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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED MTBE GROUNDWATER

QUALITY STANDARDS AMENDMENTS: PCB No. R01-14
35 ILL. ADM. CODE 620 (Rulemaking - Water)

Proceedings held on March 1, 2001, at 2:02 p.m., at the
Illinois Pollution Control Board, 600 South Second Street, Suite
403, Springfield, Illinois, before Hearing Officer Joel J.
Sternstein.

Reported by: Darlene M. Niemeyer, CSR, RPR
CSR License No.: 084-003677

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A P P E A R A N C E S

Board Member Nicholas J. Melas
Board Member Ronald C. Flemal, Ph.D.
Board Member G. Tanner Girard, Ph.D.
Board Member Marili McFawn
Board Member Elena Kezelis

Anand Rao, Senior Environmental Scientist

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BY: Stephen C. Ewart
Deputy Counsel
Division of Legal Counsel
1021 North Grand Avenue East
Springfield, Illinois 62794-9276
On behalf of the Illinois EPA.

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E X H I B I T S

NUMBER	MARKED FOR I.D.	ENTERED
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1 P R O C E E D I N G S

2 (March 1, 2001; 2:02 p.m.)

3 HEARING OFFICER STERNSTEIN: Let's go on the record. Good
4 afternoon. My name is Joel Sternstein. I have been appointed by
5 the Illinois Pollution Control Board to serve as Hearing Officer
6 in this proceeding, which is entitled, In the Matter of:
7 Proposed MTBE Groundwater Quality Standards Amendments: 35
8 Illinois Administrative Code, Section 620. The docketing number
9 for this rulemaking is R01-14.

10 Sitting next to me is Nicholas Melas, the Board Member
11 assigned to this matter.

12 BOARD MEMBER MELAS: Good afternoon.

13 HEARING OFFICER STERNSTEIN: Also present from the Board
14 are Board Member Ronald Flemal and Board Member Tanner Girard.

15 BOARD MEMBER GIRARD: Good afternoon.

16 HEARING OFFICER STERNSTEIN: Board Member Elena Kezelis.

17 BOARD MEMBER KEZELIS: Good afternoon.

18 HEARING OFFICER STERNSTEIN: Board Member Marili McFawn.
19 Anand Rao is to my immediate left. He is a member of the Board's
20 technical unit. And sitting in the back we have Erin Conley, our
21 rulemaking coordinator, and Marie Tipsord, who is the Attorney
22 Assistant to Board Member Girard.

23 For the record, today's date is March 1st, 2001, and it is
24 approximately two minutes after 2:00 p.m. This is a rulemaking

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1 subject to the Board's procedural rules and, therefore, all
2 relevant, nonrepetitious and nonprivileged testimony will be
3 heard at this first hearing of this proceeding and also at the
4 second hearing. The second hearing will be held on April 5th at
5 the James R. Thompson Center in Chicago.

6 The Illinois Environmental Protection Agency filed this
7 matter with the Board on September 1st, 2000. On September 7th,
8 2000, the Board accepted this matter for hearing. On the table
9 over here in the -- to you it would be in the front, right
10 corner, are the current notice and service lists. If you notice
11 that your name does not appear on these lists, there are also
12 sign-up sheets for both the notice and service lists there, as
13 well. Please sign up if you wish to be included on either list.

14 By way of explanation, individuals on the notice list
15 receive only Board and Hearing Officer opinions and orders.
16 Individuals on the service list receive copies of all documents
17 filed by all persons on the service list, including prefiled
18 testimony and questions, motions and appearances, as well as
19 Board and Hearing Officer opinions and orders. If your name is
20 on the service list and you file documents with the Board, you
21 will also serve everyone else on the service list with copies of
22 those same documents. If you have any questions about the list,
23 please see me during a break or after the hearing.

24

Also on the table in the front of the room to your right

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1 you will find copies of the Board's Accept for Hearing Order in
2 this matter, which is dated September 7th of 2000, and copies of
3 the Hearing Officer Order in this matter, which is dated January
4 29th, 2001. In addition, you will also find copies of the
5 Agency's proposed language for this rule.

6 A couple of housekeeping matters. Rest rooms are in the
7 hallway to your right and the rest room keys are also located on
8 the table there in the front of the room.

9 At today's hearing we will be hearing the testimony of the
10 Illinois Environmental Protection Agency. The Board received
11 prefiled testimony from the Agency, and copies of the prefiled
12 testimony are also on the table in the front right of the room.
13 We will allow questions for the specific testimony, and Mr. Cobb
14 will be testifying today. After we finish with the Agency's
15 testimony we will allow other participants to state their
16 positions regarding R01-14.

17 A few items about decorum. Anybody who testifies will be
18 sworn in by the court reporter. Anyone may ask a question of
19 anyone who testifies. However, I ask that you raise your hand,
20 wait for me to acknowledge you, and after I have acknowledged
21 you, please state your name and who you represent before you
22 begin asking questions.

23 Please speak one at a time. If you are speaking over each

24 other, the court reporter will not be able to get your questions

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1 on the record. When answering questions, please be sure to say
2 yes or no instead of nodding or shaking your head. Please note
3 that any questions asked by a Board Member or staff are intended
4 to help build a complete record for the Board's decision and are
5 not meant to express any preconceived notion or bias on the part
6 of the Board.

7 Is there anyone else here who anticipates that they would
8 like to testify at the close of the Agency's testimony today?

9 Okay. One other housekeeping matter. I would ask that
10 anybody who has a cell phone to please turn that off and to
11 refrain from holding conversations via a cell phone in the back
12 of the room. It just makes it harder for us to hear up here.

13 At this point I would just like to ask if Mr. Melas or if
14 any of the other Board Members have anything to add?

15 BOARD MEMBER MELAS: I have nothing else to add to what you
16 have covered. Just looking forward to hearing your testimony,
17 Mr. Cobb.

18 HEARING OFFICER STERNSTEIN: Any of the other Board
19 Members?

20 Okay. Mr. Ewart, I understand that you do not have an
21 opening statement today.

22 MR. EWART: No, I don't.

23 HEARING OFFICER STERNSTEIN: But you would like to
24 introduce your witness?

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1 MR. EWART: Yes, of course. Thank you, Mr. Hearing
2 Officer. My name is Stephen Ewart. I am an attorney with the
3 Illinois EPA. And to my right is the person who will be
4 testifying today in support of the proposed amendments to include
5 Methyl Tertiary-Butyl Ether, MTBE, as a standard in 35 Illinois
6 Administrative Code Part 620. Mr. Cobb is a Licensed
7 Professional Geologist, who is a Manager of the Groundwater
8 Section of the Division of Public Water Supplies in the Illinois
9 EPA.

10 We also have in attendance Mr. Thomas -- Dr. Thomas
11 Hornshaw, who is a toxicologist with the Illinois EPA.

12 Also with us is Mr. Gary King. He is a professional
13 engineer and Juris Doctor and also is Manager of the Division of
14 Remedial Management of Illinois EPA.

15 If you wish, we would like to go to our testimony. There
16 are copies of the testimony and the proposed amendments to the
17 Groundwater Quality Standards, Part 620, over to our right.
18 Thank you.

19 HEARING OFFICER STERNSTEIN: Okay. Why don't we go ahead
20 and swear in Mr. Cobb.

21 (Whereupon the witness was sworn by the Notary Public.)

22 MR. COBB: My name is Richard Cobb. I am the Manager of

23 the Groundwater Section for the Illinois Environmental Protection
24 Agency's Bureau of Water. For further detail on my

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1 qualifications I do have as the first exhibit a copy of my
2 Curriculum Vitae. The testimony, the statement of reasons, and
3 exhibits included with this testimony describe the basis for the
4 proposed amendments to the Groundwater Quality Standards. The
5 Illinois EPA is proposing a preventive notice and a response
6 level, and Class I and Class II groundwater standard for Methyl
7 Tertiary-Butyl Ether, MTBE. In addition we are proposing
8 amendments to the compliance determination section of the
9 Groundwater Quality Standards Regulations.

10 Illinois EPA is proposing these amendments consistent with
11 the Illinois Groundwater Protection Act policy and program
12 statement; in accordance with the requirements of Section 8 of
13 the IGPA, Illinois Groundwater Protection Act, and in response to
14 the Illinois Pollution Control Board's request to continually
15 update the groundwater standards.

16 By way of background, community water supplies in Illinois
17 routinely sample for volatile organic chemicals as a result of
18 the Safe Drinking Water Act monitoring requirements. Under
19 Illinois' Community Water Supply Laboratory Fee Program, analyses
20 for MTBE have been reported as part of the standard laboratory
21 method since 1994. Therefore, we have been receiving Safe

22 Drinking Water Act compliance samples that are taken at the entry
23 point to a community water supply distribution system. These are
24 also referred to as finished water samples.

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1 Since 1994 26 community water supplies have been impacted
2 with MTBE contamination. Another factor to consider is that
3 these are finished water samples and they are collected after
4 treatment. Thus, the contamination level in the source water
5 itself could be higher. In addition, there is also the potential
6 risk to other potable wells including private, semi-private, and
7 non-community water supply wells.

8 The Illinois EPA has evaluated each of the 26 community
9 water supplies with MTBE detects as shown in Figure 1. The
10 monitoring conducted at over 1,200 community water supplies
11 participating in the laboratory testing fund program just over
12 1,100 of those facilities are groundwater dependent has resulted
13 in 26 facilities with detections of MTBE. Four community water
14 supplies have had to discontinue use of wells as a result of MTBE
15 contamination.

16 First, Oakdale Acres Subdivision and two other small
17 subdivisions served by private wells located in Kankakee County
18 had to discontinue the use of their wells and connect to a nearby
19 community water supply.

20 Roanoke, located in Woodford County, has had to shut down
21 wells due to high levels of MTBE.

22 East Alton, located in Madison County, has had to use one
23 of their wells as a hydraulic well containment system with
24 discharge to surface water to protect their well-field from a

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1 MTBE plume with concentration exceeding 1,000 parts per billion.

2 The community of Island Lake had to take a well out of
3 service as a result of elevated levels of MTBE.

4 Maps of each of these communities has also been prepared
5 showing the community water supplies; the type of aquifer being
6 used; the community water supply well depth; MTBE and benzene,
7 toluene, ethylbenzene and xylene concentrations; the location of
8 potential contamination sources surveyed by Illinois EPA staff
9 under the IGPA well site survey requirements; the location of
10 reported leaking underground storage tank sites, the setback zone
11 established under the Illinois Groundwater Protection Act; and,
12 if delineated, the contributing recharge area of the wells.
13 Those maps are contained in Exhibit 2.

14 HEARING OFFICER STERNSTEIN: Mr. Cobb, for clarification,
15 all the exhibits that you are referring to have been attached to
16 your prefiled testimony; is that correct?

17 MR. COBB: That's correct.

18 HEARING OFFICER STERNSTEIN: Okay.

19 MR. COBB: MTBE is an organic chemical, specifically an
20 ether. Ethers, especially those of low molecular weight, such as

21 MTBE, are significantly soluble in water. MTBE in drinking water
22 can be detected by the senses of taste and smell at extremely low
23 concentrations of 20 to 40 parts per billion. MTBE is primarily
24 manufactured and isolated for use as a fuel additive. It is used

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1 in gasoline to increase the octane rating, in effect causing the
2 fuel to burn more completely and therefore create less pollution
3 in the exhaust.

4 MTBE was used in small amounts from the late 1970s
5 primarily in California to help curtail the air pollution
6 problems due to hydrocarbon emissions in large urban areas. In
7 recent years, however, its use has spread throughout the country
8 in response to increased air pollution control laws. The MTBE is
9 raising increasing concerns because it is being found in many
10 water supply wells across the country.

11 Some states, such as California and Maine, have taken the
12 initiative to regulate or ban MTBE use within its borders. With
13 increasing detection at fairly high levels in community and
14 private water supply wells, MTBE has been raised as a contaminant
15 of concern for its possibility to cause cancer and its
16 disagreeable taste and odor.

17 Major issues. Solubility and dispersal. MTBE has a high
18 solubility for an organic compound. When in an organic solution
19 such as gasoline, a high percentage of MTBE can transfer in the
20 water that is in contact with the organic phase. Once in the

21 aqueous phase, MTBE can disperse in the water and migrate at the
22 same rate as the water in the underground aquifer systems.

23 Environmental fate. MTBE is readily broken down in the
24 presence of ultraviolet light, or UV, such as direct sunlight.

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1 In its pure form, on the surface, or in shallow surface water, it
2 volatilizes rapidly or is broken down by sunlight with sufficient
3 time. Natural degradation of MTBE in groundwater, however, is
4 not as effective. The primary attenuation for MTBE in
5 groundwater is through dispersion. Biodegradation is also not an
6 effective method of natural breakdown of MTBE in a groundwater
7 setting. MTBE is resistant to natural forms of degradation.
8 According to the research by the United States Geological Survey
9 biodegradation rate constants for MTBE are estimated to be
10 several orders of magnitude lower than for other gasoline
11 components such as benzene and toluene.

12 MTBE versus benzene, toluene, ethylbenzene, and xylene.
13 Detections of MTBE in groundwater can often be traced to above
14 ground bulk terminals and underground petroleum storage tanks
15 both of which have been leaking fuel materials to the groundwater
16 surface. With releases or leaks of petroleum products, two
17 components of concern often detected are the MTBE and the BTEX.
18 BTEX plumes are very organic in nature, and tend to float on the
19 surface of groundwater. The soluble components principally BTEX

20 dissolve in the water layer. MTBE has a much higher solubility
21 index than the BTEX components of petroleum products. Therefore,
22 a larger proportion of MTBE is expected to be in the water layer,
23 relative to the proportional amounts of BTEX in the water layer.

24 Petroleum plumes as MTBE reservoirs. MTBE is both soluble

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1 in organic as well as aqueous liquid phases. It is more soluble,
2 by roughly an order of magnitude, in the organic phase. When
3 releases or leaks of petroleum products containing MTBE float on
4 the surface of the groundwater, the petroleum plume may act as an
5 MTBE reservoir allowing the MTBE to dissolve into the water layer
6 so long as the MTBE concentration are available in the organic
7 phase of the petroleum plume. Thus, in considering the treatment
8 of MTBE, the remediation must remove the original petroleum plume
9 containing MTBE as a reservoir of the MTBE while any necessary
10 MTBE treatment is taking place for a community water supply at
11 the entry point of its distribution system.

12 Without attending to the petroleum plume as an MTBE
13 reservoir, the treatment of MTBE at a community water supply may
14 become a lengthy process. The recharge of the groundwater with
15 MTBE from the original plume can occur for long periods of time.
16 The half-life of MTBE is listed as between four months to two
17 years.

18 MTBE is a progressive problem. As discussed earlier, MTBE
19 has a very long residence time in groundwater. The source of

20 MTBE contamination is often leaking underground storage tanks.
21 With many known and unknown aging underground storage tanks still
22 in the ground and potentially leaking, the increasing
23 contribution of MTBE to groundwater seems inevitable. Since MTBE
24 resists breakdown, any addition of MTBE to groundwater will most

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1 likely increase the concentration of MTBE detected in the
2 downstream aquifer at some time in the future.

3 Current treatment methods compared. Natural attenuation
4 and/or biodegradation. Scientific studies have been performed
5 that show natural attenuation of MTBE in groundwater is
6 negligible. MTBE is considered persistent, or recalcitrant, in
7 groundwater and degrades very slowly by natural chemical or
8 biological degradation. With the recent introduction of MTBE
9 into the underground environment, sufficient microbial organisms
10 do not exist in most natural settings to degrade the MTBE.
11 Acidic chemical breakdown of MTBE can occur, but at lower pH
12 levels than typically observed in nature. A study by Lawrence
13 Livermore National Laboratory in California determined that very
14 limited evidence exists that the natural attenuation of MTBE is
15 occurring in the field.

16 Chlorination and/or sodium hypochlorite. The typical
17 chlorination process used to disinfect drinking water supplies
18 has been shown to have no noticeable effect on MTBE

19 concentrations.

20 Ultraviolet irradiation. High-energy ultraviolet light can
21 be used in a similar manner as chlorine to disinfect drinking
22 water supplies. The UV light disrupts the DNA function and is
23 designed to effectively kill all organic life in the water
24 system. However effective this method is on microbial life in

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1 the potential drinking water, it is ineffective on MTBE.
2 Experiments performed at the University of California Davis
3 confirmed that there was no evidence of MTBE degradation in the
4 water upon exposure to UV light emitted by a low-pressure mercury
5 lamp.

6 Reverse osmosis or RO. This process uses a semi-permeable
7 membrane, which allows only small particles to pass through it.
8 For instance, reverse osmosis has been used to filter salinity or
9 salt out of seawater to provide fresh drinking water for areas
10 with extreme water supply problems. For large pumping rates,
11 this method can be very expensive, depending on the constituents
12 in the water. To date, most membrane technologies are not
13 applicable to volatile organic chemicals.

14 Little information is available concerning the removal of
15 MTBE using RO filtration. Ultimately, the high equipment cost,
16 maintenance, and filter replacement costs would cause this method
17 to lose cost-effectiveness. These systems are expensive even for
18 home use, which in most cases is purification of already treated

19 water. Even under those conditions, filters must be replaced
20 periodically. For the cleansing of raw water for a community
21 water supply, filter replacement costs would make this method
22 impractical unless the source water influent into the treatment
23 system was fairly clean to start with and the flow of water
24 through the system was moderate to low.

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1 Granular activated carbon or GAC. Most concentrations of
2 organic chemicals in a water phase are effectively reduced when
3 treated with granular activated carbon. With MTBE, however, GAC
4 is not as effective treatment medium due to the limited
5 adsorption capability of GAC for MTBE. When used alone, removal
6 of MTBE by GAC is not considered cost-effective for treating the
7 large volumes of water used by a community water supply. Cost
8 prohibitively large units or multiple pass GAC systems may be
9 necessary to reduce the levels of MTBE to desired concentrations.
10 GAC will also be reduced in its efficiency to remove MTBE if the
11 influent water contains total dissolved solids, metals or
12 especially organics.

13 If benzene or other organic chemicals are present with
14 MTBE, MTBE adsorbed on a GAC filtration unit could be dislodged
15 by the benzene or the other organic compound sending a large
16 spike of MTBE through the treatment system. To protect from such
17 an occurrence would require careful monitoring of the GAC system

18 when GAC is used as a primary method of treating MTBE. Such
19 monitoring of the GAC system will also increase costs. Studies
20 have shown that MTBE may be treated cost-effectively with GAC
21 only at low concentrations. GAC may be useful and cost-effective
22 as a means of secondary treatment as a polishing step following
23 some other forms of MTBE removal.

24 Air stripping. Air stripping is one of the most

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1 cost-effective approaches for removing VOCs from groundwater.
2 Since MTBE is a volatile organic chemical with a moderately high
3 vapor pressure, one would expect it to be susceptible to air
4 stripping. MTBE, however, is not efficiently air stripped under
5 moderate conditions due to its high solubility in water and its
6 low Henry's Law constant. The high solubility of MTBE requires
7 the construction of much larger air stripping units than
8 constructed for conventional volatile organic chemicals or
9 compounds, which would impart higher capital and operating costs
10 for MTBE treatment. However, if the temperature of the influent
11 water containing MTBE contaminants can be raised significantly at
12 a reasonable cost, the size of the stripping unit can be reduced
13 with the same or similar removal efficiency.

14 In various field studies, MTBE has been air stripped
15 effectively, but it requires very high air-to-water ratios, the
16 use of influent water heating to facilitate volatilization, and
17 the use of a packed tower with appropriate media. In one study,

18 at 44:1, 75:1, 125:1, and 200:1 ratios of air-to-water the
19 following removal efficiencies were achieved, respectively: 44%,
20 51%, 61%, 93-99%. At such high air-to-water ratios, however, the
21 media in the stripping tower can become clogged with
22 precipitating scale and freezing problems can occur in cold
23 months.

24 One study found that heating the influent water from 10

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1 degrees Celsius to 27 degrees Celsius increased the efficiency of
2 removal by a factor of two. This would require pre-heating the
3 water, which would add additional cost. The cost of air
4 stripping is approximately one-half that of granular activated
5 carbon, but this does not include treatment of the resulting gas
6 stream containing the MTBE vapors. If the facility is in an air
7 pollution nonattainment area and cannot release MTBE into the
8 atmosphere, treatment of the gas stream will be required. This
9 will roughly double the cost, thus decreasing the
10 cost-effectiveness of air stripping as a treatment option.

11 If MTBE vapor treatment is not necessary, packed tower air
12 stripping may be coupled with a granular activated carbon
13 treatment and air/water stream heating as a cost-effective method
14 of reducing concentrations of the contaminant. Currently, this
15 appears to be the most cost-effective method of treatment
16 compared to the other proven methods.

17 Treatment summary. With the limited field-tested data
18 available for most recently researched methods of MTBE treatment,
19 few viable options exist that have wide applicability and are
20 cost-effective. It is important to note that for traditional
21 technologies, such as GAC or air stripping, the average costs for
22 treating MTBE-contaminated water is 40 to 80 percent higher than
23 treating waters containing benzene or other organic chemicals.
24 Air stripping is the lowest cost technology for high flow rates

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1 of 100 to 1,000 gallons per minute, if no air treatment is
2 required. Air treatment can be required.

3 Hollow fiber membranes are the lowest cost technology for
4 low flow rates, that is 10 to 100 gallons per minute, if no air
5 treatment is necessary, which is normal at low flow rates.

6 Granular activated carbon will be the most cost-effective
7 at all flow rates if air treatment is required and the influent
8 water has low levels of other organic chemicals. If air
9 treatment is required and high levels of other organic compounds
10 are detected, air stripping is more cost-effective than granular
11 activated carbon at flow rates of 100 or greater.

12 Advanced oxidation processes are in all cases more
13 expensive than the alternative technologies, and there are
14 sufficient uncertainties at this point with respect to the
15 by-products of advanced oxidation processes to warrant further
16 study of this technology before accepting full utilization. At

17 high flow rates, however, the advanced oxidation processes may
18 become cost-effective compared to other technologies, pending
19 further full-scale field tests. Various forms of biodegradation
20 may, in fact, soon take precedence over some of these methods,
21 but at this time there is not enough field study completed to
22 warrant full implementation.

23 Most sources claim that treatment options for MTBE in
24 groundwater should be conducted on a case-by-case basis. Each

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1 well may have different sets of parameters with respect to other
2 wells. Factors such as pH, pumping rate, facility design, water
3 hardness, inorganic chemical levels, the level of MTBE
4 contamination, and the level of interference by other organic
5 contaminants will differ by well or treatment application point.

6 United States Environmental Protection Agency Blue Ribbon
7 MTBE Panel findings. On November the 30th, 1998, former U.S. EPA
8 Administrator, Carol Browner, of the U.S. EPA, appointed a Blue
9 Ribbon Panel of leading experts to investigate concerns raised by
10 the discovery of MTBE, a gasoline additive, in some water
11 supplies. According to the report produced from the Blue Ribbon
12 Panel, the U.S. EPA recommended that:

13 A comprehensive set of improvements to the nation's water
14 protection programs, including over 20 specific actions to
15 enhance Underground Storage Tank, Safe Drinking Water, and

16 private well protection programs.

17 Review of the Blue Ribbon Panel recommendations and
18 findings supports inclusion of a groundwater standard for MTBE.

19 Safe Drinking Water Act unregulated contaminant monitoring
20 requirement for MTBE. The U.S. EPA recently adopted new
21 revisions to the Unregulated Contaminant Monitoring Regulation
22 under the Safe Drinking Water Act. MTBE is one of 13 chemicals
23 included in this regulation. One of the Blue Ribbon Panel
24 recommendations consisted of accelerating the unregulated

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1 contaminant monitoring regulation or process for MTBE prior to
2 the implementation date of January 1st, 2001.

3 Illinois EPA's proposal to amend the Groundwater Quality
4 Standards. Section 620.310(a)(3)(A)(i), Preventive Response
5 Activities. This subsection has been amended to include a
6 preventive response level for MTBE based on its taste and odor
7 threshold. Exhibit 3 details information on the taste and odor
8 threshold for MTBE.

9 Section 620.410(b). This subsection has been amended to
10 include a Class I: Potable Resource Groundwater Standard for
11 MTBE. This standard is based on a draft Illinois EPA health
12 advisory, developed pursuant to 35 Illinois Administrative Code,
13 Section 620.605, and a review of what other states are doing.
14 Exhibit 4 further details information on the health advisory
15 information for MTBE.

16 Section 620.420(b). This subsection has been amended to
17 include in Class II: General Resource Groundwater Standard for
18 MTBE. In the original regulatory proceeding, R89-14(B), the
19 Class II: General Resource Groundwater Standard for organic
20 constituents was based on the capability of treatment technology
21 to achieve the Class I standard. The treatment of MTBE is very
22 difficult once it has dissolved into the groundwater.

23 The Henry's Law coefficient for MTBE is very low, making it
24 difficult to remove. Granular activated carbon is also not

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1 effective because MTBE does not readily absorb. Thus, the Class
2 II standard is also proposed at 0.070 milligrams per liter.

3 Section 620.505(a)(5). This subsection has been amended to
4 not exclude certain compliance points that we believe are valid
5 for determining groundwater quality, and in certain instances may
6 be existing potable water supply wells.

7 That concludes my testimony, and I would be happy to
8 address any questions at this time.

9 HEARING OFFICER STERNSTEIN: Before we start the questions,
10 Mr. Cobb, do you wish to have your testimony admitted as an
11 exhibit?

12 MR. COBB: Yes.

13 HEARING OFFICER STERNSTEIN: If you could provide me with a
14 copy and also one for the court reporter. Okay. I am going to

15 mark the testimony of Richard P. Cobb, P.G., as Exhibit Number 1
16 in this matter.

17 (Whereupon said document was duly marked for purposes of
18 identification as Hearing Exhibit 1 as of this date.)

19 HEARING OFFICER STERNSTEIN: Are there any objections to
20 the admission of this exhibit? Seeing none, the exhibit is
21 admitted.

22 (Whereupon said document was duly admitted into evidence as
23 Hearing Exhibit 1 as of this date.)

24 HEARING OFFICER STERNSTEIN: And we will now open the floor

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1 for questions for Mr. Cobb. Again, I just ask that if anybody
2 wants to ask a question they raise their hand and wait for me to
3 acknowledge them.

4 Yes, sir. If you could identify yourself, please.

5 MR. CURTIS: Yes, please. My name is Craig Curtis. I am a
6 political professor at Bradley University. I just have a little
7 bit of curiosity. In doing some of the preliminary research with
8 some of my students who are here with me today, we came across
9 some indications that there are some very large spills of MTBE in
10 the Madison County area. And I noticed on your exhibit, or
11 Figure 1, page three of your testimony, there is only one well
12 that had been -- where there had been detections. I believe you
13 said there was one well that had been closed there. What
14 happened to the rest of the MTBE?

15 HEARING OFFICER STERNSTEIN: I am sorry. Before we
16 continue, which part of the exhibit was that?

17 MR. CURTIS: That was page three, CWS Facilities with MTBE
18 Detections. There is one in Madison County, Bethalto, and I
19 believe in the testimony also there was a mention of a well in
20 East Alton.

21 HEARING OFFICER STERNSTEIN: Okay. Figure 1. Figure 1 on
22 page three?

23 MR. CURTIS: That's right.

24 HEARING OFFICER STERNSTEIN: Okay.

25

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1 MR. COBB: Well, in response to that, that is a very large
2 regional aquifer system. The data that we are primarily using
3 there is from available community water supply testing. In fact,
4 as I testified, the majority of the data that we do have is
5 related to finished water or Safe Drinking Water Act compliance
6 monitoring. In fact, we do run an ambient groundwater monitoring
7 network program, as well, comprised of community water supply
8 wells.

9 In fact, that is how we happened to come across the Methyl
10 Tertiary-Butyl Ether in East Alton's wells. So, you know, those
11 are points in space where you are taking a sample out in a large
12 volume of groundwater and geologic materials, and I don't know
13 for sure why we may not have picked up, other than we may -- you

14 know, if you continue to test you possibly may, and put more
15 points out there, and possibly wherever these alleged spills were
16 at, you may possibly find more MTBE.

17 MR. CURTIS: I guess my point is that maybe the problem is
18 even bigger than you are -- than you are suggesting, because the
19 evidence -- we found this on the web.

20 MR. NEU: It was the U.S. EPA.

21 MR. CURTIS: Yes, the U.S. EPA data suggested that --

22 HEARING OFFICER STERNSTEIN: I am sorry, Professor Curtis.

23 MR. CURTIS: Yes.

24 HEARING OFFICER STERNSTEIN: It sounds like you are about

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1 to go into actually providing testimony. If you are going to do
2 that, we would need to swear you in.

3 MR. CURTIS: Okay. Well, I would prefer not. It is just
4 that --

5 HEARING OFFICER STERNSTEIN: But if you are going to
6 continue with that current line there, that sounds like
7 testimony, so we need to have you sworn in. So if you wouldn't
8 mind raising your right hand.

9 MR. CURTIS: I will, but I am about to give hearsay
10 evidence.

11 HEARING OFFICER STERNSTEIN: Well, we can take note of that
12 when writing the opinion. But, again, if you are going to
13 provide any testimony, we need to swear you in.

14 MR. CURTIS: Okay. Absolutely.

15 (Whereupon the witness was sworn by the Notary Public.)

16 THE COURT REPORTER: Excuse me, Mr. Hearing Officer, the
17 gentleman sitting next to Mr. Curtis spoke. I need his name.

18 MR. CURTIS: It is C. J. Neu, N-E-U.

19 HEARING OFFICER STERNSTEIN: Mr. Nue, will you be providing
20 any testimony today or just Professor Curtis?

21 MR. NUE: Just Professor Curtis.

22 HEARING OFFICER STERNSTEIN: Okay.

23 MR. CURTIS: In our preliminary research we found some
24 reports on the web, from the EPA web site, I believe, that

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1 reported a very large -- several very large spills, in excess of
2 30,000 pounds total in that area. And by far the vast majority
3 of the spills reported for the State of Illinois were from that
4 area. I guess I was mostly just curious as to, one, what the
5 sources of those might be, because I didn't know? And then, two,
6 what might have happened to all of that MTBE?

7 MR. COBB: I am not sure I can answer the question.

8 HEARING OFFICER STERNSTEIN: Professor Curtis --

9 BOARD MEMBER MELAS: Excuse me. When you say in that area,
10 what area?

11 MR. CURTIS: Madison County.

12 BOARD MEMBER MELAS: Madison County.

13 MR. CURTIS: Yes, across the river from St. Louis.

14 HEARING OFFICER STERNSTEIN: Professor Curtis, we might be
15 interested in seeing copies of those web pages or possibly you
16 could submit just the URLs for those web pages as part of a
17 public comment.

18 MR. CURTIS: Yes. May I send that to you? Would that be
19 appropriate?

20 HEARING OFFICER STERNSTEIN: Yes. We can discuss the
21 procedure after the hearing. But just to let you know that we
22 would be interested in seeing those and I am sure the Agency
23 would be, as well.

24 MR. CURTIS: We most certainly would be willing to provide

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1 that information.

2 HEARING OFFICER STERNSTEIN: Mr. King, did you have
3 something to say in response?

4 MR. KING: I guess I was just -- maybe just -- were you
5 looking for some additional information relative to the East
6 Alton problem?

7 MR. CURTIS: Not necessarily just to East Alton, more for
8 the whole area. I guess I am just curious as to why more has not
9 been detected. I got an answer to that, that I thought was
10 satisfactory.

11 MR. COBB: We would be happy to look at whatever he
12 provides us. I have to admit, I have not seen the information

13 posted on their web site.

14 BOARD MEMBER KEZELIS: Professor Curtis, do you recall when
15 you visited that web page of the U.S. EPA, how long ago?

16 MR. CURTIS: That would have been approximately last
17 October.

18 BOARD MEMBER KEZELIS: October of 2000?

19 MR. CURTIS: Yes, ma'am.

20 BOARD MEMBER KEZELIS: Okay. Thank you.

21 HEARING OFFICER STERNSTEIN: Do you have any further
22 questions, Mr. Curtis?

23 MR. CURTIS: No. Thank you.

24 HEARING OFFICER STERNSTEIN: Other further questions from

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1 the audience for Mr. Cobb?

2 Okay. I see that Board Member Girard has a question.

3 BOARD MEMBER GIRARD: Thank you. Mr. Cobb, you have, in
4 your testimony, noted numerous community water supplies in
5 Illinois that have a problem with MTBE. You have also gone
6 through various treatment options and a lot of the shortcomings.
7 Do you know of any of these community water supplies in Illinois
8 that are specifically treating for MTBE and what their field
9 experience is with the different methods?

10 MR. COBB: Yes. The East Alton is the best example of a
11 system where treatment is occurring. Essentially, what is going

12 on there, the Bureau of Land -- there were two potential sources.
13 Those have been remediated through Agency clean up programs. In
14 addition, since the horses were kind of out of the barn on some
15 of these potentially in this area, we had a plume that was very
16 close to the well, East Alton well 9 and levels started to
17 continue and then finished water concentrations began continuing.
18 And we -- it is a close cluster of wells, I think eight or ten
19 wells in the well-field. What was done there is that well 9 was
20 used as a hydraulic control well after doing some groundwater
21 modeling, and monitoring, and testing to compare the monitoring
22 to the modeling over time to see if that -- if the modeling made
23 sense. In fact, the hydraulic containment system and the capture
24 zone model for the well does seem to be accurate.

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1 Essentially, what they are doing, then, is there is an old
2 wastewater treatment plant, and they had some conventional
3 treatment, like a slat aerator. They had some softening. They
4 had a clarifier where they were doing some mixing. So what we
5 were seeing -- or what we have seen is, number one, the plume
6 concentrations are going down. I think part of that is the
7 remediation of potential sources or the contributing areas,
8 because those were quite extensive remediations that were done
9 there. And, number two, you know, possibly maybe the plume over
10 time, maybe we have seen the highest end of it. But it appeared
11 that about 25 percent of the influent was being removed by that

12 conventional treatment before discharge. And East Alton did have
13 a consultant that they hired to evaluate various treatment
14 options, and I could possibly go through some of those statistics
15 with you.

16 BOARD MEMBER GIRARD: Are you saying basically that they
17 are using air stripping, then, after the --

18 MR. COBB: They are using conventional air stripping and
19 they did experiment a little bit with the chlorination process,
20 to not much avail. But I think one of the things that we are
21 seeing, we are getting reduction. It is about 25 percent from
22 the original influent. But what we are also seeing is the source
23 contribution is going down over time, which we are lucky on that,
24 because then that has kept them out of looking at some of the

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1 other options that they were going to have to look at.

2 And, specifically, they looked at a range of four different
3 options. Number one, a totally new well-field, for example. And
4 that was about \$2,727,000.00 for that. First is kind of what
5 they are doing right now, is pumping and treating and discharging
6 with iron and manganese reduction and that capital cost was about
7 \$40,000.00 with an annual cost increase to the community of
8 \$92,000.00. So the community level, that was a percent revenue
9 increase of about 15 percent.

10 Option B that they were going to evaluate, for example, if

11 the plume concentrations hadn't gone down and they needed to
12 lower those levels that they were discharging into the Wood River
13 Creek -- they were doing this under a court order. But the
14 second option would be a pump and treat discharge of the iron and
15 manganese with further reduction with an air stripper. Now, they
16 are just using a conventional slat type aerator. It is not a
17 packed media air stripper that they are using. As we said, those
18 require pretty large air-to-water ratios to be effective, in some
19 cases almost evaporative in nature. But the capital costs for
20 what I just described was about \$650,000.00. That would be an
21 annual revenue increase out there of about 34 percent, and an
22 annual cost increase of about \$200,000.00. The operation and
23 maintenance cost of \$156,000.00, and a debt service even further
24 to add into that of about \$40,000.00.

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1 The other option that the consultant evaluated is -- by the
2 way, this was Mike Curry, if you are familiar with Curry
3 Consultants. The next option that they evaluated was pumping and
4 treating the discharge with iron and manganese reduction and then
5 reduction of the MTBE using granular activated carbon. Here the
6 operation and maintenance cost, as I read in my testimony, you
7 have to keep a pretty close eye on the activated carbon so that
8 the other organics don't dislodge. They do have some other
9 organics in their groundwater, by the way. The O&M cost is
10 \$300,000.00. That is a 137 percent revenue increase out there at

11 the community level. And the capital cost is \$1,000,048.00.

12 The last option includes pump and treat and discharge
13 removal of the iron and manganese reduction with MTBE with air
14 stripping and polishing with granular activated carbon, just as
15 some of the things that we have talked about in my testimony.
16 The capital costs there would be 2.9 million projected and a 297
17 percent revenue increase, and O&M costs annually would be 1.5
18 million. They also looked at an alternate treated water supply
19 and what that would cost, as well, as actually even another
20 option. That capital cost was about 1.5 million.

21 So we are just fortunate that we worked together and
22 remediated the potential sources and monitored this very closely
23 as we found it, because if -- I think we -- the source removal
24 helped in the process. If the plume -- if the concentrations

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1 were still very high, we would probably only be removing 25
2 percent with that conventional treatment. To achieve -- if the
3 plume were still high and we were not seeing removal, we would
4 have to move into these cost options that I just went through.

5 BOARD MEMBER GIRARD: Thank you.

6 BOARD MEMBER McFAWN: What were the sources or the
7 potential sources, as you called them?

8 MR. COBB: The two potential sources were underground
9 storage tanks.

10 BOARD MEMBER McFAWN: And the State undertook the
11 remediation versus the owners or operators of the tanks?

12 MR. COBB: I will let Gary --

13 MR. KING: Well, we took enforcement action against the
14 owners and operators. I guess I need sworn in.

15 BOARD MEMBER McFAWN: Sure. Good idea, Mr. King.

16 HEARING OFFICER STERNSTEIN: Yes. Mr. King, I am sorry,
17 you just gave testimony there, so we will have to swear you in.

18 MR. KING: All right.

19 (Whereupon the witness was sworn by the Notary Public.)

20 HEARING OFFICER STERNSTEIN: Mr. Cobb, I couldn't help but
21 noticing that you were reading off of something while you were
22 giving your answers to Board Member Girard. Would you care to
23 submit that as prefiled testimony for the next hearing?

24 MR. COBB: I can. Something that would be more readable,

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1 because the font size on this may not -- I could read it, but I
2 could barely read it.

3 HEARING OFFICER STERNSTEIN: Whatever format. Just so that
4 we have it on paper as an exhibit.

5 MR. COBB: Yes, I can do that.

6 HEARING OFFICER STERNSTEIN: That would be a big help.
7 Thanks.

8 MR. RAO: Mr. Cobb, I had a follow-up to Member Girard's
9 question. You were presenting some cost figures for treatment.

10 MR. COBB: Uh-huh.

11 MR. RAO: And in your testimony you referred to
12 cost-effectiveness in all of the terms that you used. Has the
13 Agency, you know, determined what would be cost-effective for
14 treating MTBE, or how would you characterize this
15 cost-effectiveness?

16 MR. COBB: Well, I think as I testified, that is -- that
17 would probably have to be a site-by-site, case-by-case
18 determination. What worked in East Alton, in fact, we know just
19 because of even some of the other extenuating circumstances, may
20 not work in other places. So I know that there is continuing
21 research out there. In fact, even in the water policy report
22 that I read today there was some new process that potentially
23 might help treat for MTBE.

24 So, I mean, we don't have an extensive, you know, research.

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1 I know the U.S. EPA and the American Water Research Foundation,
2 AWWRF, the American Water Works Association, API, you know, many
3 different groups are looking at that. I think it is a
4 case-by-case determination, number one, what are the inorganic
5 constituents, what are your settings. I mean, are there
6 alternatives. I think you have to go through almost an analysis
7 like this.

8 MR. RAO: Okay. And you are submitting that information?

9 MR. COBB: Yes.

10 MR. RAO: That would be helpful.

11 BOARD MEMBER MELAS: Early on in your testimony you
12 mentioned that sunlight will degrade MTBE if it is on the
13 surface. Then later you talked about ultraviolet radiation had
14 no effect or very little effect. So it is obviously not the UV
15 portion of the sunlight that is doing it.

16 MR. COBB: Well, they did the UV experiments with a
17 low-pressure mercury lamp. But what they found with MTBE in
18 shallow surface water, not when it goes deep --

19 BOARD MEMBER MELAS: No. I understand.

20 MR. COBB: That the sunlight. So whether that is -- you
21 know, what are all of the factors there that are affecting that,
22 I am not sure I know. But the research has been done, those
23 findings have been presented that the natural sunlight appears to
24 have an affect.

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1 BOARD MEMBER KEZELIS: Following up on Board Member Melas'
2 question, would the sunlight reaction also possibly be
3 attributable to air stripping and the temperature, because at
4 higher temperatures you --

5 MR. COBB: I would certainly think that all of those things
6 would be a factor, yes, the temperature, the -- you know, all of
7 those would be factors. I have not done extensive evaluations of
8 all of those factors.

9 BOARD MEMBER MELAS: If I can get off into another area a
10 little bit, it is quite obvious that taste and odor is impacted
11 severely with even very small concentrations. A lot of the
12 research that has been done on health has been through animal
13 research. Can you or our toxicologist give us some -- what
14 research has been found as to the affect on human health.

15 HEARING OFFICER STERNSTEIN: Mr. Hornshaw, if you are going
16 to testify we just need to swear you in really quickly.

17 MR. HORNSHAW: Okay. Sure.

18 (Whereupon the witness was sworn by the Notary Public.)

19 MR. HORNSHAW: Good afternoon. There has been quite a bit
20 of research that has been done with MTBE by inhalation in air.
21 Not so much has been done by ingestion. And the study that we
22 chose to develop, the health advisory, was at that time the only
23 study done in animals by the ingestion route. That was one of
24 the things that tipped us in favor of using that particular

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1 study. And that study found in all doses tested that it caused
2 the rats to have diarrhea and increased serum cholesterol, both
3 potentially significant events to humans. So we chose that as
4 the basis for the development of a health advisory of .07
5 milligrams per liter.

6 There have been some cancer studies done in animals, none
7 of -- no epidemiological studies in humans, that I am aware of.

8 The cancer study that we evaluated at the time we developed the
9 health advisory was also done by the inhalation route and it
10 showed excess tumors in male rat kidneys and female mouse livers.
11 And for various reasons those types of tumors in those species
12 and sexes of animals are usually thought to be not very relevant
13 for predicting human cancer risk. For example, the male rat
14 kidney tumors are the direct result of a great over-production of
15 a specific protein that male rats excrete into their urine for
16 marking their territories. And with very few exceptions most
17 humans don't do that anymore.

18 (Laughter.)

19 MR. HORNSHAW: So that is not a relevant finding for human
20 cancer risk. So that gives you a short overview of the health
21 affects that you might expect from excess levels of MTBE by the
22 oral route. By the inhalation route most of the health affects
23 are on the central nervous system.

24 BOARD MEMBER FLEMAL: Tom, I take it we are not the first

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1 ones who are looking at actual numbers to apply to water
2 standards for MTBE.

3 MR. HORNSHAW: That's correct. There are several states
4 around the country who have developed their own state water
5 standards. I know California and New York, their regulations
6 allow them to make determinations of cancer-causing risk
7 independent of the U.S. EPA determination methods. They have

8 done this and determined that a more recent -- the cancer study
9 that I described plus a more recent study that is by the oral
10 route was conducted in Italy and has not gone full review by the
11 U.S. EPA. But these two states have used that study as the basis
12 for making a determination that this chemical is a probable
13 carcinogen in humans. So their regulatory apparatus cranks out a
14 number of -- in California's instance, I think it is 13 parts per
15 billion, and New York's is ten parts per billion, I believe.
16 Several other states have .07 or 70 milligrams -- I am sorry --
17 70 parts per billion as their primary either groundwater or
18 drinking water standards.

19 BOARD MEMBER FLEMAL: The numbers you are proposing to us
20 today are somewhat larger than similar standards applicable in
21 New York and California?

22 MR. HORNSHAW: Correct. And equivalent to some other
23 states.

24 MR. RAO: May I follow-up?

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1 HEARING OFFICER STERNSTEIN: Go ahead, Mr. Rao.

2 MR. RAO: Dr. Hornshaw, this rat study that you were
3 referring to, is that the one that is in the draft advisory
4 referred to as the Robinson study?

5 MR. HORNSHAW: That's correct.

6 MR. RAO: Could you explain, you know, in that -- from that

7 Robinson study what was the rationale for picking 100 parts per
8 million as the lowest -- what was it -- the lowest observable
9 adverse effect level?

10 MR. HORNSHAW: That was the lowest dose tested and the
11 affects that I mentioned, the diarrhea and the elevated serum
12 cholesterol, were seen at that dose and all other doses. So we
13 don't know what the no effect level is. So we use that as the
14 lowest observable effect level, because that was the lowest level
15 that was tested in that study.

16 MR. RAO: So --

17 HEARING OFFICER STERNSTEIN: Just to clarify really
18 quickly, Mr. Rao, the study that you are referring to is referred
19 to in -- is that Exhibit 4 --

20 MR. RAO: Yes.

21 HEARING OFFICER STERNSTEIN: -- of the Agency's prefiled
22 testimony?

23 MR. RAO: Yes. I think there are three or four documents
24 in Exhibit 4.

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1 HEARING OFFICER STERNSTEIN: Okay.

2 MR. RAO: And this is the IEP's notice of Health Advisory
3 for Methyl Tertiary-Butyl Ether.

4 HEARING OFFICER STERNSTEIN: Dated June 9th, 1994?

5 MR. COBB: That's correct, Exhibit 4.

6 HEARING OFFICER STERNSTEIN: Okay.

7 BOARD MEMBER KEZELIS: And the level, again, at which MTBE
8 is detectable by smell or taste?

9 MR. HORNSHAW: In the range of 20 to 40 parts per billion.

10 BOARD MEMBER KEZELIS: Okay.

11 MR. RAO: So is it possible that this lowest observable
12 adverse effect level, or LOAEL, could be lower than 100 parts per
13 million?

14 MR. HORNSHAW: It certainly is. That's why we put an extra
15 uncertainty factor in the derivation of the final Health Advisory
16 to account for the fact that we had not identified a no
17 observable adverse effect level. That uncertainty factor is to
18 help us approximate the no observable adverse effect level.

19 MR. RAO: Now, in the U.S. EPA Health Advisory that was
20 submitted as part of Mr. Cobb's testimony, at page 27 of that
21 document, and I am quoting from the document here. "However,
22 U.S. EPA does not have high confidence in the use of Robinson et
23 al. 1990 study nor any other study presently available for
24 quantitation of the potential noncancer or cancer effects of

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1 MTBE. Because of the lack of confidence in the quantitative
2 estimation of drinking water risk, this Advisory does not
3 recommend either a low-dose oral cancer risk number or a low end
4 reference dose number."

5 Could you please explain the IEPA's position regarding the

6 U.S. EPA's Health Advisory recommendation for not issuing a
7 health risk level for MTBE until more reliable data is available?

8 MR. HORNSHAW: Well, I can tell you that we had similar
9 concerns about the overall quality of the database, and that
10 actually is reflected in the overall uncertainty factor of 10,000
11 that was applied to the lab animal study to come up with the 70
12 part per billion Health Advisory. We -- I don't know how Rick
13 would respond to this, but we were asked to come up with a value
14 because the compound had already been detected in a public water
15 supply. So we didn't have the luxury of saying we can't do this
16 because the data is weak. We had to come up with a value to tell
17 the owners of the public water supply whether their water was
18 okay to drink or whether they should get a new supply.

19 HEARING OFFICER STERNSTEIN: To clarify, Mr. Rao, and I am
20 sorry to do this again. But the document that you are referring
21 to is also part of Exhibit 4, and it is the Drinking Water
22 Advisory: Consumer Acceptability Advice and Health Effects
23 Analysis on MTBE, dated December of 1997 from the U.S. EPA's
24 Office of Water.

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1 MR. HORNSHAW: That's correct.

2 MR. RAO: I just have a couple of more questions on this.
3 This draft Health Advisory was issued by the IEPA in June of
4 1994. Did you consider any other more recent studies to see if
5 the proposed number would be different or lower since the last

6 seven years?

7 MR. HORNSHAW: There is a bit of a history behind this
8 Health Advisory. It was placed in the Environmental Register in
9 July of 1994 partly to solicit public comment on it, and we did
10 receive public comment from three sources. As a result of that,
11 the three public comments, we arranged a follow-up meeting with
12 all three of the commentators and discussed the issues that they
13 raised. And out of the meeting with the commentators, one of the
14 comments that was never able to be resolved, the claim was made
15 that the diarrhea, especially in lab rats, is a fairly common
16 finding in a lot of studies, and there is never 100 percent
17 certainty that the finding is a result of the chemical that is
18 being studied or is just something that is peculiar to lab rats
19 that are given corn oil as a vehicle, for instance.

20 So one of the things that we agreed to do after the meeting
21 was to go back to the original author, Robinson, or to the U.S.
22 EPA, to whom he had submitted the results of his study and try
23 and get the actual original lab sheets and data sheets and
24 everything that would have been submitted, with the summary of

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1 the study. We were never able to get that either from Robinson
2 or from the U.S. EPA that I know of. I know the commentator tried,
3 through their channels, to come up with the original lab sheets.
4 And we tried whatever methods that were available to us, and we

5 were never able to find those daily logs of what the animals were
6 doing and their body weights and their bowel habits and
7 everything else. So that never did get resolved, that issue.

8 And so, I guess, to make the story a little bit shorter,
9 this thing just kind of sat for several years, because there was
10 not really any pressure to get this thing finalized anymore. The
11 value had been used and, apparently, it was acceptable for use.
12 So we just never finalized it.

13 MR. RAO: You mean the draft advisory is still in a draft
14 form?

15 MR. HORNSHAW: Yes, it is.

16 MR. RAO: Okay. That was one of the questions that I had,
17 whether it has been finalized or not.

18 In the attachment that we referred to earlier, the
19 attachment to the IEPA's draft advisory, you mentioned a lifetime
20 inhalation cancer bioassay study. Regarding the study, the
21 advisory states that the study may be considered to develop a
22 Health Advisory for MTBE once it has finished U.S. EPA's review
23 process.

24 So could you explain, you know, what is the status of the

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1 U.S. EPA's review process of the study?

2 MR. HORNSHAW: I don't think I have ever seen a final
3 version of this in the published literature. The study may have
4 been published -- I mean finalized through the laboratory that

5 conducted it and accepted as final by the U.S. EPA. I couldn't
6 tell you if it ever appeared in the open literature that I would
7 be able to find, and --

8 MR. RAO: I am sorry for interrupting. Is this the same
9 study that was used by California or is that another --

10 MR. HORNSHAW: The Robinson study?

11 MR. RAO: No, the cancer inhalation bioassay study.

12 MR. HORNSHAW: I am not that familiar with it. In talking
13 with people out there, I think they relied on both that study as
14 well as the one that was conducted in Italy to make their
15 determination that it is a human carcinogen, or a probable human
16 carcinogen, yes.

17 HEARING OFFICER STERNSTEIN: Just for clarification there,
18 Mr. Rao, you were looking at the draft Health Advisory, page 22?

19 MR. RAO: Yes.

20 HEARING OFFICER STERNSTEIN: Okay.

21 BOARD MEMBER KEZELIS: May I ask a question while Mr. Rao
22 is --

23 MR. RAO: Yeah, sure.

24 BOARD MEMBER KEZELIS: -- reviewing material? Mr. Cobb, in

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1 the -- in your study of the community water supply collections,
2 since 1994, have you been able to identify or detect any sort of
3 a pattern in the prevalence of MTBE? Has the frequency of

4 detection continued to increase, or has it slowed down? Has
5 there been any sort of a pattern? Obviously, not from a
6 geographic perspective? Or is there?

7 MR. COBB: From the geographic perspective you can see that
8 it is not just located in the nonattainment areas. Is there any
9 pattern? I don't think there is a discernible pattern. I mean,
10 as we test, we found things and I guess we are fortunate in that
11 we are an ethanol producing state and we don't have as big a
12 problem as maybe the New England States and California. And, you
13 know, also we have pretty aggressive Leaking Underground Storage
14 Tank and Remediation Programs in Illinois. So I am not sure. I
15 don't see a pattern other than, you know, I see that it is not
16 just in nonattainment areas, as far as geographic.

17 BOARD MEMBER KEZELIS: When was the most recent detection
18 of MTBE?

19 MR. COBB: Well, since we -- since the East Alton incident,
20 I don't think that we have added anymore. That was during the
21 summer of 2000. I think it started back in July when we first
22 started -- in other words, there were 25 before that and then
23 East Alton was kind of the newest addition. There is some
24 distinction there in that it was detected through our ambient

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1 monitoring program versus the Safe Drinking Water Act compliance
2 monitoring program, which a majority of the data there is as
3 finished water samples.

4 BOARD MEMBER KEZELIS: Okay. Thank you.

5 MR. RAO: Dr. Hornshaw, earlier in response to one of my
6 questions you mentioned that another division in the IEPA wanted
7 you to come up with this clean up level or number for MTBE.
8 Could you explain the interrelationship between the Groundwater
9 Quality Standards and remediation standards, or if you are not
10 the right person --

11 MR. HORNSHAW: The groundwater standards form the basis,
12 for instance, of the migration to groundwater pathway in the TACO
13 regulations. So you have to have that as something -- as the
14 value you plug into the equation that calculates how much can be
15 left in soil to protect the groundwater quality.

16 To finish up the question of how -- of why didn't we ever
17 finalize the Health Advisory that we started in 1994, the Italian
18 study that raised the issue again of cancer as an end point was
19 published in the Scientific Journal in 1995, and to my knowledge
20 the U.S. EPA is still reviewing that study. So that also tended
21 to put the finalization of the Health Advisory on the back burner
22 for us until that question was answered.

23 BOARD MEMBER KEZELIS: Could we get a copy of the Italian
24 study? Is it included in --

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1 MR. HORNSHAW: No.

2 BOARD MEMBER KEZELIS: Could we --

3 MR. COBB: This is out of my own files. I could make a
4 copy and --

5 BOARD MEMBER KEZELIS: Yes.

6 HEARING OFFICER STERNSTEIN: Could you submit that as
7 prefiled testimony for the next hearing?

8 MR. HORNSHAW: Sure.

9 HEARING OFFICER STERNSTEIN: Okay.

10 MR. COBB: A more kind of foundational response on the
11 relationship of health advisories to the groundwater standards, I
12 am sure Board Member Dr. Flemal will recall, several of our
13 foundational standards in 620 are Health Advisory based. So we
14 have always had that relationship. In some cases we are blessed
15 with having a maximum contaminant level, and in this event we are
16 not blessed with the U.S. EPA study and the Italian study and
17 doing studies for as long as they have been and not coming out
18 with a drinking water standard.

19 In fact, not only did we use health advisories for certain
20 of the existing Part 620 standards but we also codified the
21 procedure within the Board's regulations -- or the Board codified
22 those, to develop such health advisories where we didn't have to
23 fill the gaps, where we didn't have -- and, quite frankly, the
24 other thing that came up was the -- this is all the result of the

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1 Oakdale Acres subdivision. I guess maybe the first time I came
2 across MTBE was that there was a bulk petroleum facility in the

3 1990s where we started getting detects, but we didn't think about
4 the inherent problems with the biodegradation and the treatment.
5 But when the Oakdale Acres subdivision issue came up in 1994, and
6 they were having 400 to 700 parts per billion, so that is when we
7 went to the Health Advisory procedure, and it is just fortunate
8 that they abandoned all of their wells and hooked up to a surface
9 water supply.

10 BOARD MEMBER MELAS: That 400 you said was finished water?

11 MR. COBB: Yes, and there were also private wells in
12 subdivisions there, and that particular area you are dealing with
13 fractured bedrock, so you don't get much dispersion. Well, you
14 don't get much with MTBE anyway, as I testified earlier. But you
15 get some direct flow paths right to the wells with little
16 dispersion, let's put it that way.

17 MR. RAO: I had a follow-up to Dr. Hornshaw's statement
18 earlier. Regarding the Italian study, have you attempted to use
19 the results of that study to come up with a clean up level for
20 MTBE or to see how it compares with the Robinson study?

21 MR. HORNSHAW: Not at all. We don't have the capability to
22 do that. Actually, the Health Advisory for carcinogens is the
23 lowest detection limit, so that we don't even bother with the one
24 in a million cancer risk. It is just make sure it is not there.

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1 Other than the ones that have groundwater standards or MCLs

2 already.

3 MR. RAO: So if a chemical is supposed to have a carcinogen
4 effect, then under the 620 rules we go with the practical
5 quantitation level that is the --

6 MR. HORNSHAW: Right, the lowest --

7 MR. RAO: The lowest. Okay.

8 MR. HORNSHAW: -- achievable detection limit, if there is
9 more than one EPA method that can analyze for it.

10 MR. RAO: Okay. Thank you. I have a couple of questions
11 for Mr. Cobb. On page one of your testimony you state that,
12 "there is also the potential risk to other potable wells,
13 including private, semi-private and non-community water supply
14 wells."

15 Is the IEPA aware of any MTBE contamination problems at
16 private water wells?

17 MR. COBB: Not really, but a few where we have had
18 incidents called in where there has been kind of this awareness
19 that arose back in the year 2000. But the thing you have to
20 consider is that those wells are not being tested for MTBE.
21 Private wells are tested for bacteria and nitrates, and the
22 non-community -- and that would also hold true with the
23 semi-private wells for the most part.

24 The non-community wells are primarily tested for the Safe

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1 Drinking Water Act contaminants that have maximum contaminant

2 levels, and there is no maximum contaminant level for MTBE. So I
3 don't know if the Illinois Department of Public Health -- it just
4 so happens that the volatile organic testing methodology, I think
5 it is method 512, that is used to sample and analyze for VOCs
6 also picks up the MTBE. But if they are not quantifying for it,
7 then they are not going to show it in any of the tests. In fact,
8 they are not required to do it. It just so happened that in the
9 community water supply testing fund, and that is our laboratory,
10 and we ask that those be quantified in 1994.

11 BOARD MEMBER FLEMAL: You both noted that you can detect by
12 both taste and smell at relatively low concentrations, a third to
13 a half of what you are proposing as the standard. Is that a
14 sufficiently distinctive taste and smell that someone could be on
15 to the presence of MTBE without doing the analysis? I have never
16 smelled it or tasted it.

17 MR. COBB: I haven't either.

18 BOARD MEMBER MELAS: Thank God.

19 MR. COBB: All I have is kind of the U.S. EPA analysis of
20 that. A couple of the well systems where we have the problems,
21 one in particular, you certainly smell something, but I don't
22 think any of us are expert enough to offer an opinion that that
23 might be the MTBE.

24 BOARD MEMBER FLEMAL: So there is not a distinctive taste

1 or odor?

2 MR. HORNSHAW: It has been described as like turpentine,
3 but you have to remember also that the 20 to 40 part per billion
4 range is the low end of the detection limit. Some people within
5 the population will know something is there at that
6 concentration, and the higher you go in concentration the more
7 people will recognize it and say, oh, boy, that is not very good.

8 BOARD MEMBER FLEMAL: I am just wondering if there is a
9 safety factor there? Nobody is going to have a couple of
10 milligrams per liter of this stuff in their water without being
11 well aware that they have got a problem.

12 MR. COBB: Just to kind of draw an analogy, we have several
13 other contaminants that are similar to this in the groundwater
14 quality regulations right now, for example, xylene, toluene. All
15 of those have taste and odor thresholds below the standard,
16 which is based on the long-term chronic health effects. So we
17 were really following kind of the similar pattern here in
18 proposing that taste and odor be a part of the preventive notice
19 and response levels. The same as xylene. The same as toluene.
20 The same as ethylbenzene. I think we testified a little bit even
21 on this at one of the -- the Site Remediation Program here and I
22 think I gave some testimony on that.

23 BOARD MEMBER GIRARD: I have a question along similar
24 lines. In the Oakdale subdivision example you said that you

1 found MTBE levels elevated in some of the private wells
2 surrounding the subdivision. Now, did the people who got water
3 from those wells come to you and say, you know, I smell or taste
4 something in my water? Or did the Agency go out once they found
5 the problem in the one well system and go out to surrounding
6 wells to see if there was a problem?

7 MR. COBB: I can't recall precisely how -- what the origin
8 or the genesis was.

9 Gary, do you?

10 MR. KING: That was done by the emergency response group,
11 so I am not familiar with how that got started.

12 MR. COBB: I don't know. I think that the community
13 supply, that for some reason the spike was high enough, even
14 though they didn't quantify it, that it certainly raised the lab
15 analyst's suspicion enough that he wanted to go out and find out
16 what that was. So even as I just testified earlier, they weren't
17 quantifying prior, but I think that spike was of sufficient
18 magnitude that they went ahead and looked at it. And as a
19 result, then, I think they were put on some kind of a very
20 frequent monitoring.

21 Now, as to how expanded to the private wells, I don't know
22 if that is something that we initiated in cooperation with the
23 community or with the county health department. Many times that
24 is what is done. Or in other cases, the Agency staff actually go

1 out working with the community relations staff to take samples.
2 But I don't know precisely how that occurred. I just know that
3 it did occur.

4 BOARD MEMBER GIRARD: Thank you.

5 MR. RAO: Mr. Cobb, on page two of your testimony, you
6 noted that four out of the 26 community water supplies
7 discontinued the use of their wells after they detected MTBE.
8 Did the four community water supplies discontinue the use of the
9 contaminated wells on their own or was it because of any
10 applicable regulatory requirements?

11 MR. COBB: Interesting question. Oakdale Acres
12 subdivision, the potentially responsible party was -- there was
13 quite an initiative on their own and a citizens group there. I
14 think, in fact, the potentially responsible party was cooperative
15 in this case. There was a citizens group.

16 And I think, Counselor, you may have attended that hearing.
17 (Mr. Cobb referring to Mr. Ewart.)

18 I think it was driven by their initiative. East Alton, as
19 I said, was an issue where we found it by chance with the ambient
20 monitoring program, because East Alton was not utilizing the
21 community water supply testing program and, therefore, they were
22 using private labs, and MTBE was not being quantified.

23 Between Water and Bureau of Land and the field operation
24 staff, we all worked very hard and cooperatively on, number one,

1 you know, let's look at the potential sources. Number two, let's
2 do some further field evaluation with hydro punches, etcetera.
3 As Gary testified -- as Mr. King testified, let's do some
4 enforcement here. The water supplies themselves I thought were
5 pretty creative in evaluating options and bringing in a good
6 consultant, one of the better water supply consultants around to
7 evaluate options. So I think they were very proactive. We
8 didn't have to -- excuse me just a second.

9 (Mr. Cobb conferred with Mr. Ewart.)

10 MR. COBB: Never mind. So East Alton did it on -- Island
11 Lake, they were also doing -- they must have been doing testing
12 on their own or maybe had found taste and odor issues on their
13 own. They had a well that had -- where they were having taste
14 and odor problems, and then they tested it subsequently and found
15 that it was -- that MTBE was a problem. They abandoned the well
16 and then they drilled some new wells in place of that.

17 Roanoke, we are still kind of dealing with. Roanoke is a
18 situation where some of the wells that are being utilized there
19 are using an unconfined aquifer system. And those wells have
20 varying -- the concentrations in the wells vary between up to 50
21 parts per billion. However, they have got other wells in their
22 system that appear to be screened in a confining unit that is
23 below this -- not screened in the confining unit, but screened
24 below a confining unit in another sand and gravel aquifer. So

1 they have some options there of kind of switching and mixing
2 their wells to reduce down to acceptable levels, and they are
3 doing that voluntarily. We are not pushing them through any
4 means and mechanisms that we have available to us under the Act
5 or the Board's regulations.

6 MR. RAO: Would there be any regulatory impact on these,
7 you know, 26 facilities that have detected MTBE if the Board
8 adopts the proposed standard, like if they exceed, you know, the
9 standard?

10 MR. COBB: Under Section 39 of the Act where those permits
11 are issued by a public water supply, under the Act and under the
12 Board's regulations, it is my opinion that if they exceeded the
13 standard that, in fact, they may be violating Section 39 and that
14 permit is being violated. That is my opinion on that. So if
15 they did go above the 70, and that well is permitted under
16 Section 39, and under Section 39 you have to be in compliance
17 with the Act and all of the reg -- and the regulations adopted by
18 the Board under the Act.

19 MR. RAO: So do you think there will be any economic impact
20 on those facilities if the standard is adopted?

21 MR. COBB: I think that is something you have to measure
22 with balance, with other impacts like at East Alton. In fact,
23 you know, the adoption of the standard helps the enforcement and
24 clean up of the potential sources and, you know, can get at the

1 problem maybe in a more proactive and preventive nature. So I
2 think you really have to look at the whole picture in terms of
3 the negative benefit. It may be a positive benefit, in my mind.

4 HEARING OFFICER STERNSTEIN: Mr. King, do you want to add
5 to that answer?

6 MR. KING: Yes, please. Just to clarify, I don't -- as I
7 recall, none of those other 22 wells are above -- have even
8 approached the response number of 20 parts per billion. So they
9 are well below the standard, as I recall.

10 MR. COBB: That's exactly correct. The others are
11 detectable levels. So in that case, right back to the story I
12 was telling about the potential sources and the preventive end of
13 things, there you are in to more of a, under Section 12 -- and
14 this is just an opinion -- cause, threaten, and allow
15 potentially, but the cause is the real cause. And so the well is
16 not out of compliance under Section 39 until it violates the
17 standard.

18 MR. RAO: So could you clarify out of the 26 community
19 water supply wells impacted by MTBE, how many of those water
20 supplies --

21 MR. COBB: Remember, those are not wells. Those are
22 systems --

23 MR. RAO: Water supply systems, yes.

24 MR. COBB: -- with multiple wells at the systems.

1 MR. RAO: Yes. Okay. Thanks for that clarification. So
2 how many of those systems have detected MTBE above the proposed
3 Groundwater Quality Standards in their wells?

4 MR. COBB: Well, the four.

5 MR. RAO: Just the four that have stopped using their
6 wells?

7 MR. COBB: Yes.

8 MR. RAO: Okay.

9 MR. COBB: In fact, if you go back to -- is it Exhibit 2 of
10 my testimony? I don't know. We can use the first map. Maybe it
11 would be of benefit just to walk through that. So here we have
12 the T&C Mobile Estates community water supply, and that's a well.
13 And the minimum and maximum -- potential maximum setback. And
14 down in the lower right-hand corner is the table of MTBE
15 concentrations that were detected over time. Now, I don't have
16 up to the current data in this particular exhibit. But this
17 gives you an idea of the levels. You could go to Belvidere and
18 see a similar thing.

19 So we are below the 70 and, in fact, below the 20. Like I
20 said, I think we are blessed because we are an ethanol producing
21 state, and I think many of the remediations that are out there
22 are aggressively done. And so, I mean, just kind of page through
23 that, but that is what those tables are on each of those maps.

24 MR. RAO: And the levels are all in milligrams per liter?

1 MR. COBB: Parts per billion.

2 MR. RAO: Parts per billion.

3 MR. COBB: Yes.

4 MR. RAO: Okay.

5 MR. COBB: We would have a problem --

6 MR. RAO: I know.

7 MR. COBB: -- if those were milligrams per liter. Like
8 Island Lake, you know, if you go to that one, in Lake County, you
9 will see higher concentrations there. That is why that well --
10 they shut that well down on their own initiative and they drilled
11 a new well. Unfortunately, they are starting to get some detects
12 in their new well. So the data is all right there on that map,
13 on those maps.

14 BOARD MEMBER KEZELIS: Following along with your
15 discussion, for example, of Island Lake as part of your Exhibit
16 2, if you could walk me through the facility legends that you
17 typically have on the right-hand side. In this one, for example,
18 you have J&L Oil Company. I am assuming that is either -- that
19 was an above or below ground fuel storage facility that was
20 identified by the Agency?

21 MR. COBB: Is this the Island Lake?

22 BOARD MEMBER KEZELIS: Yes, I am using Island Lake as an
23 example. Maybe there is a better one.

24 MR. COBB: Yes. Let me explain that. Between -- what we

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1 did here is we had the finished water data, and that's why we say
2 TAP. That means treatment application point, which is the same
3 thing as an entry point. That is not a tap or a faucet. I
4 apologize for some of these abbreviations. What we did was the
5 Bureau of Land has geo-coded, and that is the software out there
6 that will take an address with a zip code and you can convert
7 that into real-world coordinates, like latitude and longitude.

8 BOARD MEMBER KEZELIS: GPS?

9 MR. COBB: Latitude and longitude or UTM or feet. We
10 worked together and we overlaid then that geo-coded information
11 on leaking underground storage tanks and simply overlaid it using
12 the geographic information system.

13 BOARD MEMBER KEZELIS: Okay.

14 MR. COBB: But we also then linked the finished water data
15 to this map layout.

16 BOARD MEMBER KEZELIS: Okay. Let me follow-up with that,
17 then, Mr. Cobb. Because it is an overlay, it is not necessarily
18 the case that these overlays -- the Agency has a reasonable
19 belief that these particular leaking underground storage tanks
20 identified in these legends as an overlay from the Bureau of Land
21 were the source?

22 MR. COBB: Well, I am not going to offer an opinion that
23 those are a source.

24 BOARD MEMBER KEZELIS: Okay.

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1 MR. COBB: I would utilize the word potential source.

2 BOARD MEMBER KEZELIS: Okay.

3 MR. COBB: And I would emphasize that strongly, because we
4 have not done -- you know, unlike what we -- in some cases, we
5 have not gone out and drilled monitoring wells and done modeling
6 and investigations to say these are, indeed, the source. All we
7 were doing is doing some analysis and coordination between the
8 programs in effect, you know, leading to the regulatory
9 proposals.

10 BOARD MEMBER KEZELIS: And did the leaking underground
11 storage tanks, were they tested and tested positive for the
12 presence of MTBE, or was it simply that they were LUST?

13 MR. COBB: They were on the -- they were just on the active
14 LUST, leaking underground -- you have stated it correctly.

15 BOARD MEMBER KEZELIS: Okay.

16 HEARING OFFICER STERNSTEIN: Does anybody in the audience
17 have any other questions for the Agency panel?

18 I have a couple of quick questions here with respect to
19 620, the proposed Agency language at 620. It is toward the end
20 there. Hold on. It is 620.505. There is some added language
21 there to, I believe, clarify drinking water supply wells that are
22 used for compliance determinations.

23 First of all, what was the genesis behind the addition of
24 this language?

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1 MR. COBB: Well, over the implementation of the program, we
2 certainly gained some experiences and had gone through some
3 examples. The particular case in which we were dealing with, we
4 are dealing with a setting, and this is a geologic setting such
5 that we are dealing with a sand and gravel aquifer that was at
6 the surface, and sand at the surface down to whatever the depth
7 of the aquifer was. And in this case there were potable wells
8 there that, in fact, were sand point wells. So even though, from
9 a hydrogeologic perspective, those sand point wells could
10 represent a fair -- well, number one, they were existing potable
11 wells. Number two, they were -- they could certainly represent
12 the conditions of that sand and gravel system, since they were
13 not much different than a monitoring well, in fact. They were a
14 well driven down into the sand and gravel unconfined aquifer
15 system. In fact, the way we had this structured before, they
16 would be disqualified as compliance points.

17 So this amendment is to try to circumvent some of that. In
18 fact, it was an enforcement case that was referred to as
19 Stonehedge. I think if you look in my Curriculum Vitae, there is
20 a reference back to a particular case, Stonehedge, Inc. And that
21 was one where we couldn't tie in groundwater standards violations
22 because the wells, which I thought were perfect for monitoring
23 wells, from a hydrogeologic standpoint, maybe not the best
24 drinking water wells, but, hey, they were drinking water wells,

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1 were disqualified. So that part of the case got thrown out. We
2 did proceed and win the setback violation. We were dealing with
3 a new storage of deicing agents, and they were placed -- it was
4 placed within the setback of these potable wells. And what
5 happened was this was sitting outside, the rain leached through
6 it, and we had concentrations of chlorides approaching seawater
7 in the down gradient sand point wells. So this is structured to
8 deal with that issue.

9 HEARING OFFICER STERNSTEIN: Okay. So to clarify, the
10 genesis of the additions to Part 620.505 was the enforcement case
11 People v. Stonehedge?

12 MR. COBB: Yes.

13 HEARING OFFICER STERNSTEIN: Okay.

14 MR. COBB: And you can see there is a couple -- there was
15 an appellate court case.

16 HEARING OFFICER STERNSTEIN: And that is all --

17 MR. COBB: And there was a circuit court case that dealt
18 with the setback issue only.

19 HEARING OFFICER STERNSTEIN: And that case is referenced in
20 your Curriculum Vitae which is included as an exhibit to your
21 testimony --

22 MR. COBB: Yes.

23 HEARING OFFICER STERNSTEIN: -- which you have submitted as

24 an exhibit today?

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1 MR. COBB: Yes.

2 HEARING OFFICER STERNSTEIN: And then one other question
3 also on 620.505 at -- this is very minor. It is
4 620.505(a)(5)(c). There might be a comma missing there, but just
5 to clarify, the Illinois Water Well Construction Code was enacted
6 on August 20th, 1965?

7 MR. COBB: We will take a look at that, Mr. Hearing
8 Officer. It looks like a drafting.

9 HEARING OFFICER STERNSTEIN: Okay. I appreciate that. Mr.
10 Rao has one more question.

11 MR. RAO: This is just a clarification question regarding,
12 again, drafting. It is in Section 620.110, definitions. It is
13 the new language that has been added to the definition of
14 Licensed Professional Geologist. In this definition you have --
15 let me see here. Let me read this. It says a Licensed
16 Professional Geologist means an individual who is licensed under
17 the laws of the State of Illinois to engage in the practice of
18 the profession of geology in Illinois under the Illinois
19 Professional Geologist Act.

20 So I just wanted to ask you whether we needed the citation
21 to the Illinois Professional Geologist Act since you already say
22 under the laws of the State of Illinois.

23 MR. COBB: Well, let us take a look at that.

24 MR. RAO: Yes.

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1 MR. COBB: It has been awhile since I looked at it, but I
2 think we were trying to strive for consistency.

3 MR. RAO: That's what it seemed like.

4 MR. COBB: There was some regulations that the Bureau of
5 Land were also working on where this came into play, I thought.
6 But, like I said, it has been awhile since I -- let us go back
7 and look at that.

8 MR. KING: There is a little bit of difference between the
9 two, so --

10 MR. COBB: I think we want them consistent, would be my
11 intent.

12 MR. RAO: Yes. Thank you.

13 HEARING OFFICER STERNSTEIN: Are there any other questions
14 of the Agency witnesses from the audience?

15 Does anyone have any further comments or testimony
16 regarding this matter, R01-14?

17 Okay. Seeing none, for clarification, the second hearing
18 in this matter will be held on Thursday, April 5th, 2001, at 1:30
19 p.m., in Chicago, at the James R. Thompson Center, 100 West
20 Randolph Street, Room 8-033. The prefiled testimony for that
21 hearing must be filed with the Board by Thursday, March 29th,
22 2001, at 4:30 p.m.

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1 STATE OF ILLINOIS)
) SS
2 COUNTY OF MONTGOMERY)

3 C E R T I F I C A T E

4

5 I, DARLENE M. NIEMEYER, a Notary Public in and for the
6 County of Montgomery, State of Illinois, DO HEREBY CERTIFY that
7 the foregoing 66 pages comprise a true, complete and correct
8 transcript of the proceedings held on the 1st of March A.D.,
9 2001, at 600 South Second Street, Suite 403, Springfield,
10 Illinois, In the Matter of: Proposed MTBE Groundwater Quality
11 Standards Amendments: 35 Ill. Adm. Code 620, in proceedings held
12 before Joel Sternstein, Hearing Officer, and recorded in machine
13 shorthand by me.

14 IN WITNESS WHEREOF I have hereunto set my hand and affixed
15 my Notarial Seal this 6th day of March A.D., 2001.

16

17

18 Notary Public and
19 Certified Shorthand Reporter and
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