

ILLINOIS POLLUTION CONTROL BOARD

March 7, 1996

IN THE MATTER OF:)
)
CABOT CORPORATION PETITION) AS 96-3
FOR AN ADJUSTED STANDARD FROM) (Adjusted Standard-UIC)
35 ILL. ADM. CODE PART 738,)
SUBPART B)

OPINION AND ORDER OF THE BOARD (by R.C. Flegal):

This matter comes before the Board upon a Petition for Modification and Reissuance of Adjusted Standard filed by Cabot Corporation (Cabot). The purpose is to conform the exemption Cabot currently holds under Illinois underground injection control (UIC) law with exemptions granted to Cabot under federal UIC law.

The requested modifications consist of clarification that leachate and purge water may be disposed in Cabot's UIC wells, in conformity with a similar finding of the United States Environmental Protection Agency (USEPA) issued in November 1994; and that injection of restricted waste may take place in Cabot's new UIC Well #3, in conformity with a finding of USEPA issued in January 1996.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq.). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois" (Act at Section 5(b)) and to "grant . . . an adjusted standard for persons who can justify such an adjustment" (Act at Section 28.1(a)). More generally, the Board's responsibility in this matter is based on the system of checks and balances integral to Illinois environmental governance: the Board is charged with the rulemaking and principal adjudicatory functions, and the Illinois Environmental Protection Agency (Agency) is responsible for carrying out the principal administrative duties.

The Act also provides that "the Agency shall participate in [adjusted standard] proceedings". (415 ILCS 28.1(d)(3).) On February 15, 1996 the Agency filed a recommendation that the instant requested adjusted standard be granted. The recommendation was accompanied by a motion to file instanter. The motion is hereby granted.

Based upon the record before it and upon review of the factors involved in the consideration of adjusted standards, the Board finds that Cabot has demonstrated that grant of an adjusted standard in the instant matter is warranted. The adjusted standard accordingly will be granted subject to conditions set out by USEPA on a similar federal exemption.

PROCEDURAL HISTORY

Cabot has previously been granted an exemption from the general prohibition against underground injection of restricted waste. That exemption was initially granted by USEPA in 1990 upon petition from Cabot with support of the Agency¹, and subsequently issued by the Board in docket AS 92-8². The exemption was then, as now, based on the "no-migration" provisions found under both federal and Illinois law.

In late 1994 Cabot sought clarification of its federal UIC exemption from USEPA such as to make explicit that certain leachate and purge water could be disposed in the UIC wells. On November 4, 1994 USEPA entered this clarification into Cabot's federal exemption. (Petition Exh. D.) Cabot did not at that time request that the Board also introduce the clarification into State law.

In August 1995 Cabot made a second request regarding its federal exemption, specifically requesting that the exemption allow disposal in a new UIC well, known as Well #3. This request was proposed to be granted by USEPA by publication on November 28, 1995 at 60 Fed. Reg. 58623 *et seq.* In addition, a public notice, pursuant to 40 CFR 124.10, was published in the local papers on December 5, 1995, and a public hearing was tentatively set for January 1996; USEPA subsequently canceled the hearing "due to lack of public interest in the decision" (Supp. Exh. at 3). The USEPA has now reissued the exemption³, including exemption for Well #3, with an effective date of January 22, 1996.

Simultaneously with filing of its federal request regarding Well #3, Cabot filed the instant matter with the Board. The initial filing occurred on August 17, 1995; the petition was filed under the old docket number, AS 92-8. By order of September 7, 1995 the Board found that Cabot's petition was sufficiently different from the adjusted standard granted in AS 92-8 to require opening a new docket. The Board also found the petition insufficient and required that Cabot submit additional material to meet the requirements of Section 106.705 of the Board's procedural rules. (35 Ill. Adm. Code 106.705.)

Cabot filed an amended petition curing the insufficiency on October 19, 1995. Among the additions made to the petition was requested language for the adjusted standard.

¹ See 55 Fed. Reg. 49340 (November 27, 1990) and 56 Fed. Reg. 5826 (February 13, 1991).

² In the Matter of: Petition of Cabot Corporation for an Adjusted Standard from 35 Ill. Adm. Code 738.Subpart B, AS 92-8, February 17, 1994.

³ USEPA's Notice of Reissuance is in the record of this matter as an attachment to Cabot's filing of January 23, 1996, and is identified as Supplemental Exhibit cited as "Supp. Exh.".

Cabot has waived hearing in this matter. No other person has requested a hearing, and accordingly none has been held.

Cabot has requested expedited consideration by the Board. By order of January 18, 1996 the Board granted this request consistent with the Board resources and the need to complete the record in this matter.

NATURE OF THE FACILITY AND DISCHARGE

The facility at issue is located at Tuscola, Illinois. It occupies approximately 100 acres and is located three miles west of Tuscola on Route 36. Cabot employs 184 people at the facility which has been in operation since 1958. The facility is an inorganic chemical manufacturing plant which manufactures fumed silicon dioxide (or fumed silica, SiO₂) marketed under the registered trademark of Cab-O-Sil®. Silicon dioxide is used as an additive in many products.

The production process involves the hydrolysis/oxidation of a chlorosilane feedstock to produce SiO₂ and hydrochloric acid (HCl). (Pet. at 2.)⁴ The chlorosilane feedstocks include silicon tetrachloride (SiCl₄), methyl trichlorosilane (CH₃SiCl₂), and trichlorosilane (HSiCl₂). (*Id.*) The central reaction in the manufacturing process is combination of silicon tetrachloride with oxygen and hydrogen to produce both fumed silica and hydrogen chloride vapor. (USEPA Notice of Intent to Reissue Exemption, 60 FR 58623, 58624.) Separation results in fumed silica, product hydrochloric acid, and wastewaters contaminated with hydrochloric acid; the latter requires disposal. Cabot usually injects this waste, along with rainwater runoff and seepage into its UIC wells. (60 FR 58624.)

Other hazardous waste streams are also generated at the facility, of which many are injected into its UIC wells. (Pet. at 2.) Those waste streams injected into the UICs include acidic wastewater from air pollution control scrubbers, stack drains, fan drains, other equipment drains and washdown (D002); surface water drainage, seepage, leachate, monitoring well purge water and groundwater (F039); spent acetone from the QC laboratory (F003); and unsalable by-product HCl (D002). (*Id.*)

The facility has three UIC wells which have been issued UIC permits from the Agency. Wells #1 and #2 have been used pursuant to the existing federal/state exemption to inject hazardous waste. UIC Well #3 has not been used to inject hazardous waste. However, Cabot intends to replace Well #1 with Well #3 once Well #3 is authorized; at that time Cabot will plug and abandon Well #1. (*Id.*)

⁴ Cabot's August 17 petition will be cited as "Pet. at ___"; the Agency's recommendation will be cited as "Agency at ___".

UIC ADJUSTED STANDARD PROCEDURE

The Illinois Environmental Protection Act at Section 28.1 (415 ILCS 5/28.1 (1994)) provides that a petitioner may request, and the Board may impose, an environmental standard that is different from the standard that would otherwise apply to the petitioner as the consequence of the operation of a rule of general applicability. Such a standard is called an adjusted standard. The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and within the Board's procedural rules at 35 Ill. Adm. Code Part 106.

Cabot seeks an adjusted standard from the requirements set forth at 35 Ill. Adm. Code Part 738, Subpart B which prohibit the underground injection of certain restricted hazardous wastes. The procedures via which an adjusted standard from the UIC prohibitions may be sought, and the level of justification required for a petitioner to qualify for a UIC adjusted standard, are set out at 35 Ill. Adm. Code 738.Subpart C. 738.Subpart C has the following organization:

**PART 738
HAZARDOUS WASTE INJECTION RESTRICTIONS
SUBPART C: PETITION STANDARDS AND PROCEDURES**

Section	
738.120	Petitions to Allow Injection of Prohibited Waste
738.121	Required Information to Support Petitions
738.122	Submission, Review and Approval or Denial of Petitions
738.123	Review of Adjusted Standards
738.124	Termination of Approved Petition

Each of the Part 738 sections is identical-in-substance with the federal UIC exemption provisions, with the correspondence as follows:

<u>State Regulation</u>	<u>Federal Regulation</u>
Section 738.120	40 CFR 148.20 (1988)
Section 738.121	40 CFR 148.21 (1988)
Section 738.122	40 CFR 148.22 (1988)
Section 738.123	40 CFR 148.23 (1988)
Section 738.124	40 CFR 148.24 (1988)

Section 738.120(a) specifies:

Any person seeking an exemption from a prohibition under Subpart B for the injection of a restricted hazardous waste into an injection well or wells shall submit

a petition for an adjusted standard to the Board, pursuant to 35 Ill. Adm. Code 106.Subpart G, demonstrating that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous.

The demonstration that must be made to gain the "no-migration exemption" here requested is found at Section 738.120(a)(1)(A). A showing is required that:

Fluid movement conditions are such that the injected fluids will not migrate within 10,000 years:

- i) Vertically upward out of the injection zone; or
- ii) Laterally within the injection zone to a point of discharge or interface with an Underground Source of Drinking Water (USDW) as defined in 35 Ill. Adm. Code 730.

USEPA'S MODIFICATIONS OF EXEMPTION

Cabot's instant request is for two modifications of the existing State exemption. These are (1) that there be explicit identification that multi-source leachate from Cabot's leachate collection system or purged from on-site monitoring wells (purge water) is among the wastes for which underground injection may occur, and (2) that Well #3 be explicitly identified as a well within which underground injection may occur. Both modifications have already been granted by USEPA with respect to federal law.

The multi-source leachates at issue are classified as RCRA F039 wastes. The original USEPA exemption did specifically identify F039 waste as one of the wastes for which exemption was granted; so did the Board's February 1994 grant of adjusted standard. However, the content of Cabot's specific multi-source leachates did not correspond fully with the chemical constituents listed in the original federal exemption.

To rectify this situation, Cabot in August 1994 requested that USEPA modify the exemption. Cabot supplied USEPA with the full additional list of constituents. (Petition Exh. C.) On November 4, 1994 USEPA issued Cabot a modification of the exemption that added the new constituents in question to the list of exempted wastes for Wells #1 and #2. (Petition Exh. D.) USEPA found that Cabot's original no-migration demonstration remained valid even considering the disposal of the leachate and purge water. (*Id.*; Pet. at 4.)

Cabot's argument to USEPA regarding the use of Well #3 was made on the same basis as the original grant of exemption for Wells #1 and #2. That is, Cabot argued, and USEPA agreed, that use of Well #3 presented a no-migration hazard. In awarding the exemption for Well # 3, USEPA noted:

As required by 40 CFR part 148, Cabot has demonstrated, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This final decision allows the initiation of underground injection by Cabot of specific restricted hazardous wastes, including hydrochloric acid and wastewaters contaminated with hydrochloric acid which are hazardous because they are corrosive (Waste Code D002), a multi-source leachate (Waste Code F039) contaminated with small amounts of 1,1-dichloroethylene, 1,2-dichloroethylene, methylene chloride, phenol, tetrachloroethylene, and trichloroethylene from a closed waste storage impoundment, and low concentrations of residual, spent acetone (Waste Code F003) rinsed from laboratory glassware cleaned with solvent, into a Class I hazardous waste injection well, specifically identified as Well No. 3, at the Tuscola facility. This reissuance also incorporates conclusions based on geological data gathered during construction of that well and contained in the petition for reissuance dated August 16, 1995, into the Administrative Record of the decision to grant Cabot Corporation an exemption from the Land Disposal Restrictions. This decision constitutes a final USEPA action for which there is no administrative appeal. (Supp. Exh. at 3.)

DISCUSSION AND CONCLUSION

In its granting the original UIC exemption to Cabot in AS 92-8, the Board placed weight both on the quality of USEPA's technical review and on the need to keep Illinois' identical-in-substance environmental programs in conformity with the corresponding federal programs. The Board today again gives weight to both of these considerations.

As regards the technical merits of the Cabot's request, the Board observes that awarding of any exemption for underground injection of wastes requires a substantial demonstration on the part of an applicant. These are detailed in the Board's order in AS 92-8, and will not be repeated in full here.

As regards the identical-in-substance nature of today's adjusted standard request, the Board observes, as it did in AS 92-8, that because the Illinois UIC program is identical-in-substance with the federal UIC program, it is intended to be no more (or less) stringent than the federal program. (AS 92-8 at p. 7.) The Board today finds, also as it did in AS 92-8 (*Id.*), that State denial of the exemption granted Cabot under federal law would cause a more stringent State law to apply to Cabot.

In sum, the Board finds that Cabot has demonstrated that grant of an adjusted standard is warranted. The Board has also reviewed the justification provided by Cabot to USEPA, and finds that Cabot has made all the demonstrations required pursuant to the identical-in-substance regulations at 35 Ill. Adm. Code 738.Subpart C.

The Board further finds that the conditions imposed by USEPA on the similar federal exemption are necessary limitations on the grant of this adjusted standard. Accordingly, the adjusted standard will be granted subject to those conditions. These include addition to the Board's February 1994 grant of adjusted standard language that reflects the USEPA modifications of November 4, 1994 regarding limits on F039 waste and of January 22, 1996 regarding use of Well #3.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

Cabot Corporation is hereby granted an adjusted standard from the requirements of 35 Ill. Adm. Code 738, Subpart B, for the underground injection control Wells #1, #2, and #3 at its Tuscola, Illinois, facility. This adjusted standard constitutes an exemption from the prohibitions of Subpart B such as to allow the underground injection disposal of wastes classified as acidic water (D002), by-product hydrochloric (D002), spent acetone (F003) and multi-source leachate (F039). This adjusted standard is subject to the following conditions:

- a) The monthly average injection rate must not exceed 400 gallons per minute;
- b) The concentrations of the constituents included in the injected leachate will not exceed the following values:

Acetone	47,000.00 mg/L
Tetrachloroethylene	1.66 mg/L
Methylene chloride	59.0 mg/L
Trichloroethylene	1.66 mg/L
1,2 Dichloroethylene	.33 mg/L
1,1 Dichloroethylene	2.33 mg/L
Phenol	12,000.00 mg/L
1,1 Dichloroethane	.33 mg/L
1,2 Dichloroethane	1.66 mg/L
Trans 1,2 Dichloroethane	33.33 mg/L
Cis 1,2 Dichloroethane	23.33 mg/L
1,1,1 Trichloroethane	66.66 mg/L
1,1,2 Trichloroethane	1.66 mg/L
Vinyl Chloride	.66 mg/L
Chloroethane	3.33 mg/L
Chloroform	.33 mg/L
Ethylbenzene	233.33 mg/L
Xylene (Total)	3333.33 mg/L

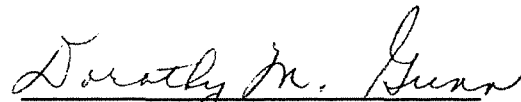
Toluene	333.33 mg/L
1,1,1,2 Tetrachloroethane	.33 mg/L
1,1,2,2 Tetrachloroethane	.33 mg/L
Cyanide (Total)	66.66 mg/L
Barium	666.66 mg/L
Cadmium	1.66 mg/L
Chromium	33.33 mg/L

- c) Direct injection shall occur only into the Franconia, Potosi, and Eminence Dolomites and the Gunter Sandstone;
- d) The injection zone consists of the Franconia, Potosi, Eminence and Oneota Dolomites and the Gunter Sandstone, found between 4,421 and 5,400 feet in Cabot's Well #1, between 4,442 and 5,400 feet in Cabot's Well #2, and between 4,452 and 5,400 feet in Cabot's Well #3; and
- e) Cabot must be in full compliance with all conditions of its permits and other conditions relating to the exemption found in 35 Ill. Adm. Code 738.123 and 738.124.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act, 415 ILCS 5/41 (1994), provides for appeal of final orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 7th day of March 1996, by a vote of 7-0.


 Dorothy M. Gunn, Clerk
 Illinois Pollution Control Board