

ILLINOIS POLLUTION CONTROL BOARD  
July 26, 1983

DEPARTMENT OF THE ARMY, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 83-25  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

MS. BERNADINE McGUIRE, ATTORNEY AT LAW, APPEARED FOR PETITIONER,  
DEPARTMENT OF THE ARMY.

MR. GARY KING, ATTORNEY AT LAW, APPEARED FOR RESPONDENT, THE  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by J.D. Dumelle):

The Department of the Army, Rock Island District, Corps of Engineers ("Army Corps") has proposed to dredge up to 25 sites on the Illinois River waterway between river mile 80.2 and 230.2. The three year project is to remove recently deposited bottom material as necessary to restore proper channel dimensions for safe navigation.

PROCEDURAL HISTORY

On November 18, 1982, the Illinois Environmental Protection Agency ("Agency") forwarded the Army Corps' request for a provisional variance from certain water quality standards for maintenance dredging of the Illinois River between miles 147 and 148 near the mouth of the Mackinaw River.

On November 19, 1982, the Board granted the provisional variance with the nine conditions requested by the Agency. (PCB 82-136, Board Member Goodman concurring, Board Chairman Dumelle dissenting.)

On February 28, 1983, the Army Corps filed a petition for a five-year variance to allow for bankline or open water disposal of sediment dredged from "the entire Illinois Waterway between miles 80.2 and 230.2" (Pet. p.2). In a March 24, 1983, Order, the Board listed several deficiencies of the petition for variance, and allowed 45 days for filing an amended petition.

On May 6, 1983, the Army Corps filed an amended petition for variance, on June 8, 1983, the Agency recommendation was filed, and on July 1, 1983, the Army Corps filed a response to Agency recommendations. A hearing in this matter was held on July 14, 1983, in the Peoria Public Library, Conference Room, Peoria, Illinois. The Army Corps filed a Memorandum of Law at that hearing and previously filed documents were introduced.

#### The Present Variance Request

The Army Corps' amended petition for variance seeks relief from Water Quality Standards for three years rather than the five years requested in the February 28, 1983, petition for variance, and seeks more comprehensive relief: Sections 302.203 (Unnatural Turbidity), 302.206 (Dissolved Oxygen), 302.208 (Total Lead, Total Cadmium, Total hexavalent Chromium) and 302.212 (Ammonia Nitrogen and Un-ionized Ammonia). The Agency recommendation approves of the variance request subject to various conditions that primarily concern monitoring sediment and water quality before and during the dredging and bankline disposal operation. The Army Corps' response to Agency recommendations "basically concurs with the Agency's recommendations to the Board" (§ 1), but "perceives certain philosophical differences", that "may be only a matter of semantics" (§ 2).

#### The Nature of the Activity

When sedimentary material accumulates on the bottom of a navigable waterway, such as the Illinois River, it may impede navigation. Dredging is the underwater excavation of such material (Am. Pet., P. 3). A commonly used excavating machine is the cutterhead hydraulic pipeline dredge which consists of a rotating blade device that is submerged to dislodge bottom material; behind the cutterhead, suction draws the dislodged material and water into a pipe (Am. Pet. p.3). This water/material slurry or dredge material is transported through the pipes and pumps to its intended placement or disposal site which may be a maximum of one and one-half miles from the cutterhead (Am. Pet., pp.3-4).

Alternatively, the dredging operation may be done by clamshell, dragline, backhoe, or bucket ladder. These devices mechanically lift or scoop the sedimentary material from the bottom of the waterway for deposit on a barge or placement on the disposal site (Am. Pet., p.3). Dredging, whether by cutterhead hydraulic or mechanical means, is merely the removal of material from the river bottom. The disposal of dredged material is a separate act which can occur miles from the dredging site (Pet. Memo. of Law, ¶ II).

Although none of the parties chose to explain the terminology or procedures to the Board, it appears there are three common methods of disposal: open water, bankline, and confined. Open water disposal may mean that the dredged material is simply dumped back in the same waterway from which it was removed. The original petition for variance requested "bankline or open water disposal of dredged material" (Pet., p.2), but the amended petition neither includes nor excludes this option. It would appear that in this disposal option 100% of the dredged material is discharged to the navigable waters.

Bankline disposal implies that the dredged material is placed on the banks of the river where some portion of the water/material slurry may return to the river with or without restriction. That portion of the dredged material which returned to the waterway would be a discharge. That portion which remained on land would not.

Confined disposal involves placing the dredged material in a site "sized to allow suitable retention time for water quality improvement before the return of the dredged water to the receiving stream" (Am. Pet., p.6). Only that portion of the dredged water which returned to the receiving stream would be a discharge.

The discharge of dredged material may have an impact on the receiving stream. That impact will depend on many factors, including: the characteristics of the dredged material (sediment and ambient water), hydrologic and meteorologic conditions before and during the activity, and the disposal option (Am. Pet., p.6).

#### Legal Requirements

The Board has not adopted "effluent limitations" that apply to the discharge of dredged material. However, such discharges are subject to Section 304.105, Violation of Water Quality Standards. Anyone wishing to discharge dredged materials to the waters of the United States must apply to the Secretary of the Army for a permit. Section 404 of the Clean Water Act, 33 U.S.C. §1344. Also, Section 401 of that act, 33 U.S.C. §1341, provides that any applicant for such a permit, including the Army Corps, must seek certification, from the state in which the discharge will originate,

that the discharge will not violate water quality standards. The Army Corps applied to the Agency for §401 certification, and the Agency issued a conditional certification that water quality would not be violated so long as the material to be dredged met certain parameters (Amend. Pet., p. 19). Those parameters appear to evaluate sediment grain size and the presence of polluted materials (Rec., pg. 10), and somehow apply the Board's water quality standards (Rec., p. 6). Neither party has submitted the theory or standards for such process into the record in this proceeding. Whatever these parameters may be, it appears the Army Corps is free to conduct its maintenance dredging and correlated discharge of dredged material without Board action for those sediments and disposal procedures which pass the Agency certification parameters. This presumes that the discharges will not cause violations of any Board water quality standards. For those sediments that do not pass the Agency certification parameters, Section 401 of the Clean Water Act, 33 U.S.C. §1341, precludes discharge of the dredged material until the standards are waived in some manner.

In one short sentence on page 19 of the Amended Petition for Variance, under a caption entitled "Analysis of Applicable Federal Law", the Army Corps finally explains that the present request for water quality standards variance only covers impacts of discharge of dredged material from sediments that fail agency certification parameters. Any dredging and discharge that meets certification procedures will proceed, presumably, as needed.

#### Activity Affected by the Variance Request

Maintenance dredging is intended to ensure navigability. Until navigability is threatened or impaired at some location the Army Corps will not know where dredging is needed. Until the dredging location is known, representative sediment analyses cannot be done to determine compliance or non-compliance with the certification parameters (Rec., pp. 2-3). Discharge of dredged material typically occurs adjacent to the dredging (Am. Pet., p. 5).

Historically (1952-1982) dredging in the Illinois river has occurred along the 36.5 miles of the 150-mile length identified in Attachment 1 of the Amended Petition for Variance. Three unnumbered exhibits to the original Petition for Variance contain substantial sedimentary analyses from the Illinois River but it is uncertain how these relate to the certification parameters. A typical dredge operation in the Illinois River would remove 68,000 cubic yards of slurry and solids. Depending upon the solids content (10-20%) this would be 69 to 137 million gallons of dredged material (Am. Pet., p. 5). The record does not show how much discharge would return to the river in such a typical event, nor its composition. In an average year, three such events would occur, with an average length of 1½ miles (Am. Pet., p. 5).

A 1982 discharge of dredge material from sediments not in compliance with the certification parameters did not cause a water quality violation. (Am. Pet., p. 6) (Rec., p. 5). However, the Agency believes sediments near the Peoria Pool (Sites 16 to 22 of Am. Pet., Ex. I) would be more polluted (Rec., p. 6).

In the absence of a variance, the Army Corps would be unable to conduct any necessary dredging of sediments that failed the certification parameters or would be required to dispose of these sediments in a confined disposal area (Rec., pp. 3-4). A dispute between the Army Corps and the Agency as to who should pay for the confined disposal may postpone site acquisition (and dredging) for years (Rec., p. 4) (Am. Pet., p. 13). Thus, without a variance or other relief, dredging on sediments that fail certification is unlikely to occur for years. If any such sediments impeded navigation, commerce on the Illinois River would stop.

#### Hardship

The Illinois River is a main pathway for commerce. In 1981, the anticipated area for which the variance is requested passed over four billion dollars worth of commodities. If the Illinois River became obstructed, past studies indicate alternative transportation modes would cost users an additional \$150,000,000 annually (Am. Pet., p.2) (Rec., p.3). This consequence could occur rapidly because of the potential for accumulation of sediments that fail the certification parameters.

#### Discussion

This proceeding places the Board in a difficult position. The parties provided little or no information on important questions: What is the standard for a non-certified sediment; can its volume or location be estimated in any way; what is the volume and character of discharge from a typical dredge; what might it be from a non-certified sediment dredge? Nor have the parties provided the Board with even rudimentary information on methods for open water or bankline disposal that would allow the Board to choose between them or place restrictions to reduce the likelihood of environmental harm from the discharges. Basically, the parties have asked the Board to either grant a variance they have agreed on or risk stopping Illinois River commerce.

Because of the severe hardship that could result if the variance was denied the Board today grants a variance. But, that variance is for a shorter term than requested and provides for the development of information that will allow for more reasoned decisions on any future variance requests.

The parties jointly have argued that the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., and Chapter 7, Illinois Pollution Control Board Rules and Regulations, do not apply to the proposed disposal of dredged material (R. 12-28, Pet. Ex.C). Because the present request for variance from water quality standards does not require that issue be decided, the Board declines to do so.

The Army Corps has argued that the act of dredging cannot be regulated by the State of Illinois (R. 18-19, Pet. Ex. 1). The Agency offered no opinion. Because the Army Corps requested a variance for water quality violations caused by the discharge of dredged material, the Board need not and does not decide the applicability of Board rules and regulations to the act of dredging.

The Board notes that in its reference to Illinois EPA 401 certification #C-157-82 in today's order it does not intend approval of that document or its procedures as the Board was not provided with any documentation on this matter.

This Opinion constitutes the Board's findings of facts and conclusions of law in this matter.

#### ORDER

Petitioner, Department of Army, Rock Island District, Corps of Engineers, is granted a variance from Section 304.105 as it applies to Sections 302.203, 302.206, 302.208 (Total Lead, Total Cadmium, and Total Hexavalent Chromium only), and 302.212, subject to the following conditions:

1. This variance will expire on August 1, 1984.
2. This variance will apply only to violations of water quality that may occur as a result of discharge of dredge material coming from maintenance dredging of sediments not meeting Illinois EPA 401 certification #C-157-82, and only within the 25 sites on the Illinois River Waterway between river miles 80.2 and 230.2, as specified in Attachment #1 to the Amended Petition for Variance filed on May 6, 1983. For purposes of this Order these shall be known as Paragraph #2 dredging events.

3. Prior to beginning any dredging event, Petitioner shall obtain sediment core samples at locations and depths within the reach of the proposed dredge cut which are representative of that cut, for the purposes of determining whether such cut is a Paragraph #2 dredging event. Sampling and analysis of the sediments shall be determined by the Petitioner and the Agency, but shall include analysis for parameters in Paragraph 10,d).
4. Petitioner shall conduct a Paragraph #2 dredging event only where necessary to ensure safe navigation, and the length, width and depth of any such event shall be reduced as much as feasible, consistent with providing safe navigation.
5. For any Paragraph #2 dredging event, Petitioner shall consider and evaluate the use of mechanical dredging with bankline disposal, as opposed to hydraulic dredging, for any such event under which less than 50,000 cubic yards will be dredged.
6. For any Paragraph #2 dredging event, Petitioner shall use all reasonable efforts, other than upland confined disposal, to reduce the volume and character of discharges which might cause water quality violations. Open water disposal is prohibited.
7. If analysis under Paragraph 3 or Paragraph 10,a) disclose that sediments fail Illinois EPA 401 certification #C-157-82, the Petitioner shall immediately begin planning for the location, development and construction of a confined disposal facility, and investigate alternatives, innovative or otherwise, for controlling pollutants in a manner which minimizes the need for confined disposal facilities. Petitioner shall fully cooperate with the Department of Transportation in this planning effort.
8. In advance of any necessary Paragraph #2 dredging event, Petitioner shall notify the Agency of the day that the dredging project is scheduled to begin.
9. Petitioner shall acquire information and prepare a report on the factors in a dredging operation that affect the Board's Part 302 Water Quality Standards. This report, at a minimum, shall include:
  - a) a description of the types of dredging procedures currently in use for navigable waters of the United States;
  - b) a description of the types of disposal procedures currently in use for dredge material from navigable waters of the United States;

- c) for each procedure in a) and b), a description of the factors which influence the volume and character of discharge of dredge material to navigable waters of the United States;
- d) for each procedure in a) and b), methods of reducing the volume and Part 302 pollutants in the discharge of dredge material;
- e) a copy of, and explanation of, Illinois EPA 401 certification #C-157-82 and any subsequent modifications;
- f) a copy of, and summary of, all testing results obtained under paragraph 10 of this Order, and any other testing results Petitioner believes would be relevant.
- g) any steps taken under Paragraph 7.

This report shall be submitted to the Agency and the Board at least 90 days prior to the termination of this variance.

10. Petitioner shall conduct sampling and testing as follows:

- a) On an annual basis, a survey of existing sediment and water quality at the 11 sites identified in Attachment #1 to the Amended Petition for Variance with a historical dredging frequency average of once every ten years or less. No less than three sediment core samples shall be taken from each of the sites in the areas and to the depths most likely to be dredged; the actual number of core samples to be obtained shall be determined by the Petitioner and the Agency based on the size and shape of the area to be dredged; sediment samples shall be analyzed as set forth in Paragraph 10,d). At the time sediment samples are collected, ambient surface and mid-depth grab water samples shall be collected. These samples shall be analyzed for: water temperature, dissolved oxygen, pH, specific conductance, and turbidity.
- b) The sampling and testing requirements of Paragraph 3 of this Order.
- c) During any dredging project, whether a Paragraph #2 dredging event or not, water quality impacts and discharge character shall be monitored as follows:
  - 1. Petitioner shall sample the following parameters at all sampling points listed under Paragraph 10,c)4: specific conductance; turbidity; oil and grease; dissolved oxygen; total suspended solids; volatile suspended solids; total ammonia nitrogen as N; pH; water temperature; lead (total);



zinc (total); arsenic (total); barium (total); cadmium (total); chromium (total hexavalent); copper (total); mercury (total); nickel (total); and selenium (total).

2. Sampling at the sampling points listed in Paragraph 10, c), 4 shall be at surface and mid-depth elevations between mid-channel and the bank on which disposal occurs, or at a point representative of the discharge.
  3. Sampling at the sampling points listed in Paragraph 10, d), 4 shall be done daily during the period of the dredging by 8-hr composite samples with 3 aliquots. Petitioner shall report the river velocity and height for each day of the dredging.
  4. Sampling shall be done at the following points:
    - a. At a point upstream of the influence of the dredging, but no more than one-half mile;
    - b. At a point within tributaries entering the dredge cut, if any, upstream of backwater effects but as close to the confluence as possible;
    - c. At three points downstream of the discharge: 1) at half the distance to the periphery of the mixing zone and 3) at twice the distance to the periphery of the mixing zone. The "mixing zone" shall be defined as an area equal to 25 percent of the cross-sectional area of the stream or the area of a circle with a radius of 600 feet, whichever is less.
    - d. at three points representative of the discharge of dredged material.
- d) Sediment samples taken under Paragraph 10 shall be analyzed for the following parameters with the results of all chemical analyses being expressed on a dry weight basis: grain size (based on a U.S. #230 sieve), oil and grease, total volatile solids, ammonia nitrogen, five-day biochemical oxygen demand, total polychlorinated biphenyl, arsenic, barium, cadmium, chromium, copper, mercury, nickel, lead, selenium, and zinc.

- 11. All sampling and analytical methods to be employed during the variance period shall follow procedures established by Standard Methods for the Examination of Water and Wastewater, 15th Edition and Chemistry Laboratory Manual for Bottom Sediments and Elutriate Testing, March 1979. Both sampling and laboratory analyses shall provide for replicate testing. Field analyses shall be performed by trained personnel under direct supervision; laboratory analyses shall be performed by certified laboratories.
- 12. By February 1, 1984, and annually thereafter for the duration of the variance, Petitioner shall submit to the Agency the results of sampling under Paragraph 10, the results of any evaluation under Paragraph 5, and the steps taken under Paragraph 7, if any, in planning the location development and construction of a confined disposal facility.

CERTIFICATION

I, (We), \_\_\_\_\_, having read and fully understanding the Order in PCB 83-25, hereby accept that Order and agree to be bound by all of its terms and conditions.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.  
Board Member J. Theodore Meyer dissented.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board hereby certify that the above Order was adopted on the 27<sup>th</sup> day of July, 1983 by a vote of 4-1.

\_\_\_\_\_  
Christan L. Moffett, Clerk  
Illinois Pollution Control Board