CONESTOGA-ROVERS
& ASSOCIATES

209 Gothic Court, Suite 109, Franklin, TN 37067
Telephone: 615.778.2535 Facsimile: 615.778.2533
www.CRAworld.com

November 21, 2006

Reference No. 044006

Mr. Joe Kath
Illinois Department of Natural Resources
Endangered Species Program
One Natural Resources Way
Springfield, Illinois 62702-1271

PROJECT NO: 44006
ORIGINATOR: SE
DATE: 11-21-06
☒ CORRESPONDENCE FILE
☐ ENGINEERING FEES FILE
☐ VENDOR FILE
☐ OUT-OF-OFFICE REPORTS FILE
☐ FIELD FILE
☐

Dear Mr. Kath:

Re: Illinois Section 1080.10 Conservation Plan
Commercial Sand and Gravel Dredging on the Ohio River
Ingram Materials Company
IDNR File No. 200600635
Section 10/404 Permit Application

This letter is in response to the October 10, 2006 letter from Robert Schanzle of the Illinois Department of Natural Resources (IDNR) to Jarrod Bonnick of the U.S. Army Corps of Engineers (USACOE). The letter addresses issues related to threatened and endangered (T&E) species in response to a Section 10/404 permit application submitted by the Ingram Materials Company (Ingram) for the dredging of sand and gravel for commercial purposes at various locations on the Ohio River.

As required by the pending USACOE Section 10/404 permit, Ingram applied for an individual Section 401 Water Quality Certification from the Illinois Environmental Protection Agency on September 19, 2006. Ingram's total requested permit coverage area is Ohio River Miles 892.5 to 894.5 and 923.0 to 930.0 which are within the Counties of Hardin, Massac, and Pope in the State of Illinois. Please note that the permit coverage area has been revised since September 19, as requested by the agencies to encompass the entire physical locations of Cottonwood and Irish Jimmie's Bars.

IDNR staff requested that a Conservation Plan (CP) be prepared in accordance with Illinois Administrative Code, Chapter I, Section 1080.10. A telephone conversation was held between Conestoga-Rovers & Associates (CRA) aquatic biologist Don Knorr and yourself on November 3, 2006 to discuss the CP. This letter contains Ingram's CP for the proposed dredging. For this CP, Ingram is focusing exclusively on Ohio River Miles 892.5 to 894.5 for reasons discussed below.

The following species and locations were identified as species of concern and areas of concern by the IDNR:

FEB-07-2007 09:27 FROM: TO:217 785 2438 P.2

Ohio River, Cottonwood Bar, River Miles 923.0 to 930.0
Butterfly mussel (*Ellipsaria lineolata*) - Listed by Illinois
Ebonyshell mussel (*Fusconaia ebena*) - Listed by Illinois
Least tern (*Sterna antillarum*) - Listed by Illinois and U.S.
Redspotted sunfish (*Lepomis miniatus*) - Listed by Illinois

Ohio River, Irish Jimmie's Bar, River Miles 892.5 to 894.5
Fat Pocketbook mussel (*Potamilus capax*) - Listed by Illinois and U.S.
Ebonyshell mussel (*Fusconaia ebena*) - Listed by Illinois

Both the Cottonwood and Irish Jimmie's Bars are within the area of proposed dredging. The Cottonwood Bar has been a major location of Ingram's previous dredging, staging, fleeting, and river traffic for the last 35 years. Accordingly, IDNR has previously agreed with Ingram's position that there is no realistic possibility of T&E species being present in the area around Cottonwood. Therefore, Ingram requests that Cottonwood be taken out of consideration for the possible presence of T&E species, and is not further discussed in this CP.

Irish Jimmie's Bar is a reserve area where dredging is infrequent; this area is the basis of this CP. Ingram requests that the USACOE Section 10/404 Individual Permit for dredging on the Ohio River within Illinois contain the special condition that no dredging is to be done in the vicinity of Irish Jimmie's Bar (River Miles 892.5 to 894.5) until an appropriate mussel survey and/or sediment testing be completed and approved.

The following CP focuses on the two listed freshwater mussel species known to occur in the vicinity of Irish Jimmie's Bar.

CONSERVATION PLAN

I. Description of Impact

A. Legal Description

The proposed project will consist of sand and gravel extraction by dredging of several areas of the Ohio River for commercial purposes with associated processing, barge loading, and associated fleeting.

Attachment A shows the location of the proposed dredging areas for the total requested permit coverage area. Ohio River Miles 892.5 to 894.5 are within the State of Illinois and are the proposed dredging areas applicable to this CP.

FEB-07-2007 09:27 FROM: TO:217 785 2438 P.2

B. Biological Data

1. Ebonyshell mussel (*Fusconaia ebena*)

Ebonyshell mussels are listed by Illinois as threatened. The ebonyshell prefers large rivers with sand and gravel substrates. It is reported to be found at depths from 1 to 5 feet. Skipjack herring (*Alosa chrysochloris*), a migratory species, is the host fish of the mussel larva (glochidia). Restriction of the movement of this host fish has been reported to have constricted the range of this mussel.

2. Fat Pocketbook mussel (*Potamilus capax*)

The fat pocketbook mussel, also referred to as the pearly, is listed by Illinois as endangered. The fat pocketbook has also been designated an endangered species pursuant to the U.S. Endangered Species Act of 1973. *P. capax* has been reported from the sand and mud substrates of medium to large rivers, ranging at depths of less than six inches to more than eight feet. Historic and present records indicate that it is a riverine species that requires flowing water and stable substrate. The species does not occur in the impounded sections of rivers and is apparently quite sedentary in the substrate.

Little is known about specific environmental requirements for adults or any other life stage. Habitat of the glochidia is initially within the gills of the female, then in the water column, and finally attached to a suitable host, possibly the freshwater drum or white crappie. Habitat requirements or associations for the juvenile stage are unknown.

C. Description of Activities

Ingram proposes to perform commercial sand and gravel hydraulic dredging on the Ohio River, parts of which are within the State of Illinois. As shown on the attached figures, the applicable area lying within the State of Illinois occurs generally within River Miles 892.5 to 894.5. This is the area north of the dashed line in the Ohio River, as shown on the attached figures. The State of Illinois boundary delineation shown on the figures are based on published material of the USACOE.

All of these areas have been dredged within the past 5 years, and have been approved under a Corps Section 10/404 permit for at least 10 years. Ingram has been actively dredging on the Ohio River for the past 35 years.

The average material extraction rate is approximately 8,000 gallons per minute, for combined water and solids (slurry), potentially for 24 hours per day and 365 days per year.

FEB-07-2007 09:27 FROM: TO:217 785 2438 P.4/20

The average water return flow from the floating barge to the river is approximately 5,000 gallons per minute (including some waste solids), potentially for 24 hours per day and 365 days per year.

The purpose of the proposed activity is to extract sand and gravel from the Ohio River for commercial sale. These products are used in the construction of roads, residential houses, commercial buildings, and other structures. Dredging activities also assist in keeping the Ohio River open to marine transportation.

D. Adverse Effects

Species of concern may be harmed if they are in the vicinity of the dredging or downstream of it. Physical harm could be induced if the species are near the intake of the dredge. Potential harm may also be due to suspended solids and sedimentation of adjacent and downstream areas. Dissolved oxygen levels may also decline due the suspended solids and the creation of isolated deep pools.

II. Measures to Minimize and Mitigate Impacts

A. Area Minimization

Ingram proposes to perform a preliminary mussel survey within mineable and permitted areas around Irish Jimmie's Bar, prior to any dredging in that area. In lieu of, or in addition to, a mussel survey, Ingram can also perform sediment testing as directed by the agencies.

Prior to the initiation of dredging operations at a dredge site around Irish Jimmie's Bar, a preliminary diving survey by an approved mussel surveyor will be conducted to determine if freshwater mussels are present. The areal limits of the dredging will be marked with buoys. In this manner, survey data will be collected immediately preceding dredge operations. If mussels are found they will be identified to species. If the fat pocketbook mussel (both a state and federal listed species) is found then both the U.S. Fish and Wildlife Service (USFWS) and IDNR will be notified. If the other state-listed mussel species of concern is found, only the IDNR will be notified.

If the listed species are found, discussions would be initiated with one or both (as appropriate) of the resource agencies on how to proceed. If only the state-listed mussels are found, discussions will be held with IDNR on where to move the mussels and the methodology to be used for the collection and relocation. Ingram will follow the appropriate methods under the direction of the approved mussel surveyor to ensure the safety of the individual animals and the success of the relocation process of the mussels.

B. Management for Continued Use

Areas of favorable habitat for mussels, defined as those areas with appropriate substrate less than 9 feet in depth, will be protected from the effect of dredging. Therefore, the continued use of these areas as habitat will not be affected.

C. Description of Minimization and Mitigation Measures

To minimize the potential for dissolved oxygen (DO) depletion, sand and gravel will be extracted in the pattern of elongated trenches in areas of flow (where possible). This practice will minimize creating areas of deep isolated pockets that have the highest potential for DO depletion. It may be possible to orient trenches that restore flow to these isolated deep pools.

General and Special Conditions for Commercial Sand and Gravel Dredging in the Ohio River are published in the Notice of Re-Issuance of Regional General Permit No. 32 by the USACOE, Louisville District. These conditions should be identical to the pending individual USACOE Section 10/404 permit for Illinois waters. The following conditions are notable and will be protective of the listed species (the numbering reflects the listing in the General Permit).

Special Conditions:

"b. That irrespective of pool stage, the permittee shall not dredge:

(1) Within 150 feet of the shoreline.

(2) Within a distance of the shoreline equal to three times the dredge depth when the depth exceeds 50 feet.

(3) In an area less than 5 feet deep.

(4) In an area less than 9 feet deep if within 1,000 feet of the shoreline.

c. That the permittee shall not dredge closer than 1,500 feet upstream of any known mussel bed, nor closer than 500 feet to the side, nor within 500 feet downstream of such a bed; or in designated sensitive areas.

d. That the permittee shall, on encountering uncharted mussel beds, cease all dredging in the subject area and notify the Louisville District Engineer of such location.

e. That the permittee shall neither dredge nor has any attendant equipment or appurtenances such as anchors or barges within:

(7) 1,000 feet of the shoreline of an island with less than 5 foot depth.

g. That should the District Engineer become aware of any particular fish and wildlife resource areas experiencing substantial adverse impacts from dredging operations, the District Engineer reserves the right to impose any additional restrictions or eliminate specific areas from dredging permits entirely in order to preserve the integrity of these resource areas.

h. That, should the District Engineer become aware of any areas experiencing critical caving bank problems, the District Engineer reserves the right to impose any additional restrictions or eliminate specific areas from dredging permits entirely in order to preserve the integrity of these areas."

General Conditions:

"b. That the permittee agrees to make every reasonable effort to prosecute the work authorized herein in a manner so as to minimize any adverse impact of the work on fish, wildlife, and natural environmental values.

c. That the permittee agrees to prosecute the work authorized herein in a manner so as to minimize any degradation of water quality."

The strict adherence to these conditions by Ingram, which is their standard operating procedure, will serve to protect the listed species.

D. Monitoring Plans

Daily operating records will be maintained by each dredge. In addition, Ingram will conduct additional monitoring data as is reasonable and requested by IDNR.

E. Adaptive Management Practices

Adaptive management is a technique being applied to species/habitat management projects that includes consultation between the project participants and the agencies. Adaptive management is defined as an iterative approach to managing ecosystems, where the methods of achieving the desired objectives are unknown or uncertain. In essence, adaptive management provides a formalized process for the interactive management of a project. Such a process is useful for the following reasons:

- Mistakes may be made during the implementation of the management plan. It is then necessary to determine if the mistakes need to be corrected, are acceptable, or whether they enhance the site.
- Unexpected detrimental events may alter the site, requiring consideration of corrective measures after consultation with the involved agencies. For example, the invasion of an

FEB-07-2007 09:28 FROM: TO:217 785 2438 P.7/20

exotic species may necessitate early intervention. A decision will be required on how to control this invasion.

- It may not be completely clear how to achieve one or more of the objectives. Trials using different methods may be needed and, decisions on how to bring the site into compliance with performance standards are needed.
- A beneficial event may happen unexpectedly. If so, a decision will be required on whether to capitalize on such events.

The establishment of clear goals, objective performance standards, and a well-defined monitoring program are key to a successful adaptive management program. Monitoring in an adaptive management context focuses on early identification of undesirable trends and provides the guidance, through an experimental construct, necessary to determine the appropriate remedial action to reverse an undesirable situation or trend. Remedial actions will then be developed and coordinated with the agencies.

The Pittsburgh District USACOE in their environmental impact statement for dredging of the Allegheny and Ohio Rivers state that significant mussel colonies are found in shallow areas (less than 9 feet deep). The adaptive management plan proposed by the USACOE consists of the following:

1) Limit dredging to areas greater than 9 feet depth initially.
2) Continue to conduct mussel surveys prior to dredging around Irish Jimmie's Bar, revisiting the methodology and decision criteria as necessary as more information is compiled.
3) Consider other adaptive management restrictions, as necessary, on a site-specific basis, that are warranted to avoid adverse impacts on aquatic life, such as avoidance of high quality habitats when identified.

Should state-listed species be determined by the pre-dredge surveys, Ingram will immediately contact the IDNR. Discussions will be held with IDNR on the relocation of the mussels to a suitable site that will not be dredged. Methodologies of the re-location efforts and assessment and selection of appropriate relocation sites will be mutually developed and agreed upon. Ingram will use relocation information from IDNR, other agencies, and the scientific literature to help ensure the success of the relocation effort and long-term survival of the relocated animals.

F. Verification of Funding

Ingram is committed to provide financial security necessary to complete, monitor, and implement appropriate and reasonable actions to ensure the success of the mitigation.

III. Description of Alternative Actions

The are no other economically viable methods with a lesser environmental impact for extracting materials from a river, as compared to hydraulic dredging.

A. Actions Taken to Prevent Taking

The procedures specified in the above plan will be strictly followed and will prevent the inadvertent taking of the listed species.

B. No Action Alternative

The cessation of dredging activities would leave the river unchanged from current conditions. Therefore, the potential impact to aquatic life would be avoided.

However, regional economic and financial factors would be adversely affected from the cessation of dredging activities. For example, approximately 50 Ingram employees would lose their jobs. Ingram would be unable to fulfill their contractual requirements to their customers. Customers would need to find other suppliers and may not be able to meet their contractual responsibilities. Increased costs may result to both commercially available sand and gravel and to public infrastructure projects that utilize sand and gravel for concrete and asphalt.

IV. Likelihood of Survival of Listed Species and their Habitat(s)

With the implementation of this Conservation Plan the likelihood of the survival of the species due to Ingram's proposed activities will not be negatively affected.

V. Implementing Agreement

A. Identification of Plan Participants

- IDNR – Joe Kath 217-782-6384
- Ingram Materials Co. – Charles Sanders 615-298-7570
- CRA Project Manager – Steve Seachman 615-778-2535
- CRA Biologist – Donald Knorr 610-321-1800
- Qualified Mussel Surveyor – to be determined

An Implementing Agreement will be drafted in the future, when and if Ingram elects to dredge at Irish Jimmie's Bar.

FEB-07-2007 09:29 FROM: TO:217 785 2438 P.9/20

B. Obligations and Responsibilities

An Implementing Agreement will be drafted in the future, when and if Ingram elects to dredge at Irish Jimmie's Bar.

C. Certification of Legal Authority

An Implementing Agreement will be drafted in the future, when and if Ingram elects to dredge at Irish Jimmie's Bar.

D. Assurance of Compliance with Federal, State and Local Regulations

An Implementing Agreement will be drafted in the future, when and if Ingram elects to dredge at Irish Jimmie's Bar.

E. Copies of Federal Authorizations

Ingram has applied to the USACOE for a Section 10/404 permit. The authorization is still pending. No other federal authorizations have been received.

Closing Remarks

This plan represents an initial draft plan acceptable to Ingram. The permittee is amenable to further refine the elements of this plan based on comments and discussions with the agencies. If you have any questions or comments please contact Charles Sanders of Ingram at 615-298-7570 or Steve Seachman of CRA at 615-778-2535.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Stephen Seachman, P.E.

for Donald Knorr

DFK/SES/1

Attachment A – Project Location Figures

FEB-07-2007 09:29 FROM: TO:217 785 2438 P.10/20

Distribution:

Mr. Charles Sanders, President & CEO
Ingram Materials Company
One Belle Meade Place
4400 Harding Road
Nashville, Tennessee 37205

Mr. Robert Schanzle
Illinois Department of Natural Resources
Office of Realty and Environmental Planning
One Natural Resources Way
Springfield, Illinois 62702-1271

Mr. Bruce Yurdin
Illinois Environmental Protection Agency
Water Pollution Control, Section #15
P.O. Box 19276
Springfield, IL 62794-9276

Mr. Jarrod Bonnick
Department of the Army
Louisville District, Corps of Engineers
P.O. Box 489
Newburgh, Indiana 47629-0489

Mr. Leroy Koch
U.S. Fish and Wildlife Service
3761 Georgetown Road
Frankfort, Kentucky 40601

FEB-07-2007 09:30 FROM: TO:217 785 2438 P.11/20

ATTACHMENT A

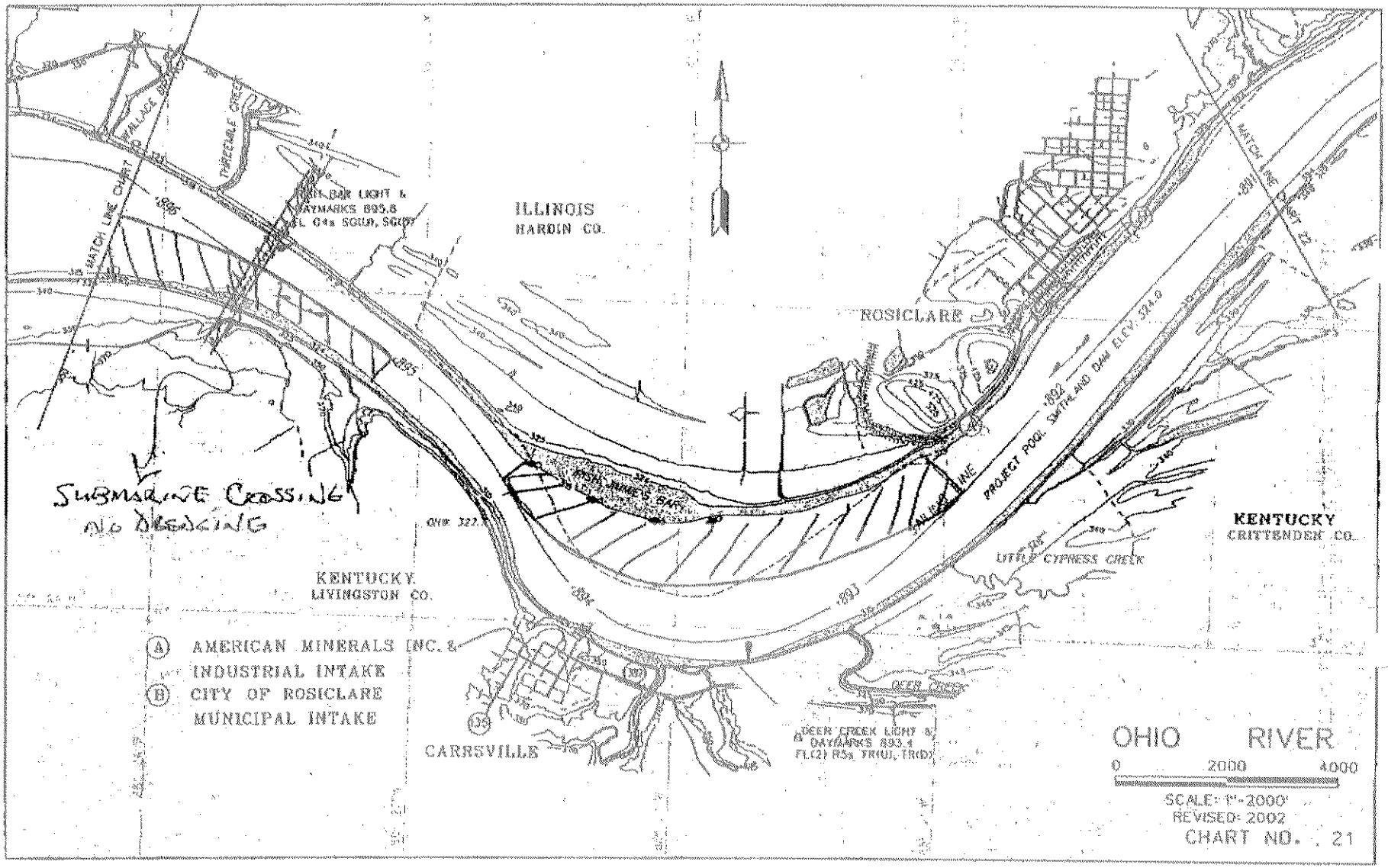
PROJECT LOCATION FIGURES

FEB-07-2007 09:30 FROM: TO:217 785 2438 P.13/20

Areas under Permit for a **minimum of 10 years and dredged in the last 5 years.**

FLEETING: 893 RDB

OR Miles 892.5 – 894.5 RDB



Commercial Sand and Gravel
Dredging Permit Application
200600635
February 23, 2006

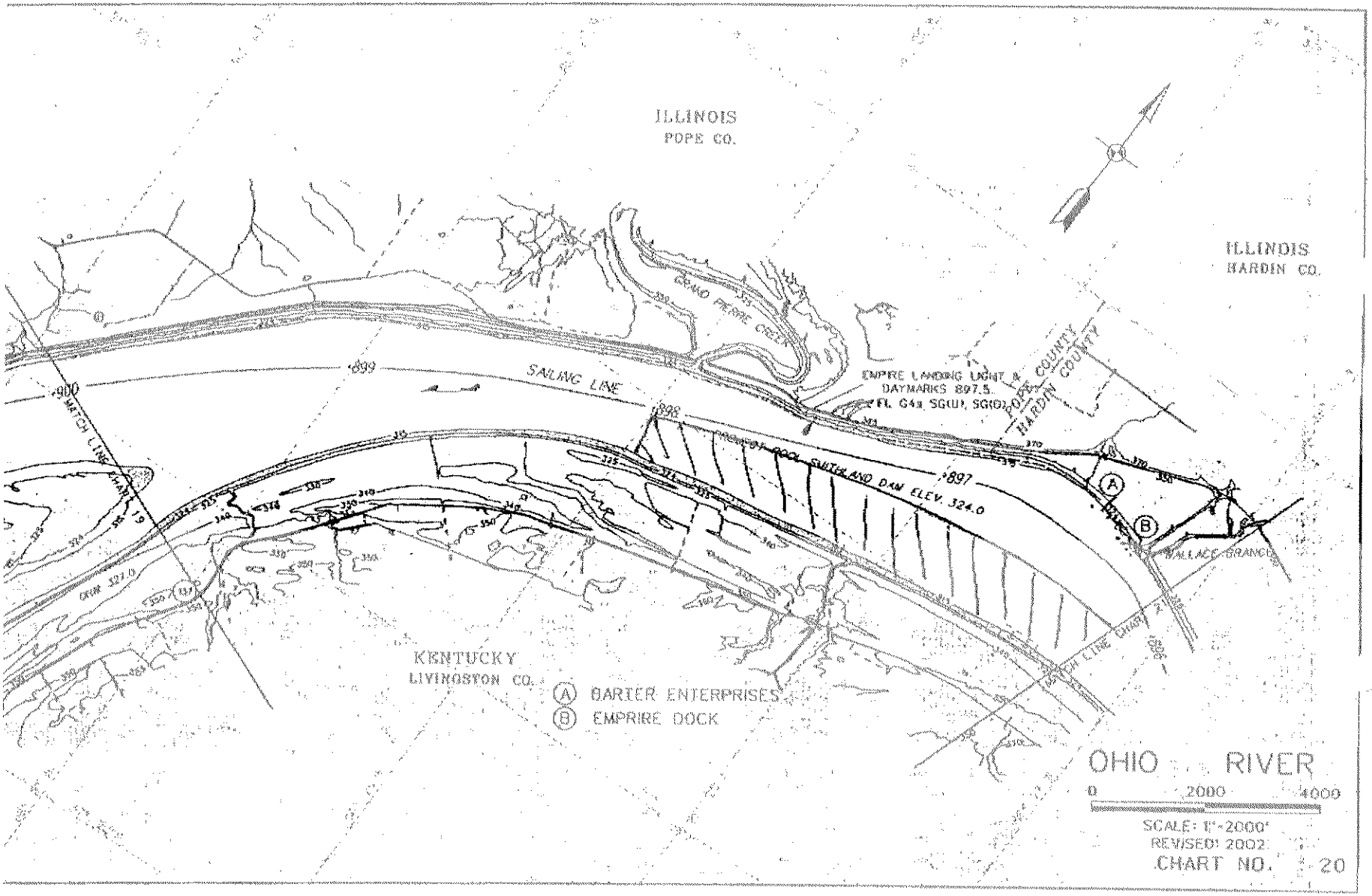
Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

P.14/20
T0:217 785 2438
FEB-07-2007 09:30 FROM:

Areas under Permit for a minimum of 10 years and **dredged in the last 5 years.**

FLEETING: 897 LDB

OR Miles 895.0 – 898.0 LDB



Commercial Sand and Gravel
Dredging Permit Application
200600635
February 23, 2006

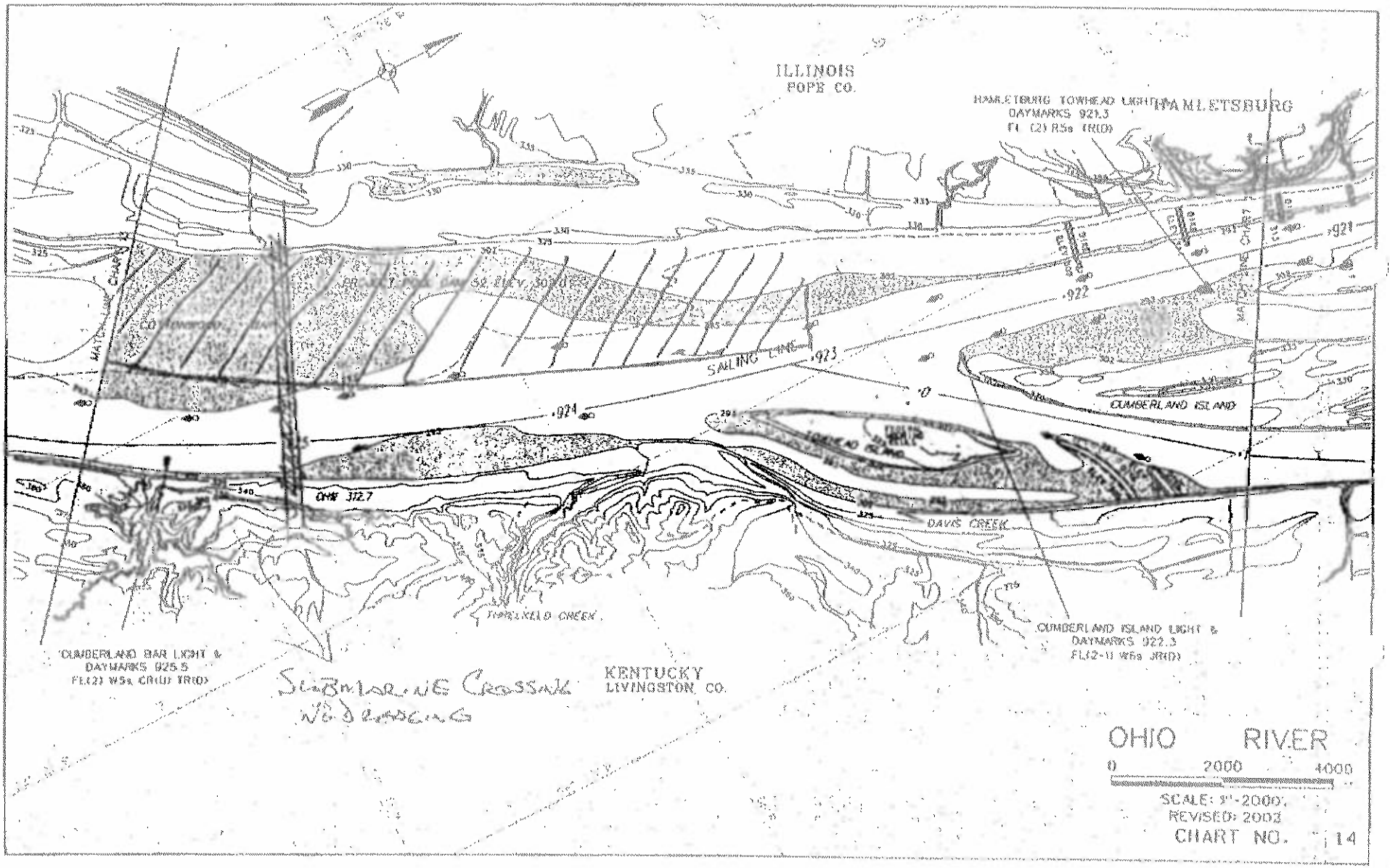
Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

FEB-27-2007 09:31 FROM: TO:217 785 2438 P.15/20

Areas under Permit for a minimum of 10 years and dredged in the last 5 years.

FLEETING: 927 RDB

OR Miles 923.0 – 930.0 RDB



Commercial Sand and Gravel
Dredging Permit Application
200600636
February 23, 2006

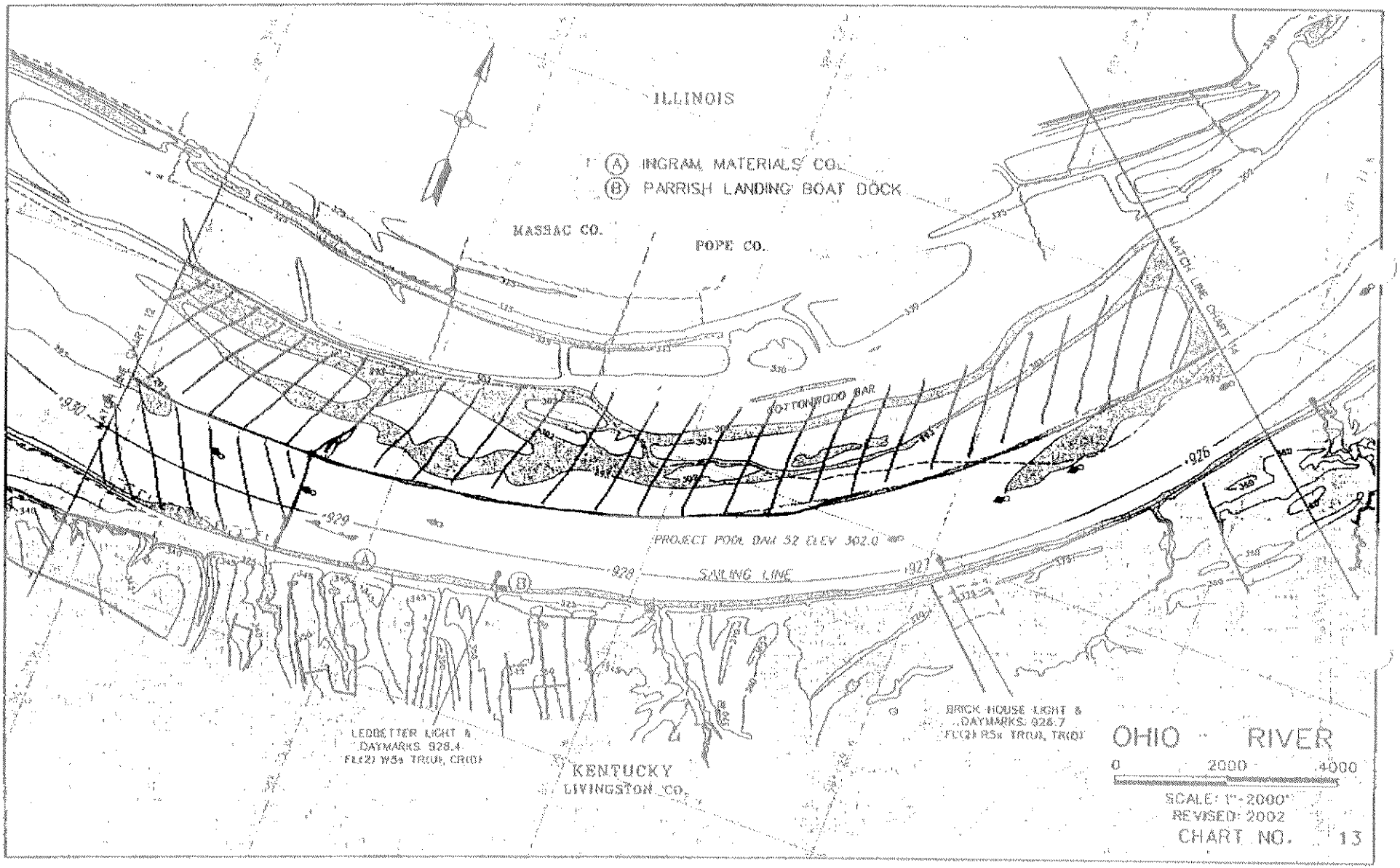
Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

FEB-07-2007 09:31 FROM: TO:217 785 2438 P.16/20

Areas under Permit for a minimum of 10 years and dredged in the last 5 years.

FLEETING: 927 RDB

OR Miles 923.0 – 930.0 RDB



Commercial Sand and Gravel
Dredging Permit Application
200600635
February 23, 2006

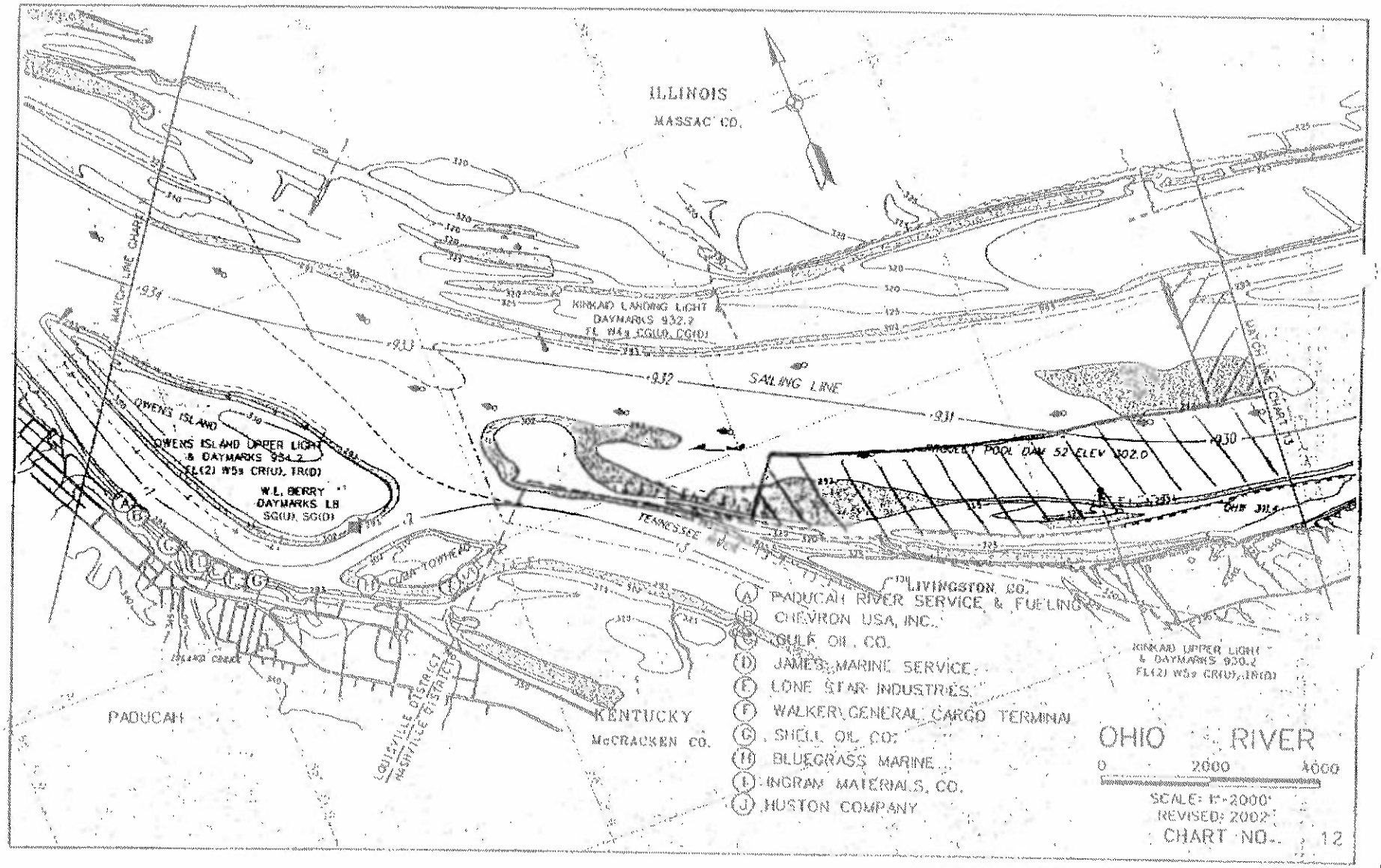
Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

FEB-07-2007 09:32 FROM: TO:217 785 2438 P.17/20

Areas under Permit for a
minimum of 10 years and
dredged in the last 5 years.

FLEETING: 927 RDB

OR Miles 929.2 – 931.5 LDB



Commercial Sand and Gravel
Dredging Permit Application
200600635
February 23, 2006

Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

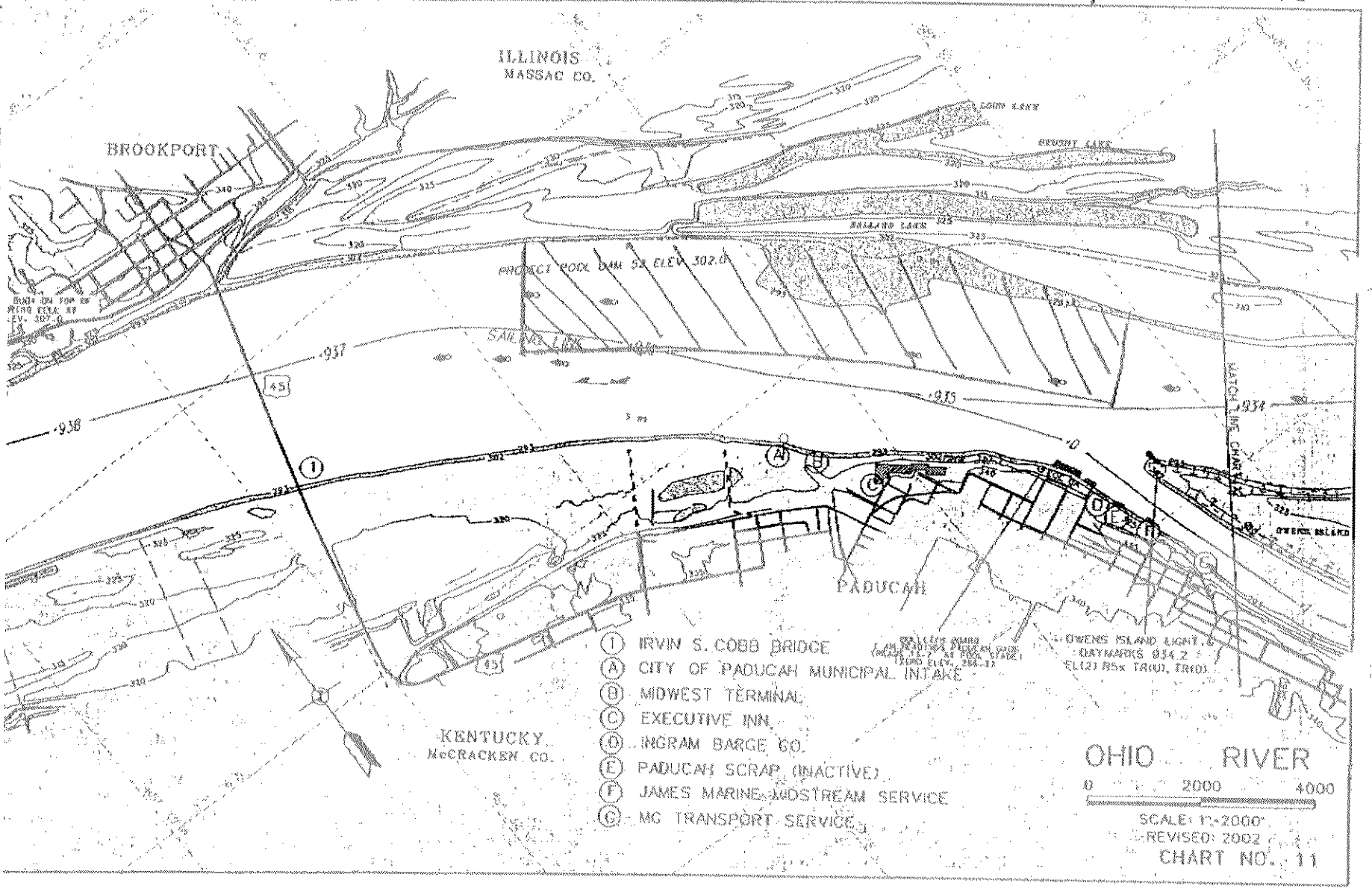
FEB-07-2007 09:33 FROM: TO:217 785 2438 P.18/20

Areas under Permit for a minimum of 10 years and dredged in the last 5 years.

FLEETING: 934 LOB

OR Miles 934.5 – 936.3 RDB

NO DREDGING APRIL 15 - JUNE 15



Commercial Sand and Gravel
Dredging Permit Application
200600635
February 23, 2006

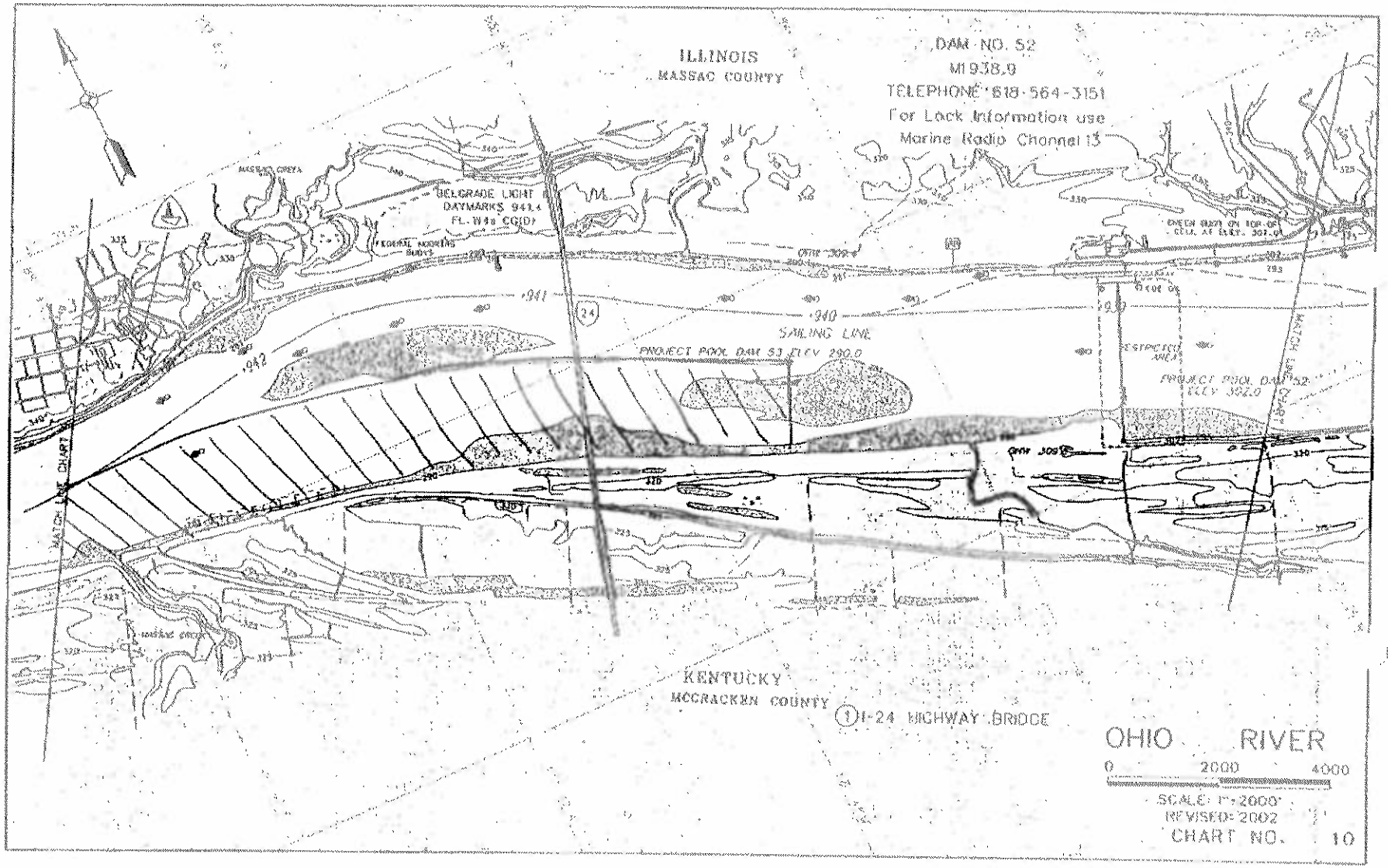
Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205

P.19/20
T0:217 785 2439
FEB-07-2007 08:33 FROM:

Areas under Permit for a minimum of 10 years and dredged in the last 5 years.

FLEETING: 942 LDB

OR Miles 940.1 – 943.9 LDB



Commercial Sand and Gravel Dredging Permit Application
200600635
February 23, 2006

Charles J. Sanders, III
Ingram Materials Company
4400 Harding Road
Nashville, TN 37205