

ILLINOIS POLLUTION CONTROL BOARD  
October 23, 1986

ILLINOIS ENVIRONMENTAL )  
PROTECTION AGENCY, )  
 )  
Complainant, )  
 )  
v. ) PCB 81-144  
 )  
MARATHON PETROLEUM COMPANY, )  
an Ohio corporation, )  
 )  
Respondent. )

MR. JAMES L. MORGAN, ASSISTANT ATTORNEY GENERAL, APPEARED ON BEHALF OF THE COMPLAINANT.

MR. JEFF BENSON AND MR. DAVID R. SAAD, ATTORNEYS AT LAW, APPEARED ON BEHALF OF THE RESPONDENT.

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

This matter comes before the Board on the September 14, 1981 Complaint brought by the Illinois Environmental Protection Agency (Agency), as amended on November 29, 1982.

Count I of the Amended Complaint alleged that: (1) from February, 1979 until November 29, 1982, the Respondent failed to report loading and concentration levels for trivalent chromium in effluent discharged from one or both refinery discharge points (001 and/or 002); (2) from July, 1979 until November 29, 1982 (including, but not limited to, the months of July, 1979; November, 1979; June, 1980; July, 1980; August, 1980, and March, 1981), the Respondent failed to report for Discharge Point 002 daily maximum concentrations for parameters for which such measurements are to be taken pursuant to its NPDES Permit; (3) from March, 1980 until November 29, 1982 (including, but not limited to, March, 1980; June, 1980; July, 1980; August, 1980; March, 1981; and May, 1981), the Respondent failed to report with respect to effluent discharged from Discharge Point 002 water temperatures (in the receiving stream) and zinc concentration and quantity levels, and (4) in July, 1979, the Respondent failed to report with respect to effluent discharged from Discharge Point 002 precise 30-day average load levels for hexavalent chromium, thus failing to fulfill the requirements of Standard Condition 16 of the Attachment H to its NPDES Permit in violation of Rules 501(a) and 501(c) of Chapter 3: Water Pollution Regulations (now 35 Ill. Adm. Code 305.102) and Section 12 (f) of the Illinois Environmental Protection Act (Act).

Count II of the Amended Complaint alleged that: (1) from February, 1979 until November 29, 1982, the Respondent has caused or allowed the discharge from Discharge Point 001 of effluent exceeding those parameter quantity and concentration limits specified in its NPDES Permit for the effluent parameters of five-day biochemical oxygen demand (BOD<sub>5</sub>), phenols, hexavalent chromium, suspended solids, chloride, and total dissolved solids; (2) from March, 1979 until November 29, 1982, the Respondent has caused or allowed the discharge from Discharge Point 002 of effluent exceeding those parameter loading and concentration limits specified in its NPDES Permit for the effluent parameters of BOD<sub>5</sub>, oil, fat and grease, phenols, hexavalent chromium, sulfide, total chromium, cyanide, suspended solids, and chemical oxygen demand in violation of Rules 410(a) and 901 of the Chapter 3: Water Pollution Regulations (now 35 Ill. Adm. Code 304.141 and 35 Ill. Adm. Code 309.102) and Section 12(f) of the Act.

Count III of the Amended Complaint alleged that, on various specified occasions between May, 1979 and November 29, 1982, the Respondent has caused or allowed the receiving stream into which it discharges effluent from Discharge Points 001 and 002 to exceed the ammonia nitrogen concentration above the levels allowed in its NPDES Permit in violation of Rules 410(a) and 901 of the Chapter 3: Water Pollution Regulations (now 35 Ill. Adm. Code 304.141 and 35 Ill. Adm. Code 309.102) and Section 12(f) of the Act.

After extensive discovery and numerous pre-hearing procedural matters were disposed of, the initial hearing in this enforcement action was held on April 15, 1985. Subsequently, lengthy settlement negotiations between the parties occurred. A second hearing was held on September 30, 1986 and the parties filed their proposed Settlement Agreement (Stip.) on October 2, 1986.

The Respondent, the Marathon Petroleum Company (Marathon), is an Ohio corporation which is duly licensed and authorized to conduct business in Illinois. The Respondent owns and operates a petroleum refinery near the eastern edge of the City of Robinson in Crawford County, Illinois. Marathon operates a wastewater treatment system in connection with its crude oil refinery. The effluent from the Respondent's wastewater treatment system is discharged into an unnamed ditch via two point sources: Discharge Point 001 (main process discharge) and Discharge Point 002 (emergency bypass impoundment basin\*). The unnamed ditch flows

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\*In connection with its wastewater treatment system, the Respondent maintains and operates two stormwater retention basins which are collectively known as the emergency bypass Impoundment Basin. Discharge Point 002 (i.e., Outfall 002), which is designated as the Impoundment Basin Discharge in the draft. (continued)

about nine miles east into Sugar Creek which is tributary to the Wabash River. (Stip. 2).

The Agency issued the Respondent NPDES Permit #IL004073 on November 19, 1974, pursuant to the requirements of the Federal Water Pollution Control Act, 33 U.S.C. 1151 et seq., which authorized, inter alia, the discharge of effluent from Marathon's wastewater treatment system via Discharge Point 001 to the receiving water. This NPDES Permit was reissued by the Agency on April 23, 1976 and again on November 10, 1978 and the applicable discharge requirements were modified by Board action in two subsequent proceedings: PCB 78-176 and PCB 80-102. (See: Opinion and Order of the Board dated February 15, 1979 in PCB 78-176, Marathon Oil Company v. IEPA, 32 PCB 545, and Opinion and Order of the Board dated October 2, 1980 in PCB 80-102, Marathon Oil Company v. IEPA, 39 PCB 541).

During the settlement negotiations after the filing of the instant enforcement action, the Respondent contended that it was in full compliance with its NPDES Permit and all applicable statutes and regulations. (Stip. 2). However, the parties concomitantly concluded that there was a need for an engineering study to determine the availability and feasibility of an appropriate means for reducing the frequency and size of Marathon's discharges from Discharge Point 002 (i.e., Outfall 002), assuming, arguendo, that corrective measures would be appropriate. Accordingly, the Respondent retained Radian Corporation, an independent nationally recognized engineering and consulting firm located in Austin, Texas, to conduct an engineering study and comprehensive review of Marathon's stormwater management alternatives. (Stip. 3).

On May 21, 1984, the Radian Corporation submitted its final report to the Respondent and this report was subsequently submitted to the Agency for its review. After carefully considering and evaluating the study made by its independent engineering consultant, Marathon submitted a stormwater management proposal to the Agency and the Radian Corporation conducted a supplemental study directed specifically at the Respondent's proposal. (Stip. 3-4). In light of the results of the previously mentioned engineering studies, the parties have developed a proposed settlement agreement and the Agency has agreed to issue an NPDES Permit to the Respondent containing substantially the same terms and conditions as contained in the draft NPDES Permit incorporated as Exhibit A of the Settlement Agreement. (Stip. 4-5; see: Exhibit A of the Stip.).

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NPDES Permit set forth in Exhibit A of the Stipulation, discharges from the Impoundment Basin into the previously mentioned unnamed tributary to Sugar Creek.

The primary goal of the Respondent's stormwater management program is to increase its stormwater impoundment capacity and to properly divert its non-refinery stormwater runoff. The proposed program is designed to enable the Respondent to store and treat stormwater runoff from a storm having a return frequency of a 10 year/24 hour storm, as per U.S. EPA guidelines. (Stip. 5). Although the 10 year, 24-hour storm event was used as a design criteria, both the Agency and the Respondent agree that this criterion is not adopted under any statute, regulation or ordinance. (Stip. 5).

The effectiveness of the design of the Respondent's stormwater control program was confirmed in a supplemental analysis which was performed by the Radian Corporation, since the initial stormwater program included some of the Respondent's own proposals. (See: Exhibit B of the Stip.). The Respondent's engineering consultant developed an appropriate model for use as a tool to evaluate the system after construction and evaluated data suitable for developing a tank dike management plan to maximize the storage of stormwater behind the tank dikes. It is stipulated that both the engineering study on stormwater management alternatives and the supplemental analysis report have been reviewed by the Agency. (Stip. 5).

The Respondent's stormwater management program was developed utilizing the selection criteria of: (1) design capacity; (2) the Respondent's ability to implement the program without bypassing or upsetting its wastewater treatment plant; (3) cost efficiency, and (4) the Respondent's ability to implement the stormwater program in the shortest time period vis-a-vis other possible alternatives. (Stip. 5-6). It is anticipated that, no matter what levels of rainfall occur in relatively short time spans, the Respondent's stormwater control program will provide sufficient stormwater diversion and storage capacity to appropriately cope with the situation. (Stip. 6). The Agency believes that the Respondent's proposal "should provide sufficient stormwater impoundment capacity and stormwater diversion to assure Marathon's compliance with its NPDES permit" and "accepts the Marathon program on the basis of the data provided in the Radian report and supplemental analysis", assuming that the program is properly implemented by the Respondent. (Stip. 5-6).

The proposed settlement agreement does not provide for any admissions of violations. (R. 2-3). However, it is stipulated that the Respondent shall pay a sum of \$10,000.00 into the Illinois Environmental Protection Trust Fund for the purposes of environmental protection and related enforcement programs within 30 days of the date of the Board's Order. (Stip. 11).

Additionally, the proposed settlement agreement provides that the Respondent shall: (1) divert stormwater runoff from its land treatment facility to two storage tanks (existing tanks 806

and 807 which each have a storage capacity of 1,575,000 gallons) for storage pending treatment in its wastewater treatment plant in full compliance with all applicable federal and state statutes, rules and regulations; (2) design and construct a totally enclosed diversion system through the oil refinery in order to divert the stormwater runoff from about 128 acres of non-refinery land located south of the refinery property line as designated in Exhibit C of the Stipulation; (3) complete the construction of the totally enclosed diversion system by November 1, 1987; and (4) dredge the Impoundment Basin, as necessary, to increase its impoundment capacity by about 4,000,000 gallons and maintain its stormwater management system storage capacity by dredging at least every two years thereafter as required for compliance with the terms and conditions of its NPDES Permit (including the proper handling and disposal of the dredged material).

Moreover, the settlement agreement also provides that Marathon shall: (1) record on at least a daily basis (except where otherwise noted) the on-site rainfall data; the Impoundment Basin water level; the volume of water pumped from the Impoundment Basin to the waste-water treatment facility; the tank 806 and tank 807 water levels and withdrawal rates; an estimate of the volume of water directed from, or bypassed around, the Wastewater Treatment System to the Impoundment Basin; the volume of water leaving the API Separator; and the concentration of BOD<sub>5</sub>, (weekly), COD, (twice weekly), pH, (twice weekly), TSS, (twice weekly) and oil and grease (twice weekly), separately analyzed and reported on a composite basis for both water leaving the DAF Unit and for Impoundment Basin water being pumped to the Wastewater Treatment System; (2) maintain the records pertaining to the previously mentioned data in item #5 at the refinery for a period of at least three years and make such data available for Agency inspection within a reasonable period, upon request, after a discharge from Outfall 002; (3) develop a procedure to use diked areas in the tank farm to retain stormwater and to minimize or eliminate discharges via Outfall 002 in an appropriate manner, as well as keeping the requisite data pertaining to the tank farm for Agency persual and inspection; (4) operate the Impoundment Basin so that water is withdrawn at the maximum possible rate which can be treated without upsetting the Respondent's wastewater treatment system; and (5) retain an independent consultant, if necessary, if undue problems result after construction of its diversion system, as per agreement of the parties. (Stip. 6-11).

In evaluating this enforcement action and proposed settlement agreement, the Board has taken into consideration all the facts and circumstances in light of the specific criteria delineated in Section 33(c) of the Act and finds that settlement agreement acceptable under 35 Ill. Adm. Code 103.180. Accordingly, the Respondent will be ordered to pay the sum of

\$10,000.00 into the Environmental Protection Trust Fund and to follow the terms and conditions of the compliance plan as delineated in the proposed settlement agreement.

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

ORDER

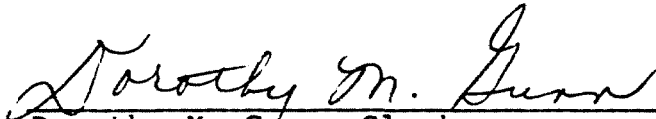
1. Within 30 days of the date of this Order, the Respondent, the Marathon Petroleum Company, shall, by certified check or money order payable to the State of Illinois and designated for deposit into the Environmental Protection Trust Fund, pay the sum of \$10,000.00 which is to be sent to:

Illinois Environmental Protection Agency  
Fiscal Services Division  
2200 Churchill Road  
Springfield, Illinois 62706

2. The Respondent shall comply with all the terms and conditions of the Settlement Agreement filed on October 2, 1986, which is attached to this Order and incorporated by reference as if fully set forth herein.

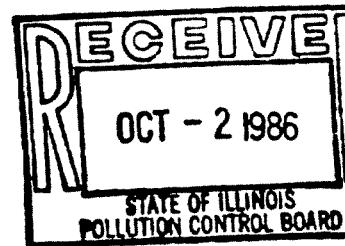
IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 23<sup>rd</sup> day of October, 1986 by a vote of 6-0.

  
\_\_\_\_\_  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board



NEIL F. HARTIGAN  
ATTORNEY GENERAL  
STATE OF ILLINOIS  
SPRINGFIELD  
62706



September 30, 1986

Ms. Dorothy Gunn, Clerk  
Illinois Pollution Control Board  
State of Illinois Center, Suite 11-500  
100 West Randolph  
Chicago, Illinois 60601

Re: IEPA v. Marathon Petroleum Company  
PCB 81-144

Dear Ms. Gunn:

Enclosed please find the original and ten copies of the settlement agreement presented at the September 30th hearing in the above-referenced cause for filing. Please return one copy to me with your file-stamp affixed thereto.

Thank you for your cooperation.

Sincerely,

James L. Morgan  
Assistant Attorney General  
Environmental Control Division

JLM:rsr  
Enclosures  
cc: Joseph Wright, Jr.  
Bruce Carlson  
David Saad



ENVIRONMENTAL PROTECTION AGENCY, )  
 )  
 Complainant, )  
 )  
 -vs- )  
 )  
 MARATHON PETROLEUM COMPANY, an Ohio )  
 corporation, )  
 )  
 Respondent. )

No. PCB 81-144

SETTLEMENT AGREEMENT

Pursuant to 35 Ill. Adm. Code Sec. 103.180, the following Settlement Agreement entered into between Complainant, Illinois Environmental Protection Agency (hereinafter "Agency"), the Respondent, Marathon Petroleum Company (hereinafter "Marathon") and the Illinois Attorney General (hereinafter "Attorney General"), is set out for the purpose of approval of the proposals hereinafter set forth. It is expressly understood and agreed by and between Marathon, the Attorney General and the Agency that the agreements, plans, stipulations and statements herein contained are not binding on the parties and shall be deemed null and void and held for naught, in the event such approval is not obtained, or in the event additional terms or conditions which are unacceptable to the parties are imposed. No statement, stipulated fact or admission contained herein shall be used in any other proceeding or cause of action, except in a proceeding to enforce the terms of this Settlement Agreement. Subject to the foregoing understanding and agreement, it is further agreed as follows:



## FACTUAL BACKGROUND

1. Marathon is a foreign corporation duly authorized to do business in the State of Illinois.

2. Marathon owns and has operated at all times pertinent hereto a petroleum refinery near the City of Robinson, Crawford County, Illinois.

3. In connection with the operation of Marathon's refinery, it operates a Waste Water Treatment System. The effluent from Marathon's Waste Water Treatment System is discharged via Outfall 001 into an unnamed tributary of Sugar Creek which ultimately flows into the Wabash River. The confluence of Sugar Creek and the Wabash River is approximately nine (9) miles east of the refinery.

4. In connection with the operation of the Waste Water System, Marathon maintains and operates two stormwater retention basins collectively known as the Impoundment Basin. Outfall 002, designated the Impoundment Basin Discharge in the draft NPDES permit, described in Paragraph 5 below and attached hereto as Exhibit A, discharges from the Impoundment Basin into the said unnamed tributary to Sugar Creek.

5. On or about November 19, 1974, Marathon was issued NPDES Permit No. IL0004073 pursuant to the requirements of the Federal Water Pollution Control Act, 33 U.S.C. 1151 et seq., which authorized, inter alia, the discharge of effluent from its Waste Water Treatment System via Outfall 001 to the receiving water. Said permit was reissued on April 23, 1976 and November 10, 1978 and was modified by action of the Illinois Pollution Control Board in two proceedings: PCB 78-176 and

80-102. A draft renewal NPDES permit is attached hereto as Exhibit A.

6. On September 10, 1981, the Agency commenced this proceeding by filing a complaint in three Counts.

7. Marathon contends that it is in full compliance with its NPDES permit and all applicable statutes and regulations.

8. After extensive discovery, the parties concluded that there was need for additional data, information and knowledge in order to determine the availability of an appropriate means of reducing the frequency and size of discharges from Outfall 002, assuming, arguendo, that corrective measures are appropriate.

9. Therefore, in an effort to provide a means to resolve this matter without further litigation, expense and delay, Marathon agreed to retain an independent engineering firm of known stature to complete a study designed to provide the data, information and knowledge discussed in paragraph 8 above. Radian Corporation, a nationally recognized engineering and consulting organization located in Austin, Texas, was retained to conduct a comprehensive review of stormwater management alternatives. The fees and costs for said study were paid by Marathon. A final report was submitted by Radian on May 21, 1984, and thereafter submitted to the Agency. Since that date Marathon has submitted a proposal to the Agency and Radian has conducted a supplemental study directed specifically at the Marathon proposal.

10. The Agency, their agents and attorneys, Marathon, their agents and attorneys and the Attorney General agree that

the study, data, observations, work papers, documents or photographs forming the basis of the study shall be discoverable by the Agency, but shall not be introduced into evidence or used in any way in this proceeding (except for purposes of impeachment of the author or authors of the study or any witness who purports to describe the contents or conclusions of the study) without the prior written agreement of the Agency and Marathon. The provisions of this Paragraph shall apply to any study conducted pursuant to Paragraph 25, except that such study may be used as evidence in litigating the appropriateness of Marathon's determination of a program of corrective action arrived at under Paragraph 25. Marathon's agreement to conduct said studies shall in no way be deemed an admission.

11. The Agency, the Attorney General and Marathon agree that the delay in prosecution of this action necessitated by the studies was reasonable in light of the need for a thorough engineering study given the nature, extent and causes of the above alleged violations, the nature of Marathon's operations and control equipment and the benefits to be obtained as the result of the study.

12. In view of the foregoing, Marathon, the Attorney General and the Agency have agreed to settle this litigation, through Marathon's implementation of the terms and conditions of this Settlement Agreement and through the Agency's issuance of an NPDES permit containing substantially the same terms and conditions as contained in the draft NPDES permit attached hereto as Exhibit A. Nothing in this Settlement Agreement bars Marathon from prosecuting an appeal of any permit conditions imposed in

the issued NPDES permit that differs from the conditions imposed in the draft NPDES permit attached hereto as Exhibit A.

13. The object of the program to be undertaken by Marathon is an increase in stormwater impoundment capacity combined with a diversion of non-refinery stormwater run-off.

14. The program is designed to allow Marathon to store and treat stormwater run-off from a storm having a return frequency of a 10 year/24-hour storm.<sup>1</sup> The program was derived with regard to the alternatives and volumes identified in the Radian Corporation report, Stormwater Management Alternatives. Because the program does include some of Marathon's own proposals, the effectiveness of the design was confirmed in a supplemental analysis, a copy of which is attached hereto as Exhibit B, and both reports have been reviewed by the Agency. While the 10 year, 24-hour storm event was used as a design criteria, both parties agree this criterion is not adopted under any statute, regulation or ordinance. Nonetheless, in light of the supplemental analysis performed by Radian Corporation, the Agency believes the Marathon proposal should provide sufficient stormwater impoundment capacity and stormwater diversion to assure Marathon's compliance with its NPDES permit.

15. The selection criteria for the Marathon program were design capacity, Marathon's ability to implement the program

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<sup>1</sup> Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category. Effluent Guideline Review Office of Water and Hazardous Material, U.S.E.P.A., April, 1974, Doc. #EPA440/1-74-014, page 100.

cost efficiency and Marathon's ability to implement the program in the shortest time period relative to other alternatives. Radian's supplemental analysis supports the conclusion that regardless of antecedent moisture conditions the program will provide sufficient storage capacity and stormwater diversion. The Agency accepts the Marathon program on the basis of the data provided in the Radian report and supplemental analysis and the belief that the program, if properly implemented, should assure Marathon's compliance with the NPDES permit.

#### SETTLEMENT TERMS

16. Marathon will divert stormwater runoff from its land treatment facility to two storage tanks (existing tanks 806 and 807) for storage pending treatment in the waste water treatment plant, all in compliance with applicable federal and state statutes, rules and regulations. Each of said tanks has a capacity of 1.575 million gallons. Run-off from the land treatment facility resulting from a storm having a return frequency of a 25 year/24-hour storm has been calculated by Marathon to be 1.75 million gallons. The land farm was designed to impound an additional 25 year/24-hour storm pursuant to 35 Ill. Adm. Code Section 724.373(d). These storage tanks and land treatment facilities are designated on a map of the Marathon Refinery, attached hereto as Exhibit C.

17. Marathon will design and construct a totally enclosed diversion system through the refinery for diversion of stormwater runoff from approximately 128 acres of non-refinery

land located south of the refinery property line, as designated on Exhibit C.

18. Marathon will dredge the Impoundment Basin as required to increase impoundment capacity by approximately 4 million gallons and will maintain stormwater management system storage capacity by dredging at least every two years thereafter as required for compliance with the terms and conditions of the NPDES permit to be issued under Paragraph 20 below. Dredged material will be handled and disposed of in accordance with the Illinois Environmental Protection Act, Ill. Rev. Stat. 1985, ch. 111 1/2, par. 1001, et seq. ("the Act"), and 35 Ill. Adm. Code, Subtitle G.

19. Since, according to Marathon, a full construction season will be needed to complete the actions described in paragraph 17, if the Board approves this agreement on or before March 1, 1987 the work shall be completed by November 1, 1987. However, if the Board's approval of this agreement comes after March 1, 1987 and before March 1, 1988, this work shall be completed by November 1, 1988. The initial dredging called for in Paragraph 18 and the work in paragraph 16 has been completed.

20. The Agency has circulated for public comment a draft NPDES permit to Marathon for a five year period from the date of issuance in the form attached hereto as Exhibit A.

21. This Settlement Agreement, if approved by the Board in its entirety and if fully implemented, will obviate the need for, and be in settlement of, further litigation of the types of violations of the Act and IPCB regulations alleged in the First Amended Complaint in this cause, occurring up to the date of this

Settlement Agreement.

22. Marathon will record on at least a daily basis (except where noted otherwise) the following:

- a) on-site rainfall data;
- b) Impoundment Basin water level;
- c) volume of water pumped from the Impoundment Basin to the waste water treatment facility;
- d) tank 806 and 807 water levels and withdrawal rates;
- e) an estimate of the volume of water directed from or by-passed around the Waste Water Treatment System to the Impoundment Basin;
- f) volume of water leaving the API Separator;
- g) concentration of the following contaminants, separately analyzed and reported on a composite basis for both (1) water leaving the DAF Unit and (2) Impoundment Basin water being pumped to the Waste Water Treatment System:
  - 1) BOD<sub>5</sub> (weekly)
  - 2) COD (twice weekly)
  - 3) pH (twice weekly)
  - 4) TSS (twice weekly)
  - 5) Oil and grease (twice weekly)

These records (including any of the described records and analyses made more frequently than the periods set forth above) will be maintained at the refinery for a period of at least three years and will be available to the Agency for inspection. Copies of such records will be provided within a reasonable period to the Agency, upon request, after a discharge from Outfall 002. The obligations imposed by this Paragraph 22 will be coterminous with the term of the renewal NPDES permit to be issued. To the extent any of the recordation obligations set forth above are in addition to current recordation practices, such additional obligations will commence immediately upon the completion of the actions described in Paragraphs 16 and 17.

23. Marathon will develop a procedure which will utilize diked areas in the tank farm to retain stormwater that falls thereon and will control the time and volume of stormwater released therefrom so as to minimize or eliminate discharges via Outfall 002. Although development of the procedure will be on-going as experience is gained, Marathon shall collect, maintain and review at least the following data concerning the tank farm:

- (1) A depth versus volume curve (chart) will be developed and used for each tank dike area to determine actual stormwater storage volume. In addition, a tank dike level monitoring system will be installed and the volume of stormwater in tank dike storage will be monitored, and recorded on at least a daily basis, records to be retained for three years.
- (2) The Impoundment Basin in-flow/out-flow and storage volume will be monitored in conjunction with tank dike storage volume. Based upon the impoundment storage volume, tank dike storage volume, water return rate to the waste water treatment plant and weather conditions, storm water would be released from various tank dike storage area(s) at a controlled/monitored rate to the impoundment basin.
- (3) Tank dike area drainage rate will be monitored closely to minimize the storage of water in the dike areas while also maintaining as much excess impoundment basin capacity as possible.

These records (including any of the described records and analyses made more frequently than the periods set forth above) will be maintained at the refinery for a period of at least three years and will be available to the Agency for inspection. Copies of such records will be provided within a reasonable period to the Agency, upon request, after a discharge from Outfall 002. The obligations imposed by this Paragraph 23 will be coterminous with the term of the renewal NPDES permit to be issued. The



obligations of this Paragraph 23 will commence immediately upon the completion of the actions described in Paragraphs 16 and 17 above.

24. Marathon will operate the Impoundment Basin so that water is withdrawn at the maximum possible rate which can be treated without upsetting the Waste Water Treatment System.

25. If Marathon experiences a discharge from Outfall 002 after the date on which the actions called for in Paragraph 17 is to be completed (as calculated in Paragraph 19), which discharge contains a contaminant listed under the draft NPDES permit attached hereto as Exhibit A for that Outfall, as that permit exists now or may hereafter be amended, with the exception of total suspended solids, which contaminant exceeds the daily maximum concentration and load limits, as calculated under the draft NPDES permit, Marathon will retain an independent consultant for the purpose of analyzing the nature of the discharge, its cause or causes, and the need for and type of further corrective action, if any. However, the parties may agree that no such independent consultant's report is necessary. In the event such agreement is not reached between the parties, Marathon will submit a written description for the scope of work to be performed to IEPA for its review and comments. Marathon will not commence the study until 30 days after submitting the scope of work document to the Agency. Said report will be completed and submitted to the Agency within 6 months of the end of IEPA's comment period. The parties will discuss the report of the independent consultant within 30 days of the submittal of the report. If the consultant recommends further corrective action,

Marathon shall prepare, within 90 days after the submittal of the report, a program for appropriate corrective action, unless the parties agree that no further corrective action is warranted. The report will be prepared and delivered under the same terms and conditions as those described in Paragraph 10.

Nothing in this paragraph shall bar the Agency from seeking any relief of any type in any forum against Marathon, should Marathon elect not to take any corrective action deemed necessary by the Agency, without regard to the findings or recommendations of the independent consultant.

Further, nothing in this Agreement affects Marathon's responsibility to comply with, nor the power of the Agency and State of Illinois to enforce, any applicable law or statute.

26. Marathon agrees to pay a sum of \$10,000.00 to the Environmental Protection Trust Fund for the purposes of environmental protection and related enforcement programs. Marathon agrees to make such payment within 30 days of the date of the approval of this Settlement Agreement. Marathon waives its right to have any unused portion of said payment returned to Marathon.

MARATHON PETROLEUM COMPANY

BY: R. L. Barrett

DATED: 9-25-86

ILLINOIS ATTORNEY GENERAL

BY: Robert S. Stupp

DATED: 9-29-86

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BY: Joseph E. Dvorbode

DATED: 9/30/86

NPDES Permit No. IL0004073  
Illinois Environmental Protection Agency

Division of Water Pollution Control

2200 Churchill Road

Springfield, Illinois 62706

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date: August 1, 1991

Issue Date:  
Effective Date:

Name and Address of Permittee:

Facility Name and Address:

Marathon Petroleum Company  
Robinson Refinery  
539 South Main Street  
Findlay, Ohio 45840

Marathon Petroleum Company  
Robinson Refinery  
Illinois Refining Division  
Marathon Avenue  
Robinson, Illinois 62454  
Crawford County

Discharge Number and Name:

Receiving Waters:

001 - Treatment Plant Discharge  
002 - Impoundment Basin Discharge

Unnamed Tributary to Sugar Creek  
Unnamed Tributary to Sugar Creek

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C Rules and Regulations of the Illinois Pollution Control Board, and the FWPCA, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Thomas G. McSwiggin, P.E.  
Manager, Permit Section  
Division of Water Pollution Control

TGM:YS:ds:5791C,sp

EXHIBIT A

NPDES Permit No. IL0004073  
Effluent Limitations and Monitoring

POLLUTANT	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SA TY
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		
Temperature	See special condition no. 1 241****	See special condition no. 2 612****	10	20	Daily 2/week 2/week 2/week	C G G C
Suspended solids	289**** 9767****	735**** 18821****	12	24	2/week 2/week	C C
Fats & oil	361****	763****	15	30	1/week	M C
Ammonia-N	763	4.5**** 1679*****		0.2	2/week 2/week	C C
Total phosphorus (total)	7.4 10.4****	16.5 30.3****	1.0	2.0	2/week 2/week	C C
Hexachlorocyclopentadiene concentration		1.8****		0.1	2/week	C
Dissolved solids				700 3500	2/week 2/week	C C
Un-ionized ammonia as N					2/week	C

See special condition no. 3  
See special condition no. 4  
See special condition no. 8  
See special condition no. 14

NPDES Permit No. IL0004073  
Effluent Limitations and Monitoring

POLLUTANT	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	S 1
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		
<u>Outfalls: 002*</u>						<u>When Dischar</u>
(MGD)	See special condition no. 1					Daily
***	****	****	10	20	Daily	
Suspended	****	****	12	24	Daily	
solids***	****	****	15	30	Daily	
Fats &	****	****	0.3	0.6	Daily	
oil	****	****	0.1	0.3	Daily	
Ammonia Nitrogen***	****	****	1.0	2.0	Daily	
Mercury***	****	****			Daily	
Lead***	****	****			Daily	
Cadmium***	****	****			Daily	
Copper***	****	****			Daily	

special condition no. 13  
see special condition no. 11  
see special condition no. 8

Special Conditions

1. The pH shall be in the range 6.0 to 9.0.
2. Discharge of wastewater from this facility must not alone or in combination with other sources cause the receiving stream to violate the following thermal limitations at the edge of the mixing zone which is defined by Rule 302.102, Illinois Pollution Control Board Rules and Regulations, Chapter 1: Water Pollution, as amended:
  - A. Maximum temperature rise above natural temperature must not exceed 50F (2.780C).
  - B. Water temperature at representative locations in the main river shall not exceed the maximum limits in the following table during more than one (1) percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the following table by more than 30F (1.670C). (Main river temperatures are temperatures of those portions of the river essentially similar to and following the same thermal regime as the temperatures of the main flow of the river.)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
0F	60	60	60	90	90	90	90	90	90	90	90	60
0C	15.6	15.6	15.6	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	15.6

3. Mathematical composites for oil, fats and greases shall consist of a series of grab samples collected over any 24-hour consecutive period. Each sample shall be analyzed separately and the arithmetic mean of all grab samples collected during a 24-hour period shall constitute a mathematical composite. No single grab sample shall exceed a concentration of 75 mg/l.
4. The terms and conditions of PCB 85-83 are hereby incorporated by reference as if fully set forth herein.
5. Sample taken in compliance with the effluent monitoring requirements for discharge #001 shall be taken at a point representative of discharge #001 but prior to mixing with discharge #002.

NPDES Permit No. IL0004073

Special Conditions

6. Sample taken in compliance with the effluent monitoring requirements for discharge #002 shall be taken at a point representative of discharge #002 but prior to mixing with discharge #001.
7. The permittee shall record monitoring results on Discharge Monitoring Report Forms using one such form for each discharge each month.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 15th day of the following month, unless otherwise specified by the permitting authority.

Discharge Monitoring Reports shall be mailed to the IEPA at the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
2200 Churchill Road  
Springfield, Illinois 62706

Attention: Compliance Assurance Section

Additionally, Discharge Monitoring Report forms shall be mailed to United States Environmental Protection Agency in Chicago on a quarterly basis. The permittee shall submit the reports as follows, unless otherwise specified by the permitting authority.

Period	Report Due At
	U.S. Environmental Protection Agency
Jan, Feb, Mar	April 28th
April, May, June	July 28th
July, Aug, Sept	October 28th
Oct, Nov, Dec	January 28th

Reports shall be addressed to United States Environmental Protection Agency as follows:

NPDES Compliance Unit  
United States Environmental Protection Agency  
Region V  
230 South Dearborn Street  
Chicago, Illinois 60604

Special Conditions8. Storm Water Credit:

An additional storm water credit for the following parameters shall be calculated based on 100% of the storm water flow as defined below.

<u>Parameter</u>	Pounds per 1000 gallons of storm water flow	
	<u>Average</u>	<u>Maximum</u>
COD	1.6	3.1
Oil and Grease*	0.067	0.13
BOD	.22	.4
TSS	.18	.28
Hexavalent Chromium	.00023	.00052
Total Chromium	.0018	.005
Phenolic Compounds	.0014	.0029

**Dry Weather Flow** - The average flow from the API separator for the last three consecutive zero precipitation days. Previously collected storm water shall not be included.

**Storm Water Flows** - The storm water runoff which is treated in the waste water treatment facility shall be defined as that portion of the flow greater than the dry weather flow or which is discharged from Outfall 002.

The storm water credit does not authorize the permittee to exceed the concentration limits contained in Effluent Limitations and Monitoring, Page 2.

In computing monthly average permit limits to include storm water credit, the pound credit calculated above shall be averaged along with process pound limits over the 30 day period. Explanatory calculations and flow data shall be submitted together with discharge monitoring reports.

The total quantity (of any constituent for which there is a load limit prescribed on page 2 of this permit under Outfall 001) discharged from Outfalls 001 and 002 shall not exceed the sum of the storm water credit plus the load limits listed on Page 2 of this permit under Outfall 001, subject to Special Condition No. 13.

\*At no time, the permittee shall exceed more than 918 lbs of fats, oil and grease in the discharge from Outfall 001.

9. The permittee shall monitor Outfall 001 twice per year and Outfall 002 during two separate discharges associated with two distinct precipitation events at least if two such discharges occur during a calendar year, as follows:
- Polynuclear\* aromatic hydrocarbons using U.S.EPA method # 610 (44 FR 69514), and
  - Benzene, toluene and ethylbenzene using U.S.EPA method # 602 (44 FR 69474)



Special Conditions

Sample type shall be a 24 hr. composite sample. The results shall be submitted during April and October to both IEPA and USEPA unless otherwise specified by the Agency.

If the permittee, after monitoring the above items (a) and (b) twice, can demonstrate to the satisfaction of the Agency that the parameters are not found at a level of environmental or human health significance during the one year period, upon written request by the permittee, the Agency shall review the monitoring requirements and may, at their discretion, revise or waive these monitoring requirements.

List of Polynuclear Aromatic Hydrocarbons

Benzo (a) anthracene (1,2-benzanthracene)  
Benzo (a) pyrene (3,4-benzopyrene)  
Benzo (b) fluoranthene  
Benzo (k) fluoranthene (11,12-benzofluoranthene)  
Chrysene  
Acenaphthylene  
Anthracene  
Benzo (g,h,i) perylene (1,12-benzoperylene)  
Fluorene  
Phenanthrene  
Indeno (1,2,3-c,d) pyrene (2,3-0-phenylenepyrene)  
Pyrene

If the Agency determines that any of the parameters are being discharged at a level of environmental or human health significance, the permit may be reopened to incorporate limitations, in accordance with the Federal and State of Illinois Rules and Regulations.

10. This permit does not authorize the permittee to operate an onsite sludge disposal facility or the land application of sludge onsite.
11. At the option of the Illinois Environmental Protection Agency, the monitoring and reporting of BOD<sub>5</sub>, total suspended solids, ammonia nitrogen, phenol, chromium (hexavalent), chromium (total) and COD as listed on the effluent limitations and monitoring page for outfall 002 may, at their discretion, revise or waive these monitoring requirements, providing that the following conditions have been met:
  - A. No violations of the maximum permit limitations are observed during the period of which the parameters were monitored.

Special Conditions

- B. Monitoring of the parameters indicates a consistent average, with little deviation, at a point below the permitted average concentration.
- C. The parameters indicated have been monitored for a continuous period of 6 calendar months and at least three discharge occurrences have been monitored.

The permittee must make the request to discontinue the monitoring in writing and include a summary of the data collected.

- 12. In accordance with applicable federal and State of Illinois regulations, the Agency may modify this permit during its term to incorporate requirements for biological toxicity testing of discharges or receiving waters, and to incorporate additional requirements or limitations based on the results of such testing, following public notice and opportunity for hearing.
- 13. Any discharge that occurs from Outfall 002 is considered to be a bypass, as defined below, and subject to the condition contained below:

**Bypass**

(1) Definitions.

- (i) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- (ii) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

(2) Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause any effluent concentration or quantity limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (3) and (4) of this condition.

Special Conditions

(3) Notice

- (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in 40 CFR 122.41(16) (24-hour notice.)

(4) Prohibition of bypass

- (i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
  - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
  - (C) The permittee submitted notices as required under paragraph (3) of this condition.
- (ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (4)(i) of this condition.

- 14. The ammonia as (N) concentration shall not exceed 1.5 mg/l during the months of April through October or 4.0 mg/l during the months of November through March, unless the unionized ammonia concentration does not exceed 0.04 mg/l.
- 15. The Permittee's discharges shall not, alone or in combination with other sources, cause a violation of any applicable water quality standard.

3 January 1985

222-103-02

JAN - 7 1985

Vicki May  
Marathon Petroleum Company  
1000 Marathon Avenue  
Robinson, Illinois 62454

Dear Vicki,

As per our telephone conversation, enclosed is a copy of the model output for the Marathon stormwater proposal.

We are preparing a letter which will discuss the use of this model as a tool for evaluation of the system after construction. Also this letter will specify the data needs for developing the tank dike management plan for optimizing the storage of stormwater in the tank dikes.

If you have any questions, please don't hesitate to call.

Sincerely,

  
Robert C. Wallace  
Staff Engineer

RCW:dla

Enclosure

RECEIVE

JAN 08

J. E. FORT

DRAINAGE TREATMENT INITIAL  
 AREA RATE CAPACITY VOLUME  
 (ACRES) (GPM/MIN) (GALLONS) (GALLONS)

DIKE DIKE DIKE DIKE  
 180 192 2.56E+07 6.00E+06

POND FOND FOND FOND  
 289 500 3.24E+07 1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
NOV	1	0.000											
	2	0.670											
	3	0.000											
	4	0.000											
	5	0.000											
	6	0.000	0.600	87	1.494	0.000	-2.68E+05	5.73E+06	0.00E+00	-4.52E+05	9.58E+05	0.00E+00	101.6
	7	0.000	0.600	87	1.494	0.000	-2.68E+05	5.46E+05	0.00E+00	-4.52E+05	9.10E+05	0.00E+00	110.6
	8	0.000	0.000	73	3.699	0.000	-2.68E+05	5.20E+05	0.00E+00	-4.52E+05	8.64E+05	0.00E+00	105.6
	9	0.000	0.000	73	3.699	0.000	-2.68E+05	4.92E+05	0.00E+00	-4.52E+05	8.19E+05	0.00E+00	107.6
	10	0.000	0.000	73	3.699	0.000	-2.68E+05	4.66E+05	0.00E+00	-4.52E+05	7.74E+05	0.00E+00	109.6
	11	0.060	0.000	73	3.699	0.000	-2.68E+05	4.39E+05	0.00E+00	-4.52E+05	7.29E+05	0.00E+00	111.6
	12	0.700	0.060	73	3.699	0.000	-2.68E+05	4.12E+05	0.00E+00	-4.52E+05	6.84E+05	0.00E+00	113.6
	13	0.000	0.760	87	1.494	0.000	-2.68E+05	3.86E+05	0.00E+00	-4.52E+05	6.38E+05	0.00E+00	115.6
	14	0.000	0.760	97	1.494	0.000	-2.68E+05	3.59E+05	0.00E+00	-4.52E+05	5.93E+05	0.00E+00	117.6
	15	0.000	0.760	87	1.494	0.000	-2.68E+05	3.32E+05	0.00E+00	-4.52E+05	5.48E+05	0.00E+00	119.6
	16	0.000	0.760	87	1.494	0.000	-2.68E+05	3.05E+05	0.00E+00	-4.52E+05	5.03E+05	0.00E+00	121.6
	17	0.000	0.700	97	1.494	0.000	-2.68E+05	2.78E+05	0.00E+00	-4.52E+05	4.58E+05	0.00E+00	123.6
	18	0.000	0.000	73	3.699	0.000	-2.68E+05	2.52E+05	0.00E+00	-4.52E+05	4.12E+05	0.00E+00	125.6
	19	0.000	0.000	73	3.699	0.000	-2.68E+05	2.25E+05	0.00E+00	-4.52E+05	3.67E+05	0.00E+00	127.6
	20	0.050	0.000	73	3.699	0.000	-2.68E+05	1.98E+05	0.00E+00	-4.52E+05	3.22E+05	0.00E+00	129.6
	21	0.050	0.000	73	3.699	0.000	-2.68E+05	1.71E+05	0.00E+00	-4.52E+05	2.77E+05	0.00E+00	131.6
	22	0.010	0.140	73	3.699	0.000	-2.68E+05	1.44E+05	0.00E+00	-4.52E+05	2.32E+05	0.00E+00	133.6
	23	0.620	0.150	73	3.699	0.000	-2.68E+05	1.18E+05	0.00E+00	-4.52E+05	1.86E+05	0.00E+00	135.6

UNSE - TABLE 3

DRAINAGE AREA (ACRES)		TREATMENT RATE (GAL/MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)										
DISE		DISE	DISE	DISE										
120		126	2.56E+07	6.00E+06										
POND		POND	POND	POND										
289		1500	3.24E+07	1.00E+07										
YR	MO	DATE	INCREMENTAL PRELIF (INCHES)	FIVE DAY EFFECIF (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUMOFF (INCHES)	INFLOW TO CILES (GAL/DAY)	CIVE VALUE (GALLONS)	DIVE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
		24	0.000	0.770	87	1.494	0.000	-2.48E+05	9.08E+05	0.00E+00	-4.52E+05	1.41E+06	0.00E+00	137.7
		25	0.000	0.750	87	1.494	0.000	-2.48E+05	6.49E+05	0.00E+00	-4.52E+05	9.60E+05	0.00E+00	137.7
		26	0.550	0.680	87	1.494	0.057	5.96E+04	6.99E+05	0.00E+00	7.23E+04	1.03E+06	0.00E+00	137.4
		27	0.240	1.280	95	0.526	0.027	-1.74E+05	5.65E+05	0.00E+00	-2.37E+05	7.90E+05	0.00E+00	141.5
		28	0.470	1.510	95	0.526	0.149	4.62E+05	1.03E+06	0.00E+00	7.29E+05	1.52E+06	0.00E+00	137.3
		29	0.020	1.360	95	0.526	0.000	-2.48E+05	7.35E+05	0.00E+00	-4.52E+05	1.06E+06	0.00E+00	139.3
		30	0.000	1.380	95	0.526	0.000	-2.48E+05	4.91E+05	0.00E+00	-4.52E+05	6.11E+05	0.00E+00	141.2
DEC		1	0.170	1.380	95	0.526	0.039	-7.61E+04	4.15E+05	0.00E+00	-1.44E+05	4.67E+05	0.00E+00	141.9
		2	0.430	1.000	37	1.494	0.011	-2.16E+05	1.99E+05	0.00E+00	-3.69E+05	9.81E+04	0.00E+00	143.6
		3	3.850	1.190	95	0.526	3.264	1.57E+07	1.59E+07	0.00E+00	2.52E+07	2.53E+07	0.00E+00	31.8
		4	0.480	4.350	95	0.526	0.156	4.94E+05	1.64E+07	0.00E+00	7.71E+05	2.60E+07	0.00E+00	29.3
		5	0.310	5.010	95	0.526	0.057	1.23E+04	1.64E+07	0.00E+00	-1.08E+03	2.60E+07	0.00E+00	18.3
		6	0.030	5.320	95	0.526	0.000	-2.48E+05	1.61E+07	0.00E+00	-4.52E+05	2.56E+07	0.00E+00	30.5
		7	0.000	5.080	95	0.526	0.000	-2.48E+05	1.57E+07	0.00E+00	-4.52E+05	2.51E+07	0.00E+00	32.4
		8	0.000	4.650	95	0.526	0.000	-2.48E+05	1.36E+07	0.00E+00	-4.52E+05	2.47E+07	0.00E+00	34.4
		9	0.000	0.820	87	1.494	0.000	-2.48E+05	1.33E+07	0.00E+00	-4.52E+05	2.42E+07	0.00E+00	36.4
		10	0.170	0.340	73	3.699	0.000	-2.48E+05	1.30E+07	0.00E+00	-4.52E+05	2.38E+07	0.00E+00	38.4
		11	0.000	0.160	73	3.699	0.000	-2.48E+05	1.48E+07	0.00E+00	-4.52E+05	2.33E+07	0.00E+00	40.4
		12	0.000	0.130	73	3.699	0.000	-2.48E+05	1.45E+07	0.00E+00	-4.52E+05	2.29E+07	0.00E+00	42.4
		13	0.000	0.130	73	3.699	0.000	-2.48E+05	1.42E+07	0.00E+00	-4.52E+05	2.24E+07	0.00E+00	44.4
		14	0.070	0.130	73	3.699	0.000	-2.48E+05	1.40E+07	0.00E+00	-4.52E+05	2.20E+07	0.00E+00	46.4
		15	0.220	0.200	73	3.699	0.000	-2.48E+05	1.37E+07	0.00E+00	-4.52E+05	2.15E+07	0.00E+00	48.4
		16	0.000	0.000	73	3.699	0.000	-2.48E+05	1.34E+07	0.00E+00	-4.52E+05	2.11E+07	0.00E+00	50.4

CONTINUED

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/DAY)	CAPACITY (GAL/DAY)	INITIAL VOLUME (GALLONS)
D1-E	D1-E	D1-E	D1-E
180	184	2.56E+07	6.00E+06
FOND	PCND	PCND	PCND
189	500	3.24E+07	1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO PCND (GAL/DAY)	FOND VOLUME (GALLONS)	PCND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
	17	0.000	0.290	73	3.699	0.000	-2.68E+05	1.32E+07	0.00E+00	-4.52E+05	2.66E+07	0.00E+00	52.4
	18	0.000	0.290	73	3.699	0.000	-2.68E+05	1.25E+07	0.00E+00	-4.52E+05	2.01E+07	0.00E+00	54.5
	19	0.000	0.290	73	3.699	0.000	-2.68E+05	1.25E+07	0.00E+00	-4.52E+05	1.97E+07	0.00E+00	56.5
	20	0.000	0.250	73	3.699	0.000	-2.58E+05	1.24E+07	0.00E+00	-4.52E+05	1.92E+07	0.00E+00	58.5
	21	0.000	0.000	73	3.699	0.000	-2.70E+05	1.21E+07	0.00E+00	-4.52E+05	1.88E+07	0.00E+00	60.5
	22	0.040	0.030	73	3.699	0.000	-2.68E+05	1.18E+07	0.00E+00	-4.52E+05	1.83E+07	0.00E+00	62.5
	23	0.040	0.070	73	3.699	0.000	-2.68E+05	1.16E+07	0.00E+00	-4.52E+05	1.79E+07	0.00E+00	64.5
	24	1.450	0.110	73	3.699	0.114	2.91E+05	1.19E+07	0.00E+00	4.46E+05	1.82E+07	0.00E+00	62.5
	25	1.300	1.530	95	0.526	0.629	3.79E+06	1.56E+07	0.00E+00	6.06E+05	2.44E+07	0.00E+00	35.6
	26	0.050	2.930	95	0.526	0.000	-2.68E+05	1.54E+07	0.00E+00	-4.52E+05	2.39E+07	0.00E+00	37.6
	27	0.770	2.880	95	0.526	0.371	1.55E+06	1.69E+07	0.00E+00	2.46E+06	2.64E+07	0.00E+00	26.7
	28	0.020	3.610	95	0.526	0.000	-2.68E+05	1.68E+07	0.00E+00	-4.52E+05	2.59E+07	0.00E+00	18.7
	29	0.000	3.590	95	0.526	0.000	-2.68E+05	1.54E+07	0.00E+00	-4.52E+05	2.55E+07	0.00E+00	30.7
	30	0.000	2.140	95	0.526	0.000	-2.68E+05	1.61E+07	0.00E+00	-4.52E+05	2.50E+07	0.00E+00	32.7
	31	0.000	0.840	87	1.494	0.000	-2.68E+05	1.58E+07	0.00E+00	-4.52E+05	2.46E+07	0.00E+00	34.7
JAN	1	0.000	0.790	87	1.494	0.000	-2.68E+05	1.36E+07	0.00E+00	-4.52E+05	2.41E+07	0.00E+00	36.7
	2	0.000	0.000	73	3.699	0.000	-2.68E+05	1.33E+07	0.00E+00	-4.52E+05	2.37E+07	0.00E+00	38.7
	3	0.000	0.000	73	3.699	0.000	-2.68E+05	1.51E+07	0.00E+00	-4.52E+05	2.32E+07	0.00E+00	40.7
	4	0.000	0.000	73	3.699	0.000	-2.68E+05	1.46E+07	0.00E+00	-4.52E+05	2.28E+07	0.00E+00	42.3
	5	0.000	0.000	73	3.699	0.000	-2.68E+05	1.45E+07	0.00E+00	-4.52E+05	2.23E+07	0.00E+00	44.8
	6	0.000	0.000	73	3.699	0.000	-2.68E+05	1.43E+07	0.00E+00	-4.52E+05	2.19E+07	0.00E+00	46.3
	7	0.000	0.000	73	3.699	0.000	-2.58E+05	1.41E+07	0.00E+00	-4.52E+05	2.14E+07	0.00E+00	48.9
	8	0.000	0.000	73	3.699	0.000	-2.52E+05	1.31E+07	0.00E+00	-4.52E+05	2.10E+07	0.00E+00	50.8

DRY HOLE	YEAR	DATE	INITIAL	AREA	DATE	VOLUME	(GALLONS)	AREA	DATE	VOLUME	(GALLONS)
INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES
180	FND	186	FND	289	FND	289	FND	180	FND	289	FND
2.55E+07	6.00E+06	3.24E+07	1.00E+07	3.24E+07	1.00E+07	3.24E+07	1.00E+07	3.24E+07	1.00E+07	3.24E+07	1.00E+07

9	73	3.699	0.000	-2.68E+05	1.34E+07	0.00E+00	-4.52E+05	2.05E+07	0.00E+00	52.8
10	73	3.699	0.000	-2.68E+05	1.52E+07	0.00E+00	-4.52E+05	2.01E+07	0.00E+00	54.8
11	73	3.699	0.005	-2.68E+05	1.29E+07	0.00E+00	-4.52E+05	1.99E+07	0.00E+00	56.2
12	73	3.699	0.000	-2.68E+05	1.29E+07	0.00E+00	-4.52E+05	1.92E+07	0.00E+00	58.8
13	73	3.699	0.000	-2.68E+05	1.24E+07	0.00E+00	-4.52E+05	1.87E+07	0.00E+00	60.8
14	73	3.699	0.000	-2.68E+05	1.21E+07	0.00E+00	-4.52E+05	1.83E+07	0.00E+00	62.8
15	73	3.699	0.000	-2.68E+05	1.18E+07	0.00E+00	-4.52E+05	1.78E+07	0.00E+00	64.8
16	73	3.699	0.005	-2.68E+05	1.17E+07	0.00E+00	-4.52E+05	1.74E+07	0.00E+00	67.8
17	73	3.699	0.005	-2.68E+05	1.13E+07	0.00E+00	-4.52E+05	1.69E+07	0.00E+00	69.8
18	73	3.699	0.005	-2.68E+05	1.10E+07	0.00E+00	-4.52E+05	1.65E+07	0.00E+00	70.8
19	73	3.699	0.005	-2.68E+05	1.08E+07	0.00E+00	-4.52E+05	1.60E+07	0.00E+00	73.8
20	73	3.699	0.005	-2.68E+05	1.05E+07	0.00E+00	-4.52E+05	1.55E+07	0.00E+00	74.8
21	73	3.699	0.250	-2.68E+05	1.02E+07	0.00E+00	-4.52E+05	1.51E+07	0.00E+00	76.8
22	73	3.699	0.255	-2.68E+05	9.95E+06	0.00E+00	-4.52E+05	1.46E+07	0.00E+00	78.8
23	87	1.494	0.100	-2.68E+05	9.59E+06	0.00E+00	-4.52E+05	1.42E+07	0.00E+00	80.8
24	87	1.494	0.500	-2.68E+05	9.41E+06	0.00E+00	-4.52E+05	1.37E+07	0.00E+00	82.8
25	87	1.494	0.610	-2.68E+05	9.15E+06	0.00E+00	-4.52E+05	1.33E+07	0.00E+00	84.8
26	97	1.494	0.610	-2.68E+05	8.89E+06	0.00E+00	-4.52E+05	1.28E+07	0.00E+00	86.8
27	73	3.699	0.000	-2.68E+05	8.71E+06	0.00E+00	-4.52E+05	1.24E+07	0.00E+00	89.0
28	73	3.699	0.110	-2.68E+05	8.34E+06	0.00E+00	-4.52E+05	1.19E+07	0.00E+00	91.0
29	73	3.699	0.250	-2.68E+05	8.07E+06	0.00E+00	-4.52E+05	1.13E+07	0.00E+00	93.0
30	73	3.599	0.290	-2.68E+05	7.81E+06	0.00E+00	-4.52E+05	1.10E+07	0.00E+00	95.0
31	73	3.699	0.000	-2.68E+05	7.54E+06	0.00E+00	-4.52E+05	1.06E+07	0.00E+00	97.0



DRAINAGE TREATMENT INITIAL  
AREA RATE CAPACITY VOLUME  
(ACRES) (GAL/MIN) (GALLONS) (GALLONS)

DIKE DIKE DIKE DIKE

180 186 2.56E+07 6.00E+06

POND POND POND POND

289 500 3.24E+07 1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
FEB	1	0.450	0.300	73	3.699	0.000	-2.68E+05	7.27E+06	0.00E+00	-4.52E+05	1.01E+07	0.00E+00	99.0
	2	0.370	0.750	87	1.494	0.005	-2.42E+05	7.03E+06	0.00E+00	-4.11E+05	9.71E+06	0.00E+00	100.6
	3	0.025	1.140	95	0.526	0.000	-2.68E+05	6.76E+06	0.00E+00	-4.52E+05	9.26E+06	0.00E+00	102.8
	4	0.005	0.875	87	1.494	0.000	-2.68E+05	6.49E+06	0.00E+00	-4.52E+05	8.81E+06	0.00E+00	104.6
	5	0.005	0.870	87	1.494	0.000	-2.68E+05	6.22E+06	0.00E+00	-4.52E+05	8.36E+06	0.00E+00	106.9
	6	0.090	0.875	87	1.494	0.000	-2.68E+05	5.96E+06	0.00E+00	-4.52E+05	7.91E+06	0.00E+00	108.9
	7	0.000	0.505	97	1.494	0.000	-2.68E+05	5.69E+06	0.00E+00	-4.52E+05	7.45E+06	0.00E+00	110.9
	8	0.000	0.115	73	3.699	0.000	-2.68E+05	5.42E+06	0.00E+00	-4.52E+05	7.00E+06	0.00E+00	112.9
	9	0.000	0.090	73	3.699	0.000	-2.68E+05	5.15E+06	0.00E+00	-4.52E+05	6.55E+06	0.00E+00	114.9
	10	0.000	0.065	73	3.699	0.000	-2.68E+05	4.88E+06	0.00E+00	-4.52E+05	6.10E+06	0.00E+00	116.9
	11	0.000	0.080	73	3.699	0.000	-2.68E+05	4.62E+06	0.00E+00	-4.52E+05	5.65E+06	0.00E+00	118.9
	12	0.000	0.000	73	3.699	0.000	-2.68E+05	4.35E+06	0.00E+00	-4.52E+05	5.19E+06	0.00E+00	120.9
	13	0.000	0.000	73	3.699	0.000	-2.68E+05	4.08E+06	0.00E+00	-4.52E+05	4.74E+06	0.00E+00	122.9
	14	0.000	0.000	73	3.699	0.000	-2.68E+05	3.81E+06	0.00E+00	-4.52E+05	4.29E+06	0.00E+00	124.9
	15	0.000	0.000	73	3.699	0.000	-2.68E+05	3.54E+06	0.00E+00	-4.52E+05	3.84E+06	0.00E+00	126.9
	16	0.000	0.000	73	3.699	0.000	-2.68E+05	3.28E+06	0.00E+00	-4.52E+05	3.39E+06	0.00E+00	129.0
	17	0.000	0.000	73	3.699	0.000	-2.68E+05	3.01E+06	0.00E+00	-4.52E+05	2.93E+06	0.00E+00	131.0
	18	0.000	0.000	73	3.699	0.000	-2.68E+05	2.74E+06	0.00E+00	-4.52E+05	2.47E+06	0.00E+00	133.0
	19	0.000	0.000	73	3.699	0.000	-2.68E+05	2.47E+06	0.00E+00	-4.52E+05	2.01E+06	0.00E+00	135.0
	20	0.000	0.000	73	3.699	0.000	-2.68E+05	2.20E+06	0.00E+00	-4.52E+05	1.56E+06	0.00E+00	137.0
	21	0.000	0.000	73	3.699	0.000	-2.68E+05	1.94E+06	0.00E+00	-4.52E+05	1.10E+06	0.00E+00	139.0
	22	0.000	0.000	73	3.699	0.000	-2.68E+05	1.67E+06	0.00E+00	-4.52E+05	6.74E+05	0.00E+00	141.0
	23	0.000	0.000	73	3.699	0.000	-2.68E+05	1.40E+06	0.00E+00	-4.52E+05	2.22E+05	0.00E+00	143.0

24	0.030	0.000	3.699	73	-2.68E+05	1.13E+06	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	0.00E+00	144.0
25	0.000	0.030	3.699	73	-2.68E+05	8.64E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	0.00E+00	144.0
26	0.000	0.030	3.699	73	-2.68E+05	5.96E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	0.00E+00	144.0
27	0.000	0.030	3.699	73	-2.68E+05	3.28E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	0.00E+00	144.0
28	0.000	0.030	3.699	73	-2.68E+05	6.00E+04	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	0.00E+00	144.0
1	0.000	0.030	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
2	0.000	0.000	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
3	0.000	0.000	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
4	0.000	0.000	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
5	1.490	0.000	3.699	73	3.50E+05	3.50E+05	0.00E+00	5.41E+05	0.00E+00	0.00E+00	0.00E+00	141.6
6	0.110	1.490	0.526	95	-2.68E+05	8.26E+04	0.00E+00	-4.52E+05	8.32E+04	0.00E+00	0.00E+00	143.6
7	0.050	1.600	0.526	95	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
8	0.005	1.650	0.526	95	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
9	0.100	1.655	0.526	95	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
10	0.040	1.755	0.526	95	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
11	0.000	0.195	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
12	0.000	0.195	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
13	0.000	0.145	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
14	0.000	0.145	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
15	0.000	0.040	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
16	0.000	0.000	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
17	0.290	0.000	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0
18	0.470	0.290	3.699	73	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	0.00E+00	144.0

MC	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CONVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	PIPE VOLUME (GALLONS)	DIKE CAPACITY (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	POND DISTANCE FROM TO- DOWN (INCHES)
	289	50	3.24E+07	1.00E+07									
	160	199	2.56E+07	6.20E+06									

DRAINAGE TREATMENT INITIAL  
 AREA RATE CAPACITY VOLUME  
 (ACRES) (GAL/MIN) (GALLONS) (GALLONS)

DIKE DIKE DIKE DIKE

180 186 2.50E+07 6.00E+06

POND POND POND POND

289 500 3.24E+07 1.00E+07

NO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	IN-LOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
19		0.000	0.760	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
20		0.915	0.760	87	1.494	0.160	6.11E+05	6.11E+05	0.00E+00	9.60E+05	9.60E+05	0.00E+00	139.7
21		0.005	1.675	95	0.526	0.000	-2.68E+05	3.43E+05	0.00E+00	-4.52E+05	5.08E+05	0.00E+00	141.7
22		0.000	1.680	95	0.526	0.000	-2.68E+05	7.52E+04	0.00E+00	-4.52E+05	5.56E+04	0.00E+00	143.8
23		0.000	1.390	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
24		0.000	0.920	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
25		0.000	0.920	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
26		0.230	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
27		0.670	0.230	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
28		0.920	0.300	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
29		0.000	0.920	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
30		0.060	0.920	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
31		0.000	0.960	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
AFR 1		0.600	0.750	87	1.494	0.051	-2.11E+04	0.00E+00	0.00E+00	-3.24E+05	0.00E+00	0.00E+00	144.0
2		0.310	0.680	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.19E+05	0.00E+00	0.00E+00	144.0
3		0.030	0.970	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
4		0.005	1.000	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
5		0.350	0.945	87	1.494	0.002	-2.60E+05	0.00E+00	0.00E+00	-7.07E+05	0.00E+00	0.00E+00	144.0
6		0.210	1.295	95	0.526	0.017	-1.83E+05	0.00E+00	0.00E+00	-5.84E+05	0.00E+00	0.00E+00	144.0
7		0.680	0.905	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
8		0.100	0.675	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
9		0.170	0.745	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
10		0.030	0.910	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

DRAINAGE TREATMENT INITIAL  
 AREA RATE CAPACITY VOLUME  
 (ACRES) (GAL/MIN) (GALLONS) (GALLONS)

DIKE DIKE DIKE DIKE  
 180 186 2.56E+07 6.00E+06

POND POND POND POND  
 289 590 3.24E+07 1.00E+07

NO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DICES (GAL/DAY)	DICE VOLUME (GALLONS)	DICE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
11		0.010	0.640	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
12		0.050	0.440	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
13		1.520	0.420	73	3.699	0.136	3.96E+05	3.96E+05	0.00E+00	6.15E+05	6.15E+05	0.00E+00	141.3
14		0.430	1.940	95	0.526	0.124	3.38E+05	7.34E+05	0.00E+00	5.20E+05	1.13E+06	0.00E+00	139.9
15		0.000	2.100	95	0.526	0.000	-2.68E+05	4.66E+05	0.00E+00	-4.52E+05	6.83E+05	0.00E+00	141.0
16		0.020	2.020	95	0.526	0.000	-2.68E+05	1.96E+05	0.00E+00	-4.52E+05	2.31E+05	0.00E+00	143.0
17		0.010	2.030	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
18		0.000	1.980	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
19		0.000	0.450	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
20		0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
21		0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
22		0.000	0.010	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
23		0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
24		0.000	0.000	73	3.699	0.000	2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
25		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
26		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
27		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
28		0.500	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
29		0.030	0.500	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
30		0.860	0.530	87	1.494	0.153	4.81E+05	4.81E+05	0.00E+00	7.50E+05	7.50E+05	0.00E+00	140.7
PAV	1	1.570	1.390	95	0.526	1.078	5.00E+06	5.46E+06	0.00E+00	8.00E+06	8.75E+06	0.00E+00	105.1
	2	0.550	2.960	95	0.526	0.277	1.07E+06	6.57E+06	0.00E+00	1.72E+06	1.05E+07	0.00E+00	97.4
	3	0.580	3.410	95	0.526	0.225	8.32E+05	7.40E+06	0.00E+00	1.31E+06	1.19E+07	0.00E+00	91.6

DRAINAGE TREATMENT INITIAL  
AREA RATE CAPACITY VOLUME  
(ACRES) (GAL/MIN) (GALLONS) (GALLONS)

DIKE DIKE DIKE DIKE  
180 186 2.56E+07 6.00E+06

FUND POND POND POND  
289 500 3.24E+07 1.00E+07

DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
4	0.000	3.670	95	0.526	0.000	-2.68E+05	7.13E+06	0.00E+00	-4.52E+05	1.13E+07	0.00E+00	93.6
5	0.000	3.660	95	0.526	0.000	-2.68E+05	6.86E+06	0.00E+00	-4.52E+05	1.09E+07	0.00E+00	95.6
6	0.000	2.800	95	0.526	0.000	-2.68E+05	6.59E+06	0.00E+00	-4.52E+05	1.04E+07	0.00E+00	97.6
7	0.230	1.230	95	0.526	0.024	-1.51E+05	6.44E+06	0.00E+00	-2.64E+05	1.02E+07	0.00E+00	98.6
8	0.000	0.810	87	1.494	0.000	-2.68E+05	6.17E+06	0.00E+00	-4.52E+05	9.72E+06	0.00E+00	100.9
9	0.000	0.230	73	3.699	0.000	-2.68E+05	5.91E+06	0.00E+00	-4.52E+05	9.27E+06	0.00E+00	102.9
10	0.000	0.230	73	3.699	0.000	-2.68E+05	5.64E+06	0.00E+00	-4.52E+05	8.91E+06	0.00E+00	104.8
11	0.390	0.230	73	3.699	0.000	-2.68E+05	5.37E+06	0.00E+00	-4.52E+05	8.36E+06	0.00E+00	106.6
12	0.480	0.620	97	1.494	0.020	-1.72E+05	5.20E+06	0.00E+00	-2.93E+05	8.06E+06	0.00E+00	108.2
13	0.170	0.970	87	1.494	0.000	-2.68E+05	4.73E+06	0.00E+00	-4.52E+05	7.61E+06	0.00E+00	110.2
14	0.490	1.040	87	1.494	0.022	-1.52E+05	4.77E+06	0.00E+00	-2.82E+05	7.33E+06	0.00E+00	111.4
15	0.050	1.530	95	0.526	0.000	-2.68E+05	4.50E+06	0.00E+00	-4.52E+05	6.86E+06	0.00E+00	113.4
16	0.000	1.620	95	0.526	0.000	-2.68E+05	4.23E+06	0.00E+00	-4.52E+05	6.43E+06	0.00E+00	115.4
17	0.000	1.230	95	0.526	0.000	-2.68E+05	3.96E+06	0.00E+00	-4.52E+05	5.97E+06	0.00E+00	117.5
18	0.180	0.750	37	1.494	0.000	-2.68E+05	3.70E+06	0.00E+00	-4.52E+05	5.52E+06	0.00E+00	119.5
19	0.050	0.750	87	1.494	0.000	-2.68E+05	3.43E+06	0.00E+00	-4.52E+05	5.07E+06	0.00E+00	121.5
20	0.000	0.320	73	3.699	0.000	-2.68E+05	3.16E+06	0.00E+00	-4.52E+05	4.62E+06	0.00E+00	123.5
21	0.250	0.230	73	3.699	0.000	-2.68E+05	2.89E+06	0.00E+00	-4.52E+05	4.17E+06	0.00E+00	125.5
22	0.390	0.480	73	3.699	0.000	-2.68E+05	2.62E+06	0.00E+00	-4.52E+05	3.71E+06	0.00E+00	127.5
23	0.060	0.870	87	1.494	0.000	-2.68E+05	2.36E+06	0.00E+00	-4.52E+05	3.26E+06	0.00E+00	127.5
24	0.000	0.750	87	1.494	0.000	-2.68E+05	2.09E+06	0.00E+00	-4.52E+05	2.81E+06	0.00E+00	131.5
25	0.120	0.700	87	1.494	0.000	-2.68E+05	1.82E+06	0.00E+00	-4.52E+05	2.36E+06	0.00E+00	133.5
26	0.000	0.820	87	1.494	0.000	-2.68E+05	1.55E+06	0.00E+00	-4.52E+05	1.91E+06	0.00E+00	135.5

EFFLUENT AREA (ACRES)	TREATMENT RATE (GAL/MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
180	186	2.56E+07	6.00E+06

POND	POND	POND	POND
289	500	3.24E+07	1.00E+07

ID	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
27		0.000	0.570	87	1.494	0.000	-2.68E+05	1.28E+06	0.00E+00	-4.52E+05	1.45E+06	0.00E+00	137.5
28		1.120	0.180	73	3.699	0.035	-9.47E+04	1.19E+06	0.00E+00	-1.74E+05	1.28E+06	0.00E+00	138.3
29		0.000	1.240	95	0.526	0.000	-2.68E+05	9.23E+05	0.00E+00	-4.52E+05	8.28E+05	0.00E+00	140.3
30		0.000	1.240	95	0.526	0.000	-2.68E+05	6.54E+05	0.00E+00	-4.52E+05	3.75E+05	0.00E+00	142.3
31		0.000	1.120	95	0.526	0.000	-2.68E+05	3.86E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
1		0.000	1.120	95	0.526	0.000	-2.68E+05	1.16E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
2		0.030	1.120	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
3		1.620	0.030	73	3.699	0.169	5.59E+05	5.59E+05	0.00E+00	8.76E+05	8.76E+05	0.00E+00	146.1
4		0.000	1.650	95	0.526	0.000	-2.68E+05	2.91E+05	0.00E+00	-4.52E+05	4.24E+05	0.00E+00	142.1
5		0.080	1.650	95	0.526	0.000	-2.68E+05	2.31E+04	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
6		0.630	1.730	95	0.526	0.262	1.01E+06	1.04E+06	0.00E+00	1.60E+06	1.60E+06	0.00E+00	136.9
7		0.000	2.360	95	0.526	0.000	-2.68E+05	7.28E+05	0.00E+00	-4.52E+05	1.15E+06	0.00E+00	136.9
8		0.000	2.330	95	0.526	0.000	-2.68E+05	5.00E+05	0.00E+00	-4.52E+05	7.00E+05	0.00E+00	140.9
9		0.000	0.710	87	1.494	0.000	-2.68E+05	2.32E+05	0.00E+00	-4.52E+05	2.48E+05	0.00E+00	142.9
10		0.000	0.710	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
11		0.000	0.630	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
12		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
13		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
14		0.170	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
15		0.030	0.170	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
16		0.000	0.260	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
17		0.000	0.260	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
18		0.000	0.260	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/MIN)	INITIAL CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
180	186	2.56E+07	6.00E+06

POND	POND	POND	POND
289	509	3.24E+07	1.00E+07

NO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIXES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
	19	0.530	0.209	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	20	0.000	0.560	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	21	0.000	0.530	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	22	0.000	0.530	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	23	0.000	0.530	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	24	0.000	0.530	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	25	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	26	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	27	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	28	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	29	1.230	0.020	73	3.699	0.057	1.25E+04	1.25E+04	0.00E+00	-1.74E+03	0.00E+00	0.00E+00	144.0
	30	0.000	1.310	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
JUL	1	0.000	1.310	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	2	0.000	1.310	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	3	2.170	1.310	95	0.526	1.645	7.77E+06	7.77E+06	0.00E+00	1.25E+07	1.25E+07	0.00E+00	88.6
	4	0.700	3.490	95	0.526	0.316	1.27E+06	9.05E+06	0.00E+00	2.02E+06	1.45E+07	0.00E+00	79.6
	5	0.000	2.870	95	0.526	0.000	-2.68E+05	8.78E+06	0.00E+00	-4.52E+05	1.40E+07	0.00E+00	81.6
	6	0.000	2.870	95	0.526	0.000	-2.68E+05	8.51E+06	0.00E+00	-4.52E+05	1.36E+07	0.00E+00	85.6
	7	0.000	2.870	95	0.526	0.000	-2.68E+05	8.24E+06	0.00E+00	-4.52E+05	1.31E+07	0.00E+00	85.7
	8	0.000	2.870	95	0.526	0.000	-2.68E+05	7.98E+06	0.00E+00	-4.52E+05	1.27E+07	0.00E+00	87.7
	9	0.000	0.700	87	1.494	0.000	-2.68E+05	7.71E+06	0.00E+00	-4.52E+05	1.22E+07	0.00E+00	89.7
	10	0.000	0.000	73	3.699	0.000	-2.68E+05	7.44E+06	0.00E+00	-4.52E+05	1.18E+07	0.00E+00	91.7
	11	0.000	0.000	73	3.699	0.000	-2.68E+05	7.17E+06	0.00E+00	-4.52E+05	1.13E+07	0.00E+00	93.7

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL./MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
190	186	2.56E+07	6.00E+06

POND	POND	POND	POND
289	500	3.24E+07	1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DICES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM DEP (INCHES)
	12	0.000	0.000	73	3.699	0.000	-2.66E+05	6.90E+06	0.00E+00	-4.52E+05	1.09E+07	0.00E+00	95.7
	13	0.000	0.000	73	3.699	0.000	-2.66E+05	6.64E+06	0.00E+00	-4.52E+05	1.04E+07	0.00E+00	97.7
	14	0.000	0.000	73	3.699	0.000	-2.66E+05	6.37E+06	0.00E+00	-4.52E+05	9.96E+06	0.00E+00	97.7
	15	0.000	0.000	73	3.699	0.000	-2.66E+05	6.10E+06	0.00E+00	-4.52E+05	9.51E+06	0.00E+00	101.7
	16	0.000	0.000	73	3.699	0.000	-2.66E+05	5.83E+06	0.00E+00	-4.52E+05	9.06E+06	0.00E+00	103.7
	17	0.000	0.000	73	3.699	0.000	-2.66E+05	5.56E+06	0.00E+00	-4.52E+05	8.61E+06	0.00E+00	105.7
	18	0.000	0.000	73	3.699	0.000	-2.66E+05	5.30E+06	0.00E+00	-4.52E+05	8.15E+06	0.00E+00	107.6
	19	0.000	0.000	73	3.699	0.000	-2.66E+05	5.03E+06	0.00E+00	-4.52E+05	7.70E+06	0.00E+00	109.6
	20	0.000	0.000	73	3.699	0.000	-2.66E+05	4.76E+06	0.00E+00	-4.52E+05	7.25E+06	0.00E+00	111.5
	21	0.000	0.000	73	3.699	0.000	-2.66E+05	4.49E+06	0.00E+00	-4.52E+05	6.80E+06	0.00E+00	113.5
	22	0.000	0.000	73	3.699	0.000	-2.66E+05	4.22E+06	0.00E+00	-4.52E+05	6.35E+06	0.00E+00	115.5
	23	0.000	0.000	73	3.699	0.000	-2.66E+05	3.96E+06	0.00E+00	-4.52E+05	5.87E+06	0.00E+00	117.5
	24	0.230	0.000	73	3.699	0.000	-2.66E+05	3.69E+06	0.00E+00	-4.52E+05	5.44E+06	0.00E+00	119.5
	25	0.110	0.230	73	3.699	0.000	-2.66E+05	3.42E+06	0.00E+00	-4.52E+05	4.97E+06	0.00E+00	121.6
	26	0.000	0.340	73	3.699	0.000	-2.66E+05	3.15E+06	0.00E+00	-4.52E+05	4.54E+06	0.00E+00	123.6
	27	0.000	0.340	73	3.699	0.000	-2.66E+05	2.88E+06	0.00E+00	-4.52E+05	4.07E+06	0.00E+00	125.6
	28	0.000	0.340	73	3.699	0.000	-2.66E+05	2.62E+06	0.00E+00	-4.52E+05	3.63E+06	0.00E+00	127.6
	29	0.000	0.340	73	3.699	0.000	-2.66E+05	2.35E+06	0.00E+00	-4.52E+05	3.18E+06	0.00E+00	129.6
	30	0.000	0.110	73	3.699	0.000	-2.66E+05	2.08E+06	0.00E+00	-4.52E+05	2.73E+06	0.00E+00	131.6
	31	0.480	0.000	73	3.699	0.000	-2.66E+05	1.81E+06	0.00E+00	-4.52E+05	2.28E+06	0.00E+00	133.6
AUG	1	0.000	0.480	73	3.699	0.000	-2.66E+05	1.54E+06	0.00E+00	-4.52E+05	1.83E+06	0.00E+00	135.6
	2	0.000	0.480	73	3.699	0.000	-2.66E+05	1.28E+06	0.00E+00	-4.52E+05	1.37E+06	0.00E+00	137.6
	3	0.000	0.480	73	3.699	0.000	-2.66E+05	1.01E+06	0.00E+00	-4.52E+05	9.22E+05	0.00E+00	139.6



DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/MIN)	INITIAL CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
190	185	2.56E+07	6.00E+06

POND	POND	POND	POND
289	500	3.24E+07	1.00E+07

NO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
4		0.000	0.460	73	3.699	0.000	-2.68E+05	7.40E+05	0.00E+00	-4.52E+05	4.70E+05	0.00E+00	141.9
5		0.005	0.480	73	3.699	0.000	-2.68E+05	4.72E+05	0.00E+00	-4.52E+05	1.63E+04	0.00E+00	143.9
6		0.000	0.005	73	3.699	0.000	-2.68E+05	2.04E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
7		0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
8		0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
9		0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
10		0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
11		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
12		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
13		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
14		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
15		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
16		0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
17		1.090	0.000	73	3.699	0.030	-1.20E+05	0.00E+00	0.00E+00	-4.82E+05	0.00E+00	0.00E+00	144.0
18		0.000	1.090	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
19		0.000	1.090	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
20		0.000	1.090	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
21		0.000	1.090	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
22		0.080	1.090	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
23		0.020	0.080	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
24		0.000	0.100	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
25		0.000	0.100	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
26		0.000	0.100	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL./MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
180	186	2.56E+07	6.00E+06

POND	POND	POND	POND
289	500	3.24E+07	1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
	27	0.180	0.100	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	28	0.710	0.200	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	29	0.000	0.890	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	30	0.000	0.890	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	31	0.000	0.890	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
SEP	1	0.000	0.890	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	2	0.000	0.710	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	3	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	4	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	5	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	6	0.030	0.090	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	7	0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	8	0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	9	0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	10	0.000	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	11	0.020	0.030	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	12	0.050	0.020	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	13	0.000	0.070	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	14	0.000	0.070	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	15	0.000	0.070	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	16	0.080	0.070	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	17	0.000	0.130	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
	18	0.000	0.080	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
189	186	2.56E+07	6.00E+06

FOND	FOND	POND	POND
289	500	3.24E+07	1.00E+07

YR	MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
		19	0.060	0.080	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		20	0.750	0.140	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		21	0.030	0.890	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		22	0.090	0.840	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		23	0.000	0.840	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		24	0.000	0.840	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		25	0.005	0.780	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		26	0.000	0.035	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		27	0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		28	0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		29	0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		30	0.000	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
OCT		1	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		2	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		3	0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		4	1.000	0.000	73	3.699	0.017	-1.84E+05	0.00E+00	0.00E+00	-5.86E+05	0.00E+00	0.00E+00	144.0
		5	0.460	1.000	87	1.494	0.016	-1.91E+05	0.00E+00	0.00E+00	-5.97E+05	0.00E+00	0.00E+00	144.0
		6	0.000	1.460	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		7	0.000	1.460	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		8	0.005	1.460	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		9	0.000	1.465	95	0.526	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		10	0.000	0.465	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
		11	0.090	0.005	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
DIKE	DIKE	DIKE	DIKE
189	186	2.56E+07	6.00E+06

POND	POND	POND	POND
239	500	3.24E+07	1.03E+07

NO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TLR (INCHES)
12		0.490	0.095	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
13		0.060	0.585	87	1.494	0.000	-2.66E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
14		0.000	0.640	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
15		0.000	0.640	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
16		0.000	0.640	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
17		0.020	0.550	87	1.494	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
18		0.110	0.080	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
19		0.380	0.139	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
20		2.750	0.510	87	1.494	1.523	7.17E+06	7.17E+06	0.00E+00	1.15E+07	1.15E+07	0.00E+00	92.9
21		0.680	3.260	95	0.526	0.300	1.20E+06	8.37E+06	0.00E+00	1.90E+06	1.34E+07	0.00E+00	84.4
22		0.350	3.940	95	0.526	0.078	1.12E+06	8.48E+06	0.00E+00	1.58E+06	1.36E+07	0.00E+00	83.7
23		0.030	4.270	95	0.526	0.000	-2.68E+05	8.22E+06	0.00E+00	-4.52E+05	1.31E+07	0.00E+00	85.8
24		0.020	4.170	95	0.526	0.000	-2.68E+05	7.95E+06	0.00E+00	-4.52E+05	1.27E+07	0.00E+00	87.8
25		0.000	3.830	95	0.526	0.000	-2.68E+05	7.68E+06	0.00E+00	-4.52E+05	1.22E+07	0.00E+00	85.8
26		0.000	1.080	87	1.494	0.000	-2.68E+05	7.41E+06	0.00E+00	-4.52E+05	1.17E+07	0.00E+00	91.8
27		0.000	0.400	73	3.699	0.000	-2.68E+05	7.14E+06	0.00E+00	-4.52E+05	1.13E+07	0.00E+00	93.8
28		0.000	0.050	73	3.699	0.000	-2.68E+05	6.88E+06	0.00E+00	-4.52E+05	1.08E+07	0.00E+00	95.8
29		0.000	0.020	73	3.699	0.000	-2.68E+05	6.61E+06	0.00E+00	-4.52E+05	1.04E+07	0.00E+00	97.8
30		0.000	0.000	73	3.699	0.000	-2.68E+05	6.34E+06	0.00E+00	-4.52E+05	9.94E+06	0.00E+00	99.9
31		0.000	0.000	73	3.699	0.000	-2.68E+05	6.07E+06	0.00E+00	-4.52E+05	9.49E+06	0.00E+00	101.6
NOV 1		0.000	0.000	73	3.699	0.000	-2.68E+05	5.80E+06	0.00E+00	-4.52E+05	9.04E+06	0.00E+00	103.6
2		0.000	0.000	73	3.699	0.000	-2.68E+05	5.54E+06	0.00E+00	-4.52E+05	8.59E+06	0.00E+00	105.8
3		0.000	0.000	73	3.699	0.000	-2.68E+05	5.27E+06	0.00E+00	-4.52E+05	8.13E+06	0.00E+00	107.9

SE TREATMENT INITIAL  
 EA RATE CAPACITY VOLUME  
 S) (GAL/MIN) (GALLONS) (GALLONS)

KE DIKE DIKE DIKE  
 80 186 2.56E+07 6.00E+06

ND POND POND POND  
 89 500 3.24E+07 1.00E+07

INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLOW TO DIKE (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLOW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TOP (INCHES)
0.000	0.000	73	3.699	0.000	-2.68E+05	5.00E+06	0.00E+00	-4.52E+05	7.68E+06	0.00E+00	109.9
0.000	0.000	73	3.699	0.000	-2.68E+05	4.73E+06	0.00E+00	-4.52E+05	7.23E+06	0.00E+00	111.9
0.000	0.000	73	3.699	0.000	-2.68E+05	4.46E+06	0.00E+00	-4.52E+05	6.78E+06	0.00E+00	113.9
0.000	0.000	73	3.699	0.000	-2.68E+05	4.20E+06	0.00E+00	-4.52E+05	6.33E+06	0.00E+00	115.9
0.000	0.000	73	3.699	0.000	-2.68E+05	3.93E+06	0.00E+00	-4.52E+05	5.87E+06	0.00E+00	117.9
0.000	0.000	73	3.699	0.000	-2.68E+05	3.66E+06	0.00E+00	-4.52E+05	5.42E+06	0.00E+00	119.9
0.000	0.000	73	3.699	0.000	-2.68E+05	3.39E+06	0.00E+00	-4.52E+05	4.97E+06	0.00E+00	121.9
0.000	0.000	73	3.699	0.000	-2.68E+05	3.12E+06	0.00E+00	-4.52E+05	4.52E+06	0.00E+00	123.9
0.000	0.000	73	3.699	0.000	-2.68E+05	2.86E+06	0.00E+00	-4.52E+05	4.06E+06	0.00E+00	125.9
0.000	0.000	73	3.699	0.000	-2.68E+05	2.59E+06	0.00E+00	-4.52E+05	3.61E+06	0.00E+00	127.9
0.000	0.000	73	3.699	0.000	-2.68E+05	2.32E+06	0.00E+00	-4.52E+05	3.16E+06	0.00E+00	130.0
0.000	0.000	73	3.699	0.000	-2.68E+05	2.05E+06	0.00E+00	-4.52E+05	2.71E+06	0.00E+00	132.0
0.000	0.000	73	3.699	0.000	-2.68E+05	1.79E+06	0.00E+00	-4.52E+05	2.26E+06	0.00E+00	134.0
0.000	0.000	73	3.699	0.000	-2.68E+05	1.52E+06	0.00E+00	-4.52E+05	1.80E+06	0.00E+00	136.0
0.000	0.000	73	3.699	0.000	-2.68E+05	1.25E+06	0.00E+00	-4.52E+05	1.35E+06	0.00E+00	138.0
0.000	0.000	73	3.699	0.000	-2.68E+05	9.81E+05	0.00E+00	-4.52E+05	9.01E+05	0.00E+00	140.0
0.000	0.000	73	3.699	0.000	-2.68E+05	7.13E+05	0.00E+00	-4.52E+05	4.49E+05	0.00E+00	142.0
0.000	0.000	73	3.699	0.000	-2.68E+05	4.45E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
0.000	0.000	73	3.699	0.000	-2.68E+05	1.77E+05	0.00E+00	-4.52E+05	0.00E+00	0.00E+00	144.0
0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
0.000	0.000	73	3.699	0.000	-2.68E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

73-395

DRAINAGE AREA (ACRES)	TREATMENT RATE (GAL/MIN)	CAPACITY (GALLONS)	INITIAL VOLUME (GALLONS)
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DIKE	DIKE	DIKE	DIKE
180	186	2.56E+07	6.00E+06

POND	POND	POND	POND
289	500	3.24E+07	1.00E+07

MO	DATE	INCREMENTAL PRECIP (INCHES)	FIVE DAY PRECIP (INCHES)	CURVE NUMBER	S VALUE	INCREMENTAL RUNOFF (INCHES)	INFLW TO DIKES (GAL/DAY)	DIKE VOLUME (GALLONS)	DIKE OVERFLOW (GALLONS)	INFLW TO POND (GAL/DAY)	POND VOLUME (GALLONS)	POND OVERFLOW (GALLONS)	DISTANCE FROM TEP (INCHES)
27		0.000	0.000	73	3.699	0.000	-2.66E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
28		0.000	0.000	73	3.699	0.000	-2.66E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
29		0.000	0.000	73	3.699	0.000	-2.66E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0
30		0.000	0.000	73	3.699	0.000	-2.66E+05	0.00E+00	0.00E+00	-7.20E+05	0.00E+00	0.00E+00	144.0

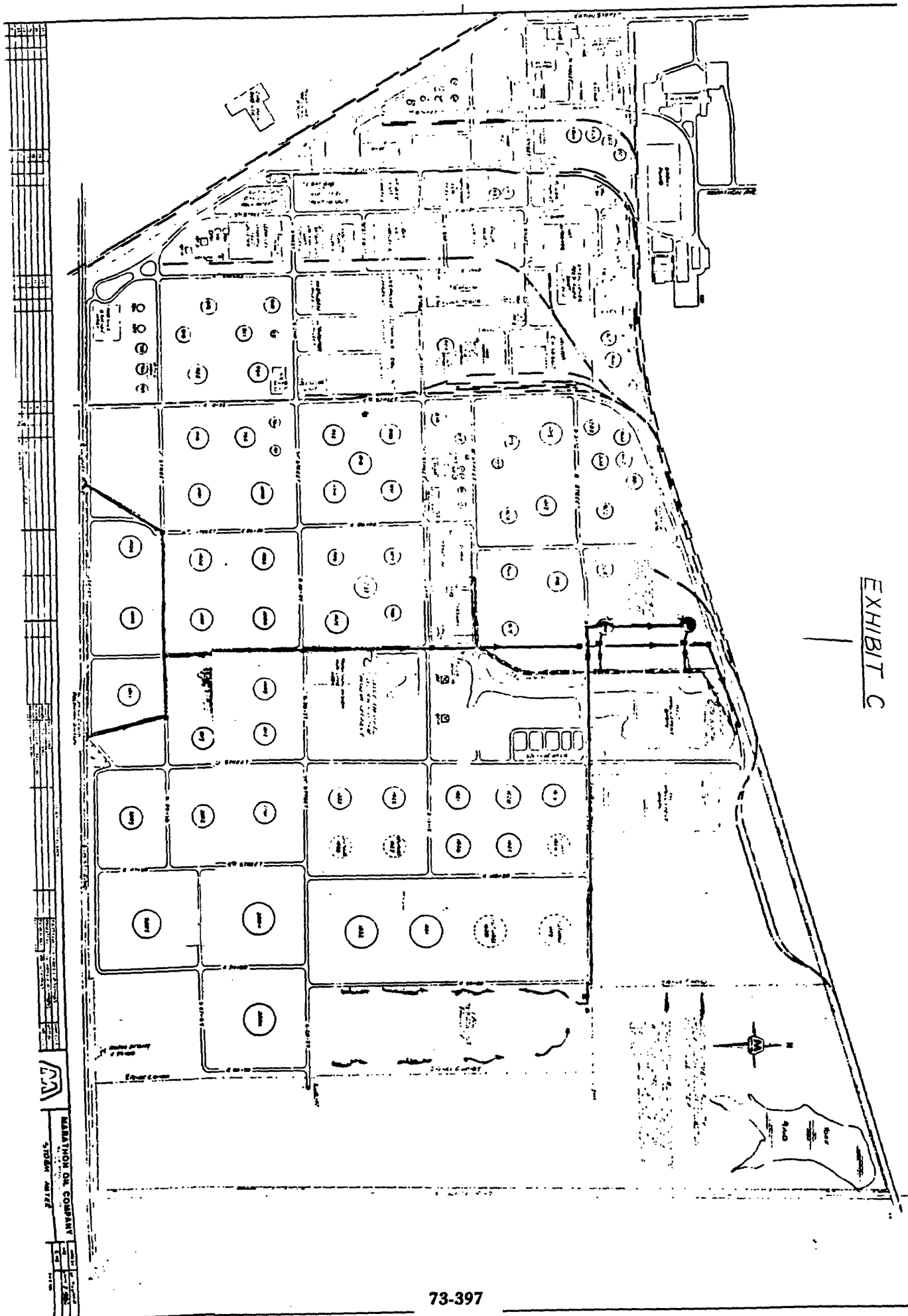


EXHIBIT C


  
 MANHATTAN OIL COMPANY