3 SEE HERE WAS ASSOCIATED WITH OUR INVESTIGATION. BUT TYPICALLY,
4 THERE'S NOTHING THERE. IT'S JUST AN OPEN FIELD. LOOKING AT
5 HISTORICAL PHOTOGRAPHS -- IN FACT, I BELIEVE THERE'S ONE OVER
6 THERE -- YOU CAN SEE THAT THERE USED TO BE, COMING OFF THAT TRAIN
7 TRACK -- NOW, THE TRAIN TRACKS ARE RUNNING RIGHT OVER HERE, OKAY?
8 BUILDING 712 IS ON ONE SIDE. THIS OPEN FIELD'S ON THE OTHER.
9 THERE USED TO BE A RAILROAD SPUR THAT CAME OFF OF THE MAIN LINE,
10 AND YOU CAN SEE THINGS THAT WERE STORED OVER HERE AT ONE TIME.
11 NOW, THAT RAILROAD SPUR IS GONE AND, AGAIN, NOTHING'S STORED
12 THERE.

13 TO BE QUITE HONEST WITH YOU, THERE'S NO INFORMATION
14 TELLING US WHAT WAS STORED THERE. YOU CAN SEE OBJECTS IN THE
15 HISTORICAL PHOTOGRAPHS, BUT WE LOOKED THROUGH DIFFERENT RECORDS TO
16 SEE IF -- WHAT MIGHT HAVE BEEN STORED THERE. THERE IS A WATER
17 TREATMENT FACILITY ON THE OTHER SIDE OF THIS ROAD, RIGHT OVER
18 HERE. IT COULD HAVE BEEN -- THE STUFF THAT WAS STORED OVER THERE
19 COULD HAVE BEEN ASSOCIATED WITH THAT TREATMENT FACILITY FOR ALL WE
20 KNOW. BUT WE DON'T HAVE ANY INFORMATION ON EXACTLY WHAT WAS
21 STORED THERE.

22 STUDIES HAVE BEEN CONDUCTED OUT HERE BEFORE WE DID OUR
23 REMEDIAL INVESTIGATION. I BELIEVE THERE WERE FIVE MONITORING
24 WELLS ALREADY IN PLACE. FOUR OF THE MONITORING WELLS WERE LOCATED
25 AROUND THE BUILDING 712 AREA. AND THE FIFTH MONITORING WELL WAS

July 27, 1994

1 IN THIS OPEN FIELD AREA.

2 WHAT WE FOUND -- OBVIOUSLY WE FOUND A LOT OF PESTICIDES
3 IN THE SURFACE SOIL AND THE SEDIMENT NEAR THE CEMENT PADS, VERY
4 HIGH LEVELS. THE HIGHEST LEVEL WAS ABOUT ONE MILLION PARTS PER
5 BILLION. WE'RE TALKING PERCENTAGE, SO VERY HIGHLY CONCENTRATED
6 SOIL -- OR PESTICIDE LEVELS IN THE SOIL; AS WELL AS THE SEDIMENT
7 IN THE DRAINAGE DITCH, WHICH MAKES SENSE BECAUSE IT'S A PRETTY
8 STEEP DITCH, AND I'M SURE THROUGH RUNOFF A LOT OF STUFF FLOWS
9 RIGHT INTO THAT DITCH.

10 WITH RESPECT TO GROUNDWATER, WE REALLY DIDN'T FIND MUCH
11 OF A PESTICIDE PROBLEM. WE DID HAVE SOME LOW LEVELS. THE WELL IN
12 BETWEEN THE PADS HAD SOME VERY, VERY LOW LEVELS. I LIKE TO CALL
13 THEM TRACE LEVELS; WE'RE TALKING VERY LOW PARTS PER BILLION. BUT
14 THE MAJOR PROBLEM, WITH RESPECT TO GROUNDWATER, HAPPENED TO BE
15 SOME LEVELS OF ETHYLBENZENE AND XYLENE IN THE FORMER STORAGE AREA.

16 I MENTIONED JUST A BIT AGO WE HAD ONE WELL OVER IN THE
17 FORMER STORAGE AREA. AND HISTORICALLY, BACK IN THE MID-80S WHEN
18 THAT WELL WAS FIRST INSTALLED, IT HAD SOME LOW LEVELS OF
19 ETHYLBENZENE AND XYLENE, AND THAT WELL'S BEEN SAMPLED ABOUT THREE
20 OR FOUR TIMES, AND THE CONTAMINANTS KEEP SHOWING UP AT SLIGHTLY
21 LOWER LEVELS.

22 WE LOOKED FOR THE SOURCE OF ETHYLBENZENE AND XYLENE; WE
23 KNOW THOSE ARE ASSOCIATED WITH PETROLEUM PRODUCTS, GASOLINE OR
24 WHATEVER, DIESEL FUEL. WE THOUGHT MAYBE THERE WAS AN UNDERGROUND
25 STORAGE TANK OVER THERE THAT NOBODY KNEW ABOUT. SO, WE LOOKED AT

July 27, 1994

1 THAT, WE DID SOME GEOPHYSICAL WORK TO SEE IF WE COULD SEE A TANK;
2 NOTHING CAME UP.

3 WE DID SOME EXTENSIVE SAMPLING IN THE FORMER STORAGE
4 AREA THINKING THAT WE'RE GOING TO HIT SOME KIND OF SPILL AREA THAT
5 WOULD HAVE, YOU KNOW, ETHYLBENZENE AND ALL THESE OTHER PRODUCTS,
6 BUT WE REALLY DIDN'T FIND THE SOURCE OF THIS ETHYL BENZENE AND
7 XYLENE.

8 LET ME TELL YOU ABOUT THE LEVELS JUST A LITTLE BIT MORE.
9 WE ARE TALKING ABOUT LOW LEVELS OF ETHYLBENZENE AND XYLENE. THEY
10 ARE BELOW WHAT'S CALLED FEDERAL DRINKING WATER STANDARDS. BUT
11 THEY ARE ABOVE THE STATE'S DRINKING WATER STANDARDS. THE STATE'S
12 STANDARDS ARE A LITTLE BIT MORE STRICTER THAN THE FEDERAL
13 STANDARDS (SIC).

14 THE EXTENT OF THAT CONTAMINATION IS DEFINED. IT'S A
15 VERY SMALL PLUME. WE HAVE WELLS -- WE HAVE A LOT OF WELLS. AT
16 ONE TIME I MENTIONED THERE WERE FIVE WELLS WHEN WE STARTED. I
17 THINK WE'RE UP TO ABOUT 13 WELLS OR 12 WELLS. WE HAVE A PRETTY
18 GOOD IDEA. WE LOOKED AT THE DEEP GROUNDWATER RIGHT BELOW THAT
19 ETHYLBENZENE PLUME, AND WE DIDN'T FIND ANY ETHYLBENZENE OR XYLENE
20 IN THE DEEP GROUNDWATER. SO, WE KNOW IT'S A SMALL LOCALIZED
21 GROUNDWATER PROBLEM.

22 TALKING ABOUT THE FINDINGS A LITTLE BIT, I PROBABLY WENT
23 OVER MOST OF THIS, JUMPING AHEAD OF MYSELF. I WILL SAY ANOTHER
24 THING, BY THE CEMENT PAD AREA, WE ALSO FOUND SOME SEMI-VOLATILE
25 ORGANICS LIKE NAPHTHALENE. AGAIN, AT ONE TIME THESE PESTICIDES

July 27, 1994

1 WERE APPLIED WITH A PETROLEUM-BASED SOLVENT, SO SEEING THINGS LIKE
2 NAPHTHALENE, NAPHTHALENE IS A CONTAMINANT THAT'S ASSOCIATED WITH
3 PETROLEUM. IF THEY USED PETROLEUM-BASED SOLVENTS TO MIX WITH THE
4 PESTICIDES TO APPLY IT, IT MAKES SENSE THAT WE WOULD FIND SOME OF
5 THESE COMPOUNDS IN THAT SEDIMENT OR IN THE SOIL AND SEDIMENT.

6 THAT'S PRETTY MUCH JUST WHAT I JUST MENTIONED. LOW
7 LEVELS OF XYLENE AND ETHYLBENZENE ABOVE THE STATE STANDARDS, BUT
8 BELOW FEDERAL STANDARDS. I MENTIONED SOME PESTICIDES IN
9 GROUNDWATER, EVEN OUR UPGRADIENT WELL, FOR WHATEVER REASON, HAD
10 SOME LOW LEVELS OF PESTICIDES. AGAIN, THESE LOW LEVELS COULD HAVE
11 BEEN DUE, PRETTY MUCH THE SAME SITUATION WHERE I TALKED BEFORE
12 ABOUT SITE 24 WHERE YOU START GETTING SOME PARTICULATES INTO THE
13 SAMPLE, ESPECIALLY IN OUR BACKGROUND WELL. WE WERE A LITTLE BIT
14 SURPRISED.

15 WE HAD THE SAME PROBLEM WITH LEAD AND -- METALS SUCH AS
16 LEAD, CADMIUM AND CHROMIUM IN OUR GROUNDWATER. AND THIS GOES BACK
17 TO THE WHOLE DISCUSSION WE HAD PREVIOUSLY, AND WE EVEN INCLUDED ON
18 THERE INCLUDING OUR UPGRADIENT WELL. AGAIN, WE'RE NOT SO SURE
19 WHETHER THESE METALS WERE REALLY ASSOCIATED WITH THE SITE OR NOT.
20 WE REALLY BELIEVE THEY ARE NOT.

21 WITH RESPECT TO DISSOLVED METALS, MANGANESE WAS THE ONLY
22 CONTAMINANT WHICH EXCEEDED WATER STANDARDS. IT EVEN EXCEEDED IT
23 IN OUR UPGRADIENT WELL, AND AS WE KNOW, I THINK THROUGHOUT THIS
24 REGION, MANGANESE SEEMS TO BE EVERYWHERE, REGARDLESS IF IT'S ON-
25 SITE OR OFF-SITE.

July 27, 1994

1 DEEP GROUND WATER; SURPRISINGLY, OUR DEEP WELL, WE WERE
2 LOOKING FOR ETHYLBENZENE, BECAUSE WE WERE INTERESTED IN -- WE HAVE
3 A SHALLOW GROUNDWATER PROBLEM. WE WERE INTERESTED TO SEE HOW FAR
4 DOWN THESE CONTAMINANTS MIGRATE. WE ACTUALLY PICKED UP VERY LOW
5 LEVELS OF TCE IN THE WELL, WHICH WAS SURPRISING BECAUSE THIS SITE,
6 ALL THE SOIL SAMPLES THAT WE'VE TAKEN, ALL THE OTHER MONITORING
7 WELLS HAD NO TCE IN IT. WE FOUND VERY LOW LEVELS OF TCE. SO, WE
8 RE-SAMPLED THE WELL; THE SECOND ROUND WE DIDN'T HAVE IT. NOW,
9 THAT'S NOT UNCOMMON WHEN YOU GET TO LOW LEVELS. IT IS UNCOMMON
10 IF, FOR EXAMPLE, THE FIRST ROUND YOU HAVE 1,000 MICROGRAMS PER
11 LITER, AND THEN THE SECOND TIME YOU SAMPLED IT YOU DIDN'T FIND IT.
12 THAT'S UNUSUAL; SOMETHING'S WRONG THERE. WHEN YOU'RE AT SUCH A
13 LOW LEVEL, FIVE PARTS PER MILLION, THAT'S VERY, VERY LOW TO BEGIN
14 WITH. SO, CAN'T SAY THERE ISN'T ANYTHING THERE, BUT WE'RE SAYING
15 IT'S A PRETTY SMALL PROBLEM. AND AGAIN, WE DON'T BELIEVE IT'S
16 ATTRIBUTABLE TO SITE TWO BASED ON THE DATA THAT WE HAVE OF THIS
17 SITE AND BASED ON THE HISTORY OF THIS SITE, KNOWING IT WAS USED
18 FOR A PESTICIDE STORAGE AREA.

19 MRS. WOOD: THERE ARE NO WELLS -- WATER
20 WELLS IN THE AREA?

21 MR. WATTRAS: THERE ARE WATER WELLS, NOT IN
22 THE IMMEDIATE AREA OF SITE TWO. THERE ARE WELLS WITHIN A MILE OF
23 SITE TWO THAT ARE OPERATING AND ARE CLEAN, BUT NOT WITHIN THE
24 IMMEDIATE SITE TWO AREA.

25 WHILE WE WERE DOING THIS STUDY, WE WERE GETTING THE

July 27, 1994

1 RESULTS IN FROM THE LABORATORY. WE WERE SEEING THESE VERY HIGH
2 LEVELS OF PESTICIDES. WE TALKED TO THE DEPARTMENT OF THE NAVY AND
3 MARINE CORPS, AND WE ALERTED THEM THAT, LOOK, WE HAVE SOME
4 -- WE HAVE A MAJOR PROBLEM WITH THE SOIL.

5 THE NAVY AND MARINE CORPS DECIDED TO "LET'S GET RID OF
6 THE SOILS NOW. LET'S NOT WAIT UNTIL THE STUDY IS OVER. LET'S DO
7 SOMETHING NOW."

8 SO, THEY DID WHAT'S CALLED A TIME CRITICAL REMOVAL
9 ACTION. THEY WENT IN AND THIS IS BEING DOWN RIGHT NOW IN FACT.
10 THEY'RE EXCAVATING AS WE SPEAK. THERE'S A HOLE IN THE GROUND OUT
11 AT SITE TWO.

12 THEY DECIDED, "LET'S NOT WAIT FOR THE CLEANUP. WE KNOW
13 WE HAVE A PROBLEM THAT WE'RE GOING TO HAVE TO DEAL WITH. WHY WAIT
14 TO THE END OF THE STUDY TO DEAL WITH IT? LET'S GET RID OF IT
15 NOW." ESPECIALLY IN LIGHT OF THE FACT THAT THE BUILDING IS BEING
16 USED AS AN ADMINISTRATIVE OFFICE.

17 SO, THAT'S GOING ON RIGHT NOW. AND THAT HAPPENS -- I
18 MEAN, THAT HAPPENS A LOT. IT'S NOT A BAD THING TO DO. IF YOU
19 KNOW YOU HAVE A PROBLEM, WHY WAIT ANOTHER YEAR OR TWO TO COMPLETE
20 A STUDY, WHEN AT THE END OF THE STUDY YOU KNOW YOU'RE GOING TO
21 HAVE TO ADDRESS THAT PROBLEM. IT REALLY MAKES SENSE TO DEAL WITH
22 THE PROBLEM NOW.

23 THAT'S BEEN THE WAVE OF THINGS, NOT ONLY IN THE
24 DEPARTMENT OF DEFENSE, BUT PRETTY MUCH THROUGHOUT THE INDUSTRY, IS
25 "LET'S NOT WAIT FOR THE END OF THESE STUDIES. WE'LL DEAL WITH THE

July 27, 1994

1 OBVIOUS PROBLEM FIRST, THEN WE'LL WRAP UP ANYTHING IN THE FINAL
2 STUDY, AND WE'LL DEAL WITH THE RESIDUAL PROBLEM." SAY, IF IT WAS
3 A GROUNDWATER PROBLEM. YOU KNOW, THERE'S NO RISK TO THE
4 GROUNDWATER, BUT WE'LL DEAL WITH THAT AT THE END OF THE STUDY.
5 LET'S DEAL WITH THE PART THAT MIGHT ACTUALLY HAVE A RISK AS WE
6 SPEAK.

7 THAT'S JUST THE PAD. CLEANUP IS CURRENTLY UNDERWAY, AS
8 I SAID. IT'S INVOLVING APPROXIMATELY 500 CUBIC YARDS OF PESTICIDE
9 CONTAMINATED SOIL. I BELIEVE THEY ARE TAKING THAT SOIL OFF-SITE
10 TO AN INCINERATOR. IS THAT CORRECT, NEAL?

11 MR. PAUL: RIGHT.

12 MRS. WOOD: WHERE IS THE INCINERATOR?

13 MR. PAUL: IN KENTUCKY.

14 MRS. WOOD: IN KENTUCKY?

15 MR. PAUL: ACTUALLY, WE ARE EXCAVATING ALL
16 THE SOIL AND ARE WAITING FOR CONFIRMATION OF THE SAMPLES BACK TO
17 MAKE SURE WE HAVE EXCAVATED ALL WE NEED TO DO. HOPEFULLY WE WILL
18 BE CLOSING THAT JOB OUT. I ANTICIPATE HOPEFULLY NEXT WEEK WE CAN
19 GO IN AND PUT CLEAN BACK FILL BACK INTO IT.

20 MRS. WOOD: IS BASE EQUIPMENT DOING THIS?

21 MR. PAUL: NO, OHM IS DOING IT.

22 MRS. WOOD: OHM.

23 MR. PAUL: INTERESTINGLY ENOUGH, I'VE HAD
24 QUITE A FEW CALLS FROM OTHER CONTRACTORS ON THIS JOB, WANTING TO
25 KNOW HOW THEY COULD GET INVOLVED IN CONSTRUCTING, AND WE'RE TRYING

July 27, 1994

1 TO GET SOME OF THAT BUSINESS BACK IN NORTH CAROLINA. I'VE GIVEN
2 THEM THE PROJECT FOR OHM -- I'VE GIVEN THEM THEIR PHONE NUMBER TO
3 CONTACT THEM BECAUSE THEY DID NOT USE A NORTH CAROLINA
4 CONSTRUCTION COMPANY. SO, HOPEFULLY WE CAN BRING SOME OF THAT
5 BUSINESS BACK INTO ONSLOW COUNTY AND THE STATE OF NORTH CAROLINA.

6 MRS. WOOD: I MEAN, THEY HAD TO HAVE THE
7 SPECIFIC SITE, ANYTHING THAT'S RUN AROUND THIS --

8 MR. PAUL: TRIPLE ACTION ALSO WANTS IT
9 BECAUSE THEY'RE CAPABLE OF CARRYING MAYBE 20 CUBIC YARDS.

10 MR. WATTRAS: I'M SURE THEY HAVE A WEIGHT
11 RESTRICTION, YOU KNOW?

12 MR. PAUL: WHAT'S THAT?

13 MR. WATTRAS: I WAS GOING TO SAY ABOUT 15
14 CUBIC YARDS.

15 MR. PAUL: YEAH. YOUR BASIC DUMP TRUCK
16 CAN CARRY NINE.

17 MRS. WOOD: NOW, THAT WOULD HAVE TO BE
18 COVERED, WOULDN'T IT?

19 MR. PAUL: OH, YEAH.

20 MR. WATTRAS: OH, YEAH. I'M SURE THEY ARE.

21 MR. PAUL: AND WE WEIGH THEM ON BASE TO
22 INSURE THAT --

23 MRS. WOOD: AND THEN THEY WEIGH IT OUT.

24 MR. PAUL: THEN THEY WEIGH IT OUT TO MAKE
25 SURE WE'RE NOT PAYING FOR ANYMORE THAN WHAT WE'RE ACTUALLY

July 27, 1994

1 GETTING.

2 MRS. WOOD: SO THEY DON'T STOP OFF AND DUMP
3 IT TO SAVE GAS.

4 MR. PAUL: EVEN THOUGH IT'S NON-HAZARDOUS,
5 YOU STILL MANIFEST IT TO INSURE THAT IT DOES GET SOME
6 DISPOSABILITY.

7 MR. WATTRAS: NOW, WITH RESPECT TO THE RISK
8 ASSESSMENT, WE LOOKED AT TWO SCENARIOS. SINCE WE KNEW THERE WAS
9 REMOVAL ACTION TAKING PLACE, WE SAID WHAT WOULD BE THE RISK
10 FOLLOWING THE REMOVAL OF THE SOIL, BECAUSE AS I MENTIONED, WE WERE
11 GOING AFTER THE OBVIOUSLY PROBLEM, BUT WE HAVE TO FIGURE OUT IN
12 THE TOTAL SCHEME OF THINGS, IS THERE GOING TO BE SOME RISK EVEN
13 AFTER REMOVING THE SOIL, BECAUSE WE'RE ONLY ADDRESSING THE HOT
14 SPOT, AND IT'S PRETTY WELL DEFINED.

15 WE ALSO LOOKED AT WHAT WOULD BE THE RISK WITHOUT
16 REMOVING THE SOIL. ALTHOUGH WE KNEW THEY WERE REMOVING IT, WE
17 WANTED TO MAKE A COMPARISON OF WHAT IS THE REAL IMPACT OF DOING
18 THIS.

19 SO, HUMAN HEALTH LOOKED AT, BEFORE THIS REMOVAL ACTION,
20 AND IT WAS PRETTY OBVIOUS THAT IF THE SOIL SEDIMENTS WEREN'T
21 REMOVED, THERE WOULD BE WHAT WE WOULD CONSIDER AN UNACCEPTABLE
22 RISK FOR THOSE PEOPLE THAT WOULD, YOU KNOW, BE WORKING IN THE AREA
23 OR WHATEVER. THERE WAS A HIGH RISK.

24 BUT AFTER THE SOIL IS REMOVED -- NOW, WHEN WE DO THIS
25 STUDY, WE KNOW A CERTAIN AREA IS GOING TO BE REMOVED AND WE THROW

July 27, 1994

1 OUT THOSE RESULTS. OKAY. NOW, WE LOOK AT WHAT'S THE OTHER
2 CONCENTRATIONS OF THE CONTAMINANTS IN THE AREA. WE HAD, WITHIN
3 THE OTHER PARTS OF THE LAWN, WE HAD SOME PESTICIDES AT WHAT I
4 WOULD CALL TYPICAL LEVELS THAT YOU FIND THROUGHOUT LEJEUNE. I
5 KNOW YOU'VE HEARD ME TALK ABOUT OUR PESTICIDES THROUGHOUT CAMP
6 LEJEUNE THAT I SAID IF I SEE SOMETHING WITH 10 OR 50 PARTS PER
7 BILLION, I REALLY DON'T RAISE AN EYEBROW, BECAUSE I SEE THAT
8 EVERYWHERE. YOU KNOW, THAT DOESN'T TELL ME THAT THERE'S A SOURCE.

9 SO, THROUGHOUT THE LAWN AREA, AND EVEN IN SOME OF THE
10 BACKGROUND SAMPLES, WE HAVE SOME LOW LEVELS OF PESTICIDES. WELL,
11 WHEN WE USE THAT DATA IN THE RISK ASSESSMENT AFTER REMOVING THIS
12 HOT SPOT; THERE IS NO UNACCEPTABLE HEALTH RISK. EVERYTHING, YOU
13 KNOW, PUTTING CLEAN SOIL BACK IN THE HOLE, REGRADING IT, THERE IS
14 NO UNACCEPTABLE HEALTH RISK AFTER THIS HOT SPOT IS REMOVED.

15 COLONEL WOOD: WHO ASSUMES RESPONSIBILITY FOR
16 LOOKING INTO THE WELFARE OF THE PEOPLE WHO MAY HAVE BEEN EXPOSED
17 OVER THE YEARS WHILE THEY WERE OUT THERE?

18 MR. HAVEN: A LOT OF WHAT WENT ON THERE
19 WAS THERE WERE DIFFERENT RISK ASSESSMENTS DONE LIKE HEALTH RISK
20 ASSESSMENT TO HUMAN RECEPTORS IS --

21 MR. BIXIE: AS I HAD MENTIONED BEFORE AN
22 AGENCY FOR TOXIC SUBSTANCES HAS ALSO TAKEN THAT INTO ACCOUNT AND
23 THEY'RE CONDUCTING A PROGRAM.

24 COLONEL WOOD: DO THEY HAVE ACCESS?

25 MR. HAVEN: EVERYTHING -- ALL THE

July 27, 1994

1 INFORMATION THEY HAVE REQUESTED THEY FORWARD TO US AND WE'RE
2 WORKING WITH MANPOWER, FOR EXAMPLE, BASE HOUSING TO GET THEM ALL
3 THE INFORMATION THAT THEY WANT. THEY HAVE ALSO GONE THROUGH, I
4 BELIEVE, SOME MEDICAL RECORDS AND THINGS LIKE THAT TO GET MORE
5 INFORMATION, AND THEY ARE ESSENTIALLY LOOKING AT THAT POSSIBILITY.

6 COLONEL WOOD: DO YOU KEEP THAT --

7 MR. HAVEN: NO, SIR.

8 COLONEL WOOD: WILL THEY USE THE FACILITY?

9 MR. HAVEN: HERE AGAIN, THE ATSTR MANAGER
10 -- BASICALLY BEFORE WE PUT IN MANPOWER, BASE HOUSING --

11 COLONEL WOOD: DOES ATSTR SAY THEY HAVE THE
12 RESPONSIBILITY FOR IT?

13 MR. HAVEN: YES, SIR. THEY'D HAVE
14 RESPONSIBILITY FOR IT.

15 MR. WATTRAS: SEE, THAT'S THE MAIN
16 DIFFERENCE. I BELIEVE LAST NIGHT YOU ASKED A QUESTION ABOUT ATSTR
17 AND THE RISK ASSESSMENT THAT THEY DO. AS I SEE IT, HERE'S THE
18 DIFFERENCE: WHEN WE DO A RISK ASSESSMENT UNDER CERCLA, WE LOOK AT
19 WHAT'S THE CURRENT RISK AND WHAT'S THE FUTURE RISK.

20 ATSTR, THEY GET INTO THE MORE OF THE -- THOSE F.D.
21 STUDIES, WHAT ARE THEY CALLED? WHATEVER THEY'RE CALLED. THEY
22 WILL DO THAT. THAT'S THE MAIN DIFFERENCE. THEY LOOK AT LOOKING
23 AT BIRTH DEFECTS OR WHATEVER. WE DON'T DO THAT UNDER OUR RISK
24 ASSESSMENT. THAT'S -- WE LOOK AT CURRENT SITUATION. WE DON'T
25 LOOK AT THE PAST. THAT IS PART OF THEIR MISSION. THEY WILL AT

July 27, 1994

1 WHAT HAS HAPPENED IN THE PAST AND LOOKING FOR TRENDS IN CANCER IN
2 THE AREA, OR BIRTH DEFECTS OR THINGS LIKE THAT. THAT'S THE MAIN
3 DIFFERENCE IN OUR RISK ASSESSMENT AND THEIR PUBLIC HEALTH
4 ASSESSMENT. IT'S EITHER CALLED -- IT'S CALLED A PUBLIC HEALTH
5 ASSESSMENT, WHEREAS OURS IS CALLED A RISK ASSESSMENT, A HUMAN
6 HEALTH RISK ASSESSMENT.

7 THEY'RE NOT GOING TO TELL YOU NUMBERS THAT THERE IS --
8 YOU KNOW, WE COME UP WITH THESE INCREMENTAL CANCER RISKS, YOU
9 KNOW, WHAT'S THE CHANCES OF ACQUIRING CANCER. THEY DON'T DO THAT
10 PART OF IT; THEY LOOK AT MORE OF A TREND-TYPE THING. THAT'S THE
11 MAIN DIFFERENCE. SO, THAT'S THEIR MISSION, AND I BELIEVE THEY'RE
12 PROBABLY LOOKING AT THAT ASPECT.

13 WITH RESPECT TO ECOLOGICAL RISKS, I'LL LET TOM BIXIE
14 TALK ABOUT THIS AGAIN, HIS SPECIALTY HERE.

15 MR. BIXIE: AGAIN, WHEN WE WENT THROUGH OUR
16 ANALYSIS, WE DID FIND THAT PESTICIDES, AND THAT WAS NO SURPRISE,
17 WAS THE MAIN PROBLEM OR THE MAIN CONTAMINANT BEFORE THE TIME
18 CRITICAL REMOVAL ACTION.

19 NOW, THE DRAINAGE DITCH GOES TO OVERS CREEK, THAT'S
20 WHERE THE DRAINAGE DITCH GOES. THAT'S PARALLEL TO THE SITE.
21 BASED ON OUR SAMPLING, WE DIDN'T SEE CONTAMINANTS REALLY MIGRATING
22 DOWN TO THERE. AGAIN, RAY WENT OVER THE PESTICIDES, WHAT THEY DO,
23 THEY ADHERE TO THE SEDIMENTS OR PARTICLES; THEY DON'T TRANSFER
24 DOWNSTREAM READILY.

25 AND SO, THE AREA OF CONCERN WAS LIMITED TO RIGHT NEXT TO

July 27, 1994

1 THE SITE AND ON-SITE. WE WENT THROUGH AND LOOKED AT CERTAIN
2 SEDIMENT, COMPARED IT TO STANDARDS AND VALUES THAT WOULD EVALUATE
3 THE HEALTH OF AQUATIC ORGANISMS EXPOSED, AND ALSO WE WENT THROUGH
4 THE TERRESTRIAL SCENARIO I MENTIONED BEFORE, ASSUMING THAT A DEER
5 OR RABBIT WAS ON-SITE EATING PLANTS AND BEING EXPOSED TO THAT.

6 MRS. WOOD: WHAT ABOUT THE BURROWERS, OUR
7 EVER-PRESENT MOLES AND THINGS LIKE THAT?

8 MR. DIXIE: TYPICALLY WE LOOK AT BURROWING
9 WILDLIFE WHEN THERE'S A VERY HIGH RISK OF VOLATILES IN THE SOIL.

10 MRS. WOOD: BUT THEY WOULD NOT BE AFFECTED
11 BY PESTICIDES?

12 MR. BIXIE: THEY WOULD. IN FACT, THEY
13 WOULD BE IN CONTACT WITH THEM THE SAME WAY A RABBIT WOULD AND THE
14 SAME WAY A BIRD WOULD. THEIR EXPOSURE WOULD BE GREATER BECAUSE
15 THEY WOULD BE BURROWING INTO THEM. BUT THE DATABASE AND THE
16 LITERATURE, REALLY, I DON'T THINK HAS ADVANCED FAR ENOUGH TO
17 ASSUME THAT IF A GROUND SQUIRREL OR A MOLE WAS IN CONTACT WITH THE
18 SOIL, HOW MUCH OF IT IT ABSORBS. TYPICALLY, THE EXPOSURE IS
19 EVALUATED BASED ON THEM EATING WORMS THAT EAT THE DIRT, THEN
20 EATING DIRT JUST BY GOING THROUGH THE SYSTEM, EATING PLANTS AND
21 THINGS LIKE THAT. SO, IT'S PRIMARILY THAT EXPOSURE.

22 MRS. WOOD: BUT THEY ARE IN THE MODEL?

23 MR. DIXIE: EXCUSE ME?

24 MRS. WOOD: I MEAN, THE MOLES, ARE THEY THE
25 BURROWING ANIMAL THAT'S IN YOUR MODEL?

1 MR. DIXIE: NO, IN OUR MODEL, WE HAVE
2 RABBITS, DEER AND BIRDS.

3 MRS. WOOD: I WOULD THINK IF THAT STUFF IS
4 GOING DOWN IT SEEMS APPROPRIATE TO --

5 MR. DIXIE: WELL, IN THIS PARTICULAR AREA,
6 BASED ON, YOU KNOW, HOW THE PAD WAS AND LOOKING AT THE TYPES OF
7 HABITATS, WE FELT THOSE WERE THE CRITICAL WILDLIFE SPECIES.

8 MR. WATTRAS: PLUS YOU HAVE TO REMEMBER THIS
9 IS AN AREA, IT'S NOT IN THE MIDDLE OF THE WOODS. IT'S A MOWED
10 LAWN.

11 MRS. WOOD: RIGHT. YEAH.

12 MR. WATTRAS: I MEAN, THAT HAS TO BE
13 CONSIDERED, TOO. SO, NOT TO SAY THERE COULDN'T BE A MOUSE OR A
14 MOLE.

15 COLONEL WOOD: WE'VE GOT MOLES IN OUR LAWN AT
16 HOME.

17 MR. WATTRAS: OH, I KNOW. I'M NOT SAYING
18 IT'S NOT --

19 MRS. WOOD: I WAS THINKING OF A MOLE, TOO.

20 MR. WATTRAS: -- YOUR TYPICAL ENVIRONMENT.
21 WE HAVE THEM, TOO. I KNOW WHAT YOU'RE SAYING.

22 MR. BIXIE: I GUESS, ON THE OTHER SIDE,
23 TOO, IS WHENEVER WE PICK WILDLIFE THAT WE'RE GOING TO EXAMINE,
24 IT'S TYPICALLY WILDLIFE THAT HAS A LARGE HISTORY OF BEING STUDIED.
25 FOR INSTANCE, THERE'S BEEN A LOT OF HISTORY ON THE EFFECTS OF

July 27, 1994

1 CHEMICALS ON RABBITS, ON CHICKENS, ON DEER.

2 MRS. WOOD: SO, YOU HAVE YOUR --

3 MR. BIXIE: AND WE KNOW PRETTY MUCH HOW
4 MUCH A RABBIT EATS, HOW MUCH WATER A RABBIT NEEDS, WHAT THE AREA
5 THAT A RABBIT WOULD -- ITS HOME RANGE, BECAUSE THAT HAS TO BE
6 TAKEN INTO CONSIDERATION. WHEN WE LOOK AT A DEER THAT HAS A VERY
7 BIG HOME RANGE. SO, YOU ASSUME THAT THE ACTUAL FOOTPRINT THAT IS
8 CONTAMINATED, MAYBE IT'S 100 FEET BY 100 FEET, MAY ONLY BE ONE
9 PERCENT OF ITS HOME RANGE. THE OTHER 99 PERCENT OF ITS TIME, YOU
10 ASSUME THAT IT'S IN DIFFERENT AREAS THAT ARE NOT CONTAMINATED.
11 SO, THAT HAS TO BE FACTORED INTO THE MODEL.

12 THAT COMES INTO PLAY, FOR INSTANCE, WHEN WE -- WE DON'T
13 TYPICALLY LOOK AT, LIKE, TURTLES OR SNAKES BECAUSE THERE'S NOT A
14 LOT OF -- ALTHOUGH THEY ARE IMPORTANT, AS WILDLIFE, THERE'S NOT A
15 LOT OF INFORMATION IN TERMS OF HOW MUCH WATER DOES A SNAKE DRINK.

16 MRS. WOOD: YEAH.

17 MR. DIXIE: SO, YOU REALLY HAVE TO BASE A
18 LOT OF, WHEN YOU SELECT YOUR WILDLIFE, ON WHAT TYPE OF INFORMATION
19 YOU HAVE ON HOW MUCH IT EATS. SO, THAT COMES INTO PLAY, TOO.

20 WHEN WE WENT THROUGH THIS MODEL AND BEFORE THE TIME
21 CRITICAL ACTION, WE AGAIN DETERMINED IF PESTICIDES WOULD PRESENT
22 A PROBLEM TO THESE WILDLIFE BEING EXPOSED, AND DO PRESENT A
23 PROBLEM TO ANY TYPE OF AQUATIC ORGANISMS BEING EXPOSED IN THAT
24 DITCH.

25 NOW, WE DID REALIZE THAT THE DITCH WAS A DRAINAGE DITCH

July 27, 1994

1 AND THERE WASN'T OBVIOUSLY A VIABLE POPULATION OF FISH. THERE MAY
2 BE SOME FROGS, MAYBE A TADPOLE OR SOMETHING LIKE THAT, BUT TO BE
3 CONSERVATIVE, WE TREATED IT AS A SERVICE WATER BODY AND COMPARED
4 IT TO THOSE STANDARDS. I THINK THE NEXT SLIDE --

5 MR. WATTRAS: WELL, THIS ONE BASICALLY SAYS
6 BEFORE -- IF YOU DIDN'T REMOVE THE SOIL, WE FOUND THAT THERE WOULD
7 BE A DECREASE IN VIABILITY, WHICH IS PRETTY OBVIOUS WITH THOSE
8 LEVEL OF PESTICIDES. THEN WE LOOKED AT IT FROM A STANDPOINT,
9 OKAY, AFTER THE SOIL IS REMOVED, AND IT HAS BEEN REMOVED, TOM AND
10 HIS GROUP LOOKED AT WHAT WOULD BE THE IMPACTS AFTER THAT.

11 MR. BIXIE: AND AFTER WE SAW THAT THERE
12 -- BASED ON THE TERRESTRIAL RECEPTORS IN OUR MODEL, THERE WOULD BE
13 NO DECREASE IN THE VIABILITY OF THE TERRESTRIAL RECEPTORS. THERE
14 WOULD STILL BE A VERY SLIGHT DECREASE IN TERMS OF THE AQUATIC
15 RECEPTORS, BUT WHAT WE SEE THIS IS, AND RAY MENTIONED THIS, IS TO
16 THE LEVELS OF PESTICIDES THAT WE SEE THROUGHOUT THE BASE FROM A
17 NORMAL SPRAYING. THE AREAS THAT HAVE VERY HIGH LEVELS THAT REALLY
18 WOULD PRESENT A SIGNIFICANT RISK TO AQUATIC ORGANISMS IN THIS
19 DRAINAGE DITCH, WERE BEING REMOVED BASED ON SOME OF THE REMOVAL
20 ACTIONS. SO, WE FELT LIKE IT ADDRESSED THE SIGNIFICANT RISKS.

21 MRS. WOOD: WE'VE GOT A DECREASE. IT'S NOT
22 NEUTRALIZED, BUT IT'S --

23 MR. BIXIE: AND THEN, THAT LOW LEVEL,
24 AGAIN, WOULD EXIST THROUGHOUT ANY AREA, A GOLF COURSE, WOULD HAVE
25 THOSE PESTICIDES, BUT IT WASN'T AT THAT HIGH LEVEL.

July 27, 1994

1 MR. WATTRAS: THE FEASIBILITY STUDY, BECAUSE
2 NOW, AFTER REMOVING THE SOIL, AND WE DID AN EVALUATION OF THE
3 RISKS AND WE DETERMINED THERE WAS NO MORE UNACCEPTABLE RISKS TO
4 HUMAN HEALTH AND THE ENVIRONMENT, WE THEN LOOKED AT OUR ONLY
5 PROBLEM REMAINING, WHICH HAPPENED TO BE THIS SMALL PLUME OF
6 ETHYLBENZENE AND XYLENE IN GROUNDWATER.

7 WE LOOKED AT SIX ALTERNATIVES THAT WE COULD DO WITH THIS
8 CONTAMINATION PROBLEM. ALTERNATIVE ONE BEING NO ACTION;
9 ALTERNATIVE TWO BEING INSTITUTIONAL CONTROL WHERE WE WOULD JUST
10 KEEP MONITORING THE PROBLEM. AGAIN, IN THIS CASE EVEN -- ALTHOUGH
11 WE HAVE SOME SUPPLY WELLS WHICH ARE QUITE FAR FROM THE SITE, IT
12 WOULD INCLUDE SAMPLING OF THOSE WELLS TO MAKE SURE NOTHING IS
13 WRONG WITH THEM. IT WOULD INCLUDE, OBVIOUSLY, NOT LETTING ANYBODY
14 PUT ANY WELLS ON THE SITE.

15 THE THIRD ALTERNATIVE WOULD BE TO EXTRACT THE
16 GROUNDWATER WITH THE WELL, OR WELLS, TREAT IT ON-SITE, AND THEN
17 DISCHARGE IT THROUGH A SANITARY SEWER LINE TO THE SEWAGE TREATMENT
18 PLANT.

19 THE FOURTH ALTERNATIVE WOULD BE SIMPLY TO COLLECT IT,
20 DISCHARGE IT TO THE SEWAGE TREATMENT PLANT WITHOUT TREATMENT. THE
21 REASON THAT WAS SELECTED IS BECAUSE, NUMBER ONE, WE'RE TALKING
22 ABOUT SOME PRETTY LOW LEVELS TO BEGIN WITH. LEVELS THAT, AS I
23 MENTIONED BEFORE, ARE BELOW STATE STANDARDS FOR GROUNDWATER, BUT
24 ARE JUST SLIGHTLY ABOVE -- I'M SORRY, THAT ARE BELOW THE FEDERAL
25 STANDARDS FOR GROUNDWATER BUT ARE SLIGHTLY ABOVE STATE STANDARDS.

July 27, 1994

1 AND AT THOSE LEVELS, PUTTING IN A SANITARY SEWER LINE AND SENDING
2 IT TO THE SEWAGE TREATMENT PLANT WOULD PROBABLY BE FEASIBLE FOR
3 TREATING IT DOWN TO A FURTHER LEVEL.

4 MRS. WOOD: OKAY, NOW, THIS IS GOING TO BE
5 ONE THAT A PIPE SWINGS IN? IT'S GOING TO THE FRENCH CREEK PLANT?
6 OR ARE YOU --

7 MR. WATTRAS: WE WOULD SEND IT TO THE NEAREST
8 SANITARY SEWER LINE. AND I KNOW YOU'RE TALKING ABOUT THE FUTURE
9 TREATMENT PLANT.

10 MRS. WOOD: YEAH, THEY WERE TALKING
11 ABOUT --

12 MR. WATTRAS: YEAH, IT WOULD GO TO, PROBABLY
13 BY THE TIME, IT WOULD PROBABLY GO TO THAT TREATMENT PLANT.

14 MRS. WOOD: SO, I MEAN, THIS IS NOT GOING
15 TO BE DONE INSTANTLY?

16 MR. WATTRAS: BUT THAT'S NOT GOING TO BE THE
17 SELECTED ALTERNATIVE ANYWAY. BUT IT REALLY WOULDN'T MATTER --
18 HADNOT POINT, EVEN IF HADNOT POINT IS OPERATING, WHICH IT STILL
19 IS, SENDING IT INTO A SANITARY SEWER LINE AND TAKING IT ALL THE
20 WAY DOWN TO HADNOT POINT WOULD STILL BE ACCEPTABLE. THEY HAVE A
21 BIOLOGICAL TRICKLING FILTER, AND THEY HAVE AN AERATION POND, THAT
22 WOULD PROBABLY BE ABLE TO REMOVE THESE LEVELS OF ETHYLBENZENE AND
23 XYLENE. WE'RE TALKING ABOUT SOME VERY LOW LEVELS.

24 COLONEL WOOD: BUT YOU'RE ALSO TALKING ABOUT
25 PLANTS THAT ARE BEYOND THE -- USABILITY.

July 27, 1994

1 MRS. WOOD: THEY'RE UNDER WAIVER, LET'S PUT
2 IT THAT WAY.

3 COLONEL WOOD: THEY'RE DISCHARGING LOTS OF
4 WATER INTO THE RIVER THAT THEY SHOULD NOT BE. IN OTHER WORDS,
5 THEY'RE OVER THE STATE STANDARDS.

6 MR. PAUL: THAT'S CORRECT.

7 MRS. WOOD: LET'S NOT GET OFF ON THAT.

8 MR. WATTRAS: YES, I KNOW WHAT YOU'RE TALKING
9 ABOUT.

10 MR. PAUL: YEAH. YEAH, LET'S DON'T GET --
11 THE BOTTOM LINE HERE IS WE'RE NOT GOING TO -- IT'S NOT
12 ECONOMICALLY FEASIBLE TO CHASE THESE TRACE AMOUNTS OF
13 CONTAMINATION.

14 MR. WATTRAS: THE FIFTH ALTERNATIVE WOULD BE
15 TO COLLECT IT AND DISCHARGE IT AND PIPE IT OUT TO SITE 82. NOW,
16 SITE 82 IS LOCATED ABOUT TWO MILES DOWN THE ROAD, AND WE'RE
17 BUILDING A TREATMENT PLANT TO DEAL WITH A MAJOR GROUNDWATER
18 PROBLEM OUT THERE. AND WE SAID, WELL, LET'S JUST COLLECT IT AND
19 SEND IT TO SITE 82.

20 AND THE SIXTH ALTERNATIVE WOULD INVOLVE IN SITU
21 TREATMENT. AND IT'S PRETTY MUCH WHAT I TALKED ABOUT BEFORE WHERE
22 WE WOULD TRY SOMETHING LIKE VAPOR EXTRACTION TO PULL OUT THESE
23 VOLATILES.

24 THE COST OF THESE ALTERNATIVES GO FROM ZERO; THE MOST
25 EXPENSIVE ALTERNATIVE WOULD BE TO BUILD AN ON-SITE TREATMENT

July 27, 1994

1 PLANT, WHICH IS PRETTY OBVIOUS BECAUSE OF THE CAPITAL COSTS, WE'RE
2 LOOKING AT ALMOST TWO MILLION DOLLARS TO DO THAT.

3 TO JUST MONITOR IT AND TO SEE WHAT'S HAPPENING OVER TIME
4 WOULD COST THE DEPARTMENT OF THE NAVY ABOUT \$350,000. THAT'S
5 MAINLY AN ANALYTICAL COST. WE'RE TALKING ABOUT USING ABOUT FIVE
6 OR SIX MONITORING WELLS, TAKING SAMPLES QUARTERLY, MAYBE OVER TIME
7 TAKING THEM BI-ANNUALLY, AND ANALYZING THEM FOR CONTAMINANTS OF
8 CONCERN HERE.

9 MRS. WOOD: WELL, NOW, THAT 350,000 IS
10 PROJECTED OVER WHAT PERIOD OF YEARS?

11 MR. WATTRAS: THAT'S PROJECTED OVER 30 YEARS.

12
13 MRS. WOOD: 30 YEARS, OKAY.

14 MR. WATTRAS: THAT'S A STANDARD TIME FRAME
15 THAT WE LOOK AT THINGS --

16 MRS. WOOD: OKAY. RIGHT, I REMEMBER THAT
17 CAME UP EARLIER.

18 MR. WATTRAS: -- WHEN WE DO COST ANALYSES,
19 AND THESE ARE PRESENT WORTH COSTS.

20 MRS. WOOD: OKAY.

21 MR. WATTRAS: THAT WOULD BE THE MONEY YOU'D
22 HAVE TO SET ASIDE TODAY AND DRAW FROM.

23 ALTERNATIVE NUMBER FOUR IS SENDING IT DOWN TO -- THROUGH
24 A SANITARY SEWER LINE DOWN TO HADNOT POINT WOULD BE ABOUT 1.3
25 MILLION. ALTERNATIVE FIVE -- THAT'S STILL BACKWARDS. I'M SORRY.

July 27, 1994

1 MRS. WOOD: YEAH, IT'S GOING TO 82.

2 MR. WATTRAS: OH, ALTERNATIVE FIVE IS TO
3 COLLECT IT AND SEND IT DOWN TO SITE 82. THAT ONE IS ABOUT 1.4
4 MILLION. AND ALTERNATIVE SIX IS TO DO THE IN SITU STUDY, OR THE
5 IN SITU REMEDIATION; THAT WOULD BE ABOUT 1.3 MILLION. NOW --

6 MR. PAUL: EXCUSE ME, RAY, IS THERE A
7 MINIMUM AMOUNT OF ALTERNATIVES YOU HAVE TO COME UP WITH? I DON'T
8 KNOW IF YOU PROBABLY KNOW THIS ANSWER, BUT I KNOW YOU HAVE TO USE
9 ALTERNATIVES IN YOUR FEASIBILITY STUDIES.

10 MR. WATTRAS: I MISSED YOUR QUESTION. I
11 COULDN'T HEAR YOU.

12 MR. PAUL: IS THERE A MINIMUM --

13 MR. WATTRAS: AMOUNT OF ALTERNATIVES?

14 MR. PAUL: RIGHT. I KNOW YOU HAVE TO USE
15 NOTHING AS ONE.

16 MR. WATTRAS: YOU ALWAYS HAVE TO USE NO
17 ACTION. YOU ALWAYS SHOULD CONSIDER A TREATMENT, TOTAL TREATMENT
18 ALTERNATIVE.

19 MR. PAUL: RIGHT.

20 MR. WATTRAS: YOU SHOULD ALWAYS CONSIDER A
21 CONTAINMENT ALTERNATIVE. I BELIEVE THOSE ARE AT LEAST THREE
22 ALTERNATIVES THAT YOU ALWAYS HAVE TO CONSIDER. CONTAINMENT, TOTAL
23 REMEDIATION AND NO ACTION. AND INNOVATIVE -- WELL, TREATMENT IS
24 PREFERRED.

25 MS. TOWNSEND: YOU START LOOKING AT -- AT --

1 OF THOSE THREE OPTIONS, THEN YOU LOOK AT LANDFILL ON-SITE,
2 LANDFILL OFF-SITE. YOU GET INTO THOSE BREAK-UPS WHERE IT'S REALLY
3 THREE CATEGORIES.

4 MR. PAUL: I KNOW YOU GUYS ALWAYS DO A
5 REAL GOOD JOB OF PROPOSING QUITE A FEW ALTERNATIVES FOR US.

6 MR. WATTRAS: YEAH, THERE ARE CERTAIN ONES
7 THAT YOU ALWAYS HAVE TO CONSIDER, UNLESS THERE'S A SITUATION WHERE
8 YOU FIND OUT THAT YOU SAMPLE A SITE AND SOMETIMES YOU MIGHT -- YOU
9 DON'T EVEN NEED A FEASIBILITY STUDY IF YOU DETERMINE THAT, AFTER
10 SAMPLING, YOU DON'T HAVE A PROBLEM, THEN IT DOESN'T MAKE SENSE TO
11 DO A FEASIBILITY STUDY, BUT THAT'S KIND OF RARE.

12 AS I MENTIONED BEFORE, SOIL -- WE'RE NOT GOING TO DO
13 ANYTHING MORE TO THE SOIL. WE'RE DEALING WITH IT NOW, AND WHAT'S
14 REMAINING IS ACCEPTABLE. IT'S NOT AT HIGH LEVELS THAT'S GOING TO
15 CAUSE A PROBLEM.

16 GROUNDWATER, THE PROPOSED ALTERNATIVE HERE IS TO NOT
17 TREAT IT, BUT TO JUST PERFORM INSTITUTIONAL CONTROLS, AND I'LL
18 EXPLAIN A LITTLE BIT ABOUT THIS APPROACH.

19 THE INSTITUTIONAL CONTROLS WOULD INCLUDE AN ORDINANCE
20 RESTRICTION FOR PUTTING ANY SUPPLY WELLS IN THIS AREA. IT WOULD
21 INVOLVE LONG TERM GROUNDWATER MONITORING OF THE SHALLOW AND OF THE
22 DEEP AND OF A FEW OF THE SUPPLY WELLS.

23 COLONEL WOOD: WHAT IS LONG TERM?

24 MRS. WOOD: 30 YEARS.

25 MR. WATTRAS: IT WOULD BE 30 YEARS, BUT I'LL

July 27, 1994

1 QUALIFY THAT. EVERY FIVE YEARS -- WHEN YOU SELECT AN ALTERNATIVE
2 THAT IS NOT A FINAL REMEDY, IN OTHER WORDS, A CONTAINMENT
3 ALTERNATIVE, FOR EXAMPLE, OUT AT HADNOT POINT WHERE WE'RE
4 CONTAINING THAT PLUME, THAT'S NOT A FINAL REMEDY. EVERY FIVE
5 YEARS, UNDER CERCLA, IT'S A REQUIREMENT THAT YOU LOOK AT THE
6 PROBLEM AGAIN TO SEE IF THE ALTERNATIVE IS, NUMBER ONE, EFFECTIVE;
7 WHETHER IT'S EFFECTIVE FROM THE STANDPOINT THAT YOU ARE REDUCING
8 CONTAMINATION OR YOU'RE PREVENTING MIGRATION; OR IN SOME CASES,
9 YOU KNOW, I GUESS IT'S POSSIBLE THAT THINGS COULD GET WORSE IN
10 FIVE YEARS, THAT THE ALTERNATIVE THAT YOU SELECTED WASN'T THE BEST
11 ALTERNATIVE. BUT WHEN I SAY 30 YEARS, SAY IN FIVE OR TEN YEARS,
12 AND YOU HAVE TO DO THIS EVERY FIVE YEARS, IN TEN YEARS, WE MONITOR
13 THIS PROBLEM AND WE SEE THAT, OVER TIME, THESE ETHYLBENZENE AND
14 THE XYLENE HAS DECREASED IN CONCENTRATION TO THE POINT THAT
15 THEY'RE NOT A PROBLEM ANYMORE, IT WOULD BE DONE. SO,
16 THEORETICALLY 30 YEARS. POSSIBLY AS LITTLE AS FIVE YEARS,
17 SOMEWHERE IN BETWEEN THERE.

18 MRS. WOODS: SO, WHEN THEY GET DOWN TO BELOW
19 STATE REQUIREMENTS --

20 MR. WATTRAS: BELOW STATE STANDARDS.

21 MRS. WOODS: -- THAT'S IT.

22 MR. WATTRAS: THE REASON WE SELECTED THIS
23 ALTERNATIVE AS OPPOSED TO TREATMENT IS, NUMBER ONE, THERE IS NO
24 RISK. WE'RE TALKING ABOUT A VERY SMALL POCKET OF GROUNDWATER.
25 WE'VE DISCUSSED BEFORE ABOUT THE FACT THAT THERE IS NO EXPOSURE

July 27, 1994

1 BECAUSE EVERYBODY'S GETTING THEIR WATER FROM THE SUPPLY WELL.

2 THE OTHER ASPECT HAS TO DO WITH THE CONTAMINANTS
3 THEMSELVES, XYLENES AND ETHYLBENZENES, THEY'RE RELATED TO
4 PETROLEUM PRODUCTS. OVER TIME, I MENTIONED THAT SAMPLES WERE
5 FIRST BEING TAKEN IN THE MID-80S, CONCENTRATIONS HAVE BEEN
6 DECREASING. WE HAVE A HANDLE ON THE LIMITED AREA OF
7 CONTAMINATION. THESE ARE CONTAMINANTS THAT CAN, THROUGH NATURAL
8 PROCESSES, BIODEGRADE IN THE AQUIFER. THEY ARE SEEING THAT AT A
9 LOT OF SITES NOW WITH PETROLEUM. IF I'M NOT MISTAKEN, THE STATE -
10 - MAYBE, PATRICK, I DON'T KNOW IF YOU CAN ADD ANYTHING TO THIS,
11 THE STATE OF NORTH CAROLINA IS LOOKING AT A LOT OF PETROLEUM
12 GROUNDWATER PROBLEMS WHERE THEY'RE LOOKING AT POSSIBLY JUST
13 MONITORING THAT PROBLEM. IF IT'S A LOW LEVEL PROBLEM. I MEAN,
14 OBVIOUSLY, WE'RE NOT TALKING ABOUT A MAJOR PROBLEM HERE WHERE THE
15 STATE WOULD JUST SAY, "OH, LET'S JUST MONITOR IT."

16 BUT IN A SITUATION LIKE THIS WHERE YOU'RE JUST AT THE
17 LEVELS, WE'RE LOOKING AT IT FROM THE STANDPOINT IT BECOMES REALLY
18 NOT A FEASIBLE IDEA TO GO AHEAD IN THERE, INVEST ALL THAT CAPITAL
19 TO START TREATING WHEN IT'S COST-EFFECTIVE TO JUST MONITOR THIS
20 PROBLEM, WE THEN -- THEORETICALLY, WE'VE BEEN MONITORING IT SINCE
21 THE MID-80S AND HAVE FOUND THAT THE LEVELS HAVE BEEN SLOWLY
22 DECREASING, AND, DUE TO THE NATURE OF THESE CONTAMINANTS, WE
23 BELIEVE, JUST THROUGH NATURAL ATTENUATION, THAT IT WILL CLEAN
24 ITSELF UP THROUGH TIME.

25 MRS. WOOD: AND IT'S AN AREA WHERE YOU'VE

July 27, 1994

1 GOT TIME.

2 COLONEL WOOD: DO YOU HAVE AN APPROXIMATE DATE
3 TO EXPECT IT MAY BE CLEAN?

4 MR. WATTRAS: NO, WE DO NOT. WE DON'T HAVE
5 AN APPROXIMATE DATE. WE WILL BE MONITORING THIS, LIKE I SAID,
6 OVER TIME, AND IN FIVE YEARS, WE'LL DO A PRETTY GO ANALYSIS OF
7 WHAT HAS CHANGED WITHIN THE LAST FIVE YEARS.

8 THERE ARE MODELS, COMPUTER MODELS, THAT WE COULD
9 THEORETICALLY COME UP WITH A DATE, BUT YOU KNOW WHAT, THAT'S A
10 THEORETICAL MODEL, SO NOTHING'S GUARANTEED. MODELING IS VERY --
11 THERE'S A LOT OF GOOD ASPECTS ABOUT USING COMPUTER MODELS. YOU
12 COULD USE IT IN THIS CASE, AND IT WILL POP OUT A NUMBER, BUT IT'S
13 JUST GOING TO BE A BEST GUESS OF A NUMBER OF YEARS.

14 BUT AT THESE LEVELS, I WOULD BE, YOU KNOW, KIND OF
15 SURPRISED IF A MODEL CAME OUT AND SAID IT'S GOING TO TAKE A
16 HUNDRED YEARS, YOU KNOW. I THINK AT THESE LEVELS, BY JUST LEAVING
17 THE PROBLEM GO AND SEEING THE DECREASE OVER TIME, THAT WE HAVE
18 SEEN, THAT WE WOULD BE IN PRETTY GOOD SHAPE.

19 THAT CONCLUDES THIS OPERABLE UNIT, AND DO YOU HAVE ANY
20 QUESTIONS?

21 MRS. WOOD: NO, I JUST ENJOYED THIS VERY
22 MUCH. WE APPRECIATE THIS.

(WHEREUPON, THESE PROCEEDINGS CONCLUDED AT 8:58 P.M.)

July 27, 1994

I CERTIFY THAT THE FOREGOING IS A CORRECT TRANSCRIPT
FROM THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.



STACY TONE, CCR

8-9-94
DATE