UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA
FOURTH DIVISION

US EPA RECORDS CENTER REGION 5
514445
931676

UNITED STATES OF AMERICA,

Plaintiff,

and

STATE OF MINNESOTA, by its Attorney General, Hubert H. Humphrey, III, its Department of Health, and its Pollution Control Agency,

Plaintiff-Intervenor,

vs.

REILLY TAR & CHEMICAL CORPORATION; HOUSING AND REDEVELOPMENT AUTHORITY OF ST. LOUIS PARK; OAK PARK VILLAGE ASSOCIATES; RUSTIC OAKS CONDOMINIUM, INC.; and PHILLIP'S INVESTMENT CO.,

Defendants,

and

CITY OF ST. LOUIS PARK,

Plaintiff-Intervenor,

vs.

REILLY TAR & CHEMICAL CORPORATION,

Defendant,

and

CITY OF HOPKINS,

Plaintiff-Intervenor,

vs.

REILLY TAR & CHEMICAL CORPORATION,

Defendant.

Civil No. 4-80-469

AFFIDAVIT OF
EDWARD J. SCHWARTZBAUER

STATE OF MINNESOTA)
) SS:
COUNTY OF HENNEPIN)

EDWARD J. SCHWARTZBAUER, being first duly sworn states as follows:

1. I am a lawyer with the law firm of Dorsey & Whitney, attorneys for defendant in the above-captioned matter. I make this affidavit in support of the Memorandum of Reilly Tar and Chemical Corporation in Opposition to the Motion of the United States for Summary Judgment on Reilly's Sixth Affirmative Defense to the United States' Complaint.

2. Exhibits 1-5, 7-22, 28, 32 and 33, attached hereto, are true and correct copies of documents received during the course of discovery from the Plaintiffs in this action. Some of these documents have been marked as exhibits during depositions. They are referred to in the Memorandum in Opposition as "RTC Ex. __."

3. Exhibit 6, attached hereto, is a true and correct copy of Plaintiff United States' First Amended Complaint.

4. Exhibit 23, attached hereto, is a true and correct copy of document number 4600479, Agreement for Purchase of Real Estate dated April 14, 1972. It has been marked during deposition as Reilly Tar Exhibit number 31 and is referred to in the Memorandum in Opposition as RTC Ex. 31.

5. Exhibit 24, attached hereto, is a true and correct copy of document number 400781, Hold Harmless Agreement dated June 19, 1973. It has been marked during deposition

as Reilly Tar Exhibit number 71 and is referred to in the Memorandum in Opposition as RTC Ex. 71.

6. Exhibit 25, attached hereto, is a true and correct copy of pages 1 and 52-60 of the Deposition of Francis J. Pucci taken on October 20, 1983.

7. Exhibit 26, attached hereto, is a true and correct copy of pages 1 and 118-121 of the Deposition of Dale Wikre taken on November 1, 1983.

8. Exhibit 27, attached hereto, is a true and correct copy of pages 1 and 140-142 of the Deposition of Harvey McPhee taken on October 4, 1983.

9. Exhibit 29, attached hereto, is a true and correct copy of a letter from Dr. L. Kang dated September 9, 1982.

10. Exhibit 30, attached hereto, is a true and correct copy of a letter from Stephen Shakman to Edward Schwartzbauer dated July 9, 1980.

11. Exhibit 31, attached hereto, is a true and correct copy of pages 1 and 87-89 of the Deposition of Sandra Gardebring taken on September 28, 1983.

FURTHER AFFIANT SAITH NOT.

Edward J. Schwartzbauer

Subscribed and sworn to
before me this 16th day
of March, 1984.

Vicki Kay Wurst
Notary Public

VICKI KAY WURST
NOTARY PUBLIC MINNESOTA
HENNEPIN COUNTY
My Commission Expires Sept 15 1988

1

Apr 76

city of SLP
5005 minnetonka boulevard • st. louis park, minnesota 55416 • phone (612) 920-3000

May 24, 1976

Mr. Pat Mader
Minnesota Polution Control Agency
1935 West County Road B2
Roseville, MN 55113

Dear Mr. Mader:

Enclosed is a Discharge Monitoring Report and Monthly Operation Report as required by our NPDES Permit No. MN0045489. These reports cover our first month of discharge for our Republic Creosote storm sewer system.

If you have any questions, please feel free to call me or Hubert Huls from our consultant, SERCO Labs.

Sincerely,

David H. Rudberg
Director of Public Works

DHR:blj

cc: Hubert Huls
Harvey McPhee

Enclosures

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2

Suburb May Seek U.S. Aid to Oust 'Eyesore' in Renewal Move

St. Louis Park may ask federal assistance to eliminate Republic Creosoting Co., a 76-acre "eyesore" just north of Hwy 7.

The city this week will submit a 14-page workable program for community improvement to the housing and home finance agency (HHFA), Camille D. Andre, city manager, said.

If HHFA approves the program—a general statement of the city's present efforts to eliminate and prevent slums and blight — the city will be eligible for urban renewal applications.

City officials acknowledged that the principal reason for seeking federal aid is to remove the creosote plant, which has been in operation at the site more than 50 years.

Under urban renewal, the city would buy, clear and improve the creosote property and then sell it for other industrial development. The federal government would pay two-thirds of the net cost and the city would pay the rest.

Mayor Kenneth Wolfe said there is "no question" the city council would approve such a project.

He noted that much of the 76 acres is too low to be suitable for other industry immediately upon clearing.

About three or four feet of additional soil is necessary to assure proper drainage of the area, he said.

In the past rain water and creosote have soaked into the ground and contaminated at least one city well which had to be abandoned a number of years ago, Wolfe added.

Andre listed three other reasons for redevelopment:

THE PLANT is a nuisance use in the area.

THE PLANT emits smoke and unpleasant odors. Residents nearby, though they moved in long after the plant was built, have objected to "large quantities of dirt, dust, fumes, cinders and other unpleasant substances."

THE PROPERTY is not highly-productive taxwise. Total market value of the 76 acres and buildings is $828,600, according to R. B. Connery, city assessor.

A key requirement in the program to be given to HHFA this week is a citizens advisory committee. Fifteen residents were named to the committee last week.

They are Mrs. E. C. Davidson, 2510 Xylon Av; Lester B Drager, 6520 Eliot View road; Patrick L. Lawless, 2836 Maryland Av; Mas Matsumoto, 2637 Hampshire Av.; L. T. Merrigan, 4321 Mackey Av; Mrs. Henry Morris, 4021 W. 39th St; Mrs. Kenneth Schlenker, 2541 Rhode Island Av., Donald Turkington, 3250 Louisiana Av.

Also Robert E. Wheelock, 4248 Toledo Av.; William J. Hansen, 2405 Decatur Av.; Everett Goulet, 1645 Oregon Av., John J. Novotney, 3537 Zinran Av., Irving R. Brand, 4300 Forest road; Robert Oelke, 2608 Huntington Av., and Mrs. Vernon Olsen, 2832 Alabama Av.

The first meeting has been set for 8 p.m. May 16 at city hall, Councilman Leonard J. Thiel, an ex-officio member of the committee, said.

The committee will define all areas in St. Louis Park which need improvement, Andre said. Members will try to get residents interested in improving their property to prevent blight from starting.

The property between Walker St. and Hwy. 7 and between Hwy 7 and Lake St. also is low land and requires redevelopment for maximum benefit, Wolfe said.

Total area involved is 88.1 acres.

THE MINNEAPOLIS STAR
Mon., May 8, 1961 5A

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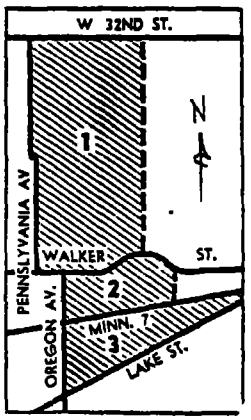

Republic Creosoting Co. occupies 76.2 acres in the area designated (1). Mill City Plywood Co. is at (2), 6.2 acres. The other property (3), 5.7 acres, is vacant.

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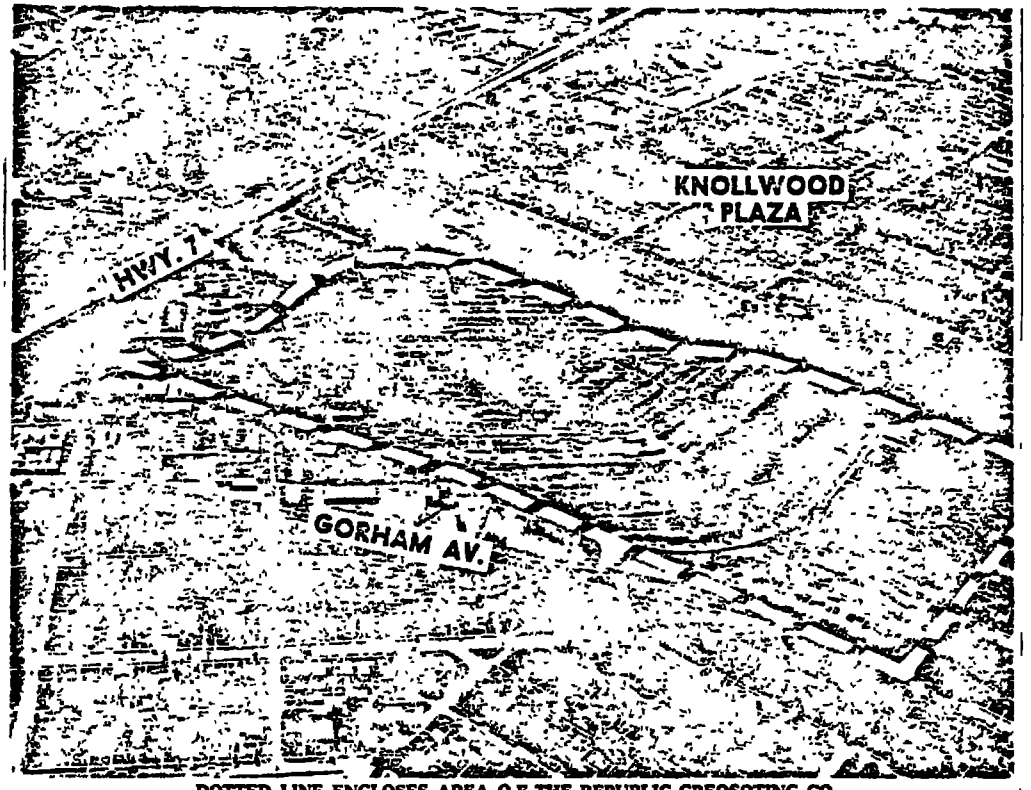

DOTTED LINE ENCLOSES AREA OF THE REPUBLIC CREOSOTING CO.
Federal aid sought to eliminate the plant in St. Louis Park

★ ★ ★ ★

THE MINNEAPOLIS STAR
14B * Tues., Aug. 1, 1961

Suburban Renewal Plan OKd

Special to the Minneapolis Star

WASHINGTON — Federal housing administrator Robert C. Weaver today approved the "workable program" for St Louis Park, Minn.

The approval means the government has agreed the city is making strong enough

ST. LOUIS PARK

local efforts in planning and housing code enforcement to become eligible for federal aid in urban renewal.

St. Louis Park would like to start an urban renewal project on the 76 acres now occupied by Republic Creosoting Co. just north of Hwy. 7 and west of Gorham Av. The land would be redeveloped for other industry

Weaver's approval of the city's workable program does not constitute approval of this particular redevelopment project.

"We'll go just as fast as we can" (in seeking federal assistance to eliminate the cresote plant), pledged Mayor Kenneth Wolfe.

The federal government would pay two-thirds of the net cost of the renewal project and the city would pay the rest.

Republic Creosoting is located in a low area which prevents proper drainage of storm water. Residents have complained that the plant is an "eyesore," and that it emits smoke and unpleasant odors and dirt and cinders.

The city plans to study how much fill would be required to bring the land to a proper elevation. Then the urban renewal application would be prepared.

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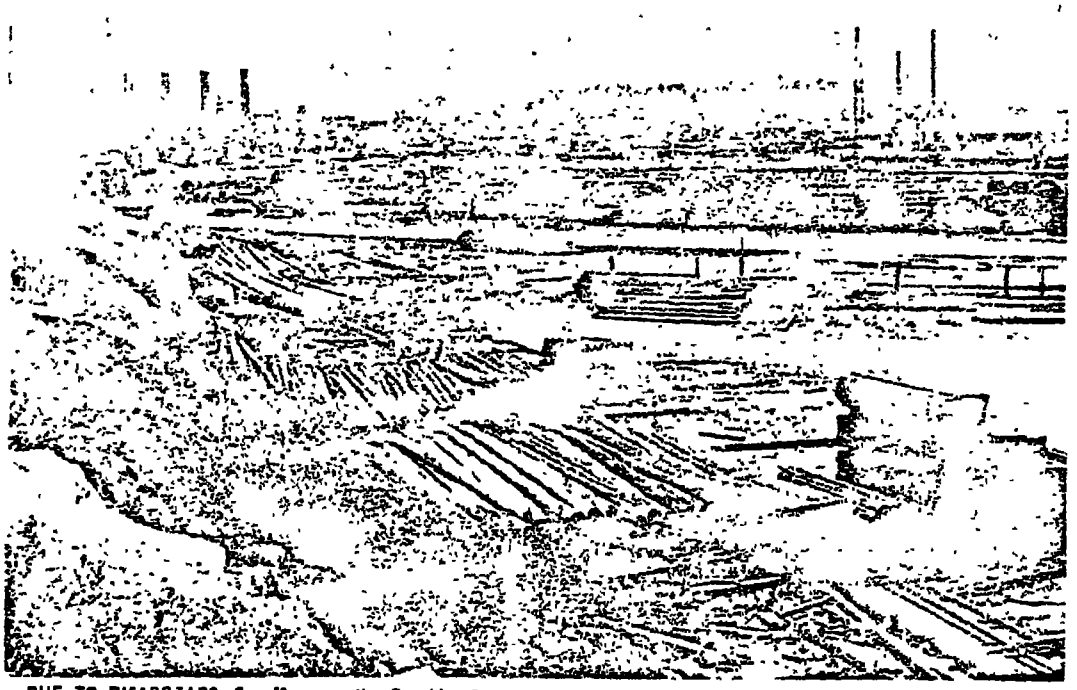

DUE TO DISAPPEAR?—For 50 years, the Republic Creosoting Co plant yards in the center of St. Louis Park has been vilified as unsightly. Now, with the U S. Housing and Home Finance Agency approval of preliminary plans for urban redevelopment in the Park, it may be worked over to become a modern, landscaped area to accomodate a variety of business establishments and park-like "buffer" zones. Certification of the city for renewal and redevelopment aid by the federal government is the first step toward realizing a local program to sustain land values and fight creeping urban depreciation —(STAFOTO)

edevelopment

Part of Creosote Plant Is Proposed for First Project In Urban Renewal Plan

St Louis Park got the green light from the federal government this week to begin actual redevelopment of 'blighted areas within the boundaries

It was learned through Third District Congressman Clark MacGregor the Federal Housing Administration has approved the city's 'workable program for community improvement' '

Sparked principally by the mayor appointed Citizens Advisory Committee on Community Improvement, the betterment planners intend making a 76-acre tract, including part of the Republic Creosoting Co. property, its first target Ci Councilman Leonard Thiel chairman of the committee.

Republic Creosoting, 7300 Wa er St, a division of Reilly T and Chemical Co of Indianap lis, Ind owns about 93 acres land in this area Herbert Fin local manager said some of t property extends to the nor west of the crater-like stora said to the bondary of O Hill park

'All we know about the ci plans is what we've read in t papers' Mr Finch declared I company has been operating its present site for 50 years

Mayor Kenneth Wolfe explained the land being considered for urban redevelopment extends south to "about Lake St" It lies between W. 32nd St. and the proposed southern extension of Louisiana Ave.

'The city now is budgeting for 1962 to prepare preliminary engineering and other surveys needed," he said

Two paramount intentions are part of the city's desire to redevelop in this area Officials want to raise the grade in the creosote plant area from two to four feet to provide better drainage and to seal the ground which has become permeated with creosoting materials over the years

City Manager C D Andre said two principal cost factors are involved in the program' 1 Acquisition of privately-owned property and 2 Installation and development of grade and utilities

Much of the property now is zoned for heavy industry Mayor Wolfe said it probably would remain in industrial zoning when redeveloped but, by virtue of change, could be rezoned for better type of industry with better buffers between residen and other property"

The drainage consideration highly important to the ci the officials said. If the are including the creosoting wor is graded and redeveloped, it may be possible to carry run-off water south into Minnehaha Creek rather than piping it under Highway 7 and eastward to connect with Minneapolis. This latter need would be astronomically expensive, Mr. Andre said.

By provision of federal regulations the government will pay two-thirds of the net cost of an approved renewal project. Manager Andre explained the total "loss' expense incurred by the city in acquiring and developing land under the program would be met on a two-thirds-one third basis by the government and the city

The mayor said there is a possibility the city would either not incur loss or face a small expense The work could be tied in with the building of the Louisiana Ave extension, to Highway 7, he said

"Our purpose in considering urban renewal is to keep valuations in St Louis Park up so that property will not depreciate, giving slum conditions a chance to build," he concluded

While the creosoting company area is the first to be considered by the city, several other sites will be studied for possible redevelopment, Mr Wolfe announced

(Continued on Page 9)

St. Louis Park
DISPATCH

THURSDAY, AUGUST 3, 1961

RECEIVED
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ST. LOUIS PARK, MINN

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FORM APPROVED
BUDGET BUREAU NO. 43-R023

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
WASHINGTON, D.C. 20242

APPLICATION FOR RESEARCH, DEVELOPMENT, AND DEMONSTRATION GRANT

FWPCA USE ONLY
PROGRAM NO
ACCOUNT NO
DATE RECEIVED

PART I, SECTION A, REQUEST AND CERTIFICATION

1. TYPE OF GRANT
[X] CLASS I - RESEARCH [ ] CLASS II - DEMONSTRATION [ ] CLASS III - STORM & COMBINED SEWER [ ] CLASS IV - ADVANCED WASTE TREATMENT [ ] CLASS V - INDUSTRIAL WASTE

2. TITLE OF PROJECT
Investigation of Phenol Degradation and Migration under Subsurface Conditions

3. APPLYING ORGANIZATION AND MAILING ADDRESS (ZIP Code)
City of St. Louis Park
5005 Minnetonka Boulevard
St. Louis Park, Minnesota 55416

4. PROJECT LOCATION AND MAILING ADDRESS (ZIP Code)
Same as 3.

5. GRANT DIRECTOR, MAILING ADDRESS (ZIP Code) AND TELEPHONE NO.
Chris Cherches
City Manager
5005 Minnetonka Boulevard
St. Louis Park, Minnesota 55416
Telephone: 612-920-3000-11

6. PROJECT DIRECTOR MAILING ADDRESS (ZIP Code) AND TELEPHONE NO.
Harvey McPhee, Public Health Officer
5005 Minnetonka Boulevard
Telephone: 612-920-3000-64

7. FINANCIAL OFFICER (To Receive Grant Funds), MAILING ADDRESS (ZIP Code) AND TELEPHONE NO.
Earl E. Hanson, Director of Finance
5005 Minnetonka Boulevard
Telephone: 612-920-3000-26

8. TYPE OF APPLICATION ("X" appropriate box)

X	NEW	
	REVISION (TO)	FWPCA GRANT NO
	CONTINUATION (OF)	

9. PROJECT FINANCING

a. FOR TOTAL PROJECT

TOTAL PROJECT PERIOD	(FROM) June 1970	(THROUGH) June 1973
TOTAL PROJECT COST		$ Unknown

b. FOR THIS REQUEST

GRANT PERIOD	(FROM) June 1970	(THROUGH) June 1971
APPLICANT'S SHARE		$ 7,294
GRANT REQUESTED		$ 138,586
TOTAL		$ 145,880

FWPCA USE ONLY

APPROVED PROJECT PERIOD	
FROM	THROUGH

APPROVED ESTIMATED PROJECT COST	
APPLICANT'S SHARE	$
GRANT REQUESTED	$
TOTAL	$

10. TERMS AND CONDITIONS

The attached statements and exhibits are hereby made part of this application and the undersigned representative of the Applicant certifies that the information in the application and in the attached statements and exhibits is true, correct, and complete to the best of his knowledge and belief. He further certifies that. He has been authorized to file this application by formal action of the governing body of the Applicant as is evidenced by the ATTACHED CERTIFIED COPY OF AUTHORIZATION MADE BY THE APPLICANT'S GOVERNING BODY, the governing body of the Applicant agrees that if a Federal grant for the Project is made on the basis of this application or on the basis of any provision or amendment thereof, it will comply with all of the applicable requirements and conditions of the regulations governing grants for water pollution control authorized by the Water Pollution Control Act, as amended (33 U.S.C. 466 et. seq.) and with such additional conditions as the Commissioner may impose prior to or at the time of the grant award.

SIGNATURE OF PERSON AUTHORIZED TO SIGN	DATE
Chris Cherches TITLE City Manager	April 10, 1970

FWPCA 211 (Rev 3-69) (Page 1)

2900.03

PART I, SECTION B, SUMMARY DESCRIPTION OF PROJECT

GIVE A BRIEF DESCRIPTION OF THE PROJECT, SUMMARIZING THE PROJECT OBJECTIVES AND PLAN OF OPERATION DESCRIBED IN THE DETAILED PROJECT PLAN (PART II, SECTION A). *(Limit the summary to the space provided)*

A. Project Objectives

The immediate objectives of the project are to investigate and document the source of phenolic contamination of the ground-water supplies in the vicinity of St. Louis Park, Minnesota. Migration both vertical and horizontal will be monitored to determine the effects of various subsurface lithologies on attenuation and the biodegredation of phenols in an anaerobic environment. This data will be used to develop criteria to evaluate alternative methods of disposal.

B. Plan of Operation

The plan of operation will consist of three phases. Phase I will include an investigation to determine the extent, nature and scope of the problem. The data to investigate the problem will be obtained from the drilling of observation wells at 10 selected locations. These wells plus selected commercial and municipal wells, will be monitored for a period of one year. This monitoring will consist of analysis of water samples and recording water level changes. Stream samples will also be obtained and analyzed on a monthly basis.

Phase II would consist of a study of alternative methods of solution. These alternatives would include removal wells, barrier wells and removal of the shallow contaminated soil. A cost analysis of alternatives will also be made.

Phase III would be the carrying out of recommendations made in Phase II.

C. Need for Grant

To provide funds for the investigation of subsurface migration of phenols and recommend a method of disposal. The results could have substantial local and national benefits.

PART I, SECTION C, APPROVAL BY STATE WATER POLLUTION CONTROL AGENCY *(If applicable)*

TITLE OF PROJECT

Investigation of Phenol Degradation and Migration under Subsurface Conditions

GRANT APPLICANT

City of St. Louis Park, 5005 Minnetonka Boulevard, St. Louis Park

The project described above, if carried out in accordance with the proposed plan of operation, is hereby approved

NAME OF OFFICIAL STATE WATER POLLUTION CONTROL AGENCY

SIGNATURE OF RESPONSIBLE OFFICER	TITLE OF OFFICER	DATE
W. Ballard		April 15, 1970

CA 211 (Rev 3-69) (Page 2)

2900164

PART ECTION D-1. FINANCIAL SUMMARY

1. ESTIMATED PROJECT COSTS DURING GRANT PERIOD

ITEM	PROPOSED BY APPLICANT		FWPCA USE ONLY	
	TOTAL FOR GRANT PERIOD	GRANT REQUESTED	ELIGIBLE COSTS	FWPCA OFFER
A. SALARIES AND WAGES	7,384	7,015		
B. FRINGE BENEFITS	552	524		
C. CONSULTANT SERVICES	44,962	42,714		
D. EQUIPMENT	4,500	4,275		
E. SUPPLIES	635	603		
F. TRAVEL	2,085	1,981		
G. PUBLICATION COSTS	7,000	6,650		
H. OTHER				
I. CONTRACTS	4,000	3,800		
TOTAL DIRECT COSTS (A thru I)				
J. INDIRECT COSTS ( )				
TOTAL R/D/D STUDIES (A thru J)	71,118	67,562		
K. CONSTRUCTION-ENGINEERING PLANS	6,074	5,771		
L. CONSTRUCTION - SUPERVISION	1,215	1,154		
M. CONSTRUCTION - CONTRACTS	60,738	57,701		
N. CONSTRUCTION - MATERIALS				
TOTAL CONSTRUCTION (K thru N)	68,027	64,626		
O. OPERATION - SALARIES & WAGES	1,583	1,504		
P. OPERATION - FRINGE BENEFITS	152	144		
Q. OPERATION - SUPPLIES				
R. OPERATION - UTILITIES				
S. OPERATION - REPAIRS	5,000	4,750		
TOTAL OPERATION (O thru S)	6,735	6,398		
TOTAL FACILITIES (K thru S)	74,762	71,024		
TOTAL PROJECT COSTS (A thru S)	145,880	138,586		

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PART I, SE ON D-1, FINANCIAL SUMMARY (Continued)

2. PROPOSED FUNDING

ITEM	PROPOSED BY APPLICANT		FWPCA USE ONLY	
	PERCENT	FUNDS	PERCENT	FUNDS
APPLICANT'S SHARE	5	$ 7,294		$
GRANT REQUESTED	95	138,586		
C. TOTAL	100	$ 145,880	100	$

3. SUPPORT TO BE USED FOR THE PROJECT

ITEM	DATE AVAILABLE	AMOUNT
A. CASH	immediate	$ 7,294
B. GENERAL OBLIGATION BONDS		
C. REVENUE BONDS OR CERTIFICATES		
D. OTHER (Specify)		
E. ANTICIPATED FWPCA GRANT		138,586
F. TOTAL		$ 145,880

REMARKS

2900.00

PART I, SECTION D-2, FINANCIAL DETAIL - RESEARCH/DEVELOPMENT/DEMONSTRATION STUDIES

A. Salaries and Wages

NAME	POSITION	PROFESSION OR SKILL	ANNUAL SALARY	TIME ON PROJECT (% of time)	COST
Harvey McPhee	Director, St. Louis Park Health Department	Public Health Officer	14,767	50	$ 7,384
(The City would propose hiring an additional full-time sanitarian to free the Public Health Officer for additional studies on the proposed project)					
					TOTAL A $ 7,384

B. Fringe Benefits

NAME	TYPES OF BENEFITS (Social Security, Group Life Insurance, Retirement, etc.)		
Harvey McPhee	Medical-Hospitalization-Life Insurance	$168/year	$ 84
	Public Employee Retirement Association	560/year	280
	OASDHI	375/year	188
			TOTAL B $ 552

C. Consultant Services

CONSULTANT (if known)	SERVICES TO BE PERFORMED	
Eugene A. Hickok & Associates Consulting Hydrologists and Engineers	Project preparation to include method and site selections	$ 13,963
	Supervision of project and data analysis	8,773
	Supervision of Soil Sample Collection	877
(For explanation of additional services, see continuation of Page 5)		TOTAL C $ 23,613

D. Equipment

ITEM	HOW OBTAINED (purchase, rental, furnished by applicant)	
Submersible test pump for sampling deep wells (to include generator)	Purchase on competitive bid	$ 4,500
		TOTAL D $ 4,500

E. Supplies

ITEM	HOW OBTAINED (as in D. above)	QUANTITY	UNIT COST	
Lab Supplies				$
1000 ml sampling bottles for water analysis	Purchase	50	2.30	115
500 ml distillation flasks and condenser	Purchase	12	35.00	420
Miscellaneous beakers, piping	Purchase			100
				TOTAL E $ 635

2900.07

Part I, Section D-2, Financial Detail

C. Consultant Services (continued)

Item	Purpose	Cost
Sample Collection (Water)	Technician field work to secure necessary water samples for analysis from ten observation and municipal wells, ditches, and streams on a monthly basis	$ 7,019
Sample Collection (Soil)	Technician field work to secure necessary soil samples from borings and surface on a monthly basis	$ 877
Laboratory Analysis (Water and Soil)	Personnel & Equipment to provide professional and technical analysis of samples produced during research, to include comprehensive reporting of findings.	
	Water analysis	$11,698
	Soil analysis	$ 1,755
	Total Consultant Services	$44,962

PART I, SECTION D-2, FINANCIAL DETAIL - RESEARCH/DEVELOPMENT/DEMONSTRATION STUDIES (Cont.)

	TRAVELER	DESTINATION AND PURPOSE	NO. OF TRIPS	COST PER TRIP	COST
F. Travel	Consultant & Sanitarian	Local site visitation and supervision, supply pick-up and data collection	150	6.57	$ 985
	Project Director	Chicago, Illinois, for data support	2	550	1,100
					TOTAL F $ 2,085

	ITEM	PURPOSE	
G. Publication Costs	Report Preparation and Publication	Compilation and preparation of data for printing	$ 3,000
		Printing, binding and distribution costs for dissemination of information for area and industry wide consideration	4,000
			TOTAL G $ 7,000

	ITEM	PURPOSE	
H. Other			$
			TOTAL H $

	LIST ANTICIPATED CONTRACTS BY PURPOSE, PROBABLE CONTRACTOR IF KNOWN, AND ESTIMATED COST	
I. Contracts	Retention of legal services for preparation of contract documents and construction easements for placement of observation wells Firm of Popham, Haik, Schnobrich, Kaufman and Doty	$ 4,000
		TOTAL I $ 4,000

	LIST RATE, BASE OF COMPUTATION, AND NEGOTIATING AGENCY	
J. Indirect Costs	None	$
		TOTAL J $

PART I, SECTION D-2, FINANCIAL DETAIL - FACILITIES

K. Plant Engineering	Costs of engineering plan preparation for construction of 10 observation wells estimated @ 10% of construction costs	$ 6,074
		TOTAL K $ 6,074

29 00 60

L. Construction - Supervision	Sufficient full-time field inspectors to insure the engineering plans and specifications are followed by the contractor and that all work is done in accordance with the goals and objectives of the ground water testing program. (estimate @ 2% of construction costs)	$ 1,215
		TOTAL L $ 1,215
M. Construction - Contracts	Ten Soil borings ranging to 50' depth, @ $573 per boring	$ 5,726
	Five St. Peter Geologic Formation Observation Wells	
	4" diameter - 125' depth	6,697
	Grouting - approximately 4 yards per well	2,236
	Site Restoration	1,342
	Five Jordon Geologic Formation Observation Wells	
	6" diameter - 125' depth	10,125
	4" diameter - 500' depth	20,054
	Grouting - approximately 4 yards per well	2,236
	Sealing packer (includes installation)	7,605
	2" line @ $1.50 ft. - 450' for 5 wells	3,375
	Site Restoration	1,342
		TOTAL M $ 60,738
N. Construction - Materials	All materials to remain property of Contractor	$
		TOTAL N $

O. Operation Salaries and Wages

NUMBER OF EMPLOYEES BY SKILL, ANNUAL SALARIES, AND TIME ON PROJECT B. OR HOURS

(1) Pump Station Mechanic I to operate test pump for water samples Annual Salary $8,796; estimated time spent on project 18%	$ 1,583
	TOTAL O $ 1,583

P. Operation-Fringe Benefits

LIST BY GROUPS NAMED IN "O" ABOVE *(Social Security, Group Life Insurance, Retirement, etc.)*

Pump Station Mechanic I	
Medical-Hospitalization-Life Insurance	30
Public Employees Retirement Association	122
	TOTAL P $ 152

Q. Operation - Supplies

ITEM	HOW OBTAINED	QUANTITY	UNIT COST	
To be furnished by Contractor				$
				TOTAL Q $

R. Operation - Utilities

ITEM	QUANTITY	
Included in contract		$
		TOTAL R $

S. Operation - Repairs

LIST MAJOR ITEMS OF EQUIPMENT AND FACILITIES REPAIR, AND ESTIMATED COSTS

Well and Pump Repairs (includes contingency for possible vandalism of wells)	$ 5,000
	TOTAL S $ 5,000

2900-71

PART I, SECTION E. PROJECT SCHEDULE

1. DATA ON CONTRACTS

A. HAVE ANY CONTRACTS BEEN AWARDED? ☐ YES ☒ NO

B. IF YES, LIST THOSE AWARDED *(Give purpose of contract, name of contractor, and date awarded)*

2. APPLICANT IS PREPARED TO MAINTAIN THE FOLLOWING SCHEDULE
(Not applicable to Class I Grants)

ITEM	NUMBER OF CALENDAR DAYS
A. DAYS REQUIRED TO COMPLETE PRELIMINARY STUDIES, AFTER GRANT OFFER IS ACCEPTED	60
B. DAYS REQUIRED TO COMPLETE ENGINEERING REPORT FOR PROPOSED PROJECT, AFTER GRANT OFFER IS ACCEPTED	NA
C. DAYS REQUIRED FOR PLANS AND SPECIFICATIONS TO BE READY FOR ADVERTISING FOR BID, AFTER GRANT OFFER IS ACCEPTED.	90
D. DAYS REQUIRED TO LET CONTRACT FOR CONSTRUCTION, AFTER GRANT OFFER IS ACCEPTED	120
E. ESTIMATED TIME TO COMPLETE CONSTRUCTION AND INITIATE POST-CONSTRUCTION STUDIES	120
F ESTIMATED TIME REQUIRED FOR POST-CONSTRUCTION STUDIES	360
G ESTIMATED TIME REQUIRED AFTER POST-CONSTRUCTION STUDIES FOR PREPARATION OF A FINAL TECHNICAL REPORT TO EVALUATE FINDINGS	60

PART II, DETAILED PROJECT DESCRIPTION

(Part II of the application shall provide a detailed description of the project plan, supporting information, and miscellaneous information. The description shall be prepared in accordance with the Instructions for completing Part II to assist in the review of this application. Begin here and use continuation pages as necessary.)

Section A. PROJECT PLAN

2900 J.2

Part II, Detailed Proje - Description

Part II, Section A, Project Plan

1. Project Objectives

A. Immediate Objectives

1. Documentation of contaminant source through comparative analysis of shallow soil borings taken at varying distances from suspected sources within the heavy industrial area of St. Louis Park. (As outlined by dotted line on Location Map) The heavy industrial area in question encloses approximately thirty (30) manufacturing operations of varying intensity. These manufacturing operations include: wood preservative and paint removing compounds; hair pieces and wigs; metals, both sheet and precision parts; weed and brush control chemicals; plywood; plastic laminates; lead smelting; industrial rubber products; creosote, manufacture and treatment; ready-mix concrete radiators and cooling coils; and an auto reduction yard.

2. Determination of area and vertical extent of ground water contamination of the area around and including the heavy industrial area through test well construction at varying distances and depth from the subject area.

3. Documentation of contaminant amounts in contribution to ground and surface waters. Contaminant concentration analyzed in conjunction with ground water flow data will then provide information for computation of phenol quantity supplied at the site surface.

4. Determination of geologic formation effect on the movement of phenols and on biodegredation of phenolic compounds under anaerobic conditions. Phenolic degredation has been researched in surface waters under free oxygen conditions and an objective of the proposed investigation is the study of the effect of anaerobic bacteria on phenols.

5. Development of criteria for evaluation of alternatives for future surface and ground water pollution control.

6. Evaluation of treatment alternatives for existing contaminated surface water and of any contaminated ground water recovered.

B. Long Range Objectives

Elimination of surface and ground water contamination by industrial discharges containing phenolic and associated waste compounds in St. Louis Park.

2900 073

2. Need for Project

The City of St. Louis Park is dependent upon ground water for both municipal and industrial water supplies. (See Location Map for municipal well location). Preliminary samples taken from municipal wells in September, 1969 showed an average phenol content of .015 ppm. (See Table 1). In 1932, complaints that municipal water tasted "tarry" forced the abandonment of Well #8A. At that same time, a group of shallow private wells in the area were also abandoned due to taste and odor problems.

Further contamination of the area aquifers by phenols could raise the phenol content to levels unacceptable for potable use. An investigation which could indisputably document the source of this contaminant and its subsurface migration characteristics would enable the City to proceed with Phase II of the program which is the elimination of source contamination and the removal of existing contaminants.

A review of the state codes indicates the lack of legislation with respect to chemical pollution of ground-water supplies. Standards and rules relative to the location, design, operation, and maintenance of sites and facilities for disposal of phenolic compounds is nearly non-existent. The absence of this type of legislation reflects the inadequacy of technological knowledge regarding subsurface movement of phenols and of biodegradation of phenolic compounds in both the saturated and unsaturated zones under anaerobic conditions. The result of this research would prove invaluable for the development of standards governing location of future plants and the control of existing operations.

Part II, Section A, (continued)

3. Plan of Operation

The proposed program would be undertaken in three phases as follows:

Phase I

The first phase of the program, to be commenced approximately two months after grant approval and completed in one year, is investigation to determine the nature and scope of the problem.

a. The source documentation would be accomplished through comparative analysis of soil samples taken from shallow borings at varying distance from the suspected sources. Phenolic content analysis would be accomplished through leaching phenol content from mixture of 100 gram soil sample and 500 ml distilled water. All liquid portions would be analyzed using a standard phenol test with results interpreted from a standard phenol curve.

b. Areal and vertical extent of ground water contamination around and including the site would be accomplished through the above mentioned soil sample analysis and through the construction of monitoring wells. The proposed wells would be constructed at varying distances from the site. Of the ten wells proposed, five would be constructed to depths of 500 feet with packer installation midway in the Jordon geologic formation encountered at that depth to facilitate sampling at various depths. The Jordon formation, from which nine of the City's fifteen wells are drawing, is a loosely semented, medium to coarse grained, white sandstone with an average thickness of 80 to 100 feet.

The remaining five wells would be drilled approximately 125 feet to penetrate the upper layer of the St. Peter geologic formation. This formation is a white to yellow, medium to fine-grained sandstone varying from 100 to 165 feet in thickness.

The municipal wells cannot effectively be utilized for the initial quantity sampling or for continued monitoring due to the dilution of sampling levels within the well from porosity.

c. Documentation of contaminant amounts available at the site will be accomplished through shallow soil borings for soil analysis taken within the site and from phenol analysis of surface water collecting in a drainage ditch originating at the site.

d. Determination of geologic formation effect on the movement of phenols and on the possible biodegradation of phenolic compounds under anaerobic conditions will be accomplished through continuous monitoring of the observation wells and of soil samples. The wells will be sampled on a monthly basis at levels corresponding to varied geologic formations and at varied levels within the formations. The statistics generated from these observations will, under comparison, relate the possible chemical alteration of downward percolating phenolic compounds and the levels of biodegradation, if any, of the phenolic compounds at various geologic levels.

Phenols movements will be documented through changes in content at various levels and distances in the monitoring wells when changes in contaminant amount supplied at the surface are recorded through the soil and water samples noted in (c) above.

Phenols movements will also be documented through monitoring content changes during and after seasonal fluctuations in water usage in the municipality and surrounding areas. This is expected to be most noticeable during the summer months when wells 1, 2, and 3 (See Location Map) in the St. Peter formation will be drawing heavily producing a cone of depression in the aquifer with a corresponding local reversal of ground water flow from the normal Easterly direction. The lateral and vertical extent of the cones of depression will be noted by water level changes in the drawing and monitoring wells.

Part II, Section A, (continued)

Phase II

The data generated in Phase I of the project would be applied to an evaluation of alternative methods of solution. Depending upon whether there is phenol degradation and/or chemical recomposition and whether the contaminants can be judged self-dispersing, the alternative solutions may be source elimination alone or with removal procedures. In any case, Phase II would include elimination of contamination at the source through prohibition of further surface disposal of wastes containing phenolic compounds.

If it is found that phenols are not biodegradable under anaerobic conditions and further that there is chemical recomposition, Phase II would then include steps to control and remove the existing surface wastes. This would include pumping surface waters into city sanitary sewers until concentrations are 0.001 ppm or lower and removal of existing contaminated shallow soil to prevent further contamination by downward percolating surface water.

The next step in Phase II would be the control of shallow ground water at the plant site through the possible construction of removal wells. These wells, if found feasible, could pump the subsurface water into sanitary sewers for disposal.

An investigation of the possibility of controlling water quality in deep aquifers would be initiated in Phase II. It is proposed that if found desirable in Phase I of the project, deep pumping wells could be constructed around the site to serve as barriers by creating local reversals in ground water flow thus eliminating any emanation of contaminants from the plant site.

Phase III

Information provided by the studies undertaken in Phase II would determine the desirability of controlling well construction. If practical, the wells would then be constructed for pumping both shallow ground and deep aquifer water.

Part II, Section A, (continued)

4. Project Facilities

Office and conference facilities available at Municipal Building. Major item of equipment needed and identifiable at this stage is a submersible electric pump and mobile generator unit, estimated cost $4,500, to be utilized for pumping samples from the five deep (500 ft) monitoring wells proposed in the project. A pump meeting all the requirements, including portability, is not now available.

Additional equipment used in the construction of the proposed wells would be and remain the property of the contracting firm.

Part II, Section B

1. Project Personnel

Project Director - St. Louis Park Public Health Officer, SSAN 501 20 3649

Academic Background - B.S. Degree with major in biology and minors in chemistry and philosophy from Creighton University, Omaha, Nebraska, conferred in 1950.
M.P.H. Degree with emphasis in environmental health and epidemiology from the University of Minnesota School of Public Health, Minneapolis, Minnesota, conferred in 1959.

Professional interest-Environmental health: has established air pollution control standards for the City of St. Louis Park as embodied in recently adopted ordinance. (These standards were also adopted in large part by the State Pollution Control Agency) He has also written food standards as well as taxidermy and swimming pool control ordinances for the City. In the early 1960's he persuaded the City Council to adopt flouridation of municipal water supplies.

2. Other Project Activity

The Project Director is not presently involved in any research, development, or demonstration projects. It is, however, planned that he will devote a portion of his time to research in air pollution control standards in the upcoming year with federal assistance from the Department of Health, Education, and Welfare.

TABLE 1

WATER ANALYSIS OF

ST. LOUIS PARK, MINNESOTA

September, 1969

Well No.	Geologic Formation	Phenols in ppm
1	St. Peter	0.014
2	St. Peter	0.008
3	St. Peter	0.012
4	Jordan	0.014
5	Jordan	0.014
6	Jordan	0.023
7	Jordan	0.013
8	Jordan	0.018
8A	Jordan	0.012
9	Jordan	0.013
10	Jordan	0.014
11	Hinckley	Trace
12 (Before iron treatment)	Hinckley	0.018
12 (After iron treatment)	Hinckley	0.018
13 (Before iron treatment)	Hinckley	0.018
13 (After iron treatment)	Hinckley	0.018
14	Jordan	0.009
19	------	0.028
23	St. Peter	0.023
33	------	0.02
Mhaha. Cr. Sample #1		0.02
Mhaha. Cr. Sample #2		0.021
Drainage Ditch. (7200 Walker St.)		Excess of 2.0 ppm

2900079

STATE OF MINNESOTA)
COUNTY OF HENNEPIN)SS
CITY OF ST. LOUIS PARK)

I, Elsie Dahlstrom, being the duly appointed, qualified and acting Deputy Clerk of the City of St. Louis Park, Hennepin County, Minnesota, do hereby certify that I have carefully compared the attached copy of Resolution No. 3855 with original thereof as duly adopted at a regular meeting of the City Council held October 20, 19 69 as recorded in the Official Book of Resolutions of said City, and that said copy of Resolution constitutes a full, true and correct copy of Resolution No. 3855.

I further certify that said meeting was a regular meeting held upon due call and notice as required by law, and seven Council Members were present thereat.

WITNESS my hand and the seal of said City this 10th day of April 19 70.

ELSIE D. DAHLSTROM, Deputy City Clerk

(SEAL)

2900 DEC

OCTOBER 20, 1969
7A

RESOLUTION NO. 3855

RESOLUTION AUTHORIZING THE CITY MANAGER TO FILE AN APPLICATION FOR A FEDERAL GRANT TO DEVELOP A WATER POLLUTION PREVENTION PROGRAM

WHEREAS, Title II of the Federal Water Pollution Control Act, by the Clean Water Restoration Act of 1966, as amended, provides for the making of grants of Federal funds by the United States Department of the Interior Federal Water Pollution Control Administration to public or private agencies and institutions, and to individuals to support research and demonstration projects for the identification and prevention of pollution of waters, and

WHEREAS, the City of St. Louis Park (herein sometimes referred to as "Applicant"), deems it necessary and in the public interest to investigate alternative means of control of surface and ground water contamination by industrial discharge containing phenolic and associated waste compounds within the Applicant's jurisdiction.

WHEREAS, it is estimated that the cost of said research and demonstration will be $145,880.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ST. LOUIS PARK, MINNESOTA:

1. That an application be made to the Department of the Interior Federal Water Pollution Control Administration for a grant in an amount authorized by Sections 5 and 6 of the Federal Water Pollution Control Act, as amended, which amount is presently estimated to be $138,586 and that the Applicant will pay the balance of the cost from other funds available to it.

2. That the City Manager is hereby authorized and directed to execute and to file such application with the Department of the Interior, to provide additional information and to furnish such documents as may be required by said Department, to act as the authorized correspondent of the applicant, and the City Manager and the Mayor are hereby authorized to execute such contracts as are required by said Department.

3. That the United States of America and the Secretary of the Interior be, and they hereby are, assured of full compliance by the Applicant with regulations of the Department of the Interior effectuating Title II of the Clean Water Restoration Act of 1966.

290081

4. That the United States of America and the Secretary of the Interior be, and they hereby are, assured of full compliance by the Applicant with the regulations of the Department of the Interior effectuating Title VI of the Civil Rights Act of 1964 and with Federal requirements relating to equal employment opportunity.

5. That the United States of America and the Secretary of the Interior be, and they hereby are, assured of full compliance by the Applicant with the Federal Labor Standards imposed under Title VII of the Housing Act of 1961, as amended.

Adopted by the City Council October 20, 1969.

Mayor

Attest:

City Clerk

Reviewed for administration:

City Manager

Approved as to form and legality:

City Attorney

2900-83

5

SUMMARY REPORT
ON THE
NEIGHBORHOOD DEVELOPMENT PROGRAM

In 1971, Reilly Tar and Chemical Corporation announced that their plant would be closing in 1972. In March of 1971, the City Council gave approval of the center line extension of Louisana Avenue from 32nd Street to Oxford and was in the process of negotiating acquisition of right-of-way with the Reilly Tar and Chemical Corporation. During these discussions about extension of Louisiana Avenue which also included adoption of the extension on an official map, it became obvious that acquisition of several acres of property owned by the Reilly Tar and Chemical Corporation would be expensive and there was some possibility of severance damages also. At the same time, the city was concerned not only with the existing nature of the development of the Creosote property but, more importantly, its reuse. It was decided that in order to reduce land costs for the extension of Louisiana Avenue and to gain all of the advantages the city could gain by establishing a desirable framework for redevelopment of the area, Federal assistance should be considered to accomplish these objectives.

The City Council also asked that the comprehensive guide plan for the area be studied to determine the best use for the area. Research on the issues indicated that the site would be eligible for a Neighborhood Development Program with the Federal Government incurring 75 percent of the cost and the local share would be 25 percent. This local share could be contributed in either cash or facilities such as streets and utilities. Because streets and utilities would be needed for the site and area, the local share could be provided by the extension of Louisiana Avenue and utilities.

Using Federal assistance was justified on the basis that it would provide at least some means of returning to the community at least a small portion of the tax dollars that annually flow from the community to Washington. In addition, the benefits anticipated from guiding redevelopment of the site were also of major concern. It was recognized that without substantial local involvement in redevelopment of the site, any number of undesirable or inappropriate uses might be located on the site. In addition, by acquiring the property and inserting proper controls, including placing of covenants on the property, the site could be sold for private development thereby insuring that the land would be used for uses acceptable to the community. In fact, it was felt that substantial benefits to the abutting areas could be gained by providing such things as pedestrian ways through the site, a pedestrian link over Louisiana Avenue, and additional park and open space.

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While the staff of the Housing Authority was preparing the application and necessary documentation for the Neighborhood Development Program, extensive negotiations took place between the city and Reilly Tar and Chemical relative to acquisition of property for Louisiana Avenue. After extensive negotiations it became possible for the city to not only acquire the land necessary for the extension of Louisiana Avenue, but also the remainder of the site thus holding the property until the NDP was approved and funding made available for the Housing Authority to acquire the property.

In April of 1972 (after a public hearing) the completed NDP application was submitted to HUD. At the same time, the City Council entered into a purchase agreement to purchase the property, thereby insuring that the land would be available as proposed in the Neighborhood Development Program. During the fall of 1972, HUD requested some minor revisions to the application. These revisions were made and additional hearings were held during the fall of 1972. In December of 1972, HUD formally approved the NDP.

In April of 1973, a contract covering the terms of the program was executed by the HRA. In May of 1973, HUD submitted the executed copy of the contract, thereby making the Authority eligible to submit a requisition for a temporary loan and a requisition for a note sale to cover the activities included in the program. At approximately the time when the direct loan of 1.9 million dollars was received, the following actions took place in accordance with proper procedures. City Council authorized the final payment to Reilly Tar and Chemical Corporation and sale of the property to the Housing and Redevelopment Authority as previously agreed to. The Housing and Redevelopment Authority authorized purchase of the property from the City Council. At closing, the funds the City Council received from closing of the property with the Authority were immediately invested at substantial profit to the community. Had not the Council passed an emergency ordinance, the interest gained on the temporary loan would have essentially accrued to the Federal Government rather than the city.

Investment of the money from the sale of the property at an earlier date, gained approximately $8,900 for the city, and transfer of the land from the city to the HRA has always been a part of the program and required by the term of the program as originally approved in April of 1972.

William L. Thibault

bf

PLANNING DEPARTMENT
July 9, 1973

PARTIAL CHRONOLOGICAL
NEIGHBORHOOD DEVELOPMENT PROGRAM

1. February 7, 1972 - Resolution No. 4445, Resolution Supporting Neighborhood Development Program. Approved. (Resolution 4446, authorizes the use of a Special Benefit Tax Fund to undertake renewal activities suggested in the Workable Program.) MS 462.545.

2. March 20, 1972 - Set hearing for Neighborhood Development Program, April 3, 1972.

3. March 23, 1972 - Notice of Public Hearing on NDP published.

4. April 3, 1972 - City Council authorize negotiations with Republic Creosote and to enter into an agreement to purchase and approving payment of $5000.
Public Hearing on Proposed Neighborhood Development Program. Hearing continue to April 17, 1972, authorizing staff to prepare necessary resolution.

5. April 17, 1972 - Public Hearings, proposed Neighborhood Development Program

6. April 20, 1972 - The original NDP application was submitted to HUD April 20, 1972. The city was informed that the application was being given a favorable review and would probably be approved; however, in the fall we were informed by the area office that they were requesting minor revisions and new hearings.

7. October 13, 1972 - HUD sent a letter stating they would approve the city's program and would offer a formal contract on or before December 14, 1972.

8. October 24, 1972 - Public Hearing Oak Park Village Urban Renewal Plan. Another Hearing set for November 6, 1972.

9. October 25, 1972 - the HUD area office authorized the Authority to incur administrative and appraisal cost prior to formal project approval and requested that we coordinate the hiring of appraisers with the area Land Valuation Branch. A process of selecting and reviewing appraisal firms was developed during a series of meetings held with the area office. Appraisal firms were asked to submit contracts after which the city and HUD agreed on the two appraisal firms to be awarded the contract.

10. November 6, 1972 - Public Hearing on NDP - Hearing published October 26 and November 2, 1972.

11. November 14, 1972 - After the City Held several additional hearings on the NDP, the city submitted its revised renewal plan in compliance with HUD's request.

12. November 20, 1972 - Public Hearing on proposed renewal plan and Neighborhood Development Program as described in notice of Hearing published November 9 and November 16, 1972.

13. December 8, 1972 - The city submitted application for a $1,900,000 temporary loan.

14. December 14, 1972 - Contracts were executed with the appraisal firms. The area office informed us that our NDP was approved with a loan in the amount of $2,134,593 and a capital grant to aid and finance the program in the amount of $1,214,593.

15. December 15, 1972 - City made first payment on NDP property.

16. December 26, 1972 - Congressional notification identified.

17. January 2, 1973 - HUD said it will make available $700,000 to carry our Year II of our Neighborhood Development Program and asked that our new application be submitted by March 1, 1973.

18. January 16, 1973 - The first appraisal was submitted to the HUD area office. On January 22, the second appraisal was submitted together with a request for concurrence in the acquisition prices.

19. January 26, 1973 - The revised management policies were received and a meeting was attended on February 6 at the area office to receive their comments about the new policies.

20. February 15, 1973 - The area office officials indicated that the only remaining problem with the city's program is the affirmative finding relative to Section 105f. The area office requested submission of a program which would show the city can meet the provisions of Section 105f.

21. February 21, 1973 - Supplement for meeting all the requirements of Section 105f was submitted.

22. March 2, 1973 - In a telephone conversation with Alan Anderson, the city is informed that there are still complications in gaining approval and authorization to execute the contract.

23. April 13, 1973 - NDP contract received from HUD.

24. April 20, 1973 - NDP contract executed by HRA. Requested $1,900,000 temporary loan.

25. May 25, 1973 - HUD returned executed copy of contract.

26. June 11, 1973 - HRA received temporary loan for $1,884,111.

27. June 15, 1973 - Ordinance No. 1229 adopted by City Council authorizing Sale by the City of Lots 25 through 48 Inclusive Block 306 to HRA.

28. June 21, 1973 - City completed purchase of NDP property from Rielly Tar and Chemical Company. HRA purchased property from the city.

6

ELD/js-20

UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA
FOURTH DIVISION

UNITED STATES OF AMERICA, Plaintiff, and STATE OF MINNESOTA, by its Attorney General Warren Spannaus, its Department of Health, and its Pollution Control Agency, Plaintiff-Intervenor, v. REILLY TAR & CHEMICAL CORPORATION, HOUSING AND REDEVELOPMENT AUTHORITY OF ST. LOUIS PARK, OAK PARK VILLAGE ASSOCIATES, RUSTIC OAKS CONDOMINIUM, INC., and PHILIP'S INVESTMENT CO., Defendants, and CITY OF ST. LOUIS PARK, Plaintiff-Intervenor, v. REILLY TAR & CHEMICAL CORPORATION, Defendant, and CITY OF HOPKINS, Plaintiff-Intervenor, v. REILLY TAR & CHEMICAL CORPORATION, Defendant.	Civil No. 4-80-469

FIRST AMENDED COMPLAINT

INTRODUCTION AND NATURE OF THE CASE

1. This is a civil action brought by the United States of America on behalf of the Administrator of the United

States Environmental Protection Agency, (hereinafter "EPA") to repair the harm caused, and prevent the future harm posed, by pollution of the ground and waters in and around the City of St. Louis Park, Minnesota. The activities of the defendant Reilly Tar and Chemical Corporation ("Reilly Tar") have resulted in the disposal, leaching, and migration of hazardous and other chemical wastes into the ground and waters of the City of St. Louis Park with substantial adverse effects at present and potentially more adverse effects in the future. This action seeks a judgment that the handling, storage, treatment and disposal of hazardous and other chemical wastes by the defendant Reilly Tar are presenting and may present an imminent and substantial endangerment to health and the environment, within the meaning of Section 7003 of the Resource Conservation and Recovery Act, 42 U.S.C.A. §6973, as amended by the Solid Waste Disposal Act Amendments of 1980, Pub. L. No. 96-482 (Oct. 21, 1980), 94 Stat. 2348. This action also seeks a judgment that there is and may be an imminent and substantial endangerment to the public health and welfare and to the environment because of actual and threatened releases of hazardous substances from the facility owned and operated by Reilly Tar in the City of St. Louis Park, within the meaning of Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. No. 96-510 (December 11, 1980), 94 Stat. 2767, 42 U.S.C.A. §§9606 and 9607. Plaintiff seeks injunctive relief, including remedial measures, and the response costs incurred by the plaintiff.

JURISDICTION, VENUE, AND NOTICE

2. This Court has jurisdiction over this case pursuant to 28 U.S.C. §1331, 28 U.S.C. §1345, 42 U.S.C.A. §6973, and 42 U.S.C. §§9606, 9607, and 9613.

3. Venue is proper in this district, pursuant to 28 U.S.C. §1391(b), 42 U.S.C. §6973, and 42 U.S.C. §9606 and 9613.

4. Notice of commencement of this action has been given to the State of Minnesota pursuant to 42 U.S.C. §6973.

THE ACTIVITIES OF THE DEFENDANTS
IN ST. LOUIS PARK, MINNESOTA

5. Defendant Reilly Tar, formerly known as Republic Creosoting Company, is incorporated under the laws of the State of Indiana and is headquartered at 1510 Market Square Center, 151 North Delaware Street, Indianapolis, Indiana.

6. In 1917, defendant Reilly Tar began operation of a plant at a site in St. Louis Park, Minnesota ("Reilly Tar site"). At the plant, defendant Reilly Tar, among other activities, refined coal tar into creosote oil and other products and treated wood products with creosote oil and other materials as preservatives.

7. The activities of Reilly Tar at the Reilly Tar site, including the refining of coal tar and the treatment of wood products, generated chemical wastes. For 55 years, Reilly Tar handled, stored, treated and disposed of these chemical wastes at the Reilly Tar site.

8. Reilly Tar ceased the distillation of coal tar into creosote oil and other products at the Reilly Tar site in 1971. It ceased the treatment of wood products in 1972.

9. In June, 1973, the City of St. Louis Park purchased the Reilly Tar site and transferred its ownership, by quitclaim deed, to the defendant Housing and Redevelopment Authority of St. Louis Park, a municipal corporation existing under the laws of the State of Minnesota.

10. Defendant Oak Park Village Associates, limited partnership existing under the laws of the State of Minnesota, bought part of the Reilly Tar site in December, 1977. Defendant Rustic Oaks Condominium, Inc., incorporated under the laws of the State of Minnesota, bought part of the Reilly Tar site in June, 1978 and May, 1979. Defendant Philip's Investment Co. bought part of the Reilly Tar site in January, 1980. Defendant Housing and Redevelopment Authority of St. Louis Park still owns part of the Reilly Tar site. The defendants named in this paragraph are named as defendants only to insure that the remedial measures sought by the plaintiff can be fully implemented.

11. In 1970, the State of Minnesota and the City of St. Louis Park sued Reilly Tar in state court for violations of state law at the Reilly Tar site relating to air and surface water pollution. The complaint was amended by the State of Minnesota in 1978 to allege pollution of the groundwater, and the state suit is still pending.

12. Since the passage of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. No. 96-510 (December 11, 1980), 94 Stat. 2767, 42 U.S.C.A. §§9601 et seq., the United States Government has begun to incur costs in taking actions to repair the harm caused and prevent the future harm posed by the pollution of the groundwater in and around the City of St. Louis Park.

THE ENDANGERMENT TO HEALTH
AND THE ENVIRONMENT CREATED BY
THE ACTIVITIES OF REILLY TAR

13. Chemical wastes resulting from the refining of coal tar into creosote oil and other products and from the treatment of wood products with creosote oil and other materials consist of

many chemicals which usually are part of three distinct groups: neutral oils, tar acids, and tar bases. Neutral oils include polynuclear aromatic hydrocarbons ("PAH") compounds such as fluoranthene, acenaphthene, benzopyrene, benzanthracene, pyrene, and chrysene. Tar acids consist of phenolic compounds such as phenol and cresols. Tar bases consist of basic nitrogen compounds such as acridines and naphthylamines.

14. Some creosote oil is carcinogenic in animals and has been associated with occupational cases of cancer in humans. It is absorbed from the intestinal tract on ingestion and through the skin. Acute exposure may produce vomiting, respiratory difficulties, headache, vertigo, and convulsions. Exposure to high concentrations may cause hypertension.

15. Many PAH compounds found in wastes resulting from the refining of creosote oil and other products from coal tar and from the treatment of wood products with creosote oil and other materials are carcinogenic in animals and are suspect human carcinogens. In addition, interaction among various PAH compounds may result in an enhancement of their carcinogenic and other toxic effects. Also, some PAH compounds are co-carcinogens, substances which enhance the carcinogenic activity of cancer-causing substances.

16. Phenolic compounds found in the [illegible] of wastes resulting from the refining of creosote oil and other products from coal tar and from the treatment of wood products with creosote oil and other materials are toxic. Ingestion may cause nausea, vomiting, paralysis, convulsions, coma, and death. Kidney, liver, and lung functions may be impaired upon prolonged exposure to phenolic compounds. Phenol is a tumor promoter, increasing the carcinogenic response of certain carcinogens when exposure to the phenol follows exposure to the carcinogen.

17. Chemical wastes generated at the Reilly Tar site spilled, leaked and were discharged directly by Reilly Tar onto and into the ground at the site.

18. Chemicals which are part of the chemical wastes generated by the refining of coal tar into creosote oil and other products and the treatment of wood products with creosote oil and other materials exist at present in the ground at and surrounding the Reilly Tar site.

19. The chemicals in the ground at and surrounding the Reilly Tar site have leached and migrated and will continue to leach and migrate into the groundwater beneath and surrounding the Reilly Tar site.

20. The groundwater beneath and surrounding the Reilly Tar site is part of a system of several aquifers which supplies water to the City of St. Louis Park and other parts of the Minneapolis - St. Paul metropolitan area. Numerous industrial and drinking water wells have been drilled into the

aquifers. Some wells offer a route for [illegible] migration of chemicals between the aquifers because of inadequate grouting and well-casings. One well, drilled to a depth of 909 feet beneath the Reilly Tar site, is [illegible] with coal tar at a depth of approximately 590 feet.

21. The City of St. Louis Park and the City of Hopkins, as well as other municipalities, obtain drinking water for their residents from the system of aquifers extending beneath the Reilly Tar site. The City of St. Louis Park closed five drinking water wells in 1978 and 1979, and the City of Hopkins closed one drinking water well in 1981, because the water in the wells was contaminated with chemicals which are part of the chemical wastes generated by the refining of coal tar into creosote oil and other products and the treatment of wood products with creosote oil and other materials.

22. Chemicals which are part of the chemical wastes generated by the refining of coal tar into creosote oil and other products and the treatment of wood products with creosote oil and other materials have contaminated the groundwater in one aquifer at least two miles to the north of the Reilly Tar site, and at least one and one-half miles to the east and southeast of the site.

23. The chemicals will continue to move, through leaching and migration of groundwater, from the Reilly Tar site, through the aquifers, and into the drinking water supply for the Minneapolis - St. Paul metropolitan area unless measures are taken to prevent it.

FIRST CAUSE OF ACTION

24. Section 7003 of the Resource Conservation and Recovery Act, 42 U.S.C.A. §6973, as amended by the Solid Waste Disposal Act Amendments of 1980, Pub. L. No. 96-482 (Oct. 21, 1980) 94 Stat. 2348, provides, in pertinent part, as follows

> Notwithstanding any other provision of this Act, upon receipt of evidence that the handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may bring suit on behalf of the United States in the appropriate district court to immediately restrain any person contributing to such handling, storage, treatment, transportation, or disposal to stop such handling, storage, treatment, transportation, or disposal or to take such other action as may be necessary. The Administrator shall provide notice to the affected State of any such suit.

25. Hazardous waste is defined in Section 1004(5) of the Resource Conservation and Recovery Act, 42 U.S.C.A. §6903(5), as follows

> The term 'hazardous waste' means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristic may --
>
> A. cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illnesses. or
>
> B. pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

26. The chemical wastes disposed of upon and into the ground on the Reilly Tar site are hazardous waste as defined in Section 1004(5) of the Act.

27. Disposal is defined in Section 1004(3) of the Resource Conservation and Recovery Act, 42 U.S.C. 6903(3), as follows.

> The term "disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

28. The discharge, deposit, dumping, spilling, leaking and placing of hazardous waste upon and into the ground and water on and beneath the Reilly Tar site constitutes disposal as defined in Section 1004(3) of the Act.

29. The defendants have contributed and are contributing to such disposal.

30. Reilly Tar's past handling, storage, and treatment of hazardous waste and the past and present disposal of hazardous waste upon and into the ground and water on and beneath the Reilly Tar site are presenting and may present an imminent and substantial endangerment to health and the environment.

SECOND CLAIM FOR RELIEF

31. Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. No. 96-510 (December 11, 1980), 94 Stat. 2767, 42 U.S.C. 9606(a), provides in pertinent part, as follows.

> In addition to any other action taken by a State or local government, when the President determines that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility, he may require the Attorney General of the United States to secure such relief as may be necessary to abate such danger or threat, and the district court of the United States in the district in which the threat occurs shall have jurisdiction to grant such relief as the public interest and the equities of the case may require.

32. Hazardous substance is defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §9601(14), to mean, in pertinent part, "... any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act ...."

33. The hazardous waste disposed of upon and into the ground on the Reilly Tar site are hazardous substances as defined by Section 101(14) of the Act.

34. Facility is defined in Section 101(9) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §9601(9), as follows

> (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located, but does not include any consumer product in consumer use or any vessel,

35. The Reilly Tar site is a facility within the meaning of Section 101(9) of the Act.

36. Release is defined in Section 101(22) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §9601(22), to mean, in pertinent part, "... any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment."

37. Releases, as defined in Section 101(22) of the Act, of hazardous substances are occurring, have occurred, and threaten to occur from the Reilly Tar site.

38. The activities of Reilly Tar have caused the releases and threatened releases of hazardous substances from the Reilly Tar site.

39. There is and may be an imminent and substantial endangerment to the public health and welfare and the environment because of the actual and threatened releases of hazardous substances from the Reilly Tar site.

THIRD CLAIM FOR RELIEF

40. Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §9607(a), provides, in pertinent part, as follows

> Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section-
>
> (1) the owner and operator of a ... facility,
> (2) any person who at the time of disposal or any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,...
>
> from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance, shall be liable for-
>
> (A) all costs of removal or remedial action incurred by the United States Government or a State not inconsistent with the national contingency plan,...

41. Response is defined in Section 101(25) of the Act, 42 U.S.C.A. §9601(25) to mean "remove, removal, remedy, and remedial action".

42. Removal is defined in Section 101(23) of the Act, 42 U.S.C.A. §9601(23), in pertinent part, as follows.

> "remove" or "removal" means the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. The term includes, in addition, without being limited to,... action taken under 104(b) of this Act....

43. Remedial action is defined in Section 101(24) of the Act, 42 U.S.C.A. §9601(24), in pertinent part, as follows.

> "remedy" or remedial action" means those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment...

44. Since the passage of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the United States has incurred and will continue to incur response costs, including the costs of removal and remedial actions, as defined in Sections 101(23), 101(24) and 101(25) of the Act, to respond to the hazard created by the release and threatened release of hazardous substances from the Reilly Tar site.

45. The defendant Reilly Tar is liable to the United States for the response costs, including the costs of removal and remedial actions, incurred to respond to the hazard created by the release and threatened release of hazardous substances from the Reilly Tar site.

PRAYER FOR RELIEF

WHEREFORE, the plaintiff, the United States of America, prays that this Court

1. Enjoin the defendants from dumping, depositing, or causing the disposal of any hazardous waste upon or into the ground on the defendants' property or into the groundwater and aquifers under and surrounding the defendants' property at the Reilly Tar site,

2. Enjoin the defendants from entering any areas on the Reilly Tar site which are contaminated with hazardous wastes without the approval of the Court,

3. Order the defendants to permit the plaintiff, through its authorized agents, to enter and inspect the Reilly Tar site, to take samples, to install wells, and to undertake any other activity related to the clean-up of hazardous wastes from the site,

4. Order the defendant Reilly Tar and Chemical Corporation to prevent the further spread in the groundwater and aquifers of hazardous wastes from the Reilly Tar site by accomplishing measures, including the following, according to a plan and schedule approved by the Court after consultation with EPA:

a. install and operate a system of gradient control or barrier wells which includes treatment with appropriate chemical technology of the groundwaters extracted from the wells;

b. locate, inspect, clean, properly abandon, and monitor existing wells which may facilitate the spread of hazardous wastes from the Reilly Tar site,

d. clean out the [illegible] 100-foot deep well on the [illegible] site and properly dispose of the material, and

e. develop a well-field monitoring plan for, and monitor and report with progress report filed with the Court [illegible], the accomplishment of all measures identified in the Court-approved plan,

5. Order the defendant Reilly Tar and Chemical Corporation to repair and clean up the pollution caused by its handling, storage, treatment, and disposal of hazardous wastes at the Reilly Tar site by accomplishing measures, including the following, according to a plan and schedule approved by the Court after consultation with EPA

a. determine the nature and extent of contamination by hazardous wastes of the soil on, in, beneath, and immediately surrounding the Reilly Tar site,

b. remove, neutralize, or isolate all hazardous wastes and contaminated soil on, in, beneath, and immediately surrounding the Reilly Tar site in order to eliminate further leaching and migration of hazardous wastes into the groundwater and aquifers,

c. remove hazardous wastes from the Reilly Tar site from the groundwater and aquifers,

d. ensure the proper disposal, treatment of all hazardous wastes, contaminated soil, or contaminated groundwater removed from the environment as a result of the implementation of the measures required by subparagraphs a through c, and

e. monitor and verify with progress reports filed with the Court and EPA the accomplishment of the measures required in subparagraphs a through d,

6. Order the defendant Reilly Tar and Chemical Corporation to finance all monitoring and maintenance necessary to verify the containment and clean-up of hazardous wastes from the Reilly Tar site.

7. Order the defendant Reilly Tar and Chemical Corporation to finance the restoration of closed drinking water wells in the City of St. Louis Park which have been contaminated with hazardous wastes from the Reilly Tar site and/or to finance the acquisition and development of alternate sources of water;

8. Order the defendant Reilly Tar and Chemical Corporation to pay the plaintiff its costs incurred in taking samples, installing monitoring wells, and otherwise identifying, quantifying, and locating hazardous wastes on and migrating from the Reilly Tar site,

9. Order the defendant Reilly Tar and Chemical Corporation to pay the plaintiff the response costs the plaintiff has incurred to respond to the hazard created by the release and threatened release of hazardous substances from the Reilly Tar site.

10. Order the defendant Reilly and the Chemical Corporation to post a performance bond for the accomplishment of all response measures, the amount of which will be determined in later proceedings,

11. Award plaintiff the costs of this suit and such other relief as this Court deems just and appropriate.

CAROL E. DINKINS
Assistant Attorney General
Land and Natural Resources Division
United States Department of Justice
Washington, D.C. 20530

JOHN M. LEE
United States Attorney

FRANCIS X. HEKLAND
Assistant United States Attorney

7

Metropolitan Council of the Twin Cities Area

Metro Square Building, 7th Street and Robert Street, Saint Paul, Minnesota 55101 Area 612, 227-9421

May 16, 1972

Mr. William L. Thibault
Planning Director
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, Minnesota 55416

RE: St. Louis Park Neighborhood Development
Metropolitan Council Referral File No. 1204

Dear Mr. Thibault:

On May 11, 1972, the Metropolitan Council reviewed the St. Louis Park Neighborhood Development Program to purchase approximately 100 acres of land in the center of the City.

After review of the St. Louis Park proposal the Metropolitan Council voted to find the application consistent with metropolitan planning. Review of the plan, however, brought out potential problems that are of concern to the Metropolitan Council. These concerns include:

(1) The high water table - the water table level, at 3 or 4 feet below the ground surface would generally prohibit usage of basements.

(2) Soils and ground water saturated with phenols and other constituents from creosote - there may be problems associated with plantings, particularly plantings with deep root structures. It may be advisable to obtain further expert opinions from soils scientists and agronomists. The U. of M. Extension Division may provide this advice.

It is recommended that in Phase I of the NDP for St. Louis Park additional environmental investigations be initiated so that a better interpretation can be concluded as to a most suitable configuration of housing, etc. The investigations should provide information including the following recommended items:

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(1) Concentrations of phenols, etc., in the soil and a mapping of how these concentrations may vary over the 80 acre site.

(2) Groundwater elevations over the 80 acre site.

(3) Analysis of groundwater over different areas of the site.

(4) Previous or existing ponding areas that were utilized by the industry with an indication of what the soils and groundwater quality is at these locations.

An interpretation of the above information would assist in determining soil sealing and cover material needed, possible effects on plantings, safety requirements, and design criteria for storm sewer construction.

If the Metropolitan Council can be of any further help to you in the development of your program, please feel free to contact us.

Sincerely yours,

METROPOLITAN COUNCIL

by
Albert J. Hofstede
Chairman

AJH:bc

cc: Mr. James Alexander, Office of Local & Urban Affairs, State Planning Agency
Mr. Thomas Feeney, Department of Housing & Urban Development
Mr. George Pennock, Metropolitan Council District 5

8

8-9-72

August 9, 1972

Mr. Thomas Feeney, Area Director
St. Paul Office
Department of Housing and Urban Development
1821 University Avenue
St. Paul, Minnesota

Attn: Charles Warner

Dear Mr. Feeney:

Enclosed is a copy of the report, "An Assemblage of Analytical Data Regarding the Reilly Chemical and Tar Property St. Louis Park, Minnesota." This report was prepared by the City to provide basic information about the known conditions in and around the property included in the city's Neighborhood Development Program application. As the report indicates, a committee consisting of a member from the State Health Department, Pollution Control Agency, Metropolitan Council, and the St. Louis Park Health Department, will study the report and determine what additional research, if any, is necessary.

Please include this enclosed report as supplemental information to the city's NDP application. If you have any questions regarding the report, please feel free to contact Harvey McPhee, Health Department, St. Louis Park.

We hope that the findings and information contained in the report will enable you to complete the review of our NDP application. The City appreciates your interest in our application and we hope to hear from you soon relative to approval of the NDP.

Sincerely,

William L. Thibault, Executive Director

50004452

6

CITY OF
ST. LOUIS PARK, MINN.

9-1-72

September 1, 1972

Mr. Allen Anderson, Program Manager
Department of Housing and Urban Development
Griggs-Midway Building
1821 University Avenue
St. Paul, Minnesota 55104

Dear Mr. Anderson:

I wish to thank you for the opportunity to meet with you and your staff members yesterday. We have anxiously awaited to hear your concerns and problems relative to our NDP application. I feel certain that the City can provide you with the necessary additional information and satisfactorily respond to your concerns expressed the other day. A complete response to these concerns should be available in approximately two weeks.

A committee consisting of personnel for the State Health Department, State Pollution Control Department, Metropolitan Council and St. Louis Park will be meeting in approximately ten days to discuss soil and environmental conditions of the site. Members of your staff will be invited to participate and hear the conclusions and findings of the committee relative to the report, "An Assemblage of Analytical Data Regarding the Reilly Chemical and Tar Properties, St. Louis Park, Minnesota", a copy of which was sent to Charles Warner on August 9, and a copy of which was left in the hands of Mr. Bruss at our meeting of August 30.

I am sure we can provide your office and Mr. Bruss with additional data and a better basis for reaching conclusions on the soil and environmental conditions. A review of the report just mentioned and a thorough review of the existing logs of the soil borings will be helpful. It should be kept in mind that the data on conditions includes a report which generalizes the soil data and which was prepared by the Creosote Company and submitted to the court in their efforts to reduce the assessed valuation on their property.

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While the evidence indicates that approximately 50% of the soil would require special footing consideration, it is our hope that approximately 75% of the buildings could be located on the good soil. In addition, it is felt that a good percentage of the remaining buildings would be located on soil which is not excessively costly to develop.

A new preliminary site development plan will be prepared, as you suggested.

It is my understanding that your office will send a letter outlining the results of your findings to date and Charles Warner is going to develop a time table for the final review and approval of our application, assuming that there is no problem with the soil or the problem is satisfactorily correctable. I cannot over-emphasize our need for the time table, inasmuch as our planning and programming for the central area is directly related to the NDP application and its approval.

Sincerely,

William L. Thibault
Planning Director

ns

cc: Charles Warner
Robert Bruss
Harvey McPhee

50004455

10

AUG 9 1972
MINN. POLLUTION
CONTROL AGENCY

AN ASSEMBLAGE OF ANALYTICAL DATA
REGARDING THE
REILLY CHEMICAL AND TAR PROPERTY
ST. LOUIS PARK, MINNESOTA

Prepared by the
St. Louis Park Health Department

August 1, 1972

150002

RTC Ex. 216

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1500006

I. Introduction

The Reilly Chemical and Tar property, also known as the Republic Creosote Plant, located at 7200 Walker Street in St. Louis Park is owned by the Reilly Chemical and Tar Corporation of Indianapolis, Indiana. This company first acquired a portion of this property in 1917 and then added to the original in 1920 with a total area of 80 acres at this time. This company has had a history on this property of creating industrial waste and air pollution problems. After the adoption by the St. Louis Park City Council of the Air Pollution Ordinance in 1968, the City began making investigations of the air contaminants and industrial wastes emanating from the plant. The State Pollution Control Agency and the State Health Department assisted the City in these investigations. During this period of time the City, with the assistance of several state agencies and several private consulting firms, has done a great deal of investigative work to determine the extent of the problems.

Now the City is interested in acquiring the property for redevelopment purposes. A number of federal and state agencies have questioned the plans of the City for this area. Some of the questions include creosote soil saturation relative to the elevation of the lowest floor level in proposed structures, stability of the soil, contamination of ground water, contamination of storm water to be discharged into Minnehaha Creek, disposal of ponded water during installation of sewer and other utilities, planting of shrubbery and trees, and perhaps other related questions. The City feels that it is well aware of the possible problems related to the plant site as well as other adjacent property as a result of information gained over the past several years from various types of testing and laboratory work. The federal and state agencies have not had the benefit of this information. Therefore, it was decided at a recent meeting at the Minnesota Board of Health Building that we would assemble this information for review by all agencies prior to another meeting. After everyone has had an opportunity to review this material, another meeting will be scheduled to determine if any additional investigative work should be done on the property.

II. Analyses of Runoff Waters for Phenols

In order to attempt to assertain whether phenols were picked up by water traveling over the surface of the Creosote property, several runoff samples were taken to measure the amount of phenol in water running from bituminous streets onto the Republic Creosoting property, samples 1, 2, 4, 1a, 2a, and in runoff from the property, sample 3 (see Figures 1, 2, 3, and 4.) According to measurements in Figures 1, and 2, the average phenol content of runoff going onto the Creosote plant property was .03 and .018 mg/l, respectively. Runoff water from the Creosote property was .06 and .09 mg/l, tending to indicate that the amount of phenol runoff onto the plant is somewhat less than the phenol content of runoff water directly from the property. This would seem to indicate that phenolic substances are originating from the plant site.

****

Figure 1. Amount of phenol found in surface water (runoff) samples - 11/16/71, analyzed by Tri-City Laboratory (see Figure 4 for locations).

Location	Phenol (mg/l)
1a. 2nd St. N.W. & Republic (into plant)	.015
2a. 35th and Pennsylvania (into plant)	.045

150CCC8

Figure 2. Amount of phenol found in surface water (runoff) samples 10/9/70, analzyed by Tri-City Laboratory (see Figure 4 for locations).

Location	Phenol (mg/l)
1. 2nd St. N.W. and Republic (into plant)	.008
4. 1st St. N.W. between Republic & Walker (into plant)	.008
3. Walker (plant runoff)	.066
2. 35th and Pennsylvania (into plant)	.020

****

Figure 3. Amount of phenol found in surface water (runoff) analyzed by Tri-City Laboratory.

Location	Phenol (mg/l)
Unknown (plant runoff)	.09

1500009

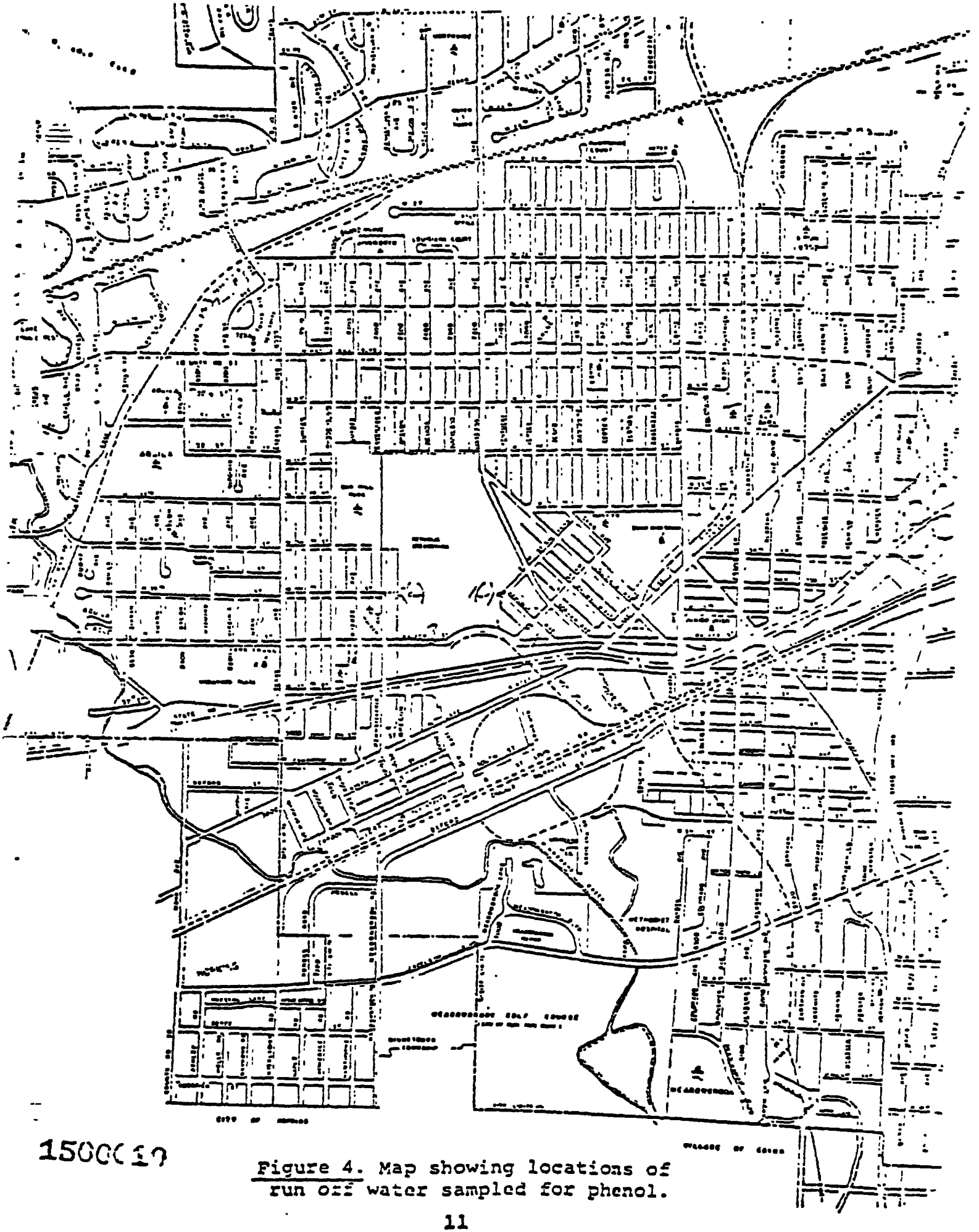

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Figure 4. Map showing locations of run off water sampled for phenol.

III. Analyses of Effluent Ditch and Pond Samples for Phenols

Samples taken from the effluent ditch, which leaves the Creosote plant and flows underneath Walker Street, and the pond south of Highway 7 readily show that high concentrations of phenol were discharged from the Creosote plant and somewhat smaller amounts exist in the pond south of Highway 7. (see Figures 5, 6, 8.) Studies conducted by the Minnesota Pollution Control Agency showed that the effluent from the plant and the pond into which the effluent flowed were toxic to fathead minnows and life forms normally found in unpolluted waters were absent in the ditch and pond. (see Appendix A.)

Samples taken since the plant discontinued operation indicate that the levels in the pond are decreasing. (see Figure 6.)

IV. Analyses of Well Waters for Phenols

In analyses of well waters taken from various St. Louis Park City Wells done by Eugene Hickok & Associates for the Burdick Grain Company (1968) and the City of St.Louis Park, small amounts of phenol were detected. (see Figure 9.) (Appendix B.) The Tri-City Laboratory also detected small amounts of phenol in some of its analyses, however, the presence of phenol was not consistent from one sampling date to another. (see Figure 10.)

In a memorandum from R. E. Frazier, Chief, Section of Analytical Services, Minnesota State Health Department to John Badalich, Director, Minnesota Pollution Control Agency, Mr. Frazier concludes that since phenols above ten parts per billion can be detected by taste and odor, and amounts approaching one part per billion can be objectionable after chlorination, and no unusual complaints about taste and odor have been received from users of the St. Louis Park Water Supply, the municipal wells are not contaminated. (see Appendix C.) Analyses done by the Minnesota State Health Department show phenols levels below 0.005 mg/l in several municipal and private wells. (see Figure 9.)

Additional phenol analyses, including gas chromatography, conducted by the Rice Division of the NUS Corporation, did not show any contamination of various municipal and private wells. (see Figure 9.) (see Appendix D.)

1500011

As a result of these various well samples analyzed for phenol, particularly taking into account the results of the NUS Corporation, it would appear that there is no phenol contamination in any of the municipal wells or in any of the private wells tested by the NUS Corporation or the State Health Department.

****

Figure 5. Amount of phenol found in the effluent ditch of and other ponds surrounding the Creosote property. (see Figure 7 for locations.) Sampled by Minnesota Pollution Control Agency.

Sample Source	6/13/68	8/1/68
Effluent at source	160	.380
Effluent leaving property	130	140
At Highway 7	---	15
At first pond	---	1.9
At second pond		0.8

****

Figure 6. Amount of phenol found in the effluent ditch of and swamps around the Creosote property, 6/21/72 and 7/7/72, analyzed by Tri-City Laboratory.

Sample #	Description of Sample	6/21/72 (ppm)	7/7/72 (ppm)
1	Ditch north of Walker	0.65	7.5
2	Ditch south of Walker	0.80	11.5
3	Swamp So. of Highway 7	0.25	0.15

1500012

SKETCH MAP OF REPUBLIC CREOSOTE CO.
AND REILLY TAR AND CHEMICAL CO.
ST. LOUIS PARK

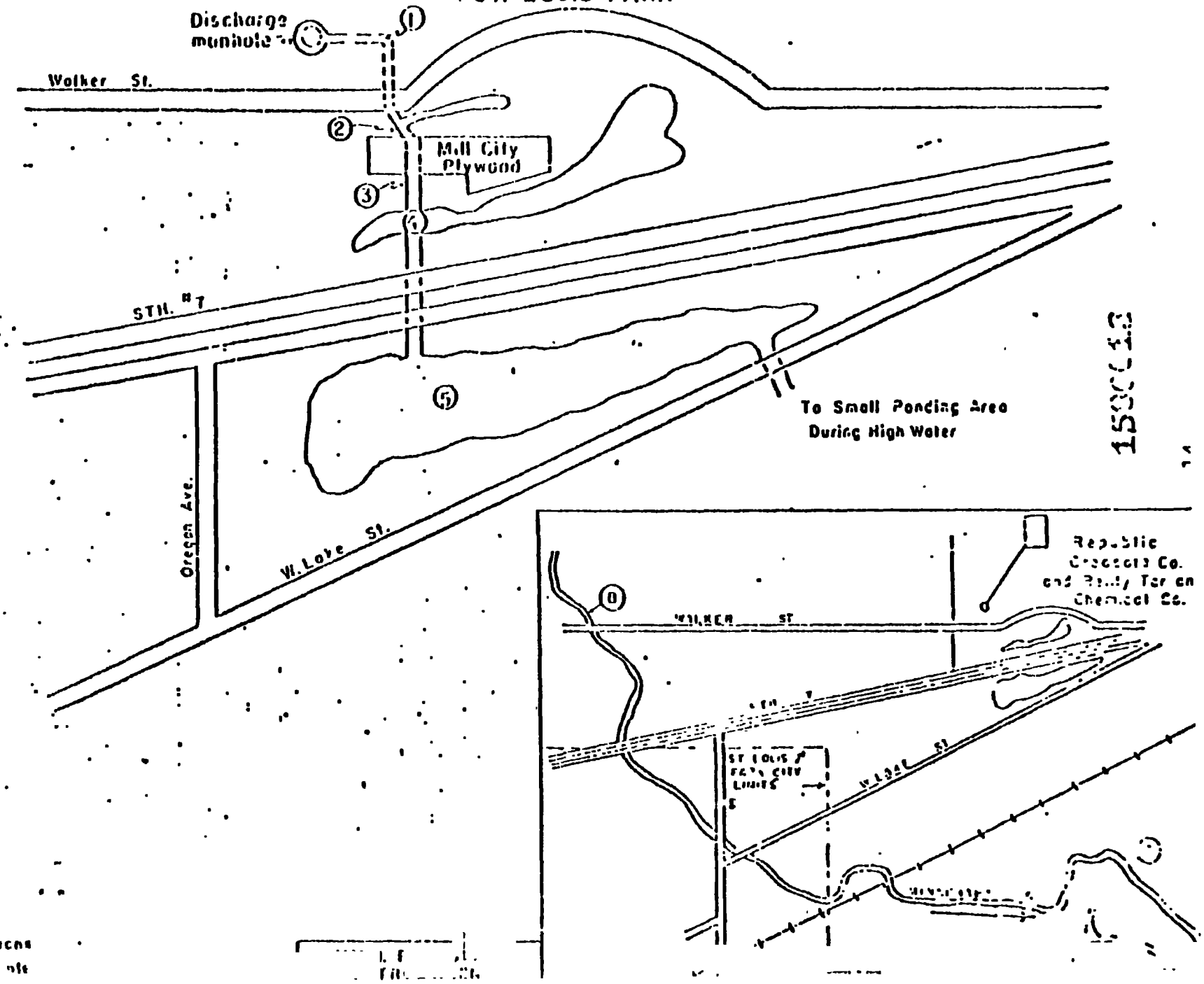

Figure 7. Location of water samples analyzed and phenols by the MPCA, April 16, 1970.

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Figure 8. Complete analysis of the water found in the effluent ditch of the ponds around the Creosote property, and in Minnehaha Creek. Sampled by Minnesota Pollution Control Agency, April 16, 1970.*

Station	Description
1	Effluent leaving Republic Creosote's property
4	Pond at W. Lake St. and Louisiana Ave. receiving effluent
6	Minnehaha Creek upstream from Republic Cresote's operation
8	Minnehaha Creek downstream from Republic Cresote

Sample Number	1	4	6	8
Date Collected	4/16/70			
Time Collected	3:00 pm	11:00 pm	2:00 pm	2:30 pm
Temperature	24° C	12° C	12° C	11° C
Total Solids	500	410	490	730
Total Volatile Matter	300	110		230
Suspended Solids	82	33	34	160
Suspended Volatile Matter	56	26	17	54
Turbidity	96	29	13	31
Total Hardness as $CaCO_3$	100	130	260	270
Alkalinity as $CaCO_3$	530	130	170	170
pH Value	8.7	7.1	8.1	8.1
Dissolved Oxygen	0.4	4.6	16	16.6
5 day Biochemical Oxygen Demand	710	65	3.8	8.0
Ammonia Nitrogen	230	6.0	.20	.13
Phenol	1100	18.3	< .01	<.01

*Results are in milligrams per liter except as noted.

Figure 9. Water samples taken from City and private wells and analyzed by various laboratories.

Well #	NUS (mg/l)	Hickok(ppm)	Burdick(ppm)	State H.D. (mg/l
1	---	.014	---	
2	---	.008	---	
3	<.001	.012	.002	
4	<.001	.014	.008	<.005
5	---	.014	---	<.005
6	<.001	.023	.0025	---
7	---	.013	---	<.005
8	< .001	.012(8a-012)		<.005
9	---	.013	---	<.005
10	< .001	.014	---	---
11	---	trace	0.000	---
12	---	.018	0.000	---
13	< .001	.018	0.000	<.005
14	<.001	.009	0.000	<.005
Flame Ind.	.001(0.000)*			<.005
Northland			0.008	
Park Pet	<.001			---
Minn. Rubber			0.000	
Park Elevator			0.008	
S & K Products				<.005
McCourtney Plastic				<.005

*Phenol was not detected in this water by gas chromotography

1500C15

Figure 10. Water samples taken from City and private wells and analyzed for phenol content by the St. Louis Park Tri-City Laboratory. (measured in parts per billion)

Well	8/8/69	3/9/70	3/18/70	3/23/70	4/20/70	10/14/70
1	-1					
2	-1					
3	-1					0
4	-1		10	-1		
5	-1		10			
6	-1	18	-1	-1		
7	-1					
8	-1		10	10		
9	-1					
10	2					0
11						0
12			-1	-1		
13		21		-1		
14						10
Park Pet			20		23	0
Northland Alum.					16	
S & K Prod.			12			
Robinson Rubber		8	6		2	
Flame Ind.		15	-1		6	0

V. Analyses of Soil Samples for Phenol

Results of soil analyses for phenol done by Hickok and Associates appear inconclusive (see Figures 11 and 12). One might expect phenol levels in the soil at SL-2 to be considerably higher than those found at SL-1 for two reasons: 1.)Clay would be expected to hold phenolic compounds better than coarse sand; 2.)The elevation of SL-1 is quite a bit higher than SL-2, therefore, all water draining from the property, and particularly the area experiencing the most spillage, would drain toward and tend to pool in the vicinity of SL-2.

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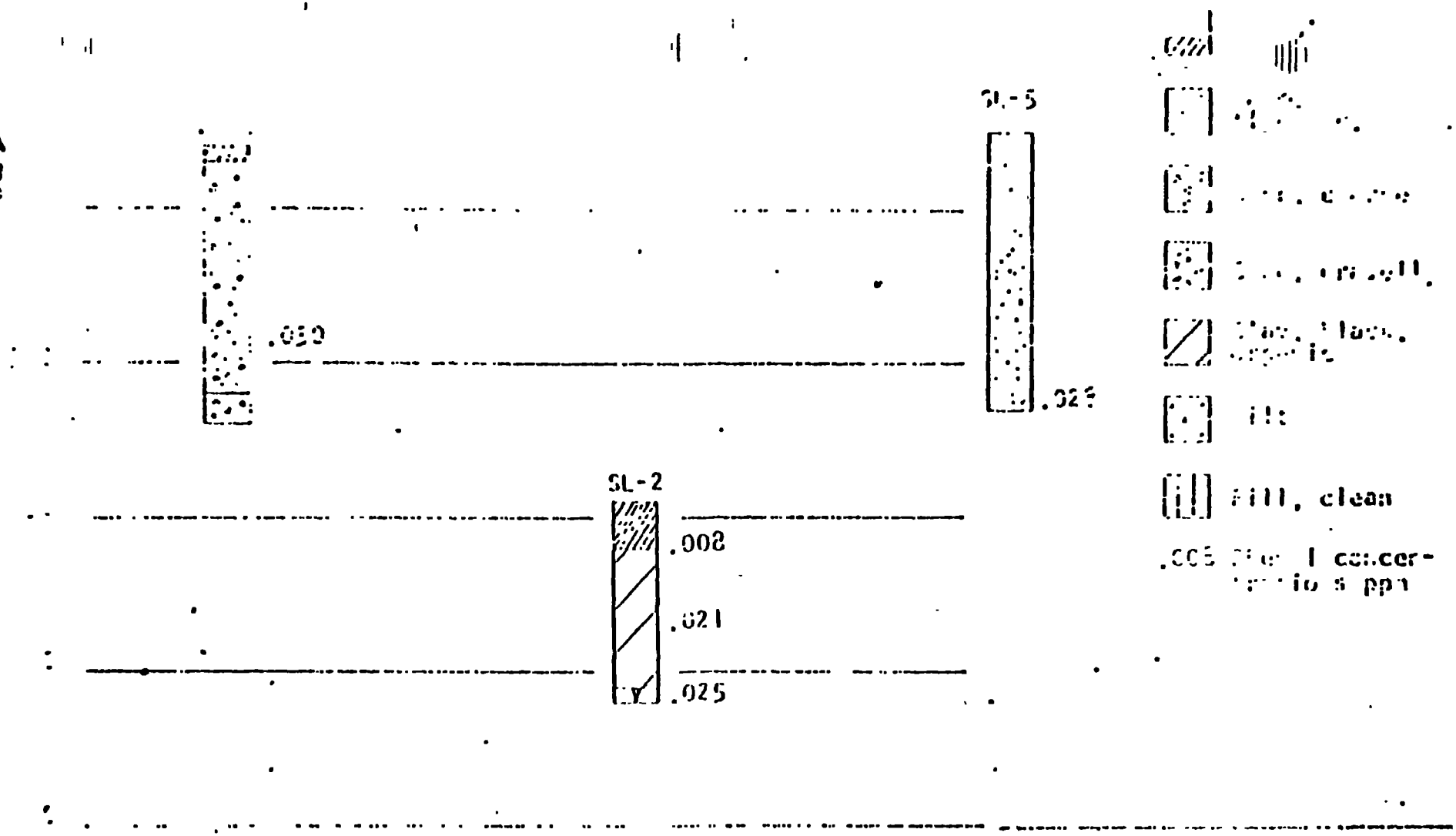

Figure 11. Phenol content of soils at various depths analyzed by Hickok & Associates. (see Figure 12 for locations.)

E A HICKOK & ASSOCIATES
HYDROLOGY
MINNEAPOLIS, MINNESOTA

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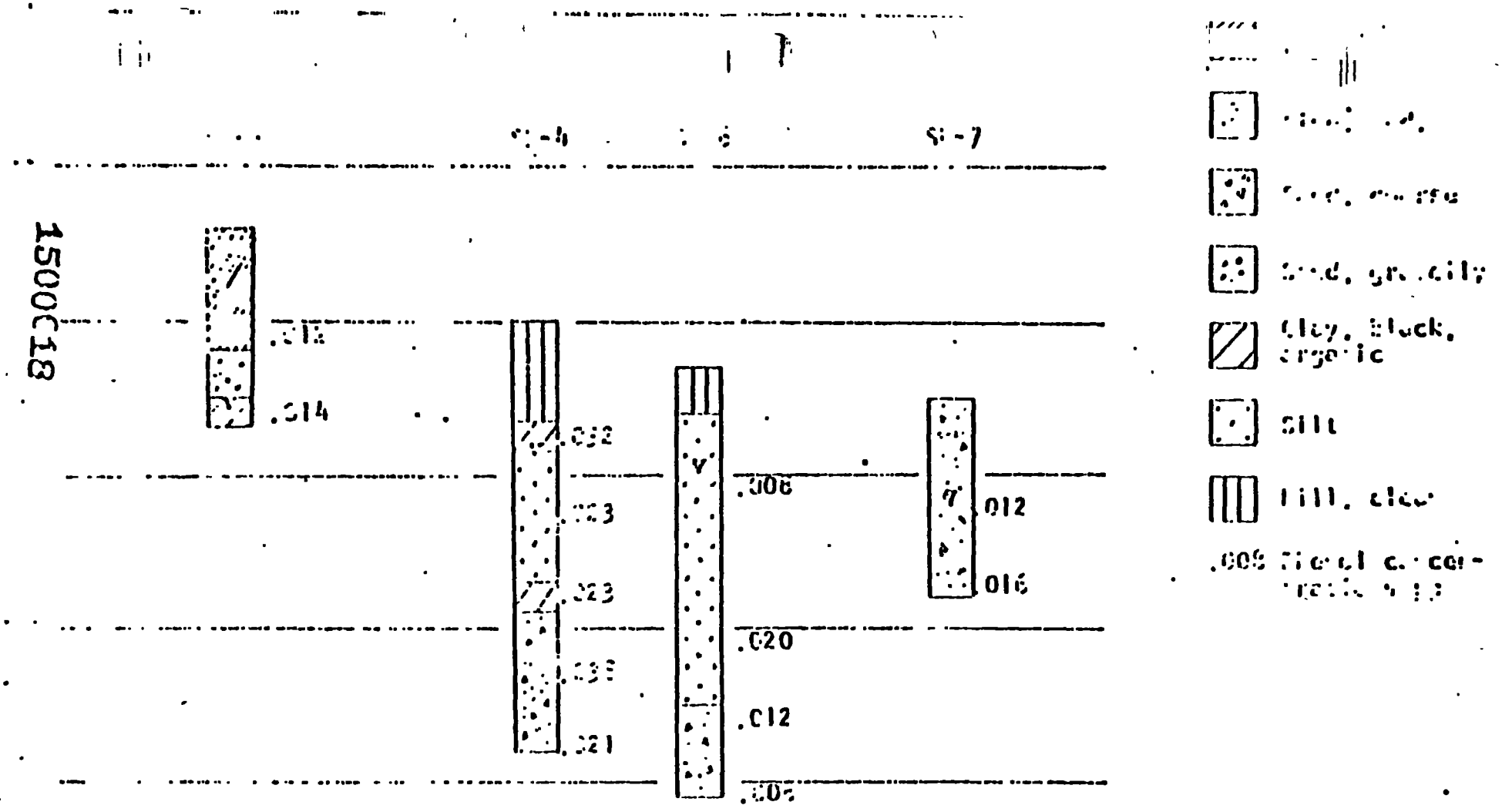

Figure 11a- Phenol content of soils at various depths analyzed by Hickok & Associates. (see Figure 12 for locations.)

E A HICKOK & ASSOCIATE
HYDROLOGISTS - ENGINEER
MINNEAPOLIS MINNESOT

1500C18

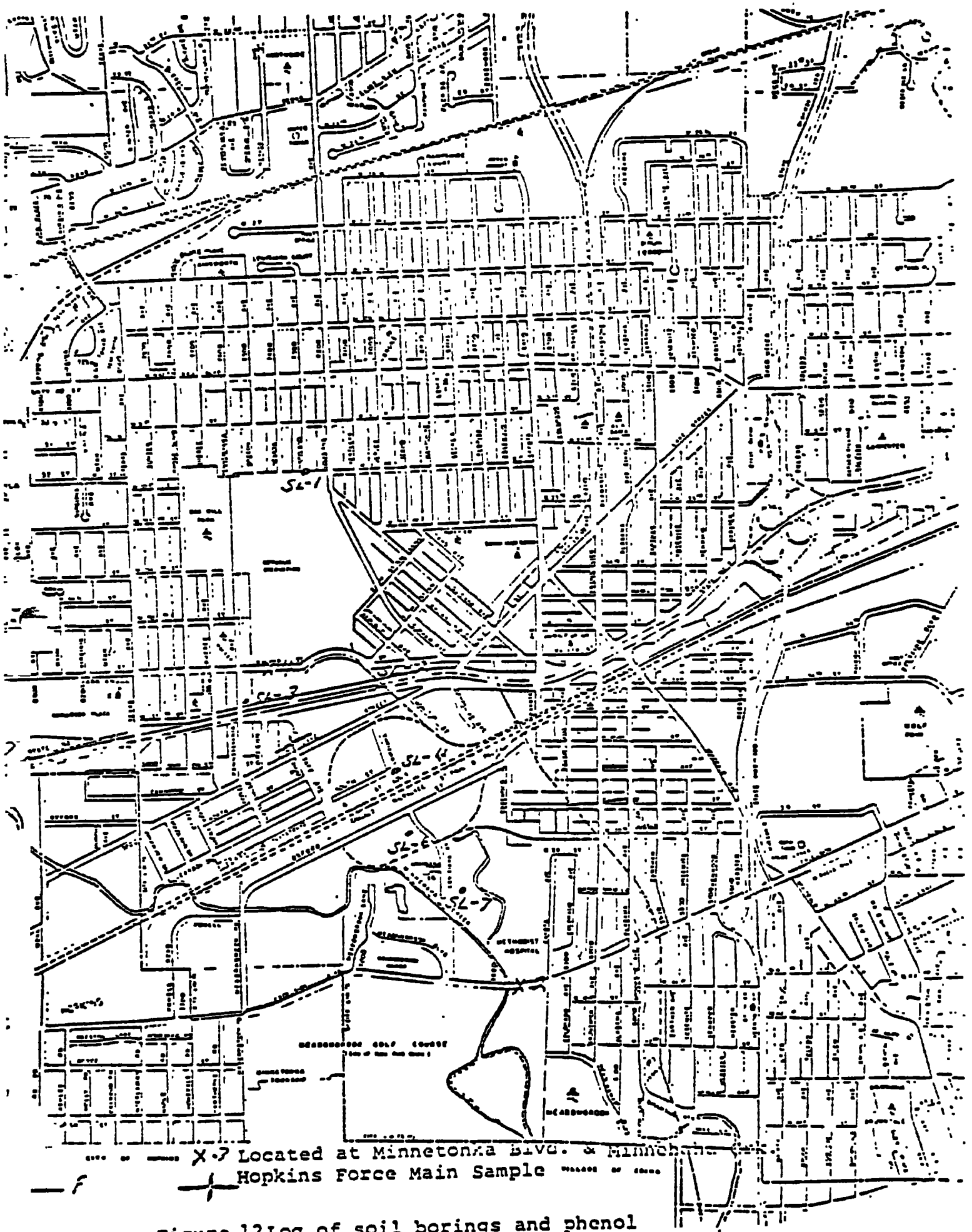

Figure 12 Log of soil borings and phenol content of soil at various depths.

In addition, during the construction of the Hopkins force main, soil and water samples were collected from a hole, located approximately 280 feet from the spur tracks crossing Lake Street between Taft and Oregon and about 8 feet deep, and analyzed for phenol content. (see Figure 13) All samples were extremely high in phenol content, ranging from a water sample of 85 ppm to soil samples from 120-390 ppm.

Contrasting the amount of phenol in the soil samples analyzed by Hickok to those found across Highway 7, the first would appear almost negigible. Furthermore, in discussing levels of phenol in soils with R. E. Frazier of the State Health Department, it was his opinion that phenol levels below 1 part per million could be considered inconsequential.

****

Figure 13. Soil samples taken along West Lake Street during construction of Hopkins force main, November, 1970. (see Figure 12 for location)

Sample	Phenol ppm
Soil 1 (11/23/70)	330
Soil 2 (11/23/70)	260
*H_2O - 1 (11/29/70)	85
*Soil - 3 (11/29/70)	390
*Soil - 4 (11/29/70)	120

*All samples approximately 280 feet from spur tracks on west side - 8 feet deep.

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Figure 14. Percentage of oils found in soil at six locations. (see Appendix E for soil types) (see Figure 15 for locations)

	Depth(ft.)	Approx. Soil Type	% Oil
Boring #1	2.0	loamy sand	7.0
	4.0	sandy clay loam	no trace
	8.5	fine med sand	trace
	11.5	fine med sand	1
	18.5	muck	1
	27.0	muck	no trace
Boring #2	2.0	loamy sand	1.5
	3.5	loamy sand	1.0
	5.5	fine med sand	no trace
	8.5	fine med sand	1.0
	15.0	peat	no trace
	20.0	muck	trace
Boring #3	2.0	loamy sand	trace
	5.0	peat	6.0
	8.5	peat	no trace
	10.0	peat	———
	15.0	muck	no trace
	23.0	fine med sand	———
	28.5	fine med sand	———
Boring #4	18.5	sandy clay loam	no trace
	23.5	fine med sand	trace
Boring #5	5.0	loamy sand	6.0
	8.0	peat	7.0
	13.5	muck	7.0
	18.0	muck	2.0
	25.0	muck	8.0
Boaring #6	2.0	sandy loam	4.0
	5.0	peat	2.0
	7.0	peat	———
	10.0	peat	2.0
	15.0	fine med sand	1.0+
	20.0	fine med soil	———
	25.0	fine med sand	———
	30.0	fine med sand	trace
	33.0	fine med sand	trace

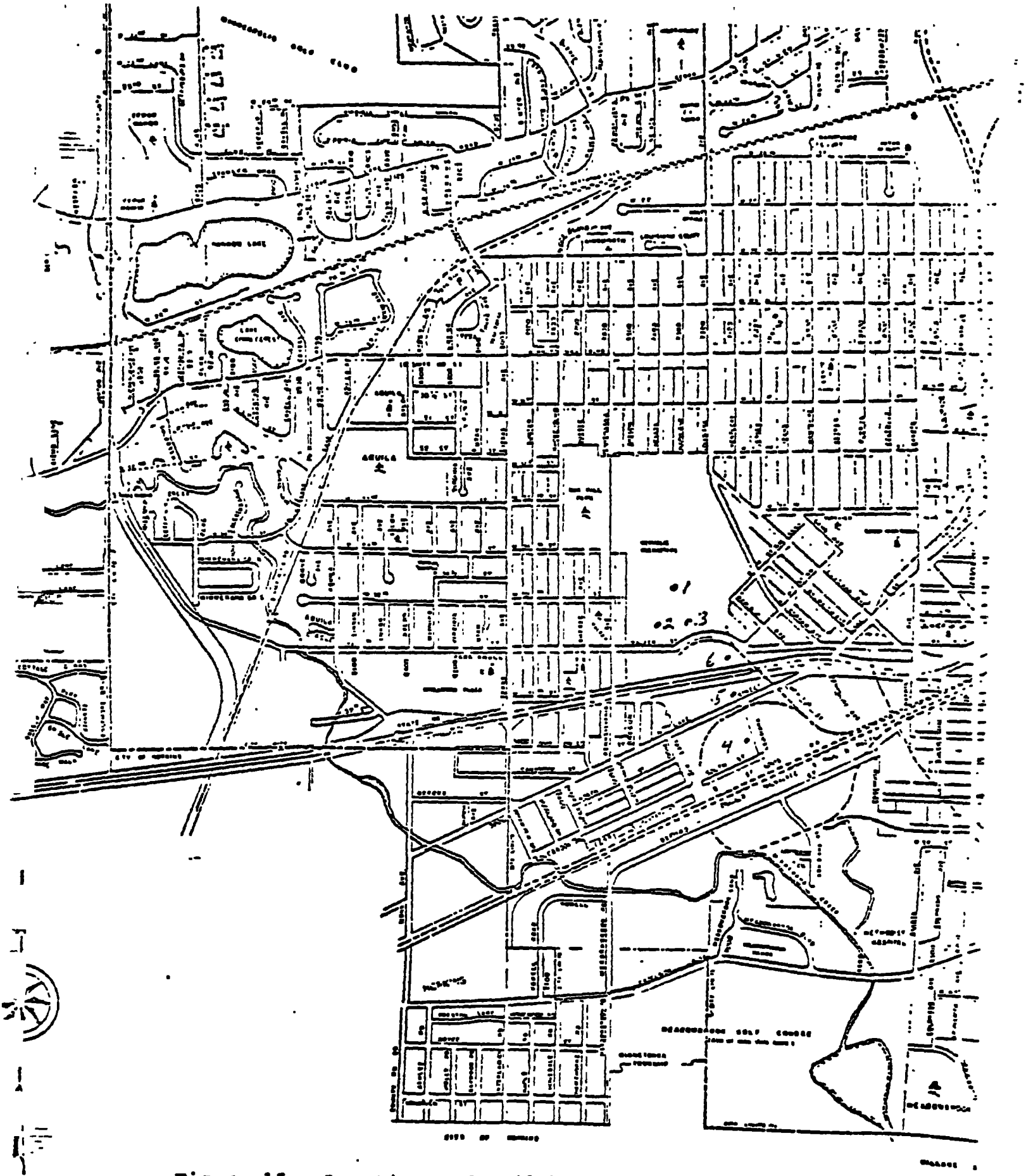

Figure 15. Locations of soil borings taken on 4/23/71.

VI. Analyses of Soil Samples for Oil Content

Soil borings were taken on April 23, 1971. (see Appendix E) Samples were then analyzed for oil content and the amount expressed according to the percent of oil found in each soil sample. (see Figure 14).

Aside from a small amount of oil found near the surface of the ground at the Creosote plant, no substantial quantities of oil were found in the large majority of soil samples from the property. Small percentages, ranging from 1-8% were found at two locations (5, 6 and 8), directly south of the Creosote property. These areas have been saturated from discharges from the distilling operation and it would appear that any serious soil contamination with oil exists outside of the Creosote property.

VII. Dewatering For Construction of Utilities

The City has been questioned regarding dewatering of the ponded water and subsoil during the installation of utilities. It should be noted that all of the ponded water is located on the south side of Highway 7 which is not part of the Reilly Chemical and Tar property. Nevertheless, we do wish to respond to this question since it will have to be resolved.

The City has made a number of phenol determinations on the effluent from the plant property. Samples were taken from the ditch as the discharge left the property and from the pond on the south side of Highway 7. (see Figure 6) This data indicates that the phenol levels in this area of ponded water south of Highway 7 are decreasing. In addition, three samples were taken for oil and grease analysis from the same sampling locations as were sampled for phenols. The laboratory work was done by the Metropolitan Sewer Board and the samples showed 41 mg/l for two ditch samples and 51 mg/l for the ponded water south of Highway 7. (see Appendix F)

The Reilly Chemical and Tar Company ceased all operations on June 30, 1972. Since that date the water level of the ponded effluent has steadily decreased and will disappear within a short time, barring any unusually high precipitation. For the

1500023

purpose of establishing some specific parameters, the City has estimated a total of 2,500,000 gallons of waste water in this pond at this time.

The phenol information and pond volume was submitted to the Metropolitan Sewer Board. With their determination of the oil and grease content and our information on phenol content, approval has been granted to dump this waste into the sanitary sewer at a rate not to exceed 200 gpm.

VIII. Soil Types and Densities

Figure 16 is a generalized soil map of the property owned by the Reilly Chemical and Tar Company which classifies soil conditions into four categories based on the findings obtained from the thirty-one soil borings taken on the site. (Appendices E & The borings are considered to be representative of the area and the categories as mapped reflect the approximate percentages of the four categories.

Soil Categories and Percentages

Excellent - 25.3 acres = 31.7%
(0 to 5 feet of organic or poor soil with at least 11 BPF achieved at 0 to 5 feet below grade)

Good - 15.3 acres - 19.1%
(6 to 10 feet of organic or poor soil with at least 11 BPF achieved at 11 to 15 feet below grade)

Fair - 21.7 acres = 27.1%
(11 to 15 feet of organic or poor soil with at least 11 BPF achieved at 16 to 20 feet below grade)

Unsuitable- 17.7 acres = 22.1%
(15 or more feet of organic or poor soil with at least 11 BPF achieved at 20 or more feet below grade)

This information on soil types and densities will obviously influence the overall plan for the area, however, unsuitable conditions can be overcome through construction methods and excavation of certain unsuitable soil areas for use as top soil in other areas.

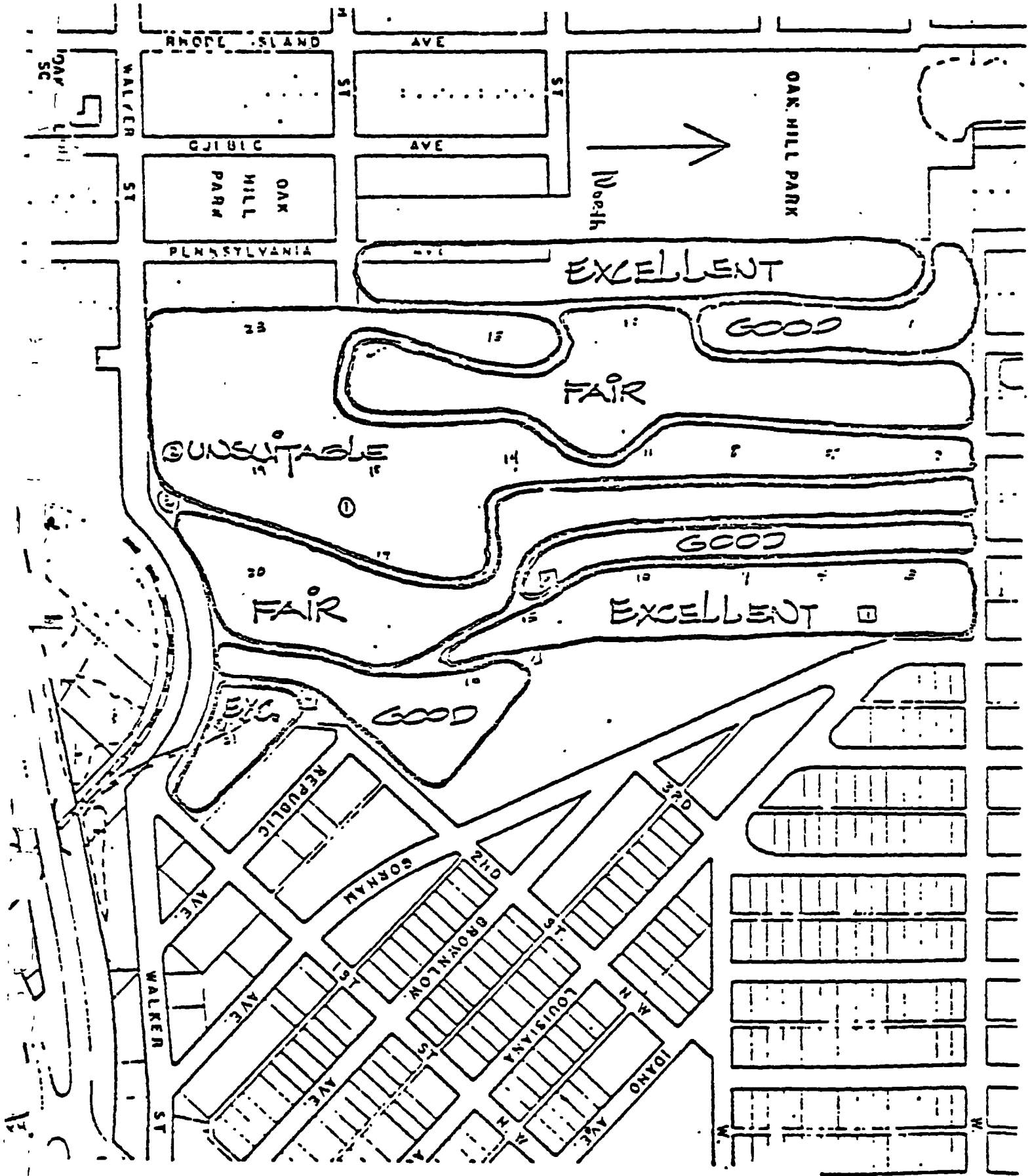

Figure 16. Locations of All Soil Borings on Reilly Chemical and Tar Company property.

1-23 Soil borings done for Reilly Company (Appendix G)

1-5 Soil borings done for Louisiana Ave. extension

1-3 Soil borings done for City during test for % of oils in soil. (Appendix E)

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IX. Plantings

The City wishes to provide adequate green spaces in this redevelopment area including the use of selected trees and shrubs. Because some concern was expressed during our past meetings regarding possible problems with plantings in creosote saturated areas the City has contacted Mrs. Jane McKinnon, Extension Horticulturist. In a letter dated July 7, 1972, (Appendix H) she indicates, after consultation with Mr. Lou Hendricks, Extension Forestor, Dr. Leon Snyder, Director of the Landscape Arboretum, and Dr. Harold Wilkins, Extension Horticulturist, that several feet of material will have to be removed in creosote contaminated areas for any plantings including trees and shrubs.

The south portion of the site will require additional fill to establish the necessary grade, and top soil will also have to be provided for all green spaces. Therefore, the problems of planting in creosote saturated areas will be somewhat alleviated with the necessary increase in grade elevation and the provision of top soil.

The City does not anticipate any problems with plantings, but will take necessary precautions and seek expert advice in providing all plantings in this redevelopment.

X. Miscellaneous Information

The City also has been questioned whether or not there have been any communications with the Minnehaha Watershed District since the storm sewer effluent from the Reilly Chemical and Tar area will discharge into Minnehaha Creek. Mr. Gene Hickok, their consulting hydrologist, did some of the preliminary phenol work for the City. Mr. Don Rincham, Manager of the Watershed District has been contacted by the St. Louis Park City Manager and asked to lend their assistance and cooperation in the installation of storm sewer for the area.

Storm sewer construction will require some type of protective pipe joint to prevent or minimize ground infiltration in the event contaminated areas are discovered. The Director of Public Works is aware of this design specification, and it will be incorporated into all plans.

The water table was reported to be several feet during our first meeting, however, the receipt of additional information on soil borings, it was determined to be a range of 9 to 15 feet. The City building department will require soil borings for each building at which time water table levels will again be determined. No basements or other construction will be permitted in the water table.

XI. Conclusions

In considering the redevelopment of a large land area, previously occupied by an industry of the nature of the Reilly Chemical and Tar Corporation and the industrial waste pollution that can occur as a result of this industry, one must of necessity assess the extent of any permanent or potential environmental degradation. In this particular situation ground and surface water and soil contamination should be studied. Through various independent and self-conducted studies, the City of St. Louis Park feels that it has done this.

Various laboratories have attempted to detect phenol contamination in ground water supplies approved for municipal and industrial use. Although results varied, the most sophisticated techniques showed no contamination and since extremely low level contamination would have caused taste and odor complaints, we feel certain that no contamination has occurred. In fact, opinions expressed by staff of the NUS Corporation, the MPCA and the State Health Department indicate that contamination, as a result of this particular situation will not occur in the future.

Ponded waters, located off the Reilly property are contaminated with phenols, greases and oils. However, the Metropolitan Sewer Board will permit disposal of these waters into the sanitary sewer system during utility construction. In addition, run-off storm water quality will improve following the closing of the plant and clearance of the land.

The storm water discharge into Minnehaha Creek will meet all requirements with tight jointed pipe where necessary and the covering of creosote saturated areas with cleanfill, top soil, pavement, and concrete.

Soil borings on the property have shown limited oil saturation, and the water table is located at a depth of nine to fifteen feet. Although soil borings will be required for each building no basements will be permitted in creosote saturated soil or into the water table.

In addition to the concerns as to whether or not chemical contamination of the soil has occurred, another matter of importance is the soil's physical characteristics. Numerous soil borings to study soil types and densities have been conducted and these will affect the comprehensive plan in this area. Soil borings will be required prior to construction of all buildings and any pocket contamination discovered at that time would be assessed and the project altered accordingly.

XII. Summary

The City of St. Louis Park has collected existing data and conducted extensive research on all phases of potential environmental and construction problems which may affect the redevelopment of the Reilly Chemical and Tar property. Problems in the area south of this property, although not a part of this project but altered as a result of industrial wastes disposed of by the company, have also been assessed and solutions are being found. Additional testing at this time would serve no useful purpose.

It is the City's conviction that as this redevelopment project progresses, any existing levels of phenol and oil contamination will decrease and the potential for any additional environmental contamination eliminated. Every aspect of the environmental quality of the area will be improved.

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APPENDIX A

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MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality

Report on Waste Disposal at
Republic Creosote Co. and
Reilly Tar and Chemical Co.,
St. Louis Park

April, 1970

The Republic Creosote Co. impregnates wood products with creosote. The Reilly Tar and Chemical Co. distills coal tar to obtain creosote. The companies have been in this same location for over half a century (see figures).

In the distillation process, the initial wet petroleum charge is heated to separate the water. This condensate, or separarated water, is estimated by the company to amount to about 300 gallons a day. It is passed through an oil separator and a hay filter before it leaves company property. The company has indicated it would prefer to discharge this waste to the sanitary sewer. A surface condenser is used in the distillation process so the cooling water does not come in contact with the product. The flow of cooling water is about 80 gpm (gallons per minute), and it is recirculated from a cooling pond with a capacity of about 47,000 gallons. The company plans to abandon this pond and use a one pass system with discharge to the storm sewer when it is extended to the area. Any excess cooling water also passes through the oil separator system before discharge from the plant grounds.

Disposal of industrial wastes is complicated by run-off of surface waters and seepage into the ground. The plant area itself comprises 78 acres, and an additional 20 acres will be drained across company property after completion of the proposed storm sewer in this area (see Figure I).

The company land is stooped with petroleum products, although the company maintains there is no drippage from impregnated wood which is stored on the property. Surface water flows across the company property from north to south and leaves the property via a culvert under Walker Street at the south end. At

this point, the effluent of the oil separator combines with any surface run-off which may be present.

The water flows from the culvert to a marsh and into two small ponds which are separated by State Highway 7 and bounded by Walker, West Lake and Oregon Streets.

Laboratory analyses were made on samples of this flow obtained just above the culvert. The phenol concentrations on April 14 and 18 were 150 to 1100 mg/l (milligrams per liter), respectively. The BOD (5-day biochemical oxygen demand) on April 18 was 1000 mg/l, and the suspended solids and turbidity were 82 and 96 mg/l, respectively.

During heavy rains the south part of the property often is under water. There is a great deal of concern by officials of St. Louis Park that run-off may seep into the ground and cause pollution of the ground waters. In 1932, the city had to abandon one of its wells in the vicinity because of the obnoxious taste of the water.

The bedrock and surface are Ordovician and Cambrian sandstones and dolomites overlain by glacial till. The till is 50-100 feet thick and consists of clay with small amounts of sand and gravel. The St. Peter (100-250 feet deep), Jordan (400-500 feet deep) and Hinckley (1000 feet deep) formations are used by St. Louis Park as sources of potable water.

The results of an investigation by Hickok and Associates for St. Louis Park recently showed that phenols were found in concentrations as high as 0.02 mg/l in soil samples from outside of the plant site at depths of as much as 20 feet.

An analysis for phenols of samples of water from the city wells by the Minnesota Department of Health on April 16 showed no concentrations greater than 0.005 mg/l. This is the limit of detectability for the chloroform extraction method used.

The company has stated it plans to place all pipelines carrying petroleum

products above the ground surface to help detect leaks and minimize losses.

A field investigation in regard to biological aspects was conducted on April 13 Waste water was being discharged from the plant site and via a circuitous route was reaching the culvert under Highway 7 and the pond across Highway 7.

Water samples were taken near the source of the waste at several points downstream, and from the pond. Approximately 40 liters of pond water was taken for use in a static bioassay in the laboratory. Another 40 liters of water was obtained from Minnehaha Creek above the Republic Creosote plant and used as dilution water and as a control.

The results obtained from the bioassay were inconclusive; however, 100% mortality of fathead minnows was evident in the undiluted pond water, which had a phenol concentration of 19 mg/l.

On April 16, additional water samples were obtained. At this time approximately [illegible] liters of Republic Creosote's waste was obtained near the point of discharge and another 40 liters of dilution water was obtained from Minnehaha Creek above the plant. In addition 30 fathead minnows were placed in each of three cages at locations in Minnehaha Creek above the plant, in Minnehaha Creek below the plant and in the pond south of Highway 7. The minnows were observed in the field at 24 hour intervals for a period of 96 hours. It was found that all fish in the pond were dead within 24 hours, but the minnows in Minnehaha Creek were alive after 96 hours.

The second laboratory bioassay utilizing the effluent from Republic Creosote revealed 100% mortality of fathead minnows at dilutions ranging from 5% to 100%. The BOD of this effluent was 1000 mg/l.

Observation of the ditch south of Walker Street, north of Highway 7, south of Highway 7 where the ditch enters a marshy pond, and at the center of the pond revealed heavy accumulations of black oily sediment. Bottom fauna were not found in any of the sediments.

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Water obtained from the above sampling points was examined microscopically and found to be free of phytoplankton or zooplankton; however, masses of fungal mycelium are noted in a sample taken north of Walker Street.

Summary and Conclusions

Both field and laboratory bioassays indicated that the effluent of Republic Creosote and the waters of the pond into which the effluent flows were acutely toxic to fathead minnows. With the exception of the presence of an unidentified fungus, life forms normally found in unpolluted waters were absent in the ditches and ponds.

Process waste is discharged from company property in violation of existing standards in regard to phenols, BOD, suspended solids and turbidity, and is acutely toxic to animal and plant life.

The company is operating a waste disposal system without a permit as required Minnesota statutes, chapters 115 and 116.

Continued presence of soil contaminated with phenolic compounds is not desirable and may be a hazard to use of the municipal wells as a source of water supply.

The company stores petroleum products on their property without adequate safeguards in violation of regulation WPC 4. Escape of this stored material could result in pollution of waters of the state.

Petroleum products spilled on the soil on company property are an actual source of pollution via surface run-off and a potential source by percolation through the soil.

Recommendations

1. The industrial wastes should be adequately treated before discharge to surface waters or diverted into the municipal sanitary sewer.
2. Adequate safeguards should be provided for all liquid storage tanks.
3. The run-off of water across the plant areas should be controlled and diverted from company property.

Consideration should be given to removing the contaminated ground.

G. R. Keenan, Acting Chief
Section of Industrial & Other Wastes

Edward A. Fleming, Ph. D., Chief
Section of Special Services

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality
Section of Special Services

Analytical Data of Republic Creosote Co.,
Reilly Tar and Chemical Co.

April 16, 1970

Table 1

Station	Description
1	Effluent leaving Republic Creosote's property
4	Pond at W. Lake St. and Louisiana Ave. receiving effluent
6	Minnehaha Creek upstream from Republic Creosote's operation
8	Minnehaha Creek downstream from Republic Creosote's operation

Sample Number	1	4	6	8
Date Collected	4/16/70			
Time Collected	3:00 pm	11:00 pm	2:00 pm	2:30 pm
Temperature	24° C	12° C	12° C	11° C
Total Solids	500	410	490	730
Total Volatile Matter	300	110		230
Suspended Solids	82	33	34	160
Suspended Volatile Matter	56	26	17	54
Turbidity	96	29	13	31
Total hardness as $CaCO_3$	100	130	260	270
Al alinity as $CaCO_3$	530	130	170	170
pH Value	8.7	7.1	8.1	8.1
Dissolved Oxygen	0.4	4.6	16	16.6
Five-day Biochemical Oxygen Demand	710	65	3.8	8.0
Ammonia Nitrogen	230	6.0	.20	.13
Phenol	1100	18.3	<.01	<.01

Results are in milligrams per liter except as noted.

1500035

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality
Section of Special Services

Phenol Data (mg/l) of Republic Creosote Co.,
Reilly Tar and Chemical Co.

April 16, 1970

Table II

Sample Source	6/13/68	8/1/68
Effluent at source	160	.380
Effluent leaving property	130	140
At highway 7	—	15
At first pond	—	1.9
At second pond	—	0.8

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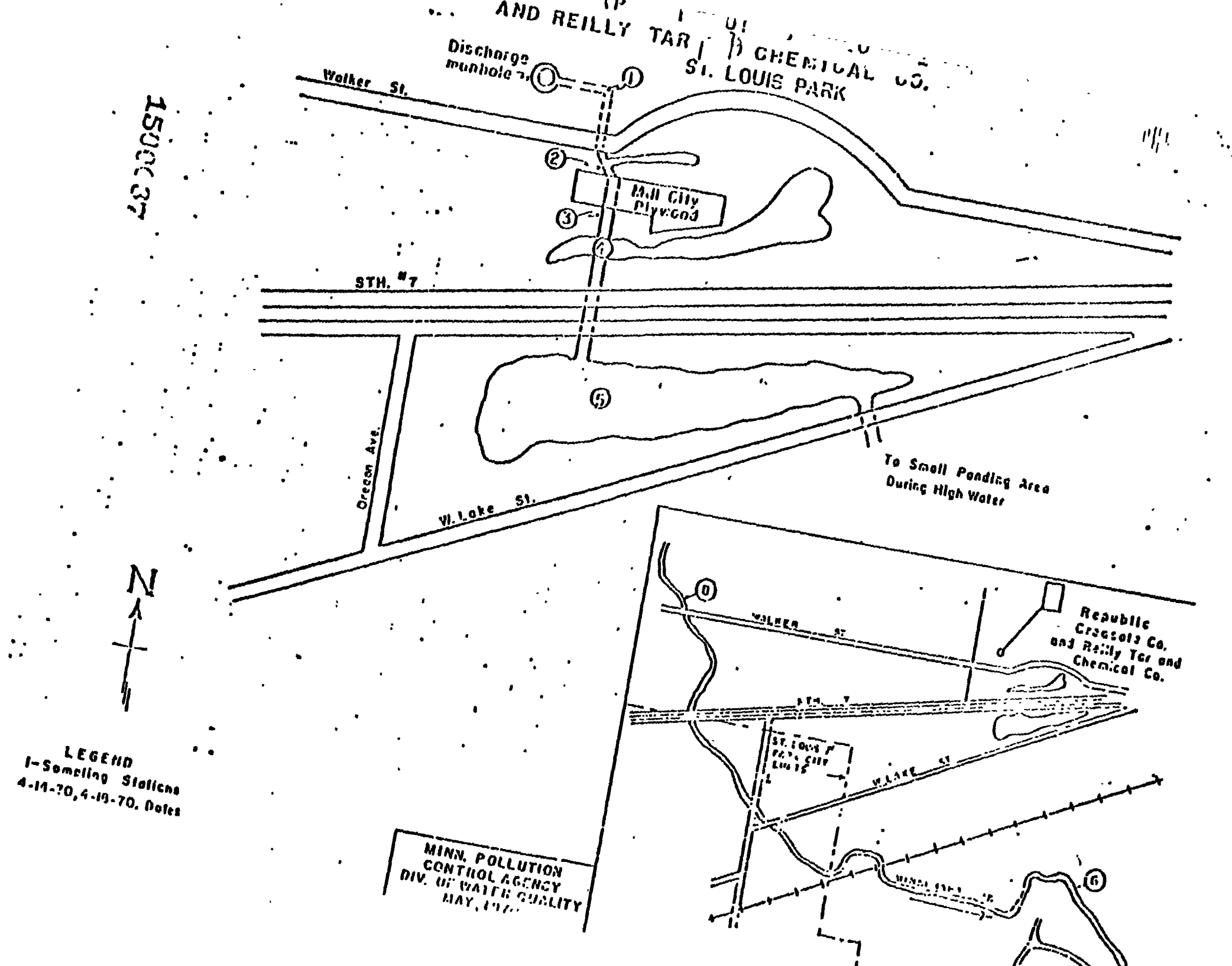
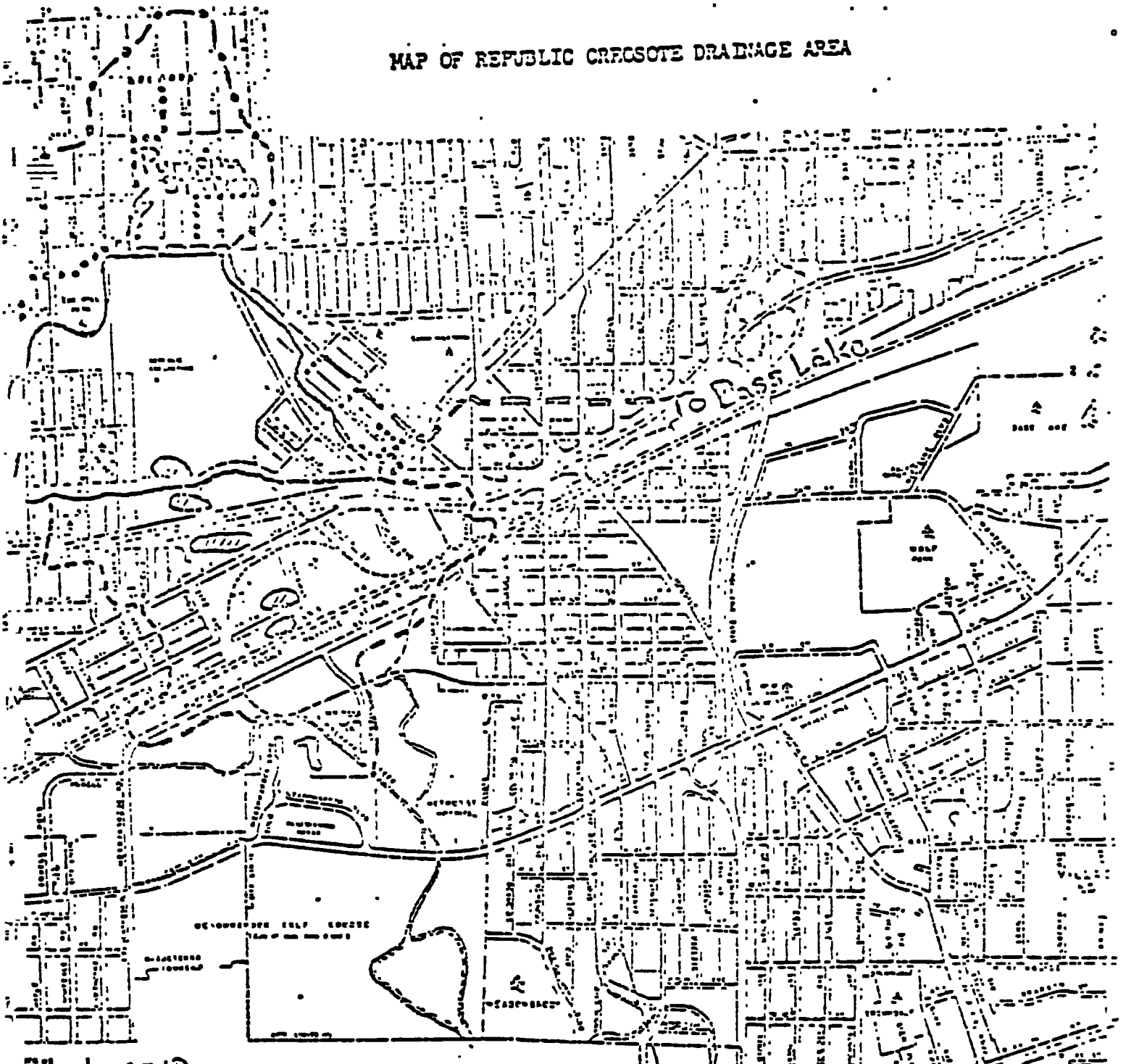

AND REILLY TAR
CHEMICAL CO.
ST. LOUIS PARK
Discharge manhole
Walker St.
Mill City Plywood
STH. #7
Oregon Ave.
W. Lake St.
To Small Ponding Area During High Water
N
LEGEND
1-Sampling Stations
4-14-70, 4-19-70, Dates
Republic Creosote Co. and Reilly Tar and Chemical Co.
WALKER ST
WALKER ST
MINN. POLLUTION CONTROL AGENCY
DIV. OF WATER QUALITY
MAY, 1972

MAP OF REPUBLIC CREOSOTE DRAINAGE AREA



LEGEND

- Area at present draining into Creosote area
- Area draining into proposed storm sewer (Part of Proj. 66-17) outlet into Mahna Creek
- Area withheld from Creosote area - by ponding and pumping
- Present ponding

1500038

Proposed storm sewer (underscored by Lowell P. Ellis)

INFORMATION FROM STORM SEWER PROJECT 66-17 by DUNNE LOASU ENGR. DEPT. ST LOUIS

C- 5	Quebec Avenue	J-11	Woodlawn Drive	J-10	
C-20	Quebec Drive	F-10	Noel Lane	E-16	
	Quentin Avenue	I-18	Wyoming Avenue	K- 5	
J-16					
C- 5	Raleigh Avenue	I-16	Norwood Avenue	I-16	
J-12	Randolph Avenue	K-21	Xylon Avenue	K- 9	
C-13	Republic Avenue	L-13			
H-11	Rhode Island Avenue	J-10	Yosemite Avenue	I-16	

APPENDIX B

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GROUND-WATER INVESTIGATION PROGRAM

AT

ST. LOUIS PARK, MINNESOTA

PROGRESS REPORT I

SEPTEMBER 1969

EUGENE A. HICKOK & ASSOCIATES
HYDROLOGISTS - ENGINEERS
MINNEAPOLIS, MINNESOTA

1500040

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Table 1A	Well Index, St. Louis Park, Sept. 1969
Table 2	Well Water Analysis 1946-1968, St. Louis Park

1500042

INTRODUCTION

An investigation was undertaken during September 1969 to determine the extent of phenolic compounds in the major aquifers in the vicinity of the Republic Creosoting Company plant located at 7200 Walker Street, St. Louis Park, Minnesota. See Figure 1, Location Map.

In conjunction with this study seven borings were made to obtain soil samples for analysis of phenolic compounds in the unsaturated soil zone and to determine the extent of migration of the compounds in the shallow sand and gravel deposits in the area. The analysis of water and soil samples made during the study are included in the report, as well as a tabulation of water analyses of selected deep wells for the years 1946 - 1968.

In 1932 complaints were made to the Village of St. Louis Park that a municipal well contained water with a tarry taste. This well (No. 8A) was subsequently abandoned. At the same time a group of shallow private wells were also abandoned due to taste and odor problems.

During 1936 the McCarthy Well Company investigated reports of ground-water contamination, and concluded that they had not found any source of material that could be responsible for these tastes other than wastes discharged from the Republic Creosoting Company.

Recently the City of St. Louis Park has been confronted with problems due to the surface existence of creosote. It is believed by the utility personnel that the creosote has an adverse affect on buried water mains. In addition, there have been reports of

1500043

city personnel who have had severe skin reactions due to handling creosote bearing soil during utility line construction.

GROUND WATER QUALITY

Phenol is a colorless substance which is highly soluable in water. It poses a potential health hazard. The U.S. Public Health Service has set an upper limit of concentration of 0.001 ppm for drinking water (Anon., "Drinking Water Standards," Title 42 - Public Health; Chapter 1 - Public Health Service, Department of Health, Education and Welfare, Part 72 - Interstate Quarantine Federal Register 2152 (Mar. 6, 1962.)

During the recent survey water samples were collected from 14 city wells and selected commercial wells in the area. Two locations on Minnehaha Creek were sampled and one sample was obtained from a ditch originating on the property of Republic Creosoting Company. Samples were analyzed in the laboratories of E.A. Hickok & Associates. See Table 1, Tabulation of Water Analysis, Sept. 1969.

For comparison purposes the results of available chemical analysis of well water from 1946 to 1968 have been tabulated. See Table 2.

The general direction of flow of ground water in the artesian aquifers in the area of St. Louis Park is toward the East. Superimposed on the artesian water surface are cones of depression caused by pumping from both municipal and industrial wells.

When water is withdrawn from a well, the water level in the ground-water reservoir is drawn down in the vicinity of the well forming a cone of depression in the ground-water surface. The drawdown is greatest at the well and diminishes as the

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distance from the well increases. As a result, the pumping causes ground water to move radially through the underground reservoir toward the well. With continuous pumping, the cone of depression is steadily enlarged until the reservoir is exhausted or until the cone of depression reaches a source of recharge large enough to sustain the yield of the well and thus stop further water level declines.

The rate of growth and lateral extent of the cone of depression are independent of the rate of pumping. However, the rate of pumping causes a proportional variation in the depth of the cone of depression. Twice the pumping rate would produce a cone of depression twice as deep at any point.

The gradient of the upper flow systems is modified where liquid wastes are discharged onto the surface. This downward percolating liquid creates a ground-water high or mound from which the water moves away in all directions. The discharge of liquid wastes as at the Republic Creosoting plant would be expected to cause such a condition.

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TABLE 1

WATER ANALYSIS OF

ST. LOUIS PARK, MINNESOTA

September, 1969

Well No.	Geologic Formation	Phenols in ppm
1	St. Peter	0.014
2	St. Peter	0.008
3	St. Peter	0.012
4	Jordan	0.014
5	Jordan	0.014
6	Jordan	0.023
7	Jordan	0.013
8	Jordan	0.018
8A	Jordan	0.012
9	Jordan	0.013
10	Jordan	0.014
11	Hinckley	Trace
12 (Before iron treatment)	Hinckley	0.018
12 (After iron treatment)	Hinckley	0.018
13 (Before iron treatment)	Hinckley	0.018
13 (After iron treatment)	Hinckley	0.018
14	Jordan	0.009
19	------	0.028
23	St. Peter	0.023
33	------	0.02
Mhaha. Cr. Sample #1		0.02
Mhaha. Cr. Sample #2		0.021
Drainage Ditch (7200 Walker St.)		Excess of 2.0 ppm

Analysis by E.A. Hickok & Associates

1500047

TABLE 1A

WELL INDEX
ST. LOUIS PARK, MINNESOTA
SEPTEMBER 1969

Well No.	Owner	Location	Well Log Avail.	Static Water Level	Pumping Water Level
1	City Well	NON-RESPONSIVE [redacted]	X	56'	61'11"
2	City Well		X	56'	62'
3	City Well		X	54'4"	100'
4	City Well		X	---	----
5	City Well		X	119'9"	128'10"
6	City Well		X	123'8"	155'
7	City Well		X	91'11"	118'8"
8	City Well		X	149'7"	----
9	City Well			91'	117'9"
10	City Well		X	---	----
11	City Well		X	386'4"	414'
12	City Well		X	----	----
13	City Well		X	----	----
14	City Well			116'6"	129'6"
19	Flame Industries	Lake St. & Taft		----	----
23	McCourtney Plastics	27th W. of Louisiana	X	----	----
33	S-K Products	36th & Brunswick	X	----	----

1500048

TABLE 2

WELL WATER ANALYSIS 1946-1968

PHENOL CONCENTRATIONS - PPM

ST. LOUIS PARK, MINNESOTA

Sample Date	WELL NUMBER								
	3	4	5	6	11	12	13	14	33
1/14/46		0.100							
9/30/46		0.115	0.02						
10/4/46									
10/16/47				0.007					
10/24/47			0.02						
4/19/48				0.015					
4/23/48				0.015					
6/23/48		.005							
6/23/48		0.010							
6/30/48		0.005							
8/5/48		0.070							
8/5/48		0.015							
8/13/48		0.070							
2/6/68									0.008
3/7/68	0.002	0.008		0.0025	0.000	0.000	0.000	0.000	

1500049

GLACIAL DRIFT

The glacial drift consists largely of till with some sand and gravel deposits. The till is composed mainly of clay with sand, pebbles, cobbles and boulders intermixed.

Seven shallow borings were made within a 4,000 ft. radius of the Republic Creosoting plant. Depths of these wells range from 13 - 18 ft. Soil samples were obtained every 5 feet. Logs of each boring are shown in Figure 4 and 4A.

The following procedure was established to analyze the phenol content of the soil samples.

1. A representative 100 gram soil sample was obtained from each 5 ft. interval.
2. The 100 gram sample was then placed in a 1000 ml beaker and 500 ml of distilled water added. This was stirred for 15 minutes.
3. The sample was then filtered through a vacuum filter and a standard phenol test was performed on the liquid portion. Results were interpreted from a standard phenol curve.

The laboratory procedure is believed to establish the amount of phenol material that can readily be leached from the soil by percolating water. It should be noted that results of this procedure will give a somewhat lower phenol content than actually exists, as all of the phenol in the sample is not leached in a 15 minute period.

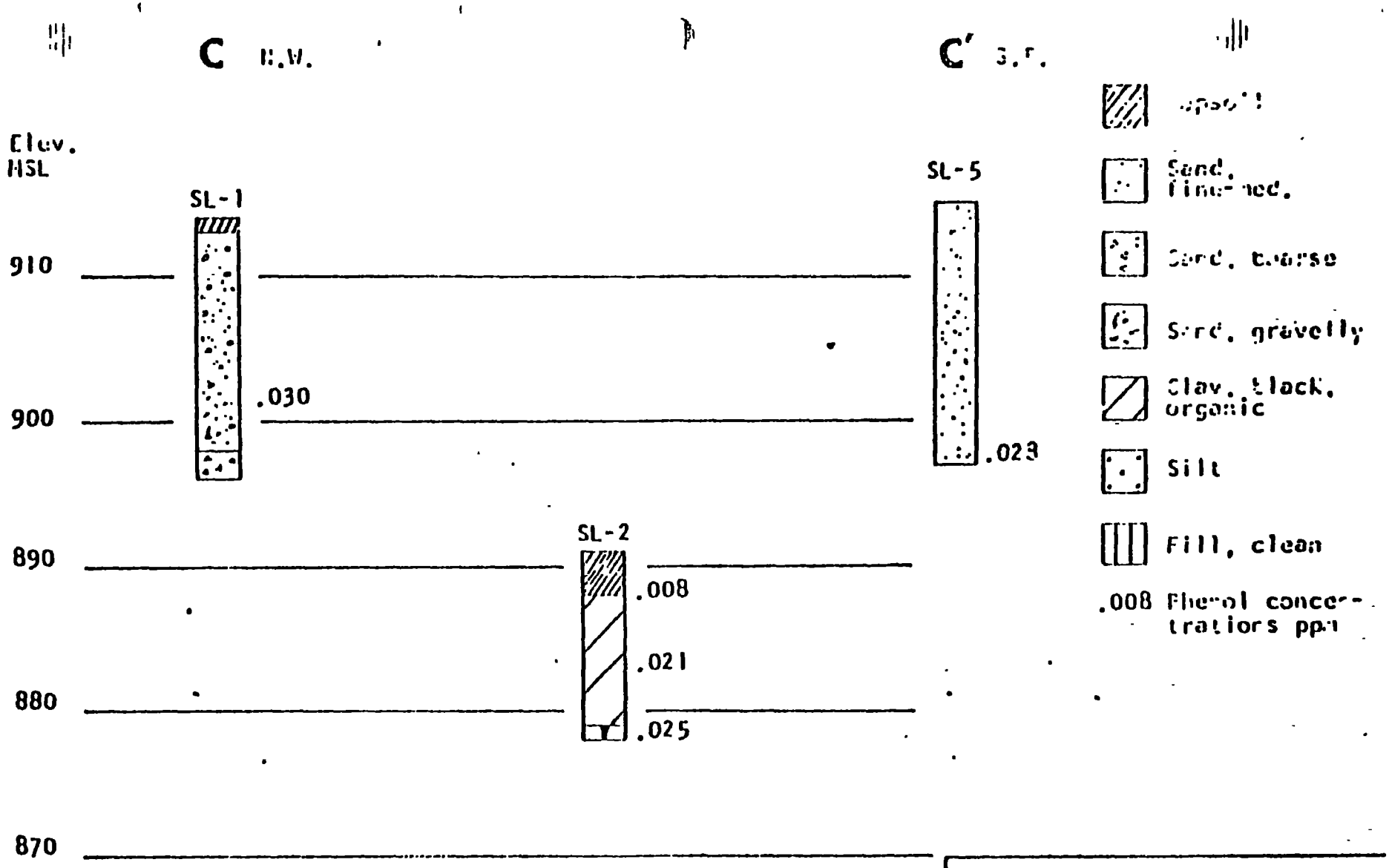
Figure 4 is a comparison of phenol concentrations with relative elevation. There is apparently no consistent relationship between phenol concentration and depth. High concentrations

1500C50

of phenols are present in most clay and silt layers although well No. 1 contains high concentrations (0.030 ppm phenol) in a coarse sand.

The phenol concentrations seem to decrease with distance from the Republic Creosoting plant. The results of samples taken from 13 ft. depths below ground surface at each soil boring have been plotted and are shown on Figure 5. Boring SL-1 located on the north edge of Republic Creosoting approximately 1,000 ft. from the source of phenols shows a phenol content of 0.030 ppm.

To make a detailed analysis of the effect of distance and depth on phenol concentration will require more intensive geologic and hydrologic information than is now available. To provide the data necessary for a more complete analysis a minimum of 10 soil borings ranging to 50 ft. in depth in addition to several additional deep test wells will be required.

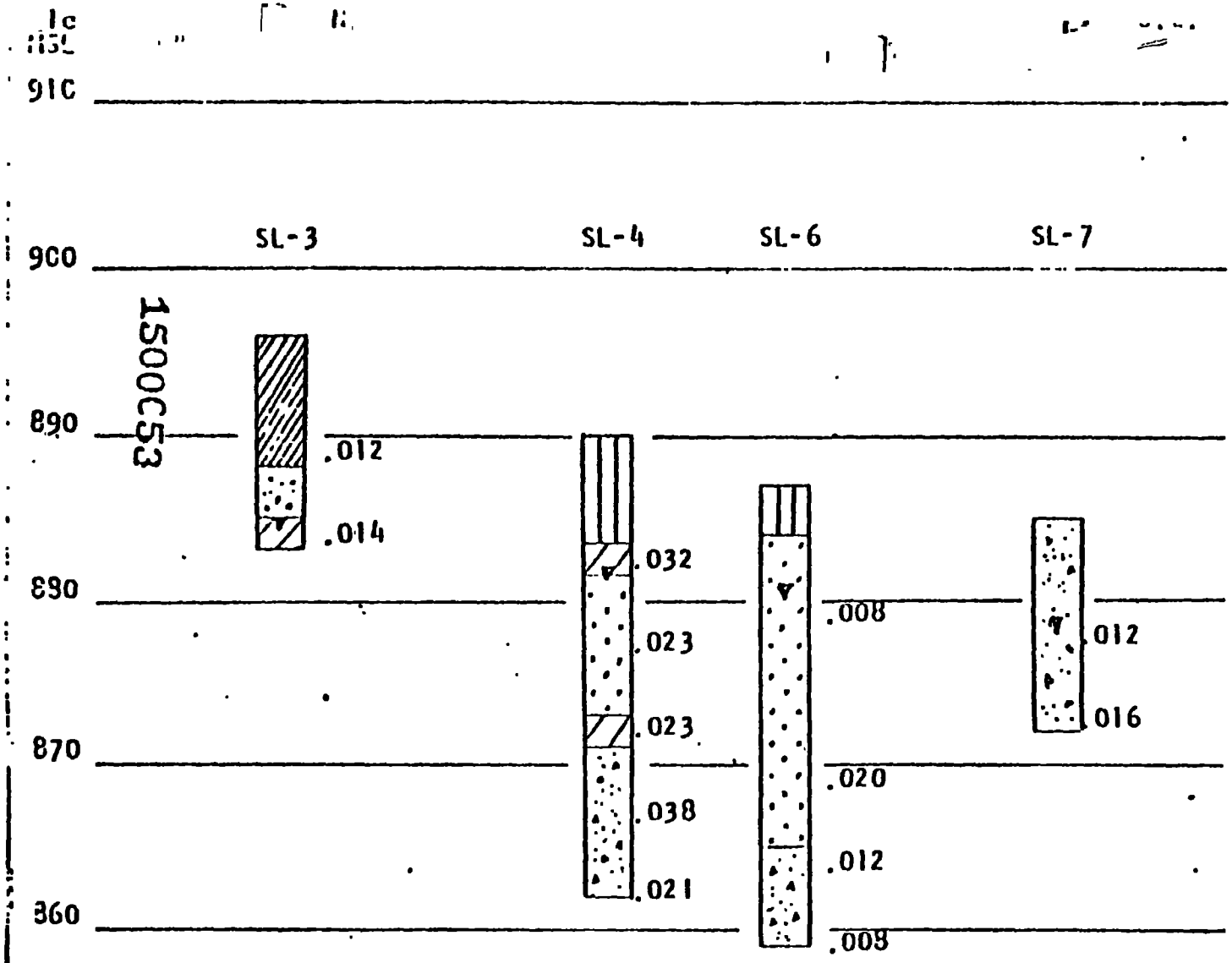


CITY OF ST. LOUIS PARK

[illegible] LOG OF [illegible]
SECTION [illegible]

E A HICKOK & ASSOCIATES
HYDROLOGISTS - ENGINEERS
MINNEAPOLIS MINNESOTA

1500052



Topsoil

Sand, fine, med.

Sand, coarse

Sand, gravelly

Clay, black, organic

Silt

Fill, clean

.008 Phenol concentrations ppm

CITY OF ST. LOUIS PARK

GRAPHIC LOG OF SOIL BORING

E A HICKOK & ASSOCIATES
HYDROLOGISTS - ENGINEERS
MINNEAPOLIS MINNESOTA

ST. PETER FORMATION

The St. Peter formation consists of a white to yellow, medium to fine-grained sandstone. It varies from 100 - 165 ft. in thickness in the St. Louis Park area and contains beds of shale in the lower part of the formation.

The highest concentrations of phenols are found in wells open to the St. Peter formation, near the Republic Creosoting plant and down gradient in the direction of the regional water level slope. Well No. 19 shows the highest phenol concentration at 0.028 ppm. This well is located approximately 1,200 ft. south of the creosoting plant property line and less than 500 ft. from the low swampy area which receives water from the company's effluent ditch. Well No. 33 located down gradient but at a greater distance has a phenol concentration of 0.020 ppm or a decrease of .008 ppm in a horizontal distance of 6,000 ft.

Municipal wells 1, 2, and 3 located to the north of the plant also have phenol but due to increased distance and their location in respect to the regional water level gradient, contain lower concentrations. These wells contain an average of 0.011 ppm of phenol.

A possible explanation for even small amounts of phenol up-gradient lies in the fact that wells 1, 2 and 3 pump an average of approximately 2 to 3 million gallons per day (mgd). This is believed to produce a cone of depression around the wells and correspondingly a local reversal in the direction of ground water flow. This pumpage could cause movement of water from the area of the creosoting plant toward wells 1, 2, and 3.

1500054

SHAKOPEE FORMATION

Most of the Shakopee formation is a massive, gray to buff, dolomitic limestone with cavities filled with white calcite. Some private wells are constructed in the Shakopee but the St. Louis Park municipal wells do not utilize this formation for its water supply.

1500055

JORDAN FORMATION

The Jordan formation is a loosely cemented medium to coarse grained, white sandstone. Average thickness in the St. Louis Park area is 80 - 100 ft. The coarseness of grain and uniformity of grain size make the Jordan formation an excellent aquifer.

To some extent the horizontal migration of phenols in the Jordan resembles that in the St. Peter geologic formation. Phenol concentrations decrease with distance from the source and also up gradient. The high phenol content of municipal well No. 6 is believed due to its location with reference to the low lying land surrounding Minnehaha Creek. Surface water containing phenolic compounds draining from the vicinity of Highway 7 toward Minnehaha Creek could have caused a source of phenols to be located near well No. 6. Therefore, subsurface travel time has been decreased and the phenol concentrations observed are higher than would otherwise be anticipated.

The general pattern of vertical and horizontal migration of phenol compounds is complicated by the existence of numerous fissures and solution cavities in the Shakopee formation overlying the Jordan Sandstone. Numerous wells which penetrate the geologic formations above the Jordan, including the Shakopee formation, if improperly constructed could serve as conduits for vertical migration of phenols.

Evidence of contamination at depth is shown in the area near 29th Street and Idaho Avenue. In this area the results indicate that the St. Peter and Jordan formations contain concentrations of phenols in near equal amounts.

1500056

HINCKLEY FORMATION

The Hinckley formation is a coarse to fine, yellowish to pink sandstone. Average thickness in the St. Louis Park area is 120 ft.

A trace of phenols was found to be present in municipal well No. 11 which penetrates the Hinckley formation. Due to location, less than 100 ft. from municipal wells 1, 2, and 3 which are open to the St. Peter formation, it is believed that leakage could be responsible for the presence of this trace of phenols. A sample from well No. 12 also contained a trace of phenols. Municipal well No. 6 located 200 ft. distant, may be responsible for the phenol due to vertical leakage.

It is recommended that further investigations be made to determine the source of these phenols.

1500057

CONCLUSIONS

1. The chemical process wastes such as those discharged by the Republic Creosoting Company contain phenols.
2. Phenolic compounds have penetrated to the glacial drift, St. Peter, Shakopee and Jordan geologic formations in the vicinity of St. Louis Park.
3. The city wells sampled have phenol concentrations above the upper limits set by the U.S. Public Health Service. Ground water contaminated by phenolic compounds is objectionable and potentially a health hazard. Concentrations of phenol in excess of 0.001 mg/l can be undesirable to the taste and may be harmful to health. (Anon., "Drinking Water Standards," Title 42 - Public Health; Chapt. 1 - Public Health Service, Department of Health, Education and Welfare, Part 72 - Interstate Quarantine Federal Register 2152 (March 6, 1962).
4. Phenols have been identified in municipal and commercial wells at distances of 8,000 ft. from the creosote plant.
5. The glacial drift is primarily utilized for domestic wells in the St. Louis Park area. The majority of the shallow private wells in the glacial drift in the vicinity of the creosote plant have been abandoned.
6. The St. Peter, Jordan and Hinckley formations are the principal aquifers for St. Louis Park municipal and commercial wells.
7. The observed movement of ground water in the vicinity of St. Louis Park is in the same Easterly direction as regional ground-water movement. In some areas the movement is controlled by local pumping wells.

1500053

8. The biodegredation of phenols under anaerobic conditions is not fully understood. Research of public documents to date has not proven helpful in providing an evaluation of analysis techniques or in estimation of the biodegredation features of phenolic compounds.

9. The ground-water control program initiated should be considered one of continuing investigation. Geologic and hydrologic subsurface information is lacking in many locations in St. Louis Park. This information is needed to document travel of ground-water contaminants.

RECOMMENDATIONS

1. The further disposal of untreated phenolic liquid waste should be prohibited.
2. A comprehensive investigative program to more exactly delineate the extent of ground-water contamination and to prevent further migration of phenolic compounds in the aquifers of the area should be initiated.
3. The following studies should start immediately.
   (a) Water quality sampling should be conducted on a regular basis.
      1. Selected wells should be sampled on a monthly basis to determine if there are seasonal changes in water quality or phenol content.
      2. Water levels should be recorded on a monthly basis from all aquifers.
      3. Stream and storm sewer monitoring at selected sites should be initiated to determine if phenol waste from Republic Creosoting is entering the surface waters of the area.
4. Shallow soil borings which penetrate the static water level of the upper flow systems should be constructed.
   (a) Soil samples should be taken and analyzed to determine phenol content.
5. Observation wells which would penetrate to the Jordan formation should be drilled to provide better control where subsurface information is lacking.
   (a) See Appendix A for construction details
   (b) These wells should be monitored as described above

6. A quantitative pumping test should be conducted in the immediate vicinity of the Republic Creosoting Company plant to determine aquifer characteristics of the glacial drift material.

7. A program of removal of water containing high phenol concentrations in the glacial drift immediately surrounding the Republic Creosoting plant should be initiated. The program should be based upon the results of the test outlined in No. 6 above.

8. An investigation should be made of all possible means of removal and disposal of the shallow, heavily saturated soils in the vicinity of the creosote plant. The best program should be selected and implemented at the earliest possible date.

9. Based on the data obtained from deep drilling a specific program to either remove the contaminated ground water from these aquifers or to control its further migration should be implemented.

10. Using pump test data construct removal wells (5) to pump contaminated water out of the ground within the area of highest concentration before it has an opportunity to migrate.

Respectfully submitted,

EUGENE A. HICKOK & ASSOCIATES

E.A. Hickok, P.E.

September 26, 1969

EAH:rc

1500061

APPENDIX A

CONSTRUCTION OF OBSERVATION WELLS

Typical St. Peter Formation Observation Well

4" Diameter cased to 125 ft.

Grout seal to prevent contamination from glacial drift (approx. 4 yds.)

Typical Jordan Formation Observation Well

6" Diameter cased to top of St. Peter formation (approx. 125 ft.)

Grout seal to bottom of St. Peter formation (approx. 6 yds.)

4" Diameter open hole to bottom of Jordan formation

4" Packer set at approximately 450 ft.

Construction of Well for Quantitative Pump Test

12" Diameter to approximately 100 ft.

80 ft. 12" casing

20 ft. nominal 12" well screen

1500062

APPENDIX C

1500063

DEPARTMENT HEALTH

Office Memorandum

SEE 4-20-70 FOR HIGHLIGHTING.

TO: Mr. John P. Badalich, Director
Minnesota Pollution Control Agency
Attention: Mr. C. A. Johannes, Acting Director
Division of Water Quality

DATE: April 20, 1970

FROM: R. E. Frazier, Chief, Section of Analytical Services
Division of Environmental Health

SUBJECT: St. Louis Park well water analysis

e have your memorandum of April 14 on the subject of phenol in wells in St. Louis Park.

Enclosed are the analytical results for a series of samples collected from various t. Louis Park wells on April 16, 1970, by Mr. Fridgen of the Health Department and xamined by the Section of Analytical Services for phenol material. In all cases phenolic material as phenol was less than 5 micrograms per liter.

nalyses were made by the chloroform extraction procedure described on page 517 of Standard Methods for the Examination of Water and Waste Water, 12th edition. This is probably the most sensitive test for phenols available.

The determination of phenol is a somewhat difficult procedure and is complicated by the fact that the phenolics are a class of compounds, any one of which may give a different response in a particular method of determination. Results are reported, however, as if pure phenol were the substance determined. On the assumption that any phenolic present in the water from the St. Louis Park wells would be from wastes scharged by Republic Creosoting Company, wastes from this company were studied to compare their response in the procedure used to that of pure phenol. Comparisons were based on ultraviolet absorption methods which are not subject to great variation for the substituted phenols. Results showed that the creosoting wastes gave about 80% of the response that would be expected of pure phenol. This indicates the method used is quite adequate to measure phenolics from the creosoting waste.

While phenolics are toxic to bacteria when present in high concentrations, in moderate-to-low concentrations they are quite biodegradable. For example, both high-rate trickling filters and activated sludge systems are in use in the petroleum industry in the treatment of phenolic wastes. Feed water can contain upward of 500 mg/l of phenolics. Standard Methods even makes provision for preventing loss of phenol during transport of the sample from bacteriological degradation. The extent to which phenols are destroyed in ground water would probably depend both on residence time in the aquifer and distance traveled to a sampling point, as well as on the nature of the aquifer itself. It is highly unlikely that phenols can persist for long periods of time in dilute solution in biologically active portions of the soil, and it is inconceivable that phenols discharged to the surface of the grounds in the St. Louis Park area could reach the Hinckley sandstone.

Probably the most objectionable feature of phenol in a water supply is the taste and odor imparted to the water. The hazards to health are small at concentrations of phenol which produce tastes which would not be tolerated. Standard Methods states that phenols above 10 parts per billion can be detected by taste and odor, and amounts

approaching one part per billion can be objectionable after chlorination. It seems pertinent that no unusual complaints about tastes and odors have been received from users of the St. Louis Park water supply.

While we do not believe that there is good evidence at the present time to substantiate a claim that the Park municipal wells are contaminated, it seems obvious that the disposal of a substantial quantity of phenolic material on the surface of the ground in a general area where there are wells producing water for human consumption is not desirable and constitutes a serious hazard. The economic consequences of significant contamination would be tremendous; and the potentital threat should be removed as soon as possible.

It would seem advisable to arrange a meeting with all the people concerned and explore the problem more thoroughly.

RCF:pjb

Enclosures

1500065

DIVISION OF ENVIRONMENTAL HEALTH

ANALYTICAL DATA

Report To ___ T.T.

Sample Number	Town, County, Etc.	Sampling Point and Source of Sample			
1	St Louis Park	Well #4	P.O	WWS	
2	"	#5	"	"	
3	"	#7	"	"	
4	"	#8	"	"	
5	"	#9	"	"	
6	"	#13	"	"	

Space for Lab. use only. Sample Number	2109	2110	2111	2112	2113 - 2114
Date Collected	4-16-70				
Time Collected					
Temperature °F					
Date Received by Lab.					
Coliform M.P.N. per 100 ml.	4-16-70				
Con. ☐ Comp. ☐					
Bacteriologic M.F.C. per 100 ml.					
Total Solids					
Turbidity					
pH					
Total hardness as $CaCO_3$					
Alkalinity as $CaCO_3$					
Color value					
Iron					
Manganese					
Chloride					
Residual Chlorine					
Sulfate					
Fluoride					
Total Phosphorus					
Nitrite Nitrogen					
Nitrate Nitrogen					
Methylene Blue Active Sub. as ABS					
Calcium as $CaCO_3$					
Sodium					
Potassium					
Spec. Cond. mmhos/cm @ 25 °C					
Turbidity @ 50 °F	<.005	<.005	<.005	<.005	<.005 <.005

1500006

Results ... milligrams per liter unless otherwise noted.

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

5
4-17-70

ANALYTICAL DATA

Report To DT

Field Number	Town, County, Etc.	Sampling Point and Source of Sample
7	St Louis Park	Well P.D
8	"	Home Industries
9	"	S-K Products
10	"	Mr Courtney's Products

Space line for Lab. use only. Sample Number	2115	2116	2117	2118	
Date Collected	4-16-70				
Time Collected					
Temperature °F					
Date Received by Lab.	4-16-70				
Coliform M.P.N. per 100 ml.					
Con. ☐ Comp. ☐					
Streptococci M.P.N. per 100 ml.					
Total Solids					
Turbidity					
Color					
Total Hardness as $CaCO_3$					
Alkalinity as $CaCO_3$					
pH Value					
Iron					
Manganese					
Chloride					
Residual Chlorine					
Sulfate					
Fluoride					
Total Phosphorus					
Nitrite Nitrogen					
Nitrate Nitrogen					
Methylene Blue Active Sub. as ABS					
Calcium as $CaCO_3$					
Sodium					
Potassium					
Spec. Cond. mmhos/cm @ 25 °C					
Ions @ 50 °F					
Fluoride	<.005	<.005	<.005	<.005	

1500667

APPENDIX D

1500068

MANOR OAK TWO
1910 COCHRAN ROAD
PITTSBURGH, PA 15220
412-343-5200

November 5, 1970

Client No. 6157.01

Mr. Harvey J. McPhee
Public Health Sanitarian
City of St. Louis Park
5005 Minnetonka Boulevard
St. Louis Park, Minnesota 55416

Dear Mr. McPhee:

We have completed the chemical (4-aminoantipyrine) and freeze concentration--gas chromatographic (GLC) analyses of the well waters and Republic Creosote Company effluent water collected Wednesday, October 21, 1970. Partial results were sent to you in a letter addressed to Mr. Cherches. Dr. Baker of Mellon Institute has sent me the results of his analyses, a copy of which is attached.

Except for the effluent sample, Dr. Baker was unable to find any phenols or phenolic compounds in any of the waters. A comparison of the typical chromatograms shown in Figures 1 and 2 demonstrates this point quite clearly. Figure 2 is a chromatogram of the water from the Flame Industries well. Analysis of this sample in the RICE laboratory revealed the presence of 0.001 mg/l of phenol. Table 1 lists the location, odor, phenol concentration and the area of the rapidly eluting peak presumably due to sulfur containing compounds. (A sulfide odor was noted during collection of many of the well waters.) Dr. Baker estimates his limit of detection as 1 to 3 µg/l (0.001 to 0.003 mg/l) for organic materials, although recovery at this level may be influenced by the total dissolved salt content of the waters during concentration.

From the above information, we can conclude that:

1. Phenolic compounds were detected in the Republic Creosote effluent water both by GLC and the 4-aminoantipyrine method (4-AA).

2. The well at Flame Industries yielded a phenol value of 0.001 mg/l by 4-AA; phenol was not detected in this water by GLC.

1500069

3. Since phenols were not found in any of the well waters in sufficient quantity by GLC, it is impossible to determine if any of the compounds found in the effluent water are in fact present in the surrounding wells. (The 4-AA method does not identify specific phenolics, whereas GLC is capable of determining specific compounds by their elution or emergence time.)

Regarding sample handling and preservation, we believe that all due care was accorded the samples in collection, handling, preservation and analysis. The samples for Dr. Baker's work were received in Pittsburgh, October 23, 1970, in excellent (frozen) condition. The samples for work in the RICE laboratory were preserved with copper sulfate and phosphoric acid, hand carried to the airport, refrigerated in Pittsburgh overnight and were immediately analyzed (before noon) in the RICE laboratory Thursday, October 22. Thus, we believe that only limited biological activity could have caused degradation of the phenolic compounds if present.

Thank you for the opportunity to be of service.

Sincerely yours,

Ronald M. Burd

Ronald M. Burd
Senior Technical Associate

RMB:jdc

1500070

Carnegie-Mellon University

Mellon Institute
4400 Fifth Avenue
Pittsburgh, Pennsylvania 15213
(412) 621-1100

November 2, 1970

Mr. R. Burd
C. W. Rice Division - NUS
Manor Oak Two
1910 Cochran Road
Pittsburgh, Pennsylvania 15220

RE: P.O. 9032

Dear Ron:

We have made the appropriate freeze concentration and aqueous injection gas-liquid chromatographic analyses of the 10 samples from St. Louis Park, Minnesota. These were much more difficult than many other municipal, industrial and natural waters. The problem centered on the sulfuritic precipitate in the well waters. Freezing is a very effective means of concentrating color bodies and particulates. Our final concentrates were filled with fine yellow-white precipitate. This material probably is associated with a relatively fast eluting peak which was almost impossible to remove by subsequent column washing. We ruined two new FFAP columns.

The samples you delivered were immediately placed in a deep freezer. They were taken out and carefully thawed in sets of two or three per day, then stored in a refrigerator. The concentrates were also refrigerated. Ice was discarded after freeze concentration.

The effluent, sample #1, contains a number of organic solutes and is characterized as having a "cresolic" or "cresote" odor by our staff. The odor, as received, was intense enough to suggest direct chromatography without concentration. Figure 1 shows the resulting chromatogram. We recently equipped our Varian Aerograph with a new solid state electrometer and can conservatively reproduce approximately 0.3 phenol mg/l by direct aqueous injection analyses. The operating conditions are presented on the chromatogram. The other samples were actually analyzed several times: at least once at maximum sensitivity to search for phenolic material and then with proper attenuation to depict the quick-eluting peak (relative elution based on phenol = 0.3) on Figure 2. Since the well water samples did not contain the phenolic solutes and just this one peak we did not draw all the chromatographs. Table 1 presents the relative areas of the peak it produced.

Freezing sequence was in a cascade arrangement. Three 1000 ml volumes were first frozen individually to 150 to 250 ml then the combined concentrates were refrozen to a final volume. Table 1 gives the concentration ratio based on correction for wash volume. The ice from each stage was washed with deionized water. The results were adjusted for the dilution factor involved. Freezing was at 80 RPM and -12°C in an ethylene-glycol, dry ice bath. Depending on final concentration ratio after freezing, we should have been able to detect 1 to 3 μg/l of the organic materials. Phenol or other similar phenolic components were not present in this minimum detectable concentration.

The effluent sample has a dominant peak (a) corresponding to the phenol and o-cresol elution point. This was calculated to be 6.4 mg/l as phenol. Peak (c) elutes at the position of m- and p-cresol. Peaks (b) and (d) elute near the o-chloro- and di-chloro-phenolic points. Since these and minor peaks cannot be verified directly, the entire area under the chromatogram was used with the phenol calibration factor to obtain an estimate of approximately 13 mg/l organic material.

The phenol values after concentration do not include a correction for organic incorporated in the ice. For example, a water of 300 mg/l total dissolved solids concentrated 5:1 in a single stage will yield an organic recovery of about 82%. Second stage freezing of the concentrate now at approximately 1500 mg/l total dissolved solids levels in the tests reported here may reduce the first stage organic concentrate by another 40 to [illegible]. This point is academic since there was so little phenolic organic solute in the well waters. It does offer a possible reason we didn't find the 1 μg/l phenol content you measured in sample #9 by the 4-amino procedure.

Let me know if there are any further questions.

Sincerely,

Robert A. Baker, D.Sc.
Senior Fellow

RAB:bfs

1500072

Table 1
St. Louis Park, Minnesota Water Analyses

Sample No.	Location	Washed Ice Concentration Ratio	Odor	Organic Analyses	Area, in.^{2} of Peak @ 0.3 rel. elution 1% sample
1	Effluent	as received	Cresolic	6.5 mg/l phenol or o-cresol ~13 mg/l based on phenol calibration factor for entire area	0
2	Well 13	143:1	light sulfuric*	0 phenol	4.72
3	Well 14	273:1	very light*	0 phenol	0.18
4	Well 8	85.7:1	barely detectable*	0 phenol	3.36
5	Well 10	120:1	very light*	0 phenol	0.10
6	Well 3	214:1	very light*	0 phenol	0.05
7	Well 4	125:1	very light*	0 phenol	0
8	Well 6	103:1	very light*	0 phenol	0
9	Well @ Flame, Ind.	157:1	sulfuric; mineral springs*	0 phenol	3.29
10	Park Pet Hospital	107:1	barely detectable*	0 phenol	0

*light-colored yellow ppt. in samples as received, these ppt. were dense in concentrates.

1500C73

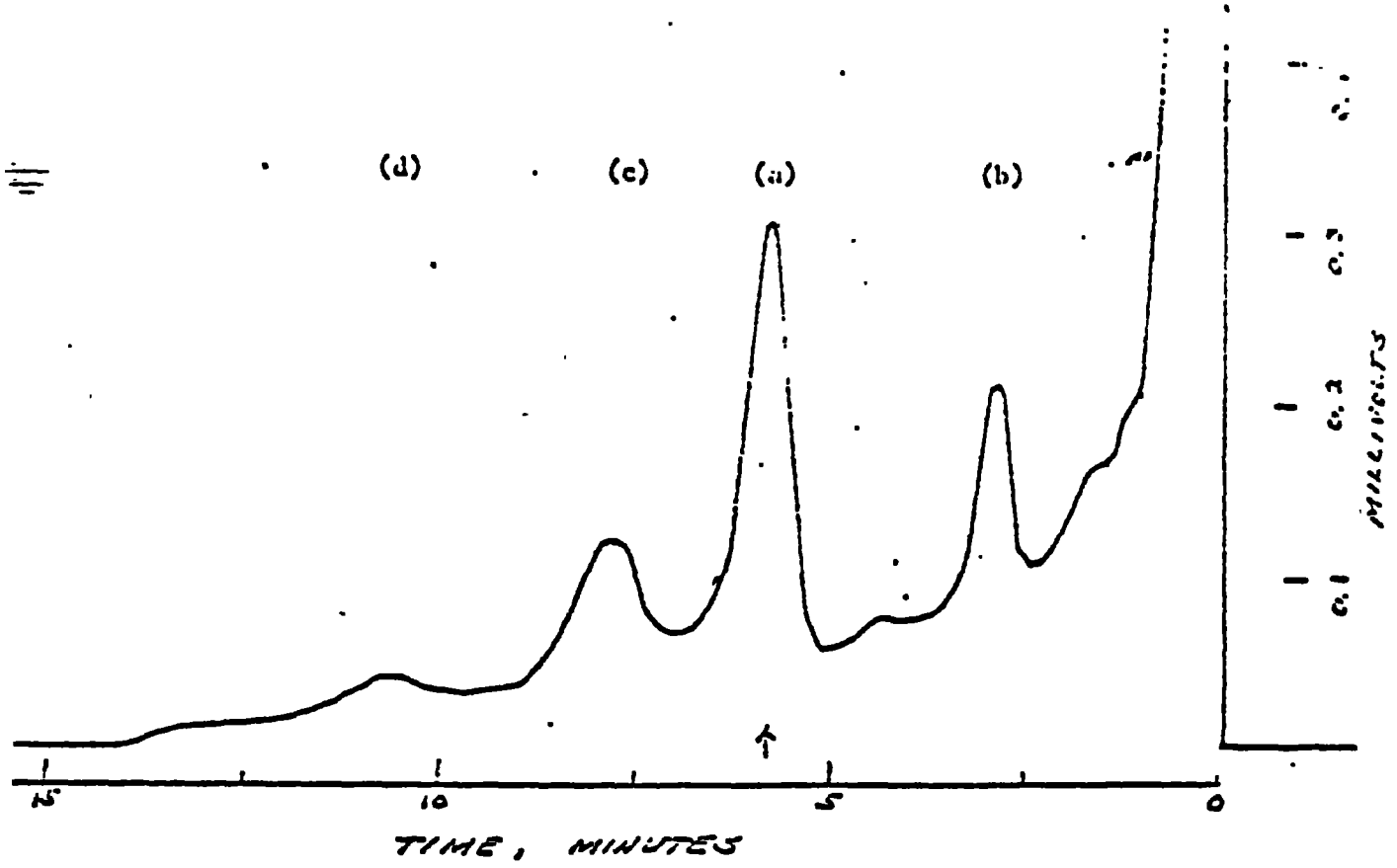


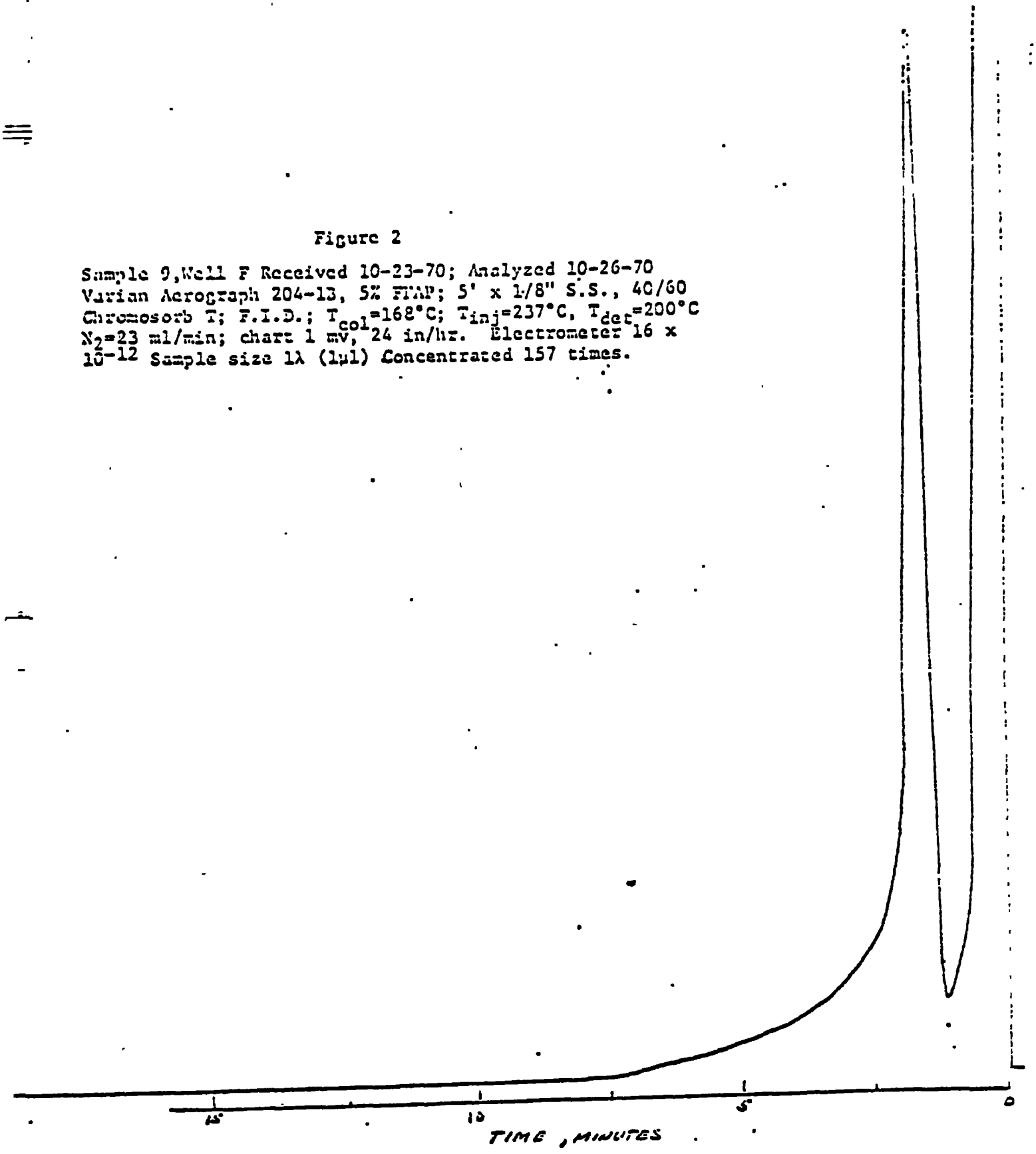
Figure 1

Sample 1, Effluent received 10-23-70; Analyzed 10-26-70; Varian Aerograph 204-1B 5% FFAP; 5' x 1/8" S.S., 40/60 Chromosorb T; F.I.D.; T_{col}=166°C; T_{inj}=237°C; T_{det}=200°C; N_2=23 ml/min; chart @ 1 mv, 24 in/hr; Electrometer @ 5×10^{-12}; Sample size 4λ (4μl). Unconcentrated. Arrow @ phenol and o-cresol elution point.

1500074

Figure 2

Sample 9, Well F Received 10-23-70; Analyzed 10-26-70
Varian Aerograph 204-13, 5% FFAP; 5' x 1/8" S.S., 40/60
Chromosorb T; F.I.D.; T_{col}=168°C; T_{inj}=237°C, T_{det}=200°C
N_2=23 ml/min; chart 1 mv, 24 in/hr. Electrometer 16 x
10^{-12} Sample size 1λ (1μl) Concentrated 157 times.



1500075

LABORATORIES
PITTSBURGH, PA 15205
412-922-2355

[illegible]
[illegible]

[illegible]
[illegible] Health Department
City of St. Louis Park
5905 Minnetonka Blvd.
St. Louis Park, Minnesota 55416

Client No. 6157.04
Date Sampled 10/21/70
Date Received 10/22/70
Date Reported 10/23/70

Rice Sample No.	Client No.	Sample Source	Phenol mg/l
100701	1	Effluent Ditch	9.79
100702	2	Well No. 13	<0.001
100703	3	Well No. 14	<0.001
100704	4	Well No. 8	<0.001
100705	5	Well No. 10	<0.001
100706	6	Well No. 3	<0.001
100707	7	Well No. 4	<0.001
100708	8	Well No. 6	<0.001
100709	9	Well @ Flame Industries	0.001
100710	10	Well @ Park Pet Hosp.	<0.001

Special Instructions

1500076

*Test results reported in ppm unless otherwise noted

APPENDIX E

1500077

LOG OF BORINGS

PROJECT: 71-127 Republic Creosoting Area St. Louis Park, Minnesota	DATE: 4/23/71 SCALE: 1" = 5'

BORING: B-5	LOCATION: As directed in the field
SURF. ELEV:	

Depth	Description of Materials	WL
3.5'	Loamy Sand, with a trace of Fine Gravel, and debris black, wet (trace of oil)	▽
13'	Fibrous Peat, brown to black, wet to saturated (trace of oil)	
21'	Muck with shells, and trace of Marl, grey to black, wet to saturated	
30'	Fine to Medium Sand, grey, saturated	
	Water level down 1.0' when measured immediately after completion of boring.	

BORING: B-4	LOCATION: As directed in the field
SURF. ELEV:	

Depth	Description of Materials	WL
16'	Loamy Sand, with a trace of Fine to Medium Sand, glass, tin, and other refuse, brown, moist to wet	▽
20'	Sandy Clay Loam, grey, wet to saturated	
25'	Fine to Medium Sand, with a trace of Fine Gravel, grey, saturated	
	Water level down 3.0' when measured immediately after completion of boring.	

1500078

LOG OF BORINGS

PROJECT: 71-127 Republic Creosoting Area St. Louis Park, Minnesota	DATE: 4/23/71 SCALE: 1" = 5'

BORING: B-3	LOCATION: As directed in the field
SURF. ELEV:	

Depth	Description of Materials	WL
3.5'	Loamy Sand, with a trace of Fine Gravel, and debris, black, wet (trace of oil)	▽
13'	Fibrous Peat, brown to black, wet to saturated (trace of oil)	
21'	Muck with shells, and trace of Marl, grey to black, wet to saturated	
30'	Fine to Medium Sand, grey, saturated	
	Water level down 1.0' when measured immediately after completion of boring.	

BORING: B-4	LOCATION: As directed in the field
SURF. ELEV:	

Depth	Description of Materials	WL
16'	Loamy Sand, with a trace of Fine to Medium Sand, glass, tin, and other refuse, brown, moist to wet	▽
20'	Sandy Clay Loam, grey, wet to saturated	
25'	Fine to Medium Sand, with a trace of Fine Gravel, grey, saturated	
	Water level down 3.0' when measured immediately after completion of boring.	

1500079

LOG OF BORINGS

PROJECT: 71-127
Republic Creosoting Area
St. Louis Park, Minnesota

DATE: 4/23/71

SCALE: 1" = 5'

BORING: B-5
SURF. ELEV:
LOCATION: As directed in the field

Depth	Description of Materials	WL
	Loamy Sand and Fine to Medium Gravel, with general fill material, brown, moist to wet (saturated at 3' depth)	V
5'		
	Loamy Sand, with a trace of Fine Gravel, black, *	
7'		
	Fibrous Peat, black, saturated (saturated with oil)	
12'		
	Muck, with shells, black, wet to saturated (trace of oil)	
21'		
	Water level down 1.0' when measured immediately after completion of boring.	
	*saturated (saturated with oil)	

BORING: B-6
SURF. ELEV:
LOCATION: As directed in the field

Depth	Description of Materials	WL
	Sandy Loam, non to slightly plastic, with a trace of Fine Gravel, brown mottled with black,	
4'	~~wet to saturated~~	
	Peat, brown to black, wet to saturated (trace of oil)	
14'		
	Fine to Medium Sand, with a trace of Fine Gravel, black, saturated (saturated with oil)	
35'		
	Water level at the surface when measured immediately after completion of boring.	

1500080

APPENDIX F

1500C81

Metro Square Building, 7th & Robert Street, Saint Paul, Minnesota 55101 Area 612, 222-8423

July 21, 1972

Mr. Harvey J. McPhee
Director of Public Health
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, Minnesota 55416

Re: City Request For Industrial Waste Disposal

Dear Mr. McPhee:

This is in reply to your request of July 18, 1972 for Sewer Board permission to discharge ponded water to the Metropolitan Disposal System.

To summarize, the City is planning redevelopment of the Reilly Chemical and Tar plant site. There exists near the plant site a pond with an estimated 2,500,000 gallons of water of a questionable nature. During utility installation for the redevelopment, it may become necessary to dewater the ponded area, and since the water cannot be discharged to Minnehaha Creek, quality determinations were made regarding compliance to the Sewer Board's Waste Control Rules and Regulations.

Samples were taken on July 6 and analyzed for phenol content by your laboratory, and samples were taken on July 12 and analyzed for grease and oil content by the Sewer Board laboratory. Results are as follows:

Sample location	phenol (mg/l)	grease and oil (mg/l)
Ditch north side of Walker St.	7.5	41
Ditch south side of Walker St.	11.5	41
Pond south side of Highway 7	0.15	51

The grease and oil concentration is within the Sewer Board's acceptable limit of 100 mg/l. Therefore, permission is granted to discharge the pond water to the sewer system. One condition is that the water be discharged at a relatively low rate (approx. 200 gpm) to minimize the possibility of a malodorous condition arising due to phenols. If nuisance conditions do arise, you will be notified to take corrective actions.

1500082

We are happy to cooperate with you on this matter. Please notify Mr. Don Madore of our staff when you are ready to discharge the pond water.

Yours very truly,

Russell H. Susag

Russell H. Susag, Ph.D., P.E.
Manager of Quality Control

RHS:DRM:em

cc: Maurice L. Robins, MSB
Frank Lamm, Metropolitan Council

1500083

APPENDIX G

1500(84

Harvey

69-326 PRELIMINARY SOILS INVESTIGAT
80 Acre Site
W of 2nd Street NW
and Republic Avenue
St. Louis Park, Minnesota

REPUBLIC CREOSOTING COMPANY

October 13, 1969

SOIL ENGINEERING SERVICES, INC.

6800 S. COUNTY RD 18 | MINNEAPOLIS, MINN • PHONE 941 5650

MAILING ADDRESS
P.O. BOX 35108
MPLS, MINN. 55435

1500085

SOIL ENGINEERING SERVICES, INC
6400 S. COUNTY RD 18 | MINNEAPOLIS, MINN. • PHONE [illegible]

October 13, 1969

MAILING ADDRESS
P.O. BOX 25108
MPLS, MINN. 55435

Republic Creosoting Company
Division of Reilly Tar & Chemical Corp.
7200 Walker Street
Minneapolis, Minnesota 55426

Attn: Mr. Herb Finch

Re: 69-326 PRELIMINARY SOILS INVESTIGATION
80 Acre Site
W of 2nd Street NW
and Republic Avenue
St. Louis Park, Minnesota

Gentlemen:

Soil borings outlined in our proposal dated August 14 have been completed. Results of the borings and preliminary recommendations for foundations are shown in this report. The purpose of the borings was to indicate the general foundation conditions over the tract relative to establishing property values and for use in a preliminary evaluation of foundation conditions for industrial buildings.

INVESTIGATION

A total of 23 borings were taken. Borings were generally positioned in a grid pattern 350 feet in the north-south direction and 400 feet in the east-west direction. Boring locations were staked and referenced by the Dolan Engineering Company. Their crew also determined the surface elevations. Locations of all borings are shown on the print of a map you furnished, as attached.

Borings were taken, between September 29 and October 10, with a truck-mounted core and auger drill equipped with hollow-stem augers. Samples were obtained with the standard 2-inch OD split sampler driven by a 140-pound hammer falling 30-inches, thru the hollow-stem augers. Blows per foot of penetration (BPF), which are an index of

1500086

OUR LETTERS AND REPORTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED, AND THEIR COMMUNICATION TO ANY OTHERS, OR PUBLICATION OF STATEMENTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED, PENDING OUR WRITTEN APPROVAL.

BORINGS • TESTS • INSPECTION • ANALYSIS • REPORTS • RECOMMENDATIONS

the relative strength of soils, were recorded. Use of the hollow-stem augers eliminated the driving of casing. However, it was necessary to employ standard jetting procedures to clear the augers in lower portions of the borings.

As indicated in our proposal, six borings were extended to the 50-foot depth, with such borings taken generally in the four corners and center of the total area to provide data for estimating piling lengths. The remainder of the borings were considerably shallower and were intended principally to check for the presence of fill and indicate the depth of any underlying organic soils.

Mineral soils encountered in the borings were visually classified in accordance with the U.S. Bureau of Chemistry and Soils Classification System. A copy of that chart is attached. Some representative samples will be retained in this office for a period of 60 days to be available for examination.

Experience in the first several borings indicated that the borings generally caved-in upon withdrawal of the hollow-stem augers thus preventing water level measurements after completion of the borings. In the subsequent borings, probings were then made in the hollow-stem augers prior to commencing of the jetting operations. Obviously, it is then not possible to make additional checks on the water level elevations.

RESULTS

LOG OF BORING sheets indicating the classification of materials encountered, penetration resistances, and water level observations are attached.

Ten of the twenty-three borings encountered extensive depths of fill over organic materials. These borings, namely ST-2, 5, 8, 11, 12, 14, 17, 18, 19, and 20, generally lie in a north-south band down the center of the property with the band being considerably wider on the south end. In these borings the fill materials, which consisted mostly of sands and sandy loams with a limited amount of fill debris, and locally black due to creosote staining, extended to depths ranging from 4 to 13 feet. The fill was generally in the north and south ends of the tract. Organic soils, that is peat or muck, were encountered below the fill in most of the borings enumerated in this paragraph. In addition, borings ST-2, 5, and 8, on the north end, encountered soft cohesive materials below the organic materials. Compressible materials, either organic or soft cohesive soils, extended to elevations ranging between about 150 to 178. The top of firm soils was then as much as 35 feet below the surface of these borings. Sands of variable gradation and color were found to underlie the organic or soft cohesive soils in these borings.

SOIL ENGINEERING SERVICES INC

Borings ST-13, 22, and 23, in the southwest portion of the tract, as well as boring ST-1 in the northwest corner, encountered limited depths of fill. These fill depths were generally on the order of 2 to 4 feet.

Significant depths of materials giving the appearance of fill were not indicated in the remaining 9 borings. These borings lie along the easterly portions of the tract or in the northerly portion of the tract on the west side. Materials encountered in these borings were typically various gradings of sands with some sandy loams. Penetration resistances indicated the strength of the sands to be somewhat variable.

Water levels were recorded in probing all borings. Borings on the north end of the tract typically indicated water levels in the range of elevation 178 to 182 while water levels on southern portions of the tract were typically between about elevation 172 and 174. Apparently the water level gradiant generally follows the surface contour.

PRELIMINARY CONCLUSIONS and RECOMMENDATIONS

Based on the borings taken, it appears that special foundation procedures would be necessary over approximately 50 percent of the tract.

The extensive depths of organic or soft cohesive materials inplace in areas of borings ST-2, 5, 8, 11, 12, 14, 17, 18, 19, and 20 would likely require the use of piling. The length, and hence cost, of piling for industrial buildings would obviously be a function of the size and weight of the buildings as well as the building locations. For preliminary estimating purposes, it appears that it would be necessary to embed typical 20-ton timber piling on the order of 15 feet below the organic or soft cohesive soils. Piling lengths up to 50 feet could then be anticipated in some areas. It is estimated that industrial buildings over about 30 percent of the tract would require the use of piling.

In areas of borings ST-1, 13, 22, and 23, the more limited depths of fill and organic materials would permit an economical excavation-backfill approach. All materials noted as being either fill or organic would have to be totally removed from the entire area of individual industrial buildings. That is, it would be necessary to remove these materials both from below footings and floor slabs. Again, the cost of such procedures would be a function of conditions at actual building locations. It does appear that much of the inplace material would be suitable for stockpiling and reuse as compacted fill. This would be an offsetting factor against the cost of the operations. It is estimated that such an excavation-backfill approach would be necessary over approximately 20 percent of the tract.

1500088

In the area of the other 9 borings, namely ST-3, 4, 5, 6, 7, 9, 10, 15, 16, and 21, it appears that the natural mineral soils would be competent for support of typical industrial buildings. The density of these materials, as recorded by the penetration resistances, is somewhat variable so, depending upon actual building locations, it might be necessary to restrict loadings in some areas. However, the minimum loading suggested based on these borings is 1500 pounds per square foot (psf). This value would likely require footings expanded somewhat wider than normal for a typical light-weight industrial building.

It should be noted that the purpose of the investigation was to outline general foundation conditions over the tract. A relatively limited number of borings was then taken. Conclusions and/or preliminary recommendations of this report are then, of necessity, based upon data obtained from the relatively limited number of borings. As plans for development of the tract progress, the taking of additional borings for specific individual buildings would be desirable to define conditions in actual locations of proposed buildings. Also, when additional borings are taken, areas requiring special foundation procedures might vary from the percentages indicated. Such percentages are based on borings taken to date and are thus approximate.

If we can be of further assistance in evaluating these data, or in taking additional borings, kindly contact us at your convenience.

Very truly yours,

SOIL ENGINEERING SERVICES, INC.

J. S. Brown, P.E.
Soils Engineer

JSB:mlk
Enclosures

1500089

SOIL ENGINEERING SERVICES INC

LOG OF BORING

PROJECT:	BORING: ST-1
89-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minnesota	LOCATION:
	DATE: 9/29/89 SCALE:

Elev.	Depth	Description of Materials	SPT	WL	Tests or Notes
193.3	0				
		Fill, Sandy Loam, non to slightly plastic, with some Fine Gravel, grey brown, moist (loose)	3		
186.3	7				
185.3	8	Peat and Organic Loam, black, moist			
		Clay Loam, grey brown, slightly moist (rather soft)	5		
183.3	10				
		Sandy Loam, non to slightly plastic, with some Fine Gravel, grey brown, moist to wet (stiff to very stiff)	13	▽	
			18		
169.3	24				
		Fine to Medium Sand, with some Fine Gravel, brown to grey brown, wet (loose to medium)	5		
			4		
			11		
			20		
			17		
		150000			
143.3	50		15		
		Water level down 11' when measured in hollow-stem auger prior to jetting. Hole [illegible]			

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Creosoting Co. Tract
W of 2nd Street NW & Republic Ave.
St. Louis Park, Minnesota

BORING: ST-2
LOCATION:
DATE: 10/1/69 SCALE: [illegible]

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
190.9	0				
		Fill, Medium to Coarse Sand and Fine Gravel, black to brown, moist to wet with a trace of Peat at the 11-foot depth (loose)	5 2	▽	Water level down 10.5' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
177.9	13				
		Silty Clay Loam, grey, moist to wet (medium)	8 6		
166.9	22				
		Medium to Coarse Sand and Fine Gravel, grey, wet (medium)	12		
165.9	25				

LOG OF BORING

PROJECT: 69-376 Preliminary Soil Borings Republic Creosoting Company Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: TT-3 LOCATION:
	DATE: 9/25/69 SCALE: [illegible]

Elev. 194.1	Depth 0	Description of Materials	SPT	WL	Tests or Notes
		Medium to Coarse Sand and Fine to Medium Gravel, brown, moist to wet (medium)	24		
			17		
			24	▽	
177.1	17				
		Medium to Coarse Sand with some Fine Gravel, with a thin lense of Clay Loam at the 40-foot depth grey, wet, (medium)	13		
			15		
			17		
			18		
			21		
			19		
144.1	50	1500092	16		
		Water level down 15' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

LOG OF BORING

PROJECT: 89-326	Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn	BORING: ST-4 LOCATION: DATE: 10/1/89 SCALE: 1"=5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
168.4	0				
165.4	3	Fine to Medium Sand with some Fine Gravel, brown to black, moist			
		Fine to Medium Sand, with some Medium to Coarse Gravel, brown to grey brown, wet (loose to medium)	5		
			8	▽	
			3		
			8		
			5		
158.4	30		10		
		Water level down 10' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

1500093

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Creosoting Co. Tract
W of 2nd Street NW & Republic Ave.
St. Louis Park, Minn.

BORING: ST-5
LOCATION:
DATE: 10/ /69 SCALE: 1"=5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
186.4	0				
		Fill, Fine to Medium Sand with some Fine Gravel, brown, moist to wet (loose)	9		
			2	▽	
175.4	11				
174.4	12	slightly Fibrous Peat, black, moist			
		Organic Silt Loam with shells, black to dark grey, moist	8		
170.4	16				
		Muck, olive, moist to wet (soft)	4		
164.4	22				
		Silt Loam to Silty Clay Loam, with some Fine Gravel and lenses of Sand moist to wet (soft to very soft)	4		
			1		
			4		
148.4	38				
		Sandy Loam, plastic, with some Fine Gravel, grey, moist (very stiff)	17		
141.4	45		15		
		Water level down 10.5' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

15/100

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Creosoting Co. Tract
W of 2nd Street NW & Republic Ave.
St. Louis Park, Minn.

BORING: ST-6
LOCATION:

DATE: 10/1/69 SCALE 1"=3'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
189.7	0				
		Fine to Medium Sand with some Fine Grave brown, moist			
185.7	4				
		Sandy Loam, plastic, with some Fine Gravel, grey, moist to wet (very stiff)	25		
			18	▽	
176.7	13				
		Fine to Medium Sand, with some Fine Gravel, brown, wet (medium)	12		
			11		Water level down 15' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
164.7	25		23		

1500055

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street & Republic Ave. St. Louis Park, Minn.	BORING: ST-7 LOCATION: DATE: 10/7/69	SCALE: 1"=3'

Elev. 185.7	Depth 0	Description of Materials	BPF	WL	Tests or Notes
		Fine to Medium Sand, brown, moist (medium)	19		
			16	▽	
171.7	14				
		Medium to Coarse Sand and Fine Gravel, brown, moist to wet (loose to medium)	5		Water level down 9' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
			21		
160.7	25		12		

1500096

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: CT-3 LOCATION:
	DATE: 10/7/69 SCALE: 1"=5'

Elev. 185.1	Depth 5	Description of Materials	BPF	WL	Tests or Notes
179.1	6	Fill, Fine to Medium Sand, with some Fine Gravel, brown to black, moist (loose)	3		
170.1	15	Fibrous Peat, brown to black, moist	9 3	▽	
160.1	25	Silty Clay, grey, wet (soft to very soft)	3 1		
150.1	35	Medium to Coarse Sand and Fine Gravel, grey, wet (medium)	10 10		
		Water level down 9.5' when measured in hollow-stem auger prior to jetting. Hole caved-in upon with drawal of auger making additional water level measurements impossible.			

1500C97

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-9 LOCATION: DATE: 10-7-69 SCALE: 1" = 5'

Elev. 166.1	Depth 0	Description of Materials	SPF	WL	Tests or Notes
		Fine to Medium Sand with some Fine Gravel brown to black, moist			
152.1	4				
		Medium to Coarse Sand and Fine Gravel, brown, moist to wet (mostly medium)	29		
			10	▽	Water level down 10' when measured in hollow-stem auger prior to jetting, not caved-in upon withdrawal of auger making additional water level measurements impossible.
			7		* brown, wet (stiff)
			19		
162.1	24				
161.1	25	Fine Sandy Loam, slightly plastic, *	14		

1500098

LOG OF BORING

PROJECT	BORING: 57-10
69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street and Republic Ave. St. Louis Park, Minn.	LOCATION:
	DATE: 7/22-30/69 SCALE: 1" = 5'

Elev.	Depth	Description of Materials	BPF	W/L	Tests or Notes
164.0	0				
		Fine to Medium Sand and Fine Gravel, brown, moist to wet (medium)	14		
			13	▽	
			11		
			10		
160.0	24				
159.0	25	Fine Sandy Loam, plastic, grey, moist *	14		
		Fine to Medium Sand and Fine Gravel, brown, wet (medium)	[illegible]		
			12		
			9		
			17		

1500099

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Creosoting Co. Tract
W of 2nd Street and Republic Ave.
St. Louis Park, Minn.

BORING: ST-11
LOCATION:

DATE 10/7-8/69 SCALE 1"=5'

Elev. 182.9	Depth 0	Description of Materials	BPF	WL	Tests or Notes
179.9	3	Fill, Crushed rock over Fine to Medium Sand, brown to black, moist			
176.9	6	Fill, Clay Loam with some Fine Gravel, grey, moist	7		
173.9	9	Peat, slightly Fibrous, black, moist		▽	
168.9	14	Fine to Medium Sand, grey, wet (loose)	3		
		Medium to Coarse Sand and Fine Gravel, with some evidence of boulders, brown, wet (loose to medium)	6		
			6		
			5		
			53		
			5		
142.9	40		18		
		Water level down 9' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

150010

LOG OF BORING

PROJECT: 69-326	Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-13 LOCATION: DATE: 10/8/67 SCALE: 1"= 3'

Elev.	Depth	Description of Materials	SPT	WL	Tests or Notes
182.5	0				
		Fine to Medium Sand and Fine Gravel, brown, moist (possibly fill)			
178.5	4				
			17		
		Medium to Coarse Sand and Fine Gravel, brown, moist to wet (loose to medium)		▽	
			8		
			7		
			9		Water level down 9' when mesured in hollow-stem auger prior to jetting. Hole caved-in upon with drawal of auger making additional water level measurements impossible.
157.5	25		21		

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creameries Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-14 LOCATION:
	DATE 10/3/69 SCALE: 1" = 5'

Elev. 181.2	Depth 0	Description of Materials	SPT	W.L.	Tests or Notes
		Fill, Fine to Medium Sand and Fine Gravel, with cinders, black, moist			
177.2	4				
		Fibrous Peat, dark brown, moist	2		
			2	▽	
166.7	14.5				
		Medium to Coarse Sand and Fine Gravel, grey, wet (loose to medium)	10		
			9		
			11		
151.2	30		11		
		Water level down 9.5' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

1500102

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-15 LOCATION: DATE 10/7/69 SCALE 1"=2'

Elev. 182.3	Depth 0	Description of Materials	BPF	WL	Tests or Notes
		Fine to Medium Sand with some Fine Gravel, black, moist			
178.3	4				
			10		
		Medium to Coarse Sand and Fine Gravel, brown, moist to wet (medium)		▽	Water level down 9' when measured in hollow-stem auger prior to jetting. Hole caves-in upon withdrawal of auger making additional water level measurements impossible.
			11		
			9		
			10		
157.3	25		21		

1500104

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Creosoting Co. Tract
W of 2nd Street N.W. & Republic Ave.
St. Louis Park, Minn.

BORING: ST-14
LOCATION:
DATE: 10/9/67 SCALE: 1" = 3'

Elev.	Depth	Description of Materials	SPF	WL	Tests or Notes
186.6	0				
		Fine to Medium Sand and Fine Gravel, brown, moist (loose to medium)	8		
			16	▽	
172.6	14				
		Silt Loam, slightly plastic brown, wet (stiff)	16		
168.6	18				Water level down 10' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
		Fine Sandy Loam, slightly plastic, grey, wet (stiff)	13		
164.6	22				
		Fine to Medium Sand and Fine Gravel, brown, moist to wet	17		
161.6	25				

1500105

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Crossing Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-17 LOCATION: DATE: 10/7/69 SCALE: 1" = 5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
182.2	0				
179.2	3	Fill, Crushed Rock over Medium to Coarse Sand and Fine Gravel, brown, moist			
178.2	4	Fill, Silty Clay Loam, lightly brown, moist			
175.2	7	Fill, Silt Loam, organic, black mottled with white, moist	2		
169.2	13	Peat and Muck, black, moist	5	▽	
162.7	19.5	Silt Loam, slightly plastic, organic, grey, moist to wet (soft)	3		
		Medium to Coarse Sand and Fine Gravel, grey, wet (loose to medium)	3		
			5		
			6		
			8		
142.2	40		10		
		Water level down 9' when measured in hollow-stem auger prior to jetting, hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

150010F

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-12 LOCATION: DATE: 10/3/69 SCALE 1" = 5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
181.3	0				
177.3	4	Fill, Fine to Medium Sand and Fine Gravel, black, moist			
		Fill, Fine to Medium Sand and Fine Gravel, grey, moist (medium)	14	▽	
170.3	11		4		
		Peat and Muck, black to olive, moist (soft)	3		
			3		
			7		
151.8	29.5		7		
		Medium to Coarse Sand and Fine Gravel grey, wet (loose to medium)	7		
141.3	40		10		
		Water level down 9' when measured in hollow-stem auger prior to jetting. Hole caves-in upon withdrawal of auger making additional water level measurements impossible.			

LOG OF BORING

PROJECT: 89-326	Preliminary Soil Borings Republic Crossing Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minnesota	BORING: ST-19 LOCATION: DATE: 9/03/67	SCALE: 1"=5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
180.7	0				
177.7	3	Fill, Fine to Medium Sand with some Fine to Medium Gravel, brown to black, moist			
		Peat and Muck, black, moist	4		
			2	▽	
167.7	13				
		Fine to Medium Sand, with some Fine Gravel, grey to grey brown, wet (loose)	0		
			9		
155.7	25		6		
		Medium to Coarse Sand and Fine Gravel, grey brown, wet (loose to medium)	7		
			20		
			19		
			14		

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings
Republic Crossing Tract
W of 2nd Street NW & Republic Ave.
St. Louis Park, Minn.

BORING: ST-[illegible]
LOCATION:

DATE [illegible] SCALE [illegible]

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
182.5	0	Fill, Tar, Cinders, Fine to Medium Sand and Fine Gravel, brown and black			
178.5	4				
		Fibrous Peat, dark brown, moist	5		
			3	▽	
170.5	12				
		Medium to Coarse Sand and Fine Gravel, grey, wet (medium to loose)	13		
			9		
			7		
			7		
147.5	35		11		
		Water level down 9' when measured in hollow-stem augers prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.			

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: [illegible] LOCATION: DATE: 10/10/69 SCALE 1" = 5'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
181.6	0				
178.6	3	Loam Topsoil, plastic, black, moist			
177.6	4	Clay Loam, brown, moist			
		Medium to Coarse Sand and Fine Gravel, grey brown, moist (medium)	17		
			15	▽	
167.6	14				
		Medium to Coarse Sand and Fine Gravel, grey, wet (medium)	[illegible]		
			14		
158.6	23				
156.6	25	Sandy Loam, slightly plastic, with some Fine Gravel, grey brown, wet (very stiff)	39		
		Medium to Coarse Sand and Fine Gravel, grey, wet (mostly medium)	13		
			10		
			11		
			9		

LOG OF BORING

PROJECT: 69-326	Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-22 LOCATION:
		DATE: 10/10/69 SCALE: 1" = 2'

Elev.	Depth	Description of Materials	BPF	WL	Tests or Notes
182.2	0				
180.7	1.5	Fill, Fine to Medium Sand, black, moist			
173.2	9	Fine to Medium Sand, with a trace of Fine Gravel, brown, moist (loose)	8	▽	
169.2	13	Sandy Loam, slightly plastic, brown, moist to wet (loose)	7		
		Medium Sand and Fine to Medium Gravel, brown, wet (loose to medium)	7 19		Water level down 8.5' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
167.7	24.5				

1500111

LOG OF BORING

PROJECT: 69-326 Preliminary Soil Borings Republic Creosoting Co. Tract W of 2nd Street NW & Republic Ave. St. Louis Park, Minn.	BORING: ST-23 LOCATION:
	DATE: 10/10/69 SCALE: 1" = 3'

Elev. 181.5	Depth 0	Description of Materials	BPF	WL	Tests or Notes
177.5	4	Fill, Fine to Medium Sand, with Fine Gravel with some evidence of brick and other debris, dark brown, moist			
		Fine to Medium Sand and Fine Gravel, brown, moist to wet (loose to medium)	8	▽	
			8		Water level down 9' when measured in hollow-stem auger prior to jetting. Hole caved-in upon withdrawal of auger making additional water level measurements impossible.
			6		
			13		

1500112

PARTICLE SIZE IDENTIFICATION

Boulders	over 3"
Gravel	
Coarse	1" – 3"
Medium	1/2" – 1"
Fine	No. 4 – 1/2"
Sand	
Coarse	No. 4 – No. 10
Medium	No. 10 – No. 40
Fine	No. 40 – No. 100
Very Fine	No. 100 – No. 200
Silt	No. 200 – .005 mm
Clay	less than .005 mm

SOIL INTRUSIONS

THICKNESS

lense	0 – 1/8"
seam	1/8" – 1"
layer	1" – 12"
varved	alternating seams or lenses of clays and silts in lake deposit

RELATIVE PROPORTIONS

with a few	0 – 10%
with some	11 – 20%
with	over 20%

MOISTURE CONTENT

Dry	less than 5%
Moist	under optimum moisture
Wet	over optimum moisture
Waterbearing	saturated sand

ORGANIC CONTENT

0 – 5%	non to slightly organic
6 – 10%	slightly organic
11 – 25%	organic
26 – 65%	muck
65+	peat

RELATIVE DENSITY OF COHESIONLESS SOILS

very loose	0 – 4 BPF
loose	5 – 10 BPF
medium dense	11 – 30 BPF
dense	31 – 50 BPF
very dense	50+ BPF

CONSISTENCY OF COHESIVE SOILS

very soft	0 – 1 BPF
soft	1 – 3 BPF
rather soft	4 – 5 BPF
medium	6 – 8 BPF
rather stiff	9 – 12 BPF
stiff	13 – 16 BPF
very stiff	17 – 30 BPF
hard	30+ BPF

PLASTICITY OF SOILS WITH LESS THAN 20% CLAY

non plastic	gritty, cannot thread
slightly plastic	rough to smooth, hard to thread
plastic	smooth to waxy, easy to thread

RELATIVE PROPORTIONS OF GRAVEL

trace	0 – 5%
little	6 – 15%
some	16 – 30%
and	31 – 50%

LABORATORY TESTS

DD	Dry Density, pcf	OC	Organic Content, %
WD	Wet Density, pcf	S	Percent of Saturation, %
MC	Natural Moisture Content, %	SG	Specific Gravity
LL	Liquid Limit, %	C	Cohesion
PL	Plastic Limit, %	Ø	Angle of Internal Friction
PI	Plasticity Index, %	qu	Unconfined Compressive Strength

DRILLING NOTES: Standard penetration test borings were advanced by 2¼" or 3¼" I.D. hollow-stem augers unless noted otherwise. Jetting water was used to clean out auger prior to sampling only where indicated on logs. Standard penetration test borings are designated by the prefix "ST" (Split Tube).
Power auger borings were advanced by 4" or 6" diameter, continuous-flite, solid stem augers. Soil classification and strata depths are inferred from disturbed samples augered to the surface and are therefore somewhat approximate. Power auger borings are designated by the prefix "B".
Hand probings were advanced manually with a 1¼" diameter probe and are limited to the depth from which the probe can be manually withdrawn. Hand probings are indicated by the prefix "H".

CLASSIFICATION: Classification on logs is made by inspection in accordance with the U. S. Bureau of Soils Classification System (see attached chart) using visual-manual procedures unless noted otherwise.

GROUND WATER: Observations were made at the times indicated. Porosity of soil strata, seasonal weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

SAMPLING: All samples are taken with the standard 2" O. D. split-tube sampler, except where noted. TW indicates thin-wall undisturbed sample.

BPF: Numbers indicate blows per foot recorded in standard penetration test, also known as "N" value. The sampler is set 6" into undisturbed soil below the hollow-stem auger. Driving resistances are then counted for second and third 6" increments and added to get BPF. Where they differ significantly, they are reported in the following form – 2/12 for the second and third 6" increments respectively.

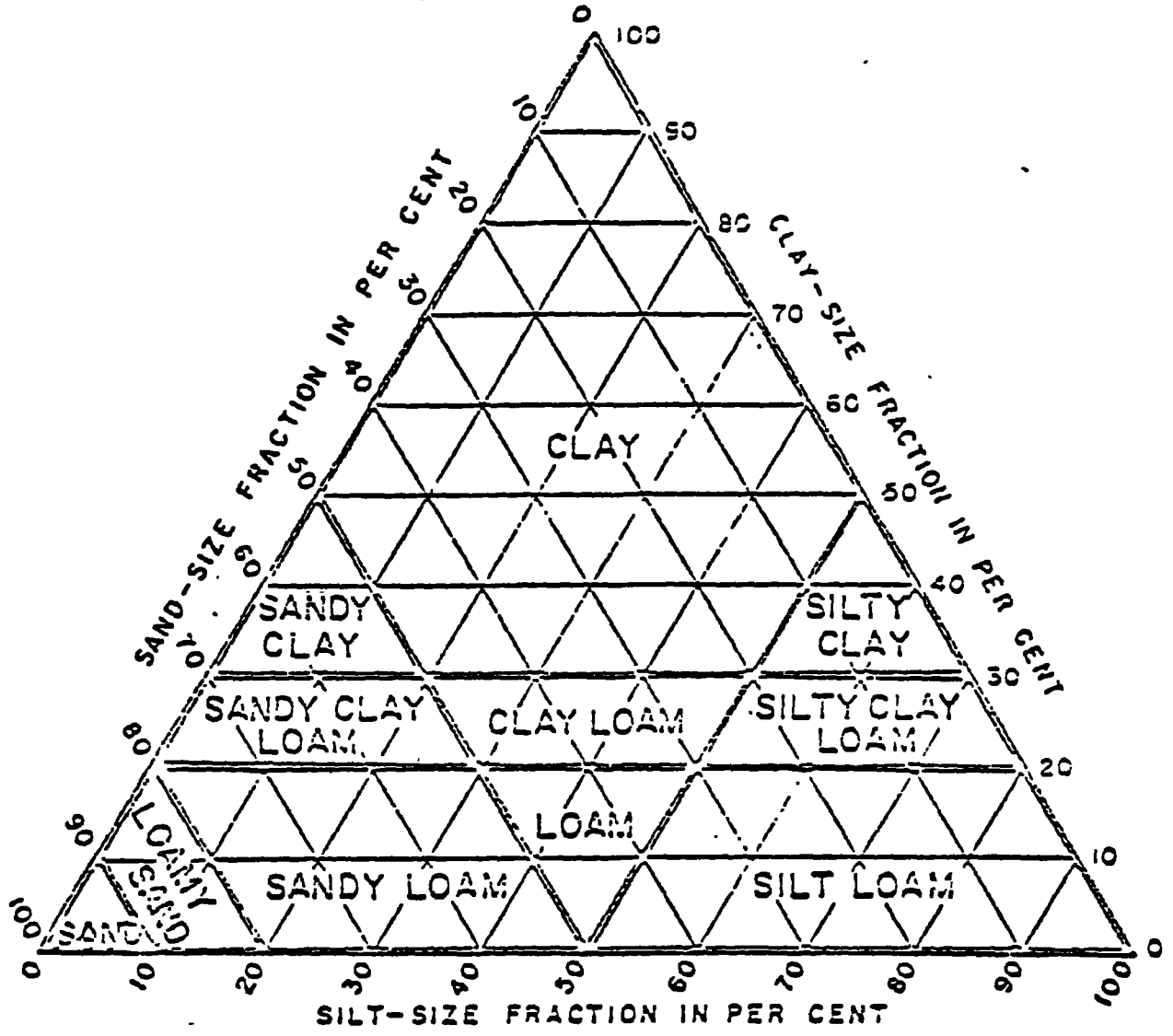
WH: WH indicates that sampler penetrated soil under weight of hammer and rods alone, driving not required.

NOTE: All tests run in accordance with applicable ASTM standards.

1500113

SOIL ENGINEERING SERVICES INC

SOIL ENGINEERING SERVICES INC.



SOILS

TEXTURAL CLASSIFICATION CHART

ADAPTED FROM U.S. BUREAU OF CHEMISTRY AND SOILS

SIZES OF SOIL SEPARATES

FRACTION	PARTICLE DIAMETER
SAND	FROM 2.0 TO 0.074 MM.
SILT	FROM 0.074 TO 0.005 MM.
CLAY	LESS THAN 0.005 MM.

1500114

APPENDIX H

1500115

AGRICULTURAL EXTENSION SERVICE
UNIVERSITY OF MINNESOTA

DEPARTMENT OF HORTICULTURAL SCIENCE
ST. PAUL, MINNESOTA 55101

July 7, 1972

Mr. Harry McPhee
St. Louis Park Health Department
5005 Minnetonka Blvd.
St. Louis Park, MN

Dear Mr. McPhee:

It is the consensus of opinion of Dr. Marvin Smith, Extension Forestor, Dr. Leon Snyder, Director of the Landscape Arboretum, Mr. Lou Hendricks, Extension Forestor, Dr. Harold Wilkins, Extension Horticulturist and myself that creosote soaked soil is not suitable for growing plants. Removal of such soil to a debth of several feet would be necessary to grow trees and shrubs, and we do not know what effect deep layers of creosote would have on soil and plants above it.

Oil soaked road beds have been known to inhibit plant growth for twenty years.

I would suggest that you employ an experienced and imaginative landscape architect to study the property under consideration to see whether creosote soaked areas can be designed for parking lots, paved areas or surfaced play grounds. Planter boxes might be planned for such architecturally treated spaces. Green spaces could then be developed in areas now occupied by plants, since existing conditions would be an excellent indication of soil capable of supporting plant growth.

1500116

Since creosote is applied to wood products for the express purpose of preventing fungus growth (which is part of the plant kingdom), it is logical to conclude that higher plants, usually more demanding of their environment, could not live in a creosoted soil.

Sincerely yours,

Jane P. McKinnon

(Mrs.) Jane P. McKinnon
Extension Horticulturist

JPK:mb

1500117

APPENDIX I

1500118

April [illegible], 1972

Mr. [illegible]
Minnehaha Watershed District
P. O. Box [illegible]
Hopkins, Minnesota

Dear [illegible]

In the near future, our Engineering Department will be planning a storm sewer system to serve the Republic Creek area. As you know, it will be necessary that this drainage run into Minnehaha Creek. I am wondering if we can obtain any free information and direction from the Board of Managers as to the type of system to be required (or encouraged). It would be very helpful if you could ask Gene Hickok to work with our City Engineers in designing this project and to give us any assistance possible inasmuch as it would appear to be a mutual objective to ensure proper water quality in the Minnehaha Creek.

Specifically, I am concerned about not only the type of drainage system that is to be [illegible] but also attempts to avoid any possibility of having to build a treatment plant for this drainage water. Not only would such a plant be extremely expensive, but the maintenance in future years would certainly be a tremendous burden upon this City. Does your office or an agency have any information as to the possibility of obtaining a study grant or feasibility money for such a storm sewer system under any of the pollution Acts? If not, would there be any possibility for the City and the Minnehaha Watershed District to work together in an attempt to resolve this matter at an early date and perhaps obtain some federal assistance for its consummation? I strongly feel that any storm sewer system within this particular area is as much a problem for the Watershed District as it is for the City and therefore, I believe that we should have complete coordination and cooperation to ensure that there is no problem after our engineering design is underway and/or such a system is constructed. This is why I am writing you in order to seek your assistance and also receive any information available to the Board of Managers as to the possibility of receiving grant monies or any other kinds of assistance. It would be my hope that if financial

1500119

Mr. Dan [illegible]
April [illegible], 1977
Page

assistance is available from any state, local or federal agency, that the Board of Managers of the Watershed District could be of great help in helping us receive such grant funds because of this particular problem.

Thank you for your consideration and I look forward to discussing this matter with you further in the near future.

Best regards,

[illegible] Churches
City Manager

cc:rg
cc: Director of Public Works
Director of Health

1500120

HUD-56 (4-70) PREVIOUS EDITION MAY BE USED

Memorandum

U.S. DEPARTMENT OF
HOUSING AND URBAN DEVELOPMENT

TO : Thomas T. Feeney, Area Director
Minneapolis, Minnesota

DATE: August 10, 197

IN REPLY REFER TO: 5.5

FROM : Robert W. Bruss, Sanitary Engineer
Milwaukee, Wisconsin

SUBJECT: 80 Acre Site
West of 2nd Street NW and Republic Avenue
St. Louis Park, Minnesota
(Republic Creosoting Company)

The captioned site was viewed July 12, 1972 in the company of Chief Architect G. Spandle.

1. The site is presently owned by the Republic Creosoting Company and has been used as a base of operations for approximately seventy (70) years. During this period the entire site has become saturated and impregnated with creosote and other coal tar derivatives to depths in excess of three (3) feet or into the ground water table which is very near the surface. At one time this site was very swampy, but was filled.

2. A soils report from Soil Engineering Services, Inc. dated October 13, 1969 indicate that special foundation procedures would be necessary over 50 percent of the tract.

3. The site has concave topographic features situated in a valley 15 to 20 feet below the contiguous area. The site does not have a positive drainage outfall.

4. Due to the nature of creosote and pitch, it is almost impossible to place fill material over the impregnated areas because in a short period of time it will again rise to the surface. The entire area would have to be excavated below the creosote.

5. As the site was once a swamp peat is present and would also have to be removed or possible build up of explosive or toxic gases may occur. Section 72905.4 of Book 2, Volume VII of the FHA manual states, "Special Hazards and Nuisances. Such conditions include unusual topography, subsidence, flooding, unstable soils, unusual traffic hazards and noise, smoke, chemical fumes, noxious odors, stagnant ponds or marshes. Any of these or similar conditio if serious and/or impossible to overcome, will render a specific location ineligible for mortgage insurance.

6. HUD policy requires us to consider the social and human impacts as well as physical dimensions of the environment. We should be thinking of the social impact of the project on the community and on the future site residents. Clearly the road configuration, lack of positive drainage, terrain features and project design will strongly influence the grain and texture of the urban fabric.

7. It is my very strong opinion and recommendation <u>the site be rejected for the construction of any residential units</u> due to:

   a. Presence of undesirable chemicals in the soil.

   b. Lack of drainage.

   c. Poor bearing capacity of the soil.

   d. Excessive site preparation expenses.

   e. Climatic conditions producing air stagnation thereby, environmentally effecting the livability, health and welfare of future homeowners.

HUD-FHA objectives are to raise the housing standards with well planned, safe and soundly constructed houses in suitable areas. This, in my opinion, does not mean that houses should be constructed on substandard lots or areas that may jeopardize the health, safety and welfare of the homeowners.

Sanitary Engineer
Architecture & Engineering

cc: Director of Operations
Program Manager
Chief Architect - Arch & Eng Section
Chief Appraiser - Multifamily
Assistant Director of Technical Services

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
MINNEAPOLIS-ST. PAUL AREA OFFICE
GRIGGS-MIDWAY BUILDING, 1821 UNIVERSITY AVENUE
ST. PAUL, MINNESOTA 55104

REGION V,
South Wacker Drive
Chicago, Illinois 60606

Classified

October 13, 1972

IN REPLY REFER TO:
PM:AA

RECEIVED
OCT 16 1972
CITY MANAGERS OFFICE
St. Louis Park, Minn.

The Honorable Frank Pucci
Mayor of St. Louis Park
St. Louis Park, Minnesota

Dear Mayor Pucci:

We share your concern over the timing of the proposed Neighborhood Development Program (NDP) project for your community. As you are aware, I have publicly stated my support for a program that not only removes one of the largest metropolitan eyesores but provides a building site for an economic mix of housing in your community.

Congressman Frenzel has been in repeated contact with the Department concerning the development of the application. This high degree of concern expressed by Congressman Frenzel and the outstanding work displayed by your staff have now resolved the serious technical questions associated with the NDP site and have made approval possible.

It is the intention of this office to fund the application to the maximum of our ability and thereby provide St. Louis Park an opportunity and financial assistance in solving a pressing community problem.

I would encourage you and the City Council to expedite the public hearing and modifications to the renewal plan in as timely a manner as possible. As these two requirements are met, the HUD Area Office will offer a formal contract on or before the 14th of December 1972 and authorize your community to proceed with the proposed project.

Sincerely,

Thomas T. Feeney
Area Director
Acting

50004462

RTC 242

P.W

CSM

ORR·SCHELEN·MAYERON & ASSOCIATES, INC.

Consulting Engineers

January 29, 1973

Environmental Protection Agency
Transport Process Branch
1901 Fort Meyer Drive
Arlington, Virginia 22209

Attention: Mr. David Yount

Gentlemen:

We are beginning work on a study to storm sewer a 350 acre drainage area in the Minneapolis suburb of St. Louis Park. The outlet of the drainage area is to a fresh water stream. The requirements of the Watershed District having jurisdiction over the stream are that all storm water must be treated to remove pollutants prior to discharging to the stream. Of particular interest in this drainage area is that 80 acres of drainage area is heavily polluted with phenols left over from a creosote operation which has operated for the past 55 years on the site. Operations were ceased in 1972; however, surface waters on the site and the soil remain polluted with phenols. The scope of the study and subsequent treatment is many faceted. The first goal is to cleanse the surface water and soil to prevent discharge to the stream and migration down to underlying rock formation aquifers which are the source of water supply to the City of St. Louis Park and other Metropolitan communities. This project will reclaim the 80 acres, which the City now owns, to make it buildable and able to support growth of grass and trees. Preliminary plans are to provide low income housing on the site. The second goal is to provide continuing treatment of the surface runoff prior to discharge to the stream to preserve its environment.

Treatment of surface waters for phenol contaminants, cleansing of contaminated soil, migration of ground water pollutants and continuing treatment of storm water are areas in which additional research is necessary. We feel this situation is unique and that its solution will provide nationwide benefit.

1000067

2021 East Hennepin Avenue • Suite 238 • Minneapolis, Minnesota 55413 • 612/331-8660

As consultant engineers retained for the project we will investigate all facets as outlined above, utilizing all other available private and public on going research. From our investigation we will recommend and implement the necessary methods of treatment to reclaim this land and protect the environment.

Because of the new knowledge which will be derived from this study and construction, we believe it to be a project qualified for an E.P.A. Research and Development Grant. Please advise this office or the City of St. Louis Park where and how such grants may be made available. Total estimated cost of the project is $2,000,000.00.

Enclosed is a report which discusses foregoing testing and analysis of the extent of contamination within the area.

Very truly yours,

ORR-SCHELEN-MAYERON
& ASSOCIATES, INC.

Wayne R. Long

WRL/gg

cc: Mr. Dave Rudberg, City of St. Louis Park

P.W.

CSM

ORR·SCHELEN·MAYERON & ASSOCIATES, INC.

Consulting Engineers

January 29, 1973

Division of Water Quality,
Air and Water Programs
Environmental Protection Agency
Washington, D.C. 20006

Attention: Mr. R. K. Ballentine
Chief of Fresh Water Biological Control Section

Gentlemen:

We are beginning work on a study to storm sewer a 350 acre drainage area in the Minneapolis suburb of St. Louis Park. The outlet of the drainage area is to a fresh water stream. The requirements of the Watershed District having jurisdiction over the stream are that all storm water must be treated to remove pollutants prior to discharging to the stream. Of particular interest in this drainage area is that 80 acres of drainage area is heavily polluted with phenols left over from a creosote operation which has operated for the past 55 years on the site. Operations were ceased in 1972; however, surface waters on the site and the soil remain polluted with phenols. The scope of the study and subsequent treatment is many faceted. The first goal is to cleanse the surface water and soil to prevent discharge to the stream and migration down to underlying rock formation aquifers which are the source of water supply to the City of St. Louis Park and other Metropolitan communities. This project will reclaim the 80 acres, which the City now owns, to make it buildable and able to support growth of grass and trees. Preliminary plans are to provide low income housing on the site. The second goal is to provide continuing treatment of the surface runoff prior to discharge to the stream to preserve its environment.

Treatment of surface waters for phenol contaminants, cleansing of contaminated soil, migration of ground water pollutants and continuing treatment of storm water are areas in which additional research is necessary. We feel this situation is unique and that its solution will provide nationwide benefit.

1000069

2021 East Hennepin Avenue • Suite 238 • Minneapolis, Minnesota 55413 • 612/331-8650

As consultant engineers retained for the project we will investigate all facets as outlined above, utilizing all other available private and public on going research. From our investigation we will recommend and implement the necessary methods of treatment to reclaim this land and protect the environment.

Because of the new knowledge which will be derived from this study and construction, we believe it to be a project qualified for an E.P.A. Research and Development Grant. Please advise this office or the City of St. Louis Park where and how such grants may be made available. Total estimated cost of the project is $2,000,000.00.

Enclosed is a report which discusses foregoing testing and analysis of the extent of contamination within the area.

Very truly yours,

ORR-SCHELEN-MAYERON
& ASSOCIATES, INC.

Wayne R. Long

WRL/gg

cc: Mr. Dave Rudberg, City of St. Louis Park

RECEIVED
JAN 31 1975

MINNESOTA POLLUTION CONTROL AGENCY

1935 W. County Road B2, / Roseville, Minnesota 55113

(612)296-7232
January 23, 1975

Mr. A.H. Manzardo, Chief
Permit Branch, Region V
U.S. Environmental Protection Agency
230 South Dearborn
Chicago, Illinois 60604

Attention: Mr. Jack Newman

Re: City of St. Louis Park
St. Louis Park, Minnesota
Permit No: MN 0045489

Dear Mr. Newman:

As per the Memorandum of Agreement between the Minnesota Pollution Control Agency and the Environmental Protection Agency, we are enclosing the original plus one copy of the draft permit, briefing memo, fact sheet, if needed, public notice, mailing list, and a description of any other procedures used to circulate the public notice, if applicable, for the referenced applicant.

Provided that no objections or questionable comments are received during the public notice period and that no modifications are made to this permit, we are also requesting your concurrence for issuance of the referenced permit upon expiration of the public notice period

Please proceed with issuance of the public notice using the attached mailing labels (Categories 1 and 3) and mailing list (Category 2) previously submitted. Please place public notice in the Minneapolis Star Tribune.

By copy of this letter we are sending a duplicate of the draft permit to the applicant in accordance with WPC 36 (g) (3).

Yours very truly,

John M Lawrence

Richard Svanda, P.E., Head
Industrial Unit, Permits Section
Division of Water Quality

Enclosure (1)
cc: Mr. Chris Cherches, Mr. Wayne R. Long, Mr. Wayne Popham
Mr. Clarence Oster, EPA, Mpls.

40090575

AN EQUAL OPPORTUNITY EMPLOYER

Draft w/ BOD and SS
w/ X factor

Permit No: MN 0045489

Application No: MN 0045489

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STATE DISPOSAL SYSTEM PERMIT PROGRAM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; hereinafter the "Act"), Minnesota Statutes Chapters 115 and 116 as amended and Minnesota Pollution Control Agency Regulation WPC 36 (hereinafter Agency Regulation WPC 36)

CITY OF ST.LOUIS PARK

is authorized by the Minnesota Pollution Control Agency, to discharge from City Development Project including land farming and storm sewer projects located as shown on Pages 3 and 4 of 16.

to receiving water named the Minnehaha Creek.

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II, hereof.

The permit shall become effective on the date of issuance by the Director pending final approval by the Agency. The Permittee shall be notified of the final decision of the Agency regarding this permit.

This permit and the authorization to discharge shall expire at midnight, December 31, 1979 . The Permittee is not authorized to discharge after the above date of expiration. In order to receive authorization to discharge beyond the above date of expiration, the Permittee shall submit such information and forms as are required by the Agency no later than 180 days prior to the above date of expiration pursuant to Agency Regulation WPC 36.

Date

Grant J. Merritt, Executive Director
Minnesota Pollution Control Agency

4100444

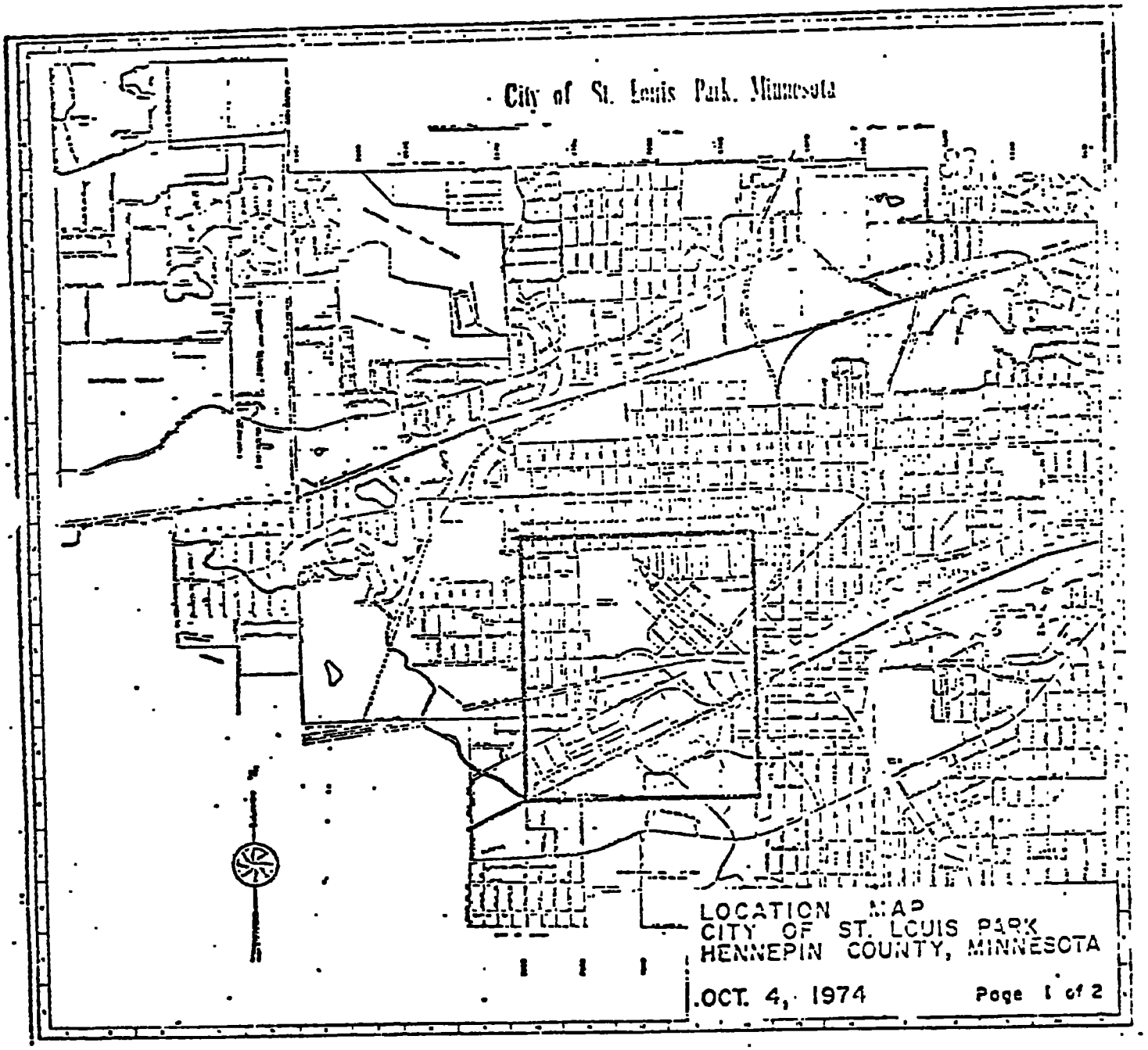
DESCRIPTION

The present proposed plans and specifications indicate that the discharge will flow from a disposal system consisting of pumps, pipes, appurtenances, storm sewer runoff collection system, two surface runoff holding lagoons sealed with a polyethylene liner, land farming facility for biological degradation of soils and a sulfur dioxide dechlorination system. The disposal system shall be designed to treat all wastewater pollutants resulting from the runoff collection system land farming operations and any other source that is identifiable to the discharge. The treated effluent will be discharged from the disposal system at an approximate rate of 279,300 gallons per day based on the average annual rainfall.

The principal activity at this facility is the treatment of contaminated surface soils and their associated surface water runoff. Contamination of the soils was largely a resultant of past creosoting and related industrial operations.

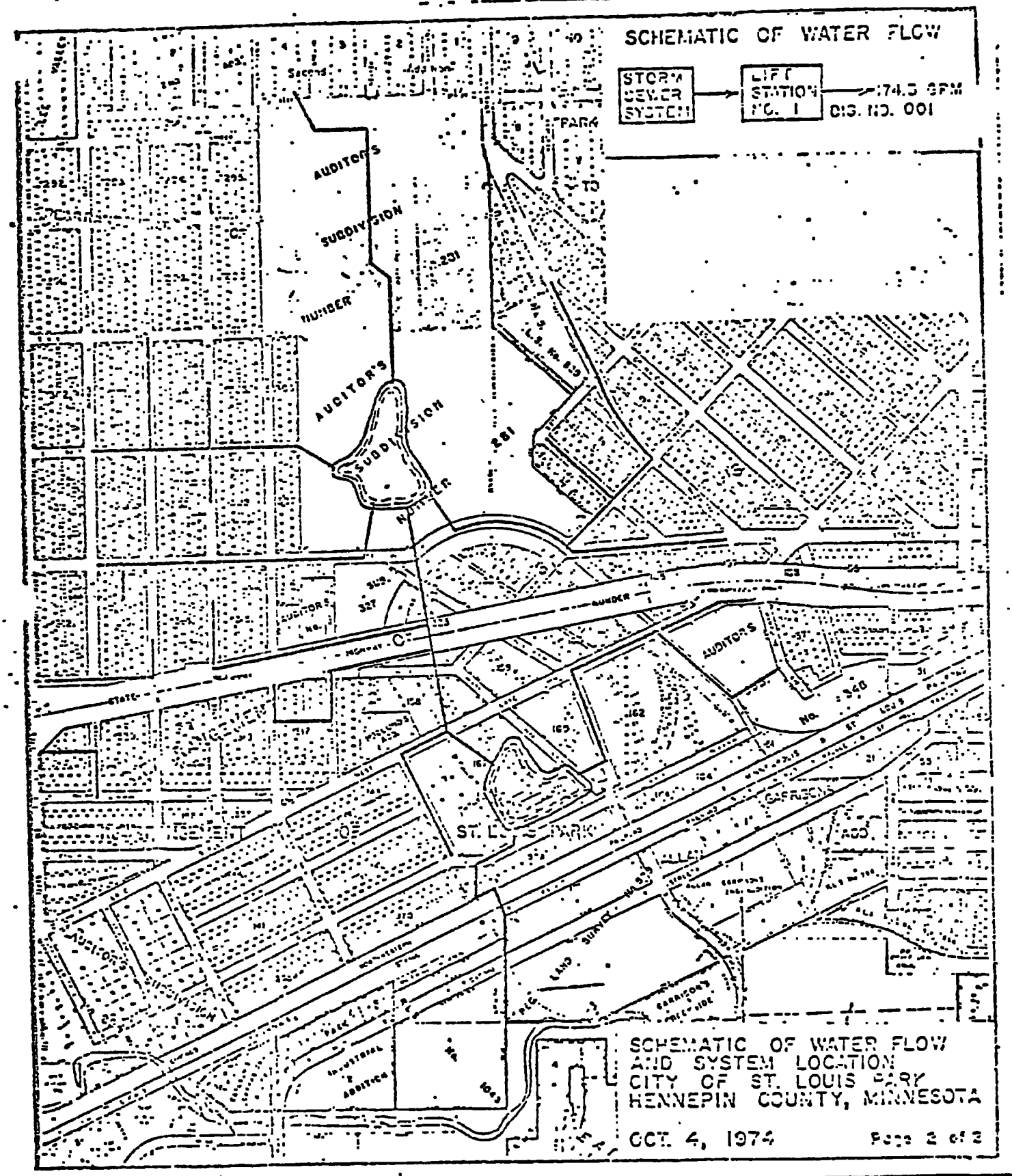
The storm sewer collection system is part of a development program, that the City of St. Louis Park is undertaking.

Permit No: MN 0045489



4100446

Permit No: MN 0045489



Permit No: MN 0045489

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until December 31, 1979, the Permittee is authorized to discharge from outfall serial number 001.

Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day Daily Avg	(lbs/day) Daily Max	Other Units Variable Daily Max	(Specify) Daily Max	Measurement Frequency	Sample Type
Flow in Minnehaha Creek (upstream of discharge)	-		-	-	Continuous	Daily
Flow-M^3/Day (MGD)	-	-	-	-	Continuous	Daily Total Flo
Oil and Grease	-	-	0.5xmg/l	15mg/l	Daily	Grab
Phenols	-	-	.01xmg/l	0.1mg/l	Daily	Grab
BOD_5	-	-	5xmg/l	45mg/l	Daily	Grab
Total Suspended Solids	-	-	5xmg/l	45mg/l	Daily	Grab
Total Chlorine Residual	-	-	0.01xmg/l	0.2mg/l	Daily	Grab
Zinc	-	-	.12xmg/l	1.0mg/l	Weekly	Grab
Cadmium	-	-	.03xmg/l	0.2mg/l	Weekly	Grab
Copper	-	-	.01xmg/l	0.5mg/l	Weekly	Grab
Nickel	-	-	0.52xmg/l	2.0mg/l	Weekly	Grab
Lead	-	-	0.03xmg/l	1.0mg/l	Weekly	Grab
Ammonia (as N)	-	-	1.0xmg/l	2.0mg/l	Weekly	Grab
Benzo-α-pyrene	-	-	-	0.01μg/l	Monthly	Grab
Chrysene	-	-	-	0.01μg/l	Monthly	Grab

The pH shall not be less than 6.5 nor greater than 8.5 and shall be monitored by daily grab sample. These upper and lower limitations are not subject to averaging and shall be met at all times.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a p[illegible]nt representative of the discharge to the Minnehaha Creek.

*See Other Requirements Part [illegible] J.5. [illegible] ta of all

410448

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date of this permit and lasting until December 31, 1979 the Permittee is authorized to discharge from outfall serial number 001.

Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	kg/day (lbs/day)		Other Units(Specify)			
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Measurement Frequency	Sample Type
Oil and Grease	-	-	10mg/l	-	Daily	Grab
BOD_5	-	-	25mg/l	-	Daily	Grab
Total Suspended Solids	-	-	30mg/l	-	Daily	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge to the Minnehaha Creek.

410049

OTHER REQUIREMENTS

1. Pretreatment

No pollutant shall be discharged from this facility to a publicly owned treatment works except in accordance with pretreatment standards established in accordance with the Act or Minnesota Statutes or any such local standards or requirements. No pollutant shall be discharged into any publicly owned disposal system which interferes with, passes through inadequately treated or otherwise is incompatible with such disposal system. The Permittee shall not make modifications to divert any discharge of pollutants authorized by this permit to a publicly owned treatment works without having first notified and received the approval of the Director.

2. The Permittee shall be responsible to provide treatment for all surface runoff water passing through the storm sewer system to bring the runoff water to the required standards. Plans for the treatment system shall be submitted to the Agency and are subject to its approval prior to commencement of the discharge.

3. This permit is neither a commitment to/or an approval of any subsequent development of this site and is without prejudice to the position of any party on the matter of responsibility for the cost of whatever ultimate work needs to be done to rehabilitate or eliminate any pollution associated to the soils and its ground waters.

4. The Permittee shall be responsible for the future removal or alteration of the storm sewer system as might be necessary as part of what ever work is needed to rehabilitate the underlying soil and its associated soils and ground waters.

5. Dilution Ratio, X

$$X=[(0.25)(\text{flow in Minnehaha Creek})+(\text{effluent flowrate})]\,/\,[\text{effluent flowrate}]$$

The flow rate utilized for calculation of the dilution ratio shall be the daily total effluent flow rate and the daily total flow rate for Minnehaha Creek.

MONITORING AND REPORTING

1. Representative Sampling

Samples shall be taken at a point representative of the discharge. Any monitoring measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Monitoring Plan

The Permittee shall submit a monitoring plan to the Director within forty five (45) days after date of issuance of this permit for approval and thereafter submit a written report to the Director each month in compliance with such plan. The monitoring plan shall include the items described in Agency Regulation WPC 36(n)(2).

3. Reporting

Monitoring results obtained during the previous month shall be summarized and reported on the designated "Discharge Monitoring Report Form", and received or postmarked no later than the 21st day of the month following the completed reporting period. The first report is due on April 21, 1975
Signed copies of these, and all other reports required herein, shall be submitted to the Director at the following address:

Director
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113
Attn: Compliance and Enforcement Section

4. Reduction or Elimination of Monitoring Requirements

If the Permittee after monitoring for at least six (6) months determines that he is consistently meeting the effluent limits contained herein, the Permittee may request of the Director that the monitoring requirements be reduced or eliminated. The determination shall be binding upon the Permittee.

5. Monitoring Report

The Permittee shall report the results of the monitoring requirements in the units specified in this permit. A report or written statement is to be submitted even if no discharge occurred during the reporting period. The monthly report shall include (a) a description of any modifications in the waste collection, treatment and disposal facilities; (b) any changes in operational procedures; (c) any other significant activities which alter the nature or frequency of the discharge; (d) any other material factors regarding the conditions of this permit and such information as the Minnesota Pollution Control Agency or Director may reasonably require of the Permittee, pursuant to Minnesota Statutes Chapters 115 and 116 as amended and Agency Regulation WPC 36(n).

Definitions

a. "Monthly Average" Discharge

1. Weight Basis - The "monthly average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the facility was operating. Where less than daily sampling is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

2. Concentration Basis - The "monthly average" concentration means the arithmetic average (weighted by flow value) of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Variable Daily Maximum" Discharge

1. Weight Basis - The "variable daily maximum" discharge means the total discharge by weight during a calendar day, based on the calculation of the Dilution Ratio, X.

2. Concentration Basis - The "variable daily maximum" concentration means maximum daily concentration, based on the calculation of the Dilution Ratio, X.

c. "Daily Maximum" Discharge

1. Weight Basis - The "daily maximum" discharge means the total discharge by weight during any calendar day.

2. Concentration Basis - The "daily maximum" concentration means the daily determination of concentration for any calendar day, AT no time shall the discharge exceed this maximum.

d. The "Agency" means the Minnesota Pollution Control Agency, as constituted pursuant to Minnesota Statutes, Section 116.02, Subd. 1.

e. The "Director" means the Executive Director of the Minnesota Pollution Control Agency as described in Minnesota Statutes, Section 116.03 as amended.

f. The "Regional Administrator" means the EPA Regional Administrator for the region in which Minnesota is located (now Region V).

g. The "Act" means the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq.

h. A "Composite" sample, for monitoring requirements, shall be defined as no less than a series of grab samples collected at equally spaced hourly intervals and proportioned according to flow.

i. Pollutants, Toxic Pollutants, Other Wastes, Point Source, Disposal System, Waters of the State and other terms for the purpose of this permit are defined in Section 502 of the Act and Minnesota Statutes Section 115.01 as amended and Agency Regulation WPC 36 (b).

7. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(g) of the Act, and Minnesota Statutes, Section 115.03, Subd. 1(e)(7), as amended.

The Permittee shall periodically calibrate and perform maintenance on all monitoring and analytical instrumentation used to monitor pollutants discharged under authorization by this permit, at intervals to insure accuracy of measurements. The Permittee shall maintain written records of all such calibrations and maintenance.

8. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person who performed the analyses;

d. The analytical techniques, procedures or methods used; and

e. The results of such analyses.

9. Additional Monitoring by Permittee

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by the Minnesota Pollution Control Agency or Director, the results of such monitoring shall be included in the calculation and reporting of values submitted on the designated Discharge Monitoring Report Form. Any increased monitoring frequency shall also be indicated on such designated form.

10. Recording and Records Retention

All sampling and analytical records required by the conditions of this permit shall be retained by the Permittee for a minimum of three (3) years. The Permittee shall also retain all original recordings from any continuous monitoring instrumentation, and any calibration and maintenance records, for a minimum of three (3) years. These retention periods shall be extended during the course of any legal or administrative proceedings or when so requested by the Regional Administrator, the Minnesota Pollution Control Agency or the Director.

PART II

MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice of such changes to the Director. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the Permittee shall immediately notify the Compliance and Enforcement Section by telephone (612)296-7236 and confirm in writing, within five (5) days of becoming aware of such condition. The written notification shall contain the following information:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue; and steps being taken to correct, reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Unauthorized Discharges

The Permittee shall immediately notify the Compliance and Enforcement Section of any unauthorized discharge, accidental or otherwise, of oil, toxic pollutants or any other substance or material under its control which, if not recovered, may cause pollution of the waters of the state, and shall recover as rapidly and as thoroughly as possible such oil, toxic pollutant, or other substance or material and take immediately such other action as may be reasonably be required to minimize or abate pollution of waters of the state caused thereby.

4. Facilities Operation and Quality Control

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a. The Permittee shall at all times maintain in good working order and operate as efficiently as possible any facilities or systems of control installed to achieve compliance with the terms and conditions of the permit.

4100454

b. The Permittee shall provide an adequate operating staff which is duly qualified under Minnesota Regulations WHOB 1 if applicable (as determined by the Director pursuant to Agency Regulation WPC 36(1)(6)(ee)) to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

c. Maintenance of the treatment facility that results in degradation of effluent quality shall be scheduled during noncritical water quality periods and shall be carried out in a manner approved by the Director.

d. The Director may require the Permittee to submit a maintenance plan to eliminate degradation of the effluent. The Permittee shall operate the disposal system in accordance with this plan as approved by the Director.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. The results of such monitoring shall be submitted to the Director as required under this provision.

6. Bypassing

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The Permittee shall promptly notify the Director, Attn: Compliance and Enforcement Section, in writing, of each such diversion or bypass.

Notification of any bypass which causes noncompliance with the daily effluent limitations shall be done in accordance with Part II,(a)(2), Noncompliance Notification.

7. Removed Substances

The Permittee shall dispose of solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters in such manner as to prevent any pollutant from such materials from entering waters of the state. The Permittee in disposal of such material shall comply with all applicable water, air and solid waste Statutes and Regulations. When requested the Permittee shall submit a plan for such disposal for approval by the Director.

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8. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the Permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities; or

b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of one or more of the primary sources of power to the wastewater control facilities.

9. Construction

This permit does not authorize the construction of any treatment works associated with this discharge, unless plans and specifications for such facilities have been approved in writing by the Director prior to the start of any construction.

410C456

RESPONSIBILITIES

1. Right of Entry

The Permittee shall pursuant to Section 308 of the Act and Minnesota Statutes 116.091, allow the Director of the Minnesota Pollution Control Agency, the Regional Administrator, and their authorized representatives:

a. To enter upon the Permittee's premises where a disposal system or other point source or portion thereof is located for the purpose of obtaining information, or examination of records or conducting surveys or investigations; and

b. To bring such equipment upon the Permittee's premises as is necessary to conduct such surveys and investigations; and

c. To examine and copy any books, paper, records or memoranda pertaining to the installation, maintenance, or operation or discharge, including but not limited to, monitoring data of the disposal system or point source or records required to be kept under the terms and conditions of this permit; and

d. To inspect any monitoring equipment or monitoring procedures required in this permit; and

e. To sample any discharge of pollutants.

2. Transfer of Ownership of Control

In the event of any changes in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall notify the succeeding owner or controller of the existence of this permit by letter, prior to the effective date of the transfer. A copy of this letter shall be forwarded to the Regional Administrator and the Director. Any succeeding owner or controller shall also comply with the terms and conditions of this permit.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act, and Minnesota Statutes, Section 116.075, Subd.2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Minnesota Pollution Control Agency and the Regional Administrator. Procedures for submitting such confidential material shall be pursuant to Minnesota Regulation WPC 36(j)(2). As required by the Act, effluent data shall not be considered confidential. The Permittee shall immediately upon discovery report, in writing to the Director any errors or omissions of such record, reports, plans or other documents prepared in accordance with the terms and conditions of this permit. Knowingly making any false statement on any such report, confidential or otherwise, may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Minnesota Statutes, Section 115.071 Subd.2(a).

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or

d. Agency Regulation WPC 36(s)(1)

5. Toxic Pollutants

Notwithstanding Part II, B, 4, above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition)is established under Section 307(a) of the Act and Minnesota Statutes, Chapters 115 and 116 as amended, for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and in accordance with applicable laws and regulation.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance with the terms and conditions except as otherwise provided in Part I, A, 6. Bypassing and Part I, A, 8. Power Failures.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Act and Minnesota Statutes, Chapters 115 and 116 as amended.

8. Federal, State and Local Laws

Nothing in this permit shall be construed to preclude the institution of any legal or administrative proceedings or relieve the Permittee from any responsibilities, liabilities, or penalties for violation of effluent and water quality limitations not included in this permit.

9. Property Rights

The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any violation of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

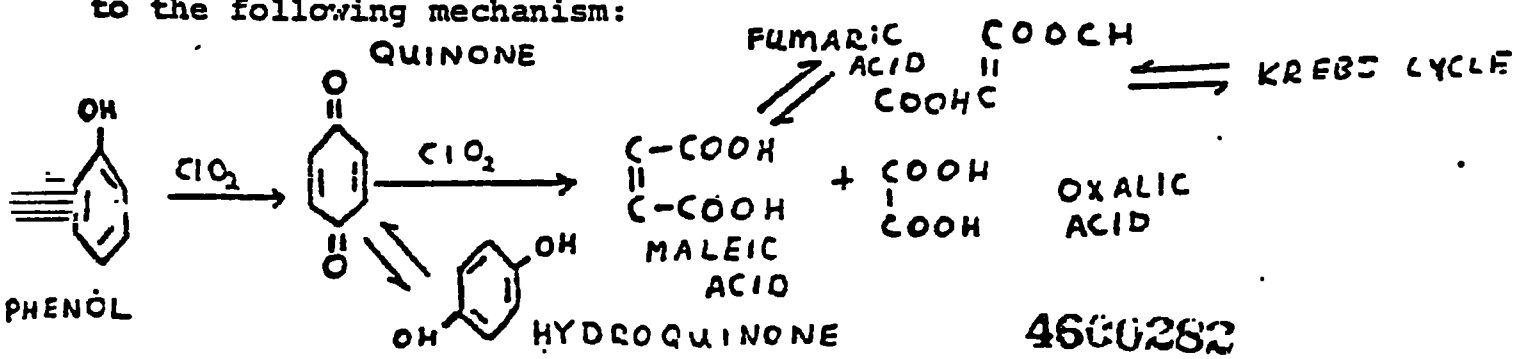
4100459

Hearing Brief
Proposed Draft NPDES Permit
City of St. Louis Park, MN
Permit No: MN 0045489

The principal activitiy at this facility is the treatment of contaminated surface soils and their associated surface water runoff. Contamination of the soils was largely a resultant of past creosoting and related practices which occured during a fifty year period on an eighty acre site where the City of St. Louis Park is presently considering an urban development project.

The City of St. Louis Park has proposed to construct a disposal system for treatment and collection of the contaminated surface soils and their associated surface runoff water. Part of this system will include a land farming operation which through bacterial action it is intended to reduce the levels of contamination in the surface soils. In addition the system will include a runoff collection system comprised of catch basins, piping, appurtenances, and surface runoff collection lagoons. The surface runoff collection system will be designed to collect drainage from the eighty acre site and also will result in the collection and diversion of approximately two hundred and twenty additional acres of drainage area through the eighty acre site. It is the intention of the City of St. Louis Park to discharge these waters to Minnehaha Creek. Because of the contamination associated with the area where the surface runoff waters will be diverted through, it is necessary that the applicant provide adequate treatment for the intended discharge. The City is proposing to utilize a chlorine dioxide treatment system to remove various hydrocarbons which are associated with the creosoting operations previously mentioned. A sulfur dioxide dechlorination system will then be utilized to remove total residual chlorine from the wastewaters to bring the effluent to the required limitations for this parameter. The entire disposal system is comprised of pumps, pipes, appurtenances, storm sewer runoff collection system, two surface runoff holding lagoons sealed with a polyethylene liner, land farming operations for biological degradation of surface soil contaminates, chlorine dioxide system for hydrocarbon destruction, and the sulfur dioxide dechlorination system.

As mentioned above it is necessary that adequate treatment be provided for the effluent to Minnehaha Creek. Although considerable time has been spent on the development of a method for treating the contaminated surface waters, there is insufficient information to determine the expected quality of these wastewaters particularly as expected before utilization of the proposed chlorination system. Phenol is considered to be the primary chemical pollutant for treatment. The chemical reaction of phenol with chlorine dioxide proceeds according to the following mechanism:



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The applicant considers that the treatment system should be compatable for treatment of wastewater of this nature. The reaction with phenols produces very little chlorinated phenols and does oxidize most hydrocarbons.[1,6] Limitations should be established for the intermediate reaction product of quinone as this chemical does inpart odor and unsavory flavor to fish and the reaction will not continue to completion unless adequate chlorine dioxide is present. Because of the limited data available concerning the expected chemical constituents of the runoff water before and after treatment, with exception to phenol, it was necessary to examine analysis performed on waters associated with the area. Examination of waters in the area by the Minnesota Health Department and others indicated the presence of common and well known chemical constituents such as; phenols, oil and grease, total suspended solids, zinc, cadmium, copper, nickel, lead and ammonia in significant quantities. In addition qualitative analysis performed by the Minnesota Health Department has revealed the presence of the well known and highly carcinogenic chemical, benzo -α- pyrene (hereafter called benzpyrene).

A quantitative analysis to determine the levels at which this chemical was present in the waters analyzed was not done, however benzpyrene is a known constituent of coal-tar derived products such as creosote. The method utilized for the qualitative analysis was such that benzpyrene would have to have been present in quantities significantly above background levels.

Because of the presence of coal-tar related substances such as benzpyrene a literature search was done to determine what other chemical parameters might be present in wastewaters from areas contaminated by coal-tar derived chemicals. A mass spectrometric analysis done for the Department of Interior indicated that the chemical chrysene could be present in heavy creosote at significant levels. Chrysene is a known carcinogen.[4,5]

The literature search and analysis previously mentioned indicated that the parameters that should be limited and monitored in this effluent which could be potentially hazardous would include zinc, cadmium, copper, nickel, lead, ammonia, benzo -α- pyrene, chrysene, phenols, and oil and grease. Total chlorine residual should also be included because of the intended use of chlorine in the treatment system. PH and flow would be included as these are parametric limitations considered for all effluents. BOD_5 and total suspended solids were not included due to an Agency Board decision that these parameters would put strict limitations on storm waters from this point source where such limitations had not been applied to other storm water discharges to Minnehaha Creek.

Minnesota Regulation WPC-14 establishes criteria for the classification of the intrastate waters of the state and the establishment of standards of quality and purity for these waters. Minnesota Regulation WPC-24 establishes classifications of intrastate waters of the state. Minnehaha Creek is classified 2B. Minnesota Regulation WPC-14 designates this classification of waters for recreational and fisheries use. Regulation WPC-14 establishes minimal effluent standards for discharge according to Section C6 of the Regulation provided that these limitations will not cause a violation of the existing standards for

water quality required by the regulation. Section C8 of the regulation indicates that in an instance where the minimal treatment and dispersion indicated in Section C6 would not be effective in preventing pollution or if at the applicable flow rates for the specified receiving stream it is evident that water quality standards may not be met then the specific water quality standards may be applied as effluent standards.

Section C7 of the Regulation goes on to indicate that the effluent should be of a quality such as to not cause a violation of water quality standards for the once in ten year seven consecutive day low flow for the specified receiving stream. The once in ten year seven consecutive day low flow for Minnehaha Creek is zero. 2,3

In order to preserve water quality standards it was considered that it would be possible because the once in ten year seven consecutive day low flow is zero to apply the water quality standards as effluent standards for a continuous discharge. However, the applicant does intend to control the discharge through the use of two ponding areas and an associated lift station. In the event that the discharge is controlled the regulation allows for some variation of treatment between the water quality requirements and what would be required for effluent standards if the stream had adequate dilution.

As previously mentioned, regulation WPC-14 requires that 2B waters meet certain specified standards. In addition, Section C14 of the Regulation requires that in instances where the permissible levels of a specific chemical substance are not defined by the Regulation then the question of establishing these levels shall be in accordance with the latest methods recommended by the U.S. Environmental Protection Agency. The Regulation also requires that toxic substances shall not exceed 1/10 the 96 hour median tolerance limit (TLM) as a water quality standard except that more stringent application factors shall be used when justified on the basis of available evidence. The following water quality standards were applicable based on the regulation:

Parameter	Limitation	Consideration for Water Quality Standards
Oil and Grease	0.5 mg/l	*
Phenols	0.01 mg/l	*
Total Chlorine Residual	0.01 mg/l	*
Zinc	0.12 mg/l	*
Cadmium	0.03 mg/l	*
Copper	0.01 mg/l	*
Nickel	0.52 mg/l	*
Lead	0.03 mg/l	*
Ammonia	1.0 mg/l	*
Quinone	0.04 mg/l	*

* Note: See attached Table 1 for explanation of derivation of standard.

Before considering the allowable discharge levels for the specified parameters based on some variability of limitations between the water quality standards and the applicable effluent standards that can be applied when their is adequate dilution in the receiving stream it is necessary to determine what effluent standards could be applicable when there is adequate dilution. Section C5(d) requires that for contaminants other than heat the 96 hour median tolerance limit for indigenous fish and fish food organisms shall not be exceeded at any point in the mixing zone. Since the effluent discharge point is part of the mixing zone and would be presumed to be the most toxic point in the mixing zone, the effluent shall never exceed the 96 hour median tolerance limit for indigenous fish and fish food organisms. In all instances the levels to be applied should consider the levels that are economically achievable for a system which is capable of removing the specific pollutant. Consideration of these requirements and those limitations directly required by the regulation in Sections C6 and 5 led to the establishment of the following effluent limitations (i.e. for a situation where adequate dilution exists in the receiving stream.)

Parameter	Daily Average	Daily Maximum	Source
Oil and Grease	10 mg/l	15 mg/l	See Table 2
Phenols	-	0.1 mg/l	See Table 2
Total Chlorine Residual	-	0.2 mg/l	See Table 2
Zinc	-	1.0 mg/l	See Table 2
Cadmium	-	0.2 mg/l	See Table 2
Copper	-	0.5 mg/l	See Table 2
Nickel	-	2.0 mg/l	See Table 2
Lead	-	1.0 mg/l	See Table 2
Ammonia as N	-	2.0 mg/l	See Table 2
Quinone	-	0.4 mg/l	See Table 2

Now that parametric limitations for water quality and effluents where there is adequate dilution have been established, it is appropriate to consider Section C8 (variability of treatment from Water Quality to effluent standards) and C5 (definitions of mixing zones) of the regulation to arrive at a ratio for dilution of the effluent to the receiving stream flow (i.e. dilution ratio). Section C5 indicates that the mixing zone for the receiving stream shall not exceed 25% of the cross sectional area of the receiving stream or 50% of the width. Twenty-five percent of the cross sectional area of the receiving stream would account for 25% of the receiving stream flow. If we assume that there is complete mixing of the effluent in the receiving stream and if we assume that the background levels of the receiving stream are low or insignificant when considering the size and nature of the discharge then the following equation would be a direct mathematical relationship between the dilution ratio, flow of the effluent, and flow in the receiving stream:

Dilution Ratio=X= [.25 (receiving stream flow rate)+(effluent flow rate)]÷(effluent flow rate)

By utilizing the dilution ratio x the daily maximum effluent limitations can vary but should never exceed the maximum values previously indicated above.

Example:

For phenol the variable effluent standard would be 0.01 x not to ever exceed 0.1.

The dilution ratio can never exceed the value of 10.

Each water quality standard previously mentioned would become an effluent standard utilizing the variable x as shown on page 5 of 16 of the proposed permit.

Establishing limitations for benzpyrene and chrysene was more difficult than for the chemical parameters previously discussed. Consideration of the carcinogenic effects of the chemical was necessary. A paper titled Polynuclear Aromatic Hydrocarbons in the Water Environment[4] summarizes much of the known data concerning benzpyrene, chrysene and other polyaromatic hydrocarbons (PAH compounds). According to the paper benzpyrene is rated with other PAH compounds as being plus three or as having an active carcinogenic potency and chrysene is rated plus one or as having a weak carcinogenic effect. Plus three is the highest carcinogenic potency indicated on the chart in the paper which summarizes available data for twenty-four PAH compounds. This same paper summarizes recommendations made to "The World Health Organization" by Borneff and Kunte in 1969, where it is recommended that drinking water standards should not exceed .03 µg/l as a total concentration of 3, 4 benzflouranthene, benzpyrene and indeno (1,2,3cd) pyrene of which benzpyrene comprises about one fourth. It was decided by the staff that for carcinogenic substances such as benzpyrene that water quality standards should not exceed the recommended drinking water standard which would be approximately 1/4 of the total of all three chemicals in the Borneff and Kunte recommendation or approximately 0.01 µg/l. Precise recommendations were not available for the chemical chrysene and it was therefore a staff decision to limit this chemical to the same value as benzpyrene (0.01 µg/l). Considering that its known carcinogenic effect is less than that of benzpyrene this does not seem unreasonable and would probably assure safe levels of this chemical in waters of the state.

Monitoring frequency and sample type was based on decisions considering the degree of consistency necessary to maintain a well operated system capable of treating the effluent to the permissible levels. Cost of chemical analysis was a major consideration in lessening the measurement frequency for metals, ammonia and PAH compounds.

Part I B. of the proposed permit also includes certain special conditions for the permit which the Agency considered necessary. The intent or justification for these special conditions is discussed below as specifically referenced from the proposed draft permit.

Part I B 1. This requirement is included in all permits and was required to assure that if the Permittee decided to divert a portion of their permitted effluent to a publicly owned treatment works, such as a sewage treatment plant, that this would be done in accordance with existing pretreatment standards consistent with Federal, State and Local Requirements.

Part I B 2,3,4. These requirements were included in the proposed permit as the Agency Board had indicated this as its intention on the November 19, 1974 meeting.

Part I B 5. This describes the dilution ratio calculation previously discussed in this memo.

A compliance schedule was not included in the permit because it is intended that the discharge meet the proposed limitations and requirements at the time the discharge is intended to commence.

FOOTNOTES:

1. Identification of Phenols in the River Test and their treatment with Chlorine Dioxide; J. F. Wallwork, M. Bentley, and D. C. Symonds; Water Treatment and Examination; 1969, page 18, part 3.

2. Surface Water Records of Minnesota; United States Department of Interior-Geological Survey; 1964.

3. Minnehaha Creek Watershed District; Sampling done by Hickock and Associates of Minneapolis; (Consultants for the Watershed District); Information was confirmed by Agency Staff conversations with representatives of Hickock and Associates on December 10, 1974.

4. RI 7000 (United States Department of Interior Bureau of Mines Report of Investigations); Mass Spectrometeric Analyses of Coal-Tar Distillates and Residues; J. L. Shulte, R. A. Friedel, A. G. Sharkey, Jr.; August 1967; page 5.

5. Bulletin World Health Organization, 1970, Vol. 43; Polynuclear Aromatic Hydrocarbons in the Water Environment; Julan B. Andelman, PhD., Michael J. Suess, Sc.D.; (Originally published 1969 as part of a dissertation done at the University of Pittsburgh).

6. Ohio River Valley Water Sanitation Commission; Edward J. Cleary, Chairman of Commission, June 15, 1951.

Prepared By Robert G. Criswell
Robert G. Criswell

TABLE 1
WATER QUALITY REQUIREMENTS

Chemical Substance	Appropriate Criteria For Consideration In Determination of Standards	Reference	Appropriate Standards
Oil and Grease	Minnesota Regulation WPC-14 - 2BWQ standard is 0.5 mg/l	WPC-14	0.5 mg/l
Phenols	Minnesota Regulation WPC-14 - 2B WQ Standard is 0.01 mg/l	WPC-14	0.01 mg/l
Total Chlorine Residual	0.01 mg/l - Duluth Water Quality Lab recommendation	W. A. Brungs - Bibliographical Reference 4	0.01 mg/l
Cadmium	1. 0.03 mg/l 2. 0.03 - 0.06 mg/l - chronic toxicity for bluegills in water of 200 hardness 3. 0.05 - 0.10 mg/l - Distress symptons in water snails 4. Synergistic effects with zinc, Cd at 0.03 and Zn at 0.15 mg/l - mortaillity to salmon dry	1. EPA Bluebook Recommendation- Bibliographical Reference 24 2. Eaton, 1971 - unpub. except in EPA Blue-Book- Bibliographical Reference 24 3. Harry and Aldrich Bibliographical Reference 5, 23 4. Hoblow, Wood, Jeffries Bibliographical Reference 6, 23	0.03 mg/l
Copper	0.01 mg/l	Minnesota Regulation WPC-14 - 2 waters	0.01 mg/l

4660283

TABLE 1
WATER QUALITY REQUIREMENTS

Chemical Substance	Appropriate Criteria For Consideration In Determination of Standards	Reference	Appropriate Standards
Oil and Grease	Minnesota Regulation WPC-14 - 2BWQ standard is 0.5 mg/l	WPC-14	0.5 mg/l
Phenols	Minnesota Regulation WPC-14 - 2B WQ Standard is 0.01 mg/l	WPC-14	0.01 mg/l
Total Chlorine Residual	0.01 mg/l - Duluth Water Quality Lab recommendation	W. A. Brungs - Bibliographical Reference 4	0.01 mg/l
Cadmium	1. 0.03 mg/l 2. 0.03 - 0.06 mg/l - chronic toxicity for bluegills in water of 200 hardness 3. 0.05 - 0.10 mg/l - Distress symptons in water snails 4. Synergistic effects with zinc, Cd at 0.03 and Zn at 0.15 mg/l - mortaillity to salmon dry	1. EPA Bluebook Recommendation- Bibliographical Reference 24 2. Eaton, 1971 - unpub. except in EPA Blue-Book- Bibliographical Reference 24 3. Harry and Aldrich Bibliographical Reference 5, 23 4. Hoblow, Wood, Jeffries Bibliographical Reference 6, 23	0.03 mg/l
Copper	0.01 mg/l	Minnesota Regulation WPC-14 - 2 waters	0.01 mg/l

4600283

Nickel	1. 96 hour LC-50 for Fathead Minnows at hardness of 200 $CaCO_3$ is approximately 26 mg/l 2. Typical application factor for 96 hr LC-50 would be 0.02 3. 0.1 mg/l	1. Pickering and Henderson Bibliographical Reference 10 2. U.S. EPA Bluebook recommendation Bibliographical Reference 24 3. U.S. EPA Bluebook recommendation Bibliographical Reference 24	0.52 mg/l
Zinc	1. 23 mg/l - 96 hr LC-50 for Fathead Minnows in hardwater 2. 0.005 application factor	1. Pickering & Henderson Bibliographical Reference 10 2. U.S. EPA Bluebook recommendation Bibliographical Reference 24	0.12 mg/l
Lead	0.03 mg/l	U.S. EPA Bluebook recommendation Bibliographical Reference 24	0.03 mg/l

4600283

Quinones	1. 0.5 mg/l - begins to influence taste of perch and carp 2. 0.4 mg/l - toxic threshold for Daphnia Magna 3. 0.1 application factor 4. 0.2 mg/l toxic threshold for bream (small sunfishes (Cyprinid family) 5. 0.1 mg/l toxic threshold for bleak (cyprinid family)	1. Brandt, H. J. - Bibliographical Reference 16, 23 2. Bringham & Kuhn Bibliographical Reference 14, 15, 23 3. Minimum recommended value by Regulation WPC-14 when other recommendation is unavailable 4. Bibliographical Reference 16, 23 5. Bibliographical Reference 16, 23	0.04 mg/l
Ammonia	Minnesota Regulation WPC-14	2 B Water Quality Standard	1.0 mg/l

4660239

TABLE 2
EFFLUENT STANDARDS WHERE THERE IS ADEQUATE DILUTION

Chemical Substance	Appropriate Criteria For Consideration In Determination of Standards	Reference	Appropriate Standards
Oil and Grease	1. EPA recommendation - Policy on Oil and Grease Limitations for Petroleum Marketing Terminals recommends 10 mg/l average and 15 mg/l maximum	1. Bibliographical References 1	10 mg/l average 15 mg/l maximum
Phenols	1. 0.079 mg/l - lethal in 30 minutes to minnows 2. 0.1 mg/l should not be exceeded at any time and place 3. Michigan Water Resources Commission 0.05 - 0.07 was lethal to trout and black crappie	1. Symms & Simpson Bibliographical References 2, 23 2. EPA Bluebook p.191 Bibliographical Reference 24 3. Report by Michigan Water Resources Commission, 1972 pp. 2, 85, 90 - Bibliographical Reference 3	0.1 mg/l
Total Chlorine Residual	1. 0.14 - 0.29 - 96 hr LC-50 Trout 2. 0.05 - 0.16 - 96 hr LC-50 for fathead minnows 3. 0.001 - 96 hr LC-50 for cladoceran (zooplankton)	1. 2. 3. Bibliographical Reference 4	0.2 mg/l

4600291

Zinc	1. 0.28 - 48 hr LC-50 for Daphnia Magna in Lake Superior water 2. 23 mg/l - 96 hr LC-50 for Fathead Minnows in hardwater 3. 0.18 mg/l caused 83% reduction in fecundity at $CaCO_3$ 200 mg/l (Fathead Minnows)	1. Biesinger and Christianson- Bibliographical Reference 7 2. Pickering & Henderson Bibliographical Reference 10 3. Brungs - Bibliographical Reference 13	1.0 mg/l
Lead	1. Lead Precipitates at pH of 10 to values from trace amounts to approximately 1.4 mg/l 2. 1.0 mg/l	1. Bibliographical Reference 8 2. U.S. EPA Interim Effluent Guidance for Metal Finishing Industries- Bibliographical Reference 28	1.0 mg/l
Quinones	1. 0.5 mg/l - begins to influence taste of perch and carp 2. 0.4 mg/l - toxic threshold for Daphnia Magna 3. 0.2 mg/l toxic threshold for bream (small sunfishes) (Cyprinid family) 4. 0.1 mg/l toxic threshold for bleak (Cyprinid family)	1. Bundt, H. J. Bibliographical Reference 16, 23 2. Bringham and Kuhn Bibliographical Reference 14, 15, 23 4. Bibliographical Reference 16	.4 mg/l

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Ammonia	1. 5.9 - 8.2 mg/l - 96 hr LC-50 for Pimephales promelas	1. Pickering, Henderson, Lemlee, 1961- Bibliographical Reference 17, 25
	2. 0.41 mg/l - 48 hr LC-50 for Salmo gairdneri	2. Ball, 1967- Bibliographical Reference 18, 25
	3. 2.5 mg/l - lethal in 1-4 days Carassious auratus	3. Rudolfs et al., 1953 Bibliographical Reference 19, 25
	4. 2.0 - 2.5 mg/l - lethal in 1-4 days Carassious auratus	4. Ellis, 1937- Bibliographical Reference 20, 25
	5. 0.3 - 0.4 mg/l - lethal to trout fly	5. Wahrmann and Woker, 1948- Bibliographical Reference 21, 25
	6. A level of 2.0 mg/l of total ammonia at pH of 8.5 and temperature of 25°C would cause a 0.3 mg/l level of undisassociated Ammonia	6. Bibliographical Reference 22

460C294

STREAM / DATE	Lake Minnewasata	Long Lake Creek	Six Mile Creek	Painter Creek	Minnehaha Creek		
					I-494	W. 56th St.	Hiawatha
1-31-71	--	---	--	--	--	--	--
2-23-71	--	0.8	--	--	22.9	22.9	--
3-30-71	--	10.1	67.6	43.2	100.0	89.7	53.4
4- 7-71	--	20.2	22.5	34.6	106.0	104.7	75.6
4-14-71	--	4.8	0.0	28.8	106.0	92.4	82.1
4-21-71	6.8	4.5	0.0	14.4	88.2	91.7	75.6
4-28-71	6.8	35.2	0.0	19.0	77.2	82.6	110.2
5- 5-71	1.4	1.7	0.0	10.1	77.0	66.8	67.9
5-12-71	5.0	1.4	0.0	11.8	55.8	53.0	42.8
6- 2-71	13.0	6.7	0.0	18.5	89.2	82.7	85.7
6-16-71	9.2	2.3	0.0	5.9	70.0	58.2	68.0
7- 7-71	--	--	--	--	--	36.5	51.8
7- 8-71	7.2	5.0	0.0	8.6	59.8	61.7	95.8
8-18-71	0.0	0.0	0.0	0.0	0.0	11.2	5.9
9-22-71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-26-71	0.0	0.0	0.0	0.0	0.0	0.0	4.3
12-17-71	0.0	0.5	0.0	13.1	29.4	58.2	56.7

Note: All results in cubic feet per second.

MINNEHAHA CREEK WATERSHED DISTRICT	E A HICKOK & ASSOCIATES HYDROLOGISTS - ENGINEERS MINNEAPOLIS MINNESOTA	TABLE
STREAM GAGING RECORD - 1971		5

46000295

STREAM / DATE	LONG LAKE AT OUTLET	LONG LAKE AT CO. HWY 146	PAINTER CREEK	SIX MILE CREEK	MINNEHAHA CREEK		
					I-494	W. 56th ST.	HIAWATHA
4/14/72	2.8	-	10.5	5.0	51.0	114.0	141.0
4/21/72	15.9	-	7.2	5.0	105.3	157.0	238.6
5/31/72	13.5	-	2.1	89.1	59.5	133.0	86.9
6/8/72	20.4	-	0.1	55.1	12.9	39.0	39.8
6/28/72	4.5	-	1.5	32.6	25.9	39.0	40.7
7/14/72	10.4	-	0.0	27.4	14.3	28.0	33.5
7/25/72	18.6	-	9.1	5.0	38.3	65.0	83.7
8/2/72	38.4	29.0	8.5	21.0	44.5	54.0	62.8
8/22/72	25.3	37.2	0.4	5.0	24.6	66.0	38.5
9/15/72	22.0	24.0	0.5	4.0	2.7	12.0	38.9
9/29/72	15.0	12.0	0.2	10.0	22.0	15.0	30.0
10/13/72	10.0	12.0	0.2	14.0	25.0	18.0	35.0
10/31/72	9.2	2.0	2.5	10.0	4.1	8.0	6.9
11/17/72	19.9	22.7	1.5	0.0	5.3	7.2	6.6
12/1/72	10.8	4.9	1.3	16.0	2.4	6.7	10.9

NOTE: All Results In Cubic Feet Per Second

MINNEHAHA CREEK WATERSHED DISTRICT	E A HICKOK & ASSOCIATES HYDROLOGISTS - ENGINEERS MINNEAPOLIS MINNESOTA	TABLE
STREAM GAGING RECORDS - 1972		2

46[illegible]

STATION NUMBER 05200500

DURATION TABLE OF DAILY DISCHARGE FOR YEAR ENDING SEPTEMBER 30

MINNEHAHA CREEK AT MINNETONKA MILLS, MINN.

CLASS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	CFS-DAYS
	NUMBER OF DAYS IN CLASS																																			
		27	37	13	5	1	5	53	12	7	15	20	10	11	17	21	5	5	2	2	2	5	6	10	7	12	10	10	10	10						8660.1
	63	36	47	32	13	10	20	12	14	4	13	6	6	8	4	4	5	1	2	14	7	15	1													977.8
56	189	9	23	10	4	6	22	14	15	12	13	3	3	5	1	1	5	4		1	2	4	3	4	4											852.4
57	86	3	7	9	23	10	24	15	12	10	17	12	11	10	4	1	3	1	1	1		3	1				1	23	45	29	3					13603.7
58	67	10	6	2	3		9	1	2	4	5	4	3	34	17	19	29	28	9	15	17	27	24	8	6	17	5									6824.2
1959	305	24	9	5	5	2	4	3	1	1	4	2																								27.7
1960	198	10	4	8	6	5	7	10	20	16	24	10	17	11	4	2	2	1	3	2	1	1	2													448.8
61	127	14	14	8	41	22	22	12	9	7	11	8	8	12	15	10	8	8	4	5																941.7
62	126	6	5	4	2	6	17	9	3	11	1		1		1		1				5	7	17	31	38	26	8	20	3	11	17	2				13904.1
63	96	12	12	16	13	13	18	6	9	8	17	12	4	8	8	7	5	3	4	16	13	26	13	12	17	4	16	4	19							7304.2
1964	262	28	18	8	1	2	8	2	7	4	5	2	8	4		3		2		1		1														150.3

CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT
	0.00	1475	4018	100.0	9	1.30	74	1450	36.1	18	11.0	25	741	18.4	27	87	66	223	5.5
	0.10	199	2543	63.3	10	1.40	125	1374	34.2	19	13.0	57	716	17.8	28	110	85	157	3.9
	0.20	182	2344	58.3	11	2.10	79	1249	31.1	20	17.0	47	659	16.4	29	140	50	72	1.7
	0.30	115	2147	53.4	12	2.60	71	1170	29.1	21	21.0	80	612	15.2	30	190	20	22	.5
	0.40	121	2047	50.9	13	3.30	103	1099	27.4	22	27.0	60	523	13.0	31	220	2	2	.0
	0.50	85	1926	47.9	14	4.20	71	996	24.8	23	34.0	67	463	11.5	32				
	0.60	150	1841	45.8	15	5.30	68	925	23.0	24	43.0	74	396	9.9	33				
	0.80	137	1691	42.1	16	6.70	83	857	21.3	25	55.0	59	322	8.0	34				
	1.00	104	1554	38.7	17	8.40	53	794	19.8	26	69.0	40	263	6.5					

46UC297

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FEB 14 1975
MINN. POLLUTION
CONTROL AGENCY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

Mr. Grant J. Merritt
Executive Director
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113

FEB 7 1975

Dear Mr. Merritt:

In accordance with the procedures designated in 40 CFR 124 and the NPDES Memorandum of Agreement and pursuant to the Federal Water Pollution Control Act, we have reviewed the proposed permits for the dischargers attached as publicly noticed by the Minnesota Pollution Control Agency.

The proposed permits as noticed are approved for issuance by the State of Minnesota immediately following the public notice comment period. This approval is conditioned upon the premise that no objections or questionable comments are received, and further, that no modifications of any nature are made without the final review and concurrence for permit issuance by this office.

This US EPA approval of the subject permits is contingent upon consistency of the proposed permit limitations and conditions with any applicable promulgated Effluent Guidelines which may become effective between now and the actual date of issuance of the subject permits.

When the final permits are issued under the above conditions, please forward two conformed copies and a summary of all comments received during the public notice period to this office at the above address Attention: Permit Branch.

Very truly yours,

James O. McDonald, Director
Enforcement Division

cc: Mr. Louis J. Breimhurst, Minnesota Pollution Control Agency

40-0266

ATTACHMENT TO LETTER OF

City of St. Louis Park
St. Louis Park, Minnesota
MN 0045489
PN Date: January 30, 1975

Municipal Water Treatment Plant
Winton, Minnesota
MN 0046485
PN Date: February 7, 1975

Municipal Water Treatment Plant No. 2
Edina, Minnesota
MN 0046124
PN Date: January 17, 1975

Municipal Water Treatment Plant No. 3
Edina, Minnesota
MN 0046141
PN Date: January 17, 1975

Municipal Water Treatment Plant No. 4
Edina, Minnesota
MN 0046159
PN Date: January 17, 1975

Municipal Water Treatment Plant
Donnelly, Minnesota
MN 0046353
PN Date: February 7, 1975

(612)296-7221
March 19, 1975

Mr. A.H. Manzardo, Chief
Permit Branch, Region V
U.S. Environmental Protection Agency
230 South Dearborn
Chicago, Illinois 60604

Attention: Jack Newman

Re: City of St. Louis Park
Storm Water Improvement Project
Permit No: MN 0045489

Dear Mr. Newman:

The above referenced proposed permit was redrafted in accordance with the findings of fact resulting from a public hearing held on February 27, 1975. on the permit conditions.

A copy of the modified proposed permit is enclosed for your review and we request your reconcurrence so that we may proceed with issuance of the permit.

Yours very truly,

Louis J. Breimhurst, P.E.
Chief, Permits Section
Division of Water Quality

Enclosure
RGC/hoc

STATE OF MINNESOTA
DEPARTMENT OF HEALTH

May 23, 1976

Mr. Joseph F. Harrison, Chief
Water Supply Branch
U. S. Environmental Protection Agency
Region V
230 North Dearborn Street
Chicago, Illinois 60604

Dear Mr. Harrison:

We are enclosing a copy of the Lyon Engineering Company Report which is basically a study to evaluate the effects on the environment from previous activities of former Republic Creosote Company which operated for approximately 50 years on an 80 acre site in the City of St. Louis Park.

We would appreciate a toxicological review of the report and any comments you might consider helpful in evaluating the health effects of the material identified in the study. We are particularly concerned about the presence of the polynuclear organics, benz(c) phenanthrene, chrysene, and benz(a)pyrene found deep in the soil column and other unidentified organic materials that you may believe to be associated with coal tar related materials from the creosote process.

Because the ground water in this area provides the water supply to approximately a half million persons we are concerned that this resource may be in serious jeopardy as a result of the contamination which may travel from this site. On June 8 we will be asked to advise the Pollution Control Agency on this subject so that they may make a decision on the use of this site. Your early response is urgently requested.

Yours very truly,

Frederick F. Heisel, Director
Division of Environmental Health

0900050

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO, ILLINOIS 60604

RECEIVED
JUN 11 1976
Minn. Dept of Health
Div. of Env. Health

	DIR	
	ASST	
	LAB.	
	WQ & GE	
	RAD.	
	I. H.	
	HR & R	
	S. F. S	
✓	G. W. S.	
	PLRG	
	FILE	

June 8, 1976

Frederick F. Heisel, Director
Division of Environmental Health
State Department of Health
717 Delaware Street, S.E.
Minneapolis, Minnesota 55440

Dear Mr. Heisel:

As requested by your letter of May 28, 1976, we have reviewed the Phase I Report on the St. Louis Park, Minnesota ground water contamination problem. These comments were transmitted by telephone to Mr. Gary England and Mr. Ed Ross of your staff on June 8, 1976. The subject report identifies significant soil contamination on the grounds of the former Republic Creosote Company. The area of contamination is about 2,200 feet by 1,000 feet running in depth from the surface to bedrock (70 feet deep). The following observations are made:

1. The contaminants could be quite toxic (benz(c)phenanthrene and benz(a)-pyrene are carcinogens) and do have the potential for damaging water supply usage.

2. Should phenolic taste or odor reasonably attributable to the contaminated area appear in any well, use of that well for drinking purposes should be discontinued until further investigation determines the presence or absence of toxic organics.

3. Removal of the most highly contaminated soils and replacement with uncontaminated soil is advisable if a disposal site which does not threaten another aquifer is available and if the removal can be economically accomplished.

4. Development over the area may reduce spread of the contaminants due to reduced surface water infiltration resulting from paving and the provision of storm water drainage. On the other hand, development may further damage the aquifer if pile driving or other development activities are required which disrupt geological configurations impeding dissipation of the pollutants.

5. Phenol and benzene extractable levels found in wells W-6, W-9 and Midco Register indicate contamination from the old plant site. Failure to find

this contamination at wells W-7, W-8, Flame, CW-1, CW-3 and CW-10 indicate the pollution has not been far disseminated by the ground water. The benzene extractable level found at the W-2 well is difficult to explain with regard to the polluted area.

6. Further study of the area is indicated to more clearly ascertain ground water flow in the area.

We trust you will find these comments of value.

Sincerely yours,

Joseph F. Harrison

Joseph F. Harrison, Chief
Water Supply Branch
Water Division

E / 77 pollution

Minnesota Pollution Control Agency

FEB 07 1978

RECEIVED
FEB 08 1978
MPCA
ATTORNEY GENERAL

Mr. George R. Alexander, Jr.,
Regional Administrator
U. S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Alexander:

For the past several years, the State of Minnesota has been investigating an extremely serious ground water contamination problem in the City of St. Louis Park, Minnesota. The problem resulted from the lengthy operation of a coal tar distillation process and wood treating operation. Investigations to date have identified soils which are contaminated with greater than 100,000 milligrams per kilogram (mg/kg) of benzene extractables near the surface and soils with greater than 10,000 mg/kg and 1,000 mg/kg at 30 feet and 60 feet respectively. Ground water in the area is approximately ten feet below the surface and highly contaminated. Polynuclear aromatic hydrocarbon concentrations of 3,400 milligrams per liter (mg/l) and phenolic concentrations of 50 mg/l have been detected 50 feet below the surface. Some of the water samples have been analyzed by the U. S. Environmental Protection Agency (EPA) regional laboratory in Chicago. That analysis identified naphthalene, pyrene, phenanthrene and several other compounds, many of which are known or suspected carcinogens.

Geologic and hydrologic studies have indicated that the bedrock aquifers of the area have been contaminated to some degree and that the potential for even further contamination exists. The location of the contamination and the hydrology of the area are such that contamination of the aquifers which serve a major portion of the metropolitan area could result.

The State has identified a two-phase program to address the problem. The first phase of the program would require approximately $300,000. It includes proper abandonment of wells which

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Equal Opportunity Employer

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are serving as pathways for deeper contamination, further definition of the geology and ground water hydrology of the area and the design of a ground water gradient control system including the final design of the removal wells and a preliminary design of a wastewater treatment system to treat the removed ground water. The second phase of the program is the construction of the removal wells and the final design and construction of the wastewater treatment system. The cost of phase two could range from $1 to $10 million.

Due to the magnitude, complexity, and possible impacts of this problem, I request that the EPA provide whatever technical and financial assistance is available to help the City and State solve this very critical pollution and public health problem. My staff and I are available to brief you on the problem at your earliest convenience and look forward to your cooperation in resolving this difficult situation.

Yours truly,

/s/ssg

Sandra S. Gardebring
Executive Director

SSG:da SSG/DLW:da

cc: The Honorable Wendell R. Anderson, U. S. Senate
The Honorable William Frenzel, U. S. House of Representatives
The Honorable Donald Fraser, U. S. House of Representatives
The Honorable Alec Olson, Lieutenant Governor of Minnesota
The Honorable Irving Stern, Mayor of St. Louis Park
Dr. Warren Lawson, Commissioner, Minnesota Department of Health

bcc: GREEN TO DLW, SSG, LJB (2), BOB MOILANEN

3700090

04-14-72

RTC#31
8/25/82

AGREEMENT FOR
PURCHASE OF REAL ESTATE

THIS AGREEMENT, made this 14 day of April, 1972, by and between Reilly Tar and Chemical Corporation (hereafter "Seller") and the City of St. Louis Park (hereafter "Buyer").

Seller agrees to sell and Buyer agrees to purchase the following described property located in the City of St. Louis Park, Hennepin County, Minnesota, legally described as:

Lots 25 through 48, inclusive, Block 306, Rearrangement of St. Louis Park

Lot 1, Auditor's Subdivision No. 281

upon the following terms and conditions:

1. Purchase Price; Earnest Money. The purchase price to be paid by Buyer for the subject property shall be One Million Nine Hundred Thousand Dollars ($1,900,000.00). Buyer has paid Seller $5,000.00 earnest money, the receipt of which is hereby acknowledged. The balance of $1,895,000.00 shall be paid by Buyer to Seller at closing.

2. Closing. Closing shall be October 2, 1972, at the offices of Yngve, Yngve & Reiersgord, Attorneys, 6250 Wayzata Boulevard, Minneapolis, Minnesota.

3. Possession Date. Possession shall be turned over to Buyer as of the date of closing.

4. Condition of Premises. It is understood that as a part of the consideration of this purchase that the Buyer is acquiring said premises in an "as is" condition except for the provisions in number 5 of this agreement and that this "as is" condition includes any and all questions of soil and water impurities and soil conditions; and that the City agrees to make no claim against the Seller for damages relative to soil and water impurities, if any, in any way relating to the premises sold

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4000470

herein, or relative to any other premises in which the City of St. Louis Park holds an interest. This provision shall survive the closing of this transaction.

5. Demolition, Removal, and Clean-up Work.

a) Definitions. For purposes of this section, the following definitions shall be applicable:

i) Grade (adjacent ground elevation) is the lowest point of elevation of the finished surface of the ground between the exterior wall of the building and a point five feet distant from said wall, or the lowest point of elevation of the finished surface of the ground between the exterior wall of a building and the property line of it if it is less than five feet distant from said wall. In case walls are within five feet of a public way, the grade shall be the elevation of the public way.

ii) Small masonry shall mean brick, stone, concrete, and non-organic materials 1 1/2 cubic feet or less in content and not more than 24" in any dimension and shall not be capable of compression at less than 1500 pounds per square foot that may easily be ascertained as to density by astute judgment factors of both the demolition contractor and the purchaser's engineering personnel.

b) Work to be Done. Reilly Tar and Chemical Company shall provide for demolition, removal, and clean-up work on the property as follows:

1) Demolish all buildings, structures, and attachments thereto to surrounding grade. Foundations and floors are to be removed to grade or below.

2) Remove above and below grade tanks and demolish supporting pads or legs to grade or below grade.

3) Remove all railroad rails and ties together with associated decks or other structures to surrounding grade or below. Loading dock and tar well structures are to be removed to the piling level, other pile caps, if any not included.

4) Remove above grade piping, poles, walls and miscellaneous structures.

5) Break open tunnels pits, basements, and cellars to the extent they are known to the seller and remove the below-grade piping or machinery exposed in the work.

6) Fill basements, cellars, pits, tunnels, and low areas with small masonry and earth materials from the site.

7) Dispose off the site the demolition materials and debris not suitable for fill outside of St. Louis Park.

8) Remove container and piping residues and dispose of same at an off site location outside of St. Louis Park.

9) Generally level the site to grade and remove miscellaneous timber, large iron, steel, and remaining debris from site and dispose of at a location outside of St. Louis Park.

10) The site shall be free of all visible demolition materials not suitable for fill, buildings, structures, and attachments thereto remaining above grade. Site finishing shall be accomplished in a workmanlike manner to rough grade conditions.

This work shall be completed by the seller on or before the closing date of October 2, 1972.

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All species of trees on the premises shall be protected from damage during the removal of structures and equipment.

This paragraph shall not be applicable to that part of the described property lying Easterly of the Easterly right-of-way line of the proposed Louisiana Avenue extension, which right-of-way line is shown in red on Exhibit A hereto. As to the part of the property lying East of the Easterly right-of-way, Buyer hereby accepts it in an "as is" condition, and Buyer shall be responsible for all demolition, removal, and clean-up work thereon.

6. Real Estate Taxes; Special Assessments. It is also agreed that at or prior to closing the Seller will pay real estate taxes due and payable in 1972 and all special assessments against the subject premises which have been levied prior to January 1, 1972, including the assessment for storm sewer, for which an appeal is now pending, Hennepin County District Court File No. 678582 and will then dismiss said appeal.

7. Seller's Warranty of Title. Subject to performance by the Buyer the Seller agrees to execute and deliver a Warranty Deed conveying marketable title to said premises subject only to the following exceptions:

a) Building and zoning laws, ordinances, State and Federal regulations;

b) Restrictions relating to use or improvement of premises without effective forfeiture provision;

c) Reservation of any minerals or mineral rights to the State of Minnesota;

d) Utility and drainage easements which do not interfere with present improvements.

8. Delivery of Abstract of Title; Marketability of Title. The Seller shall, within a reasonable time after approval of this

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agreement, furnish an abstract of title, or a Registered Property Abstract certified to date to include proper searches covering bankruptcies, and State and Federal judgments and liens. The Buyer shall be allowed 30 days after receipt thereof for examination of said title and the making of any objections thereto, said objections to be made in writing or deemed to be waived. If any objections are so made the Seller shall be allowed 180 days to make such title marketable. Pending correction of title, the payments hereunder required shall be postponed, but upon correction of title and within 10 days after written notice to the Buyer, or upon closing date, whichever date is later, the parties shall perform this agreement according to its terms. If said title is not marketable and is not made so within 180 days from the date of written objections thereto as above provided, this agreement shall, at Buyer's option, be null and void.

9. Current Litigation. It is understood that this agreement represents a means of settling the issues involved in State of Minnesota, by the Minnesota Pollution Control Agency and the City of St. Louis Park, Plaintiffs, vs. Reilly Tar & Chemical Corporation, Defendant, Hennepin County Minnesota District Court Civil File No. 670767. It is understood that the City of St. Louis Park will deliver dismissals with prejudice and without cost to defendant executed by itself and by the plaintiff State of Minnesota at closing. Defendant Reilly Tar & Chemical Corporation will deliver a dismissal of its counterclaim with prejudice and without cost to plaintiffs.

10. Equipment to Remain on Premises. Seller agrees to identify all wells and leave them intact. The Seller may, at its option, remove the pumping equipment. Seller agrees to leave water main intact and in an operable condition.

11. Continued Use of Premises. Between the date of the purchase agreement and the date of closing, the company may use

the premises for manufacturing the industrial purposes and shall continue all existing pollution abatement procedures that are now in place and installed. The company shall cease all business operation not later than October 1, 1972.

12. Maps, Drawings and Information Concerning the Property. Upon acceptance of this offer to purchase, Seller shall furnish Buyer with copies of all maps, drawings, and other data and information it may possess concerning the subject property.

13. Damages for Delay of Closing. In the event this sale is not closed on or before December 15, 1972, and in the event the purchaser, and any assignee of the purchaser, has not abandoned any right, title and interest in the premises by that date, then as additional damages, the purchaser agrees to pay the Seller an amount equal to the real estate taxes and assessments due and payable on the premises, which are payable in the year 1973, and said payment shall be due by May 1, 1973, and this provision for payment of damages, shall be deemed a payment of part of the earnest money and shall survive any cancellation of the purchase agreement.

14. Assignment of Seller's Rights. It is agreed and understood that the City of St. Louis Park is executing this agreement on behalf of the Housing and Redevelopment Authority of St. Louis Park. The City of St. Louis Park may assign its rights hereunder to the Housing and Redevelopment Authority of St, Louis Park, or to any other party without the consent of Seller. Any such assignment shall not relieve the City of its obligations hereunder.

REILLY TAR & CHEMICAL CORPORATION

By _____

Its President

And _____

Its Vice President

3693884

CITY OF ST. LOUIS PARK

By _____

Its Mayor

By _____

Its City Manager

46L-C885

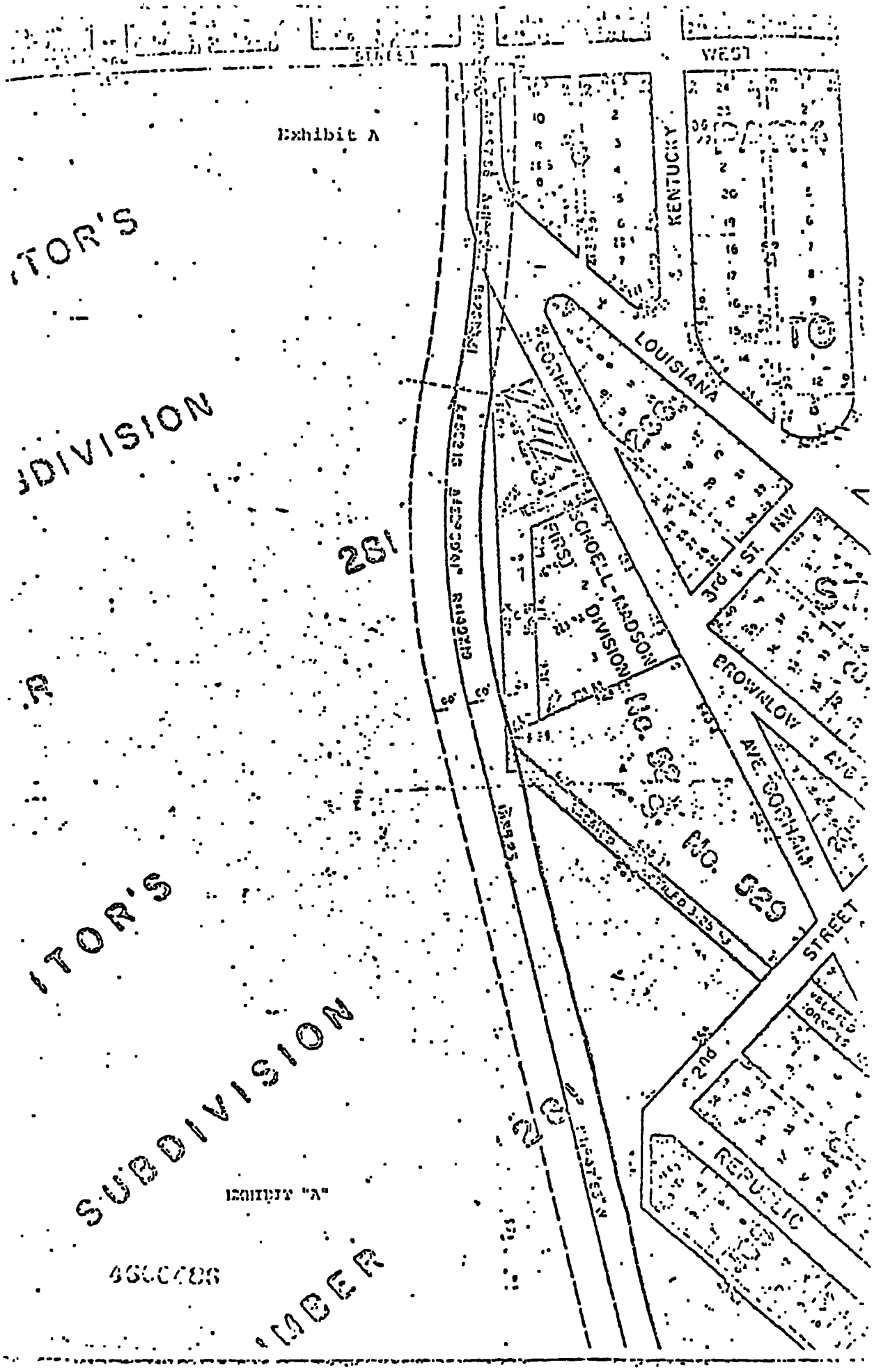
Exhibit A
WEST
KENTUCKY
LOUISIANA
3rd ST. NW
BROWNLOW AVE
AVE. GORHAM
STREET
2nd
REPUBLIC
SCHOELL-RADSON DIVISION
NO. 529
NO. 60
NO. 61
NO. 62
NO. 63
NO. 64
NO. 65
NO. 66
NO. 67
NO. 68
NO. 69
NO. 70
NO. 71
NO. 72
NO. 73
NO. 74
NO. 75
NO. 76
NO. 77
NO. 78
NO. 79
NO.

06-19-73

RTC #71

HOLD HARMLESS AGREEMENT

THIS AGREEMENT, entered into this 19th day of June, 1973 by and between the City of St. Louis Park and Reilly Tar and Chemical Corporation.

Whereas, on April 14, 1972 the City of St. Louis Park (hereafter "City") and Reilly Tar and Chemical Corporation (hereafter "Reilly") entered into an Agreement in which the City agreed to acquire Reilly's property in St. Louis Park;

Whereas, the acquisition of this property by the City was intended as a means of settlement of the issues involved in the State of Minnesota, by the Minnesota Pollution Control Agency and the City of St. Louis Park, Plaintiffs vs. Reilly Tar and Chemical Corporation, Defendant, Hennepin County District Court Civil File No. 670767.

Whereas, the City agreed in the Agreement of April 14, 1972 that it would deliver dismissals of the above noted action with prejudice and without cost to defendant executed by itself and by the plaintiff State of Minnesota at closing;

Whereas, the Plaintiff State of Minnesota has refused at this time to deliver a dismissal of its complaint;

Whereas, the City, and Reilly desire to close the real estate sale and purchase in the manner contemplated in the Agreement of April 14, 1972;

Therefore, it is agreed

1. Dismissal of Action by City

The City will dismiss the action, insofar as and remedy is claimed by the City with prejudice and without cost to Reilly.

2. Dismissal of Counterclaim by Reilly

Reilly will dismiss its counterclaim against the City with prejudice and without cost to the City.

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400783-460358-460361

400781

3. City to Hold Reilly Harmless

The City hereby agrees to hold Reilly harmless from any and all claims which may be asserted against it by the State of Minnesota, acting by and through the Minnesota Pollution Control Agency, and will be fully responsible for restoring the property, at its expense, to any condition that may be required by the Minnesota Pollultion Control Agency.

4. Hold Harmless Agreement Supplementary

The Hold Harmless Agreement in Number 3 hereof is intended to be supplementary to the Agreement between the City and Reilly relative to Carl Balander & Sons, and to Paragraph 4 of the Agreement of April 14, 1972 between the City and Reilly for the purchase of real estate.

5. City and Reilly to Proceed to Closing

Reilly and the City will proceed to the closing of the real estate transaction contemplated by the Agreement between the parties of April 14, 1972, as amended by the Contract for Deed of October 12, 1972.

Reilly Tar and Chemical Corporation

By _____

Its Vice President

And _____

Its _____

City of St. Louis Park

By _____

Its Mayor

And _____

Its City Manager

400785

1 UNITED STATES DISTRICT COURT

2 DISTRICT OF MINNESOTA

3 FOURTH DIVISION

4 ----------

United States of America,
5 Plaintiff,
and
6 State of Minnesota, by its
Attorney General Warren Spannaus,
7 its Department of Health, and
its Pollution Control Agency,
8 Plaintiff-Intervenor,
vs.
9 Reilly Tar & Chemical Corporation;
Housing and Redevelopment authority
10 of Saint Louis Park; Oak Park
Village Associates; Rustic Oaks
11 Condominium Incorporated; and
Philip's Investment Company,
12 Defendants.
and
13 City of Saint Louis Park,
Plaintiff-Intervenor,
14 vs.
Reilly Tar and Chemical Corporation,
15 Defendant.
and
16 City of Hopkins,
Plaintiff-Intervenor,
17 vs.
Reilly Tar & Chemical Corporation,
18 Defendant.

Civil No.
4-80-469

19

20

The Deposition of FRANCIS J. PUCCI, taken
21 pursuant to Notice of Taking Deposition, taken before
Kirby A. Kennedy, a Notary Public in and for the County
22 of Hennepin State of Minnesota, taken on the 20th day
of October 1983, at 1800 First Bank Place East,
23 Minneapolis, Minnesota, commencing at approximately
9:45 o'clock p.m.

24

25

BY MS. COMSTOCK:

Q. Mr. Pucci, I have handed you a document that has been previously marked as Reilly Tar Exhibit 71, which is a Hold Harmless Agreement dated June 19, 1973 between the City of Saint Louis Park and Reilly Tar & Chemical Corporation. Do you recognize this document?

THE WITNESS: Wayne, did we talk about this one this morning?

MR. POPHAM: Yes.

A. I remember it from this morning. Prior to this morning I have no specific recollection of it. I do see my signature is on this one as well.

Q. Your signature is on the second page of this document?

A. On the second page, yes, Ma'am.

Q. Mr. Pucci, do you have a recollection of why this document was executed by the City of Saint Louis Park and Reilly Tar & Chemical Corporation?

A. Why? No, I don't have any recollection as to why it was executed. I would like to go back to this last one here. I think the technical problem that they talked about is that we had to establish a housing and redevelopment authority. Didn't we?

MR. POPHAM: I believe the City did that at some point.

1 A. I think the technical problem we were
2 referring to in this letter was the establishment of a
3 housing and redevelopment authority.
4 Q. You have no recollection of HUD being
5 concerned with contamination?
6 A. No, I believe that the technical problem was
7 that we did not have a vehicle with which to receive
8 the money. We had to have a housing and redevelopment
9 authority or some such function, that was the technical
10 problem.
11 Q. If you would turn your attention back to the
12 Hold Harmless Agreement, Reilly Tar Exhibit Number 71.
13 The first paragraph in this agreement is entitled,
14 "Dismissal of Action by the City," and in that section
15 it states, "The City will dismiss the action, insofar
16 as and remedy is claimed by the City with prejudice and
17 without cost to Reilly." What is your understanding of
18 the action that the City was dismissing, what was your
19 understanding at the time you signed it?
20 A. I have no recollection of my understanding at
21 the time. Again, I would say that this is an agreement
22 that was worked out by discussion at the City Council
23 meeting and we would have directed Mr. Cherches to
24 direct Mr. Popham to make this agreement with Mr.
25 Reiersgord or whoever.

1 Q. Do you recall reviewing this agreement prior
2 to signing it?
3 A. Specifically recall it? No, I don't.
4 Q. Generally recall it?
5 A. I would have reviewed it like all the other
6 documents that I signed.
7 Q. Would you have been advised of the contents
8 and meaning of this document prior to signing it?
9 A. I would have read it and if I had any
10 questions I would have to talked to Mr. Popham.
11 Q. Do you recall talking to Mr. Popham about
12 this document?
13 A. Not specifically.
14 Q. Mr. Pucci, from the whereas clauses it would
15 appear that the --
16 A. Are you referring to the first page?
17 Q. We are on the first page, yes. There are a
18 series of five whereas clauses. It would appear that
19 the City was not able to deliver a dismissal from the
20 State of Minnesota. Is that your understanding of what
21 this states?
22 MR. COYNE: I object. The document
23 speaks for itself.
24 BY MS. COMSTOCK:
25 Q. You can answer the question, Mr. Pucci.

1 A. I will read it then. What was your question
2 again?
3 Q. It appears from the document that the City
4 was unable to deliver a dismissal of the litigation
5 commenced against Reilly from the State of Minnesota.
6 A. I don't see where the City said they were
7 going to deliver it. It seems to me all it says to me
8 is that the State of Minnesota has refused to dismiss.
9 Q. That's what I am describing.
10 A. You said it appears.
11 Q. Is that correct, is that what the document
12 states?
13 A. The document states, "Whereas, the Plaintiff
14 State of Minnesota has refused at this time to deliver
15 a dismissal of its complaint." That's what it says.
16 It doesn't say anywhere that the City was going to
17 deliver their dismissal.
18 Q. Mr. Pucci, I would like to refer you back to
19 Reilly Tar Exhibit Number 31.
20 A. Which one is that?
21 Q. It is the purchase agreement.
22 A. Is this it?
23 Q. That's not it.
24 A. I have got it.
25 Q. Turn to Paragraph 9 on Page 5, Reilly Tar

Exhibit Number 71. The last paragraph or the last sentence, I am sorry, the second to the last sentence states, "It is understood that the City of Saint Louis Park will deliver dismissals with prejudice without cost to the Defendant executed by itself and the Plaintiff State of Minnesota at closing."

A. I can't find that sentence, counselor.

Q. Paragraph 9, Page 5.

A. Paragraph 9, Page 5.

Q. It is the second full sentence.

A. Okay. I read it.

Q. Is that a term that the City agreed to in the purchase of the property from Reilly?

A. I assume since I signed it, yes, that's the term they agreed to.

Q. Was it your understanding that the City was to deliver a dismissal prepared by the State of Minnesota to Reilly at closing?

A. I don't have any recollection of that understanding.

Q. Returning to the Hold Harmless Agreement, Mr. Pucci, Reilly Tar Exhibit Number 71, the third "whereas" clause you were reading suggests that the City was unable to deliver that dismissal from the state, does it not?

1 A. When you compare the two documents, yes, it
2 does.
3 Q. Was this Hold Harmless Agreement intended to
4 allow the City to close on the purchase of the property?
5 A. I don't know.
6 Q. Do you recall whether Reilly demanded a Hold
7 Harmless Agreement prior to closing?
8 A. No, I do not recall.
9 Q. Were you ever advised that the State of
10 Minnesota had refused to issue a dismissal of the
11 litigation against Reilly?
12 A. No, Ma'am, I never was advised.
13 Q. Mr. Pucci, looking at Paragraph 1 of the Hold
14 Harmless Agreement, again, please, it says, "The City
15 will dismiss the action, insofar as and remedy is
16 claimed by the City with prejudice and without cost to
17 Reilly." Is it your understanding that the action
18 referred to is that action commenced against Reilly?
19 A. I don't know what that sentence means, that
20 the City will dismiss the action, whatever action that
21 was. I don't know how many actions there were.
22 Q. I would like you to refer back to the second
23 whereas clause of this document.
24 A. Okay.
25 Q. Was it your understanding that by acquisition

1 of its property, Reilly's property, that the City would
2 settle the litigation it had commenced against Reilly?
3 A. Again, counselor, in 1972 I do not have any
4 recollection of any understanding. I can read it now
5 in 1983 but I have no recollection of '72 or '73
6 specifically towards any understanding.
7 Q. Mr. Pucci, do you recall being advised or
8 having any discussions relating to any remedies that
9 might be required at the Reilly site?
10 A. No, Ma'am, I do not.
11 Q. Do you recall that any additional cleanup
12 either was or would have been required at the Reilly
13 site after the City purchased the property?
14 A. I have no recollection of it, no.
15 Q. Did you participate in any conversations with
16 Minnesota Pollution Control Agency officials of cleanup
17 of the Reilly site?
18 A. I never talked to a Minnesota Pollution
19 Control Agency official.
20 Q. Mr. Pucci, I would like you to look at
21 Paragraph 3 of the Hold Harmless Agreement. Paragraph
22 3 states, "The City hereby agrees to hold Reilly
23 harmless from any and all claims which may be asserted
24 against it by the State of Minnesota acting by and
25 through the Minnesota Pollution Control Agency, and

1 will be fully responsible for restoring the property,
2 at it's expense, to any condition that may be required
3 by the Minnesota Pollution Control Agency." Do you
4 have any recollection of the Minnesota Pollution
5 Control Agency requiring restoration of the property?
6 A. No, Ma'am, I do not.
7 Q. What is your understanding of any and all
8 claims to which the City agrees to hold Reilly harmless?
9 A. I have no idea what it meant at the time. I
10 don't know. I don't remember.
11 Q. Mr. Pucci, was it your understanding that by
12 this Hold Harmless Agreement the City was agreeing that
13 if any remedy was required by the Minnesota Pollution
14 Control Agency the City would hold Reilly harmless from
15 any such claims?
16 A. No, Ma'am, it's not my understanding.
17 Q. What is your understanding of this agreement?
18 A. I don't recall the document, and I don't
19 recall any discussions regarding the document.
20 Q. Do you have any general recollection that the
21 City had agreed that it would pay for any cleanup of
22 the Reilly site after it bought the property?
23 A. I know there was some discussion about a $2.2
24 million purchase price, and I don't know what the final --
25 I don't recall what the final closing price was but I

1 think some of that money was withheld to provide for
2 the cleanup, you know, taking up the narrow gauge
3 railroad that was there, the storage buildings, they
4 were cleaning up the water that was on the ground. You
5 are asking me something that happened 11 years ago. I
6 have no idea, really. I mean, I can only speculate
7 from now. I have no idea, really.
8 Q. Other than removal of existing structures on
9 the premises, did you have any understanding of any
10 cleanup of soil or water contamination --
11 A. I can recall --
12 Q. -- that may have been required or requested
13 by the Minnesota Pollution Control Agency?
14 A. None that I can recall requested by the
15 Minnesota Pollution Control Agency, none at all. I can
16 recall that there was some discussion about planting
17 certain kinds of crops in there that would take some of
18 the -- whatever they were in the soil, would cleanup
19 the soil. If I remember we planted rye or wheat or
20 flaks. I don't know what we put in there but we put
21 something in there.
22 Q. Where did those conversations occur?
23 A. At the City Council, I think.
24 Q. Would those discussions have been by City
25 staff rather than --

UNITED STATES DISTRICT COURT

DISTRICT OF MINNESOTA

FOURTH DIVISION

United States of America,
Plaintiff,
and
State of Minnesota, by its
Attorney General Warren Spannaus,
its Department of Health, and
its Pollution Control Agency,
Plaintiff-Intervenor,
vs.
Reilly Tar & Chemical Corporation;
Housing and Redevelopment authority
of Saint Louis Park; Oak Park
Village Associates; Rustic Oaks
Condominium Incorporated; and
Philip's Investment Company,
Defendants.
and
City of Saint Louis Park,
Plaintiff-Intervenor,
vs.
Reilly Tar and Chemical Corporation,
Defendant.
and
City of Hopkins,
Plaintiff-Intervenor,
vs.
Reilly Tar & Chemical Corporation,
Defendant.

Civil No.
4-80-469

The Deposition of DALE WIKRE, taken pursuant to Notice of Taking Deposition, taken before Kirby A. Kennedy, a Notary Public in and for the County of Hennepin, State of Minnesota, taken on the 1st day of November 1983 1983, at 1800 First Bank Place East, Minneapolis, Minnesota, commencing at approximately 9:40 o'clock a.m.

1 feasible,' since the former owners of the land, by
2 their deed, are held harmless in any future legal
3 action and since there is widespread doubt that Saint
4 Louis Park is equipped to deal with the problem by
5 itself." Did you make that statement?
6 A. I don't know.
7 Q. Well, did you believe at that time that the
8 former owners of the land would be held harmless in any
9 future legal action?
10 A. I don't know that I believe that they would
11 be hold harmless. I did believe that that was an issue.
12 Q. Well, by this time, since it's clear that we
13 are talking about groundwater contamination, and since
14 it's clear that we are also talking about the discovery
15 of carcinogens, at least in the soil, did you
16 understand at that time that the hold harmless applied
17 to the problems that were discussed in this newspaper
18 article?
19 MR. SHAKMAN: Objection to
20 mischaracterizing the testimony or the evidence
21 existing as to what was clear at that time.
22 A. Can you ask that again?
23 Q. All right. I will ask it differently.
24 A. Or just read it back.
25 Q. At the time of this newspaper article was it

1 your understanding that the Hold Harmless Agreement
2 applied to the problems that are discussed in this
3 newspaper article?
4 MR. SHAKMAN: I would caution the
5 witness, before answering that, not to disclose any
6 information interpreting that agreement that might have
7 been given to attorneys for the State. If he is
8 capable of associating his understanding of
9 communications of that nature that he may have been
10 privy to, he may answer.
11 A. I believe that at this point in time there
12 would have been communications with the attorneys in
13 this instance so I shouldn't answer.
14 Q. Who were the attorneys that you had
15 communications with?
16 A. As we were moving through the process we
17 would have had -- through the process of dealing with
18 the storm water proposals, at least considering, as we
19 looked at before, a stipulation agreement to deal with
20 those issues, we would have had contact with the
21 attorneys for the City. In addition, with regard to
22 the permits and strategy on how to deal with this
23 problem we would have had contact with the Attorney
24 General's staff. I don't recall what attorney was
25 assigned to the project at this point in time.

1 Q. Well, did your understanding concerning the
2 meaning of the Hold Harmless Agreement come from any
3 communications with the attorneys for the City?
4 A. It may have in part come from communications
5 with them.
6 MR. SHAKMAN: My objection does not
7 extend, for the witness' clarification, to
8 communications for attorneys from the City between the
9 time of the execution of the hold harmless and the time
10 of the exhibit before us, October 24, 1974. So to that
11 extent you may answer, but attorneys from the Attorney
12 General's staff instruction holds in regard to them.
13 A. My memory doesn't allow me to differentiate
14 between where I would have gotten all the information
15 to come to whatever conclusion I have at that point in
16 time.
17 Q. So your inability to answer my question is
18 simply based on the fact that you think that your
19 understanding may have come from the attorneys for the
20 Pollution Control Agency?
21 A. It comes from the fact that over all the
22 years I have had a great deal of communication with a
23 great many people and much of that, a significant
24 amount of that, was with attorneys since this was a
25 subject of litigation. I am sure that at various

points in time the Hold Harmless Agreement was discussed and I can't determine how I came to the knowledge I might have had at that point in time, and in fact I am not exactly sure what my knowledge would have been at this particular point in time compared to all the conversations since then up until now.

MR. SCHWARTZBAUER: Let's take a break.

(At this time a brief recess was taken.)

BY MR. SCHWARTZBAUER:

Q. Well, are you ready to help me identify some more documents?

A. I will try.

Q. The next one is a document that one of my associates identified recently, I am not sure which one, I think Mr. Wahoske, identified it as Reilly Tar Company Exhibit 224. That's called a briefing memo, Proposed Draft NPDES Permit. It doesn't have a date on it except that on Page 4 you will see a set of footnotes and in the Footnote 4 it said that certain information was confirmed by Agency staff through conversations with representatives of Hickok and Associates on December 10, 1974. Can you tell me what that is?

MR. SHAKMAN: Why don't we take a minute to read through it?

1 UNITED STATES DISTRICT COURT

2 DISTRICT OF MINNESOTA

3 FOURTH DIVISION

4 ----------

United States of America,
5 Plaintiff,
and
6 State of Minnesota, by its
Attorney General Warren Spannaus,
7 its Department of Health, and
its Pollution Control Agency,
8 Plaintiff-Intervenor,
vs.
9 Reilly Tar & Chemical Corporation;
Housing and Redevelopment authority Civil No.
10 of Saint Louis Park; Oak Park 4-80-469
Village Associates; Rustic Oaks
11 Condominium Incorporated; and
Philip's Investment Company,
12 Defendants.
and
13 City of Saint Louis Park,
Plaintiff-Intervenor,
14 vs.
Reilly Tar and Chemical Corporation,
15 Defendant.
and
16 City of Hopkins,
Plaintiff-Intervenor,
17 vs.
Reilly Tar & Chemical Corporation,
18 Defendant.

19

20

The Deposition of HARVEY McPHEE, taken
21 pursuant to Notice of Taking Deposition, taken before
Kirby A. Kennedy, a Notary Public in and for the County
22 of Hennepin State of Minnesota, taken on the 4th day of
October 1983, at 1800 First Bank Place East,
23 Minneapolis, Minnesota commencing at approximately
9:45 o'clock p.m.

24

25

1 depth of the sewer." Yes, it does say "storm sewer" in
2 the previous sentence. When was that constructed?
3 A. I don't know.
4 Q. The second page of the memo says, "We also
5 attempted to point out that the natural forces should
6 clean up any contaminants present in the marshy area."
7 Was that said?
8 A. I wouldn't dispute the statement. I can't
9 specifically recall, but I certainly wouldn't dispute
10 it.
11 Q. Well, can you recall whether you accepted
12 that idea at the time?
13 A. I wouldn't accept the idea, no.
14 Q. Why, because you disagreed with it?
15 A. That's correct.
16 Q. Why do you disagree with it?
17 A. Because the gross contamination is such that
18 natural forces couldn't clean it up.
19 Q. I take it you didn't pay much attention to
20 that argument then at that time, is that right?
21 A. If there was such an argument, I certainly
22 wouldn't have, I would listen to it.
23 Q. Down in the bottom paragraph the memo says,
24 "Mr. George Koonce would interject his great concern
25 for the soil contamination within the plant property.

1 Mr. Koonce brought up the old contention that drainage
2 from the property helped to contaminate a Saint Louis
3 Park well some 30 years ago." Did Mr. Koonce do that?
4 A. I can't recall the specifics of what various
5 people said at this meeting, so I couldn't answer that.
6 Q. Well, even though that you can't recall the
7 exact specifics of the meeting, was it clear to you at
8 that time, Mr. McPhee, that the parties at the meeting
9 were discussing the entire subject of ground water as
10 well as surface water pollution at that time, at least
11 at that meeting?
12 A. I can't specifically recall what this entire
13 meeting encompassed. I couldn't argue with the memo,
14 but --
15 Q. Was it clear to you at that time that the
16 parties were discussing the subject of ground water as
17 well as surface water pollution?
18 MR. COYNE: I object to the form of the
19 question because it elicits speculation on his part as
20 to what other people were thinking at the meeting.
21 MR. SCHWARTZBAUER: No, I want his
22 thinking.
23 A. I guess I can't remember the specifics of the
24 meeting and just exactly what the entire thing we were
25 discussing, all the issues, and --

1 Q. So you are saying --
2 A. I can't specifically say ground water was
3 included or not, I don't know.
4 Q. You have before you a document that has
5 previously been marked Reilly Tar Company 12. Is that
6 a copy to the file concerning your meeting with the
7 State of Minnesota Pollution Control Agency that we
8 were just talking about a few minutes ago?
9 A. It's certainly a memo of a meeting at the
10 Pollution Control Agency that I attended, that's
11 correct.
12 Q. On December 7, 1970?
13 A. That's correct.
14 Q. Does reading this memo refresh your
15 recollection at all as to anything else that was said
16 by --
17 A. It doesn't refresh my memory.
18 Q. I see. As we sit here today and after you
19 have looked at both of those memos, is the situation
20 such that you just don't remember the meeting?
21 A. No, I can't remember the meeting.
22 (At this time RTC Deposition Exhibit
23 214 was marked for identification by the
24 Court Reporter.)
25 BY MR. SCHWARTZBAUER:

INTER OFFICE CORRESPONDENCE

REILLY TAR & CHEMICAL CORPORATION

RTC#11
8/25/82
Ghill

TO: MR. T. J. RYAN - INDPLS. OFFICE: St. Louis Park, Minn.

FROM: Mr. H. L. Finch DATE: December 14, 1970

SUBJECT: DECEMBER 7TH MEETING IN THE OFFICES OF THE POLLUTION CONTROL AGENCY TO DISCUSS AIR AND WATER POLLUTION IN RELATION TO THE ST. LOUIS PARK PLANT.

The meeting was held in the offices of the State of Minnesota Pollution Control Agency on 717 Delaware Street, Minneapolis, Minnesota. Those present were Mr. Robert J. Lindall, Special Assistant Attorney General, State of Minnesota; Mr. Wayne G. Popham, a member of the firm of Popham, Haik, Schnobrich, Kaufman and Doty, Mr. Popham is an attorney for the City of St. Louis Park; Mr. Chris Churches, City Manager, St. Louis Park; Mr. Harvey Mc Phee, City of St. Louis Park Sanitation Department; Mr. George R. Kounce, Chief Section of Industrial and Other Wastes, Minnesota Pollution Control Agency; Mr. Tibor Kosa, Chief Engineering and Enforcement Section, Air Quality Division, Minnesota Pollution Control Agency, there was also a gentleman by the name of Mr. Smith who was interested in these proceedings strictly from the standpoint of discharge of water into the Minnehaha Creek water shed.

There was also several other gentlemen present, Mr. Mc Phee had an assistant from the St. Louis Park Health Department, Mr. George Kounce had an assistant for his division and Mr. Tibor Kosa had an assistant for his division but we did not note their names.

We will try to report some of the exchanges of the meeting but not necessarily in the order in which they occurred. Mr. Lindall opened the meeting with the request to us to explain how we intended to solve the problem of the company's polluting the air and water in St. Louis Park. We briefly attempted to report what we had done and what we were proposing to do with regard to the air and the water.

Mr. Churches brought up the subject of the reported contaminated marshes to the south of our property and immediately south of Highway #7 in which plant discharge has been made for a period of years. His contention is that the City will be unable to storm sewer this area and be assured that no contaminants from the soil will enter the storm sewer to be discharged into Minnehaha Creek. The City has recently had occasion to install a force sewer main in Lake Street located just south of Highway #7 adjacent to the ponding marshes. The force sewer is coming from the City of Hopkins and will be directed into the St. Louis Park system and then into the City of Minneapolis sanitary sewer system. During the digging operations for the storm sewer Mr. Churches, verified by Mr. Mc Phee, reported there were strong creosote odors and black oily material the depth of the sewer. It might have been mentioned around eighteen feet, I do not recall the depths they were speaking of. Mr. Churches kept pushing on the possible contamination

C 302663 - 302778 - C301970 - 400835

of any storm sewer installation, substantiating with Mr. Smith that if the City did install say a $4,000,000.00 sewer project and if contaminants entered the storm sewer that the storm sewer could not be dumped into Minnehaha Creek. Practically each time we discussed our connection with the sanitary sewer Mr. Churches would get back on the problem of the marshes. Mr. Churches seemed to have this as his point.

We attempted to point out that our connection to the City's sanitary sewer with the process water from the plant should eliminate any further contaminants from getting into the ponding area to the south. We also attempted to point out that the natural forces should clean up any contaminants present in the marshy area. It was suggested that we continue with our program to go into the City's sanitary sewer and then take a look at the marshy area to the south of the plant after a five year period and see if the same problem still existed. Mr. Churches's reaction was that five years was an entirely too long a period to even consider. From Mr. Churches's reaction, it appeared that the storm sewer installation was of urgent importance to the area.

Mr. Mc Phee claims that there is a route by which the water can cross Lake Street after the flowage from plant property under Highway #7 to the ponding area south of Highway #7. It has been my understanding that the only way water could cross Lake Street was to flood over it. And in fact, quite a number of years ago I was highly concerned about the City having blocked off the drainage under Lake Street, thereby reducing the total ponding area available to the plant. I can recall discussing the blocking of Lake Street with the then Mayor of St. Louis Park, Mr. Wolf. Mr. Wolf's reaction to my objection to the reduced drainage from the plant was that this would help prevent any of the plant water going into Minnehaha Creek. The handwriting on the wall indicated that I may have gotten into a mess had I pursued the matter any further. Mr. Mc Phee rather brushed over the point of the water being able to get on the other side of Lake Street and I still am not sure if it makes too much difference to us whether our drainage has access under Lake Street or not.

Mr. George Kounce would interject his great concern for the soil contamination within the plant property. Mr. Kounce brought up the old contention that drainage from the property helped to contaminate a St. Louis Park well some thirty years ago. And, he referred several times to the dripping of creosote on the ground from the stored pile and from the tram cars. He made reference at one time to the depth that this material had penetrated the ground and explained he did not know to what extent this had taken place. In reference to Mr. Kounce's challenge with regard to the contamination of the St. Louis Park well,

it was reminded that the period of well contamination took place at about the time the Minnesota State Highway was constructing Highway #7 across the marshy area and had utilized dynamite to remove some of the peat. We brought out the possibility that the dynamite might have opened fishers into a lower strata causing swamp water to get into otherwise fresh water.

It was pointed out also during Mr. Kounce's discussion that we utilized creosote oil for years as a weed control in the plant property which could account for some of the coloration in the ground. Mention was also made that the weed control did not have a residual effect and each year we had to spray the yard with creosote to stop the weeds. With reference to the dripping of creosote from piles, our contention was that the creosote oil did not leach out of the cross ties in any appreciable amount and that the preservative creosote has, as one of it's attributes, non-leaching qualities.

A discussion resolved around the possibility of testing the water after it had flowed over the plant property to see what contamination existed. Suggestion was made that we employ an engineer for the purpose of testing the water other than our process water. We pointed out that this would be difficult to do until we had connected to our sanitary sewer and were sure that no process water was becoming involved with runoff water. We explained that the runoff water was of a flooding nature and tests of runoff water would be difficult to determine. We probably should do some sampling of the pond directly to the south of the plant property. There is an area that is relatively isolated from that area normally receiving our discharge water.

Mr. Tibor Kosa took off on air contamination, most partically the contamination that would result from the opening and closing of our cylinder doors. Mr. Kosa felt that this was an area that would not be too expensive to control and that we were not giving any consideration to controlling this part of our operation. His idea would be for us to set up a duct system over the cylinder doors, run this into a scrubber system and then burn the remaining fumes. He also criticized us quite severely for not submitting plans for air pollution controls. He reminded us that he had recommended that we hire a consultant to determine the extent we were in violation. He pointed out quite emphatically that they have the power to require us to hire a consultant to determine the extent of our pollution. Because of the strong stand Mr. Kosa was taking we did inform them that we had hired a consultant firm to investigate odor sources from our refinery. I told them at this time we did not wish to offer the findings of the consulting concern, Pollution Curbs as we ourselves had not had time to fully digest the report. We did tell them that we had investigated adding permanaganate to our scrubber system but that our investigation showed it would not be feasible for our particular location and product.

A little later Mr. Lindall asked if they could at least have the cover page of the report to show that we were acting in good faith. We did give them the cover page of the report.

One part of the report that disturbs me considerably and why I did not feel I could give the report to them was the point under the section Conclusions and Recommendations 4.2 in which I quote the last two sentences of this paragraph which states "in any case the system evaluated" (system meaning our present scrubber) "is capable of reducing the odor level 1,000 fold. However, this reduced level of emissions still exceed the allowable M.P.C.A. emission level by the factor of 150,000,000." I thought that by the City having this at their disposal may substantiate legal action.

It is my definite recommendation that we proceed at once to prepare complete plans for submission to the City and for submission to Minnesota Pollution Control Agency concerning:

1. The connection to the sanitary sewer with the inclusion of the Edens Separator.

2. Plans for the construction of the after burner to be included as a part of our pollution control in the refinery.

It is also my recommendation that we proceed with a second program with Pollution Curbs to study the possible odor emission as a result of the opening and closing of cylinder doors. We would propose that this study would be taken at the property line to verify that this operation is in conformance with air pollution quality standards.

Yours very truly,

H. L. Finch

H. L. Finch

HLF:ge

cc: Mr. R. J. Boyle - Indpls.
Mr. P. C. Reilly - Indpls.
Mr. C. F. Lesher - Indpls.
Mr. T. E. Reiersgord - Attorney

9-9-82

Group Health Plan, Inc.

September 9, 1982

State of Minnesota
Office of the Attorney General
St. Paul, MN 55155

RE: George R. Koonce

To Whom It May Concern:

Mr. Koonce is not a patient of mine. I am quoting an evaluation done in August 1982 by his primary physician Dr. Kosiak. Dr. Kosiak is on vacation and will not be returning until September 20, 1982.

"This patient had a stroke following an electrical shock. Patient suffered brain damage and has a marked speech inpediment, drooping of the face and weakness of both arms. The patient also developed tardive dyskinesis, probably due to antidepressant drugs which he has been on. The patient has always had a rather marked degree of mental depression. The patient's condition is such that he will never be able to return to gainful employment of any kind."
"This patient has a major problem in trying to articulate by himself both as a result of stroke and due to tardive dyskinesis. His speech is almost impossible to understand and he is very depressed."

Sincerely,

Lakhbir Kang

L. Kang, M.D.
Family Practice Department
Group Health Plan, Inc.
lk/nv

00703

REC'D JUL 10 1980

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ADDRESS REPLY TO:
OFFICE OF THE ATTORNEY GENERAL
MINNESOTA POLLUTION CONTROL AGENCY
1935 W. COUNTY ROAD B2
ROSEVILLE, MINNESOTA 55113
(612) 296-7342

July 8, 1980

Edward J. Schwartzbauer, Esq.
Dorsey, Windhorst, Hannaford,
Whitney & Halladay
2300 First National Bank Building
Minneapolis, Minnesota 55402

Re: State of Minnesota, et al. v. Reilly Tar & Chemical Corp.

Dear Ed:

Of the nine persons whose depositions you wish to take, four are presently employed by the State, three are retired, and two are now privately employed. The current State employees and their availability this summer are as follows:

Roman Koch-Minnesota Department of Health, available any time except July 25-August 4.

George Koonce-Minnesota Department of Health. Mr. Koonce recently returned home after an extended period of hospitalization. We are currently inquiring about his health and availability, and hope to advise you next week.

Larry T. Johnson-Minnesota Pollution Control Agency (Marshall Office). Mr. Johnson is available throughout the summer except for July 22-23 and August 26. He would prefer the dates of July 21, 24, 25 or August 25, 27 or 28 since he could then combine the deposition with travel to the Twin Cities for other PCA business.

Dale Wikre, available throughout the summer except for July 22-23 and August 1-15.

The three retired employees and their availability are as follows:

Russell Frazier-formerly Minnesota Department of Health. Mr. Frazier resides at 181 Hartman Circle N.E., Fridley, Minnesota 55432. We have been unable to reach Mr. Frazier at home but will continue efforts to locate him.

AN EQUAL OPPORTUNITY EMPLOYER

Clarence A. Johannes-formerly with the Minnesota Pollution Control Agency. Mr. Johannes often leaves for the weekend on a Thursday or Friday so prefers that his deposition be scheduled for a Monday, Tuesday or Wednesday. He will be available this summer except for the week of July 21.

Edward Wiik. Mr. Wiik maintains a Minneapolis residence but spends most of his summer at a cabin near Little Falls. He is most often in the Twin Cities on weekends and a deposition could be arranged for a Monday or a Saturday.

The two former State employees and their availability are as follows:

Larry Anderson-formerly with the Minnesota Pollution Control Agency and now with Pfeifer And Schultz Engineers, 5401 Gamble Drive, Minneapolis. Mr. Anderson is available throughout the summer.

Jack Van De North-formerly a Special Assistant Attorney General assigned to the Minnesota Pollution Control Agency and now in private practice with the Briggs & Morgan firm. Mr. Van De North is available the weeks of July 28 and August 11. His July schedule is busy but he may have other dates available in August.

As I mentioned on the phone, we request a subpoena and the customary fees for each person who is no longer employed by the State. I believe that all of these persons would be agreeable to service of the subpoena and fees by mail, and will confirm that with them after we have worked out the tentative deposition dates.

In the State's Interrogatory Answers which were served on June 20, 1980, a name which appears in the Answers was inadvertently omitted from the identifying information in Attachment A. It was Jim Wright, a St. Louis Park well driller. His address and phone number is:

Jim Wright
1324 Kentucky Avenue
St. Louis Park, Minnesota
Telephone: 545-9472

On another matter, I would like to ask for your prompt attention to the photocopying and other duplicating bills which the State has incurred on Reilly's behalf in the course of our document production.

Because of State accounting practices, we are unable to pay vendors' complete invoices and subsequently be reimbursed by you for Reilly Tar's share. Consequently some bills have gone unpaid for close to a year and further accounting difficulties may arise if the bills are not paid soon within our new fiscal year. I propose that we set off all balances owing as of June 30, 1980, settle bills as of that date, and thereafter proceed on a pay-as-you-go basis without further setoffs. Could you or Bill Keppel please give me a call on this matter.

Very truly yours,

STEPHEN SHAKMAN
Special Assistant
Attorney General

SS:sjg
cc: Allen Hinderaker, Esq.

1 UNITED STATES DISTRICT COURT

2 DISTRICT OF MINNESOTA

3 FOURTH DIVISION

4 ----------

United States of America,
5 Plaintiff,
and
6 State of Minnesota, by its
Attorney General Warren Spannaus,
7 its Department of Health, and
its Pollution Control Agency,
8 Plaintiff-Intervenor,
vs.
9 Reilly Tar & Chemical Corporation;
Housing and Redevelopment authority Civil No.
10 of Saint Louis Park; Oak Park 4-80-469
Village Associates; Rustic Oaks
11 Condominium Incorporated; and
Philip's Investment Company,
12 Defendants.
and
13 City of Saint Louis Park,
Plaintiff-Intervenor,
14 vs.
Reilly Tar and Chemical Corporation,
15 Defendant.
and
16 City of Hopkins,
Plaintiff-Intervenor,
17 vs.
Reilly Tar & Chemical Corporation,
18 Defendant.

19

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The Deposition of SANDRA GARDEBRING, taken
21 pursuant to Notice of Taking Deposition, taken before
Kirby A. Kennedy, a Notary Public in and for the County
22 of Hennepin State of Minnesota, taken on the 28th day
of September 1983, at 1800 First Bank Place East,
23 Minneapolis, Minnesota, commencing at approximately
9:30 o'clock a.m.

24

25

1 the extent the witness can answer she may do so.
2 A. Shortly after I became the Director of
3 Enforcement, the Environmental Protection Agency had an
4 effort under way to identify hazardous waste sites
5 around the country that required remedial action. We
6 contacted the six states in our region and developed a
7 list of such sites. That list included the Reilly Tar
8 site, and at some point during my tenure as division
9 director, although I don't recall precisely when, the
10 Federal Government, on my recommendation, made a
11 decision to institute a lawsuit in this matter against
12 Reilly Tar.
13 Q. Is that the lawsuit that we are here involved
14 with today?
15 A. Yes, sir, it is.
16 Q. To whom did you make that recommendation?
17 MR. HIRD: Objection. That question
18 calls for violation of the attorney-client privilege,
19 the investigation into the reason and purposes for
20 which a lawsuit is instigated, and I instruct the
21 witness not to answer.
22 BY MR. SCHWARTZBAUER:
23 Q. Why did you want the Federal Government in
24 this lawsuit?
25 MR. HIRD: Same objection as before, and

1 instruct the witness not to answer.
2 BY MR. SCHWARTZBAUER:
3 Q. Did you yourself, in the course of your
4 tenure at Region V, write a letter to Thomas E. Reilly,
5 the President of Reilly Tar, asking about Reilly's
6 activities at other plants not in Minnesota but located
7 within Region V?
8 A. I don't recall doing that specifically. It's
9 been told to me in recent months that I did write such
10 a letter, but I don't specifically recall it. I signed
11 a lot of letters requesting information from a lot of
12 companies and I guess it wouldn't be surprising to me
13 that it included the Reilly company.
14 (At this time RTC Deposition Exhibit
15 196 was marked for identification by the
16 Court Reporter.)
17 BY MR. SCHWARTZBAUER:
18 Q. Ms. Gardebring, I have handed you Reilly Tar
19 Company Exhibit 196. Can you tell us what that is?
20 A. This is a handout that the Pollution Control
21 Agency prepared in advance of the public meeting which
22 is described here, May 16, 1983, in Saint Louis Park.
23 It's an agenda for that meeting describing who will
24 present remarks and the two page question and answer
25 format, description of what's going on here at the

1 Reilly Tar & Chemical problem in Saint Louis Park.
2 Q. Is it accurate?
3 A. Well, I haven't had a chance to read it.
4 Q. Why don't you take a few minutes?
5 A. All right. I believe it's accurate, yes,
6 sir.
7 Q. I am just going to call your attention to a
8 couple of the specific statements in the paper and ask
9 you about them.
10 A. Okay.
11 Q. On the first page we see a paragraph preceded
12 by the question, "Are we drinking bad water now?" Among
13 other things the paper states, "The municipal waters in
14 Saint Louis Park and Hopkins is safe to drink and it is
15 tested frequently by the Minnesota Department of Health
16 to make sure it stays that way." Was that an accurate
17 statement?
18 A. Yes.
19 Q. On the second page there is a question, "Are
20 the chemicals harmful?" And the paper states, "The
21 amount of PAH's in the water of contaminated wells is
22 very small and cannot be seen or tasted, nor would you
23 get sick at once if you drank the water. But many
24 scientists believe that the chemicals cause cancer in
25 people as they do in laboratory animals." Now, with

AGENDA
A Public Meeting
by the Minnesota Pollution Control Agency
and Minnesota Department of Health
for the Reilly Tar and Chemical
Hazardous Waste Site

May 16, 1983
8:00 P.M.
St. Louis Park Senior High School Auditorium

	Agenda	Topic Coverage	Presenter
I.	Welcome and Opening Remarks	Welcome Purpose	Sandra S. Gardebring Executive Director Minnesota Pollution Control Agency
II.	Goals and Objectives	1. Protect Public Health 2. Restore Drinking Water Capacity 3. Preserve and Restore Natural Resources 4. Provide for Public Participation 5. Recover Costs	Sister Mary Madonna Ashton Commissioner Minnesota Department of Health
III.	Remedial Action Master Plan	1. Drinking Water System 2. Ground Water Control System 3. Deep Source Removal 4. Shallow Source Control 5. Pathway Elimination 6. Community Relation Plan 7. Litigation	Sandra S. Gardebring Executive Director Minnesota Pollution Control Agency
IV.	Drinking Water System - Guidelines	Health Risks EPA Criteria MDH Guidelines PAH and Heterocycles	David Gray Minnesota Department of Health
V.	Drinking Water System - Study	Pilot Study Results Goals Alternatives - Treatment - Interconnect - Deeper Wells Financial	CH_2M Hill and Barr Engineering
VI.	Drinking Water System - Recommendations		Michael Hansel Minnesota Pollution Control Agency
VII.	Other RAMP Activities		Michael Hansel Minnesota Pollution Control Agency
VIII.	Closing Remarks		Sandra S. Gardebring Executive Director Minnesota Pollution Control Agency
IX.	Questions and		Technical Staff and Consultants

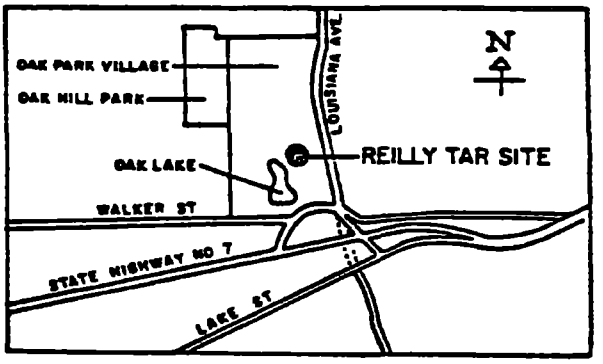
RTC 196

WHAT'S GOING ON HERE?
The Reilly Tar & Chemical Company Problem, In Brief

How did it all begin?

Between 1918 and 1972, Republic Creosote, a subsidiary of Reilly Tar and Chemical Company, operated a coal-tar distillation and wood preserving plant on an 80-acre site in St. Louis Park. The site is north of Highway #7 and west of Louisiana Avenue. Oak Park Village is located on the northern portion of the site.

What happened there?



Wastes from the distillation process and any spills or leaks were disposed of in series of ditches emptying into the swampy area south of the site. Coal-tar compounds heavily contaminated the soil, water and wells on the site - the result of more than 50 years of dumping, leaks and spills.

So what?

As people learned more about hazardous chemicals, concern developed about possible water contamination from the Reilly operation. The Minnesota Department of Health examined the site and analyzed water from nearby wells in 1974, finding some wells contaminated with phenolic compounds. Soil borings revealed heavy contamination at depths of approximately 45 feet below the site.

In 1978, using a new technique, high-performance liquid chromatography, the Minnesota Department of Health was able to detect levels of contamination in four of St. Louis Park's municipal wells in the parts-per-trillion range. The four wells were shut down. Since then, two more St. Louis Park wells and one Hopkins municipal well have been taken out of operation due to contamination.

Are we drinking bad water now?

No. No water has been pumped from those wells since they were shut down, except for a few hours during the summer of 1982 when water pressure in St. Louis Park fell so low that the fire department would have had difficulty fighting a fire. The municipal water in St. Louis Park and Hopkins is safe to drink, and it is tested frequently by the Minnesota Department of Health to be sure that it stays that way.

Where are the contaminated wells?

Two of the contaminated wells, #10 and #15, are just north of Minnetonka Boulevard, between Idaho and New Jersey Avenues. Another two, #7 and #9, are south of Cedar Lake Road between Louisiana and Nevada Avenues. (Wells #7 and #9 were only slightly contaminated, but it was believed that with wells #10 and #15 inoperative the use of #7 and #9 would serve to draw the contamination north.) Well #5, another contaminated well, is south of West 34th Street at Wyoming Avenue, and #4 is on the northeast corner of the Highway 100-Excelsior Boulevard intersection. The contaminated Hopkins well, #3, is located west of Monk Avenue at 2nd Street North.

What is in the water?

The contaminants of concern are polynuclear aromatic hydrocarbons (PAHs). Because the molecules have more than one nucleus, or center, they are "polynuclear." "Aromatic" refers to their being easy to detect by smell, and "hydrocarbons" means that the molecules are made of just hydrogen and carbon. Some "heterocyclic" compounds have also been found, in which nitrogen. oxygen or sulfur replace some of the carbon.

Are the chemicals harmful?

The amount of PAHs in the water of contaminated wells is very small and cannot be seen or tasted. Nor would you get sick at once if you drank the water. But many scientists believe that the chemicals cause cancer in people, as they do in laboratory animals. Because it is thought to be harmful to drink the water every day over a long period of time, the contaminated wells have been shut down.

If the water we're getting is okay, then what's the problem?

The trouble is that although the water is safe to drink, in the summer there is not enough to go around - for gardens, grass and people. And the source of the contamination is still there on and near the old Reilly site. The contamination can continue to spread to wells that are now clean if something is not done to prevent it.

Then do something.

We are. But cleanup costs may be many millions of dollars, so it is important to do the job right the first time. Careful study must come first. Working with the help of a 1981 grant and the $1.9 million "Superfund" grant from the federal Environmental Protection Agency, the city and the Minnesota Pollution Control Agency are conducting studies on four fronts:

1. What to do to provide the city of St. Louis Park with sufficient clean water.

2. What to do about the contaminated soil on and around the Reilly site.

3. What to do about the pathways by which that contamination is getting into deep ground water.

4. What to do to keep the contamination from spreading.

Will St. Louis Park have trouble providing enough water this summer?

Probably not. The city has connected with the Plymouth water system and is also drilling a new, deeper well to provide clean water. It is hoped that the well will be finished soon. In addition, the city is planning to implement a water conservation program this summer.

For more information about the ground water contamination problem, call the Minnesota Pollution Control Agency at 296-7294.

Permit No: MN 0045489

Application No: MN 0045489

PROPOSED
SUBJECT TO REVISION

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STATE DISPOSAL SYSTEM PERMIT PROGRAM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; hereinafter the "Act"), Minnesota Statutes Chapters 115 and 116 as amended and Minnesota Pollution Control Agency Regulation WPC 36 (hereinafter Agency Regulation WPC 36)

CITY OF ST.LOUIS PARK

is authorized by the Minnesota Pollution Control Agency, to discharge from City Development Project including land farming and storm sewer projects located as shown on Pages 3 and 4 of 16.

to receiving water named the Minnehaha Creek.

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II, hereof.

The permit shall become effective on the date of issuance by the Director pending final approval by the Agency. The Permittee shall be notified of the final decision of the Agency regarding this permit.

This permit and the authorization to discharge shall expire at midnight, December 31, 1979 . The Permittee is not authorized to discharge after the above date of expiration. In order to receive authorization to discharge beyond the above date of expiration, the Permittee shall submit such information and forms as are required by the Agency no later than 180 days prior to the above date of expiration pursuant to Agency Regulation WPC 36.

Date

Grant J. Merritt, Executive Director
Minnesota Pollution Control Agency

40000512

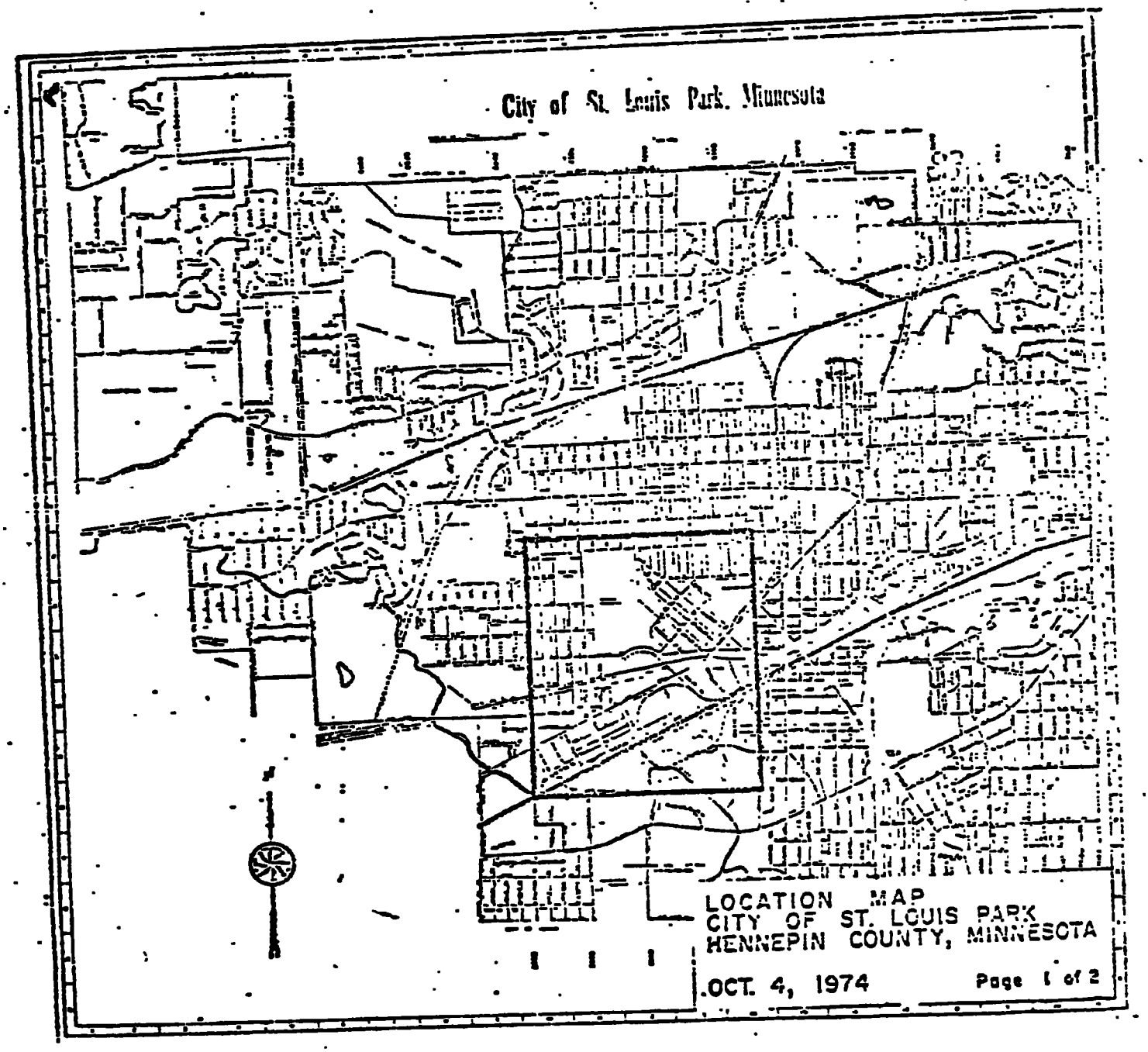
P1272-1

DESCRIPTION

In October, 1970, the Minnesota Pollution Control Agency and the City of St. Louis Park, jointly commenced an action against Reilly Tar and Chemical Company to abate pollution violations resulting from the operation of its creosote plant. As a settlement of that litigation between the City and Reilly Tar and Chemical Company, the City purchased from Reilly Tar and Chemical Company the property on which the plant was located, intending to dispose of the property for appropriate future redevelopment of the site. The prior creosote production and treatment operations on the site deposited wastes on the land containing coal tar distillates and/or related industrial chemicals which if mixed with storm water would contribute to degradation of surface waters of the state.

The City is installing a storm sewer in an area which includes the former premises of the creosote plant, and the storm sewer will discharge into Minnehaha Creek. Initially it is expected that the runoff water from the former plant site will pick up pollutants which, if not treated, will not comply with Agency Regulations WPC 2, WPC 14, and WPC 24 as presently adopted. With the passage of time it is expected that the runoff from the former site will progressively be cleared of pollutants picked up from the surface of the land.

The City shall construct and place into operation a disposal system designed to treat all wastewater pollutants attributable to the soil contamination described above. The treated effluent will be discharged from the disposal system at an approximate rate of 173,900 gallons per day based on the average annual rainfall.



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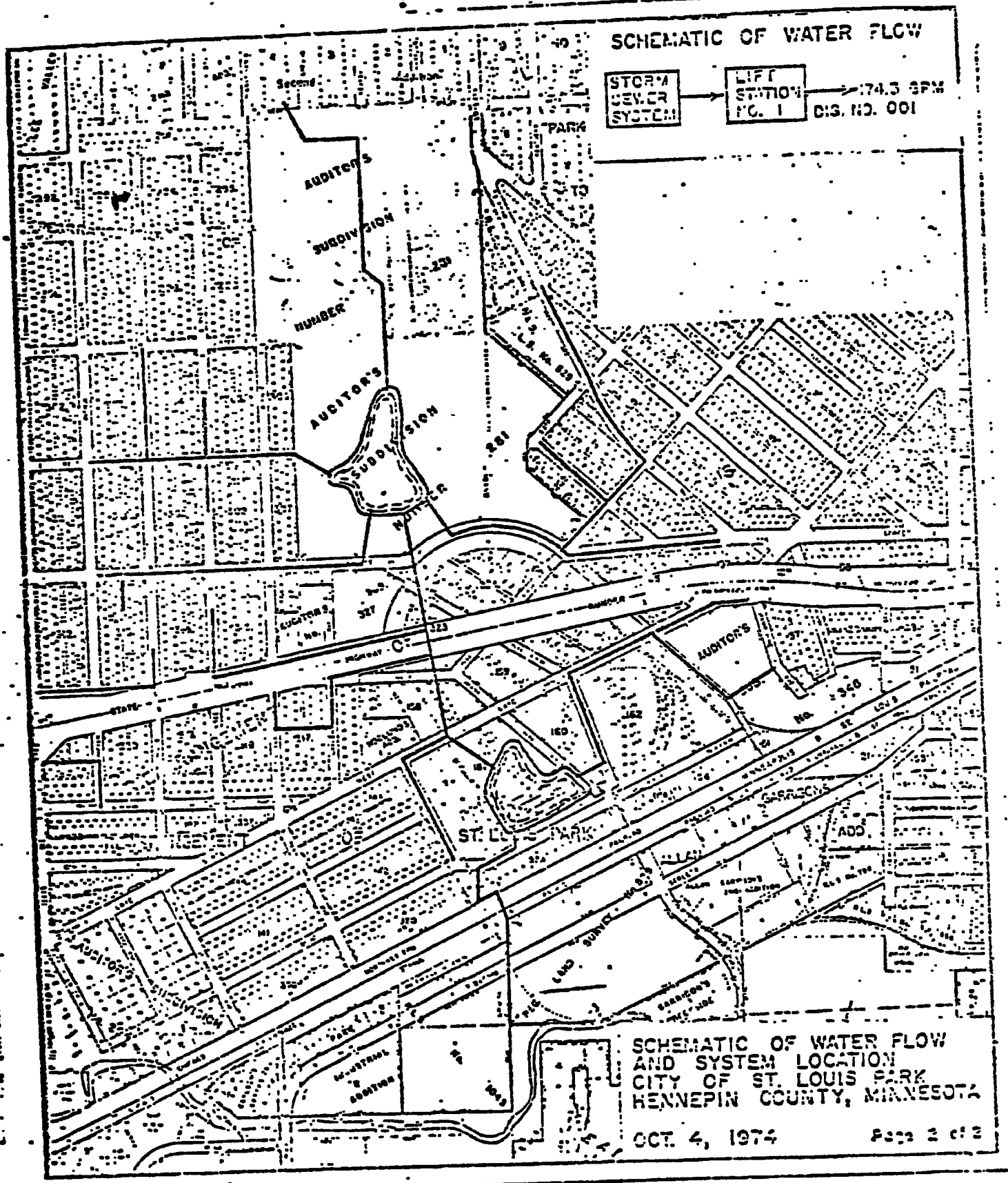
P/272-3

Permit No: MN 0045489



40000515

P/272-4

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

* 1. During the period beginning on the effective date of this permit and lasting until December 31, 1979 the Permittee is authorized to discharge from outfall serial number 001.

Such discharges shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS Specify Units			MONITORING REQUIREMENTS	
	Monthly Avg.	Variable Daily Max.	Daily Max	Measurement Frequency	Sample Type
Flow-M^3/Day (MGD)	-	-	-	Continuous	Daily Total Flow
Flow in Minnehaha Creek-M^3/Day (MGD)	-	-	-	Continuous	Daily Total F
Oil and Grease	10mg/l	0.5 + B mg/l	15mg/l	Daily	Grab
Phenols	-	0.01 + B mg/l	0.1mg/l	Daily	Grab
Quinone	-	0.04 + B mg/l	0.4mg/l	Daily	Grab
Total Chlorine Residual	-	0.01 + B mg/l	0.2mg/l	Daily	Grab
Zinc	-	0.12 + B mg/l	1.0mg/l	Weekly	Grab
Cadmium	-	0.03 + B mg/l	0.2mg/l	Weekly	Grab
Copper	-	0.01 + B mg/l	0.5mg/l	Weekly	Grab
Nickel	-	0.52 + B mg/l	2.0mg/l	Weekly	Grab
Lead	-	0.03 + B mg/l	1.0mg/l	Weekly	Grab
Ammonia (as N)	-	1.0 + B mg/l	2.0mg/l	Weekly	Grab
Benzo-α-pyrene	-	-	0.01μg/l	Monthly	Grab
Chrysene	-	-	0.01μg/l	Monthly	Grab
BOD_5	-	-	-	Weekly	Grab
Total Suspended Solids	-	-	-	Weekly	Grab
Turbidity	-	-	-	Weekly	Grab
Fecal Coliform	-	-	-	Weekly	Grab

The pH shall not be less than 6.5 nor greater than 8.5 and shall be monitored by daily grab sample. These upper and lower limitations are not subject to averaging and shall be met at all times.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge to the Minnehaha Creek.

*See Other Requirements Part I, B. 6. for computation of B value for the specified parameters. The Variable Daily Maximum shall be applicable as the maximum permissable effluent concentration except when the Daily Maximum value is more stringent.
In the event that adequate background monitoring is not done to determine a value for B as defined in Part I B. 6. of this permit then the B value shall be considered equal to zero.

40005516

B. OTHER REQUIREMENTS

1. Pretreatment

No pollutant shall be discharged from this facility to a publicly owned treatment works except in accordance with pretreatment standards established in accordance with the Act or Minnesota Statutes or any such local standards or requirements. No pollutant shall be discharged into any publicly owned disposal system which interferes with, passes through inadequately treated or otherwise is incompatible with such disposal system. The Permittee shall not make modifications to divert any discharge of pollutants authorized by this permit to a publicly owned treatment works without having first notified and received the approval of the Director.

2. The Permittee shall be responsible to provide treatment for all surface runoff water passing through the storm sewer system to bring the runoff water to the required standards. Plans for the treatment system shall be submitted to the Agency and are subject to its approval prior to commencement of the discharge.

3. This permit is neither a commitment to/or an approval of any subsequent development of this site and is without prejudice to the position of any party on the matter of responsibility for the cost of what ever ultimate work needs to be done to rehabilitate or eliminate any pollution associated to the soils and its ground waters.

4. The Permittee shall be responsible for the future removal or alteration of the storm sewer system as might be necessary as part of what ever work is needed to rehabilitate the underlying soil and its associated soils and ground waters.

5. The treatment facility described in this permit shall maintain best practicable operational capabilities at all times with the objective of maintaining the discharge levels for five day biochemical oxygen demand and total suspended solids at 25 mg/l and 30 mg/l, respectively, as a monthly average.

6. Flow Factor B

$$B = [F_U/4F_E] [C_S - C_U]$$

Where: F_U = The daily total flow rate in Minnehaha Creek above the point of discharge

F_E = The daily total flow rate for the discharge

C_U = The background concentration for Minnehaha Creek for the specific effluent characteristics above the point of discharge. The method for determining the background levels for the specific parameters shall be done by sampling Minnehaha Creek above the point of discharge once every two weeks for a one year period prior to commencement of the discharge and averaging the samples.

C_S = The water quality standard for a specific parameter. These are as follows:

Oil and Grease	0.5 mg/l
Phenols	0.01 mg/l
Quinone	0.04 mg/l
Total Chlorine Residual	0.01 mg/l
Zinc	0.12 mg/l
Cadmium	0.03 mg/l
Copper	0.01 mg/l
Nickel	0.52 mg/l
Lead	0.03 mg/l
Ammonia (as N)	1.0 mg/l

C. MONITORING AND REPORTING

1. Representative Sampling

Samples shall be taken at a point representative of the discharge. Any monitoring measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Monitoring Plan

The Permittee shall submit a plan for monitoring the discharge to Minnehaha Creek, for monitoring the subsurface soils in the area of the land farming operation for monitoring the water quality of Minnehaha Creek above the discharge point and for monitoring the storm water within forty five (45) days after the date of issuance of this permit for approval and thereafter submit a written report to the Director each month in compliance with such plan. The monitoring plan shall include the items described in Agency Regulation WPC 36 (n) (2).

Monitoring of the subsurface soils shall include those parameters required of the discharge in Part I. A. 1. of this permit.

Monitoring of the water quality of Minnehaha Creek shall include all parameters where the Permittee intends to utilize the Flow Factor B described in Part I. B. 6. in determining the maximum effluent concentration for the specific parameter.

The extent to which monitoring of the storm water prior to entering the contaminated area shall be done shall be agreed upon after a review of the monitoring plan.

3. Reporting

Monitoring results obtained during the previous month shall be summarized and reported on the designated "Discharge Monitoring Report Form", and received or postmarked no later than the 21st day of the month following the completed reporting period. The first report is due on May 21, 1975. Signed copies of these, and all other reports required herein, shall be submitted to the Director at the following address:

Director
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113
Attn: Compliance and Enforcement Section

4. Reduction or Elimination of Monitoring Requirements

If the Permittee after monitoring for a reasonable time determines that he is consistently meeting the effluent limits contained herein, the Permittee may request of the Director that the monitoring requirements be reduced or eliminated. The Permittee may also request after a reasonable period the reduction or elimination of subsurface soil monitoring, surface runoff monitoring, and water quality monitoring. This request shall be submitted for review to all parties of the Public Hearing held for the proposed NPDES permit (MN 0045489) on February 27, 1975 and the determination of the ~~parties~~ director shall be binding.

5. Monitoring Report

The Permittee shall report the results of the monitoring requirements in the units specified in this permit. A report or written statement is to be submitted even if no discharge occurred during the reporting period. The monthly report shall include (a) a description of any modifications in the waste collection, treatment and disposal facilities; (b) any changes in operational procedures; (c) any other significant activities which alter the nature or frequency of the discharge; (d) any other material factors regarding the conditions of this permit and such information as the Minnesota Pollution Control Agency or Director may reasonably require of the Permittee, pursuant to Minnesota Statutes Chapters 115 and 116 as amended and Agency Regulation WPC 36 (n).

6. Definitions

a. "Monthly Average" Discharge

1. Weight Basis - The "monthly average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the facility was operating. Where less than daily sampling is required by this permit. the monthly average discharge shall be determined by the summation of the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

2. Concentration Basis - The "monthly average" concentration means the arithmetic average (weighted by flow value) of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Variable Daily Maximum" Discharge

1. Weight Basis - The "variable daily maximum" discharge means the total discharge by weight during a calendar day, based on calculations utilizing the Flow Factor, B.

2. Concentration Basis - The "variable daily maximum" concentration means maximum daily concentration, based on calculations utilizing the Flow Factor, B.

c. "Daily Maximum" Discharge

1. Weight Basis - The "daily maximum" discharge means the total discharge by weight during any calendar day.

2. Concentration Basis - The "daily maximum concentration means the daily determination of concentration for any calendar day.

d. The "Agency" means the Minnesota Pollution Control Agency, as constituted pursuant to Minnesota Statutes, Section 116.02, Subd. 1.

e. The "Director" means the Executive Director of the Minnesota Pollution Control Agency as described in Minnesota Statutes, Section 116.03 as amended.

f. The "Regional Administrator" means the EPA Regional Administrator for the region in which Minnesota is located (now Region V).

g. The "Act" means the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq.

h. A "Composite" sample, for monitoring requirements, shall be defined as no less than a series of grab samples collected at equally spaced hourly intervals and proportioned according to flow.

i. Pollutants, Toxic Pollutants, Other Wastes, Point Source, Disposal System, Waters of the State and other terms for the purpose of this permit are defined in Section 502 of the Act and Minnesota Statutes Section 115. 01 as amended and Agency Regulation WPC 36 (b).

7. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(g) of the Act, and Minnesota Statutes, Section 115.03, Subd. 1(e)(7), as amended.

The Permittee shall periodically calibrate and perform maintenance on all monitoring and analytical instrumentation used to monitor pollutants discharged under authorization by this permit, at intervals to insure accuracy of measurements. The Permittee shall maintain written records of all such calibrations and maintenance.

8. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person who performed the analyses;

d. The analytical techniques, procedures or methods used; and

e. The results of such analyses.

9. Additional Monitoring by Permittee

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by the Minnesota Pollution Control Agency or Director, the results of such monitoring shall be included in the calculation and reporting of values submitted on the designated Discharge Monitoring Report Form. Any increased monitoring frequency shall also be indicated on such designated form.

10. Recording and Records Retention

All sampling and analytical records required by the conditions of this permit shall be retained by the Permittee for a minimum of three (3) years. The Permittee shall also retain all original recordings from any continuous monitoring instrumentation, and any calibration and maintenance records, for a minimum of three (3) years. These retention periods shall be extended during the course of any legal or administrative proceedings or when so requested by the Regional Administrator, the Minnesota Pollution Control Agency or the Director.

PART II

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice of such changes to the Director. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the Permittee shall immediately notify the Compliance and Enforcement Section by telephone (612)296-7236 and confirm in writing, within five (5) days of becoming aware of such condition. The written notification shall contain the following information:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue; and steps being taken to correct, reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Unauthorized Discharges

The Permittee shall immediately notify the Compliance and Enforcement Section of any unauthorized discharge, accidental or otherwise, of oil, toxic pollutants or any other substance or material under its control which, if not recovered, may cause pollution of the waters of the state, and shall recover as rapidly and as thoroughly as possible such oil, toxic pollutant, or other substance or material and take immediately such other action as may be reasonably be required to minimize or abate pollution of waters of the state caused thereby.

4. Facilities Operation and Quality Control

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a. The Permittee shall at all times maintain in good working order and operate as efficiently as possible any facilities or systems of control installed to achieve compliance with the terms and conditions of the permit.

b. The Permittee shall provide an adequate operating staff which is duly qualified under Minnesota Regulations WWOB 1 if applicable (as determined by the Director pursuant to Agency Regulation WPC 36(1)(6)(ee)) to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

c. Maintenance of the treatment facility that results in degradation of effluent quality shall be scheduled during noncritical water quality periods and shall be carried out in a manner approved by the Director.

d. The Director may require the Permittee to submit a maintenance plan to eliminate degradation of the effluent. The Permittee shall operate the disposal system in accordance with this plan as approved by the Director.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. The results of such monitoring shall be submitted to the Director as required under this provision.

6. Bypassing

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The Permittee shall promptly notify the Director, Attn: Compliance and Enforcement Section, in writing, of each such diversion or bypass.

Notification of any bypass which causes noncompliance with the daily effluent limitations shall be done in accordance with Part II,(a)(2), Noncompliance Notification.

7. Removed Substances

The Permittee shall dispose of solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters in such manner as to prevent any pollutant from such materials from entering waters of the state. The Permittee in disposal of such material shall comply with all applicable water, air and solid waste Statutes and Regulations. When requested the Permittee shall submit a plan for such disposal for approval by the Director.

8. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the Permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities; or

b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of one or more of the primary sources of power to the wastewater control facilities.

9. Construction

This permit does not authorize the construction of any treatment works associated with this discharge, unless plans and specifications for such facilities have been approved in writing by the Director prior to the start of any construction.

B. RESPONSIBILITIES

1. Right of Entry

The Permittee shall pursuant to Section 308 of the Act and Minnesota Statutes 116.091, allow the Director of the Minnesota Pollution Control Agency, the Regional Administrator, and their authorized representatives:

a. To enter upon the Permittee's premises where a disposal system or other point source or portion thereof is located for the purpose of obtaining information, or examination of records or conducting surveys or investigations; and

b. To bring such equipment upon the Permittee's premises as is necessary to conduct such surveys and investigations; and

c. To examine and copy any books, paper, records or memoranda pertaining to the installation, maintenance, or operation or discharge, including but not limited to, monitoring data of the disposal system or point source or records required to be kept under the terms and conditions of this permit; and

d. To inspect any monitoring equipment or monitoring procedures required in this permit; and

e. To sample any discharge of pollutants.

2. Transfer of Ownership of Control

In the event of any changes in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall notify the succeeding owner or controller of the existence of this permit by letter, prior to the effective date of the transfer. A copy of this letter shall be forwarded to the Regional Administrator and the Director. Any succeeding owner or controller shall also comply with the terms and conditions of this permit.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act, and Minnesota Statutes, Section 116.075, Subd.2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Minnesota Pollution Control Agency and the Regional Administrator. Procedures for submitting such confidential material shall be pursuant to Minnesota Regulation WPC 36(j)(2). As required by the Act, effluent data shall not be considered confidential. The Permittee shall immediately upon discovery report, in writing to the Director any errors or omissions of such record, reports, plans or other documents prepared in accordance with the terms and conditions of this permit. Knowingly making any false statement on any such report, confidential or otherwise, may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Minnesota Statutes, Section 115.071 Subd.2(a).

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or

d. Agency Regulation WPC 36(s)(1)

5. Toxic Pollutants

Notwithstanding Part II, B, 4, above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition)is established under Section 307(a) of the Act and Minnesota Statutes, Chapters 115 and 116 as amended, for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and in accordance with applicable laws and regulation.

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance with the terms and conditions except as otherwise provided in Part I, A, 6. Bypassing and Part I, A, 8. Power Failures.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Act and Minnesota Statutes, Chapters 115 and 116 as amended.

8. Federal, State and Local Laws

Nothing in this permit shall be construed to preclude the institution of any legal or administrative proceedings or relieve the Permittee from any responsibilities, liabilities, or penalties for violation of effluent and water quality limitations not included in this permit.

9. Property Rights

The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any violation of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA
FOURTH DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

and

STATE OF MINNESOTA, by its Attorney General Hubert H. Humphrey, III, its Department of Health, and its Pollution Control Agency,

Plaintiff-Intervenor,

v.

REILLY TAR & CHEMICAL CORPORATION; HOUSING AND REDEVELOPMENT AUTHORITY OF ST. LOUIS PARK; OAK PARK VILLAGE ASSOCIATES; RUSTIC OAKS CONDOMINIUM, INC.; and PHILIP'S INVESTMENT CO.,

Defendants,

and

CITY OF ST. LOUIS PARK,

Plaintiff-Intervenor,

v.

REILLY TAR & CHEMICAL CORPORATION,

Defendant,

and

CITY OF HOPKINS,

Plaintiff-Intervenor,

v.

REILLY TAR & CHEMICAL CORPORATION,

Defendant.

Civil File No. 4-80-469

AFFIDAVIT OF
MARK R. KASTER

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

MARK R. KASTER, being first duly sworn, states as follows:

1. I am a litigation assistant with the law firm of Dorsey & Whitney, attorneys for defendant in the above-entitled matter. I make this affidavit in support of the motions of Reilly Tar & Chemical Corporation ("Reilly") to compel discovery, to extend the time for filing third-party actions, and to extend the discovery deadline.

2. I am familiar with the Reilly Tar & Chemical Corporation litigation files, including the documents produced in discovery by the plaintiffs.

3. Exhibit 1, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on August 6, 1983. Said documents were produced from the files of Jay Heffern, Gordy Meyer, Bob Criswell, Rick Ferguson, Lowell Richie, Roman Koch, Tony Manoukien, Mike Convery, Roger DeRoos, David Gray, Andrew Dean, Bill Hall, Eunice Sogardson, Kari Dusich, Ed Ross, Bill Scruton, Jim Nye, Fred Heisel, Warren Lawson, Terry Hoffman, Dale Wikre, John Aho, Doug Mandy, and David Giese. On information and belief, all of these individuals have been associated with the plaintiffs in some capacity.

Approximately 10 to 15 thousand documents were produced at this time. Many of the documents pre-dated Reilly's 1979 interrogatories and request for production of documents. The scheduled depositions of Ed Ross, Roman Koch, John Aho and Russell Frazier had to be postponed because of untimely production of documents. Correspondence to that effect is attached hereto as Exhibit 2.

4. Exhibit 3, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on August 26, 1983. Said documents were from the Minnesota Department of Health files covering the following discoverable subjects: Jim Nye's files; U.S.G.S. well logs; well abandonment permission letters; chemical analyses; St. Louis Park chemical analyses; cost estimates; drillers logs; maps, photographs; surveys; requests for proposals; bids; Habco Corporation investigatory documents; Roman Koch's files; well abandonment files; Androc Chemical Corporation documents; and legislative materials on the well abandonment program.

Approximately 1 to 2 thousand documents were produced at this time. Many of the documents were responsive to Reilly's 1979 interrogatories, especially numbers 64, 66, 69 and 79. The scheduled depositions of Ed Ross, Roman Koch, John Aho and Russell Frazier had to be postponed because of the untimely production of documents. Correspondence to that effect is attached hereto as Exhibit 2.

5. Exhibit 4, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on September 22, 1983. Said documents were from the Minnesota Department of Health files covering the following discoverable subjects: maps of wells; soil boring logs; MN DOT construction plans for Louisianna Avenue; PAH sampling documents; Gary Englund's files; MDH thermal injection project files; Mike Convery's files; and MDH Safe Drinking Water Act files.

Approximately 500 to 1,000 documents were produced at this time. Many of the documents were responsive to Reilly's 1979 interrogatories, especially numbers 64, 66, 69 and 79.

6. Exhibit 5, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on September 20, 1983. Said documents were from the files of the Minnesota Pollution Control Agency, Minnesota Department of Health and Minnesota Geological Survey. The documents produced included: well abandonment files; well logs; Androc Chemical files; requests for proposals; Habco files; Jim Nye's files; maps; cost estimates; U.S.G.S. well logs; chemical analyses; well abandonment permission letter; drilling logs; sampling procedure documents; lists of consultants; laboratories and other personnel; Round Robin analyses; PCA acquifer thermal energy storage project files; MPCA soil samples and analyses; characterization reports; raw data on water chemistry and field notebooks.

Several thousand documents were produced at this time. Many of the documents were responsive to Reilly's 1979 interrogatories, especially numbers 64, 66, 69 and 79.

7. Exhibit 6, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on December 5, 1983. Said document consisted of one tape of the June 22, 1976, Minnesota Pollution Control Agency (MPCA) board meeting. It was learned at this production that the State of Minnesota retained tapes of almost all MPCA board meetings dating back to 1970. Affiant has been reviewing these tapes and has transcribed over 100 pages of materials relevant to the present litigation. The tapes contain a record of statements made by many persons whose depositions have already been taken, including Sandra Gardebring, Wayne Popham, Dale Wikre, Grant Merritt and Harold Field. All of these individuals had been deposed by Reilly prior to the production of these tapes. In addition, the tapes are responsive to Reilly's 1979 interrogatories. (See Definition F. of Defendant's Interrogatories to Plaintiff and Intervenor (Set I) which provides that "document" includes tape recordings). On information and belief, the untimely production of 13 years of MPCA board meeting tapes has impeded Reilly's meaningful discovery of these persons and other witnesses on the facts giving rise to this litigation.

8. Exhibit 7, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on December 9, 1983. Said documents were produced from the files of the Minnesota Department of Health.

Approximately three thousand documents were produced at this time. I have reviewed these documents. Many of the documents were responsive to Reilly's 1979 interrogatories, especially numbers 64, 66, 69 and 79. I am attaching a selection of handwritten documents as Exhibit 8, representing documents responsive to Reilly's prior requests but produced during this production. These documents reflect names of individuals already deposed by Reilly. Reilly was unable to question deponents on the material in these documents or on similar materials produced at this time. (See also, Exhibit 2).

9. Exhibit 9, attached hereto, is an acknowledgement of documents produced by the State of Minnesota on January 19, 1984. Said documents were produced from the Minnesota Department of Health and consisted of files from Mike Convery, Bill Hall, Roger DeRoos, Jim Nye, Doug Mandy, Dave Geise and Pauline Bouchard. On information and belief, all of these persons have been associated with the plaintiffs in some capacity.

Approximately four thousand documents were produced at this time. On the limited review of these documents since their delivery to my office in early February, it is apparent

that many of the documents are responsive to Reilly's 1979 interrogatory requests, especially numbers 64, 66, 69 and 79.

As with all documents produced by the plaintiffs, these documents must be thoroughly screened and brought to the attention of Reilly's attorneys. On information and belief, Reilly's attorneys have spent hundreds of hours reviewing recently produced documents. On information and belief, these documents greatly impacted Reilly's defense. Their untimely production has caused substantial delays in Reilly's discovery and trial preparation efforts.

10. Exhibit 10, attached hereto, is a letter I received from the State of Minnesota on January 23, 1984. It sets forth a schedule for production of documents responsive to Reilly's past requests. Page two indicates that MPCA files, Barr Engineering and Hickok and Associates' files, other site documents and CH2M-Hill consultants' documents are to be produced at a time "to be scheduled". All indications suggest that these documents will be produced either shortly before or after the Court imposed discovery deadline.

11. The failure of plaintiffs to produce requested documents in a timely fashion over the period 1980 through 1984 has prejudiced Reilly. Discovery has been delayed by the series of document productions addressed above. All of these

productions contained documents, as originally defined in Reilly's 1979 pleadings, responsive to Reilly's initial request for production of documents and interrogatories.

Further Affiant Sayeth Not.

Mark R. Kaster

Mark R. Kaster

Subscribed and sworn to before me
this 13th day of February, 1984.

Vicki Kay Wurst

Notary Public

VICKI KAY WURST
NOTARY PUBLIC MINNESOTA
HENNEPIN COUNTY
My Commission Expires Sept 15 1988

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that documents from the files of the Minnesota Pollution Control Agency and the Minnesota Department of Health identified by the document control numbers listed on the attached pages have been produced for our review in the offices of the Minnesota Pollution Control Agency on or about August 16, 1983.

Dated: August 6, 1983.

Mark R. Kaster

Dorsey & Whitney

CARTON 1 of 1

MPCA DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
~~137~~-1	Jay Heffern	9505476-9505483 9505509-9505517 9505537-9505543 9505548-9505557 9505577-9505578 9505588-9505590 9505596-9505606 9505591-9505595 9505613-9505628 9505630-9505633
~~136~~-1	Gordy Meyer	9810011-9810019 9810022-9820080 9810084-9810179 9810095A 9810103A 9810109A 9810181-9810232 9810236-9820382
~~159~~-1	Bob Criswell	9830001-9830002
135-1	Rick Ferguson	6610004-6610029 6610032-6610051 6610060-6610065 6900336-6900338 6900340-6900344 6900347-6900364 6900427-6900437 9820795-9820842 9820799A 9820800A 9820803A 9820834 A,B,& C 9820855-9820858 6900426
135-2	Rick Ferguson	9820555-9820648 9820650-9820683 9820661A 9820687-9820793 9820708A
135-3	Rick Ferguson	9820500-9820502
135-4	Rick Ferguson	9820001-9820064

138-1	Lovell Richie	9800669-9800688
138-2	Lovell Richie	9800371-9800382 9800405-9800411 9800416-9800514 9800516-9800667
139-1	Lovell Richie	9800018-9800030 9800035-9800058 9800062-9800085 9800089-9800093 9800100-9800104 9800112-9800352 9800324A
160-1	Lovell Richie	9840001-9840009

CARTON 1 of 4

MDH DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
148-1	Roman Koch	6000405-6000411 6000413-6000426 6000429-6000467 6000469-6000478 6000481-6000486 6000497-6000504 6000528-6000548 6000550-6000560 6000588-6000589 6000601 6000635-6000642 6000758-6000761 6000652 6000694-6000696 6000700-6000707 6000754-6000755
148-2	Roman Koch	6000396-6000404 6000427-6000428 6000487-6000496 6000518-6000527 6000564 6000516-6000517
148-3	Roman Koch	6000561-6000563 6000653-6000681 6000653A 6000654A 6000655A 6000693 6000691-6000692 6000697-6000699 6000733 6000735-6000753 6000756-6000757 6000762-6000779 6000790 6000801
148-4	Roman Koch	6000412 6000479-6000480 6000584-6000586 6000590-6000600 6000604 6000622 6000682-6000690 6000708-6000732 6000780-6000789 6000791-6000800

FOLDER	DESCRIPTION	NUMBER RANGE
148-5	Roman Koch	6000393-6000395 6000468 6000505-6000515 6000587 6000611-6000621 6000549 6000565-6000567 6000623-6000634 6000643-6000651 6000602-6000603 6000606-6000610
147-1	Tony Manovkian	6610001-6610214 6610216-6610565 6610568-6610594
147-2	Tony Manovkian	6610607-6610629 6610621A-6610621B
149-1	Mike Convery	6620001-6620089 6620189-6620250 6620254-6620282 6620310-6620317 6620418-6620436 6620438-6620490 6620492-6620525 6620537-6620544 6620548-6620574 6620577
149-2	Mike Convery	6620578-6620767
149-3	Mike Convery	6620090-6620188 6620322-6620329 6620545-6620547
149-4	Mike Convery	6620283 6620286-6620295 6620297-6620304 6620330 6620332-6620333 6620359-6620376
149-5	Mike Convery	6620251-6620253 6620284-6620285 6620296 6620305-6620309 6620318-6620321 6620334-6620341 6620331 6620342 6620355-6620358 6620377-6620389 6620402-6620405

FOLDER	DESCRIPTION	NUMBER RANGE
144-1	Roger DeRoos	6710001-6710041
145-1	Pauline Bouchard	6720001 6720005-6720119 6720121
146-1	David Gray	6800219-6800259 6800256-6800270 6800278 6800297-6800298 6800260-6800261
158-1	David Gray	6900340-6900344 6900347-6900364 6900366-6900368 6900426-6900437
151-1	Andrew Dean	6810001-6810046 6810048-6810157

CARTON 2 of 4

MDH DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
142-1	Bill Hall	6820001-6820056
		6820058-6820059
		6820057
		6820060-6820116
		6820118-6820161
		6820163-6820165
		6820167-6820170
		6820172-6820179
		6820181-6820206
		6820208-6820257
		6820259-6820422
		6820424-6820461
		6820463-6820468
		6820470-6820667
		6820669-6820678
		6820681-6820683
		6820686-6820840
		6820846-6820859
		6820865-6820872
		6820878-6820879
		6820885-6820886
		6820892-6820893
		6820899-6820900
		6820906-6820907
		6820914-6820915
		6820921-6820922
		6820928-6820928A
		6820935-6820935A
		6820942A
		6820943-6820944
		6820951-6820952
		6820959-6820960
		6820966-6820974
		6820980-6820981
		6820988-6820990
150-1	Eunice Sigardson	6830033-6830173
		6830354-6830365
		6830401-6830412
		6830423-6830434
		6830307-6830318
		6830251-6830262
		6830207-6830218
		6830279-6830290
		6830486-6830497

FOLDER	DESCRIPTION	NUMBER RANGE
150-2	Eunice Sigardson	6830001
		6830371-6830373
		6830332-6830334
		6830179-6830187
		6830384-6830389
		6830338-6830342
		6830002-6830013
		6830374-6830375
		6830335-6830337
		6830014-6830032
		6830418-6830020
		6830413-6830415
		6830366-6830368
		6830319-6830321
		6830291-6830293
		6830263-6830265
		6830219-6830221
		6830174-6830177
		6830222
		6830266
		6830369
		6830294
		6830322
		6830416
		6830421
150-3	Eunice Sigardson	6830435-6830442
		6830376-6830383
		6830324-6830331
		6830224-6830239
		6830188-6830195
150-4	Eunice Sigardson	6830443-6830453
		6830390-6830400
		6830343-6830353
		6830296-6830306
		6830268-6830278
		6830240-6830250
		6830196-6830206
150-5	Eunice Sigardson	6830454-6830477
		6830479-6830485
		6830498-6830499
150-6	Eunice Sigardson	6830534
		6830557-6830569
		6830625-6830626
		6830603-6830608
		6830610-6830619
		6830621
		6830918-6830999

150-7	Eunice Sigardson	6830887-6830891A 6830883-6830884 6830886 6830885 6830867-6830882 6830878A 6830879A 6830901-6830917
150-8	Eunice Sigardson	6830627-6830663 6830669-6830676 6830570-6830577
150-9	Eunice Sigardson	6830898-6830900 6830892-6830893 6830664-6830666 6830500-6830519 6830535-6830554 6830578-6830600 6830622-6830624
150-10	Eunice Sigardson	6830520-6830521 6830523-6830533 6830677-6830668 6830677-6830709 6830711 6830714-6830795 6830797-6830866
150-11	Eunice Sigardson	6831000-6831232
150-12	Eunice Sigardson	6831233-6831323
150-13	Eunice Sigardson	6831324-6831346 6831359-6831387

CARTON 3 of 4

MDH DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
150-14		6831[illegible]
~~150-15~~	~~Eunice Sigardson~~	~~6831617-6831858~~
~~150-16~~	~~Eunice Sigardson~~	~~6831859-6832000~~
150-17	Eunice Sigardson	6832001-6832151 6832099A-B
150-18	Eunice Sigardson	6832152-6832293
150-19	Eunice Sigardson	6832294-6832411
155-1	Kari Dusich	6840009-6840066
155-2	Kari Dusich	6840398-6840404 6840312-6840313 6840296-6840311 6840006-6840008
155-3	Kari Dusich	6840067-6840131 6840405 6840407-6840415 6840002-6840005
155-4	Kari Dusich	6840132-6840136 6840138-6840295 6840314-6840343 6840345-6840397
155-5	Kari Dusich	6840416-6840551 6840553-6840572
155-6	Kari Dusich	6840573-6840585 6840587-6840678 6840680-6840694 6840696-6840743
155-8	Kari Dusich	6840923-6840942 6840960-6841000 6841033-6841063 6840943-6840945 6840846 6840947-6840959 6841001-6841032 6841064-6841087

FOLDER	DESCRIPTION	NUMBER RANGE
155-9	Kari Dusich	6840897-6840899 6841088-6841246
155-10	Kari Dusich	6841247-6841269 6841276-6841339 6841341-6841535 6841415A 6841416A 6841417A 6841418A 6841420A 6841421A 6841422A 6841423A
155-7	Kari Dusich	6840771-6840789 6840797-6840830 6840841-6840863 6840865-6840876 6840831-6840840 6840877-6840886 6840900-6840902 6840904-6840922
150-14	Eunice Sigardson	6831565-6831615 6831602A-B 6831500-6831509

CARTON 4 of 4

MDH DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
152-1	Ed Ross	7200193-7200208 7200229-7200252 7200286-7200293 7200360-7200361 7200363-7200365 7200516-7200523 7200562-7200563 7200577-7200584 7200663-7200667
152-2	Ed Ross	7200466 7200192-7200192A 7200209-7200223 7200225 7200227-7200228 7200253-7200264 7200258A-B 7200268-7200285 7200294 7200299 7200303-7200304 7200306-7200359 7200362 7200366 7200368-7200462 7200451A 7200467-7200496 7200501-7200515 7200526-7200545 7200547 7200550-7200561 7200564-7200576 7200585-7200601 7200605-7200650 7200614B 7200636A 7200637A 7200652-7200662 7200668-7200688 7200684A-D 7200690-6200691

FOLDER	DESCRIPTION	NUMBER RANGE
152-3	Ed Ross	7200295-7200298 7200300-7200302 7200497-7200500
143-1	Bill Scruton	7900761-7900797
156-1	Jim Nye	9200613-9200660 9200613A-C 9200614A-C 9200615A-C 9200616A-C 9200617A-C 9200618A-C 9200619A-C 9200620A
156-2	Jim Nye	9200661-9200685 9200687-9200711 9200713-9200749
156-3	Jim Nye	9200750-9200916 9200918-9201007
156-4	Jim Nye	9201008-9201019 9201139A-9201187
156-5	Jim Nye	9201020-9201137 9201139
80-1	Fred Heisel	1100469-1100472
82-1	Warren Lawson	1000039-1000045 1100133-1100135

CARTON 1 of 1

MPCA and MDH
DOCUMENTS

FOLDER	DESCRIPTION	NUMBER RANGE
13.01	MPCA Hoffman	9507673-9507679
13.04	MDH Gordon Meyers	9810378-9810382 6700020-6700024 9600521-9600523 9810329-9810333 9810368-9810377 9810262-9810278 9810261 9810257-9810260 9810256 9810253-9810255 9810249-9810252 9810239-9810248 9810237-9810238 9810236 9810204-9810208 9810211-9810213 9810176-9810203 9810140-9810152 9810136-9810139 9810130-9810135 9810126-9810129 9810122-9810125 9810120-9810121 9810118-9810119 9810116-9810117 9810108-9810115 9810104-9810107 9810103 9810103A 9810102 9810101 9810099 9810087-9810098 9810084-9810086 9600524-9600542 9810005-9810007 9810334-9810367 9810327-9810328 9810279-9810326 9810011-9810080 9810153-9810175
13.08	MPCA Water Quality Division Dale Wikre	9600543-9600606 9600615 1000053 1800556-1800719 9600619-9600651

FOLDER	DESCRIPTION	NUMBER RANGE
13.12	MPCA Aho	7200738-7200739
13.20	MPCA Richie	9508053-9508056
13.22	MPCA - Administrative	9600662-9600663 9600669-9600715 9600691A 9600712A 9600721-9600804 9600812 9600816-9600863 9600871-9600934 9600873A
14.05	MPCA - Misc. Reports & Correspondence	1000294 1000397 1100110-1100112 1100103-1100104 1100097-1100099 1100101-1100102 1100082-1100096 1100100
17.01	MDH Koch	6000802-6000805 6000809-6000828 9600935 6000829-6000836 6000838-6000855
17.05	MDH Doug Mandy	6630001-6630128
17.07	MDH DeRoos	9600936-9600938
17.09	MDH Giese	6740001-6740005 9600939
17.10	MDH David Gray	9601158
17.12	MDH Bill Hall	6820998-6821063
17.16	MDH Ed Ross	7200800 7200799 7200798 7200797 7200796 7200794 7200793 7200792 7200791 7200790 7200789 7200788

FOLDER	DESCRIPTION	NUMBER RANGE
17.16	MDH Ed Ross (cont.)	7200740-7200742
		7200688-7200713
		7200715-7200725
		7200728-7200737
		7200743-7200764
		7200766-7200776
		7200778-7200787
		7200801-7200819
17.19	MDH Jim Nye	9201223-9201252
		9201261
		9200669A
		9200672A
		9200676A
		9200678A
		9200681A
		9201188-9201198
18.01	MDH Misc. H_2O Supply Reports	9600941-9601091
		9507598-9507606
		6610438-6610441
		6610588
		6610442-6610449
		9601092-9601093
		6610450-6610465
		6610603-6610604
		6610580
		9601094-9601157
		9201199-9201210
18.02	MDH - General Files	9508057-9508063
		9508084-9508085
		1000282-1000189
		1000249-1000250
		1000243
		9201188-9201198
		6610566-6610567
		9200735-9200749
		9200727-9200734
		9200726
		9200716-9200725
		9200703-9200704
		9200709-9200712
		9200714-9200715
		9200708
		9200707
		9200706
		9200705
		9200688-9200701
		9200673
		9200672
		9200672A

FOLDER	DESCRIPTION	NUMBER RANGE
18.02	MDH General Files (cont.)	9200675
		9200676-9200676A
		9200678-9200679
		9200678A
		9200681-9200681A
		9200669-9200670
		9200669A
		9200684-9200686
		9200688
		9601163-9601165
		6610046-6610051
		6610044-6610045
		6610040-6610041
		6610038-6610039
		6610036-6610037
		6610034-6610035
		6610032-6610033
		6610042-6610043
		6610028-6610029
		6610026-6610027
		6610024-6610025
		6610022-6610023
		6610020-6610021
		6610018-6610019
		6610016-6610017
		6610014-6610015
		6610012-6610013
		6610010-6610011
		6610008-6610009
		6610006-6610007
		6610004-6610005
		6610064-6610065
		6610062-6610063
		6610060-6610061
		7200912-7200927
		7200837-7200849
		9201285-9201291
		9201275-9201276
		9201273-9201274
		9201271-9201272
		9201269
		9201268
		9201267
		9201270
		9201266
		9201265
		9201264
		9201263
		9201262
		9201259-9201260
		9201166-9201176
		9201258

FOLDER	DESCRIPTION	NUMBER RANGE
18.02	MDH General Files (cont.)	9201257 9201256 9201210 9201251 9201177-9201184 9201252 9201185-9201192 9201253-9201255 9201301-9201304
17.14	MDH Kari Dusich	9601193-9601301
Film	Copy of MPCA Board Meeting April 8, 1980	9601302

2

REC'D JUL 29

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

July 28, 1983

Allen Hinderaker
Popham, Haik, Schnobrich, Kaufman & Doty, Ltd.
4344 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402

Edward J. Schwartzbauer
Dorsey and Whitney
2200 First Bank Place East
Minneapolis, Minnesota 55402

Re: U.S. v. Reilly Tar & Chemical Corp.
File No. Civ. 4-80-469

Gentlemen:

As I explained to each of you on the phone late yesterday, there are roughly 10,000 pages of MPCA and Health Department documents which were offered for your inspection in August, 1980, and which apparently were never inspected. While the State has satisfied its obligations under the discovery rules as to these documents, I believe expeditious completion of discovery is best served by offering each of you the opportunity to inspect these documents at this time.

We would need a week to prepare the files for inspection because these documents have been pulled from the files and mixed with other documents in order to prepare document kits for the nine present and former State employees whose depositions Reilly Tar has noticed. Accordingly, if you wish to inspect these documents, I suggest we schedule the inspection for the week after next (week of August 8) and discuss rescheduling of at least the depositions now set for the weeks of August 8 and August 15.

Very truly yours,

STEPHEN SHAKMAN
Special Assistant
Attorney General

SS:jh
cc: David Hird
Robert Leininger
Joseph Vesely

August 2, 1983

Dennis M. Coyne, Esq.
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113

Re: U.S.A., et al. v. Reilly Tar
& Chemical Corporation, et al.

Dear Dennis:

This will confirm today's telephone conversation. In view of Steve Shakman's letter indicating that the State has about 10,000 additional documents which have not yet been produced, we have agreed as follows.

We will commence examining the additional documents on Monday, August 8, and will continuedto do so as doduments are marked and produced to us. In order to avoid inconvenience to all of the lawyers involved, we have rescheduled the deposition of Dale Wikre for October 18 at 9:30 a.m. to continue October 19 at the same time, if necessary. We have also rescheduled the deposition of John Badalich to October 12 at 9:30 a.m.

Our objective is to examine the documents as quickly as possible in hopes that it will not be annessary to reschedule the depositions of Messrs. Frazier, Koch, Aho, Ross and Ms. Gardebring, scheduled August 22, 23, 24 and 30. A further postponement of those depositions may become necessary if we cannot finish our document review by the time those depositions are duecommence.

Yours very truly,

Edward J. Schwartzbauer

EJS:ml

cc: Robert Polack, Esq.
All Counsel of Record

DORSEY & WHITNEY
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WASHINGTON, D C. 20036
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30 RUE LA BOETIE
75008 PARIS, FRANCE
011 331 562 32 50

BECKY A. COMSTOCK
(612) 340-2987

August 5, 1983

Mr. Paul G. Zerby
Special Assistant Attorney
General
Minnesota Department of Health
2829 University Avenue S.E.
Suite 136
Minneapolis, MN 55414

Re: U.S.A. v. Reilly Tar &
Chemical Corporation

Dear Paul:

This letter will confirm our telephone conversation of August 4, 1983, regarding our need to reschedule the depositions of Messrs. Frazier, Koch, Aho and Ross. As discussed, we have determined that it will be necessary to reschedule these depositions so as to allow our office time to examine additional MPCA and MDH documents. Accordingly, we have agreed to the following schedule for these depositions: Russell Frazier, October 25, 1983, beginning at 9:30 a.m.; Roman Koch, October 26, 1983, beginning at 9:30 a.m.; and Ed Ross, October 28, 1983, beginning at 1:30 p.m. I will be arranging a new date for the deposition of John Aho with the MPCA attorneys and will so notify all parties.

Thank you for your assistance.

Very truly yours,

Becky A. Comstock

BAC:kll
cc: All Counsel of Record
Robert Polack, Esq
Kirby A. Kennedy
bcc: Thomas Reiersgord
Edward J. Schwartzbauer
Michael J. Wahoske
Mark R. Kaster

REC'D AUG 8 1983

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

HUBERT H. HUMPHREY III
ATTORNEY GENERAL

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

August 5, 1983

Edward J. Schwartzbauer, Esq.
Dorsey & Whitney
2200 First Bank Place East
120 So. 6th Street
Minneapolis, MN 55402

Re: U.S. v. Reilly Tar & Chemical Corporation
File No. Civ. 4-80-469

Dear Ed:

I called your office today and was advised that you will not return to the office until Monday, the 8th of August. I left a message that the production of documents will not take place on Monday, August 8th.

Ken Stevenson, of our office, spoke to Mark Kaster today and advised him that the production will not take place on Monday.

Please call me to discuss the rescheduling of the production.

Very truly yours,

DENNIS M. COYNE
Special Assistant
Attorney General

DMC:mh

RECD AUG 1 3 ...

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

August 12, 1983

Mr. Edward J. Schwartzbauer
Dorsey & Whitney
2200 First Bank Place East
Minneapolis, MN 55402

Re: U.S. v. Reilly Tar & Chemical Corp.
Civil No. 4-80-469

Dear Ed:

This letter is written to confirm that the State will make a production of documents at 9:30 a.m. on Tuesday, August 16, 1983 in Room 431 of the MPCA Offices located at 1935 W. County Road B-2, Roseville, MN 55113.

Very truly yours,

DENNIS M. COYNE
Special Assistant
Attorney General

DMC:cg
cc: All Counsel

RECD SEP 1 6 ...

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

ST. PAUL 55155

September 16, 1983

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

Becky Comstock
Edward J. Schwartzbauer
Dorsey & Whitney
2200 First Bank Place East
Minneapolis, MN 55402

Re: U.S. v. Reilly Tar & Chemical Corp.
File No. Civ. 4-80-469

Dear Becky and Ed:

I wish to confirm our conference call of September 13 in which Becky requested that the deposition of Frank Howard scheduled for September 27 be set for another date. I am sending this letter to each of you because it appears that you have not been communicating as to prior requests for rescheduling depositions.

In your affidavit of September 2, Ed, you stated that the deposition of State and St. Louis Park personnel noticed by Reilly Tar this summer "all have been rescheduled at the request of plaintiffs." This statement is in error; out of twelve depositions noticed, at most half were rescheduled on the requests of any of the plaintiffs. Rescheduling of the original dates for the John Aho, Edwin Ross, John Badalich, and John Arnold depositions was done at your request. After the Wikre deposition was reset from August 9 to August 11, and the Frazier and Koch depositions from July 27-28 to August 22-23, you requested they be postponed to September or October. Becky arranged much of this rescheduling on the phone with my co-counsel, Dennis Coyne and Paul Zerby. I sugggest you review Becky's letter to Paul of August 5, 1983.

In short, it seems clear that as much rescheduling was done at Reilly Tar's request as at the request of any other party. All parties have been courteous and cooperative about rescheduling and I hope that the misstatement in the affidavit will not lead the Court to think otherwise.

Very truly yours,

STEPHEN SHAKMAN
Special Assistant
Attorney General

SS:mah
cc: All counsel of record

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(202) 296-2780

30 RUE LA BOETIE
75008 PARIS, FRANCE
011 331 562 32 50

EDWARD J. SCHWARTZBAUER
(612) 340-2825

September 21, 1983

Stephen Shakman, Esq.
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113

Dear Steve:

I have your letter of September 16, 1983 relative to the scheduling of depositions.

The statement in my affidavit of September 2, 1983 that the depositions "all have been rescheduled at the request of plaintiffs" was an inadvertent overstatement for which I apologize. The depositions of John Aho, Edmund Ross and John Badalich were re-scheduled at our request because of the fact that we were advised by you on July 27 that you had discovered 10,000-15,000 additional documents responsive to our 1979 request for production which had not been reviewed by this office or by the attorneys for St. Louis Park. Because these documents were from the files of the PCA and Minnesota Department of Health, it appeared that they might be relevant in connection with the depositions of the PCA and MDH officials, and that the documents could not be reviewed in time to take those depositions as originally scheduled. I have absolutely no recollection that you advised us in 1980 that some additional documents had been discovered. However, if you say you did, I take your word for it.

The other reason was that St. Louis Park requested an extension of time to answer Reilly's interrogatories. We needed those answers in order to conduct the depositions. In any event, we had not requested any delays in depositions for our own convenience. When I dictated the affidavit I was thinking that all of these changes were triggered by some request that the plaintiffs had made or something that the plaintiffs had done, and that, of course, was correct.

The John Arnold deposition was originally scheduled to save travel expenses because we were going to Reno, Nevada to take the deposition of Cherches and because Dr. Arnold resided in Los Angeles when I last communicated with him. I did not discover that he had moved to the east coast until after I had sent the notice.

The Howard deposition is being rescheduled only because Becky Comstock, who is planning to take that deposition, is representing another client whose problem has been scheduled for hearing before the PCA on September 27.

I agree that all parties have been courteous about rescheduling all depositions. However, we are beginning to have problems completing the depositions in a timely manner because counsel for the plaintiffs have not been able to stay until the deposition has been finished or are just now advising us of conflicts, even though everyone has had abundant notice of all depositions. For example, the deposition of C. A. Johannes was commenced by Mr. Wahoske on September 8, with the idea that it would be continued until completed. The notice of that deposition was given on June 30. However, it was not completed because none of the attorneys for the City of St. Louis Park could be present on the following day. In addition, the deposition of John Badalich was rescheduled for October 12 on the basis of conversations which were reached early in August. My letter of August 2, 1983 to all counsel confirmed that date. However, we are now advised by the City of St. Louis Park that none of the three attorneys in that office who are working on the case can be present for any depositions during the week of October 10.

I think all lawyers should know that when a deposition is scheduled, they are obligated to be present until it is finished. The deposition notice states that "The oral examination will continue from day to day until completed." We will try to let everyone know how long a deposition is expected to take.

I cannot remember any occasion on which the lawyers from this office caused a deposition to be interrupted in the middle because it took longer than expected, although many of them have been very time consuming and even though the State has generally underestimated the time that has been necessary.

Accordingly, in the future we will expect that when a deposition is commenced, it will continue until it is finished, subject, of course, to the right of all parties to object if the deposition becomes unduly protracted by any other party.

We also must request that conflicts be reported to us promptly. I know that in the practice of law we all have conflicts. And I know that it may yet be necessary to make some changes in schedules. But we have a discovery deadline in this case and there is much discovery that has not yet been initiated. Accordingly, it may become necessary to take the position that further requests for delay will have to be made to the Magistrate.

If you want me to correct my affidavit to reflect the history set forth in this letter, please let me know.

Yours very truly,

Edward J. Schwartzbauer

EJS:ml

cc: All Counsel of Record

P.S. Enclosed is Reilly's Second Notice of Taking Oral Deposition.

bcc: Robert Polack
Michael J. Wahoske
Becky A. Comstock
James E. Dorsey III
Mark R. Kaster

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BECKY A. COMSTOCK
(612) 340-2987

September 29, 1983

Mr. David Hird
Room 1260
Environmental Enforcement Section
Land and Natural Resources Division
U.S. Department of Justice
Washington, DC 20530

Mr. Allen Hinderaker
Popham, Haik, Schnobrich, Kaufman & Doty, Ltd.
4344 IDS Center
Minneapolis, MN 55402

Mr. Stephen Shakman
Special Assistant Attorney General
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, MN 55113

Mr. Joseph C. Vesely
Vesely & Miller
400 Northwestern Bank Building
1011 First Avenue South
Hopkins, MN 55343

Re: U.S.A. et al. v. Reilly Tar & Chemical Corporation

Dear Counsel:

At the request of Paul Zerby, Special Assistant Attorney General assigned to the Minnesota Health Department, we have agreed to reschedule the depositions of Edwin Ross and Roman Koch, now set for October 28, 1983 at 1:30 p.m. and October 26, 1983 at 9:30 a.m., respectively. Based on telephone conversations with each of you or your offices, these depositions will be rescheduled to the following dates:

Edwin Ross 2200 First Bank Place East Minneapolis, MN 55402	December 8, 1983 9:30 o'clock a.m.
Roman Koch 2200 First Bank Place East Minneapolis, MN 55402	December 13, 1983 9:30 o'clock a.m.

These oral examinations will continue from day-to-day until completed.

Please note that the deposition of John Aho continues to be scheduled for October 28, 1983 at 9:30 o'clock a.m. and will continue until completed.

Very truly yours,

Becky A. Comstock

BAC:kll
cc: All Counsel of Record
Paul Zerby
Robert Leininger
Kirby Kennedy
bcc: Robert Polack
Thomas Reiersgord
Edward J. Schwartzbauer
Michael J. Wahoske
James E. Dorsey III
Mark Kaster
Theresa Wagner

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

REC'D OCT 26 1983

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE MN 55113
TELEPHONE (612) 296-7342

25 October 1983

Kathleen Martin
Popham, Haik, Schnobrich, Kaufman
& Doty, Ltd.
4344 IDS Center
80 South Eighth Street
Minneapolis, Minnesota 55402

Michael J. Wahoske
Dorsey & Whitney
2200 First Bank Place East
Minneapolis, Minnesota 55402

RE: U.S. v. Reilly Tar & Chemical Corporation
File No. Civ. 4-80-469
Deposition of Mr. John Aho

Dear Mr. Wahoske and Ms. Martin:

Earlier today I telephoned Mr. Wahoske to discuss two matters relating to the deposition of Mr. John Aho, scheduled to begin at 9:30 a.m. on October 28, 1983.

First, our office has just become aware of the existence of notes made and kept by Mr. Aho. These notes have not been previously produced by the State. I called Mr. Wahoske to inform him of this fact and to suggest that we provide him with a copy of the notes tomorrow (Wednesday, October 26, 1983.) Mr. Wahoske stated that, subject to his further review, such production would be acceptable. Accordingly, I am enclosing with this letter a copy of the documents identified by the stamped numbers 9605082 - 9605102.

Second, Mr. Wahoske and I discussed the Magistrate's Order regarding disclosure of documents reviewed by a witness but not bearing that witness' name. I suggested that we include with the Wednesday production a copy of any such documents. Mr. Wahoske agreed to this. Therefore, you also will find enclosed with this letter a copy of a document identified by the somewhat illigible stamped number 3000044.

Very truly yours,

Lisa R. Tiegel
Special Assistant
Attorney General

LRT:lt
Enclosure
cc: All Counsel (without enc.)

HUBERT H HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

REC'D NOV 29 1983

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
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ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

November 23, 1983

Edward J. Schwartzbauer, Esq.
Dorsey & Whitney
2200 First Bank Place East
120 South Sixth Street
Minneapolis, Minnesota 55402

Re: U.S. v. Reilly Tar & Chemical Corporation
File No. Civ. 4-80-469

Dear Ed:

Our office has recently learned of a box of documents from the files of the Minnesota Department of Health. These documents, some of which may not have previously been produced to you, will be available for your inspection next week. We believe many of these documents are responsive to your earlier document requests.

Please advise when you would like to review these documents.

Very truly yours,

Dennis

DENNIS M. COYNE
Special Assistant
Attorney General

DMC:mh

cc: All counsel

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

ADDRESS REPLY TO
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TELEPHONE (612) 296-7342

December 7, 1983

Becky Comstock, Esq.
Dorsey & Whitney
2200 First Bank Place East
120 South Sixth Street
Minneapolis, Minnesota 55402

Re: U.S. v. Reilly Tar & Chemical Corporation
File No. Civ. 4-80-469

Dear Becky:

This letter is written as a follow-up to our telephone conversation of Tuesday, December 6, 1983. As I advised you, Mr. Koch has maintained a file in his office pertaining to the Reilly Tar site, St. Louis Park. We only recently learned that not all of the documents in his office had been number-stamped. However, most of the documents in the file were previously number-stamped and we assume that these documents have been produced to you. In any event, we are now making the entire file available to you.

In addition to the documents that Mr. Koch kept in his office, there are other documents at the Minnesota Department of Health (MDH) which we are making available for your inspection. Most of these documents are being produced as part of our responses dated September 1 and October 17, 1983, to Reilly document requests. However, there are some documents which may be responsive to earlier requests and were previously overlooked. We believe that among the MDH documents are many duplicates of documents previously produced to you, or duplicates of the documents being produced to you from Mr. Koch's office file.

In my November 23, 1983, letter to Ed Schwartzbauer, I stated that additional MDH documents were available for inspection. Those documents remain ready for your review, as well as Mr. Koch's file. The remaining MDH documents will be available for inspection in early January, 1984.

Please call me about your plans for inspecting these documents and your wishes for the scheduling of Mr. Koch's deposition, presently set for December 15, 1983.

Very truly yours,

DENNIS M. COYNE
Special Assistant
Attorney General

DMC:mh
cc: All counsel

MEMORANDUM

TO: Reilly Tar & Chemical Corporation File

CC: Edward J. Schwartzbauer
Michael J. Wahoske
Renee Pritzker
Mark Kaster
Theresa Wagner

FROM: Becky A. Comstock BAC

DATE: December 8, 1983

RE: Production of MPCA and MDH Documents

On December 6, 1983, Dennis Coyne called me to advise me that they had located approximately 10 inches of documents in the personal files of Roman Koch. Dennis advised me that these documents were likely to be pertinent to his deposition but that they would not be able to make them available until Monday, December 12, 1983. Dennis called on December 8, 1983, and reported that the documents would be produced on Friday, December 9, 1983. Theresa Wagner has agreed to go to the Agency to review these documents. However, copies of the documents cannot be made available until Tuesday, December 13, 1983, at the earliest. Accordingly, Roman Koch's deposition has been postponed.

In combination with the production of the Koch documents, Dennis Coyne has advised that the Minnesota Health Department documents of which we were made aware in his letter of November 22, 1983, are also ready for production.

Theresa Wagner will review these documents when she is at the Agency on December 9, 1983.

Dennis Coyne has additionally advised that documents that are responsive to our request dated September 1 and November 11, 1983, have not yet been reviewed and will not be available for production until the early part of January, 1984.

BAC:kll

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BECKY A. COMSTOCK
(612) 340-2987

December 8, 1983

Dennis Coyne, Esq.
Special Assistant Attorney General
Minnesota Pollution Control Agency, Fourth Floor
1935 West County Road B2
Roseville, MN 55113

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Assistant U.S. Attorney
110 South Fourth Street
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Allen Hinderaker, Esq.
Popham, Haik, Schnobrich, Kaufman & Doty, Ltd.
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James T. Swenson, Esq.
Mackall, Crounse & Moore
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Minneapolis, MN 55402

Thomas W. Wexler, Esq.
Peterson, Engberg & Peterson
700 Title Insurance Building
Minneapolis, MN 55401

David Hird, Esq.
Room 1260
Environmental Enforcement Section
Land & Natural Resources Div.
U.S. Department of Justice
Washington, DC 20530

Re: United States of America, et al. vs.
Reilly Tar & Chemical Corporation, et al.

Dear Counsel:

Please be advised that the deposition of Roman Koch, originally scheduled to begin on Thursday, December 15, 1983, has been postponed. On December 6, 1983, the Minnesota Pollution Control Agency advised our office that numerous documents from Mr. Koch's personal files had not

been previously produced and would not be available for inspection until Monday, December 12, 1983. The deposition will be rescheduled for sometime after the first of the year. We will advise you when a new date has been set.

Very truly yours,

Becky A. Comstock

BAC:kll
cc: Paul G. Zerby
Robert Leininger
Kirby Kennedy
bcc: Robert Polack
Edward J. Schwartzbauer
Michael J. Wahoske
James E. Dorsey
Mark Kaster
Renee Pritzker

3

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that documents from the files of the Minnesota Department of Health identified by the document control numbers listed on the twenty-one (21) attached pages have been produced for our review in the offices of the Attorney General Health Division offices on or about August 25, 1983.

Dated: August 26, 1983.

Mark R. Koster

Production Documents - Dorsey 8-4

C in Nye Files

		✓ = copy
7 b = 1	U.S.G.S. Well Electro-Logs	
	9200554	✓
	9300063	✓
	9300112 - 114	113-119
	9300234 - 236	✓
	9300133 - 150	✓
	9300029	✓
	9300104	✓
	9200452 - 459	✓
	9200494	✓
	9200557 ; 9200971-975	✓
	9200360 - 361	✓
	9200354 - 359	✓
	9200362 - 363	✓
	9200334	✓
	9200337 - 338	✓
	9200588 - 589	—
	9200276 - 280	✓
	9200370	✓
	9200270 - 273	✓
	9300182 - 210	✓
	9200464	✓
	9200562 - 563	✓
	9200555 - 556	✓
	9200558 - 559	9200559
	9200526	✓

File #1 (Continued)

✓ = copy

9201312	✓
9200385-386	✓
9200540	✓
9200393-394	✓
9200392	—
9200399	✓
9200410	—
9200384	✓
9200387-392	✓
9200411	—
9300090	✓
9300099-101	9300099
9300024-[illegible]	✓
9300082-085	✓
9200398	✓
9300151	✓
9300211-229	—
9300127-132	✓
9300057-059	✓
9200426	—
9300115-119	—
9200565	✓
9200499-503	✓
9300150-171	✓

7 le #2 Remission letters

✓ = copy

9200915 - 921	✓
9200925	✓
9200927	✓
9200930 - 931	✓
9200962	✓
9200333	✓
9200344	✓
9201318 - 333	✓
9300370 - 371	✓
9300349	✓
9300353	✓
9201334	✓
9300350	✓
9300352 - 353	✓
9200412	—
9300365	✓
9300356	—
9200436	✓
9200249 - 255	✓

ile # 3 Chemical Analyses

✓ = copy

9200667 - 675
9200678 - 682
9200687
9200698 - 701
9200703 - 705
9200720
9200723 - 725
9200729 - 735
9200746 - 749

all

ile # 4 St Lucie Park Chemical Analysis

✓=copy

9201335 - 375
9200216
9201376 - 388
9200217 - 222
9200204
9201389 - 392

all

File #5 Cost Estimates - St Louis Pk

	✓ = copy
9201394	✓
9200761 - 764	✓
9200483 - 487	✓
9200476 - 480	✓
9200345	✓
9200481 - 482	✓
9200407 - 409	✓
9200241 - 242	9200242
9200244 - 247	✓
9201395 - 397	395 - 396
9200225 - 232	✓

File #6 Driller Log - Maps ✓ copy
9300347
[illegible]/395 - 4/3 ✓ large map - Atkinson ✓

le

Photographs (manila envelope)

9201441 - 443
9200805 - 807
9201420 - 430
9200613 - 9200621
9200623
9200625
9200627
9200629
9200631
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9200637
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9200641
9200643
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9200647
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9200651
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9200657
9200659

Photographs of well abandonment project

copy of identification

File #8 Maps, Etc

9201431 - 433
9201866
9201211 - 222
9201434
9201179 - 181
9201435
9201146
9201141
9201187
9201152
9201148 - 149
9201145
9201151
9201175

✓ copy
9201431

copy in sections?

all maps
Albinisms?

File #9

9300002 - 9300011	Copy = ✓
9201431	✓008 - 011
9300012 - 017	✓
9300060 - 062	✓061 - 62

File #10 Music

	✓ = copy
9200864	✓
9200871 - 872	✓
9200827	✓
9200884	✓
9200898 - 899	✓
9200902 - 905	✓
9200909 - 912	✓

File #1 Jan Nyx (Blue Fabric)

✓ copy

9201251 - 1252	✓ map - Albion
9201[illegible]	✓ survey
9201270 -	✓
9201277	✓
9201306 - 308	✓
9201301 - 304	✓ + photos
9201297 - 300	✓
9201283 - 284	—
9201262 - 263	9201263
9201309 - 311	✓ + photos
9201199 - [illegible]	✓ + photos
[illegible]	✓
9201439 - 440	✓
9201247	✓
9201252.	✓

✓ = copy

File #: RFP - [illegible]

9200752 - [illegible]	752 + 755; 756 → 760
[illegible] - [illegible]	765-767; 770-772
9200764 - [illegible]	✓
9200[illegible]	✓
9200779	✓
9200784	✓
9200786	—
[illegible] - 789	✓
[illegible] 791	—
9200793 - 813	✓
9200812	✓
[illegible]	✓
[illegible]	✓
[illegible]	✓
[illegible]	✓
9200824	✓
[illegible]	✓
[illegible]	✓
[illegible]	✓
[illegible]	✓
9200850	✓
9200854	✓
[illegible]	✓
[illegible] 081	✓
1200380	✓
[illegible]	✓

File #12 (Continued)

9300029 - 032	✓
9300044 - 045	✓
9300172 - 180	✓
9201529 - 535	✓

✓ = copy

Files #13 KAEU
600 0856 - 266

✓ = copy

Roman Koch File
File #14 Contract File

6000862 (w/ copy of 6000656)	✓
6000868 - 869	✓
6000658	✓
6000[illegible] - 690	✓
6000694	—
6000652	✓
[illegible]934	✓
6000754 - [illegible]	✓
[illegible]0870	✓
6000757 - 760	—
[illegible]	758 - 759
[illegible] - [illegible]7	✓
6000762 - 764	—
[illegible]261	✓
[illegible] 801	✓
[illegible]	— (all)
6000673 - 674	✓ photos
6000691 - 695	✓
6000[illegible] - [illegible]	✓
[illegible]A	✓
[illegible]676	✓ photo
6000734 - 738	✓ photo
6000[illegible]1	734 - 737
[illegible] - 753	—
6000[illegible] - [illegible]	✓
	—

File [illegible] (Cont'd)

✓ = copy

9200222 ✓
9200224 ✓
6000656-663 ✓
6000664-[illegible] ✓
6000675- ✓
6000677-690 (w/copy of 9200346) ✓
6000681

Hennepin County
✓ = copy

[illegible]

File #5 Sheet Placement Before Plat

7200704 - 705 ✓ 904

7201042 043 ✓

7200825 - 837 ✓

7200812 ✓

7200819 ✓

7200807 - 812 ✓

7200802 - 807 ✓

7200775 - 776 ✓

Hennepin County
✓ copy

File #10 [illegible] & St Louis Pk [illegible]

7201177 -

7201181 - 122

7201061

7201031 - 041

7200911 - 931

7201096 - 124

181

St Louis Park ✓ = copy

File #12 [illegible] Co [illegible] Chemical

[illegible]-045
7000[illegible]-[illegible]
[illegible]
7000689-697
[illegible]-[illegible]
6140001
6000673-674
6640002-004
6000692-697
4[illegible]2-004
[illegible]
4700[illegible]-016 [illegible]
[illegible]19-032
[illegible]
4700042-[illegible]
4700085 [illegible]
4700042-[illegible]
4700[illegible]-073 [illegible]
6640005-006
4700071-074 [illegible]
4700058-059 (xerox)
6640008
6[illegible]665
7201175-176
6640009-043

all

File [illegible] Research in Agriculture
[illegible] Project
1979, 1978, 1977 and [illegible]

1 copy

7800143 - 146	143-144
7800148 - 154	148
7800183 - 185	✓
7800174 - 180	174
7800219 - [illegible]	✓
7800163 - 173	166
7800156 - 57	✓
7800250 - 251	✓
7800202 - 206	✓
[illegible]	—
7800221 - 225	✓

4

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that documents from the files of the Minnesota Department of Health and the Minnesota Pollution Control Agency identified by the document control numbers listed on the attached sheets, as well as the unnumbered Minnesota Department of Health Safe Drinking Water Act files and a large map and overlay from the Minnesota Pollution Control Agency files, have been produced for our review in the offices of the Minnesota Department of Health on or about September 22, 1983, pursuant to the July 14, 1983 request of Reilly Tar and Chemical Company for production of documents.

Dated: September , 1983

DORSEY & WHITNEY

Folder 1:

Maps of wells and soil borings of the Reilly Tar site: MNDOT construction plans for grading, paving, storm sewer and signalization, TH7 - Louisiana Ave. responsive to Reilly Tar requests Nos. 15 and 20.

7200003 - 7200131	General Files
7200497 - 7200500	General Files Produce 7200498 + 7200500

Folder 2:

PAH Sampling Program Hennepin County Municipalities 1980 (blue binder) Responsive to Reilly Tar request Nos. 1 and 2.

~~6610639 - 6610752~~	Tony Manoukian files OMIT (Dups)

Blue Binder from Gary Englund files. Responsive to Reilly Tar request Nos. 1 and 2.

6650001 - 6650143	Produce All
6610595 - 6610602	

Box 1:

MDH thermal injection project (ATES) files. Responsive to Reilly Tar request No. 9.

6620806 - 6620808	Mike Convery files
6620809 - 6620865	Mike Convery files Produce
6620866 - 6620888	Mike Convery files
6620889 - 6620912	Mike Convery files
6620913 - 6621884	Mike Convery files Produce 6621027-07[illegible]
6621885 - 6622287	Mike Convery files Produce 6621187-19[illegible] ; 196-207
6640351 - 6641031	General Files

1 large map of St. Louis Park area and 1 large mylar overlay indicating well locations from the MPCA files of Ken LeVoir. Responsive to Reilly Tar request No. 15. Produce (we will need the original to reproduce color coding on the produced copy)

MDH Safe Drinking Water Act files of analyses routinely performed on all Minnesota community water supplies for

(a) microbiological,

(b) inorganic chemicals,

(c) trialmethanes, and

(d) radiological chemicals.

These files have <u>not</u> been number stamped. They are organized by community name. Responsive to Reilly Tar request Nos. 1, 2, 5 and 20.

Water Supply Reports file

Hopkins
SLP
Edina
Minnetonka
Golden Valley
Mpls
Bloomington
Rosefield
Plymouth
New Brighton
Fridley

Water Supply Data file

Hopkins
SLP
Edina
Minnetonka
Golden Valley
Mpls

Water Supply Operators

Tolleafund
Ceder
Libby

5

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that documents from the files of the Minnesota Pollution Control Agency and the Minnesota Department of Health identified by the document control numbers listed on the attached sheets as well as four cartons of unnumbered documents, five volumes of well logs and two blue binders from the files of the Minnesota Geological Survey concerning the Aquifer Thermal Energy System have been produced for our review in the offices of the Minnesota Pollution Control Agency on or about September 20, 1983, pursuant to the July 14, 1983, request of Reilly Tar and Chemical Company for production of documents.

Dated: September 20, 1983.

Mark R. Carter

Dorsey & Whitney

Carton 1 - MDH Well Abandonment documents responsive to Reilly Tar Request #22

File #19 - General Files, PAH: Well Logs
6610369 - 6610418
6640044 - 6640048 } Produce

File #20 - 6610257 - 6610354
6640049 - 6640054
6610355 - 6610366
6640055 - 6640338 } Produce

File #21 - Well Abandonment - SLP
7201183 - 7201185 Produce ; omit 7201184 (dup)
7201178 - 7201180 "
7201071 "
7201059 - 7201060 " ; omit 7201060 (dup)
7201048 - 7201058 omit 7201048 - 7201058 (Love canal report)
7201073 - 7201093 Produce
7201095 Omit 7201095
7200940 - 7201017 Omit 7200940 - 7201017 Jan 81 USGS Prelim Report
7201037 - 7201038 Produce ; omit 7201038 (dup)
7200769 - 7200770 Produce
7200823 - 7200824 Produce ; omit 7200823
7200820 - 7200821 Produce ; omit 7200821
7200814 - 7200815 Produce ; Omit 7200814
7200784 - 7200787 Produce ; omit 7200784 + 786
7200781 Produce

File #22 - Hennepin County Androc Chemical
6640339 - 6640340 Omit

File #23 - Hennepin County, St. Louis Park Request for Proposal
7500001 - 7500075 omit (request for proposal)
7400108 - 7400137 omit
7300095 - 7300188 Produce

File #24 - Hennepin County Legislative SLP Well Abandonment Project 1972, 1978, 1979 and bids
7800160 - 7800161 Produce
7800147 omit
7800162 - 7800163 Produce
7800198 - 7800199 Produce
7800164 Produce
7800200 - 7800201 Produce
7800192 - 7800195 Produce
7800234 - 7800249 Produce ; omit 7800245 - 249
7800196 - 7800197 Produce
*7800207 - 7800212 Produce
7800226 - 7800233 Produce ; omit 7800229, 7800230-233 ; 7800215, 7800217
7800189 - 7800191
7800186 - 7800188
7800213 - 7800214
7800216 - 7800217 } Not found w documents - Ask Ken about these.

File #25 - Abandoned Wells
6640341 - omit
9300000a - 9300000e produce

File #26 - Hennepin County SLP Isaac Walton League 1978
7300251 - 7300267 - omit

File #27 - HABCO
6640343 - 6640347 produce; omit 6640343, 6640345

File #28 - Jim Nye Files - SLP - RFP - Ltr.
9200773
9200776
9200778
9200780 - 9200782 produce; omit 9200781 + 782,
9200785 omit
9200787 omit
9200790 omit
9200792 omit
9200811
9200814 - 9200817
9200819
*9200821 - 9200823
9200825 - 9200827 Produce
9200829
9200831 - 9200833
9200835 - 9200837
9200839
9200841 - 9200843
9200845 - 9200847
9200849
9200851 - 9200853
9200855 - 9200859 Produce; omit 9200856 - 858
9201536 - 9201595 Produce, omit 9201537, 9201543, 9201544, 9201548-51, 9201557+58, 9201569-73, 9201578+79
9300025 - 9300026
9300005 - 9300006
9200381 - 9200382
9300019 - 9300020
9300022
9200379
9201595
9300027 omit
9201596 Produce
9300033 - 9300043 produce
9300238 omit
9300001 - 9300002 omit
9201597 produce
9200564 produce
9300065 - 9300068 produce; omit 9300066
9300239 - 9300286 omit
9201598 - 9201605 produce;

File #29 - Abandoned Wells - Misc.

9200860 - 9200865 produce
9200867 - 9200870 produce; omit 9200870
9200873 - 9200874 produce
9200876 - 9200883 produce
9200885 produce
9200887 - 9200897 produce; omit 9200877
9200900 - 9200901 produce
9200906 - 9200908 produce

File #30 - Nye

9201259 omit
9201261 produce
9201253 - 9201258 produce; omit 9201256
9201264 - 9201269 produce; omit 9201264, 9201265
9201271 - 9201276 produce
9201210 produce
9201285 - 9201291 produce
9201278 - 9201282 produce; omit 9201282
9201292 produce
9201305 produce
9201223 produce
9201248 - 9201251 produce; omit 9201249, 9201250
9201606 - 9201607 omit

File #31 - Maps, etc.

9201184 - 9201185 produce, omit 9201185
9201162 produce
9201178 omit
9201183 omit
9201147 produce
9201169 - 9201173 produce
9201154 - 9201155 produce
9201608 - 9201609 omit
9201186 produce
9201153 produce
9201160 omit
9201156 - 9201157 produce
9201164 - 9201165 produce
9201167 - 9201168 produce
9201161 omit
9201163 omit
9201177 omit
9201166 omit
9201182 omit
*9201619 produce
*9201174 produce

File #32 - Cost Estimates SLP Billing

9201611 - 9201612	omit
9200238 - 9200240	omit
9200248	omit
9200262 - 9200264	omit
9200233 - 9200237	omit

File #33 - U.S.G.S. Well Sheets Logs

9300121 - 9300123	produce
9200438	omit
9201613 - 9201615	produce, omit 9201615
9300233	produce
9300093 - 9300098	omit
9201616 - 9201757	omit
9200496 - 9200498	produce
9200587	produce
9200581 - 9200584	produce
9300181	omit
9201758	omit
9200586	produce
9200469	produce
9200585	produce
9200466	produce
9200488 - 9200489	produce
9200495	produce
9200490	produce
9200448 - 9200451	produce
9200309	produce
9200445 - 9200447	produce
9200519 - 9200525	produce
9200527 - 9200537	produce
9200590 - 9200592	produce
9201759	produce
9200551 - 9200552	produce
9200545 - 9200550	produce
9200541 - 9200544	produce
9200513 - 9200518	produce; omit 9200513
9200506 - 9200511	produce
9200400	produce
9200560 - 9200561	omit
9200403 - 9200406	omit
9200395 - 9200396	omit
9200402	omit
9200412	omit
9200414 - 9200422	omit
9300105	omit
9300071 - 9300073	omit
9300102 - 9300103	omit
9300086	produce
9201760 - 9201761	omit
9300237 - 9300238	omit

File #33 (continued)

9300172 - 9300176	omit
9200443	produce
9300125 - 9300126	omit
9300091 - 9300092	produce
9201762	omit
9300069 - 9300070	produce; omit 9300070
9200441	produce
9200427 - 9200429	produce
9300003 - 9300004	produce
9200423	omit
9201763	Omit
9300024	omit
9200424 - 9200425	omit
9300106 - 9300111	omit
9200573	produce
9200289	produce
9300124	produce
9200430 - 9200435	produce
9200567 - 9200572	produce
9200574 - 9200576	produce
9200335 - 9200336	omit
9200577 - 9200580	produce
9200460 - 9200463	produce
9200367	produce
9200341 - 9200342	omit
9200281 - 9200282	produce
9200310	omit
9200274 - 9200275	produce
9200467 - 9200468	omit
9200538 - 9200539	produce

File #34 - St. Louis Park Chemical Analyses

9201764 - 9201778
9200212
9200214 - 9200215
9201779 - 9201790
7200788 - 7200795
9201791 - 9201795
9201224 - 9201237

Produce all

File #35 - Chemical Analyses

9200661 - 9200668
9200675 - 9200677
9200683 - 9200686
9200688 - 9200697
9200702
9200706 - 9200707
9200709 - 9200715
9200708
9200716 - 9200719
9200721 - 9200722
9200726 - 9200728
9200736 - 9200745

Produce all

File #36 - Abandon Wells - Permission Letters

9200913 - 9200914	produce
9200922 - 9200924	produce
9200926	omit
9200928 - 9200929	omit
9200886	omit
9200932 - 9200950	produce; omit 9200936, 938, 939, 940, 941
9200953 - 9200961	produce; omit 9200953, 954,
9200963 - 9200966	produce
9200951 - 9200952	produce; omit 9200951
9200374	produce
9201796 - 9201797	produce; omit 9201796
9300368 - 9300369	produce
9300357	produce
9201798	produce
9300355	omit
9201800 - 9201801	produce
9300358 - 9300359	produce
9300351	produce
9300367	produce
9300360	produce
9201802 - 9201803	produce
9300354	produce
9300361	produce
9200256 - 9200261	omit
9300362 - 9300364	omit
9300366	omit
9300372 - 9300386	produce
9200437	produce
9201804 - 9201810	produce

File #37 - Drilling Log - Maps
9201811 - 9201862 Produce all

Folder 1 - MDH & MPCA sampling procedures documents responsive to Reilly Tar Request #23.

MDH Document #7200209 Produce

MPCA Document #9604941 to 9605000 Produce

Folder 2 - List of consultants, laboratories, and personnel employed or used to study and/or analyze responsive to Reilly Tar Request #25.

Document #9605001 to 9605004 Produce

Folder 3 - Round Robin Analyses responsive to Reilly Tar request #1 and #2

MDH Document #7900799 to 7900808 Produce

Folder 4 - Round Robin Analyses responsive to Reilly Tar Requests #1 & 2

MPCA Document # 9605005 to 9605016 Produce

Folder 5 - MPCA Minnehaha Creek Water Analysis responsive to Reilly Tar request # 20

Document # 9605017 - printout Produce

Carton 2 - PCA Aquifer Thermal Energy Storage Project responsive to Reilly Tar request #9

Document # 1800208 to 1800294
9601785 to 9604583
9604608 to 9603092

Produce only: 9601926 - 9601971

Carton 3 - PCA Aquifer Thermal Energy Storage Project responsive to Reilly Tar request #9

Document # 9603108 to 9604582

Carton 4 - MPCA Soil Samples and Analyses responsive to Reilly Tar request #4

03.09 - Polar Locker

Document # 9604608 to 9604627

05.01 - Reilly Tar - Blk 1 Excavations - I, Fall 1981

Document #9604628 to 9604670 Produce

05.01 Block 1 Development, II

Document #9604671 to 9604694
1800447 (3 copies)
9604695 to 9604764
4800088 to 4800092
9604765 to 9604790

05.06 HW 100 Reconstruction

Document #9820599 to 9820600
9820705 to 9820715
9820688 to 9820689

Soil Analyses

Document #9604791 to 9604913 Produce

06.00 -

Document #9604914

4800165 to 4800192
9820855 to 9820858
6900426 to 6900437
6900347 to 6900364
6900336 to 6900338

Produce

CONTENTS OF MINNESOTA GEOLOGICAL SURVEY FILES ON AQUIFER THERMAL ENERGY STORAGE

Box No. 1 of 4

1. ATES Permits and Variances

2. ATES - Technical Literature, Battelle Viewgraphs

3. ATES - Reports - Misc.

   a. Interim Report - Water Chemistry and Laboratory Studies of the University of Minnesota ATES Project, by T.R. Holm, H.C. Lee, and S.J. Eisenreich (2 copies.) November 1982.

   b. Interim Report - Water Sampling and Hydrology at the ATES Project of the University of Minnesota, by Roman Kanivetsky. April, 1983. produce

   b.1. Folder labeled "Pumping Test Well A," contains raw data used to produce above report (b.)

   c. Memo dated April 22, 1983, from James Lauer to Mark Hoyer, re Bacteriological analyses.

   d. Interim Report - Bacteriological Analysis of Waters at the Aquifer Thermal Energy Storage Project of the University of Minnesota, by James Lauer. May 1983.

   e. Management Plan - September 30, 1982.

   f. Plan for Environmental and Institutional Monitoring of Long-Term Tests of Aquifer Thermal Energy Storage. October 1982. (2 copies.)

   g. Fortran Computer Programs to Plot and Process Aquifer Pressure and Temperature Data. U.S. Geological Survey Water-Resources Investigations 83-4051. (2 copies.)

   h. Project Summary (cover sheet) and "Review of Testing at the University of Minnesota Aquifer Thermal Energy Storage Field Test Facility (FTF), St. Paul, Minnesota," by M.C. Hoyer and Matt Walton. (Paper presented at Annual Contractor's Review Meeting, Sept. 1983.)

   i. Draft - ATES Annual Report, April 1982 - March 1983. University of Minnesota St. Paul Field Test Facility, by W.E. Nederberg and Matt S. Walton.

M.C. Hoyer. (Paper presented at Annual Contractor's Review Meeting, Sept. 1982.)

k. Stapled report entitled "Environmental Assessment of the University of Minnesota ATES Demonstration Project."

l. Stapled report entitled "The University of Minnesota Aquifer Thermal Energy Storage Project," by Matt Walton, August 1981.

m. "Concept Design of Aquifer Thermal Energy Storage System, University of Minnesota, St. Paul Campus," Prime Contractor, University of Minnesota, with cover sheet memo dated November 3, 1980.

n. "Preliminary Baseline Concept Report, ATES Demonstration Project," by W. Hausz and C.F. Meyer, July 31, 1980.

o. "Progress Report, Phase I, University of Minnesota ATES Project," by Matt Walton.

p. "Quality Control of Chemical Analyses of Well Water Samples at the ATES Site, University of Minnesota, by T.R. Holm.

q. Annual Report, with memo dated February 26, 1982.

r. Management Plan, dated September 30, 1982. Edited copy.

s. "Engineering Design and Construction Report for Aquifer Thermal Energy Storage Project #300-80-0207 for the University of Minnesota," by OSM. June 1983.

t. Various documents and memos interleaved in file, but not directly relevant to University of Minnesota project or to aquifer data.

4. ATES Quarterly Reports Nos. 1 through 12, covering time period July-Sept. 1980 through April-June 1983.
(These reports are expansions of monthly reports to provide technical detail.)

END OF BOX NO. 1

Box No. 2 of 4

5. ATES Reports - Quarterly - MGS
(These are preliminary versions of 4, above.)

6. ATES Reports - Monthly - Final to PNL. Several folders, 1 report for each month of the project.

7. ATES Reports - Monthly - MGS.
(These are preliminary versions of 6, above.)

8. Management Plan for Conceptual Design of an Aquifer Thermal Energy Storage System. Demonstration Phase I. September 30, 1980; revised November 28, 1980.

9. Aquifer Characterization Plan. August 20, 1980.

10. Contract Documents for Mechanical & Electrical Systems. Sept. 12, 1980. Set No. 11.

11. Folder labeled ATES; includes memos, letters, copies of early reports.

12. Folder labeled "Matt's ATES Paper, Oct. 1981."

13. ATES - Background Material, Early Meetings, Notes.

14. Energy Programs - ATES Concept

15. Aquifer Characterization Plan - various documents.

16. ATES - Contract & Budget Information

17. ATES Correspondence.

END OF BOX NO. 2

Box No. 3 of 4

18. ATES - Drilling Specs.--various reports, request for bids from drillers, etc.

19. ATES - Instrumentation--various documents, literature, etc.

20. ATES - LETF -FTF

21. ATES - Management Plan, Work Statements--various drafts of Management Plan.

22. ATES - Meetings, Memos, Misc.

23. ATES - Two albums of photographs of rock cores.

END OF BOX NO. 3

Box No. 4 of 4

(24.) Six University of Minnesota lab books--contain raw data on water chemistry.

25. File labeled "ATES wells"

(26.) File labeled "Xpts w/reactor"

(27.) File labeled "Precipitator/filters"

28. File labeled "ATES brief--Feb. 1981"

29. File labeled "Thin section--ATES"

30. Three-ring binder labeled "ATES--T.-S."

31. Accordion file labeled "Miscellaneous material on descriptions of rock cores...John [illegible]."

32. File labeled "Characterization report" Produce

33. Accordion file labeled "Prop[illegible] Report" Produce

34. File labeled "F[illegible] M[illegible]"

35. File labeled "[illegible] reports"

36. [illegible] labeled "[illegible] ability [illegible]" Produce

37. Files labeled "Weinav Wellbore Navigation, Inc., Directional Survey Report" (3 files, one survey each for AM-1, AM-2, AM-3)

(38.) Three-ring binder labeled "FITS"

(39.) Lab record book labeled "BNW5157. Injectivity test stand."

40. Three-ring binder labeled "CORTEC Daily Reports"

41. Three-ring binder labeled "Core Logs"

42. Three-ring binder labeled "Core log BC"

43. Three-ring binder labeled "ATES AC1 & BC1 init. Desc."

44. Three-ring binder labeled "ATES cores"

45. Manuscript entitled "Laboratory Description of Cores AC1 and BC1. [illegible]"

46. M.S. Thesis, 1982, by Heidi Carol Lee

47. Orange field notebook labeled "Well CM"

48. Orange field notebook labeled "ATES water level measurements"

END OF BOX NO. 4

Received above material, boxes 1 through 4, from Minnesota Geological Survey on 20 September 1983

by Dennis Coyne
Dennis Coyne

In addition to four boxes from Minnesota Geological Survey described on the preceding pages, we received five MGS well field books:

1. Well CM Field Book
2. ATES Water Level Measurements
3. ATES SWL Mn. Geological Survey
4. #1 ATES SWL's Mn. Geological Survey
5. #2 ATES SWL's Mn. Geological Survey

and two blue binders containing assorted water level records, ATES I and II.

6

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that a Minnesota Pollution Control Agency audio tape of the June 22, 1976 MPCA Board Meeting has been produced for our review and at the offices of the Minnesota Pollution Control agency on December 5, 1983 pursuant to the Request of counsel for Reilly Tar and Chemical Company. *

December 5, 1983

Mark R. Castro
Dorsey & Whitney

* Because of limited time I only reviewed a portion of the tape. I will contact Ken Stephenson to arrange for a convenient time to continue reviewing this tape and others that may be available.

MPCA Main Office Library – 296-7708

MPCA Board Meeting Tapes

The following tapes of the PCA Board meetings contain references to the Reilly Tar Corporation and/or related matters.

1970	Sept. 14	(2 tapes)	9605090-091
	*Oct. 5	(1 tape)	9605093
	Nov. 9	(1 tape)	9605092
	Dec. 14	(2 tapes)	9605094-095
1971	Jan. 11	(2 tapes)	9605096-097
	Apr. 19	(2 tapes)	9605098-099
	Aug. 9	(2 tapes)	9605100-101 → Next mtgs?
	Dec. 13	(3 tapes)	9605102-104
1974	Aug. 20	(2 tapes)	9605105-106
	Nov. 19	(2 tapes)	9605107-108
	Dec. 17	(2 tapes)	9605109-110
1975	Jan. 21	(2 tapes)	9605111-112
	Mar. 18	(2 tapes)	9605113-114
	Apr. 15-16	(2 tapes)	9605115-116
	May 20-21	(2 tapes)	9605117-118
	Aug. 26	(2 tapes)	9605119-120
1976	June 22	(1 tape)	9605121
	July 27	(1 tape)	9605122
	Dec. 28	(2 tapes)	9605123-124
1977	Jan. 25	(2 tapes)	9605125,9605136
June 12 special mtg?	June ~~12~~ 22	(1 tape)	9605126
	Sept. 27	(1 tape)	9605129
? 11-3-77 mtg	Oct. 25	(2 tapes)	9605127-128
	Nov. 22	(1 tape)	9605130
? 12-6-77 mtg	Dec. 20	(1 tape)	9605131
1978	Jan. 24	(1 tape)	9605132
	Feb. 28	(1 tape)	9605133
	Oct. 4	(1 tape)	9605134
1979	Jan. 23	(1 tape)	9605135
	Mar. 27	(2 tapes)	9605137-138
1980	Mar. 25	(1 tape)	9605139
	June 24	(1 tape)	9605140
	Sept. 23	(3 tapes)	9605141-143
1981	Feb. 24	(1 tape)	9605144
	May 26	(1 tape)	9605145
	July 28	(1 tape)	9605146
	Oct. 27	(2 tapes)	9605147-148
	Nov. 10	(1 tape)	9605149
	Dec. 16	(2 tapes)	9605150-151

*Tape is in very poor condition. It will be copied and produced at a later date.

1982	May 25	(2 tapes)	9605152-153
	July 27	(2 tapes)	9605154-155
	Aug. 24	(2 tapes)	9605156-157
	Sept. 28	(2 tapes)	9605158-159
	Oct. 26	(2 tapes)	9605160-161
1983	Apr. 27	(2 tapes)	9605162-163
	May 24	(1 tape)	9605164
	June 28	(1 tape)	9605165
	July 12	(1 tape)	9605166
	July 26	(1 tape)	9605167
	Sept. 27	(5 tapes)	9605168-172

1972 1/~~20~~/72

MPCA BOARD MATERIALS

9605173-258
9508491-496
9605259-537

COPY ALL DOCS

9605173 -75

9605194 "MPCA BOARD REPORT NEWSLETTER" others available?

9605201 - 204

9605208 - 210

9605211 - 214

9605222 - 231

9605239

9605246 - 257

9605258

9605342 - 8

9508495 ≠ 1/25/72 Mtg ?

7

ACKNOWLEDGEMENT OF DOCUMENT PRODUCTION

I hereby acknowledge that documents from the files of the Minnesota Department of Health identified by the document control numbers listed on the attached sheets have been produced for our review in the offices of the Minnesota Attorney General's Office on or about December 9, 1983, pursuant to the requests of Reilly Tar and Chemical company for production of documents.

Dated: December 9, 1983

Nancy A Ahrens

DORSEY & WHITNEY

6200045-6200047
6200001-6200034
6200037-6200044
6200048-6200051
6002336
6200052-6200203
6200305-6200313
6200204-6200224
6200229-6200234
6200225-6200227
6002337
6200228
6200235-6200273
6200277-6200280
6200274-6200276
6200281-6200304
6200314-6200321
6200439-6200442

6500002-6500011
6500015-6500017
6500019-6500034
6500001
6500035
6500018
6500064
6500036
6500038-6500040
6500042-6500063
6500065-6500123
6002332
6500124
6002333
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6000838-6000841

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FOLDER 1	MDH FILE 7201187-7201206 7202675-7202732
FOLDER 2	MDH FILE 7201581-7201817 7500332 7800612 9200761-9200764
FOLDER 3	USGS REPORT 7202964-7203213
FOLDER 4	ST. LOUIS PARK 7201826-7202304
FOLDER 5	ST. LOUIS PARK 7202305-7202674
BOOK 1	1975 - 1969 ST. LOUIS PARK CREOSOTE 7201213-7201575 7203583-7203587 7203591-7203593 7203596-7203607 7203609-7203618
BOOK 2	SOIL AND GROUND WATER INVESTIGATION 7203214-7203524
BOOK 3	1978 - 1976 ST. LOUIS PARK CREOSOTE 7202733-7202963

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8

1-23-74 ①

MOH — Fannie Kahn
Tom Johnson
Gene Fagan
Ed Rose

SLP — Henry McPhee

OSM — Sam Anderson

22.5 ¢/100 cf ST. L.P.

[illegible] Source Hiding Contamination?

[illegible] 1 PPB

[illegible] so [illegible] it out of a [illegible] standard

[illegible]

[illegible] - Treatment methods 1 2 3

Does [illegible] treatment take care of it.

[illegible] - Bacteria on a filter will attain [illegible] if [illegible] through or [illegible] [illegible] get into GW then no [illegible] [illegible] anaerobic conditions.

[illegible] 2½ g/ft/m? will this take care of it.

[illegible] - Coliform

[illegible] - [illegible] complaint on taste + odor

[illegible]

But [illegible] complaints Patch.

[illegible] - [illegible] complaints to Brook [illegible]

Problem ½-¾ mi away ½ day complained

levels less that 10 up to 60 T+O

not related to lab results. Complaints

[illegible]

[illegible] T of [illegible]

Problem [illegible] complaints

[illegible] heard.

6000384

[illegible] Tobin Well.
[illegible] 182 well Keys & Peter Well
[illegible] 1, PPM = 1000 PPB

Anderson - 2 questions or problems
1 Problem with entire system
[illegible] that for a short time
Chlorine for 10 week period

McGhee - We are disturbed with findings & other
Data back to other work
Mechanic Bernie Gibson [illegible] Hollis Dept
Concerned if Phenols are would [illegible]
Rilley Tech & Chem. Div of [illegible]
Back questioned finding phenols
[illegible] & Tech [illegible]
Sent $300 - [illegible]
[illegible]
City let hydrolyte come back on us &
now it coming back on us. Costly
Pumping hand tied up HUD
City HQ Dow etc were really disturbed
about the Patent [illegible] Tech [illegible]
[illegible]

Phenols were of were the

[illegible] methods of [illegible]

[illegible] some [illegible]

from well

[illegible] to discharge water

[illegible] We have pumping that

have [illegible] from We are concerned

[illegible] but still in ground

[illegible]

Pure Hydrocarbons Edible to Drinking Water

[illegible] Relationship to Surface Water

[illegible]

6000386

[illegible] separate from GW [illegible]

[illegible] Reservoir We want to separate problems.

[illegible] - Is this seeing natural?
Reason - Good question. May get fresh situations, [illegible] natural - [illegible]

[illegible] do with old wills. ?

[illegible]
[illegible] - [illegible] [illegible]
[illegible]

1-29-74

(1)

1:05 Bedelich — Pump to eternity and accomplish nothing
Wayne Long — REA letter Contamination of deeper aquifers.
Three years ago Bond letter .005 no contamination of lower aquifers
If readings stabilize at .003 and .002 jumping
to conclusion then everyone agreed to
let Riley off hooks We aren't
going to
Nothing on top of ground to stop
what is happening to ground water.

Heisel - We don't know existing wells going
over If you would have said
what we are going to do about well.

Long - Many detail in construction
Want blessing to proceed
but nothing on top
Granted there are many things
Heisel Your going to provide this info
before you proceed.
Long - Beyond my imagination that
some one can say pouring would
help.

7202530

Heisel - Don't know where well are. Harvey
Harvey - Yes we know where wells are

(2)

Harvey - Stay Bore GW conclusion problems on
Dr Baker Good faith
So agree land Est Riley Tar & Chem Co
Can't bail all foil out Not enough money
We not a bunch of thieves

Kramer - Dots agree We don't disagree you want to
act in

Harvey Question mark on how bad is the GW
problem

Engineer SLP - Dr Health Dept willing to admit GW Problem

Dale Wilcox

Harvey Disagree We wanted to prove GW pollution against
Riley Tar & Chemical

Reitalich to Bud What is def of Problem

George Stipulation

Bore Engr SLP Idea to conduct investigation to see
about problem We / but want
to commit to

George Well if you want agree to Health Dept
then what are we going can't do that

Bore Jong Clarify problems 7202531

Cust - Bore knows connection
Phenols Y Ck Where it coming from

Joe — Your below the 005 you had 3 years ago
Well + in
Stuff poured on ground for 50 years.
What do you expect to happen in future
Russ — Probably introduced thru Wells
Long — Probably agree — wont agree will
go into soil
Now you expect St of Pole to sign
agreement to pump well for ever
Need long term study
Koonce — Have to say it will be corrected
or we will be ~~to~~ derelict in duty
Court will decide your responsibility
Anderson — Twenty years ago You said
my problem
St Engineer — Shared resp of can't sign
O.m. Water Supply
Koonce — What if goes to Edna
Harvey — Their atty & ours
Dole — Your lawyer said you would
do anything Hold Riley Tar Blanchard
Tony — Three years ago
Ross Hedrooks Rept said 4 yrs ago Phenols
& Every one agreed Atty's can work on
Stipulation

7232532

P Johnson — Time Schedule.

Hayward - Unidel wells? (4)

Gov Carey

Johnson Health 1 Months

RR Well

Kinney RR fill the.

Long We can find phenols from Street

Koonce - This is like a pt Source not non point Source.

Long - Can we keep up to date,

Koch - DRC bonge to 50'?

Long - We intend to do this.

7202533

(1)

GCA 7-19-74

St Louis Park
Reilly Tar & Chem Pollution Site

Fertilizer Plant
→ with what How much Tankate

Jobs Sx & Hwy 7 worst Pollut of contaminates
Solution Bury it.
No intentions of pond here or of pulling it out

Seal Ponds from GW with thick clay seal or PVC
Soft stations enough capable of cleaning up treatment
but think wont have to. Not picking
up any GW from

Where - What if we want storm water
to collect GW to test shows
chemicals.

7202534

How? - Chemicals will be broken down

oils grease & Paraffin

We have to wait for
and Study to see what
is going to have to
happen

When we haven't done anything
about benzene

OCM Separate Storm Drainage from
GW problem.

Harry McPhee - We need some assistance
from QCA
we don't know how much
will be broken down

don't aggravate GW any more
than it is.

Where Solar like .003 are other
things being liberated.

720-535

2 Board mtgs ago Koch
wanted to clean up
Can we show we aren't creating worse pollution

Hamm ?
Can't say amount creates worse problem

Walker Have to be clear problem is worse
or take 1 million c.y.

Hamm 2.2 mg/l be this San II
to be lowered with

Walker Clean Great at left + Station ?

OCM Should treat up phenols
SO_2 to treat as chlorine before
going into creek.

Walker Chlorine gives chlorophenols
more [illegible]

Kavier Have to treat in right way to
destroy phenols.

OCM Chlorine destroys
Rose Depends effect of [illegible]
Formaldehyde affects top soil.

7202536

Ron Increase permeability

Hom Draft if would change that formula.

Hom ½ life of oil & grease etc 3 to 5 years.

Kolb - Depth funds will go

Hom - Go down with water Hydrologist report should address this.

McPhee - Proposed a study with soil & tests & weeds that work all done Study rejected.

Wilson - Time to get plot plans & treatment & filing work operation.

7300537

OLA Got approval to an well & have contractor out Sept. Pond site by winter

No manhole castings till next spring

Law to build left station

Land Farming Stress Accept Gently

OSM Permits
Where NPDS 2 Mo Discharge in 180 days
Potential Waste disposal system if Ponds are there

Points
1 Land Farming is Department Process
2 Discharge May have chemicals

1. 30 day Notice for Public Comment 7200.038
2 PCA Staff Review + Report to Board
3. Board action
So earliest would be 40 days Maywood Sewer
Badalich - Goes thru Municipal waste Dept
Where No Facilities Section under Perry
You can by pass staff & go to board. Also if we don't agree with Hyd Study or City can't afford
Badalich - Can we have response within 30 days

ST&P Eng
Hyd Study ready next week

Badtke - Will submit PA same time as Hyd Study.
How you get a reg for phenol limits?

Wilson - Level of detectability

ST&P Eng - Report of Health Dept

Ramakrishna - Be coming along. Having some delays.

Wilson - .01 mg/l + more for otherwise
No effluent standard for phenol so has to be based on flow

7202539

OSM - Grant of Permit avoid the law suit

AG - No
Wilson - Worst unless, at least it clears up GW,

AG - ST&P was involved + then to DOH

Amy McPhee – We have commitment to HUD & HUD raising hell with us now.

Ron – Does HUD have any concern for your dealing with

McPhee – They have schedule that Reorg every month. They're trying to get this job done by October on schedule. Don't say they don't have concern for GW.

Wilson – When is Health Dept report need?

Kole – Soon I hope. Rather involved

720040

Wilson – Health Dept may request something & normally permit is not needed. All involved with State agencies

STLP Eng —
Continuation from to be
done some time in 1975

Badalich — Are we solving problem
for years or to end
" Scap
" End Farm
"
"

Wilson — Is Tent farming going to
cause more problems.

Badalich — Aren't we going to elaborate of

Ross — Dr Hum Sang can't tell about
pacification till get Study Low

Wilson — Need any Report
This will treat X gen. etc/ —

720021

7-31-74

Church
Since 1964 have heard some
problem with phenol. Bigger
state to help. Now they
state large problem. Studies
Since 1965 through Sanitary Engin

Want to ~~raise~~ solve problem w/o
having people thinking they can't
drink water. If go to EPA
get into paperwork

Surg. Data not statistically
significant. Did you data
to Carnegie Mellon test
Do other people have phenol
Russ + Dale said no way could
get into Hinkley

Coleman – ① No ② Don't know ③ Thing
– closer get higher it gets
– Benzo Pyrene –
Rons wheels B?
Koda – Carcinogen
Coleman DCT

7202525

(2)

Coleman - is problem just beginning

St L P Engineer - other wells

Chuck Adams asks Eng to tell about Sunday Sc

St L P Engr

Need to move ahead with Stone Sewer & development. Storm Sc will reduce

Coleman Dif issue + to two bldg

St L Pub Eng -

Coleman Contamination

St L Pub Eng Chuck Where are there other parts in state like this.
St L P has put in more time + money + we need answers.

Bob Kaiser - Can't get answers.

Chuck - My elected officials will say go ahead. We have to agree on some facts,

7202526

Coleman - We didn't want to come here to give a bad time just to tell you there is a possible problem.

Rose - Don't have to make decision in mind and in long - of study

Jay - First time heard there was talked to Rose + Ed Rose That's one bomb shell

Coleman - No New procedures ~~Treatment~~

Church - Treatment

Coleman - Yes on treat

Church - Can we get storm sewer permit or are we going to hold storm sewer up till year 2000.

Burke - Need NPDES permit

Long - Haven't been denied yet.

Burke - Then we can't hold back on issuing permit

Beatson - Agency will ~~say~~ isn't there a GW problem ~~&~~ identical to Pine Bend.

7202527

Burke What else do they need

Kaiser - State Permit.

~~Burke~~

Beatson Need permit for land farming

Barbe - You have to tell people what is needed & tell them in letter form & ~~[illegible]~~ send it out. Put on paper & send it out

Church - I can tell you every thing wrong. But let get out some time. Put something in writing.

Beeton - This is Health Dept mtg -

Barbe

Try to help you build building & put in storm & sewer.

Hilore - If Build 20 story Bldg can't dig up every thing.

STLP We want a letter saying what permits are needed.

Church - We can't allow people to read headlines people sick from phenols but can't dig up everything for a park.

Where - Where's the money

(5)

Barbe - to Wilkes Define problem
saying can't define problem.

Chuck - a letter that says you have
a problem but don't know
what problem is then don't get
anywhere.

7202529

9:45 AM 10-28-74

St Louis Park Creosote Plant Mtg

Perry Beston APCA
Dale Wilke "
Lisa Wretling "
Dave Rud Engr SLP
Jeffry Johnson OSM
Suzan Workman SLP
Jim Coleman Health
Ed Rose "
Roman Kocka "

Suzy Workman
SLP Don't want to prepare an EIS You remember what I told you Coleman - No. You remember I told you how gun shy we all were (are?).

Wilke has been gone on vacation. Had to come back

Suzy Workman What do you propose to do as alternative solutions

Perry Beston - EIS will define the magnitude of the problem
Jim Coleman - In writing an EIS a number of things have to be considered. Irretrievable commitment would be ground water resources. alternatives such as removal of soil. Problem now + problem in the future. Written so a rational judgement can be made on what the State is committing themselves to. EIS would decide what is best alternative such as 8 hours Berlin's idea to install barrier wells. It is 52 Town Board decision to make a proper judgement. Egit agencies + citizens have an opportunity to review You may have to do it because of project of this magnitude + if 500 citizens petition then under rules + regs we would be unfair you to do EIS Don't understand start pic.
Suzy Workman - after Permit? PCA wants to be doing it.
Coleman - Put everything in one report
Rudberg - Keep telling us need more info. 7202557

Comments

Perry Beston - all Permits have to be approved by the board.
Wilke - Council may say how to develope in new data

where cost Permit applicant would have to furnish info to agency to prepare an EIS

Coleman Subd 9 Masonic Temple Stopped building

So this can be over come by making sure all of the information is submitted. Thirty days to submit if need more.

Benton - Does EIS process make a decision on whether process action should be ground.

Coleman - Doesn't make decision just makes alternatives

Wise. Find some one to say land farming will work

Rudberg - On the front edge of technology Don't know if land farming will work until try it.
Don't know what u

Brown Like to see 3D contours of where creosote is and where it is moving + where it will be in 50 years + alternative treatment + effect of Talked to Warren Dawson Friday he suggested that best solution may be to cover it up

Wolman That's what our report said
Wolman Did hydrologic study not because we wanted to spend $2000

Sunde report travel movements + come up with recommendations

Barber - This is only of PCA + Health + I wasn't aware ~~of what~~ that staff of St J Parish would be here. I need info on what Health Dept + PCA are going to make recommendations so that I can report to Cherchez

7200558

Barber - Pollution - Hard to cite them in law that they are polluting. Health Dept with I testing ~~that~~ they are polluting

Rach Yes

Barber - If Health Dept says pollution then we have to go into a conference. Then it is court decision.

Beaton - Then we get into problem like Reserve

Barber - There we have to ask STLP to enter into an abatement program. Could cite Republic Creosote

Rolling -

Jeffrey Johnson - asked about Phenol health hazard

Wahlman - well Creosote is cancer so how tell not be B P present.

Barber - We would have a great number of problems with the Sunde report
out spill of movement per month. would reach water in five years & cost the dig it up cost $25,000 for just one little spill a transfer.

Sent BP report last week.

Beaton - Did I see
Wahlman Reporter saw it.
Barber Is it in the water
Coleman - Sample contains water
Barber - ok then it is in the water

Barber - we could give a qualified permit
Beaton - We are concerned that further development will preclude

Wilke - Land farming

Barber - Seaver Site got two problems going now that is worse than the Farm Bureau or Garrison
USCE

Coleman - Phenols in gw & coming from site.
Redberg - Health dept will certify pollution.
Beaton - We are here to certify. 720-2539
Hoffman - What are your recent test.
Wahlman - Russ Erickson etc said your testing methods are inadequate You have not done any more testing of Phenols by Pace Laboratories.

Chairman - are Polimar or Flame industries using GW

Yes

Coleman - They are known the GW pollution

Rudley + Johnson - Health dept will entry

Coleman - That BCA

Wilkes - Health can

Workman - what can we do at St & Parke we don't expect or anticipate or hydrogeo. to These are for reconnaissance. Your job as BCA is to recommend solutions. We are proposing to drain the site. This is what

1. drain

2 Plug Wells

3. Develope Site

4. Monitor site. Gradente limited pumping program

Workman. By continually pumping will compute water

Weston - You would move water away from site. Would have to pump up it / it the

Rudley - You ~~could~~ would probably have to put in additional wells to control movement.

Weston - Ok these are fine but if you develope on land. / BCA + Health Jurisd be reluctant to do this.

Workman - Big heads of soil. Best is the most polluted soil / so wont hold on it City is taking liability / Private person developing + don't want them to sue us.

Weston - You have done nothing to remove polluted material.

Workman - BCA said years ago + said it is unrealistic

720:2560

Weston - You said it was ok before + now your asking us to do it / again

Workman - We want your expertise + your help. + We agree there is a problem. We can't ~~[illegible]~~ if accept solution of letting the [illegible]

Seaton - Excavation may be best alternative

Coleman - And I agree.

Johnson - Does capping of wells have to wait & Sonic Cores & bring to drill water

Wolkman - Don't know the developing impact

Seaton - What impact now & in the future

Wilkinson - We can only say we don't know we can take prophactic measures but don't know what will happen in 20 years

Johnson - Is PCA having problems with storm sewers.

Ross - Talking about storm sewer permit is Bad Faith. If just says you want the permit you are going ahead with housing project

Wolkman - I consider that as an insult.

Ross - If you want to consider it as an insult then consider it as an insult.

Johnson - We were asked to submit a permit & we are going by your rules sir.

Coleman - Read Enc Policy act about permit & irretrievable action.

Rudberg - What do you want

Ross - 3D Coleman said what is needed of where Creosote is and where moving & where it will be in 50 years Smale report didn't show a map of what is

Seaton - will issue permit if you would agree not develope the site.

Wolkman - ok if you will agree that we can develope the site if there is no problem

Johnson - Sorry for getting carried away but we are here because of permit.

Where - We could let you build storm sewer

[illegible] storm sewer is 320 acre of which [illegible] Creosote pit is only 80 acres

Land Fairness Subject came up again.

Wilkinson - Aren't Chemicals Biodegradable.

[illegible] - [illegible] - Biodegradable - but [illegible] when

7202561

Johnson Goes to board on the 17th?
Wilson + Barton - not unless St J Park asks that it goes to the board.
Johnson & Gulbis - Consider that it should go to board
Wilson - Dist Separate sewer from Gas Station, Spring Park can only divert
Johnson 1. Plug wells
2. Build a storm sewer system
Can state live with this but can we live with it

Wilson -

Merritt - Come in 11:20 AM written charge that night
Barton - Want to keep the Surface Water Storm sewer tied in with Gasoline + St J Park wants to go with incremental Step
Merritt states why Board may want.
Johnson - Step 1 Plug Wells
2. Storm Drain
Coleman - Storm drainage permit could be construed as
Plugging + Storm drain will not preclude future action

Wohlmen - Storm drainage will will only affect 25% of phenol area. We need storm drainage system for much larger area than Republic Crosste Site.

7202562

Barton - Grant There is large area of contaminated soil that we don't know much about

If the Smoke spot is inadequate then we would want more info

Coleman - Don't the storm sewers a positive step.
Wilbert Pomar - No

Cost of expanding $150 million to separate

Coleman District build Storm Sewers cuz RCA didn't force Republic waste
Merritt - Charles ~~up~~ remarks in newspapers
Coleman - We wanted to see them on ground water pollution + Russ Frazier said no phenol in ground water would have been one of first storm sewered areas.
Coleman - History

Johnson. Can we agree land farming will cause no pollution

Beston - St J Park keeps saying problem is because of past action of RCA.

Merritt - Makes George Koonce fall guy but city side of St Louis Park would like to depend upon judgment of one person. Some like District should have decided. We don't have enough staff to solve every ones problem

720563

Fabre - The idea of your buying the property same as a school + must assume for RCA to have lawsuit

Rudberg - Next step is to go to board on the 18th
Wilke - You have to give a written request for it to go to board.
Rudberg - Have your comments on Smith report etc by 18th.

Ross - Seems like solution to underground pollution by surface ground solution is a physical impossibility.

Wilke - To Workman
Workman - First time you have said that your storm sewer serves this area + we would like to contact other people who is putting pressure on you. Why be Federal inf statements required.

You won't recommend E.I.S.

Workman - We could request this of City Council if this
Wilke - We could ask EOC if it was a mandatory
Workman - If less than 1000 we would design for 999 / E.I.S only considers burning not pollution
Wilke - We consider pollution etc.
Wilke - This is like issuing permit for sewer to tie in water but doesn't consider discharge.
Johnson - It's charging Paterak.
Ross - Well it drains Republic etc why a permit.
Gatson - asks if it will drain St Louis Park.
Johnson - Rudberg - Yes
Workman - Answered your questions with greatest dispatch. Could ask if have you analyzed on a statistical basis to see if you are getting anything more than zero.
Johnson
Ross - Health never said walls up north were related to Rejuvin.

7202564

Johnson - 51000 residents in St Louis Park concerned.
Workman - Investment in our municipal water supply
Wilke - What was done in 1932 We abandoned well.
Johnson - Blame Health Dept for this too.
Rudberg - Close to your well field

St Louis Park

2-7-75 (1)

Staff

MHD
Frazier Koch
Coleman Ross

PCA
Benton Wenzel ?
Wilson

Discussion Heavy Organic Compounds in Coal Tar

Wilson 1. ~~Point~~ Source
2. Extent of Area Contaminated

1. ~~Pt~~ Source

Benton Source Future Area Magnitude

Frazier - Governors Budget set out funds for analytical study of organic materials.

Benton - We have very little State special study going

Wilson - They have been using oil gas and paraffin as an insulator

Coleman - Seems to tie to Hazardous ~~Waste~~ Substances class

720042

STLVL 2-7-75 (2)

Wilson - Need a grid.

Source: (1) They had 3 storage ~~tanks~~ tanks
(2) Cooling Water Pond
(3) Sewage received discharge
(4) Wells

Barbe Set up Grid of test holes around the suspected source & a few more holes on a ~~more~~ ~~less~~ less dense grid.

~~Take~~ Take soil + water samples at intervals

Wilson Can use air photos to find what it looked like

Wilson + Koch believe that from previous boring it looks like there are layers of clay + sand with creosote occurring intermittently at different depths.

Wilson - Analysis Forest lab? 7200543

Frazier - Keep the requirements broad + general

Wilson - Limits analyses for BP
[illegible]

(2) Question - Why were you guys so GP concerned ...
Wonder if this will be problem with Fairfax
Plant & MIT Power Plant

7202544

6

I hereby acknowledge that documents from the files of the Minnesota Department of Health identified by the document control numbers listed on the attached sheets have been produced for our review in the offices of the Minnesota Attorney General, Pollution Control Division in January, 1984, pursuant to the request of Reilly Tar and Chemical Company for production of documents.

Dated: January 19, 1984

Mark R. Kotin
Dorsey and Whitney

Popham, Haik, Schnobrich
Kaufman & Doty, Ltd.

1.) Document # 6623661 — copy transmitted on Jan 19, 1984 — LLM

MDH DOCUMENTS
CARTON 1

FILE 1 Mike Convery

copy all EXCEPT:

6622[illegible]-646
6622[illegible]-675
6622[illegible]-700
6622[illegible]-713
6622[illegible]15
} out of the Mike Convery File No 3

6622[illegible]-476, Mike Convery File No. 4

6623[illegible]-271
[illegible]-267
[illegible]-465
[illegible]-517
[illegible]-501
[illegible]-522
[illegible]-136
[illegible]-140
[illegible]-187
[illegible]
6[illegible]222

6622288
6900656
6620760-763
6900426-437
6900347-349
6900340-344
6900350-364
6900336-338B
7200147-147A
6622289-296
6610438-441
6610588
6610442-465
6610603-604
6610580
6622297-305
9200761-764
9200483-487
6622306-325
7500220-220A
7500150-151
7500131-134
6622326-327
9200735-749
9200727-731
9200726
9200716-725
9200703-704
9200709-712
9200714-715
9200705-708
9200688-701
9200675-676A
9200678-679
9200669-670
9200684-686
9200688
9200672-673
9200681-681A
6622328-329
1800439
1800295-314
6622330-332
1800432-440
1800295-314
6622333-354
50004750-752
6610438-441
6610588
[illegible]
6622[illegible]55-[illegible]
6610450-465

FILE 1 Mike Convery (cont.)

6610603-604
6610580
6610466-467
6622357-358
6610468-469
6610605-605A
6610470-471
6622359-360
6610590
6610578
6610472-475
6610593
6610476-477
6610587
6622361-362
6610478-479
6622363-366
6610480-482
6610594
6610483-508
6622367-368
6610509-512
6610591
6610513-545
6622369-384
6610579
6610581-586
6610592
6610568-577
6622385-392
6610464-465
6610603-604
6610580
6610438-441
6610588
6610442-449
6622393-394
6610450-463
6610466-467
6622395-396
6610468-469
6610605-605A
6610470-471
6622397-398
6610590
6610578
6610472-475
6610593
6610476-477
6610587
6622399-400

FILE 1 Mike Convery (cont.)	6622401-404
	6610480-482
	6610594
	6610483-497
	6610498-508
	6622405-406
	6610509-512
	6610591
	6610513-545
	6622407-422
	6610579
	6610581-586
	6610592
	6610568-577
	6622423-430
	6610606
	6622431-438
	6622439-456
FILE 2 Mike Convery	9820595
	6620768-769
	6620390-394
	1800447
	1800295-314
	7200173-180
	7400500-502
	7400511-522
	7200134-136
	7200139-140
	7200145-146
	7200155-157
	50006350A-360
	7200180-183
	7200181-187
	7200141-144
	7200158-159
	7200164-164A
	7700362-408
	1800076-207
	7300456-542
	7300673-695
	6620355-355A
	6620342-348
	50002787-788A
	6620349-354
	50004040-650
	50001223
	50005031

FILE 3 Mike Convery	6622457-769
FILE 4 Mike Convery	6622770-976
FILE 5 Mike Convery	6622977-3659

MDH DOCUMENTS
CARTON 2

FILE 6 Mike Convery	6623660-4239
FILE 7 Mike Convery	6624240-695
FILE 8 Mike Convery	6624696-5171
FILE 9 Mike Convery	6625172-694
FILE 10 Mike Convery	6625695-762 6720002-004 6625763-6272
FILE 11 Mike Convery	6626273-866

MDH DOCUMENTS
CARTON 3

FILE 12 Mike Convery		6626867-7298
FILE 13 Mike Convery		6627299-8088 6610460-461
FILE 1 Bill Hall		6820998-1063
FILE 1 Roger DeRoos		6710042-295
FILE 1 Jim Nye		9201867-957 9201312-315
FILE 1 Doug Mandy		6630063-130
FILE 1 MDH General Files		6641032-274
FILE 1 Dave Giese		6740001-430
FILE 1 Pauline Bouchard	undated	6720123A-125
	12/13/78	6720126-132
	3/3/79	6720133-135
	3/6/79	6720136-142
	7/3/79	6720143-144
	7/16/79	6720145-153
	7/20/79	6720154-155
	7/24/79	6720156-162
	slide	6720163
	negs. & pix.	6720164A-164D
	lg. negs.	6720165-166
	2/77	7400423-424
FILE 2 Pauline Bouchard		6720167-216

MDH DOCUMENTS

Maps, Tables and Charts 6628089-114

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HUBERT H HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

ST. PAUL 55155

ADDRESS REPLY TO
ATTORNEY GENERAL'S OFFICE
POLLUTION CONTROL DIVISION
1935 WEST COUNTY ROAD B-2
ROSEVILLE, MN 55113
TELEPHONE (612) 296-7342

January 23, 1984

Mark Kaster
Legal Assistant
Dorsey and Whitney
2200 First Bank Place East
Minneapolis, Minnesota 55402

Re: Production Schedule
U.S., et al. v. Reilly Tar and Chemical Corporation
Civ. No. 4-80-469

Dear Mark,

In my review of our production records I find the large bulk of requested documents have been produced, and I will at this time attempt to outline a tentative production schedule for the remainder of the requested material.

It seems in order to review what has already been produced in response to your informal requests and formal requests of July 14, 1983, and September 14, 1983.

Production Date	File
August 16, 1983	MPCA - MDH files
August 26, 1983	MDH files
September 20, 1983	MPCA, MDH, MGS, ATES files
September 22, 1983	MDH, MPCA, SDWA files, Municipal Water Supply Reports
October 5, 1983	USGS
October 21, 1983	International Diabetes Center file
November 15, 1983	(see Reilly Tar request of October, 1983)
December 9, 1983	MDH files
*January 6, 1984	MPCA Board audio tapes and documents
*January 19, 1984	Remainder of MDH files

*In progress

Our office has also attempted to respond in a timely manner to your verbal demands for additional Minnesota Pollution Control Board material which was not sought in your firm's original requests.

Pursuant to your July 14, 1983 and September 14, 1983 request for production, the State of Minnesota will provide for your inspection responsive documents from the files of the MPCA, and non-State consultants in accordance with our September 1, 1983 and October 17, 1983 response to your requests.

Additionally, in order to make it more convenient for your office, we are processing documents from the EPA files in response to Reilly's July 15, 1983 request for production to the United States. You could have been required to go to Chicago EPA if our office had not spend considerable time and effort to produce the documents in Minnesota.

I have set up the following schedule for production:

EPA files	mid February
HUD files	March 1st
MPCA files	to be scheduled
Barr Engineering and Hickok and Associates files	to be scheduled
Other sites in St. Louis Park (PCA files-MDH already produced) (Informal request - see 8/4/83 Schwartzbauer letter)	to be scheduled
CH2M Hill	to be scheduled

We will make every effort to produce these files as soon as possible and according to the above timetable. You may also be assured that the productions will be on a continuous basis.

Please contact me at 296-7285 if you have any questions.

Very truly yours,

Betty McCain

Betty McCain
Legal Assistant

BLM:mamb

cc: Paul Zerby
David Hird
Steve Shakman
Edward Schwartzbauer