FINAL

ENVIRONMENTAL IMPACT STATEMENT
VOLUME 1

MINNESOTA PORTION OF A CRUDE OIL PIPELINE FROM WOOD RIVER, ILLINOIS TO PINE BEND, MINNESOTA

PREPARED BY
RTMENT OF NATURAL RESOURCES

TABLE OF CONTENTS

INTRODUCTION

Northern Pipe Line Company of Delaware, Inc., plans to construct approximately 100 miles of 24-inch diameter pipeline through southeastern Minnesota. The pipeline will carry crude oil and connect refineries in Pine Bend and St. Paul Park, Minnesota, to crude oil supplies available in the vicinty of Wood River, Illinois.

A Draft Environmental Impact Statement on the proposal was distributed in February, 1977. Subsequently, the proposed route was found to traverse an area where there was a potential for groundwater contamination in the event of an oil spill. This potential was due to the shallow depth of bedrock aquifers under portions of the route, and also to the proximity of sinkholes. These conditions could possibly allow oil from a spill to enter the bedrock aquifers. It was,therefore, determined that the pipeline should be routed in areas having a minimum of 50 feet of glacial till to protect the bedrock aquifers from contamination. Utilizing this criterion, several routes were evaluated. The Minnesota Geological Survey provided a map which delineated areas where 50 feet of till overlies bedrock, and the final routes were selected to maintain the 50 feet of till above bedrock wherever possible. The route still crosses two areas of shallow bedrock, one near LeRoy and the other in the Northfield-Cannon River areas; special protective measures are being required in these areas, as well as in the sand plain north of Northfield.

A Draft Addendum to the EIS was prepared on the new route and was distributed in January, 1978. Public meetings on the Addendum were held in Dodge Center and Northfield in February, 1978. Extensive comments were received both in writing and at the public meeting. This Final EIS is the response to those comments and concerns.

Some of the major comments and concerns raised include the following:

-Oil spills and pollution of ground and surface water
-The possibility of routing along the Chicago-Northwestern Railroad
-Effects on drain tile systems and diagonal crossing of fields
-Soil compaction
-Concerns regarding construction practices and cleanup
-Need for the project, and alternatives for bringing oil to Minnesota

This Final EIS has attempted to respond to these and other concerns either in the additional information provided in the Appendicies, or as direct responses to comments made in letters or at the public meetings.

As a result of the many comments and concerns raised, a number of mitigative measures, changes in the project and landowner protection measures have been developed.

1. An alternative route paralleling the Chicago-Northwestern Railroad has been identified and examined in detail (See Appendix IV and XIV.

2. Several alterations have been made in the company's proposed route which reduce the number of drain tiles affected.

3. Extra safeguards are being required in areas of the route having less than 50 feet of glacial till over the bedrocks. Heavier walled pipe, 100 percent x-raying of girth welds, and extra values will be required.

4. A liaison procedure has been developed, whereby construction will be monitored to determine compliance with permits and grants-of-easement (See Appendix XI).

5. A standard easement agreement was developed and its use by the company will be required. The agreement gives landowners the option of using an arbitration procedure for resolving disputes rather than going to court; gives the option to require segregation of topsoil; requires the company to notify owners prior to entry upon their land; gives option for utilization or disposal of timber; gives landowner the right to be notified prior to start of tile repair so he may inspect the work in progress; provides that the pipeline will be installed below the grade of all existing tile lines, unless the tile is buried at a depth to permit the pipeline to be built above the tile and still meet all other requirements. It should be noted, however, that landowners may negotiate on other matters or may, at the landowners option, negotiate to use an entirely different Grant-of-Easement instrument.

6. An information booklet has been developed and will be distributed to all persons whose land the pipeline will cross. The booklet explains the procedures of granting the easement and of the construction process and outlines some of the things landowners have the right to negotiate in their grant-of-easement. It also explains how to register complaints and how disputes may be resolved.

The Final EIS consists of this document plus the Draft EIS and the Draft Addendum distributed previously, and the reader is referred to the previous documents for information which is still applicable, and therefore, was not repeated in in Appendix IV, Part 2, or other portions of this document.

PROJECT LOCATION

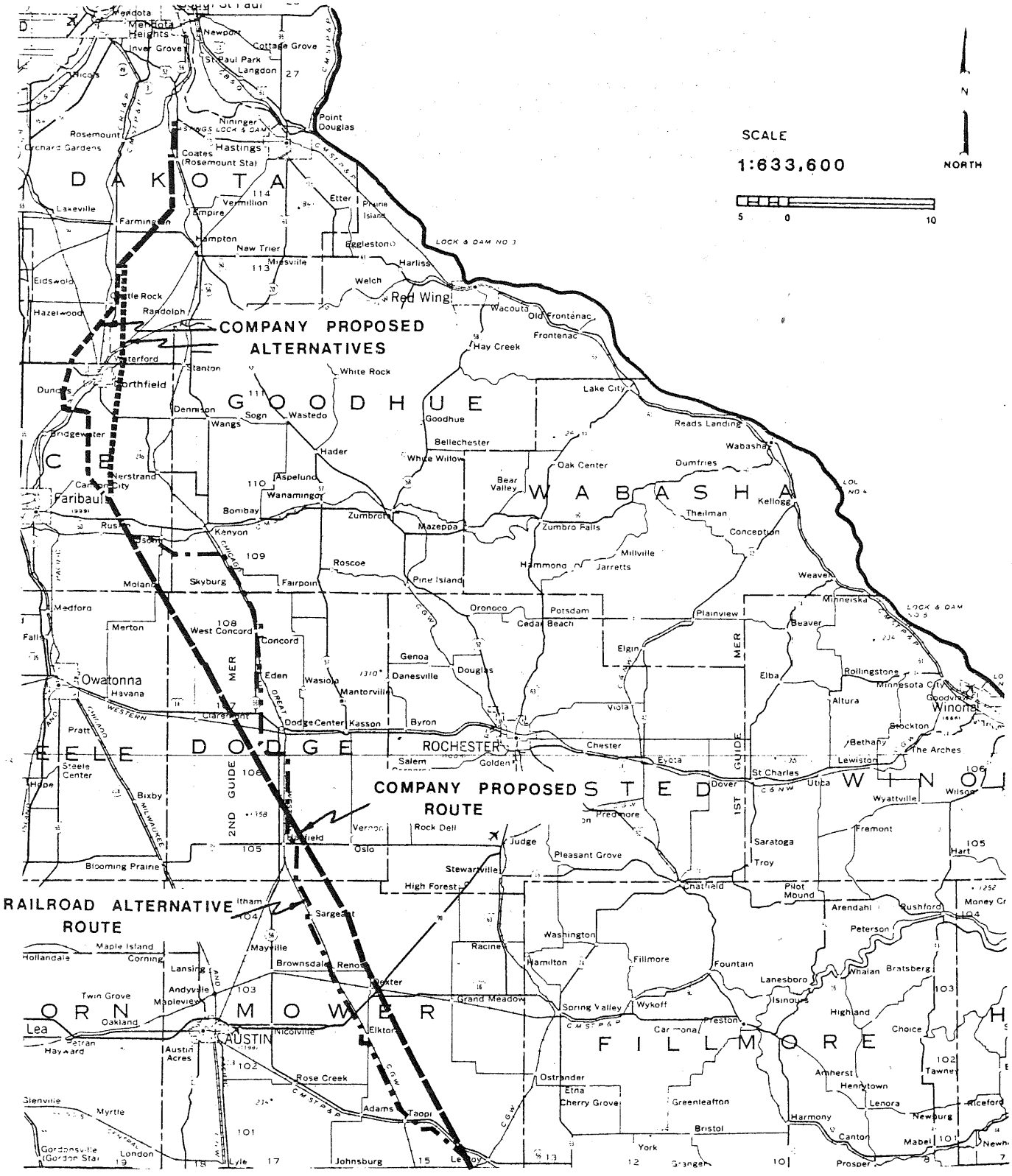


Figure 1

Geologic Map of Minnesota
Quarternary Geology
State Map SM-1 (in press)

provided by Joseph E. Goebel
Minnesota Geological Survey

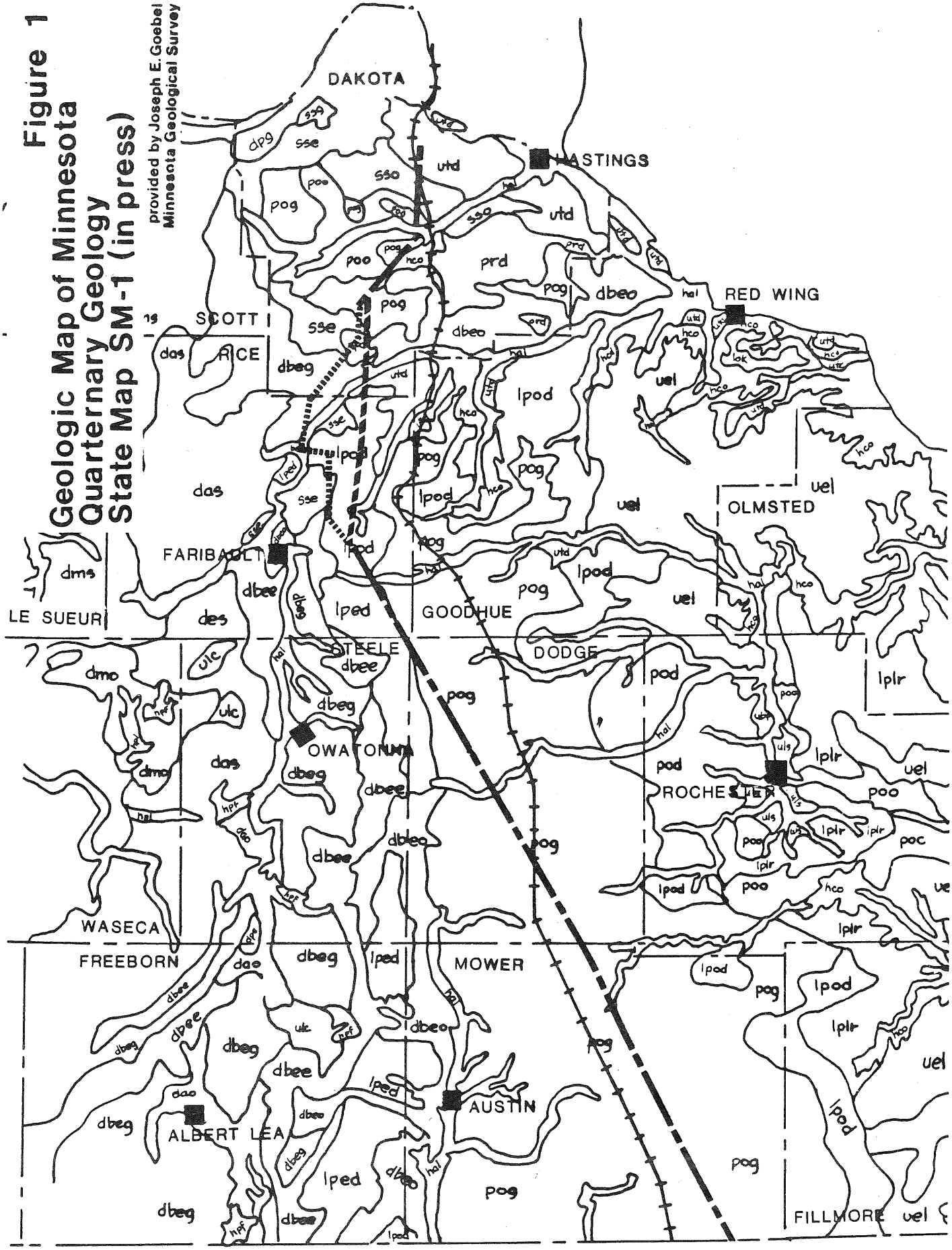


FIGURE 1

EXPLANATION OF MAP UNITS

HOLOCENE DEPOSITS

Sediments deposited since Pleistocene glaciation

hpb
hpf

Peat: hpb, bogs blanketing level to undulating terrain; hpf, fens along drainage ways or in basins with visible surface drainage.

hco

Colluvium: Mixed fine- to coarse-grained detritus including rock rubble; deposited by slope wash and creep on and below valley slopes. Outcrops of bedrock are commonly present in these areas.

hal

Alluvium: Sand and gravel on floodplains; locally interbedded with silt, clay, and organic deposits; characterized by irregular and interfingering stratification of poorly sorted to well sorted sediments.

PLEISTOCENE DEPOSITS

Deposits formed by processes active during the repeated advance and retreat of Pleistocene glaciers.

REDISTRIBUTED MATERIALS

Sediments deposited by lacustrine, eolian and fluvial processes which were active when glaciation ended and which modified and redistributed earlier drift.

ulc

Clayey and silty sediments deposited in glacial lakes

uls

Sandy and gravelly sediments deposited in glacial lakes and on beaches.

utd

Sandy and gravelly terraces occurring along streams at levels above the levels of present floodplains.

uel

Loess more than 2 meters thick; wind-blown silt and fine sand.

LATE WISCONSINAN DRIFT

DES MOINES LOBE

Gray calcareous drift (olive-brown where oxidized) dominated by finer particle sizes (combined silt and clay typically exceeds 50 percent of volume), but also characterized by shale and limestone clasts derived from western Minnesota, eastern North Dakota and Manitoba; locally mixed with brown or red drift from older lobes.

Moraine Associations of the Des Moines Lobe

Marshall: Moderate olive-brown (oxidized) or dark-gray (unoxidized) silty till and associated outwash.

dmo

Outwash.

Altamont: Light olive-gray (oxidized) or yellowish-gray (unoxidized) till and associated outwash.

das	Stagnation moraine; the segment of this moraine north of the Minnesota River covers an older lobe and contains numerous lakes.
dao	Outwash; area characterized by numerous ice block lakes.

Bemis: Yellowish-brown (oxidized) or dark-gray (unoxidized) till and associated outwash.

dbeg	Ground moraine.
dbee	End moraine; distinct bands of moraine which mark the southernmost advance of the glacier that deposited the Des Moines lobe drift in southern Minnesota and Iowa.
dbeo	Outwash.

Pine City: Yellowish-brown (oxidized) or dark-gray (unoxidized) till and associated outwash of the Grantsburg sublobe of the Des Moines lobe; locally modified by mixing with reddish till of the Superior lobe.

dpe	End moraine; marks the farthest advance of the glacier that deposited the Grantsburg sublobe tills.

SUPERIOR LOBE

Red-brown, sandy to stony, non-calcareous drift with abundant clasts of volcanic rocks, granitic and gabbroic rocks, metamorphic rocks, red sandstone and conglomerate.

Moraine Associations of the Superior Lobe

St. Croix: Reddish-brown, stony, sandy till and associated outwash.

sse	End moraine; contiguous at northwestern edge with Rainy lobe St. Croix end moraine.
sso	Outwash.

PRE-LATE WISCONSINAN DRIFT

Remants of lobes of uncertain age in areas of southeastern and southwestern Minnesota which are not blanketed by late Wisconsinan drift; typically weathered, leached, and covered by varying depths of loess.

Eastern Gray Drift

Yellowish-gray (oxidized) or olive-gray (unoxidized) till and outwash; till contains clasts of sandstone, limestone and shale as well as igneous and metamorphic rocks; generally leached near the surface, calcareous where unleached.

lped	Drift; till and outwash covered by as much as 2 meters of loess.

Eastern Old Gray Drift

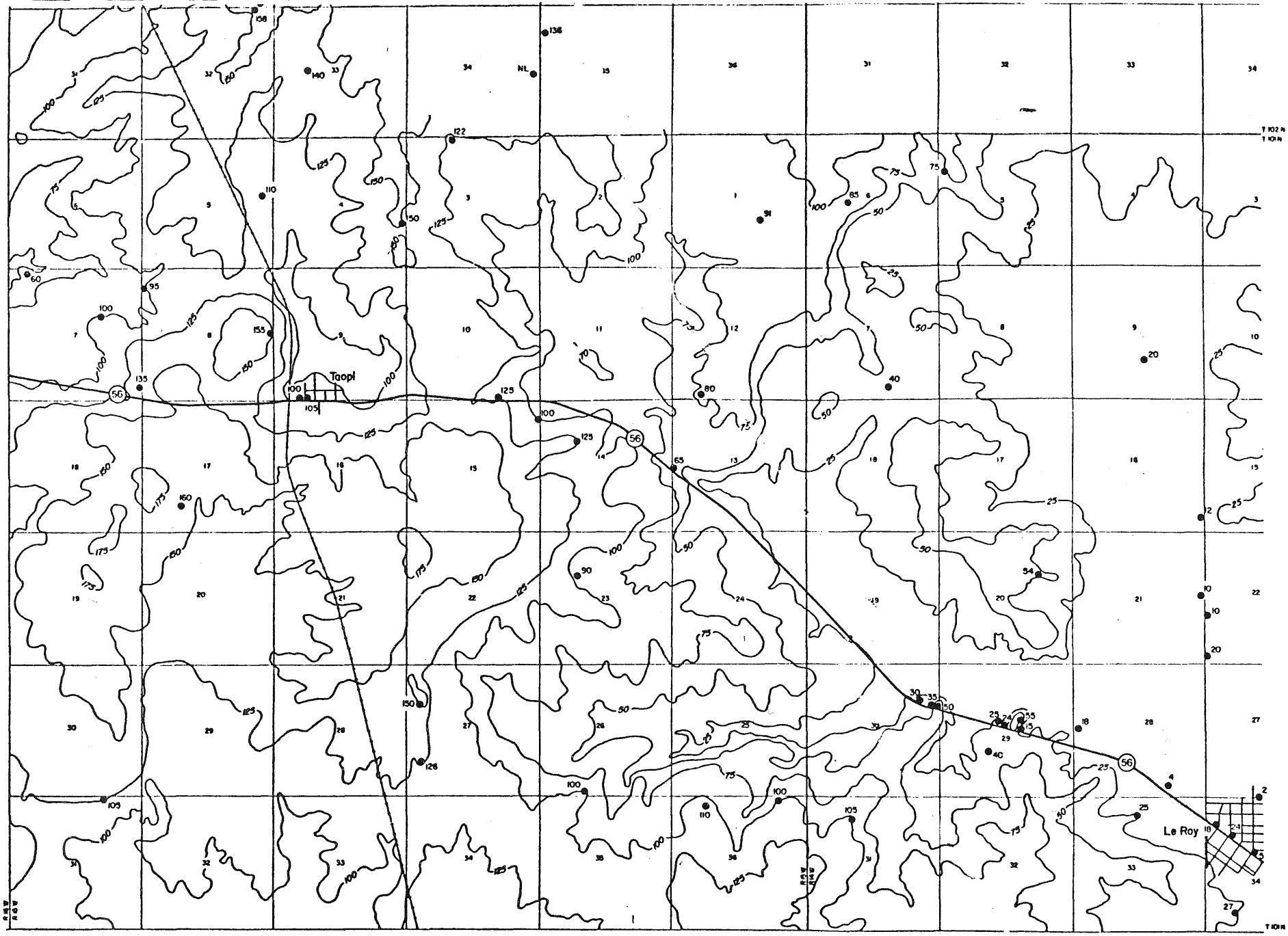
Moderate yellowish-brown weathered silty till and outwash; clasts include igneous and metamorphic rocks, limestone and sandstone, but lack shale.

pog	Ground moraine; generally covered by less than 1 meter of loess, which locally obscures included areas of outwash.
poo	Outwash.
lpod	Drift; till and outwash; covered by as much as 2 meters of loess. A boulder-strewn zone within the eastern belt of this unit is probably a remnant of an end moraine of a lobe of unknown extent which comprises the Eastern Old Gray Drift.

Pre-Late Wisconsinan Residuum

Brown clayey soils and ferruginous lateritic soils with brown iron ore deposits; derived from the weathering of Pre-Quaternary rocks; includes some till, possibly of an earlier Wisconsinan or older glaciation.

lplr	Residuum; covered by as much as 2 meters of loess; includes some older till



● 40 Water Well With Thickness of Material Overlying Limestone (Includes Some Cretaceous Sand and Gravel)

NL – No Driller's Log

~~ Depth to Limestone Bed Rock

Proposed Pipeline Route

Thickness of Unconsolidated Deposits Over Limestone Bedrock

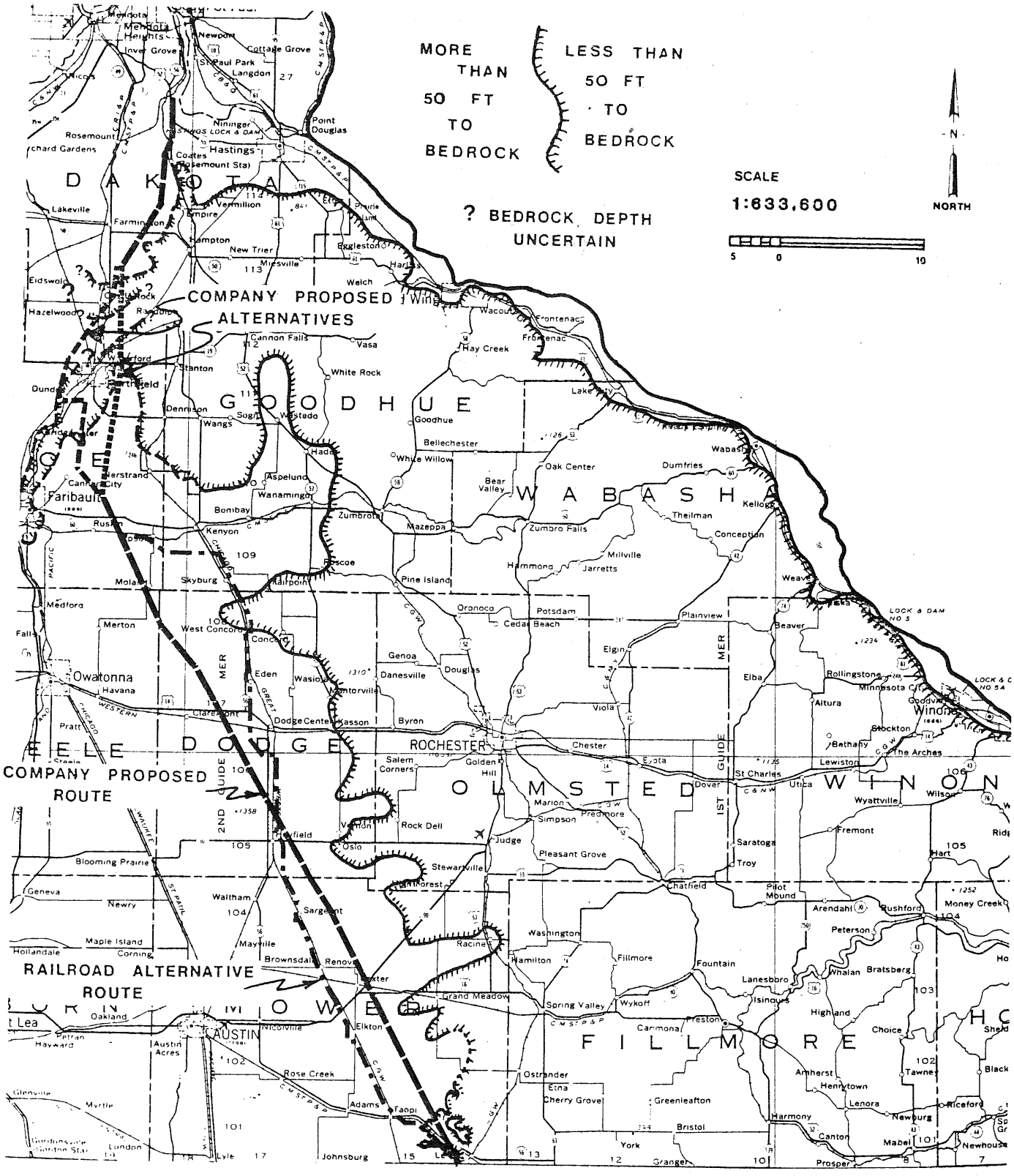
T 101 N, R 14, 15 W, Mower County

Based on Information Supplied by Bruce Olson
Minnesota Geolgical Survey, March 1978

Figure 2

Figure 3

DEPTH TO BEDROCK



COMMENTS / RESPONSES

SECTION I

LETTERS WITH COMMENTS

SPECIFICALLY ON THE

EIS DRAFT ADDENDUM

RECEIVED
MAR 27 1978
BUREAU OF PLANNING

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

P. O. Box 488
Dodge Center, Minnesota 55927

March 24, 1978

Mr. Ken Wald and Mr. Vonny Hagen
Minnesota Department of Natural Resources
300 Centennial Building
St. Paul, Minnesota 55101

Draft Addendum
Draft Environmental Impact Statement
Minnesota portion of a crude oil pipeline from Wood River, Illinois
to Pine Bend, Minnesota

1 The following comments are offered relating to the effect the proposed line will have on agricultural activities in Steele and Dodge Counties, Minnesota. Other concerns such as the wildlife, sociological, and water quality aspects have been adequately stressed in the document.

Stream crossings - Agricultural drainage ditches and smaller streams which serve as drainage outlets should have a minimum of four (4) feet of cover over the pipeline in the stream bed or ditch bottom. Adequate drainage outlet depths are essential in Dodge and Steele Counties since seventy-three (73%) percent of the soils are less than well drained. The following is a list of stream crossings where this depth is essential:

Stream or Ditch Name	Twp.	Range	Section	Location
Middle Fork Zumbro	108N	18W Ellington	20	NW¼ SW¼
Milliken Creek	108N	18W Ellington	33	SE¼ NW¼
Milliken Creek	108N	18W Ellington	33	SW¼ SE¼
Un-named Tributary Dodge Center Creek	106N	17W Ashland	7	NW¼ NW¼
Himle Group Ditch	106N	16W Vernon	32	SE¼ SW¼

2 Tile Drainage - The proposed route will cross many fields which have been pattern drained on eighty (80) to one-hundred (100) foot tile spacings. An estimated fifty percent (50%) of the distance will cross completely drained fields. A conservative figure would be six hundred ninty (690) tile crossings in Dodge County. A change in pipeline depth to provide a minimum cover of four and one-half (4½) feet will not minimize the crossings but would minimuze the construction bends under each tile line. Since the pipeline is 24 inches in diameter with thirty (30) inches of cover, it will be in line with most tile lines present and future. Tile lines are installed at three (3) to four and one-half (4½) foot depths for maximum benefits.

(68)

3 Another alternative would be to locate the pipeline near the railroad right-of-way. This would eliminate eighty (80) to ninty (90) percent of the tile crossings, not to mention the additional depth or construction bends necessary on the proposed route. This would be beneficial to the landowners whose lands are crossed and to the pipeline.

While re-routing may be costly at this time, the long-term effects of the proposed route should be considered by reviewing and regulatory agencies.

Any questions regarding these comments can be directed to the District Conservationist, U.S.D.A., Soil Conservation Service, Box 488, Dodge Center, Minnesota 55927.

Sincerely,

Steve Crull
District Conservationist

cc: Mark Moenning
Steve Henslin
Ken Rose

COMMENTS

RESPONSE

To Letter of Steve Crull, District Conservationist - USDA Soil Conservation Service

1 Federal regulations require four feet of cover over the pipeline where it passes under all water courses. In the case of ditches, the four feet would be measured from the design elevation of the bottom of the ditch (not the present bottom elevation, which may be higher because of sedimentation).

2 The pipeline will always be installed below the grade of existing tile lines. In areas where there are many tile lines, the pipeline will be buried consistantly at the depth necessary to be below tile line; that is, the grade of the pipeline will not be continually raised and lowered just to avoid tile lines. Because the area through which it passes is so heavily tiled, this will mean in effect that much of the pipeline will be below the 3 to 4½ foot depths where tile lines are most commonly found.

3 See Appendix IV, Railroad Alternative. A consulting engineering firm has currently estimated the number of tiles which would be affected by a route adjacent to the railroad, and has made a comparison on this basis between the proposed route and the railroad alternative.

Vonny 74

UNIVERSITY OF MINNESOTA

AGRICULTURAL EXTENSION SERVICE

Dodge County Extension Office
Main Street
Dodge Center, Minnesota 55927
(507) 374-6435

February 28, 1978

To: Dept. of Natural Resources

From: David H. Hanson
Ext. Director, Dodge County
Dodge Center, Mn. 55927

Re: Environmental Impact Statement

I feel a great responsibility and duty to make the below suggestions to be considered for use in your Environmental Impact Statement.

I attended the D.N.R.--Northern Pipeline Hearing in Dodge Center on Feb. 2, 1978 and have examined the first and also the amended E.I.S. I feel that there are some very great weaknesses, causing great concern by farmers owning land in the proposed route.

1 In my conversation with Dodge Co. affected farmers I find that they would prefer the line be moved to land on/or adjacent to railroad rite-of-way (where little to no field tile exist). I find that they are sympathetic to the need for crude oil and feel that most would agree to the proposal if they could be assured of the protection the following suggestions would give them.

Please consider the following:

2 1. The main pipeline should have a protective cover around it capable of containing environmentally hazardous spills. This could be of relatively inexpensive plastic. I agree it would add to the cost initially but it would increase the life of the pipeline, provide some protection to man made damage, and would most importantly contain spills. The so-called sophisticated instruments now being used are unable to detect leaks until 300 to 1,000 barrels of crude oil has escaped. This is not satisfactory in the minds of the farmers.

(59)

more

3 Agricultural field tile is normally laid at a 4 ft. depth. I suggest the new pipeline be laid at a minimum 5 ft. depth. This would eliminate future problems for the tiling of agricultural land affected. Further more it would eliminate future paper work required for special requests to have the pipeline laid deeper than the presently recommended 3 ft. minimum.

4 The repair of the field tile affected should be inspected by trained personel independent of the contractor or Northern Pipeline company. Just as electrical inspection, it should meet minimum standards before being backfilled.

I do hope that the urgency of replacing the Canadian crude oil does not force action that will endanger some of the finest agricultural land in the state and nation.

An ounce of prevention today may be better than "barrels" of cure ten years down the road.

Thanks for your consideration.

Sincerely,

David H. Hanson

David H. Hanson

Ext. Director

CC: P.C.A., S.C.S., Dept. of Agriculture
Al Quie, Ist Dist. Congressman
Mel Frederick, Senator
Don Frederick, Representative
John Biersdorf, Representative

COMMENTS

RESPONSE

To Letter of David H. Hanson
Extension Director, Dodge County
U of M Agricultural Extension Service

1 See Appendix IV, Railroad Alternative

2 It is not felt that a protective cover around the pipeline would provide sufficient additional protection to justify the additional cost and other problems which would result. A sudden, large rupture of the pipeline would also rupture a plastic pipe surrounding it. The plastic pipe also would provide little protection against external damage (i.e., by machinery) one of the leading causes of ruptures. A covering could also significantly delay detection of small leaks and hamper locating their source.

3 The pipeline will be laid under all existing tile, and landowners have the option to request deeper than normal burial in areas they plan to tile in the future. The state does not have the authority to specify the depth to which the pipeline must be installed, except at crossings of public waters.

4 We concur that such inspection of tile repairs would be ideal. However, there is no appropriate inspection agency on the state level such as there is for electrical work and some other crafts. Counties could possibly provide this service through their building inspectors. The state will be employing a liaison worker who will monitor construction work to determine compliance with the landowners' easement agreements, including tile repair. While the liaison worker will have no authority to stop construction, he will report instances of non-compliance to the appropriate state agencies and contact the pipeline company for appropriate action. Landowners will receive an information booklet describing the liaison procedure.

ADMIN 1000 (REV. 4/77)

STATE OF MINNESOTA

DEPARTMENT of Transportation

Office Memorandum

TO : William B. Nye
Commissioner
Department of Natural Resources

DATE: March 17, 1978

FROM : Jim Harrington
Commissioner

PHONE: 296-3000

SUBJECT: Draft Environmental Impact Statement - Addendum to Northern Pipeline Company's Proposed Project from Wood River, Illinois to Pine Bend, Minnesota

The Minnesota Department of Transportation (Mn/DOT) has reviewed the Draft Addendum for the Minnesota portion of a crude oil pipeline from Wood River, Illinois to Pine Bend, Minnesota. We wish to offer the following comments for your consideration in preparing subsequent reports.

1 There are two areas in the addendum that should be clarified. The first of these falls under Section 2, pages 17, 18 and 19. On these pages there are footnotes and direct references made regarding that the proposed pipeline report will pass through approximately 4 to 9 miles of road or highway right of way. Minnesota Statute identifies the rules and regulations for pipeline and utility occupancy on State trunk highways. We wish you to note that the pipeline cannot be accommodated on trunk highway right of way in a longitudinal or parallel manner. As such, the footnotes should be revised to state: excluding State highways.

2 The second area in which we would appreciate clarification is Section 3, page 88, Transportation. The section briefly discusses construction procedures in respect to the various transportation modes. The Draft Addendum indicates that permits are required from the rail companies in areas where the proposed pipeline would cross railroad lines. We concur with this and would request that the text also reference highway permits which would similarly be required from Mn/DOT and the counties for any road crossings.

3 The railroad and road crossings in the addendum are inconsistent with the route maps in Appendix G.

The list for Rail Lines on pages 65 and 70 should read as follows:

COUNTY	RAIL LINE	LOCATION
Dakota	Chicago & Northwestern	S. 36, R. 19W, T.115N
West Alternate	Chicago, Milwaukee, St. Paul & Pacific	S. 6, R. 19W, T.112
	Minneapolis, Northfield & Southern	S. 13, R. 20W, T.112N

(71)

COUNTY	RAIL LINE	LOCATION
Dakota (Continued)		
East Alternate	Chicago & Northwestern	S. 21, R. 19W, T.112N
Rice		
West Alternate	Chicago & Milwaukee St. Paul, & Pacific	S. 16, 20W, T.111N
	Chicago & Northwestern	S. 22, R. 20W, T.111N
Both Alternates	Chicago, Milwaukee, St. Paul, & Pacific	S. 9, R. 19W, T.111N
Dodge	Chicago & Northwestern	S. 36, R. 18W, T.107W
	Chicago & Northwestern	S. 34, R. 17W, T.105N
Mower	Correct As Shown	

In addition, we suggest the following list be substituted for the ROADWAY CROSSINGS in Appendix E

Dakota County

County Road No. 38
County State Aid Highway No. 42
County State Aid Highway No. 66
County Road No. 79
County Road No. 72
State Trunk Highway No. 50
County Road No. 78

East Alternate

County State Aid Highway No. 80
County Road No. 805
County Road No. 82
County Road No. 51
County State Aid Highway No. 86
County Road No. 92
County State Aid Highway No. 47
County Road No. 94
State Trunk Highway No. 19

COMMENTS

West Alternate

County State Aid Highway No. 80
State Trunk Highway No. 3
County State Aid Highway No. 86
County State Aid Highway No. 23
County Road No. 96
State Trunk Highway No. 19

Rice County

East Alternate

State Trunk Highway No. 19
County Road No. 79
County State Aid Highway No. 28
County Road No. 81
State Trunk Highway 246
County Road No. 82
County State Aid Highway No. 29
County Road No. 88
County State Aid Highway No. 27

West Alternate

State Trunk Highway No. 19
County Road No. 59
County State Aid Highway No. 1
County State Aid Highway No. 8
State Trunk Highway No. 3
County State Aid Highway No. 20
County State Aid Highway No. 22
County Road No. 82
County State Aid Highway No. 29
County State Aid Highway No. 27
County State Aid Highway No. 23

Both Routes

County Road No. 87
State Trunk Highway No. 60
County Road No. 86
County State Aid Highway No. 19
County State Aid Highway No. 32

Steele County

County State Aid Highway No. 10

Dodge County

County State Aid Highway No. 24
County State Aid Highway No. 1
County State Aid Highway No. 20
County Road No. G
County State Aid Highway No. 5
U.S. Highway No. 14
County State Aid Highway No. 5
County State Aid Highway No. 10
County State Aid Highway No. 6
State Trunk Highway No. 56
County Road No. K
County STate Aid Highway No. 4
State Trunk Highway No. 30
County State Aid Highway No. 9

Mower County

Correct as shown in the appendix

COMMENTS

Attached to our comments are a number of letters Mn/DOT has received from property owners concerned about the need and location for the proposed pipeline. These letters also express concern over possible ground water pollution and loss of agricultural lands resulting from the construction and operation of Northern pipeline.

While the Department of Transportation is sympathetic to these concerns, the authority or control of such factors is beyond the Department's jurisdiction. We are confident however, that as the Department of Natural resources and others reassess the route location, consideration will be given to these concerns so that all practicable measures will be taken to minimize environmental effects.

We appreciate this opportunity to review the Northern Pipeline Addendum. If you have any questions regarding our comments, please contact Jonette Kreideweis at 296-1653.

cc: Ken Wald - DNR

RESPONSE

To Letter of Jim Harrington, Commissioner
Department of Transportation

1 | The comment is noted as stated.

2 | The comment is noted as stated.

3 | The changes and additions noted are hereby incorporated as part of the EIS.

ADMIN 1000 (REV. 4/77)

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT Health

RECEIVED
MAR 17 1978
BUREAU OF PLANNING

TO : William B. Hoge
Commissioner of Natural Resources

DATE: March 13, 1978

FROM : Warren R. Lawson, M.D.
Commissioner of Health

PHONE:

SUBJECT: Draft Environmental Impact Statement - Addendum to Northern Pipeline Company's Proposed Project from Wood River, Illinois to Pine Bend, Minnesota

This memorandum is in response to your request for a review of the draft addendum to the Environmental Impact Statement for the Northern Pipeline. We wish to thank you for the opportunity to comment on the report. The draft addresses several items of importance which should provide an increased measure of safety from a spill. We concur wholeheartedly with the provision of added valving at the five stream crossings and the addition of automatic and check valves to the line. The provision of x-raying 25% of the pipeline was a step in the right direction although, in our opinion, an added safeguard would be to x-ray 100% of the welds in the critical area.

1

It is our understanding that a number of our concerns about engineering-type mitigating measures outlined in the January 16, 1978 memorandum which included additional x-raying, clay liners, installation of additional manual or automatic valves and evaluation of hydrostatic testing of the pipeline will be dealt with as permit considerations by your Department, and accordingly will not be discussed or evaluated in the E.I.S. We are pleased that these concerns will be addressed in the permitting process.

2

In past discussions with the pipeline company, we have been assured that a pipeline spill will be cleaned up within 36 hours. We note that a spill that occurred on November 4, 1977 near Staples, Minnesota has not been completely cleaned up as of this date. The clean up issue should be addressed in the permitting process. The Northern Pipeline Company should develop immediately better clean up procedures that will insure that spills are recovered within the shortest time possible.

3

The draft E.I.S. addendum should also address a concern that was recently brought to our attention by Mr. Herbert Pfeffer, Christenson Well Service, Dodge Center. Mr. Pfeffer notes that many farmsteads have been abandoned with the buildings removed and the land farmed. Many of the abandoned wells on such property have had the casing cut off below surface so that land could be plowed. Mr. Pfeffer is concerned that if such wells are encountered that they will not be properly sealed and be potential sources of contamination. He is also of the opinion that all wells should be located at least 100 feet from the line.

(11)

Mr. Pfeffer has informally estimated that there may be as many as one abandoned well for every farmstead in Dodge County. Because of the possible numbers of such wells, the problem of potential ground contamination from a pipeline spill is a real concern. Such wells should be located and measures taken to insure that the wells are properly sealed.

cc: Environmental Quality Board Members
Minnesota Geological Survey
Environmental Review Coordinator, Department of Natural Resources

COMMENTS

RESPONSE

To letter of Warren R. Lawson, M.D.
Commissioner, Department of Health

1 Woodward - Clyde Consultants, in their report prepared for the Minnesota Energy Agency, states that "In our opinion it is appropriate for the State of Minnesota to require 100 percent radiological testing of girth welds on pipe to be installed in areas it considers sensitive, even though some areas the state might classify as sensitive would not be specifically included in areas requiring such testing according to the regulations quoted above," (refers to Federal DOT Regulations).

On the other hand, the U.S. Department of Transportation in a letter to the Energy Agency (March 1, 1978) states that the Office of Pipeline Safety Operations (OPSO) "considers these requirements (the Federal requirements for x-raying ten percent of all girth welds and 100 percent of girth welds in specified areas) to be reasonable and adequate to assure the quality of the welding performed during the manufacture and construction of the pipeline. The post construction pressure test required by the regulations (Subpart E) is further and more positive assurance of the quality of all welds, materials, and construction procedures used prior to placing the pipeline in operation."

It should also be noted that Federal regulations require 100 percent x-raying of longitudinal welds.

As stated in Commissioner Lawson's letter, this is one of a number of engineering type mitigating measures which will be dealt with as permit considerations by DNR. The DNR permit will require x-raying 100 percent of the girth welds in those areas identified as having less than 50 feet of glacial till over the bedrock, as well as installation of thicker walled pipe and additional valves at streams.

2 We quote from a letter dated March 30, 1978 prepared by the Minnesota Pollution Control Agency in response to a similar question:

"The Minnesota Pipe Line Company crude oil spill near Staples occurred on November 4, 1977. Approximately 4,398 barrels (184,716 gallons) of Canadian crude were spilled from the 16 inch line as a result of a five foot rupture of the longitudinal seam. The oil flowed over ground to a nearby peat bog of approximately two acres. A dike was constructed around the bog, trenches were dug to direct the oil to a sump and oil was pumped directly to trucks. This continued until November 29 at which time the first burning was permitted. Burning continued for four days. By early December the weather had become severe and the remaining oil was covered by a thick layer of snow and ice. A ditch was excavated around the bog inside the dike and further cleanup was discontinued until spring. The bog was been regularly inspected since early this month and as soon as the ice begins to thaw, a meeting with Company officials, the Department of Natural Resources and the Pollution Control Agency will be held on the site. At that time, we will determine what steps are necessary to clean up the remaining oil. The Company remains liable for all cleanup of the spill,

damages to the environment, expenses incurred by the state and, possibly, penalties. The Company has already negotiated with the landowner for payment of damages. The land involved in this case was peat bog and was not cultivated or used as pasture."

Subsequently, the company has cleaned up the remaining oil and has undertaken restoration measures, including turning the soil, fertilizing and seeding. PCA will continue to monitor the site and will require additional restoration measures as necessary.

Additional information regarding cleanup of spills has been prepared by the PCA and is published in Appendix II, Spill/Pollution Concern.

3 Improperly abandoned wells in Southeastern Minnesota have been known to be a problem for many years. Locating such wells (especially those cut off below the land surface) is an extremely difficult task. If, while laying the pipeline, an abandoned well is found, it should be properly abandoned according to Minnesota Department of Health. Even though the pipeline is intended to be at least 300 feet from any home, it is possible that a water well could be closer. At least a 100 foot separation distance, and preferably 300 feet, should be provided for each water well. The pipeline company will be required, as a condition of the DNR permit, to cap any abandoned wells which are found within 300 feet of the centerline.

COMMENTS

STATE OF MINNESOTA

STATE PLANNING AGENCY
101 CAPITOL SQUARE BUILDING
550 CEDAR STREET
ST. PAUL, 55101

March 17, 1978

Department of Natural Resources
Environmental Review Coordination
3rd Floor Centennial Bldg.
St. Paul, Minnesota 55155

RE: Draft EIS Addendum on Northern Pipeline from Wood River, Illinois to Pine Bend Minnesota.

Dear Sir or Madam:

The draft EIS addendum has been reviewed by the Environmental Planning Division of the State Planning Agency. The following comments are submitted for your consideration in the final EIS addendum.

1 The map showing surficial geology, figure 7, is difficult to read. It would be helpful if the areas of outwash sand and gravel along the proposed route could be more clearly illustrated.

2 Depth to bedrock is a significant factor in comparing the route alternatives. A more detailed map showing drill hole locations, with depths to bedrock and outcrops in the general area between Fairbault and Farmington would give the reader a better understanding of the level of reliability of the inferred 50 foot isopach.

We appreciate the opportunity to review this document.

Sincerely,

Joe Sizer, Director
Environmental Planning Division

JS/tj

(3)

RESPONSE

To Letter of Joe Sizer, Director
Environmental Planning Division
State Planning Agency

1 A new map of surficial geology of Southeastern Minnesota has been provided (Figure 1), based on new unpublished information provided by the Minnesota Geological Survey.

2 The map showing the 50 foot to bedrock isopach (Figure 6 in the Draft Addendum) was prepared by the Minnesota Geologic Survey (MGS). It is based on well log records and other data which is unpublished and is not in publishable form. The MGS has stated, however, that the information on which the map was based is available for review at their offices, located at 1633 Eustis Street, St. Paul.

March 15, 1978

Mr. Ken Wald,
Environmental Review Coordinator
Department of Natural Resources
Centennial Building
St. Paul, Minnesota 55155

Dear Mr. Wald,

Enclosed please find a copy of my response to the Department of Natural Resources' request for comments on the Draft Addendum to the Draft Environmental Impact Statement for the Minnesota Portion of the Wood River, Illinois to Pine Bend, Minnesota Pipeline Project.

Section titles and numbers refer to corresponding ones in the above document.

If you have questions concerning any of this material, please feel free to call me at 789 0459.

Sincerely

Harold E. Froehlich

Harold E. Froehlich,
Engineer Minnesota, Iowa, & Illinois
RCO
3016 Armour Terrace
Minneapolis, Minnesota 55418

(42)

COMMENTS ON THE DRAFT ADDENDUM
to
DRAFT ENVIRONMENTAL IMPACT STATEMENT
Minnesota Portion of a
Crude Oil Pipeline from Wood River, Illinois to Pine Bend, MN

INTRODUCTION

1 The opening paragraph implies that this pipeline will be utilized by two refineries, whereas in fact Ashland withdrew from this project over a year ago and their needs are currently being fulfilled by the recently laid Williams pipeline.

2 The 50 feet of glacial till above bedrock is an arbitrary number. It is based on the belief that the company will have sufficient time to clean up the area before the oil enters the aquifer.. This number was selected before this company's line split wide open near Staples, Minnesota on November 4 of last year. I suggest that the time required to clean up the Staples spill is more indicative of a "real life situation" than the few days upon which the 50 feet is based. There is a documented case[1]* of oil contaminating a 160 foot well which was protected by 145 feet of glacial till.

3 Tests conducted by the company are not representative of real situations. The test container did not have holes in the bottom to relieve the pressure caused by the leak so naturally the oil flowed upward. No rainfall was applied to the surface of the soil being tested so oil migration figures do not represent actual field conditions.

4 Department of Health personnel have stated that no crude oil line should be placed over the southeastern Minnesota aquifer unless its need is absolutely crucial. This is not the case, as will be discussed later.

5 In Rower County, the line still runs through areas that have shallow bedrock and sinkholes.[2]

6 It is estimated that 10,000 tile lines will lie within 4 inches above this 24 inch pipe. There have been seventy-two spills in Minnesota in the past five years.[3] It can be expected that in the next fifty years this line will have a number of breaks and leakage into the tile system is assured. Tile lines lead directly to surface drainage systems and are thus just as important as river crossings, perhaps moreso. Leaks into tile lines cannot be directly viewed and can contaminate large areas before becoming apparent. Undetected leaks are common place. Hydrostatic tests give little assurance against future corrosive leaks of small size.[4]

1.1 SUMMARY STATEMENT

7 Assurance that the refinery in St. Paul Park, Mn will use this line is necessary. Without this assurance the proposed project is for private gain by a private corporation and Minnesota government is the vehicle whereby such an unjust transfer of property is accomplished.

8 The proposed project has been initiated to quickly obtain property rights before the Federal government completes its studies and recommends a preferred

* Numbers refer to references listed at the end of this report

route.[5] Koch plans to more than double the size of their refinery.[6] After lines are completed from the north the proposed project could be used to ship petroleum products. Products flow through soil much faster than crude oil.

9 Koch refinery uses heavy crude oil from Canada. Canada is currently estimating export of this crude until 1992.[7] Total cutoff of Canadian crude in 1981 is incorrect. Recent discoveries and decisions to build tar sand plants may well increase the amount of crude available to Minnesota refiners.

10 Some, perhaps most if not all, of the crude will be shipped from St. James, La. by barge. Capline is full. This is the reason the line origin was moved from Patoka to Wood River. A map showing the route(s) and mileages between the Gulf Coast and Wood River is a necessary part of this statement. An estimated breakdown of the amount and type of crude shipped via the various routes is also necessary. Without this information a complete transportation energy impact analysis cannot be made. Such an impact analysis has been made based on barging and the results show this aspect to be at least as great, if not greater, than other items of concern. See section 3.2.6.

11 Line size is stated as 24 inches in diameter. In the Bonner and Moore studies, Koch rated a 24 inch line at 376,000 BPD (barrels per day)[8] for crude oil and 576,300 BPD for products. These figures are 19 and 82% greater than Minnesota's total petroleum needs for 1985 as projected by the Minnesota Energy Agency Biennial report to the Governor dated January, 1976. Construction of this line thus impacts unfavorably on construction of the Northern Tier route which is ten times more energy efficient, and utilizes renewable hydroelectric power for pumping.[9] See section 3.2.6.

1.2.2 Need for the Proposed Project

12 The Federal Department of Energy has conducted a supply demand balance for all the Northern Tier States through 1980[10] and they state that Minnesota has no problem of crude oil supply in this time period. The data in their report was confirmed by its author under oath on January 23, 1978 before the Illinois Commerce Commission. Northern Pipeline Company did not challenge any item in this report.

The Federal government at this time is neutral on this project.[11] At least two other routes are viable alternatives to the proposed route:

1. Northern Tier Pipeline
2. Sohio project and a 24 inch pipeline from Cushing, Oklahoma in an existing Williams pipeline corridor.[12]

The recently released 1978 Minnesota Energy Agency Biennial Report to the Governor clearly shows that the Pine Bend to Wood River line is not needed. Table 15 in this report shows the total needed crude supply at 198,000 BPD average for the year 1980. 22,000 BPD is from Portal pipeline and other sources. The new Williams line is currently delivering about 100,000 BPD. In September of this year, this crude oil line will have a capacity of 130,000 BPD. Table 8 of reference 10 lists the Canadian allocation at 59,600 BPD for that year. Since the agency that wrote that report determines the crude allocation, I prefer to use that number rather than the 51,000 BPD as listed by the Minnesota Energy Agency. This already totals 211,000BPD, 7% more than needed. Exchanges are another source not included above. In January of this year, these were about 20,000 BPD. Barged crude from St. James, La. is another source. Last year approximately 42,000 BPD were shipped in season. With a 3½ million bbls storage

capacity, a year round 28,000 BPD supply is available by this method. Koch currently has 4.9 million bbls total storage of which 837,000 bbls is designated for crude oil. This amount of crude storage allows for 7,000 BPD for the winter months. The proposed project involves a huge storage facility at Wood River, Ill. which would better serve Minnesota's needs if located at Pine Bend. It is normal for any industry in Minnesota to store fuel for winter and a refinery is no exception. It is the price paid for doing business here. It has the advantage of flexibility to account for the temperature variations during winter and is a prudent investment. Another factor affecting these numbers is the likelihood that the Conoco Refinery in Wrenshall will shut down unless the Northern Tier line is constructed. This will reduce the needed crude supply for the state. Another factor should be brought out and that is that refineries run essentially at constant rate. The product pipelines and their associated storage facilities are the companies which take up the week to week variations in demand and their capacity to vary their supply is tremendous. For example: The Mid America line, not included in Table 15 because it is normally a propane line, was running 30,000 BPD of needed product during January of 1977.

The above figures and discussion clearly show that the Pine Bend to Wood River line is not needed by the public and there fore Koch is not entitled to eminent domain privileges. If the Wood River to Pine Bend line is built, the three main pipelines to the Twin Cities Refineries would have a combined capacity of:

Minnesota Pipeline	175,000 BPD
Williams Line	130,000 "
Wood River to Pine Bend	246,700 "
	551,700 BPD

This is over three times their current capacity!

"State energy officials say these suppliers (referring to the existing Williams line and the proposed project) are solutions only for the near future, and that the long range needs of Minnesota demand access to Alaskan oil."[13] The EIS states on page 5 that the proposed project is "a long-term solution to the supply problem". Is Minnesota government telling the public one thing in the press and promoting another course in actuality? On the same page is stated that the proposed project is "the most economical means of transportation". Barge transportation runs 66¢ per bbl between St. James, La. and Wood River, Ill. Based on the added miles, barge transportation to Pine Bend would add 44¢ per bbl. No tariff is stated for the pipeline. A half million dollar Amoco analysis[14] clearly shows the Northern Tier route to be more economical for both Alaskan and Persian Gulf crude. Economies of the scale, such as would be achieved on the Northern Tier pipeline, are proven by experience with Capline and Colonial pipelines.[9] These discrepancies must be cleared up before this EIS is credible!

This proposal has adverse impacts on our neighboring states and our refineries in Wrenshall and Superior, Wisconsin. The electrical load imposed on Eastern Iowa is many orders of magnitude greater than any one current customer. See section 3.2.6. The states of North Dakota[15] and Montana[16] cannot be served by the proposed project and the construction of it makes the Northern Tier pipeline less viable.

Nearly half the new route in Iowa traverses the same bedrock aquifer as exists in Minnesota. Also numerous sinkholes areas exist along the new Iowa route. Sinkholes and shallow bedrock will transmit the phenol-containing crude to poison groundwater for future generations. New sinkholes are continuously forming and there is an insufficient data base to even assure that 50 feet of till exists along the line. Iowa has more tile than Minnesota. The impact of this line on our

COMMENTS

neighboring states surely is deserving of some consideration by Minnesota before certificates of need are issued.

13 1.4.1 Right-of-Way

Construction of a 24 inch pipeline requires a 100 foot right-of-way with 25 feet of this used to store topsoil. The remaining 75 feet is needed for the ditch digger, the ditch, room to lay the pipe, the welding machine, a walkway, and a road for the servicing vehicles. Only 25 to 50 feet of this should then remain as a permanent easement for pipe operation and maintenance.

14 1.4.3 Pump Station

A suitable tentative site for the pump station should be selected at this time. The earlier a farmer knows to what use his land will be put, the better he is able to plan and layout his farm. Since these pump stations require considerable electrical power, the source of this power should be established and the energy form (coal, nuclear, or oil) from which the power is extracted should be defined. The impacts of the added power requirements and the transportation of the fuel to the power plant can thus be addressed.

15 1.5 Proposed Facility

Location of manual shut-off valves should be defined at this time. The proposed spacing may be as great as 15 miles. 15 miles of pipe contains almost 2 million gallons of oil. Since the location of these shut-off valves has an influence on the amount of oil which will drain from the pipe with a rupture, the farmer should have a voice as to where the valves will be located.

16 It should be pointed out the Canadian Government has rejected the Kitimat proposal and case 1 is no longer a possibility. Koch's own data shows that a 24 inch line is rated at 376,000 BPD[8]. It should also be pointed out that a

17 typical crude slate for this line includes very high sulfur crude from Egypt and Syria[17]. This crude will be tanker transported from the source to St. James, La. It will then be barged up the Mississippi River to Wood River, Illinois.to be put into the proposed pipeline. The interior of the pipeline is bare metal and the exteriorly applied cathodic protection gives no protection to the inside of the pipe.

1.9.2 Operation

18 Koch Refining Company has no operating history of pumping.high sulfur crude oil which has also been tanker transported. This is important.

Tankers ballast their ships with sea water on the return trip, thus there is both water and sulfur in the crude. These are the ingredients of sulfuric acid; about the best metal corroder known. In addition, the proposed crude oil is more viscous than normal and therefore the friction is higher. This results in higher interior metal surface temperatures which in turn accelerate the corrosive process.

19 Techniques have been developed to rehabilitate soil which has been contaminated by oil[18]. There are certain bacteria that thrive in such soil and eventually return it to its original state. To do this, however, special areas, equipment, and techniques are necessary. No such sites are available in Minnesota, Iowa, or Illinois. I must ask therefore what does the company plan to do with the tons of contaminated soil and where will the company get the topsoil to replace that which has been removed? Should not this planning preceed operation of this pipeline?

20 1.9.2 Leak Detection System

This system essentially measures the volume of oil put in the line at Wood River, Illinois and measures the volume of oil which come out at Pine Bend. The company has a good accurate metering system but in spite of this, several thousand gallons per day can leak from this line without anyone being the wiser. This can go on for months. It is estimated that the pipe will pass beneath and as close as 4 inches to 10,000 tiles lines between Pine Bend and Wood River. If this oil goes down, it enters the aquifer. If it goes up, it very likely will enter the tiling system. In winter the oil cannot surface because of frost. Under these conditions what good is a flyover every two weeks? The smaller holes are much more insidious than a large rupture!

This leakage can go on indefinitely. Wide spread soil and/or aquifer contamination can result. There was one uncected leak last summer just south of Minneapolis at the intersection of Wescott and Lexington. Nobody knew there was a leak until the trees started dying and this area was not tiled. The Alyeska line was recently ruptured[19] with a rather large hole which was not detected by the metering system. Statements at the hearings by company personnel are particularly misleading on this subject.

21 3.2.6 The Socio-Economic Environment

If constructed, this proposed project will impact on society in a variety of ways in an estimated fifteen states. Agriculture in particular will suffer losses at this point in history when it is largely paying the bill for our foreign oil imports. Reduced crop yields along the right-of-way are common place. Acreage is removed from agriculture for pumping stations, electrical sub-stations, power lines, power plant expansions and coal storage areas--all to power the pipeline. With each spill, crops and acreage are lost and a tremendously valuable water resource could easily be poisoned.

Preservation of all our crop producing land should be our nation's number one objective. Agriculture is a gigantic solar energy industry already in existence. The dollar return per unit of unrenewable energy expended in agriculture is very high.[20] It is 6.1 times better than the cement industry, 5.5 times better than the aluminum industry, 3.8 times better than the steel industry, and 2.9 times better than the petroleum industry. The obvious reason agriculture compares so favorably is its natural use of the sun. Increased exports of farm products thus ought to be our first priority in attempting to offset our bill for oil imports.

The Minnesota Energy Agency projects that by 1983 over half of the petroleum used in Minnesota will be supplied by the two new lines from the south. This will be mostly OPEC oil; therefore, an embargo would be disastrous for Minnesota, particularly if it occurred in winter.

The above Energy Agency's 50% may be low. The economic incentive to increase the throughput after a line is in place is present, because the construction and pipe costs are proportionately very high compared with additional pumping equipment and increased electrical power, i.e., within limits the additional revenue increases much faster than the additional operating costs. In the case of Koch, there is an addec economic incentive to increase throughput because they can process heavy sour crude which can be purchased up to $3.00 per barrel cheaper. In fact, Koch Refinery can process the cheapest crude available. At the present time, this crude is available in the Mid-East and indeed Koch's slate of crude includes Syrian and Egyptian high sulfur extremely viscous crudes. Saudi Arabia has recently announced its intention to increase its output of heavy sour crudes while re-

COMMENTS

ducing its output of the lighter sweeter crudes.

At 246,700 BPD Koch's proposed pipeline could transport all of the Twin Cities crude requirement, all from the MidEast. Logistic systems are not changed overnight. Pipeline industry practice is to give priority to historical shippers. During the last embargo the long lines at the filling stations and the shortages of heating oil were precisely in those locations which had let themselves become dependent on OPEC oil. Why doesn't Canada swap Canadian crude for OPEC oil? It is precisely for this reason--they don't want to establish this pattern. Yet our Energy Agency is promoting this very dependence.

Secretary Schlesinger on the other hand has vowed to reduce our oil imports from 8.2 MMB to 5.8 MMB by 1985. By contrast, the following represents the thinking of our Minnesota Energy Agency: "the most plausible assumption appears to be that crude oil will continue to be imported to meet the increasing demand for petroleum products"[21].

If Koch's line is built, there is no need for a line to bring Alaskan crude to Minnesota--until OPEC shuts off the supply--then it is too late. We must see to it that a line to bring Alaskan crude to Minnesota is built now while we still have time.

It would be far better to invest in logistics systems which deliver domestic crude than to permit construction of a line which helps to continue the present trend of inflation, dollar devaluation, trade imbalance, and high unemployment. American economists, all the way from Walter Heller on the left to Milton Friedman on the right, agree that unemployment cannot be reduced to satisfactory levels as long as 44.3 billion dollars are being drained from our economy. President Carter has stated that this oil bill is costing us 1.8 million jobs each year in capital lost for U.S.A. investments.

Comparing oil imports with agricultural exports is enlightening. In 1970, when we spent $3 billion for foreign oil, we sold $7 billion of farm products to foreign countries. In 1977, our farm exports had increased to $24 billion but our oil import bill had escalated to $44.3 billion. Dollar devaluation and inflation are thus a direct result of this unbalance. Even John Galbraith, a liberal easterner, recently stated that "inflation which was 7% last year would have been much higher but it wasn't because we are taking it out of the hides of the farmers".

Any project which adds to these trends should not be approved for these basic socio-economic reasons alone; but, as discussed below the waste of energy of the proposed line is also sufficient reason to disapprove the project.

The United States cannot tolerate the energy waste which will accompany individual refinery solutions to their supply problem. Transportation distances are great and we need the savings in energy inherent in collective use of large pipelines. Pipelines of twice the size will transport four times the amount of crude oil at only twice the expenditure of energy for pumping. Table 31 of reference 9 illustrates the lowered tariffs for increased pipe sizes, and economies of scale that individual parties cannot achieve alone are discussed in other parts of that reference.

A review of the energy flow maps of reference 9 reveals the one serious shortcoming of the current United States crude transportation system as Canadian crude

is curtailed. While numerous routes and means exist in the Eastern half of the country, the land locked states north and west of Chicago are seriously lacking in means to obtain Alaskan and other crude delivered to the West Coast. The Northern Tier Project provides this important "missing link" in a United States logistic network for crude supply. It resolves the problem of excess crude supply on the West Coast and minimizes the expenditure of energy in transporting it to the refinery and to market. It is also the best realizable solution to the Canadian crude curtailment problem. If each northern tier refinery is left to resolve its own individual supply route problem, a myriad of patchwork, energy wasteful, and environmentally damaging projects will result.

The recently laid 12" diameter Light Hydrocarbons Dome line will become Eastern Iowa's largest single electrical power consumer [22] in September of this year. This 2000 HP pumping station (there are 3 in all) requires a new electrical substation and will consume 12 million KWH of energy per year.

This substation requirement however is small compared to those required by the proposed project. This project involves eight 6500 HP pumping stations[23], three of which are also in Eastern Iowa. At the design capacity of 246,700 BPD the electrical requirement for these eight stations is 404 million KWH/year. Assuming the electrical plants are coal fired, 233,601 tons of coal will be required by the electric utilities. This does not include the energy required to barge or pump the crude to Wood River and the diesel fuel required to move the coal to the power plant. Although Iowa and Illinois have coal, it is high in sulfur content. A.D. Little, Inc.[24] stated in a recent study that the electric utility needs for air pollution control equipment will not be fulfilled in the next decade. Low sulfur coal will thus have to be transported to the utilities. Barging crude up the Mississippi to Wood River and transporting Western coal to the area is estimated to consume 99,095,000 gallons per year of diesel fuel at the pipeline design capacity of 246,700 BPD. The total fuel expense is thus equivalent to 880,829 tons of coal per year. During the winter of 1976-77, Minnesota had its coldest winter on record. The projected energy required to transport crude to Pine Bend from St. James, La. would have heated 187,187 homes in Minnesota during that winter! Assuming four people per home, a population greater than that of Minneapolis and St. Paul combined could be kept warm with the largely wasted energy, 73% of which is likely to be from foreign crude oil sources.

The Wood River to Pine Bend line is a good example of patchwork transportation line to serve the interests of one refinery. In reference 8, Koch Refinery rated a 24" crude oil line at 376,00 BPD. History shows that pipeline throughput increases with time. Assuming the same type crude is pumped at this rate, the equivalent energy requirement becomes 1,838,000 tons of coal per year. As previously explained, the economic incentive to increase throughput once the line is in place is ever present. The Wood River to Pine Bend line could then become a means to economically justify tremendous waste of energy.

Should Koch be successful in developing a market to use the crude or its refinery products at the rate of 376,000 BPD, the energy waste increases sufficiently to heat the homes of a 1,562,391 population during a record Minnesota winter. The breakdown in British Thermal Units of heat is:

Barge	2056×10^{10}	BTU/year
Coal for electric utilities	1756×10^{10}	" "
Rail for coal transportation	90×10^{10}	" "
Total	3902×10^{10}	BTU/year

COMMENTS

Since barge and rail are diesel powered, 55% of this energy waste is likely to be of foreign origin. This amount of energy can be shown to be reasonable by calculating the BTU per ton mile. It is 1679. This compares favorably with the figure of 1850 given on page 262 of reference 9.

Minnesota is already experiencing problems as a result of western coal being shipped eastward. Approximately one million tons of coal is shipped through the state to Peoria, Illinois each year. The proposed project is likely to increase this quantity from 23 to 89% depending on pipeline throughput.

The energy required for pumping crude via the Northern Tier line is significantly lower and involves very little diesel oil and possibly no foreign oil. Much of the energy is supplied by hydroelectric power and the remainder comes from electric utilities which receive low sulfur coal from nearby sources. A comparison between the two lines can be made computing the percentage of energy consumed to the energy transported. For the Koch line these numbers are 3.58% and 4.90% for the 246,700 BPD and 376,000 BPD cases respectively. For Northern Tier Pipeline the comparative number is .94% for 709,999 BPD.[7] This is based on an installed horsepower of 174,000 and the same efficiencies and transmission losses as Koch's line but only 10% of the rail diesel fuel requirement. The 10 to 1 advantage of the Northern Tier line is thus apparent. Of all transportation modes pipelines are the least flexible. It is therefore imperative that pipeline routes be selected wisely as their merits and consequences will impact upon us well into the next century.

RCO recognizes that we are asking the state of Washington to accept the risks involved in having a deep water tanker terminal at Port Angeles and a rather large pipeline cross the state. But, there are benefits for Washington State which we feel outweigh these risks.

The states of Washington, Montana, North Dakota, Minnesota, Wisconsin, Michigan, Iowa, and Illinois contain one third of the cropland within the USA[25]. Agriculture relies heavily on petroleum products. Farmers in the above states have become dependent upon products from refineries using largely Canadian crude. Although farming is energy intensive, the dollar return per unit of energy expended is high[20]. With Canadian crude curtailment, we cannot allow our principal exporting industry to decline. In fact, we must see it increase to help resolve the problems of inflation, unemployment, and decline in the value of the dollar. It is thus a question of the best way to replace the lost crude supply.

A northern tier pipeline would serve all the above states including Eastern Washington which receives petroleum product from Montana.

Amoco's half million dollar pipeline analyses resulted in the conclusions that such a line is superior to other options and provides the lowest cost method for delivering Alaskan, Indonesian, and Persian Gulf crudes to northern tier refineries.

This pipeline, under US control, is embargo proof and obviously provides an optional defense strategy in time of national emergency. Through connections with other pipelines up to sixty-six refineries could potentially receive crude via this route. The line also crosses thick salt beds in the Williston Basin which can provide needed strategic crude storage.

Washington State is concerned, and rightfully so, about tanker traffic in Puget Sound. The Northern Tier Pipeline can supply the four Puget Sound refineries via a 24" spur line from North Bend Junction to Anacortes, and thus avoid increased, or eliminate entirely, Puget Sound tanker traffic.

It is estimated that salaries paid by the company in Washington State during pipeline operation will be 1.2 millions of dollars annually. Large annual tax revenues will also be received by each county through which the line passes.

Grand Coulee Dam, being located in Washington State, can provide the electric power to pump the crude and receive compensation accordingly without depleting our expendable fuel resources. On page 8-5 of reference 26, it is stated that Grand Coulee has an ultimate capacity of 9771 megawatts. Its current capacity is 2025 megawatts. Hydropower is desirable to transport petroleum because it is independent of disruptions in the coal industry, such as we are currently experiencing.

We recognize that financing and environmental risks may be problematic, but we also believe in first things first. The Alcan gas line received government approval prior to financial committments. The Northern Tier consortium is preparing the EIS at this time. The U.S. Bureau of Land Management is holding a public meeting as part of this process in Crookston, Minnesota, March 23, 1978, 2 PM. at the University of Minnesota-Crookston campus.

Why should Minnesota rush to complete Koch's line when a much sounder alternative is being seriously pursued?

RCO concludes, after a year of study of alternate means, that the Northern Tier Pipeline proposal should receive the open encouragement of Minnesota government.

COMMENTS

Submitted by:
Harold E. Froehlich
Engineer,
Minnesota, Iowa, & Illinois RCO
3616 Armour Terrace
Minneapolis, Minnesota 55418
(612) 789 0459

REFERENCES

1. Oil Spill, Fayette County, Iowa, August 19, 1968.
2. Conversation with Roger Bhend, Leroy, Minnesota, February 20, 1978.
3. PCA Report to Senate Transportation Committee, Tim Scherkenbach, February 20 '78
4. Theory of Elasticity, S. Timoshenko, McGraw-Hill Book Company, 1934, pg.75.
5. Environmental Statement Procedure, Northern Tier Pipeline System, US Dept. of the Interior, Bureau of Land Management, Oregon State Office, November, 1977.
6. EA 406 - (b) Forecasts, Koch Refining Company.
7. Canadian Oil, Supply & Requirements, National Energy Board, February, 1977.
8. Crude Supply Alternatives for the Northern Tier States, Volume II Technical Report, 25 July 1976, Prepared for the Federal Energy Administration, Bonner & Moore Associates, Inc.
9. National Energy Transportation, Volume 1--Current Systems and Movements, United States Senate Committee on Energy and Natural Resources, May 1977, Publication No. 95-15.
10. Petroleum Supply Alternatives for the Northern Tier States Through 1980, Federal Energy Administration, June 1977. FEA/H-77/183.
11. Statement of Policy, United States Department of Energy, John F. O'Leary before the Illinois Commerce Commission, February 16, 1978.
12. Williams Pipeline Company, Mainline Expansion for Northern Tier Supply, August 23, 1976.
13. "Oil Pipelines to Supply Minnesota Still Get Bushwhacked", Minneapolis Tribune, March 12, 1978.
14. Northern Tier Pipeline System Benefits to the Northern Tier States and the Nation, Northern Tier Pipeline Co., April 21, 1977.
15. Letter from Governor Thomas L. Judge, Montana, September 6, 1977.
16. Letter from Charles F. Metzger, Ph.D. Energy Advisor to Governor Arthur A. Link, North Dakota, and Chairman, Natural Resources Council, September 2, 1977.
17. Project Summary, "Wood River, Illinois to Pine Bend, Minnesota Pipeline", Koch Industries, Inc., April 20, 1977, Revised May 5, 1977.
18. Oil Spill: Decisions for Debris Disposal, Industrial Environmental Reasearch Laboratory, Edison, New Jersey, October, 1977.
19. Newsclipping, February, 1978.
20. A Study of the Energy Needs of the Food Industry, "US Food and Fibre Sector: Energy Use and Outlook", United States Senate Committee on Agriculture and Forestry, September 20, 1974.

21. Minnesota's Energy Situation, A Biennial Report to the Governor and the Legislature, Minnesota Energy Agency, January 1976.
22. "New Dome Substation Will Serve Largest Consumer", Current News, Eastern Iowa Light and Power Cooperative, Volume 23, Number 3, February 17, 1978.
23. Project Summary, "Wood River, Illinois to Pine Bend, Minnesota Pipeline", Koch Industries, Inc., April 20, 1977, Revised May 5, 1977.
24. Outlook for Air and Water Pollution Control through 1985, Arthur D. Little, Inc., April, 1977.
25. Agriculture, Rural Development & Use of the Land, United States Senate Committee on Agriculture and Forestry, Sub-committee on Rural Development, April 16, 1974.
26. Energy Technology Handbook, Douglas M. Considine, Editor-in-chief, McGraw-Hill Book Company, 1977.

COMMENTS

RESPONSE

To Letter of Harold E. Froehlich, Engineer
Minnesota, Iowa, Illinois Reroute
Crude Oil (RCO)

1 At this time, both Ashland Oil (St. Paul Park) and Continental Oil (Wrenshall, Minnesota) as well as Dow Chemical support this project and are prepared to nominate volumes for transport through Northern Pipe Line. Documentation is provided in the accompanying attachments (See Appendix X).

2 See Appendix II, Spill/Pollution Concerns.

3 The criteria of 50 feet of glacial till above bedrock was not based on the tests done by the company. It was developed by the Minnesota Pollution Control Agency and resulted in a much more conservative figure (in terms of the protection provided) than the calculations by the company.

4 No documentation is given for the position attributed to the Health Department. DNR has received several letters and memos from the Health Department over the past few months regarding the project, including letters published in this Final EIS, and at no time have they expressed the opinion cited in the comment. The Health Department and the Pollution Control Agency have worked extensively with DNR in developing mitigation measures to reduce the possibility of a spill, and to minimize the consequences of a spill if and when one occurs.

5 The Minnesota Geological Survey recently did a survey of well logs in southern Mower County and from this information has drawn a new map showing the depth to bedrock (see Figure 2). In the areas identified as having less than 50 feet of glacial till over the bedrock, the Company will be required as conditions of the DNR permit to install heavy-walled (½ inch thick) pipe and to x-ray 100 percent of the girth welds. These requirements are the same as required by Federal regulations for stream crossings.

6 See Appendix II, Spill/Pollution Concerns

Oil passing through tile lines will usually be detected upon entering surface waters, in which case it would be cleaned up much like any other surface spill. Effects of crude oil on tile systems are unknown. The viscosity of the oil may plug or clog the tile rendering it nearly useless. Cleaning of such damaged tile would probably be impossible, and the old tile line would have to be removed and a new one installed.

There is no evidence that undetected leaks are commonplace. A well-designed and properly functioning cathodic protection system will prevent most external-corrosion caused leaks.

7 At this time, both Ashland Oil (St. Paul Park) and Continental Oil (Wrenshall, Minnesota) as well as Dow Chemical support this project and are prepared to nominate volumes for transport through Northern Pipe Line. Documentation is provided in the accompanying attachments (see Appendix X).

RESPONSE

8 Any significant expansion of the Koch refinery would require a Certificate of Need from the Minnesota Energy Agency. An amendment to the Certificate of Need on the pipeline would be necessary before refined products could be shipped through the pipe.

9 See Appendix I, Need Issues.

Northern Pipeline Company prepared the following response:
It is not correct that "most if not all, of the crude will be shipped from St. James, La. by barge". Current estimates for the source volumes are as follows:

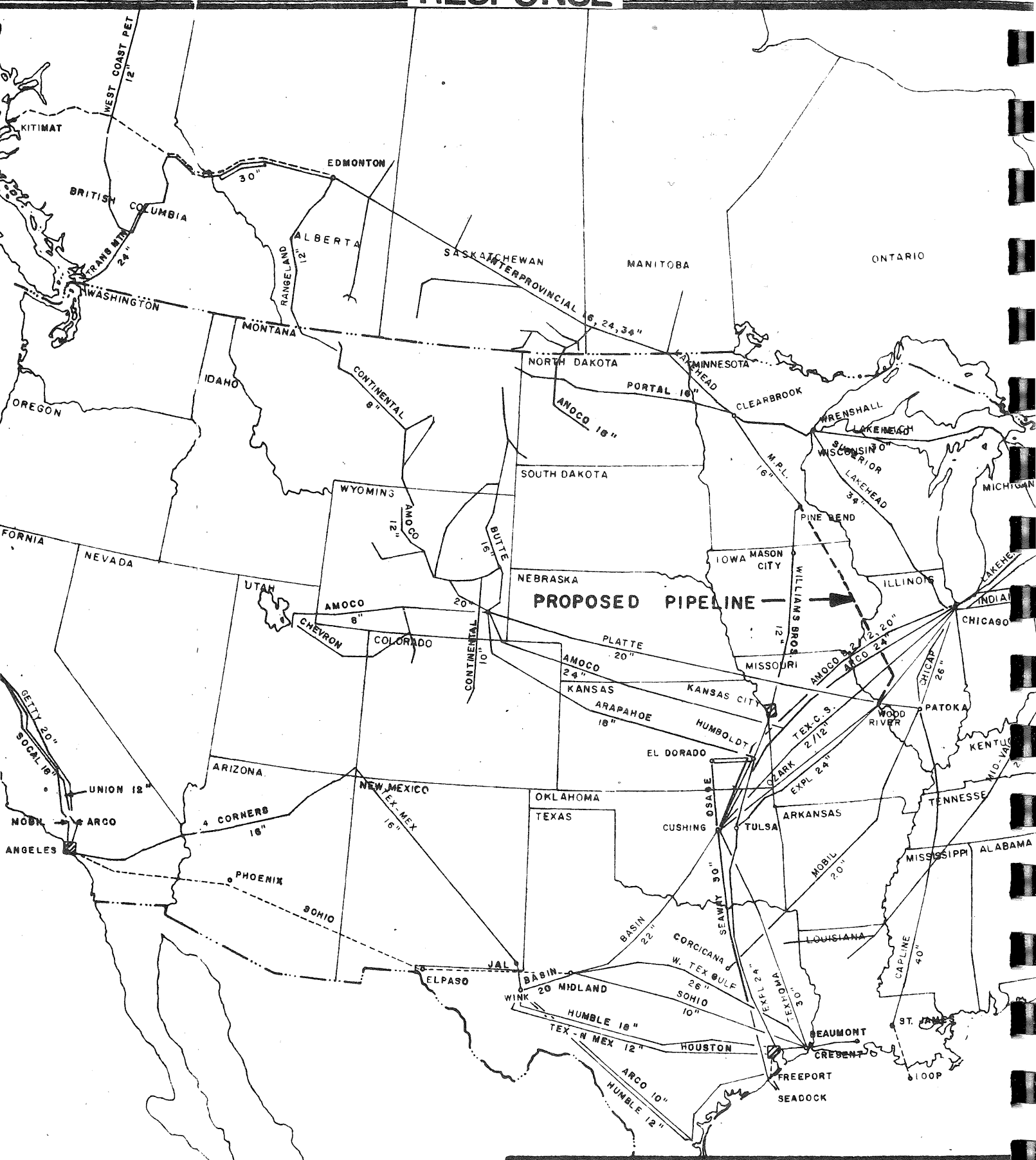
Transportation Source	130,000 BPD (MBPD)	175,000 BPD (MBPD)
Barge	37	50
Ozark Pipeline	52	70
Capline/Capwood Pipelines	30	40
Explorer Pipeline	11	15
Totals	310	175

Obviously, the above does not support the conclusion that Capline is completely full, It is generally true that Capline nominations are made to capacity; however, on a day-to-day basis there is up to 150,000 BPD of space available for spot shipments. It is this available space that will be used in support of the above estimates.

10 The move from Patoka to Wood River for the origin of Northern Pipeline was not entirely based on the present utilization of Capline, since it is believed that a Capline expansion will occur eventually. Further, the origin at Wood River does not preclude the use of the Capline source. Because of the delay involved to actually expand Capline (perhaps 5 years or more), it is apparent that Northern Pipeline would require immediate access to other transportation sources. These sources are available at Wood River. When in fact a Capline expansion is completed, access by Northern Pipeline will remain possible by way of Capwood. A map of U.S. Crude Oil Supply Routes is attached hereto.

A schedule of actual crude types slated for transport by Northern Pipeline is not possible at this point in time. Many factors enter into the development of such a schedule (crude available for purchase by shippers, competitive pricing, etc.); which factors will not be known until just prior to the startup date. These factors are an integral part of the working of our free enterprise system. A schedule is provided that lists crude types that are typical of those that may be transported. This listing is as follows:

RESPONSE



MAJOR U.S. CRUDE SUPPLY ROUTES

RESPONSE

Crude Type	Gravity (°API)	Sulfur (%)	Pour Point (°F)	Viscosity (Centistokes)
Ras Gharib (Egyptian)	22.6	3.17	+20.0	183 @ 70°F 59.3 @ 100°F 22.4 @ 140°F
Souedie (Syrian)	25.1	3.59	-20.0	124 @ 0°C 66 @ 10°C 37.5 @ 20°C
Cueto Bachaquero (Venezuelan Blend)	26.7	1.83	-30.0	46.3 @ 70°F 24.1 @ 100°F

Average Composite Specific Gravity at 40°F: 0.913
Average Composite Viscosity at 40°F: 500 SUS

11
12 See Appendix I, Need Issues

A 50-foot right-of-way easement is being proposed on this project to minimize the amount of land that would be disrupted. While a wider right-of-way easement would provide more working space, it is the intent of this specification to restrict the construction activities to as small an area as possible, thereby reducing the amount of agricultural land which may be affected. When specific conditions (such as stream crossings and rough terrain) require additional work space, an easement for a wider working area will be obtained. If the width specified in the easement agreement is exceeded during construction, the landowner is entitled to additional damage payments.

Topsoil is removed (where specified in the easement agreement) by a crawler-mounted wheel-type ditcher from over the trench (3-foot minimum width) and placed on the working side. The ditcher is 11 feet, 6 inches in width, and the ditching apparatus includes an adjustable length conveyor which will place the topsoil in an area at least 2 feet from the edge of the trench.

13 Subsoil is removed to the proper depth by a second ditcher. The subsoil is placed on the side opposite the working side (topsoil side) of the ditch.

The topsoil is leveled over a 4-5 foot area (2-7 feet from the trench) on the working side.

The pipe is strung alongside the ditch being laid on skids directly over the leveled topsoil. The skids are placed at least 40 feet apart. This will reduce the possibility of the topsoil becoming packed by vehicles or heavy equipment. Welding personnel will walk on the fringe of the topsoil area.

When the pipe is welded, wrapped, lowered in place, and the subsoil filled in, the relatively undisturbed topsoil will be bladed over the trench and leveled.

RESPONSE

14 Based on the hydraulic design, Pump Station No. 8 will be located approximately in Section 11, T105N,R17W, Dodge County. This station will not be constructed initially, but will be required when the volumes to be transported exceed 153,000 BPD. The power for this proposed station will be provided by either People's Cooperative or Northern States Power, depending on the specific requirements at the time of construction.

15 See Response #16 to the Mark Moenning (RCO) letter for a listing of valve locations.

16 See Appendix I, Need Issues.

17 Contrary to the statement in comment #18, Koch has a considerable amount of experience in transporting high-sulfur crude oil that has also been transported by tanker. Typically, the oil is pumped from aboard ship to inlamd storage
18 tanks. It is normal practice to provide an adequate amount of time to allow any entrained water to settle out. The water is then drawn off the tank bottom prior to shipping the oil by pipeline.

19 See Appendix II, Spill/Pollution Concerns, Section III. C., D.

20 See Appendix IX, Leak Detection.

21 See Appendix I, Need Issues.

RECEIVED
MAR 17 1978
BUREAU OF PLANNING

CARLETON COLLEGE
NORTHFIELD, MINNESOTA
55057
DEPARTMENT OF GEOLOGY

March 15, 1978

Department of Natural Resources
Environmental Review Coordination
3rd Floor Centennial Building
St. Paul, Minnesota 55155

Dear Sirs:

With this letter you will find a series of questions and comments that I have concerning the Draft Environmental Impact Statement prepared for the Minnesota portion of a crude oil pipeline from Patoka, Illinois, to Pine Bend, Minnesota, proposed by the Minnesota Pipeline Company.

I attended the February 21, 1978, meeting at Carleton College held for the purposes of hearing comments from the public concerning the Draft Addendum to the above impact statement. It should be valuable for you to know that I am presently Professor of Geology and Director of the Carleton Arboretum. I have been studying the soils, rocks, and waters of Rice County and the surrounding area for about the last ten years. I have, therefore, developed some knowledge of this area which may not be available to the Minnesota Geological Survey or U.S. Geological Survey in St. Paul. By training I am a geomorphologist, hydrologist, and stratigrapher.

I would appreciate it very much if you would inform me of the receipt of this letter and also explain to me how my comments will be made known to the Environmental Quality Board.

Sincerely yours,

C.E. Buchwald, Ph.D.
Professor of Geology
Director of the Arboretum

Encl:

cc: Al Houston, Rice County R.C.O.
Congressman Al Quie

(43)

CARLETON COLLEGE
NORTHFIELD, MINNESOTA
55057
DEPARTMENT OF GEOLOGY

March 15, 1978

TO: Department of Natural Resources
Environmental Review Coordination

FROM: Dr. C.E. Buchwald, Professor of Geology
Director of the Carleton Arboretum

RE: Comments and questions concerning the proposed Northern Pipeline Project

All page numbers used in the following comments and questions refer to the Draft Addendum to Draft Environmental Impact Statement of the Minnesota Portion of a Crude Oil Pipeline from Wood River, Illinois, to Pine Bend, Minnesota, issued January, 1978, by the Department of Natural Resources.

COMMENTS

1 Page 2 - The figure 6 referred to here has a 50 ft isopachous line drawn on it. There is no indication on the map as to whether the 50 ft thickness is inside or outside the boundary. The map is rendered useless as drafted.

2 Page 12 - Statement says that backfill will be inspected to remove all rocks, etc. No mention is made of where these rocks will be placed after removal from the backfill.

3 Page 14 - The analysis of leakage of the pipeline calls an example of 308 barrels being spilled a "worst-case spill." Surely this is misleading to the reader. The company has admitted in public that most breaks are caused by people

digging near the line and that a "worst-case" rupture could drain several miles of the pipe. Since there are 2.24 bbl in each foot of pipe it is unrealistic to say that a "worst-case spill" is only 308 bbl.

A spill of 154 bbl/hour is below the detection limit of the company system according to this description. Therefore it is possible that 3,696 bbl/day could leak from the system without the company knowing it.

4 Page 25 - It should be pointed out that the D.N.R. is presently studying the Cannon River for inclusion in the Scenic Rivers designation. Disruption of the banks of the river would certainly have an important aesthetic effect, particularly if the pipeline company continues to clear trees and brush from the right-of-way.

5 Page 25 - It is stated that Spring Brook is known to have trout about a mile downstream of the crossing. There is an implication that trout are not found at the crossing. In fact, the D.N.R. does not know whether or not there are trout at the crossing site.

6 Page 30 - Top of page "No bedrock outcrops are apparent on this side." Inspection of the aerial photograph and inspection on the ground will show that this is an area of very shallow bedrock. There is a rock quarry adjacent to the pipeline route and can be seen in the photo. Bedrock is apparent to me.

7 Page 30 - It should be added that the Cannon is not only a designated canoe route but is currently under study for inclusion in the Wild and Scenic Rivers Act.

8 Page 31 - The pipeline crossing here is certainly within a zone that could one day be added to the Cannon River Wilderness Park. The park is important enough that it has been nominated for Critical Areas status with the State Planning Agency.

9 Page 32 - Here again it should be pointed out that no one in the D.N.R. knows whether or not trout spawn at the crossing site.

10 Page 49 - The statement (2.4.1) concerning bedrock cannot be based on the map in Figure 6. That map is constructed at far too small a scale to make such a determination. There are many areas within the so-called 50 ft isopach that have bedrock at the surface. I will be happy to show these to geologists working for the D.N.R.

11 Page 49 - The Prairie du Chien Group includes many sandstone horizons which also crop out along the Cannon River. The statement leads us to think that only dolomite is found here.

12 Page 49 - Section 2.4.3 should point out that the St. Peter Sandstone and the Prairie du Chien Group aquifers lie beneath the till and outwash in this area. Thus this area serves as

COMMENTS

a place for groundwater recharge into those aquifers.

13 Page 52-53 - I would like to point out again that this map is essentially fraudulent. It asks the reader to believe that till and outwash thickness is known in enough detail to map its occurrence. This is false. I would be happy to show any geologists associated with this project that they are wrong. There are places where the bedrock is exposed at the surface where this map says it is buried under 50 feet of till!

14 Page 57 - Figure 7 is unreadable. Why is an unreadable map included in an environmental impact statement?

15 Page 60 - At the bottom of the page the report correctly points out that much of the area is well drained and lacking in vernal ponds and other wetlands. The report should point out that this makes it all the more important that the pipeline not endanger what few areas we have remaining. The route maps show several places where the pipeline is routed near or through vernal ponds.

16 Page 63 - The misleading statement about trout spawning occurs here again. It should be pointed out that trout <u>may</u> spawn at the Spring Brook crossing site, as well.

17 Page 79 - The published route map shows the pipeline passing within 300 feet of at least one residence. Therefore the statement as written is incorrect.

18 Page 82 - It is true that the route may avoid all known sinkholes, but it should be pointed out that sinkholes may exist beneath the till. Quarried exposures of the Prairie du Chien and other carbonate rocks in the area often show enlarged joints and other solution features some filled with till. It could easily be the case that sinkholes have been buried in the geologic past by glacial deposits and are, therefore, difficult to discover with only cursory study of the route.

19 Page 87 - The section of the impact statement on crop reductions leaves much to be desired. The document purports to be a knowledgable, scholarly study of the impact of the pipeline on the environment of the State of Minnesota. There is nothing but generalized hearsay in this section. The people most directly affected by the pipeline, area farmers, will bear the greatest impact, and yet essentially no information has been made available concerning income loss due to reduced fertility.

The assumption that only the trench width be used to determine impact seems unjustified. Pipeline construction involves the use of heavy equipment which compacts and in other ways disturbs soil over the entire 50 ft right-of-way. The impact statement gives no guidance at all to the farmer who is supposed to negotiate compensation before construction begins.

This entire section needs to be properly researched and then rewritten.

20 Page 91 - The statement models what would happen in an area

COMMENTS

where the soil is 50 ft thick. However a substantial portion of the line goes through an area of shallow bedrock in Rice County and Dakota County. The line will be placed in the bedrock itself, and yet the impact statement has no analysis whatsoever of the hazard of an oil leak in a rock-cut section. The impact statement is incomplete until such a modelling is done.

Estimates that 50 feet of glacial till will serve as a barrier in the event of a major spill seem justified. It should be pointed out that tills are not the best aquifers in this part of Minnesota. Glaciofluvial and fluvial deposits, because of their good sorting and high permeability, are the most important shallow aquifers. These deposits which are best for water sources are also the most permeable for oil. This results in the difficult problem that those places most valued for their water resources are also most vulnerable for pollution.

21 Page 92 - It should be emphasized that very little research has been done on the hydrology of the Prairie du Chien Group in Rice County. There are enlarged joint systems as seen in quarry faces, sandstone lenses, and springs and seeps which indicate channelization of flow. The statement concerning the unpredictability of channelization patterns is quite correct.

22 Page 93 - Second paragraph states that "there is a period of time during which the oil moves through the soil before encountering bedrock." I do not want to appear picky but clearly,

unless there is an instantaneous movement of oil, there will be "a period of time" involved. The relevant question is how much time. In the event of a large break in outwash gravels of high permeability a substantial (1000s of barrels) amount of oil could be spilled in a few minutes. Good aquifers (DeWeist, 1965, p. 171) have coefficients of permeability ranging from 10 to 1,000,000 gpd/ft^2 (gallons per day per square foot). Given the kinematic viscosity and density of the oil as reported by Northern Pipeline Company, the effective permeability of the oil should be 0.0189 x 10 to 0.0189 x 10^6 gpd/ft^2. Disregarding any additional head due to line pressure (although this may be important if the line is overlain with highly impermeable soils), this means that oil can permeate outwash gravels a distance of .0025 feet to 2500.0 feet per day. The environmental impact statement has not shown where outwash will be encountered along the route nor what its probable permeability might be.

It should also be pointed out that there is a fourth mechanism by which oil can reach an aquifer. It may reach it directly if the pipeline itself is buried in the aquifer. Many of the small aquifers are within reach of the trench and therefore the pipe will be within the aquifer. If the bedrock trench is filled with highly impermeable soils then oil will seep into the aquifer under pressure. Furthermore it will seep for a long time before any oil reaches the surface.

23 Page 94 - River crossings are mentioned here. No statements

COMMENTS

are made in the document concerning the fact that pipelines elsewhere in Minnesota have been exposed due to movement of bed material and scouring during floods. There is very little information concerning the relationships between flooding and channel bottom configuration in the Cannon River, particularly at the crossings in question. Barring any long term changes in the climatic patterns in Minnesota we can expect the flood frequency on the Cannon to increase as urbanization and farm development occurs. Certainly the statement ought to give the public the basis for whether or not sufficient precautions are being taken to protect the pipeline during catastrophic flooding. I do not know enough about the other rivers in question to comment on their hydrology.

24 Page 95 - It should be pointed out here that soluble phenols are an important concern to public health officials. The federal government lists phenols as known and potential carcinogenic compounds. According to Deutsch (1962) phenols in ground water near Alma, Michigan, have been very difficult to remove. Further literature on the subject is available in Matis (1971) and Zimmerman (1964).

25 Page 101 - Toward the bottom of the page it says that the most up-to-date geological data available indicated... . There are four professional geologists in residence in Northfield who have great familiarity with the geology of Rice County. None of them, to my knowledge, have been consulted about the pipeline.

I find it difficult to believe that the D.N.R. has the most up-to-date geological data available.

26 Page 111 - The statement makes no mention of what will happen to the pipeline when oil is no longer available as a fuel. Will the pipe be removed? How will it be protected in the distant future (30 years)? Once it is abandoned will it continue to pose a pollution threat because it is no longer being maintained? Will the State of Minnesota be responsible for the pipe should Northern Pipeline Company go out of business?

COMMENTS

In addition to these comments and questions there are a few points not covered in the impact statement which ought to be addressed.

27 1) Oil leaking from the pipeline could enter drainage tiles and therefore reach ditches and natural streams rather quickly. There is no mention of this hazard in the impact statement.

28 2) There is no statement concerning what will happen to soils which have been contaminated by oil spills. Will they be incinerated? Placed in landfills? How will they be handled?

29 3) Catastrophic erosion can occur during heavy summer rains when the ditch is being dug. What safeguards are required to make sure that large gullies are not created by the ditching operation? The probability may be small but the results could be huge in terms of the individual farm which is affected.

COMMENTS

Buchwald, p. 10

References Cited

DEUTSCH, M., 1962, Phenol contamination of an artesian glacial-drift aquifer at Alma, Michigan, U.S.A.: Soc. for Water Treatment and Examination Proc., v. 11, pt. 2, p. 94-100.

DeWIEST, R.J.M., 1965, Geohydrology: New York, John Wiley & Sons, 366 p.

MATIS, J.R., 1971, Petroleum contamination of ground water in Maryland: Ground Water, v. 9, no. 6, p. 57-61.

ZIMMERMAN, W., 1964, Pollution of water and soil by miscellaneous petroleum products: Sixth Congress, Intl. Water Supply Assoc., p. B1-80.

RESPONSE

To Letter of C.E. Buchwald, Ph.D.
Professor of Geology
Carlton College

1 The map legend should have indicated that the till is greater than 50 feet thick to the west of the line and less than 50 feet thick to the east of the line. See Final EIS Figure 3.

2 Backfill material will be inspected, and rocks greater than 3 inches in diameter or other extraneous material will be removed and disposed of in an area off the right-of-way. This area will have been previously identified and an agreement reached with the landowner for disposal of these materials.

In those cases where the material excavated from the ditch consists primarily of rocks, a soil pad of "select" material (soil which does not contain rocks) will be placed around and over the pipe.

3 The paragraph following the one cited goes on to say that, "It should be emphasized that this is only the quantity lost until the "upstream" pumps are turned off.... The time between detection and the closing of the nearest shut-off valve could range up to several hours. At this time a great deal of oil would be lost..."

See Appendix IX for a discussion of leak detection.

4 Work is currently underway on a management plan for the Cannon River, a prerequisite for designation as a component of the State Wild and Scenic River System. Completion is not expected for at least a year. The river is currently designated as a Canoeing and Boating River. The cleared pipeline right-of-way would be an aesthetic impact, especially during and immediately after construction. Brush and low-growing vegetation would be permitted to grow up in the right-of-way, but tree growth would be controlled. Therefore, there would be a permanent corridor containing no large trees which would be a visual impact.

5 Spring Brook is a permanent trout stream beginning approximately one mile downstream of the crossing site. Water flows at the crossing site are intermittent in nature and do not provide permanent habitat. Brook trout could occur in this area during periods of sustained flow. However, the major concerns to the fishery are increased sedimentation downstream and the possibility of an oil spill which could destroy the natural trout population downstream.

6 The statement cited refers to the riverbank itself. On-site inspection revealed no rock outcrop at this point on the north bank. The Addendum, however, recognized that the entire Cannon River crossing area is an area of shallow bedrock (p. 91), and special engineering measures have been proposed to reduce the possibility of spills occurring in this area.

RESPONSE

7 See response to Comment 4.

Rice County currently has no plans to expand the Cannon River Wilderness Park,[1] although it is certainly possible that expansion could occur sometime in the future.

8 The park has been nominated for critical area designation. Along with other potential areas for designation which are being identified statewide at this time, it will be evaluated and ranked. Those areas which deserve top priority for protection will then be studied as to the best means of doing so, utilizing other programs where possible such as Wild and Scenic River designation, Floodplain Zoning, local zoning, acquisition, etc. as well as the Critical Area program.

9 See response to Comment 5.

10 Figure 6 in the Addendum was prepared by the Minnesota Geological Survey. It was based on well log data and other unpublished information in MGS file. The MGS has stated that while the supporting data for this map is not in publishable form to be included in the EIS, interested persons are welcome to review the information at the MGS offices.

11 The New Richmond sandstone, up to 65 feet thick, lies between the Shakopee and Oneota formations. The Kasota sandstone, about six feet thick, occurs as the basal Oneota unit.

12 Recharge is also related to permeability of the soils, rock formations, and water levels in the acquifers.

13 The map, as stated elsewhere, is very general in nature and was intended to identify an area <u>generally</u> having 50 feet of till. It is recognized that there are areas of less than 50 feet of till within the area, and special protective measures have been proposed for these areas.

The Minnesota Geological Survey has provided new information for an area in Mower County between Taopi and Le Roy. This is presented in Figure 2.

14 A new map of surficial (quarternary) geology has been provided. See figure 1.

1 Telephone conversation with Mr. Glen Cramer, Rice County, Parks Administator, May 1, 1978.

RESPONSE

15 We concur with the comment.

16 See response to Comment 5

17 Layout of the route attempted to avoid all homes by at least 300 feet. If during final centerline location, homes are found to be closer than 300 feet minor adjustment will be made, if possible, to maintain the 300 foot clearance.

18 We concur with the comment.

19 See Appendix VII for a discussion of soil compaction.

20 The Addendum recognizes that there are areas of shallow bedrock in the vicinity of the Cannon River and near the Iowa border, and special protective measures have been proposed to minimize the hazards of a spill in these areas. See pages 91-92 of the Addendum. The special protective measures are now proposed to include thicker walled pipe (½ inch) and 100 percent x-raying of girth welds, plus additional valves at major streams.

21 No response necessary.

22 Coefficients of permeability for the Metropolitan area, derived from Water Resources Outlook for Minneapolis - St. Paul Metro Area (Norvitch, Ross, Brietkrietz 1973) are as follows:

AVERAGE HYDROLOGICAL CHARACTERISTICS
OF BEDROCK AQUIFERS, METRO AREA

AQUIFER	THICKNESS ESTIMATES NEAR HASTINGS (FT)	TRANSMISSIVITY, AVERAGE (GALLONS PER DAY/ FT)	HYDRAULIC CONDUCTIVITY OF PERMEABILITY COEFFICIENT (GALLONS PER DAY/FT2)
St. Peter	50-100	37,500	750-375
Prairie Du Chien	150-200	51,100	340-255
Prairie Dur Chien - Jordan	250-300	82,700	330-275
Jordan	100	44,000	440

Major areas of outwash are shown in Figure 1.

23 Permits for all stream crossings must be obtained from the Department of Natural Resources. Evaluation of the crossing locations will include the stability of the stream channel at the selected location. If unstable conditions are evident, the crossing may have to be moved or stabilization measures required as appropriate. Federal regulations require burial four feet below the stream bottom, and 100 percent x-raying of welds at stream crossings.Historically, pipeline stream crossings have not been significant hazard situations.

24 No response necessary

25 The data in question was provided by the Minnesota Geological Survey.

26 In the event Northern Pipeline Company goes out of business, the pipeline is treated as an asset of the firm and would become the property of a surviving corporation or in the case of bankruptcy, its trustees. The pipeline could be sold to another corporation for its use. If this use is other than to transport crude oil, additional permits would be required. The pipeline could be dug up and the materials used for another pipeline in another location or sold as scrap. The pipeline could be abandoned and left in the ground.

The decision of whether to dig up and recover a pipeline or leave it in place will be based on economics. If a pipeline is dug up and salvaged, the landowners will be compensated for damages. If the pipeline is abandoned and left in place, it will be filled with water. With the interior at atmospheric pressure and the protective coating still in place the pipeline would not present any threat or hazard.

27 See Appendix II, Section I.B.

28 In the event of a leak or a spill in the pipeline, every effort will be made to recover the oil and to correct the damages. These efforts will be closely coordinated with local and state agencies having control over the situation. Historically, contaminated soil has been treated and disposed of under the direction of the Minnesota Pollution Control Agency. They have maintained very close control over the handling of such soils. The applicable regulations for the handling of such soils will be complied with.

See also Appendix II, Section III. 3-D.

29 Caving-in and gullying of the ditch could occur during periods of heavy rain. The best precaution against this happening is to keep the trench open for the minimum length of time necessary.

March 15, 1978

Department of Natural Resources
Environmental Review Coordinator
3rd Floor Centennial Building
St. Paul, Minnesota 55155

Dear Sir:

Submitted herewith are written comments of the Minnesota Reroute Crude Oil (RCO) Association in review of the Draft and Addendum of the Northern Pipeline Project. Comment, requested by the Department of Natural Resources is prepared and herein presented by the organization membership in Minnesota.

Numbers preceeding comments refer to the section numbers found in the Draft and Addendum.

Response or correspondence to the organization may be sent to the address below.

Sincerely,

Mark Moenning

Mark Moenning
Route 2
Dodge Center, Minnesota 55927
(507) 374-2193

WRITTEN COMMENT

on

DRAFT ADDENDUM TO THE

ENVIRONMENTAL IMPACT STATEMENT

FOR THE PROPOSED

NORTHERN PIPELINE PROJECT

WOOD RIVER, ILLINOIS TO PINE BEND, MINNESOTA

(MINNESOTA PORTION)

SUBMITTED TO

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL REVIEW COORDINATOR
3rd Floor Centennial Building
St. Paul, Minnesota 55155

BY

MINNESOTA REROUTE CRUDE OIL (RCO) ASSOCIATION

MARCH 15, 1978

COMMENTS

INTRODUCTION

1 The Draft and Addendum state the pipeline will carry crude oil and connect refineries in Pine Bend and St. Paul Park, however, a Mississippi River crossing to St. Paul Park is not addressed. Further, it would be prudent to establish that the St. Paul Park refinery intends to use the line if built.

The Addendum does not supply statistics regarding the "supply available in Wood River" nor did the Draft include the potential supply that would have been available for a line to Patoka. How do the available supplies at Wood River and Patoka compare in volume? What is the assurance of a supply that adequately meets the capacity of the proposed pipe? Where would the entire volume this line could ship be refined? From what source will oil be available for full capacity? What types of crude will be shipped? (Appendix H will be addressed under 1.4.2. Easement Fees of this reply.)

2 The Addendum states, "The former proposed route was found to traverse an area where there was a potential for groundwater contamination." This potential still exists on the new route. See map of Minnesota, Exhibit A. Nearly half of the new route proposed in Iowa traverses the same water-yielding bedrock found under the entire proposed route in Minnesota.

"Shallow depth of bedrock aquifers under portions of the route" and "the proximity of sinkholes" of which the Addendum speaks are present on the new, proposed route in both Minnesota and Iowa. There is no question that areas of shallow bedrock and sinkholes would transmit phenols contained in crude oil. These phenols may contaminate the ground water to levels above the maximum contaminent levels for organic chemicals established by the EPA for public water supplies.

A letter from the company to the DNR, September 28, 1977 states, "In all cases, it was found that the right-of-way as shown on the soil survey maps avoided all sink holes and sink hole drainage areas; i.e., in the event of a spill, the oil would always flow away from, rather than toward, the sink holes." If this statement is based on the "extensive studies" this company claims on page 2 Addendum to have made, herewith is expressed the hope that the DNR's study and judgement is more adequate. The law of gravity defies the flow of liquid away from a crator-like subsidance and the occurance of new sinkholes is unpredictable. This companies assumptive attitude has prevailed upon all those voicing concerns regarding their proposal. The company attitude has been to consistantly favor risk rather than thorough study.

The criteria of 50 feet of glacial till has not been established through actual spills, cleanup and case studies. Rapid transmittal of fluids by aquifers to unpredictable directions prevents containment and effective cleanup measures. The Addendum concludes that "no route could totally avoid the problem" of bedrock shallower than 50 feet deep. At this point it is relevent to point out that the risk of the water supplies of the Midwest is an impact that cannot be mitagated. The question of the need for this risk will be addressed in a later section of this reply.

The list of representatives attending the meetings to evaluate the proposed route did not include landowners or a citizens representative of the properties in which the "special precautions to be taken" are to be implemented. Landowners are qualified to speak on the make-up of their property and their expertise should be utilized in route investigation.

3 The special precautions listed on page 3, Addendum, refer to an increase in X-ray, the need for extra valves and more testing. An increase, extra and more--why? because weak points and breaks are inevitable in pipelines. Therefore the same potential danger is still present on the East Alternative and is a risk to water supply which no utility should be allowed to inflict upon the valuable natural aquifer resource. The East Alternative is referred to as a "more" not "an" "environmentally sound route". Shallow bedrock and sinkhole areas are present in portions of the route in which no field surveys were conducted.

1. PROJECT DESCRIPTION

1.1 SUMMARY STATEMENT

COMMENTS

4 The February 1977 Draft states that plans were to construct a 495 mi. pipeline. In a project description dated October, 1977 and also by public statement the company now proposes a 476 mile line. Although the mileage has dropped 19 miles following relocation, a letter dated September 28, 1977, prior to relocation, sets forth claims of disadvantages and states relocation would "certainly extend the length of the route." Inaccuracies have been consistently characteristic of this proposal.

5 The Draft claims the project is "made necessary" and it is "mandatory that immediate steps be taken". Mandatory seems out of order. A hearing is needed to bring forth the latest information regarding Canadian crude oil plans. The Draft and the Addendum place 1981 as the cut-off date in the Summary Statement. Appendix H of the Addendum gives 1982 as the cut-off date. Documents available from the Canadian government set the possible total cut-off as 1997. The company choose to ignore differentiating between cut-off possibilities of the light and heavy Canadian crudes. Within recent months Canada has discovered huge reserves of oil which very probably will influence their crude oil plans.

6 The Draft speaks of "northern tier refineries in Minnesota" which includes two (and a third nearby in Wisconsin) who are not stockholders in this pipeline. The fourth, Koch Refinery, Pine Bend, is owner of the Northern Company proposing this line. Koch-Northern declares "steps must be taken" for a "long-term solution". It would seem prudent to have the other refineries establish that this is the long-term solution they intend to use to supply their crude oil needs. Refiners in all of the states along the northern tier from Washington state to Minnesota are affected by Canada's plans but would not be served by this pipeline.

7 The economic studies which are claimed to show this pipeline "represents the most economical transportation alternative" need to be documented. Other studies will show this pipeline not to be the most economical for the midwest consumer of petroleum products. Newer refining processes are less polluting and are more efficient in a warmer climate. Preliminary studies show that it is more economical to ship refined fuel from the South through available pipelines than to pipe the crude from the South and then refined products back again.

1.2 STATEMENT OF PURPOSE

1.2.1 Uses of the Proposed Pipeline

8 The company has not identified the refineries and the volumes they will commit to ship which would utilize the capacity of a 24 inch diameter pipeline. The proposed lines capacity and the committed use of that capacity are not matched, pointing up the lack of established need for this project. Availability of oil for the full volume of crude this proposed line could ship has not been established. Prime agricultural land destruction should not be allowed for a facility whose use is indefinite. The more economical use of existing products lines (one being 18 inch in diameter) to supply additional needs for the Minnesota area has not been addressed.

1.2.2 Need for the Proposed Project

9 It would seem prudent that a certificate establishing a "need for the proposed project" would be included by the company as an Appendix to the Addendum and referenced here. There have been no hearings relating to a need certificate held for landowners on the route now proposed by Northern. Exhibit B is a copy of the Interim Report of Hearing Examiner Recommending Further Hearing.

The "Source:" of Table I is the Minnesota (and Northern) Pipe Line Co., subsideries of Koch, who claim it "clearly establishes the need". This Table and the information are sorely inadequate. Ignored are pipelines already constructed which are now providing an alternate supply, and also the other modes of receiving crude from the South. The U. S. Department of Energy found there is strong controversy among northern refiners regarding modes to "satisfy the crude oil needs." The Department conducted a hearing on December 2, 1977, in Minneapolis and the testimony is relevant.

Statistics have not been supplied to support this proposal as being one which would "assure the availability of crude oil supplies at competitive prices, provide the most economical transportation methods, and afford a high degree of operating flexibility." The line proposed is for shipment of expensive foreign crude rather than to encourage the use of plentiful domestic Alaska crude oil. The supplies available are to "include North African and Venezuelan crude which are subject to embargo and unreliability. In addition there is little oil available from these sources. Venezuelan crude contains vanadium which is highly toxic. Inhalation leads to vanadium toxicity and the acute symptoms lead to death. Statistical evidence suggests the involvement of vanadium in lung cancer.

The company has not established the "Supplies to be tapped by this pipeline (which) are available in central Illinois by way of connection to other existing crude oil pipelines." The original proposal to begin the line at Patoka, Illinois was changed to Wood River, Illinois because supplies were not available. In January, 1978, the company testified that should the capacity of Capline be increased "It would be preferable to change the originating point of our pipeline (back) to Patoka." The Wood River origin does not seem to be a stable source of supply.

Koch owns tankers and barges and proposes to ship heavy, viscous, high sulphur crude to a proposed tank farm and then through this proprietary pipeline, taxing the electrical supply of the Midwest. Koch's solution would be to complete a monopoly from the foreign oil tanker to the refined product with hope for refinery expansion.

There is national concern regarding foreign oil dependence. The "flexibility" cited in this section could include bringing Alaska crude through the Panama Canal or around South America. This, however, does not help to satisfy the second basic need criteria of "economical transportation." The shipment of refined products instead of crude to meet Minnesota's needs should be addressed in relation to the Draft statement that shipping crude from the South provides the "most economical transportation method."

1.3 LOCATION OF PROPOSED PIPELINE

1.3.1 Proposed Route

10 In comment regarding relocation of the first route a company representative stated September 28, 1977 that "the shortest and most reasonably direct route would result in the least overall impact". This statement dismisses the need to study in detail each mile of the proposal. The shortest route is not automatically the least expensive. The shortest route does not necessarily have the least costly construction problems. The straight line route has been proven, in the case of the original proposal, to not have the fewest enviromental problems. Unpreparedness and unwise route selection has wasted the time and money of government, agencies, and taxpaying citizens. Sincere prior investigation of all aspects of a proposal would save a pipeline company money in the long-run. The simple list of counties and townships provided, inadequately addresses the "Location of the Proposed Pipeline Route."

1.3.2 Pipeline Crossings

11 The impact upon the income-producing land of a farmer crossed by one pipeline is intense upon topsoil, productivity and drainage systems. The crossing of pipelines over one another creates a situation where, if allowed to continue, the appraised value of a farm could be destroyed. Plans to parallel pipelines to other pipelines and to property boundary lines is a mitigation of impact an EIS should require in this section.

1.4 LAND REQUIREMENTS

1.4.1 Right-of-Way

12 A pipeline cannot be safely constructed within an easement of 50 feet of width. Nor can the construction company stay within only 50 feet under legal contract. These facts can be backed by testimony from hundreds, perhaps thousands of landowners who have experienced pipeline construction in their property. A ditching machine requires about 23 feet of width. On the working side four feet is needed for the skid on which the pipe is laid and two to four feet for the pipe to be laid on the ground and for working room. This requires a total of about 30 feet and the 20 feet left is not enough room to manipulate construction equipment and keep within a total easement width of 50 feet.

COMMENTS

A width of 100 feet of right-of-way is needed to provide sufficient room for construction activities and temporary storage of excavated material. The excavated material is stored in a 25 foot strip along one side of the right-of-way and the remaining portion is used to provide access for construction equipment, to permit the passage of equipment, to store supplies and to construct the pipeline. The widths required for construction procedures cited above point up the need for 75 feet of working area and 25 feet for topsoil storage.

13 A practical reason for the need of 50 feet for a permanent easement has not been addressed by this company. James R Waller, Jr., president of MARMAC Systems Engineering, Long Beach, California is a consultant for Northern and his firm performed actual preliminary engineering designs for the project. He testified in Illinois that "The easements to be acquired by Northern will allow for multiple lines and a 50 foot easement will provide sufficient space for looping the line." This information was withheld from the Minnesota EIS in this section, from landowners at hearings, and in Appendix H dealing with "Landowner's Rights."

14 The right-of-way acreage required in Minnesota would be about 660 acres according to the Draft. In the Addendum this acreage has been reduced from 39 to 62 acres, depending on which Alternative is used. The reduction is not explained and in addition the company has registered objection during the past months that relocation of the original route would increase length and assumedly right-of-way acreage. Reviewing the numbers provided by the company, inaccuracy again seems the explanation.

1.4.2 Easement Fees

15 Appendix H should be referenced under this heading. The 'sales pitch' in the beginning paragraphs is not an appropriate part of a booklet informing landowners of their rights and the procedures of right-of-way acquisition. If a projects need was not under question, opinion phrases like "disastrous economic and social consequences" would not appear.

"To determine how much, if any, your land will be damaged" is a statement which implies that machinery weighing as much as 140,000 pounds crossing land would have no effect!

It is stated that Appendix H is not a substitute for legal advice. Aptly said, as a great deal of legal advice is needed to correct what has been slanted or left unsaid. For example, "the company will comply with all reasonable requests" does not point out that construction companies tend to honor only those written requests recorded prior to signing an easement (if they are watched carefully.) Verbal requests regarding unplanned problems or choices during construction are rarely honored. It is not the "company" referred to in the Appendix with whom the landowner deals at the time of actual construction, but a crew who heeds only those procedures which they feel someone can force them to perform. Relief in court pits a landowner against a major petroleum firm or contractor. The companies are unconcerned because the 'protection' of money coupled with a deficiency in the laws protects them from heeding any landowner's request.

1.4.3 Future Facilities

16 When the Draft and Addendum are compared, the volume demands do not appear to increase as rapidly as first projected. The date of Case II is now placed at 1982. The need for Case II is based on "if the volume demands

increase." To propose construction of a large, 24 inch line and then equate its capacity to the need issue is misleading and inaccurate. The need for the entire volume is very questionable. The need for the initial volume needs careful examination. Benefits must be balanced against enviromental damage and accurate information regarding alternate modes and supplies.

The Addendum projects no possible location of a Minnesota pump station along the new route. The reason for none is not addressed. Perhaps the need to use the line to full capacity looks less likely than it did one year earlier. The Addendum states "no further assessment is possible at this time."

1.5 PROPOSED FACILITIES

At the writing of the Addendum the applicant should have addressed this section and the Case they propose. Where are the shutoff valves going to be geographically other than 15 miles apart? This would seem the appropriate place to address a Terminal. Does Case II have 6 pumping stations? Where would pump stations be located? What is the design code followed. What is the horsepower required for a station and the amount of energy needed? What is the efficiency of this line compared to a larger one of 48 inches in diameter?

1.6 CONSTRUCTION PROCEDURES

Manpower Requirements

17 Date construction is scheduled to begin was not corrected. There will
18 be impacts from up to 250 migratory workers per spread upon the communities and their facilities. Reference should be given to section 4.6.1.

Preliminary Procedures

19 Obtaining permission to survey is a practice the pipeline companies write in an EIS and the construction crews forget about. Fencing procedures are inadequately explained; details are needed.

Clearing and Grading

20 Even though "a very large percentage of the route" is cropland the procedures to be followed in the remaining types of land found on the route should be addressed. Ridges of cultivated crops, gullies and creeks and steep slopes and rock will be encountered. The width of right-of-way that will be cleared when encountering different circumstances should be covered.

Ditching and Trenching

21 The procedure followed in crossing underground utility lines should be covered in this section. No mention is made of topsoil removal.

River and Stream Crossings

22 There are other measures which can be used to minimize the time required to cross streams and rivers which should be included. Mitigative measures should be used where crossing sites are visible from a thoroughfare or where the area is highly aesthetic. Engineering procedures are not addressed regarding floodplain areas. Temporary erosion control measures, disposal

COMMENTS

of construction materials, stabilization of banks and replacement of shubbery have not been addressed.

Highway and Railroad Crossings

23 Boring of roads creates a large additional impact on adjacent land. Open cutting of roads creates irreversible and irretrievable impacts for years following.

Drain Tile

24 The majority of farms proposed to be crossed have a tile line every 60 to 70 feet. Should there be a proven need to construct pipelines across an area of prime agricultural land, the route must follow existing property boundary lines. Following property lines will avoid approximately 95% of the tile lines of underground drainage systems. The small percentage of tile lines encountered in boundary lines can be more easily identified by the landowner. When encountering these mail tile lines in the boundarys, the tile should be bored and cased and the drainage system not cut or disturbed.

The capping or "plugging" of tile lines is notoriously neglected in pipe line construction. Neglect of this responsibility allows dirt and debris to be washed into tile lines. The alternate method using a temporary connector immediately after the trench is dug is also widely ignored by contractors.

Coating and Lowering In

25 "Construction contractors will not be allowed to dump any waste materials onto the ground or into the waters," states the Draft. That claim is violated so flagrantly by pipeline construction workers that its placement in an EIS is ludicrous.

Backfilling

26 The information given did not cover the situation of inappropriate backfill material being excavated, the proportion of suitable material substituted, and the disposal of unsuitable materials. Attention should be given to procedures of refilling the trench in a manner that places top soil in its original position.

Cleanup

27 Easements require removing debris but when the construction crews windrow and bury rocks and debris in the trench the first step of the cleanup operation is greatly simplified. In agricultural land this much too common practice results in cable, 4x4's, boards, tires, metal objects, cans, etc., being hooked by farm machinery or picked up by the farmer.

28 The second step, that of restoration, was almost ignored. Revegetation, practices need to be explained. Special resortation practices on streambanks, and sloping terrain should be addressed. Policies followed when unfavorable weather and ground conditions are present should be outlined.

29 Replacement of temporary fence is a part of cleanup and restoration, The landowners satisfaction and approval and subsequent inspections and foll owup restoration measures were not addressed.

Pressure Testing

30 Procedures followed when testing for leaks were not explained. The possible sources of test water and precautions followed when intake and discharge are carried out are not given./ 31 What procedures follow the detection of a leak need to be included.

Cathodic Protection

32 Geological sources of corrosion present along the proposed route should be addressed later in the document but referenced here in relation to planned cathodic protection.

Safety Considerations

33 Livestock safety and precautions primarily involve the construction of adequate temporary fences. Livestock farmers have expericened great difficulty with fencing crews unskilled in fence building. Temporary fences and gates become an easy mark for cattle, gates are left open by crews, and hours are spent chasing animals and separating them from neighbors livestock.

Another safety precaution is the building of ditch crossings. Livestock has been shut away from normal grain feeding for as much as two weeks. Existing entrances to fields have been used by heavy equipment during very wet conditions causing them to be unsafe and unusable to the landowner because of deep ruts. In some cases this meant not being able to harvest crops. Construction equipment has blocked road travel for as long as 45 minutes during critical hours of the day. Such practices not only create inconveniences but unsafe situations.

1.7 OPERATION AND MAINTENANCE

Vegetative Maintenance

34 The responsibility of follow-up restoration practices, shown by periodic inspections, should be borne by the company. Any area suffering from erosion will require periodic restoration. Pumping stations and valve sites will require regular maintenance and care of the landscaping.

1.9 QUALITY CONTROL AND SAFETY DESIGN

1.9.1 Construction Techniques

35 Roger Williams, president of Northern testified at a hearing in Illinois that pipe was purchased for this project from France because it was "cheap." Do the construction techniques used in France follow quality control standards expected in the U.S.? An EIS should include the source of pipe planned to be used and specifications followed in manufacture. Will the strength of this pipe be sufficient to withstand anticipated pressure? What tests will be conducted at the pipe mill in France to assure the pipe will be structurally sound?

36 The statement is made that "backfill will be inspected to remove all rock, sand, and foreign material that could damage the pipe or its coating during the backfill process." Historically, construction crews are concerned with only the first 12 to 18 inchs of fill, after which anything is windrowed into the trench. Does Northern plan to require a construction company to do differently?

1.9.3 Leak Detection System

37 The sophisticated metering systems for pipelines on the market today allows an error of as little as .02 percent. However, a 24 inch line could

COMMENTS

leak several thousand gallons per day undetected. Leaks occur regardless of precautionary measures taken to prevent them. The location of a crude oil pipeline over water-yielding bedrock risks the contamination of acquifers. The location of a crude oil pipeline through areas of active sinkhole development and unpredictable subsidence only adds to the potential. A leak which would not surface could represent thousands of gallons of crude oil reaching the ground water.

2. DESCRIPTION OF THE EXISTING ENVIROMENT

2.1 LAND USE

2.1.1 General

38 Comparison of alternatives should be required in an EIS. Comparison of alternative routes should include a route which follows existing boundary lines. If a pipeline company can present a proven need to construct across areas of prime agricultural land, the route must follow existing boundary lines. Cost per mile to build should also include repair of tile lines and drainage system. A comparison of a diagonal route drawn while sitting at an office desk and a route planned in the field would likely reveal surprising differences. The field survey would undoubtedly result in better land use if the expertise of the landowner was utilized and concurrently it could provide advantages for both company and landowner.

2.1.3 Agriculture

39 Tables should provide information significant to the actual route rather than general information of limited importance. The yields of crops in the area should be charted and used to estimate easement and right-of-way damage expenses. Correlation should be studied as to the yields from agricultural land and their frequent, direct relationship to drainage systems that have been installed. When 96% of the route proposed in Minnesota is cultivated land, the percentage of tile drainage systems is correspondingly high. This emphasizes the need to follow boundary lines to avoid unnecessary problems and the waste of time, energy and expense. Routes could be planned in relation to drainage, types of land and cropping. Information significant to the route would be useful to contractors in planning construction and estimating costs. There is also no indication of the kind and amount of livestock on farms. This information would facilitate planning for the mitigation of effects on livestock and for their safety.

COMMENTS

2.1.5 Other Land Uses

40 A "patchwork pattern' can be created in agricultural land when all types of utilities and roads are allowed to cross at will. If allowed to continue the problems created will outweigh the feasibility of some areas to be used for their original purpose. 'Patches', designed by utilities will exist where once modern farm machinery was able to manipulate.

2.1.6 Other Significant Resources

41 Listed under this section as a significant resource is the Claremont Game Refuge through which the route is proposed to traverse a 1.5 mile length. Roadside reconnaissance and plat book reference establishes that this area could be avoided. The addendum offered no mitigative measures. Also see section 2.5.2.

2.4 GEOLOGY/GROUNDWATER

2.4.1 Bedrock Geology

42 The bedrock geology present on the new line presents great risk for groundwater which underlies the entire route in Minnesota and over half

that proposed in Iowa. A criteria of 50 feet of glacial till was an estimate calculated in an office of the amount of soil needed to absorb a spill and still allow sufficient time to haul away the oil-soaked land before it reached the groundwater through the bedrock. The new route does not totally avoid the problem of bedrock shallower than 50 feet.

2.4.3 Ground Water

The Draft described the area of the original line proposal as one in which the "ground water move (s) through the soil materials and enter (s) the bedrock." This situation has not changed on the new route. The entire area acts as a recharge area. The topography provides direct conduits for pollutants to reach the groundwater system. Crude oil contains water-soluble chemical compounds which can be carried into the groundwater.

2.5 BIOLOGICAL ENVIROMENT

2.5.1 Vegetation

43 The Cannon River crossing is addressed in the Draft regarding the old route. Although a crossing is proposed again of this major river, it has not been described in the Addendum. Tree removal, floodplain, limestone bedrock, ecosystems, etc. have not been addressed. The Addendum omits the statement of the Draft that "no unique ecosystems (are) in the immediate vicinity of the route that would merit special consideration." Are there any? Drainage bottoms crossed by pipelines can be sensitive ecosystems. Generally they supply habitat conditions in limited amounts that are important to many wildlife species. Because of their location in flood plain areas they are subject to severe damage when disturbed.

2.5.2 Wildlife

Waterfowl

44 The Cannon River has a well-established floodplain of 1,000 feet on the East Alternate and 3,000 feet on the West Alternate. These areas supply wildlife and waterfowl habitat. The East Alternate Cannon crossing would result in the destruction of maple, box elder, willow and other trees and shrubs. The woodduck prefers slow rivers (this crossing is 240 cfs.) and it nests in cavities of trees such as the willow. The mallard will search out similiar areas. Both species are found in the area of the proposed crossings.

45 No attempt was made to avoid or an alternative suggested which could avoid traversing the Claremont Game Refuge. Mitigative measures regarding wildlife in this area were ignored. Also described under "Other Significant Resources," 2.1.6.

Upland Game Birds

46 The proposed route traverses 96% agricultural land which is the habitat preferred by the Hungarian partridge and the ring-necked pheasant. The partridge is found in greater numbers to the west of the old pipeline route according to the Draft, so they can be expected to be more numerous along

the new proposal. The population of both species has declined in recent years and the pipeline route will eliminate many areas of nesting in fencelines, ditches and other areas of herbaceous vegetation.

2.5.3 Fishery Resources

Prairie Creek information and fishery resources are not given.

47 The Addendum does not list any fisheries data available for the Upper Iowa River. A statement was made at the hearings that there was no fish population in the Upper Iowa. There are residents of the area who will provide data and refute the statement.

"No available fisheries data" is the information regarding Dodge Center Creek. This stream is a branch of the Zumbro River. A branch less than five miles to the East is a recognized trout stream and excellent bass fishing is available on the Zumbro farther downstream. Fishing is available in the Dodge Center Creek through which the pipeline traverses.

2.5.4 Rare, Unique or Endangered Species

48 The Minnesota trout-lilly is extremely rare and occurs nowhere else in the world. Mitigative measures should have been addressed that would avoid the lilly. The bobwhite and the wood turtle, both rare species, are found in the area the pipeline is proposed to traverse. Systematic surveys should be provided on these species.

Minnesota has 3 endangered species and 7 threatened species. (Report on Endangered and Threatened Plant Species prepared by the Smithsonian Institution, 1974.)

2.6 SOCIO-ECONOMIC ENVIROMENT

2.6.2 Economics

49 Minnesota residents who would be required to sacrifice their income-producing land would also pay more for fuel refined from crude shipped in this pipeline due to unnecessary transportation costs. Domestic Alaska Crude could be transported much more economically by a proposal from the Pacific northwest to Clearbrook, Minnesota and result in a savings of millions of dollars yearly for the Midwest consumer. See Exhibit C.

2.6.5 Services

50 2. Police Protection - Statistical information concerning the availability of law enforcement manpower and detention facilities throughout the counties on the proposed line is not provided in theAddendum.

3. Fire Protection - Fire departments maintaining contractual agreements are not listed in the Addendum.

2.6.6 Archaeological/Historical Sites

51 Because the depth at which the pipeline is to be buried practically insures the complete destruction of any archaeological and historical materials that might be crossed, the Minnesota Historical Society believes the route

COMMENTS

should be examined for prehistoric sites by on-the-site examination one thousand feet from any permanent body of water.

2.8 Climate

52 Climate and weather are important in evaluating enviromental impacts and in determining structural design and construction techniques. Description of the general climatic characteristics for the specific areas proposed by a project should therefore be very complete.

3. ENVIRONMENTAL IMPACTS

3.1 CONSTRUCTION

3.1.1 Land Use

53 One of the major environmental impacts on agricultural land resulting from pipeline construction is not "possibly soil dilution," proposed by the Addendum. Major soil dilution will occur and the effects will place an unmitigated burden on the farm operator for years. See section 3.1.3.

54 A significant land resource in Dodge County is the Claremont Game Refuge. No attempt was made in routing to avoid the 1.5 mile length. The Addendum fails to address the area's vegetation, wildlife, ecosystems, possible rare or endangered species and other environment which would incur impact.

55 A company proposing a $150 million project is certainly apprised of the fact that pipeline construction crews historically work 16 hours a day and 7 days a week. This known fact can be documented if necessary. Are we to believe the company, the agency and the firm who prepared the Draft and Addendum are naive enough to believe "there will not be any construction activity" during weekends to cause inconvenience to boating and canoeing on the Cannon River?

3.1.2 Surface Water

56 Expectable impacts on surface water from pipeline construction include diversion of surface runoff, sedimentation of stream channel and floor and walls, erosion of channel floor and walls and partial filling of stream channels by sedimentation and degradation of public water supply resources.

Surface water, or that which is on the ground surface, includes the many streams and rivers proposed to be crossed by this pipeline. They are part of the Upper Mississippi River Basin which encompasses all three states proposed to be crossed. The location of the line is within, rather than between, major river basins and therefore the pipeline is destined to disturb a large number of rivers and tributaries per mile of line. The pipe is proposed to disturb around 3,000 feet of floodplainarea.

57 The Cannon River crossing contains outcroppings which may be affected in the same manner as sinkholes. In addition, this area has less than 50 feet of soil over the bedrock. Surface water in this area quickly finds underground conduits which likely absorb any pollutants before cleanup could be accomplished.

58 The exposure of topsoils by removal of vegetation allows water erosion and sediments to pollute streams. Soluable salts and minerals will degrade the subsurface waters where the trench excavation is below existing water table levels.

3.1.3 Soils and Topography

Agriculture

59 Apparently the paralleling of boundry lines is now seen by the company as a significant mitigation of tile line damage. A route which parallels all land boundary lines possible should be addressed in an EIS in terms of mileage, tile repair savings, mitagation advantage, etc.

COMMENTS

Compaction

60 According to the Bureau of Land Management, U.S. Department of Interior, the soil compaction caused by continued passage of heavy equipment will have adverse effects on soil properties.

Soil compaction is a grave concern to crop farmers, especially in areas of heavy soils. All construction should be carried out when field conditions are fit for soil cultivation. The criteria for judging appropriate construction conditions is the same as a farm operator uses to determine if the soil is fit to proceed with field operations. Topsoil must be removed and replaced only when the land is dry.

The erronous assumption that the soil along the Minnesota Pipeline Company route in the Northern part of the state, and the soil in the area proposed to be crossed by this line, would react to construction in the same manner is characteristic of this project. "No visible crop reduction" and "no complaints of reduced yields" are assumptive phrases which have no place in an EIS. Crops visible to whom? Looking where and at how much of the line? Complaints to whom? Written or verbal? What good would it do to issue a complaint and would they admit a complaint was issued?

Soil Mixing

61 Topsoils are the organically enriched layers that have received and accumulated the residues of native plants through many thousands of years of soil formulation. In agricultural areas, they have received the fertilizers and manures applied by the farmer. It is the topsoil that supports the living soil micro-organisms so important to the nutrient cycle of the ecosystem.

Burying the topsoil under several feet of relatively sterile subsoil would prevent full restoration of the productive and ecological potentials until a new micro-organism community can be established and becomes functional.

The severity of impact to crops or native vegetation will depend to a large degree on the nature of subsoil material left on the surface. Plant establishment and growth may be inhibited by highly alkaline or acid subsoils. Heavy clay subsoils may reduce permeability to a critical point, while sands and gravels may be so permeable that moisture and nutrients cannot be retained for plant use. The soil compaction caused by continued passage of heavy equipment will also have adverse effects on soil properties. Where top soil is not replaced and soil compaction is severe, continuing crop reduction will depend upon the kinds of subsoil or substrata material left on the surface and the intensity of rehabilitation by the farmer. Even where subsoils have good textural qualities, they lack fertility.

The continuing impacts resulting from soil disturbance will vary. Where topsoils are carefully stored and replaced, normal production levels are more quickly restored. Where subsoils are mixed with topsoils or left unmixed on the surface, reduced productivity will be in proportion to the quality of material left on top. Soil Conservation Service personnel in the Midwest, predict that most subsoils on the glacial plains will produce only 40 to 60 percent of normal yields for at least 3 years. On some soils having high clay content or other severe limiting factors, normal production cannot be restored for many years.

Mitigation measures include stockpiling and replacement of topsoil. Topsoil segregation and replacement and offsite disposition of surplus soil materials should be a construction procedure granted the landowner.

The value of double ditching mentioned in the Addendum is destroyed immediately by construction crew practices. Double ditching refers to two cuts of the trench. First the topsoil is removed from the trench width and piled to the right of the trench. Excavated topsoil is leveled and used as a work area and road for construction machines. Tractors weighing 140,000 pounds, crahes, backhoes, pipe benders, trucks and welding equipment pass over the topsoil. Soil compaction is unmitigated. Seven days a week compaction continues. There is no halt for rain and succeeding muddy conditions, and more stress is placed on the soil. Tractors and equipment mire down to the axel and have to be winched through the area. Deep ruts mix topsoil with subsoil.

The second cut of the double ditching process is excavating subsoil which is placed on top of the natural topsoil cover on the left of the trench. Soil in most areas is underlain with rock and stone. These are brought to the surface. Where drainage tile are encountered a trench depth of 7 to 8 feet will be required to place a 24 inch pipe under the tile grade. A trench of that depth can and will experience cave-ins, making trench width much wider. Ditch width migrates to the topsoil 'road' and topsoil becomes part of the soupy homogenized mess which must be removed from the trench and is placed on top of the stored subsoil. Heavy rains during open ditch time have caused trench widths of 20 feet and wider, and this results in the mixing of topsoil and subsoil. Clamshell cranes are used to remove the cave-in material from the trench and mixing of soils is increased.

Because of the consistency of the material being excavated and the continued cave-in activity, the contractor seldom gets the pipeline down to the required depth. The pipe will also float in the water and sloppy material at the bottom of the ditch. Cut tile lines will continue to add water to the open ditch. The 'careful' repair of tile lines consists of placing a piece of plastic tubing over the pipeline if the tile line cut is on the same grade as the pipe! Backfilling is generally done with a large earth moving auger mounted on a crawler tractor. This machine does an 'excellent' job of further homogenizing the topsoil and subsoil. It sorts out no rock or stone but simply windrows everything back into the trench.

Drain Tile

62 The large portion of land the Addendum speaks of as "extensively tiled" needs further explanation. Tile lines are laid parallel approximately 65 feet apart. A quarter section of land or 160 acres has approximately 35 to 40 lateral tile lines. The best construction method and mitigative measure would be to avoid them. Paralleling land boundary lines as mentioned in the Agriculture division of this section would avoid all but one or two mains per farm. The mains would have to be identified and construction below them would be the same tunneling technique used for roads and railroads.

Heavy equipment will crush tile lines and cause misalignment the entire right-of-way during construction. Thus it is apparent that tile repair would be inevitable under the entire construction lane. This would create more mixing of soils without proper topsoil segregation. Trench cave-ins from unstable soil on either side are frequent. Heavy rains will make the

COMMENTS

task of repair impossible. Trying to bridge across the entire right of way, crushed by equipment, doesn't appear possible.

The construction technique described in this section of the Addendum appears to be nearly a sure thing and a model exhibited by the company is impressive. However, neither one addresses an actual situation although the method of repair may be satisfactory in an ideal setting. Direct testimony can be produced that the method of tile repair proposed has failed. The section doesn't mention what measures will be taken if this method, unproved in southeastern Minnesota, fails. Will the company make repairs without court action?

The section does not address construction when the landowner wishes to tile his farm after pipeline installation. For future tiling, a pipeline will have to be installed with a minimum cover of 60 inches. If a pipeline interferes with future tile installation it will have to be lowered at the companies expense.

Under Agriculture in this section of the Addendum the correlation is given regarding the paralleling of land boundary lines and the "opportunity to avoid tile lines". Reasons justifying refusal to further use this opportunity are in order.

3.1.4 Geology/Groundwater

Geology

63 Pipeline construction creates impacts upon the geology. Expected impacts that cannot be neutralized by mitigative measures are fracturing of bedrock during trench excavation, consumption of geologic resources and limitation of production of geologic resources. The writer (s) of the Draft and Addendum should be apprised of this.

Sinkholes

64 Sinkholes areas and outcroppings of limestone are present in southern Minnesota in the area of the proposed route. There are also areas of less than 50 feet of glacial till that have not been addressed.

Groundwater

65 Expected impacts on the ground-water resources that may not be mitigated are the increased pollution by dissolved and undissolved solids, the reduced yield of groundwater supply from sediments causing reduced movement of water and the destruction of springs and wells in the right-of-way by the construction equipment.

Reduced yield of ground water may have serious impacts on an individual well owner and may be long term. How long the impact will remain will dependon various factors including the degree of plugging, the demand for water in the aquifer and other sources of recharge.

The destruction of a spring or well would be most commonly those which serve as a water supply for livestock. Mitigation probably would involve negotiation with the landowner and drilling a well to serve as a replacement.

3.1.5 Biological Environment

Vegetation

66 This section fails to address the major adverse effects that would occur

during construction. Over 660 acres of land must be disturbed for construction. Additional acres will be disturbed for various reasons such as pump stations, right-of-way violations, and an indeterminate area will undoubtedly be disturbed for other related activities such as access roads, pipe and equipment storage areas and temporary housing facilities required by workers. Adverse impacts to vegetation fall into two broad categories--natural plant communities and cropland.

Approximately 96% of the proposed route right-of-way is presently devoted to intensive agriculture. During the construction year most of this land will not produce a crop. Total crop loss in Minnesota and the total loss over the entire route may be significant. The cumulative loss over the entire right-of-way should be estimated for value of the major crops to be lost. Crop production will continue below present levels for varying amounts of time if relatively sterile subsoils are mixed and placed on top. The structural quality of the soil and level of fertility, conducive to normal crop growth must be regained.

If any commercially valuable trees are encountered the landowner should have the option of the area being avoided. (He should not be made to "hire a contractor to remove and buy the tree" as the Draft and Addendum state.) It would be the unusual case in which a pipeline route could not be adjusted to miss a planned windbreak. Many years are involved in growing valuable trees; they may not be at their peak value. The impact upon forrested areas and windbreaks is long term.

Adverse impacts will occur at river and stream crossings in the removal of trees and the disturbance of 3,000 feet of floodplain including ecosystems. Drainage bottoms crossed by pipelines can be sensitive ecosystems and because of their location in flood plain areas they are subject to severe damage when disturbed.

Wildlife

67 There are a series of temporary adverse effects on fish and wildlife which are connected primarily with the clearing of the construction right-of-way and with the construction of stream crossings. There will be a reduction in the size and diversity of bird and mammal population directly along the route. Stream and river crossings will have adverse effects on the aquatic life from water disturbance and the increase of turbidity and sedimentation. Reproduction will be curtailed for at least one season for a considerable segment of the stream below the crossing.

The more serious and long lasting of the adverse effects are those which relate to the eradication for the life of the project of brush and trees from the permanent right-of-way. Even if the pipeline were abandoned and natural habitat segments were allowed to revert to natural vegetation, it would take many more years to reestablish some semblance of lost habitat values.

Long-term residual impacts on the ecological life will be in habitat changes in the cleared corridor through wooded areas. Floodplains also supply habitat conditions that are important to many wildlife species.

The necessity to disturb a Game Refuge has not been justified. This area affords protection for upland game birds that have declined in recent years due to a decrease in nesting and shelter areas. The impact in this area will be large and should be mitigated.

COMMENTS

Rare, Unique or Endangered Species

68 The Minnesota trout-lilly is extremely rare and occurs nowhere else in the world. The bobwhite and the wood turtle, both rare species, are found in the area the pipeline is proposed to traverse. Systematic surveys should be provided on these species.

3.1.6 Socio-Economic Environment

Population

69 The impact upon the socio-economic environment by the migratory construction population upon the area through which they would pass, needs to be spoken to. Unavoidable adverse sociological effects on local communities will occur although generally light and short term.

The impact upon the social environment has received publicity as construction crews pass through communities and agricultural land. The social impact originates from a lack of understanding. Crews have revealed the attitude that they are performing a great service and they can't understand farmers getting so upset about "digging up a little bit of land." The natural mistrust of outsiders is perpetuated by a lack of knowledge and understanding of agriculture, coupled with a lack of respect for the services performed by the farmer whose efforts provide the food eaten by the crews.

Impacts upon recreation, cultural and related services will be greater. Construction workers will likely be working long days and long weeks, but there will be those looking for a good time. Local bars, movie theaters, pool halls, etc., will be well attended by pipeline construction workers. In the less populated areas these impacts will be greater. Pipeline workers will be relatively affluent when they hit town and therefore have a comparatively high demand for recreation services. Following this demand will be an increased need for law enforcement services. As any group away from home in a strange town, pipeline construction workers will be looking for action.

An example of the loyalty of the crews was shown in a quote of a welder from Oklahoma, "Us pipeliners take care of each other.""If someone in town bothers one of us they don't have one to fight; they got us all."

Pipeliners without family ties engage in socializing which leaves a trail of broken hearts. Most of them have been divorced once or twice and claim they can weld everything "but a broken heart at the crack of dawn".

Economics

70 An unfair attitude prevails in this section to down-play the unfavorable impacts and exaggerate those claimed to be favorable. The unfavorable yield and crop loss impact is termed "small". The ridiculous amounts offered by right-of-way agents for reduced yield wouldn't come close to breaking even with the reduction in crop sales and leaving nothing for the farmers inconvenience, time, future problems, etc., etc. So where is the "economic input" they claim this pipeline will generate?

Inaccurate statements also prevail. The amount of productive land that will be affected will be much more than 37.5 acres. There will be crop reduction on 96% of the entire right-of-way which is cropland or 96% of 660 acres equals 633.6 acres.

The Addendum states that "the number of determinent variables involved makes impact projection impossible." And in the next sentence "compensation

for these losses will be negotiated between the landowner/tenant and the company before construction begins." If it is "impossible" to project loss from impact, how can just compensation be estimated and negotiated before construction? (!)

The document admits yields will be reduced but asks a landowner to absorb a perpetual yield-income reduction along with a choiceless perpetual easement. Damages and reduction cannot be negotiated before they happen!

(To repeat their phrase,) "It should be noted that" the land in northern Minnesota along the Clearbrook line is not the land they are proposing to cross with this line. So what is their point?

Opinions of a couple men, gleaned by a bias person from a "discussion" has no effect on the going price farmers are willing to pay for farms with and without a bothersome, dangerous, devaluating pipeline. An annual payment or rental may serve to equalize the market value of a piece of property to that of one without a pipeline.

Transportation

71 In addition to crop reductions, the pipeline construction activities will create a variety of inconveniences for the farmer. Movement of farm machinery and tillage and harvesting operations will be complicated by the trenching through established fields.

Trenching of minor gravel roads is an adverse impact. A minor road to the general public may be the major road for several farm families. Trenching creates bumps that have an economic impact for years to come on the machinery and cars of the families who must use the road. Who pays the bills? And who pays for the perpetual reconstruction of that area in the road?

Services

72 An adverse socialogical effect on local communities will be the demands on local facilities. It is conceivable that crews could impose an unreasonable financial burden upon small communities in terms of police, health, sewage, water, etc.

3.1.7 Air Quality and Noise

Noise

73 Construction noise factors may have an adverse impact on the production of milk cows, laying hens and brood sows, as well as, frightening other farm livestock.

3.1.8 Climate

74 Though there may be no impact on the climate, construction activities during inclement weather or shortly thereafter can cause a vast irreversible and irretrievable impact. Soil segregation and construction should take place only when ground conditions are in tillable condition.

3.2 OPERATION AND MAINTENANCE

3.2.1 Land Use

75 Land will be used by pipeline companies under a perpetual easement.

COMMENTS

The compensation offered for this use is a one-time, non renegotiable payment. Landowners should share the profits for the use of their land.

Fifty feet of right-of-way is not needed for operation of the pipeline; 25 feet permanent easement is sufficient.

Compaction or subsidence of fill areas along the trench and the exposure of rock and gravel on the surface will all contribute to more difficult farming operations.

3.2.2 Surface Waters

76 The topography of the Cannon River Crossing is the same as a sinkhole. Although the probability may be low for a spill, once is all it takes to put aquifers out of business.

3.2.3 Soils and Topography

Productivity

77 This section failed to address a spill or rupture which in agricultural land could render it unproductive.

Spills

78 The operational activities of a cleanup should include plans for disposal of contaminated soil. To maintain the area and restore its original use requires the replacement of topsoil. The feasibility of obtaining that type of soil should be addressed.

3.2.4 Geology/Groundwater

Geology

79 The operation and maintenance of the pipeline will create an impact which will have a residual effect. It will place a limitation of production of geologic resources.

Groundwater

80 The entire proposed route in Minnesota is one in which the ground water moves through the soil materials and enters the bedrock. The entire area acts as a recharge area. The topography provides direct conduits for pollutants to reach the groundwater system. The following is from a Statement by the U. S. and Iowa Geological Survey regarding the problem of "Potential for Degradation of Groundwater Quality Along Crude Oil Pipeline In Iowa," September 30, 1977.

"Instead of being filtered and diluted, pollutants are transported into the system as concentrated slugs. A principal concern is not knowing where or how far a pollutant will be transported. Ultimately, the polluted water likely would be discharged to a receiving surface stream, but several domestic and municipal water supplies could be affected enroute.

"All of the pollutants that might be present in the crude oil are unknown. However, concentrations of oil as low as 1-2 parts per million would render a water supply objectionable or unacceptable for drinking because of taste and odor problems. Further it is extremely difficult to flush

an aquifer once it has been polluted with oil. The usual recourse is to drill a deeper well to obtain water of acceptable quality."

This type of topography is along the new route in Minnesota.

An oil leak in this type of topography would not surface in the areas of the rupture as it would seep down through the crevices of the limestone. The water-soluable chemical compounds which are present in crude oil could be carried into the ground water. Leaks provided a "direct conduit" will not be detected on the surface. Surface water movement would simply increase the speed with which it would reach the aquifer. Surface water movement increased by rains falling concurrent with the leak could make even a detected and located leak impossible to clean up in a 75 hour period.

Underlying the area of the proposed pipeline route is one of the most unique aquifers in the world. It may become a more important water supply to the Midwest than it is today. The methods and devices proposed do not insure the citizen that a spill will not happen. It takes but one to require looking elsewhere for water. It is a fact that there should never be a crude oil pipeline built anywhere in southeastern Minnesota. A pipeline entering the state in the northwest where there is little or no groundwater or aquifers would be the prime mitigative measure. See Exhibit A.

3.2.5 Biological Environment

81 That the clean up and repair of an on-land oil spill would be short-term in effect is impossible to judge. Residue from oil, spilled months and years ago, is not cleaned up and continues to have effects on the biological environment.

3.2.6 Socio-Economic Environment

Economics

82 The economic impact that will result should this line be built is higher prices for refined products. Crude oil tariffs to the Twin Cities. via Wood River pipeline would be higher than shipment on a pipeline from Port Angeles, Washington to Clearbrook, Minnesota. Northern Pipe Line Co. of Delaware is not the answer to the supply problems of the Midwest and certainly not those of the Northern Tier of States. There are three other refineries in the area that have not shown a preference for this line.

The refineries were built in the North to refine crudes available from the north. It isn't economical and energy-saving to ship crude from the South where it could be refined more efficiently. Refined products shipped from the South makes more economic sense.

It is time that Minnesota join the northern tier of states and cooperate in solving the supply situation of the Upper Midwest and not just that of one refinery. The energy requirements to operate the Northern Pipe Line will be vast and more than likely generated from coal fired plants. The line proposed to traverse the northern tier of states could be powerer by electricity generated from hydroelectric plants. This Socio-Economic Environmental Impact should not go unanswered.

3.2.7 Air Quality

83 The proposed pipeline is to tender high sulfur crudes to a refinery that is already experiencing SO_2 emission problems.

COMMENTS

3.3 Impact Comparisons

84 Fewer diagonal crossings of tiled fields should be honored the entire route of the line.

4. IMPACT MITIGATION

4.1 Land Uses

85 The crossing of pipelines over one another creates not only irrevocable impacts to the land but to its value also. A farms value can be destroyed by the 'patchwork pattern' all types of utilities and roads are allowed to create. If allowed to continue unchecked the problems created will outweigh the feasibility of areas being used for their original purpose. 'Patches' designed by utilities will exist where once modern farm machinery was able to manipulate.

86 Paralleling boundaries that exist is a resource-conserving mitigation which considers the aesthetic values of the wide open spaces of rich, food producing agricultural land. Utilities assume location of their project

87 must be simply accepted and placed into the planning and development of property. The Draft, 4.6.2 states, "For example, the right-of-way could serve as a green-way, rear yard or land buffer". (!)

The application of this suggestion regarding the use of right-of-way land, in the majority of situations, is ridiculous. A glance at the agricultural land parcels which are dissected reveals these possibilities are not only impractical but in many cases impossible.

4.6 SOCIO-ECONOMIC

4.6.2 Economics

88 The least amount of impact would be a cooperative effort to build an all-American line from the Pacific Northwest to the Midwest. It could save Minnesota consumers millions of dollars each year in their cost of refined products.

COMMENTS

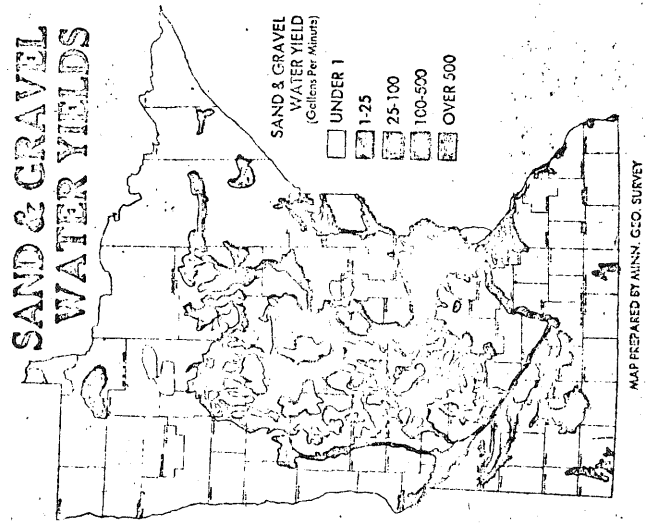
5. ALTERNATIVES

5.4 NO ACTION

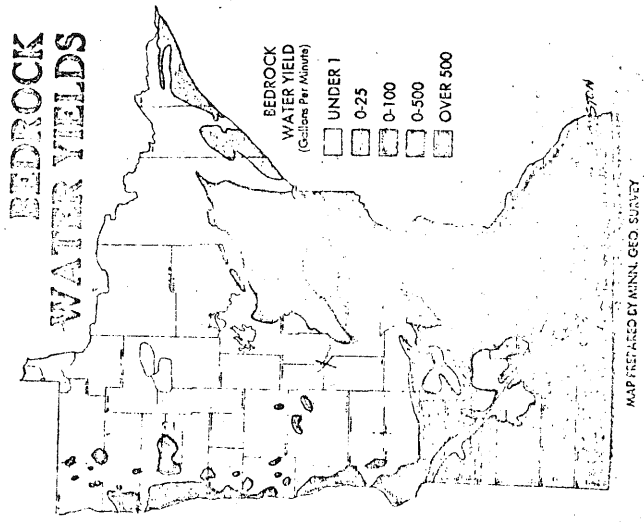
89 Implementation of a No Action Alternative would result in no environmental disturbance along the proposed pipeline route in southeastern Minnesota. However, Minnesota and Wisconsin refiners would be welcomed to tender on the 600 MBD line from Washington state to Minnesota. The Williams pipeline to the Twin Cities, along with barge shipment, can supply the interium. There is no doubt the big all-American line could supply Minnesota refineries.

Exhibit A

COMMENTS



Surface sand and gravel deposits are important sources of water in the northern two-thirds of Minnesota where the underlying bedrocks often do not yield much water. Some of these surface and buried deposits are capable of providing dependable yields of up to 1,000 gallons a minute. This map shows (1) the locations of loose layers of sand and gravel, (2) the measured or estimated water yields from these surface deposits and (3) the buried deposits of sand and gravel, which are known and likely to yield adequate amounts of water.



Beneath the ground, enormous amounts of water are stored in bedrock, sand and gravel. The Minnesota Geological Survey has estimated generally how much water these formations would yield. As the maps show, there are portions of the state where the potential water yields are poor. This map shows the generalized water yields in gallons per minute from the various units of bedrock in the state. More than two-thirds of the state is known to have bedrock yields inadequate for most uses.

CRUDE OIL TRANSPORTATION COSTS
FROM
VALDEZ, ALASKA, TO REFINERS - 1985
Dollars Per Barrel

Refining Center	Pipeline System: Northern Tier			Trans-Mountain Reversal			Rainal			SOHIO			CAPLINE			COMMENTS
	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total	
Billings	0.65	0.71	1.36	0.65	1.61[2]	2.26	0.54	1.63[2]	2.17	--	NER	--	--	NER	--	
Mandan	0.65	0.80	1.45	0.65	1.50[2]	2.28	0.54	1.66[2]	2.11	--	NER	--	--	NER	--	
Clearbrook[1]	0.65	0.90	1.55	0.65	1.12	1.77	0.54	1.14	1.68	--	NER	--	--	NER	--	
Twin Cities	0.65	1.07	1.72	0.65	1.29	1.94	0.54	1.31	1.85	0.94	2.09[4][5]	3.03	3.80	1.03[5][6]	4.83	
Superior/Wrenshall	0.65	1.03	1.68	0.65	1.18	1.83	0.54	1.20	1.74	--	NER[3]	--	--	NER[3]	--	
Chicago	0.65	1.13	1.78	0.65	1.31	1.96	0.54	1.33	1.87	0.94	1.69[4]	2.63	3.80	0.73[6]	4.53	
Toledo	0.65	1.31	1.96	0.65	1.49	2.14	0.54	1.51	2.05	0.94	1.89[4]	2.83	3.80	0.93[6]	4.73	
Detroit	0.65	1.41	2.06	0.65	1.52	2.17	0.54	1.54	2.08	0.94	2.02[4]	2.96	3.80	1.06[6]	4.86	
Buffalo	0.65	1.32	1.97	0.65	1.47	2.12	0.54	1.49	2.03	0.94	1.95[4]	2.89	3.80	0.99[6]	4.79	
Salt Lake	0.65	1.36	2.01	0.65	2.06	2.71	0.54	2.08	2.62	--	NER	--	--	NER	--	
Casper	0.65	1.11	1.76	0.65	2.01[2]	2.66	0.54	2.03[2]	2.57	--	NER	--	--	NER	--	
Denver	0.65	1.14	1.79	0.65	1.80	2.45	0.54	1.82	2.36	--	NER	--	--	NER	--	
Kansas City	0.65	1.41	2.06	0.65	1.92	2.57	0.54	1.94	2.48	0.94	1.34	2.28	--	NER	--	
St. Louis (Wood River)	0.65	1.36	2.01	0.65	2.05	2.70	0.54	2.07	2.61	0.94	1.69[4]	2.63	3.80	0.61[6]	4.41	

LC = Least cost alternative
NER = No existing or proposed route
[1] Delivery point
[2] Construction of connecting pipelines is required to enable deliveries to these points
[3] Limited quantities of crude oil could be transported by petroleum products pipeline
[4] Based on new pipeline Cushing to Chicago
[5] Based on new pipeline from Wood River to Twin Cities
[6] Based on Rainal, Capline and Chicap.

ARS:ro:197
August 5, 1977

Exhibit C

COMMENTS

CRUDE OIL TRANSPORTATION COSTS
FROM
VALDEZ, ALASKA, TO REFINING CENTERS - 1986
Dollars Per Barrel

Refining Center	Pipeline System: Northern Tier			Trans Mountain Reversal			Kitimat			SOHIO			CAPLINE		
	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total	Tanker	Pipeline	Total
Billings	0.65	0.71	1.36	0.65	1.61[2]	2.26	0.54	1.63[2]	2.17	--	NER	--	--	NER	--
Meridan	0.65	0.80	1.45	0.65	1.58[2]	2.23	0.54	1.60[2]	2.14	--	NER	--	--	NER	--
Bearbrook[1]	0.65	0.90	1.55	0.65	1.12	1.77	0.54	1.14	1.68	--	NER	--	--	NER	--
Twin Cities	0.65	1.07	1.72	0.65	1.39	1.94	0.54	1.31	1.85	0.94	2.09[4][5]	3.03	3.80	1.03[5][6]	4.83
Superior/Wrenshall	0.65	1.03	1.68	0.65	1.18	1.83	0.54	1.20	1.74	--	NER[3]	--	--	NER[3]	--
Chicago	0.65	1.13	1.78	0.65	1.31	1.96	0.54	1.33	1.87	0.94	1.69[4]	2.63	3.80	0.79[6]	4.59
Toledo	0.65	1.31	1.96	0.65	1.49	2.14	0.54	1.51	2.05	0.94	1.85[4]	2.83	3.80	0.99[6]	4.79
Detroit	0.65	1.41	2.06	0.65	1.52	2.17	0.54	1.54	2.08	0.94	2.02[4]	2.96	3.80	1.06[6]	4.86
Buffalo	0.65	1.32	1.97	0.65	1.47	2.12	0.54	1.49	2.03	0.94	1.96[4]	2.89	3.80	0.99[6]	4.79
Salt Lake	0.65	1.36	2.01	0.65	2.06	2.71	0.54	2.08	2.62	--	NER	--	--	NER	--
Casper	0.65	1.11	1.76	0.65	2.01[2]	2.66	0.54	2.03[2]	2.57	--	NER	--	--	NER	--
Denver	0.65	1.14	1.79	0.65	1.80	2.45	0.54	1.82	2.36	--	NER	--	--	NER	--
Kansas City	0.65	1.41	2.06	0.65	1.92	2.57	0.54	1.94	2.48	0.94	1.94	2.88	--	NER	--
St. Louis (Wood River)	0.65	1.36	2.01	0.65	2.05	2.70	0.54	2.07	2.61	0.94	1.69[4]	2.63	3.80	0.61[6]	4.41

(1) Least cost alternative
(2) = Horizontal or proposed route
Delivery point
Construction of connecting pipelines is required to enable deliveries to these points
Limited quantities of crude oil could be transported by petroleum product pipeline
Used or new pipeline Cushing to Chicago
Used or new pipeline from Wood River to Twin Cities
Based on Longhorn, Capline and Chicap.
ESH:rrc/07
August 5, 1977

Exhibit C

RESPONSE

To Letter of Mark Moenning
in behalf of Reroute Crude Oil (RCO)

1 The proposed pipeline will connect to the Ashland refinery in St. Paul Park through the existing Minnesota Pipeline. The Northern line will terminate at Pine Bend with facilities to deliver to Koch's refinery and to Minnesota Pipeline. Minnesota Pipeline has an existing 16-inch pipeline between Cottage Grove and Pine Bend. By reversing the flow in this line, crude can be delivered directly to Ashland. The possibility also exists to deliver to Williams Pipe Line Company at Pine Bend for subsequent delivery to Ashland at St. Paul Park through Williams' recently completed line.

At this time, both Ashland Oil (St. Paul Park) and Continental Oil (Wrenshall, Minnesota) as well as Dow Chemical support this project and are prepared to nominate volumes for transport through Northern Pipe Line. Documentation is provided in the accompanying attachments.

See Appendix I, Need Issues, for a discussion of the questions raised in the second paragraph of Comment #1.

2 See Pollution Control Agency response, Appendix II, especially section II; see also responses to other similar comments, e.g., Buchwald Comments # 13 and #20, and Froehlich Comment #5.

3 It is extremely likely there will be spills during the life of this pipeline, and the EIS recognizes this fact. In addition, from the history of previous spills (Appendix III) it is evident that spills will continue to occur in the future. An attempt has been made, by rerouting and other measures, to minimize the possibility of groundwater contamination if a spill does occur. See PCA response, Appendix II.

4 The February 1977 Draft was based on the origin of the pipeline being Patoka, Illinois. The origin of the pipeline is now Wood River, Illinois, and the comparison made in the question is invalid.

5-9 The Minnesota Energy Agency has prepared an up-to-date assessment of the need for the Northern Pipeline. See Appendix I.

10 We concur with the comment. In reference to the last line of the paragraph, however, it should be noted Appendix G of the Draft Addendum provided maps of the entire Minnesota portion of the route.

RESPONSE

The original route which was addressed in the Draft EIS dated February 14, 1977, did parallel the American Oil Company pipeline for several miles. The route was relocated, however, because of the shallow depth to bedrock over much of the area traversed by that route. There are no other existing pipelines in the immediate vicinity of the proposed route which could be paralleled.

11 Because of the northwest-southeast orientation of the proposed route, paralleling property lines which generally run north-south and east-west and and would also add several miles to the length of the pipeline, The primary advantage of paralleling property lines would be that fewer tile lines would be intercepted. However, homes, fences, telephone and powerlines, and other facilities are usually located along or near property lines, and it is felt that the offsetting impacts to these facilities would negate the advantages of such a route. A route paralleling property lines other than the "railroad route" has not been identified or evaluated in the EIS. The primary purpose of the EIS is to evaluate the impacts of the project as proposed and of feasible alternatives. The EIS process has no authority to require specific routing.

A 50-foot right-of-way easement is being proposed on this project to minimize the amount of land that would be disrupted. While a wider right-of-way easement would provide more working space, it is the intent of this specification to restrict the construction activities to as small an area as possible, thereby reducing the amount of agricultural land which may be affected. When specific conditions(such as stream crossings and rough terrain) require additional work space, an easement for a wider working area will be obtained. If the width specified in the easement agreement is exceeded during construction, the land-owner is entitled to additional damage payments.

12 Topsoil is removed (where specified in the easement agreement) by a crawler mounted wheel-type ditcher from over the trench (3-foot minimum width) and placed on the working side. The ditcher is 11 feet, 6 inches in width, and the ditching apparatus includes an adjustable length conveyor which will place the topsoil in an area at least 2 feet from the edge of the trench.

Subsoil is removed to the proper depth by a second ditcher. The subsoil is placed on the side opposite the working side (topsoil side) of the ditch.

The topsoil is leveled over a 4-5 foot area (2-7 feet from the trench) on the working side.

The pipe is strung alongside the ditch being laid on skids directly over the leveled topsoil. The skids are placed at least 40 feet apart. This will remove the possibility of the sopsoil becoming packed by vehicles or heavy equipment. Welding personnel will walk on the fringe of the topsoil area.

When the pipe is welded, wrapped, lowered in plaee, and the subsoil filled in, the relatively undisturbed topsoil will be bladed over the trench and leveled.

RESPONSE

13 The reason for the 50-foot permanent easement is to allow the company to maintain the pipeline in a safe operating condition. The company may restrict construction within the easement so that such construction may be accomplished in a manner compatible with the safe operation of the pipeline. Based on information presented in the March 1978 report prepared by Woodward-Clyde Consultants for the Minnesota Energy Agency, the most frequent cause of pipeline leaks has been excavation equipment operated by outside parties.

The statement made by Mr. Waller was in answer to a question concerning pipeline rights-of-way in general. This information was not included in the EIS or at the landowners' meetings because Northern Pipeline intends to obtain single line rights on all easements. At a future date, if conditions were to warrant looping of the line, the company would be required to pursue the same permitting process as it is currently pursuing. This would include renegotiating the right-of-way agreement with each landowner.

14 The figure "660" which appears on page 7 of the Draft is a typographical error. This number is actually "600", and is a round number approximation for the purpose of this introductory material. The exact numbers are presented in Table 2, page 17, of the Draft, and are shown as 591 acres as the total right-of-way acreage and 34 acres as the acreage over the trench.

Table 1 on page 17 of the Draft Addendum present the same calculations for the east and west Northfield alternatives as they existed when the Addendum was prepared. The current figures for the revised Company's route are: 608 acres via the east-Northfield route and 631 acres via the west-Northfield route. For the railroad alternative the figures are 641 acres via the east-Northfield route and 668 acres via the west-Northfield route.

Appendix H is a reproduction of a document prepared and sent out by Northern Pipeline Company over which DNR had no control, and was printed verbatum in the Addendum for the interest of readers. The EIS points out that there will be many impacts to private lands associated with this project.

15 The concerns noted in the comment have been recognized, and several measures have been adopted to assist landowners in safeguarding their rights, including the following:

a. Landowner's Information Booklet. The booklet will be distributed to all landowners prior to negotiation with the company regarding the right-of-way (easement) agreement. It will summarize the various procedures in building a pipeline and will describe some of the options available to the landowners either to negotiate into the right-of-way agreement or to ensure contractor compliance with its terms. Some of the options discussed will include:

1. Amount of compensation for the easement
2. Amount of compensation for foreseeable damages
3. Topsoil segretation
4. Use of arbitration to settle disputes
5. Methods of drain tile repair
6. Disposition of timber removed from right-of-way
7. Minimum depth of cover over the pipeline

The booklet will also discuss areas which the landowner should check before he signs any release forms, such as damage outside the right-of-way, adequate fence and tile repair, adequate clean-up and restoration of right-of-way, correct line placement including depth of cover, and adequate compensation for unforeseen damages.

b. Liaison Procedure. A liaison worker employed by the State will monitor construction to determine compliance with the Grant-of Easement. Discrepancies will be reported to the company for correction and to State agencies and the landowner.

c. Procedures for Making Complaints

d. Settlement of Disputes. If disputes arise which cannot otherwise be resolved between the landowner and the company, the landowner will have the option of either arbitration or going to court.

See Appendix I for a discussion of need. Based on the hydraulic design, Pump Station No. 8 will be located approximately in Section II, T10105N, R17W, Dodge County. This station will not be constructed initially, but will be required when the volumes to be transported exceed 153,000 BPD. The power for this proposed station will be provided by either People's Cooperative or Northern States Power, depending on the specific requirements at the time of construction.

The electrical energy needs of the pump station would not require additional electrical generation or high voltage transmission facilities. A liberal estimate of the electrical needs of such a station would be in the neighborhood of 4000 KW. The only new facility required would be a spur out to the existing transmission facilities.

16 Below is a list of the proposed locations of the mainline valves to be installed in Minnesota:

Valve Type	Location
Block Valve	Upstream Upper Iowa River
Check Valve	Downstream Upper Iowa River
Block Valve	Upstream North Branch Root River
Check Valve	Downstream North Branch Root River
Block Valve	Upstream Dodge Center Creek

RESPONSE

Check Valve	Downstream Dodge Center Creek
Block Valve	Upstream Rush Creek
Check Valve	Downstream Rush Creek
Block Valve	Upstream Zumbro River
Check Valve	Downstream Zumbro River
Block Valve	Upstream Falls Creek
Check Valve	Downstream Falls Creek
Block Valve	Upstream Cannon River
Check Valve	Downstream Cannon River
Block Valve	Upstream Chub Creek (Main Channel)
Check Valve	Downstream Chub Creek (Main Channel)
Block Valve	Upstream Chub Creek
Check Valve	Downstream Chub Creek
Block Valve	Upstream North Branch Chub Creek
Check Valve	Downstream North Branch Chub Creek
Block Valve	Upstream South Branch Vermillion River
Check Valve	Downstream South Branch Vermillion River
Block Valve	Upstream Vermillion River
Check Valve	Downstream Vermillion River

The average distance between a downstream check valve and the next upstream block valve is approximately 7 miles, with the greatest distance being approximately 25 miles.

The MEA considered the appropriateness of the proposed line size. Since the best line size depends upon the estimated volumes, the MEA concentrated on determining the new or additional capacity that can be justified by the record. The MEA director determined that up to 210,000 B/D had been justified. For this volume, and depending upon other parameters the best line size is 24 inches. This size allows for future expansion of up to the 300,000 B/D range without looping. However, the Kitimat option was still alive when the certificate of need for the Northern project was granted. Consequently, the 20-inch alternative was kept open in case required volumes remained in the 100,000 B/D range for several years.

17 Pipeline construction is currently scheduled to start in the spring of 1979.

Impacts associated with the work force are presented in Section 3.1.6 of the Draft Addendum, pp 85-87. On page 9 of the Draft, it is explained that the 250 workers are divided into about ten crews. This yields an average crew size of 25. Most of the crews cannot began their jobs until the previous crew's work
18 has been completed. Thus, the crews tend to become strung out along the line and a concentration of 250 workers in one locality is not anticipated.

Section 4.6.1 of the Draft describes the possibility of using local labor and is referenced here.

19 Every reasonable attempt will be made to notify the landowner and obtain permission prior to surveying. In cases where this cannot be done, care is taken not to disturb livestock or damage crops. In the event damages result the landowner will be compensated for these damages based on his negotiation with the company.

RESPONSE

Prior to clearing or grading of the construction right-of-way or stringing pipe the Contractor shall open all fences on or crossing the right-of-way and install temporary gates of sound construction to prevent entrance or exit of livestock into or out of the fenced property. Adjacent posts will be adequately braced to prevent slackening of the wire. Where woven hog wire or other special types of fence are encountered, the temporary gates will be made of similar material and of suitable quality to serve the purpose of the original fence. Upon completion of the work, the fence will be restored equivalent to, or better than its original condition. (Response by Northern Pipeline Company)

20 The Contractor is required to do such grading of the right-of-way as is necessary to provide access during construction and to insure the construction of a good, safe pipeline. This includes grading of any sharp points and hollows where necessary to allow the pipe to be bent and laid within the minimum radius of curvature specified (normally 30 times the outside diameter of the pipe). The landowner will be compensated for the actual damages based on his negotiations with the company.

21 The pipeline is required by the American National Standard Code for Pressure Piping, B31.4 - Liquid Petroleum Transportation Piping Systems, Section 434.6 (c), to provide a minimum clearance of 12 inches between the outside of the pipe and the extremity of any other underground structures. This does not include drain tile which requires only 2 inches of clearance. In most cases, the proposed line will be installed under existing utilities except where the existing utility is excessively deep.

Topsoil removal is a negotiated item with each individual landowner.

22 Permits from the Department of Natural Resources will be required for all stream crossings. Erosion control measures, bank stabilization, revegetation, and other measures specific to each stream will be specified in the permit. These are measures which cannot be determined until the exact stream crossing location is known and the permit is applied for.

All public road crossings generally require a permit from the regulating agency which stipulates whether the road must be bored or can be open cut. For open cut roads, the permit will stipulate the degree of compaction required. In cases where this is not stipulated, the ground will be compacted to its original condition.

23 The "large additional impact on adjacent land"resulting from boring a road is not defined. The impact on adjacent lands will vary from one crossing to another. But, the landowner will be compensated for whatever impact occurs based on his negotiations with the company.

The crossing of private roads should be handled in the right-of-way negotiations by each landowner with the company.

RESPONSE

In many cases, property lines don't fall in a direct line, requiring many right-angle bends to attempt to follow such a route. This will substantially increase the actual length of the pipeline. These two factors will result in a need for greater energy comsumption to transport the oil through the line. The increased length of the line means that a greater area of land would be affected. Even though an area of a farm may not be as heavily tiled, it will still undergo disruptions from construction activities.

It has been the experience where these repairs were conducted that it is preferable to leave the lines uncapped and able to drain into the trench. This permits the continued operation of the tile system during construction. The experience has been that very little, if any, dirt or debris entered the tile by using this procedure. In cases involving a large volume of discharge from the tile, a contractor may wish to place a rigid pipe between the tile ends as a temporary repair to prevent the trench from becoming too wet for construction activities.

24 If the tile lines are to severed for an extended period of time during construction, temporary connections should be considered to minimize the possibility of crop damage to areas of the field outside of the right-of-way. Temporary connections will also minimize the possibility of drainage from the tile system into the excavated ditch.

The actual benefits of installing temporary connections of severed tile lines during construction will vary depending upon:

1. The type of topsoil and subsoil;
2. the length of time the tile lines are severed;
3. the time of year;
4. the amount of rainfall; and,
5. the terrain of the field.

The landowner may wish to specify temporary connections as a special condition of his easement agreement.

25 The specifications for construction of the pipeline will contain a statement similar to the one cited in the comment. The responsibility of seeing that the contractor conforms to these requirements lies with the company's authorized inspector. The inspector has the authority to require the Contractor to conform to the specifications or he will shut the job down. The responsibility ultimately lies with the company to see that qualified inspectors are used to guarantee that the work is performed according to the specifications. The state liaison worker will also monitor construction to determine compliance with this requirement. Violations will be reported to the company for action and to the appropriate State agencies.

26 Backfill material will be inspected, and rocks greater than 3 inches in diameter or other extraneous material will be removed and disposed of in an area off the right-of-way. This area will have been previously identified and an agreement reached with the landowner for disposal.

In those cases where the material excavated from the ditch consists primarily of rocks, a soil pad of "select" material (soil which does not contain rocks) will be placed around and over the pipe.

Topsoil is removed (where specified in the easement agreement) by a crawler mounted wheel-type ditcher from over the trench (3-foot minimum width) and placed on the working side. The ditcher is 11 feet 6 inches in width, and the ditching apparatus includes an adjustable length conveyor which will place the topsoil in an area at least 2 feet from the edge of the trench.

Subsoil is removed to the proper depth by a second ditcher. The subsoil is placed on the side opposite the working side (topsoil side) of the ditch.

The topsoil is leveled over a 4-5 foot area (2-7 feet from the trenches) on the working side.

The pipe is strung alongside the ditch being laid on skids directly over the leveled topsoil. The skids are placed at least 40 feet apart. This will remove the possibility of the topsoil becoming packed by vehicles or heavy equipment. Welding personnel will walk on the fringe of the topsoil area.

When the pipe is welded, wrapped, lowered in place and the subsoil filled in, the relatively undisturbed topsoil will be bladed into the ditch.

The specifications of the contract between Northern Pipeline Company and the construction firm will contain a section describing the cleanup procedure to be followed. It will be the responsibility of the company's inspector to see to it
27 that the cleanup is performed according to specifications. The landowner may request to be notified before the trench is backfilled if he wishes to observe that the operation is in accordance with the specifications; he may also wish to discuss this matter with the State liaison worker. If, in the event the work is not acceptable, the landowner should not sign the final release form until he is satisfied the terms of the agreement have been met.

Where the river or stream crossing is shallow, the trenching operation may be performed by conventional trenching equipment. Where necessary, draglines or clamshell buckets will be used to perform the trenching operation. No dewatering is planned. Excavation will be carried out in order to minimize the turbidity of the water. The work of clearing, grading, slope protection, trenching, backfilling, final cleanup, and revegetation within at least 50 feet (further, if the banks extend beyond 50 feet) of rivers and streams will be completed within as short a time as possible to minimize erosion. The stream bed will be restored to grade with the same material as that which was excavated to minimize erosion and sedi-
28 mentation after comstruction is complete. If the river bottom is armored with cobbles, these will be separated and replaced on the river bed. Permits from the Minnesota DNR will be required for all crossings.

On sloping terrian, small diversion dikes will be used when necessary to keep water runoff from running down the ditch area. Excess excavation material (soil) will be evenly spread over adjacent areas so as not to disturb normal drainage patterns. The cleanup operation consists of removing any construction debris; chiseling, disking, harrowing, or raking the surface as required; replacing the fences and seeding the soil where appropriate; and restoring all disturbed surfaces. The cleanup equipment may consist of bulldozers, draglines, backhoes, road maintainers, wheel type tractors and other agricultural type equipment such as chisels, disks, harrows, and rakes.

It is the intent of the company to restruct construction activities during periods of inclement weather on those occasion when there is a potential for excessive damage.

Replacement of temporary fence and gates with permanent fence is a part of cleanup and restoration. The pipeline company will, insofar as is practicable, restore the construction area to its original grade and condition, except that the earth will be crowned over the trench to compensate for settlement of the backfill, and employ accepted methods to prevent surface erosion.

Where required or practicable, all disturbed surfaces will be contoured to resemble their preconstruction grade. If required, fertilizer will be applied and the area reseeded. Erosion-control devices will be constructed on steep slopes on the right-of-way and along cuts made through unconsolidated materials. Erosion-control devices include, but are not limited to, water bars, riprap, terracing, sand-cement sacks, and fencing.

29

When construction is completed, a representative of the company will meet with the landowner to approve the restoration and discuss damages. Any damages resulting from the company's operation or activities shall be paid within thirty (30) days of the mutual agreement as to amount. The company shall pay the landowner or his tenant for actual damages to growing crops, livestock, fences or buildings, caused by the operation or activities in connection with the construction of the pipeline. The landowner should not sign his final release form until satisfied with cleanup and restoration.

Hydrostatic testing of the pipeline is required prior to its being put into operation (see page 14 of the original Draft EIS). A permit from the Department of Natural Resources will be required for appropriation of water from any public lake or stream.

30

Hydrostatic test water, whether used prior to operating the line or after the line has been operating, cannot be discharged in Minnesota without a National Pollutant Discharge Elimination System Permit. This requires prior application and public notice. These permits set forth discharge standards which must be adhered to by the permittee.

31 Emergency procedures for handling crude oil spills were outlined in Appendix A of the original Draft EIS.

Corrosion is accelerated by the electrolytic nature of the soil; i.e., the more electrolytic the soil, the greater the potential for corrosion. This is usually measured as earth resistivity, with high values of resistivity corresponding to non-electrolytic soils, and vice versa. The resistivity is affected to the

32

greatest extent by the clay content of the soil; sand and gravel have very high resistivities and tills and clay soils have low resistivities. Thus, clay soils such as glacial till tend to be more corrosive than outwash. Appendix C, "Soil Data", of the Draft provides Soil Survey Interpretations prepared by the Soil Conservation Service, U.S. Dept. of Agriculture. These interpretations include a listing of the soil's corrosivity.

32 A cathodic protection system to protect against erosion will be installed. Corrosivity may differ between soil types, and a survey will be conducted soon after the pipeline is placed in the ground. Actual soil resistivity measurements will be taken at intervals along the pipeline. This data will be analyzed to determine the location of rectifiers and/or anodes required to adequately protect the pipeline. Once the cathodic protection system is operating, it will be checked at frequent intervals to verify that the proper pipe-to-soil potentials are being maintained in accordance with Subparts D and F, Part 195, Transportation of Liquids by Pipeline, Title 49, Code of Federal Regulations (Department of Transportation).

33 Prior to clearing or grading of the construction right-of-way or stringing pipe, the Contractor shall open all fences on or crossing the right-of-way and install temporary gates of sound construction to prevent entrance or exit of livestock into or out of the fenced property. Adjacent posts will be adequately braced to prevent slackening of the wire. Where woven hog wire or other special types of fence are encountered, the temporary gates will be made of similar material and of suitable quality to serve the purpose of the original fence. Upon completion of the work, the fence will be restored equivalent to, or better than, its original condition.

The Contractor will also be required to provide access across the ditch upon the request of landowners. Problems which cannot be resolved with the Contractor should be reported immediately to the project manager. A toll-free telephone number will be provided for this purpose; landowners will be provided with this number in the information booklet to be distrubited to each landowner.

34 The pipeline company will be responsible for all follow-up restoration, as well as maintenance of pump stations.

35 The selection of the source for pipe to be used on this project is based on quality and cost. The quality of all pipe to be used is specified to meet API Standard 5LX, Specification for High-Test Line Pipe. That portion of the pipe manufactured in France must meet these specifications. The decision to purchase pipe from a particular supplier is based on getting the best possible product at a reasonable cost. A large portion of the pipe remains to be purchased from a source, or sources, yet to be determined.

The strength of the pipe will be consistent with the design pressure requirements for this pipeline.

The same tests were performed in France as would have been performed in this country if the pipe were manufactured here.

36 All rocks larger than 3 inches will be removed from the backfill. No material which could damage the pipe coating can be permitted to be backfilled against the pipe. This means a minimum of 24 to 30 inches of this "select" material must be used. After the pipe has been protected by this "soil pad", the type of backfill is not as critical. However, rocks will still be removed to prevent them from frost-heaving into a farmer's field at a later date. The topmost layer of the backfill will be the stockpiled topsoil, where this has been negotiated as part of the easement agreement. Sand is an excellent backfill material and soil pad.

37 See Appendix IX, Leak Detection; and Appendix II, Spill/Pollution Concerns.

38 The EIS has considered three alternative routes and two alternative segments on the present route in the Northfield area. This Final EIS provides additional information on the railroad alternative (see Appendix IV). See also Chapter 5 of the original Draft EIS and of the Draft Addendum.

39 Tables 3 and 4 of Chapter 2 of the Draft Addendum present data on land use and crop acreage by township. Damage payments will be based on the current market value of the crop which would have been produced, for a quantity based on the highest average productivity per acre in the county and will include payments for reduced productivity after the pipeline is installed.

40 While it is true that some utilities such as transmission lines can create "patchwork patterns" in agricultural land as noted in the comment because they are above-ground and thus interfere with agricultural operations, pipeline should not normally interfere with the use of farm machinery. However, it is recognized that the pipeline may interfere with future drain tiling (See Appendix XIII.)

41 The Claremont Game Refuge is a so-called "Statutory Refuge", which means that it is private land, where designation as a refuge was requested by landowners so that the discharge of firearms could be prohibited. It contains no publically owned lands or receives no special management, and was not established because of any unique resources. The portion of the area through which the pipeline is proposed is entirely cultivated, and the pipeline will have no significant effect on wildlife habitat.

42 See Appendix II, Spill/Pollution concerns.

43 The Draft states that "the bottomlands along the Cannon River constitutes the only distinct bottomlands type ecosystem found along the route". For this reason, the specific Cannon River crossing was described as an example of the bottomlands ecosystem. The Draft Addendum describes bottomland forests "along river valleys and floodplains..." and does not select a specific crossing as an example.

A description of both the East Alternate and West Alternate Cannon River crossings is included in the Draft Addendum on pages 29-31. An aerial photograph of each is included in Appendix B, and shows the extent of forest and cropland in the vicinities of the crossings. The descriptions include detailing of the size of the floodplains and the outcropping of bedrock.

RESPONSE

There are no unique ecosystems in the immediate vicinity of the route that would merit "special" consideration. River and stream crossings are recognized as inherently more sensitive areas, and receive careful restoration efforts as described on page 83 (3.1.2 Surface Waters) of the Draft. These are not considered "special" but simply necessary. See also pages 66 and 88-89 of the Draft concerning endangered species.

44 Concur.

45 See response to comment 41.

46 Concur. However, the vegetation affected will, for the most part, become re-established, and the long-term impact on habitat will be minimal.

Prairie Creek is generally shallow and intermittant at the crossing site (T110N, R20W, S11). It is basically a minnow stream when flows exist and provides no permanent game fish habitat at the crossing site, but game fish could occasionally migrate to the area during periods of sustained flow, from the lower reaches and Lake Byllesby.

47

The Upper Iowa River is generally shallow and basically a minnow stream. Suitable habitat for game fish does not exist during most of the year. In Lake Louise, however, additional stream flows and deeper water provide suitable habitat for blue-gills, orange-spotted sunfish, crappies, northern pike, and bullheads.

Dodge Center Creek is a shallow minnow stream at the crossing site. Further downstream near Mantorville the stream provides marginal habitat for smallmouth bass.

48 Mr. Thomas Morley of the Department of Botany, University of Minnesota states that "the proposed pipeline route will run through no trout lily sites that I know of, nor is it very close to any known ones". (Letter, April 3, 1978). Mr. Morley has also stated that the railroad alternative route will not affect any known trout lily sites. The Bobwhite quail is classified by Minnesota DNR as a "threatened" species, while the wood turtle is classified as a "changing or uncertain" species. Neither the Bobwhite or the wood turtle is classified under the Federal Endangered Species Act.

49 See Minnesota Energy Agency response, Appendix I, Need Issues.

A. POLICE SERVICES

County or Municipality	No. of Officers	Detention Facilities
Dakota:	46	
South St. Paul	30	Yes
West St. Paul	22	Yes
Mendota Heights	10	Temporary
Mendota-Sanfish Lake-Lilydale	5	No
Eagan	18	No
Burnsville	56	Holding Cell
Apple Valley	17	No
Rosemount	7	No
Lakeville	13	No
Farmington	7	No
Hastings	16	Yes
InverGrove Hts.	14	No
Coates-Vermillion	1	No
Rice:	12	
Faribault	25	Yes
Northfield	17	No
Dodge:	7	
Kasson	2	No
Dodge Center	3	No
West Concord	1	No
Hayfield	(1 deputy under contract)	No
Mantorville	(1 deputy under contract)	No
Steele:	10	
Owatonna	23	Yes
Medford	1	No
Ellendale	1	No
Blooming Prairie	2-1/2	No
Mower:	22	
Austin	34	Yes

3 municipalities with contracts
3 municipalities with independent services.

B. FIRE SERVICES

Municipality	Nature of Service
Dakota County:	
Apple Valley	Volunteer
Burnsville	5+ Paid
Eagan	Volunteer
Farmington	Volunteer
Hampton	Volunteer
Hastings	5+ Paid
InverGrove Hts.	Volunteer
Lakeville	Volunteer
Mendota Hts.	Volunteer
Miesville	Volunteer
Randolph	Volunteer
Rosemont	Volunteer
South St. Paul	Full Paid
West St. Paul	5+ Paid
Rice County:	
Dundas	Volunteer
Faribault	Full Paid
Lonsdale	Volunteer
Morristown	Volunteer
Nerstrand	Volunteer
Northfield	Volunteer
Steele County:	
Blooming Prairie	Volunteer
Ellendale	Volunteer
Medford	Volunteer
Owatonna	5+ Paid
Dodge County:	
Claremont	Volunteer
Dodge Center	Volunteer
Hayfield	Volunteer
Kasson	Volunteer
Mantorville	Volunteer
West Concord	Volunteer
Mower County:	
Adams	Volunteer
Austin	Full Paid
Browndale	Volunteer
Dexter	Volunteer
Elkton	Volunteer
Grand Meadow	Volunteer
LeRoy	Volunteer
Lyle	Volunteer
Maple View	Volunteer
Rose Creek	Volunteer
Sargeant	Volunteer

RESPONSE

51 Northern Pipeline Company of Delaware, Inc., intends to conduct a survey as per the recommendations of the Minnesota Historical Society, under the guidance of a qualified archaeologist.

52 This information was provided in section 2.8 of the original Draft EIS.

53 We concur. Soil mixing will occur and will reduce productivity to varying degrees and for varying periods of time. The pipeline company is liable for such damages and landowners should be compensated accordingly.

54 See response to comment 41.

The contract between Northern Pipeline Company and the firm selected to construct the pipeline will contain a schedule and a target date. These estimates will be made by people experienced in pipeline construction and will be based on 10 hours per day, 6 days per week.

55 The Cannon River at either of the two proposed crossing points is less than 100 feet wide. This is a small crossing when compared to many which have been made. It is estimated that construction of the pipeline across the Cannon River will span approximately two weeks. This construction activity will be scheduled so that it will result in only a minimal inconvenience to recreational traffic.

56 The impacts noted were discussed in section 3.1.2 of the original Draft EIS. Permits from the Department of Natural Resources will be required for all stream crossings. The permits will specify conditions to be met to minimize adverse impacts to public waters.

57 The Draft Addendum recognized that the Cannon River area has shallow and exposed bedrock, and proposed additional protective measures in this area. See responses to Froehlich Comment #5 and Buchwald Comment #20.

58 We concur with the comment.

59 See discussion of the Railroad Alternative, Appendix IV.

60 See discussion of Soil Compaction Effects, Appendix VII, and the original Draft EIS, p. 83-84.

We concur with the comments regarding the effects of soil mixing.

It is recognized that soil mixing will occur, even with topsoil segregation procedures, and that adverse weather could result in the "worst case" circumstances cited. It will largely be the responsibility of Northern Pipeline Company to
61 insure that its contractors do not operate during extremely wet periods, and also that the trench is kept open for the shortest time possible to avoid the conditions cited. The Company is also responsible for compensating landowners for lost soil productivity. Landowners should not sign post-construction releases until compensation for such damages are settled on.

The Department of Agriculture has reviewed the proposed tile repair procedures, and provided the following comments:

> "From an engineering perspective, the methods proposed for repairing cut or disrupted drainage tiles appears to be adequate. The actual application of these methods of repair will be crucial to the performance of the entire system, once repairs have been made. Improper or sloppy repairs, even when these methods are used, will result in a tile system which does not function as designed. It can result in decreased productivity or even crop failure in areas of the tiled field outside of the right-of-way.

62

> "The actual benefits of installing temporary connections of severed tile lines during constuction will vary depending upon:
>
> 1. The type of topsoil and subsoil;
> 2. the length of time the tile lines are severed;
> 3. the time of year;
> 4. the amount of rainfall; and,
> 5. the terrain of the field.
>
> "If the tile lines are to be severed for an extended period of time during construction, temporary connections should be considered to minimize the possibility of crop damage to areas of the field outside of the right-of-way. Temporary connections will also minimize the possibility of drainage from the tile system into the excavated ditch."

Concerning routing parallel to land boundary lines, see response to Comment 11.

63 The comment is noted. Fracturing would occur only in areas where the trench is in bedrock.

64 This has been recognized and addressed. See Appendix II, Spill/Pollution Concerns, and the response to Comment #2.

65 The effects on groundwater noted here are expected to be minimal. No effect on groundwater yields is expected. Final alignment of the route will be adjusted to avoid wells. It is recommended that active wells be avoided by at least 100 feet, and preferably 300 feet, and that any abandoned wells found during construction be capped in accordance with Department of Health procedures. Any active well

displaced by pipeline construction would have to either be compensated for or replaced by the Company, as provided for in the Easement Agreement negotiated with the landowner.
See response to Comment #14 for current acreage figures.

No new access roads are planned. The section line road network provides more than adequate access. All off-road traffic is intended to remain on the right-of-way easement.

Housing facilities for workers will consist of existing hotel/motel accomodations or camper/trailer type vehicles. These vehicles are anticipated to utilize established campgrounds. No significant vegetation destruction is anticipated as a result of housing.

The following table presents the percent of harvested land (within the townships traversed by the route) which will be affected by the Company's proposed route and the estimated value of the corresponding crop loss in dollars, by county.

County	Percent of Harvested Land Within the Townships Traversed by the Route	Estimated Value of Crop Loss ($)**
Dakota	0.266% (0.228%)*	24,866 (28,292)
Rice	0.241% (0.222%)	24,959 (27,478)
Steele	0.065%	2,880
Dodge	0.150%	34,441
Mower	0.211%	39,705

66

*Numbers in parentheses are for the west alternate route (in the Northfield area).
**Based upon an estimated 1977 value of $220/acre (based on Crop and Livestock Reporting Service data).

With the exception of the east alternate in Dakota County (at 0.266%), in each of the counties the route traverses less than one-quarter of one percent of the harvested land in the townships which are traversed. This number is considerably smaller if considered on a county rather than township basis. It should be noted that the value of the crop loss does not represent a dollar loss to the farmer and damages paid are approximately equivalent to two years' production.

Where negotiated in the easement agreement, topsoil will be separated from subsoil and stockpiled, to be replaced at the completion of the backfill operation.

During the negotiation of the easement, the landowner has the opportunity to aid in the selection of the final alignment across his land. The company will attempt, to the best of its ability, to comply with the wishes of the landowner. It would indeed be the unusual case in which the route could not be adjusted to miss a windbreak. These and other routing requests should be presented to the right-of-way agent during the negotiation for easement. If at all possible, the company will attempt to comply.

Considerable effort has gone into selecting a route which avoids as much forested land as possible. Less than one percent of the route traverses forest, a total of about 6 acres. Most of this area lies along rivers and streams. In cases of

savannah-prairie type associations, with widely scattered individual trees, it should be possible to avoid such trees. Of the trees which are removed, the owner has the option of disposal methods or salvage.

67 The impacts noted have been addressed in the EIS. It should be noted, however, that brush and other natural vegetation will be allowed to become reestablished in the right-of-way; only tree growth will be controlled. Therefore, the impact on the habitat of small mammals and birds will be short-term.

68 See responses to Comment #48.

69 We concur with the comments.

70 The Pipeline Company is liable for all damages incurred to landowners as a result of pipeline construction. Initial damage payments include an amount for future reductions in productivity. The amount is negotiable between the Company and the landowner. Landowners could also negotiate to have a clause included in their easement agreement to allow additional damage payments if future crop losses exceed the estimates used for determining the initial payments.

See Appendix VII for a discussion of soil compaction effects.

71 We concur with the comments regarding inconvenience to farmers. In regard to damages to roads, the pipeline company must obtain permits from the appropriate agencies for all crossings of public roads. These permits require restoration of roadways to specifications set by the agency. The company is responsible for all damages to public roadways caused by construction of the pipeline.

72 We concur with the comment.

73 We concur with the comment. Noise could especially affect specialty farms such as turkey or mink farms.

74 We concur with the comment. However, the effects noted are not impacts <u>on</u> the climate.

75 The <u>type</u> of land use on the surface of the right-of-way will not materially change over the majority of the route, since farming will continue, although there will be some impacts such as reduced productivity as discussed elsewhere.

76 It is recognized that the Cannon River crossing and the adjacent areas of shallow and exposed bedrock present a higher than average potential for pollution of groundwater in the event of an oil spill. Therefore, special measures have been proposed in this area to reduce the potential of a spill occurring, as outlined in the response to Buchwald Comment #20.

The following information, developed by the U.S. Environmental Protection Agency, is presented on the effects of an oil spill on soil and vegetation. The reader is referred to the publication cited for references to the studies on which this information is based. (See also Appendix II, Section III B-E.)

"Vegetation can be affected for various reasons. For example, bacteria that convert the oil to organic matter create anaerobic conditions in the soil subsurface. It is largely the inability of plant roots to obtain sufficient oxygen and moisture which inhibits plant growth. Initial oil contact with soil usually stops plant growth because the volatile fractions enter the plants and seeds creating a debilitating narcotic effect.

"The ability of plants to resist oil contamination is directly related to the depth of rooting, ease of replacing stems, particularly rhizomes. Researchers generally agree that large concentrations of oil may create immediate toxic conditions for plants.

"The extent and duration of inhibited soil fertility depends largely upon the concentration and depth to which the soil is saturated with undegraded oil. Soil containing degraded oil will exhibit signs of increased fertility...

77

"The concentration at which oil addition is toxic to vegetation is of the order of 1 kg per m^2 of soil, depending upon vegetative and soil types. Even soils saturated to depths of more than 1.2 m (4 ft.) eventually showed signs of increased productivity although the period required for soil reclamation was 7 yrs. It has been suggested that oil pollution damage to plants can be minimized by heavy fertilization. This action is probably a simple mass-action effect operating by forcing the necessary nutrients into the plant.

"There is no indication that higher plants can utilize the energy content of oil for growth purposes. Plants will increase the rate of moisture loss and can compete with the microorganisms utilizing the oil for available nutrients. On the other hand, a number of studies have indicated that the microbial populations present in the rhizosphere are enhanced in both numbers and species diversity over populations in root-free soils. This is due in part to the release of amino acids and vitamins by plant tissue. The synergistic relationship is completed by the microbial production of metabolic by-products beneficial to plant growth.

"Further study is required to define the extent to which rhizospheric bacteria are capable of degrading oil spill debris substrates and, if so, what the degradation rates are. The existence of plants may also increase oxygen requirements in the oil/soil mixture and root zone by providing more carbon in the form of root tissue."
(Excerpted from Oil Spill: Decisions for Debris Disposal, Volume II, U.S. Environmental Protection Agency, 1977.)

78 See Appendix II, Section III.

79 Removal of minerals will be restricted within the pipeline right-of-way.

80 With the major exception of extensive surficial sand and gravel deposits in Dakota County, the proposed pipeline traverses surficial drift deposits throughout most of its extent in Minnesota. By the nature of its origin and deposition, glacial drift has a major component of clayey materials. Most of the natural recharge to the bedrock acquifers in the study area is vertically percolating groundwater from the saturated parts of the overlying glacial drift. The thickness and lithology of the glacial drift in the study area are extremely variable - extensive clay thicknesses occur at the surface in some areas, with underlying sand and gravel deposits. Where thick clay deposits overlie bedrock aquifers, groundwater percolation is severely retarded.

See also Appendix II, and responses elsewhere to similar comments.

81 See Appendix II, Section III.

82 Northern Pipeline Company has provided the following response:
The current schedule for termination of the availability of Canadian crude will, under present conditions, drive up the price of fuel oil as the market demand exceeds the available supply by a greater and greater margin. Ultimately, the only available supplies of crude in this situation would be the relatively small contributions of the Portal Pipe Line, and whatever could be barged or rail-carred at higher transportation costs, with winter restrictions on barging and the attendant increase in storage facilities. As shown in Table 28 on page 102 of the Draft, a pipeline will provide the most economical mode of transporting crude to the refineries. Thus the effect of a pipeline on fuel oil prices will be to hold them at a lower level than any other transportation option.

Comparisons have been made between Northern Pipeline and Northern Tier Pipeline. A comparison of stated anticipated tariffs of the two lines at first glance suggests that Northern Tier is more economical. This comparison can be misleading. The stated tariffs are based upon the assumption that the lines will operate at the specified volumes. Northern's volumes are based on the requirements of the Twin City refineries and are realistic estimates. There is some doubt throughout the industry, however, that Northern Tier can find the shippers to provide the volumes on which their stated tariff is based. This is supported by the continued reluctance throughout the industry for individual oil companies to nominate volumes which they would ship via Northern Tier, and most recently by Amoco's withdrawal of support for the project.

At this time, there is very limited interest by prospective shippers in the Northern Tier proposal. The industry lacks confidence in the validity of the proposed tariff. In the event that Northern Tier operates at a lesser volume than that on which the tariff is based, the tariff must increase.

Attached to these responses are communications from Ashland Oil Company and Continental Oil Company, expressing their interest for the Northern Pipe Line Company project.

RESPONSE

Another aspect of this question is the cost of Alaskan crude. By Federal law, the price of a barrel of Alaskan crude is set by the market price of imported oil at the port of entry. Thus, the cost of a barrel of Alaskan crude will be the same whether it is tankered to Port Angeles or to the Gulf Coast. The difference in transportation costs affects the wellhead price of Alaskan crude, but not the market price at the port of entry. Alaskan crude will become available to Northern Pipe Line when production exceeds the capacity of the West Coast refineries that can handle Alaskan crude, and the producers seek additional markets.

If Northern Tier cannot meet their volume estimates, their tariff would increase substantially. Differences in tanker costs between the West Coast and Gulf Coast will have little effect on the price of Alaskan oil to Minnesota. For these reasons, we believe that Northern Pipe Line's effect upon fuel prices will be to keep the prices at a lower level than any other transportation option.

83 The Koch Refinery is currently in violation of ambient SO_2 standards. The Minnesota Pollution Control Agency is currently negotiating a stipulated agreement to bring the refinery into compliance.

84 Comment noted.

At this time, it is not possible to determine if and how a pipeline would affect the property values of agricultural land. Although the affect may have not been substantial in the past, the increased awareness of the impacts of pipelines and powerlines may very well change this in the future. Over the past 3 years the public's consciousness of these issues has been raised by farmers protesting such projects and the news media coverage of the issues. The market value of property,
85 among many other things, is based upon the buyer's "perception" of the desirability of the property. A negative perception of property containing a pipeline may, in some cases, be translated into a lower market value for the property. The Minnesota Department of Agriculture is currently conducting an attitude survey of farm owners in an attempt to shed some light on this theory.

86 See Appendix IV, Railroad Alternative.

The statement cited referred to use of the pipeline right-of-way in a <u>developed</u>
87 area such as a residential subdivision or commercial or industrial development, and does not apply to agricultural land. The right-of-way can continue to be farmed in agricultural areas.

88 See Appendix I, Need Issues

89 See Appendix I, Need Issues.

Vonny

RECEIVED

MAR 8 1978

BUREAU OF PLANNING

March 1, 1978

Dear Vonny,

1 We've drawn up a resolution describing the inspection board the farmers want. This is the resolution:

A drainage inspection board shall be designated by the County Board of Commissioners and shall inspect and approve the drainage tile and open ditch crossings on private, county or judicial drainage systems crossed by the pipeline company. A board such as this shall consist of one pipeline company representative, one member of the County Soil Conservation Service, two farmers selected by the involved landowners, the landowner whose farm is being crossed, one area tiling contractor, and one representative from the pipeline contractor. This board shall have the power to stop the contractor if said repairs are not being made satisfactorily or if the weather conditions become unreasonable to work in this causing undue damage to the land and roads of the county. Payment for such inspectors shall be the responsibility of the owner of the pipeline.

In addition to the above resolution, the farmers would like to see an escrow account set up by the pipeline company for a period of five years from which this inspection board can draw money to pay farmers for damage caused to their land by the pipeline during the five years.

2 We've also written up a list of procedures not necessary for Northern Pipeline Company of Delaware to comply with if the proposed pipeline is put on railroad right of way, rather than farmland.

1. Removing and keeping topsoil separate is not necessary on railroad property.

2. The pipeline would probably need only 36 inches of cover, rather the 66 inches wanted by the farmers.

3. No trench crossovers would be necessary for the farmers to reach their fields.

4. No fences would need to be repaired, rebuilt, or maintained on railroad property.

5. Along the railroad right of way in Dodge County there are only 8 tile lines crossing the railroad. If the pipeline were to cross farmland, it would probably cut about 700 tile lines. It was stated at the Dodge Center ANR Hearing on 7.6.21 that it cost $150 - $200 to repair each tile crossing. Using these figures it would show a savings of $103,500 - $138,400 to Northern Pipeline in Dodge County alone if the pipeline is put along the railroad.

6. Subsoiling of the compacted right of way would not be necessary on the railroad right of way.

7. No rock picking would be necessary on the

COMMENTS

(11)

railroad right of way.

8. No crop damages would have to be paid on railroad right of way. With 6 acres of easement right of way per mile, and about 27 miles of right of way in Dodge Co., this adds up to 162 acres that damages must be paid on. Several people have told us they were paid crop damages of $1300 per acre over a five year period when the Dome Pipeline crossed their farms. Using these numbers, $210,600 in crop damages would have to be paid in Dodge County alone, but along the railroad none would have to be paid.

9. It would not be necessary for Northern to obtain the farmer's permission to inspect the pipeline when crops are growing.

If Northern Pipeline is eventually given permission to build this proposed pipeline, it would seem the most logical to route it along existing right of ways, because of the substantial savings to Northern. If 400 miles of the 476 miles of the proposed pipeline were to cut through tiled farmland, Northern would save $4.6 million in tile crossings and crop damages alone by following an established right of way. These figures don't include any money for the easement right of way, which farmers in Iowa received $50 - $60 per rod for

Please let me know if I can be of any further help to you.

Sincerely,
Steve Henslin

Steve Henslin
Rt. 2, Box 123
Dodge Center, MN
55927

COMMENTS

RESPONSE

To Letter of Steve Henslin
Dodge Center, Minnesota

1 The state has developed a liaison procedure whereby a state liaison worker will monitor construction to determine compliance with all provisions of Grants-of-Easement and state, county and local permits. (See Appendix XI). The state has no authority to establish an inspection board as outlined in the letter, and has no authority to stop construction for non-compliance. The liaison procedure will operate satisfactorily only with the cooperation of all parties involved. Non-compliance with easement or permit conditions will be reported to the company and to the appropriate agencies who will seek to resolve the problem.

2 A discussion of routing both within the railroad right-of-way and adjacent to it is presented in Appendix IV. As noted therein, it is not possible to build the pipeline within the railroad right-of-way primarily because there is not the necessary 50 feet of clear right-of-way on one side of the centerline of the track. For the most part the railroad right-of-way is 100 feet wide (50 feet each side of centerline), and it is partially taken up with the track, roadbed, fill, ditches, and cut-slopes.

COMMENTS

March 22, 1976
Dodge Center, Minn.

Department of Natural Resources
Environmental Review Coordinator
3rd 7 floor Centennial Building
St Paul, Minnesota 55155

Dear Sir:

In looking over the E. A. S. Draft Addendum, I have found some areas that aren't explained well enough or haven't been studied as deeply as I feel they should have been for a project of this nature.

1.1 Summary Statement

1 I see that it is to supply Pine Bend facilities as well as those at St. Paul Park. The St Paul Park facilities are owned by Ashland, a firm who is not backing or financially supporting this line. Are there existing pipelines between these two facilities or will a river crossing be required by a new pipeline? If so, this is not addressed in this Addendum.

1.4.3 & 2.1.7 Future Facs.

2 It states that Minn. will need a pump station by 1982. Where will it be & what impact will it have in that area? It should be addressed because a well planned project will already have a site picked for such a station. Are there enough electrical supplies in the area or what effect on area coal supplies and air quality will a generating plant have on the area.

1.9.1 Construction Tech.

3 I know by law they don't have to do any more x-raying than is in the statement. I guess what disturbs me is, that at a river crossing etc. they do 100% x on our farmland they do only 10%. I realize that a river is a direct source for pollution, the roads etc. I presume for safety. Now my point is this There is a certain safety factor on farmland also, by way of the farmer working the land, hunters, livestock etc

COMMENTS

It may harm someone in the same way as it could along a road etc. in case of a leak, the pollution can be as serious a problem as a river crossing, the reason is as follows. It has been proven that crude will get in tile lines & it is estimated the line will cross 3,000 or more lines in Nebr. so I see this as a very serious problem. Using their figures from their monitoring devices they can have a leak of up to 1,000 gal a day & it will go undetected. I don't think I have to say what a problem this could be, if a leak like this, or any other that went undetected could do when it got into a tile line. Many of these lines run for miles before they empty into a stream etc. If this happened in the winter ice etc may go undetected for quite some time. The spill if goes topside will ruin the topsoil for many yrs. thus no food production. To me a farmer its a serious problem because it will affect me very much if this happens. From the standpoint of the ruined soil & the tile lines, which line & on whose farm is it on? How many lines will be dug up to find it & when they do will the line be ruined? So my point is, why not X-ray 100% of the welds & if they have any later fix them before the pipe is put in the ground & is put in use. If is found after is in use will have a leak (a problem), will have to find where (a problem), dig it up (a mess), & etc.

4

1.9.3 Leak Detection System

It states a small leak may not be detected for some time, this I presume is the type that will leak into a tile line. If this leak is at the proper place & time & wasn't detected for some time, will cause a serious problem. So to back up what I said above why not X-ray 100% to eliminate the chance for this problem.

5

2.1.5 & 3.1.1 Other Land Use, Land Use

I don't see anything about boring a road, railroad etc. as to the affect it will have on the neighboring farmland. What will be done with the extra dirt encountered in boring? Is it to be hauled away? Also when they cross another pipe is the area needed at that point more than 50'? thus causing more damage, also the safety factor in event they rupture the other line. Are all these to be bored?

6

2.5.3 Fishery Resources

Is your report up to date? Have you checked some of the smaller

7

COMMENTS

or other streams that you have no report listed for? I'm sure many of these have more fish in them than you may realize.

3.1.3, Soil mixing

I don't approve of the double ditching method they are talking about, because what happens is this: the topsoil is put on one side & the subsoil on the other side of the trench. the problem is that the topsoil side is smaller than the subsoil side, so they drive on it, thus its compacted & isn't there to put back on top. They should push it off to the far side of the 50' (if is wide enough) & never drive on it this would be much better, the soil would be less disturbed, more productive & more like it was before the pipe was put in. They could blade the whole 50' or else the area where the trench & machines are to work off to the far side, do their job, then push the topsoil back on top. this is a practice I think the D.N.R should be greatly concerned with, because outside of water does this country have another resource of more importance than prime farmland? (corn, beans, livestock, FOOD) I think we need more land use planning like new things like this, powerlines etc. along R.R., highways, etc. My reasoning is; the amount of farmland (prime) that goes out of production is enormous, & we aren't getting new land of the quality that's going out, at a fast enough pace to keep up. So when is or how long will it be before we have a FOOD shortage? the majority of this line crosses prime farmland! 8

3.1.3 Drain tile

I don't believe there is a perfect method for fixing tile when it is cut like this, outside of don't cut it in the first place. In extremely wet weather I don't feel the repair method you have described will work properly, (too many problems later) I do not see any specs. as to how thick the channels are to be. I think that even with the rust protection in time the channels will rust out, causing a problem maybe 10-20 yrs. later. I feel that maybe some other materials that resist rust & dampness should be used. How about a plastic coated channel or something of that nature? From what tiling contractors tell me, & from my own experience with tile, they are going to have to go back farther than 2 ft on each side to get a good solid base for the channels, to prevent a misalignment problem in a yr or two. 9

COMMENTS

Also I feel a better compaction system or something between the channel & pipeline should be in order to prevent future misalignment problems. I also feel tile of 8" or larger whether they are mains or not, (especially mains) should be bored & cased to prevent misalignment problems. I feel more study should go into this because it crosses so many tile lines.

3.2.4 Groundwater

I wonder how the 50' of till was determined & if it is of the proper depth? Were soil borings taken say every quarter mile or so along the route? I think you will find in many cases along the line there are sinkholes, sandpoints, etc that are not 50' of till. I think more study should have been put into this.

10 Did any actual case studies or problems in the past go into this? If so was it in the type of soil that is in the path of the proposed line? Also was rain a factor in the test, because Federal studies state rain makes a difference, it speeds up penetration of the soil. Thus faster soil, groundwater pollution & will get into the lines faster.

I think you use 75 hrs for a spill to be cleaned up. I don't think 75 hrs. is enough time, because I don't know of any spills that have

11 been cleaned up in that period of time. In our area with the vast aquifer we have & the frequent rains, I see the the 50' of till & the 75 hr are not enough time & till to be cleaned up without problems. I see that as a problem because of how big our aquifer is. Another question, a well has to be 100' from a pipeline or underground storage because of contamination problems, so I don't think 50' of till is enough.

12 From the farmers I've talked to, there has to be about 25% of the wells along the line that are sandpoint wells in origin, some are as deep as 100'. A spill is very sure to pollute these & our water system.

3.1.4 & 3.2.4. Sinkholes, Groundwater

13 The sinkhole problem is addressed as in the Cannon River Crossing, this should be studied along the whole route, because I know there is more holes than this. There is also underground blasting to the south of us along the border. The route goes through & very close to these problems.

COMMENTS

I feel much more study should go into this as this is a very serious problem.

Some other problems I see & I'm not sure which heading to put them under, so rather than put in the wrong spot I will put at the end. They are as follows:

14 I don't see anything on what will be done with the soil from a spill. I don't find a place where there is a place addressed for a designated landfill & a cleaning process in event of a spill. Will it be hauled to a landfill & processed to bring it back to original state or what? If they haul it away & it isn't of the proper place, it will cause a pollution problem in time. Also the dirt they are to haul in will it be of the same type, qualities, etc. as was hauled away?

15 Also any future hydrostatic testing that is to be done in the future, where will it take place? What will they do with the water & oil mixture? Will they seperate it? Where will they dump it? If isn't disposed of properly will be a problem (pollution).

I hope a lot of careful study goes into this, because it can be of great impact to many people in many ways.

Sincerely
Dave Moenning
RR 2
Dodge Center, Minn. 55927

RESPONSE

To Letter of Dave Moenning

1 | See Response #7 to the Harold Froelich letter, and Appendix X, Letters of Intent.

2 | See Response #16 to the Mark Moenning letter.

3 | See Appendix II, Spill/Pollution Concerns; Appendix V, The Woodward-Clyde Report,
4 | and Appendix IX, Leak Detection. The hydrostatic testing of the pipeline will detect any leaks before the pipeline is put in use.

5 | See Appendix IX, Leak Detection.

6 | The soil removed in boring roads or railroads will be disposed of at locations agreed to in advance with landowners. More than 50 feet of right-of-way may be required at crossings of other pipelines or other locations, in which case a wider easement or temporary easement will be obtained from the landowner. Excavation around other pipelines is done with small equipment, and immediately around the existing pipe by hand to avoid damaging it.

7 | See Response #47 to the Mark Moenning (RCO) letter.

8 | See Response #8 to letter of Alvin Houston.

9 | The Minnesota Department of Agriculture has reviewed the proposed tile repair procedures and has stated they are satisfactory. The Department of Natural Resources has retained the services of a consulting engineering firm to evaluate these procedures and to make recommendations as to any changes that would further insure adequacy of tile repairs. Landowners may wish to consider these recommendations in their negotiation for the Grant-of-Easement. See Appendix VIII, Tile Repair Procedures. Also, Northern Pipeline Company has revised its proposed tile repair procedure, providing for "like kind" repair of clay, plastic, and fiberglass tiles. See Appendix VIII.

10 | The delineation of the areas having 50 feet or more of glacial till was done by the Minnesota Geological Survey (MGS). It was based on well logs and other information in the files of the MGS. In addition, MGS has gathered additional well log data in the LeRoy-Taopi area and has drawn a new map of the thickness of till in this area. (See Figure 2). The "50 foot line" is generalized and it is recognized there are still some areas of less than 50 feet of till on the route, particularly in the area of the Cannon River and the LeRoy area, where additional precautionary measures have been proposed. (See response to Froehlich Comment #5 and Buchwald Comment #20.)

RESPONSE

11 Clean-up of oil spills is done under the direction of the Minnesota Pollution Control Agency. The time required for clean-up will vary depending on the circumstances, but in most cases the pooled oil will be cleaned up within 75 hours, at which point percolation of oil into the soil or further spreading of the oil along the ground or on surface waters will greatly diminish. The final clean-up may take longer, but little additional damage will occur.

12 See Appendix II, Section II.

13 See Response #10 above. Regarding the majority of the route other than in the Cannon River area and the area of Mower County shown in Figure 2, the Minnesota Geological Survey has stated that based on their information, "the portions of the route in areas with more than 50 feet of till have in large part, over 100 feet of till. The chances are very slight that there is less than 50 feet of till in these places."

14 See Appendix II, Section III.

15 At this time, no hydrostatic testing is anticipated other than the initial testing before oil has been introduced into the line. If hydrostatic testing is done later, a permit would be required from the Pollution Control Agency for disposal of the water. The permit would specify discharge points and standards to assure proper disposal.

K.J.

7 Hillside Court
Northfield, MN 55057
March 13, 1978

RECEIVED
MAR 15 1978
BUREAU OF PLANNING

MN Department of Natural Resources
Environmental Review Coordinator
3rd floor
Centennial Building
St. Paul, MN 55155

Dear Sir:

I would like to make the following comments regarding the draft environmental impact statement for Northern Oil pipeline through Rice County.

1 First, I agree very strongly with the recommended east alternate. I believe that construction of the pipeline could have serious consequences for the trout population of Springbrook Creek, which would be crossed by the west alternate. Page 62, in the section on fishery resources, mentions this stream, but no comments are made on possible impacts that construction would have; this should be added to the EIS.

2 Section 2.5.h of the original draft document mentions the Minnesota trout lily. I am unable to determine from the map how close the line may come to an area near Kenyon, owned by The Nature Conservancy, which is one of the very few, if not the only area in which this flower is found. It would be a great tragedy if this area were disturbed.

3 Finally, I have studied long and carefully the aerial photo of the Prairie Creek crossing in relation to the map showing the pipeline route through Northfield and Wheeling townships, and I am unable to correlate them. The map shows the Prairie Creek crossing to be in Section 32 of Northfield township, at a point where Prairie Creek is running east to west. The aerial photo shows Prairie Creek running SSW to NE at the crossing, perhaps in Section 31, although that is not at all clear. I would be much concerned if the line passed to the west of the north-south township road which passes through the middle of Sections 6 and 7 of Wheeling township, as this is a very remarkable natural area.

Thank you for your attention to these comments, which I would like to have included in the hearing record.

Yours truly,

Marie Jonson

(27)

COMMENTS

RESPONSE

To Letter of Marie Jensen

1 See Response #5 to letter of C.E. Buchwald.

2 See Response #48 to letter of Mark Moenning (RCO).

3 The photo of the Prairie Creek crossing is on the west alternate route in Section 11 of Cannon City township. A photo of the crossing on the east alternate was not presented. The pipeline route is definitely east of the north-south township road in Sections 6 and 7.

COMMENTS

March 13, 1978
Farmington, MN 55024

Dear Mr. Ken Wald,

1 In reading through the Draft Addendum you say only a 3 ft. strip width would show a temporary crop loss. A ditch 3 ft. wide and 5 ft. deep with 12 to 14 in. of top soil and the balance of the subsoil of sand, gravel, and rock left open for one week will start to cave and instead of 3 ft. wide it will be 10 ft. wide on someplaces. And with one part top soil and 4 parts subsoil. How could one say that there would be only a temporary crop loss?

2 In your Addendum you say with 50 ft. of top soil over bedrock it would take quite some time before it got to the water and that oil would surface before it would go down, it would pond and could be recovered from soil by vaccum or suction. I never saw an oil spill from a pipeline, but I have seen where its dumped, such as engines drainings which is very small in comparrison to an oil spill and foilage or grass dies and the sopt stays bare for 3 years. I wonder what 2 or 3 hundred barrels would do to the soil, which would be about 12 to 16 thousand gallons of crude and if this leak would occur in a full grown corn field a pilot wouldn't even find it, by that time it would be located by the ground crew, and the unkown sinkholes, it would be in our water supply, and only 40 ft. from the bedrock it would soon be in our drinking water.

I have a feeling some think that we will never see the bottom of our breadbasket. Look at some of the other countries such as India and China. So I believe its time that we stop destroying our prime farm land, once we have gone too far there is no return.

3 The other evening a group of farmers on the pipeline route listened to a gentleman gather some information about the Northern Tier project over the Wood River. The fuel it would take to barge the cruel oil around the bottom of the U.S. and up the Mississippi to Wood River in one year would heat the cities of St. Paul and Minneapolis through the coldest winters as in 1975 and 1976. The energy in coal or fuel it would take to produce electricity to run the pump stations, wheras in the Norther Tier project the electricity would come from hydro-electric which would put no added strain on our energy resources. So with the Northern Tier project having many energy savings added I'm beginning to think that with the Wood River project Koch wants its own pipeline. But I've got enough faith in Dept. of Natural Resources that they will rule in favor of the majority instead of one.

Yours truly,
Mrs. Lawrence Brockman

RESPONSE

To Letter of Mrs. Lawrence Brockman

1 The ditch may cave in, especially during periods of heavy rain. This would result in a greater amount of soil mixing. The duration of the effects may be long lasting, and will vary with soil types, farming practices, and other factors, although most soils will return to near-normal levels of productivity in a few years. There would be a reduction in productivity over the entire right-of-way due to soil compaction, soil mixing, etc.

2 See Appendix II, Spill/Pollution Concerns.

3 See Appendix I, Need Issues.

Vonny Hagen 8

Rt. 2, Northfield, Mn. 55057
Mar. 9, 1978

MAR 13 1978

Mr. Wm. Nye, Commissioner
Minn. Dept. of Natural Resources
Centennial Office Bldg.
St. Paul, Mn.

Dear Mr. Nye:

The Draft Addendum to the Draft Environmental Impact Statement on the Minnesota portion of a crude oil pipeline proposed to be built from Wood River, Ill. to Pine Bend, Minn., is so replete with inaccuracies and misinformation that it is misleading and unfair to both the pipeline company and to southeast Minn. citizens. I urge your rejection of the proposal until a re-examination can be held.

Page 1, PP3. Planning based on this document could lead to problems for the pipeline company and for citizens and agencies.

1 Page 2, PP2. Glacial till depth over the proposed route as stated simply is not true.

2 Page 3, PP2. Valves on upstream side only. Leakage from other side thus is not prevented.

3 Page 14, item 1.9.3. PP 3 & 4. Not accurate.

4 Page 15, PP 2, Not environmentally safe. PP 3. Why state when such valves are not required?

5 Appendix H. PP 1. Statement "complete cut-off by 1982" not true. Lines 7, 8, 9, 10 a not true hypothesis. PP 3. a mistatement. The primary purpose is Environmental Impact.

6 Appendix H. page 2, PP 1, book proposes to interpret how Company feels. PP 2. Who interprests "Reasonable". PP4, same.

7 The fact that Prairie Creek, Straight River, Zumbro River, Root and Iowa Rivers, have their source along this route seem to indicate a water problem, but it is ignored by D. N. R.

The above references to pages and paragraphs is but a sample of error in this draft, and I feel this matter is worthy of your serious consideration.

Sincerely yours,
Alvin Houston

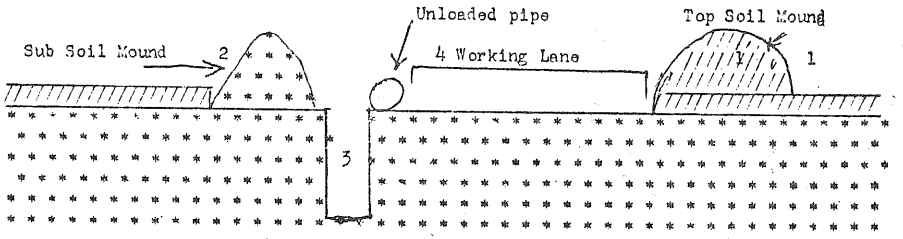
(57)

SUGGESTED METHOD OF PLACING A PIPELINE ACROSS FARMLAND

Top Soil, perhaps 6" to 24" deep.

Sub Soil.

1. Blade all top soil to one side of working lane and mound on top soil.
2. Trench sub soil and pile to opposite side of trench on only sub soil.
3. Trench 36" wide and no less than 66" deep.(Deeper where required by tile line)
4. All working traffic confined to exposed sub soil only.
5. After dug sub soil is returned, blade back top soil to original level.



* All cut or crushed tile lines to be restored to essentially as good a condition as before.

COMMENTS

RESPONSE

To Letter of Alvin Houston

1 Note that the paragraph cited states that the route was "selected to maintain the 50 feet of soil above bedrock wherever possible". It is recognized that some areas will have less than this amount; special measures have been proposed to minimize the hazards of a spill in the Cannon River crossing area and the area near LeRoy where there is a considerable amount of shallow bedrock (see pages 91-92 of Draft Addendum; also see response to Froehlich Comment #5 and Buchwald Comment #20).

2 The referenced section describes special precautions which will be taken in the area of shallow bedrock. Item number 2 states, "Extra valves will be installed in this area (shallow bedrock) with gate valves on the upstream side of the crossings of the Cannon River and the four channels of Chub Creek, and check valves on the downstream sides of each of those crossings".

This section clearly states that there will be gate valves on the upstream side and check valves on the downstream side of these specific crossings. A gate valve is manually controlled and affects flow in both directions. A check valve is automatic, like a flapper, and closes whenever there is a reverse flow in the pipeline. This system effectively prevents leakage from both directions in the area of a crossing.

See also Response #16 to the Mark Moenning (RCO) letter for a listing of valve locations, and the responses to Froehlich Comment #5 and Buchwald Comment #20 for the revised extra precautionary measures to be required in those areas identified as having less than 50 feet of glacial till.

3 See Appendix IX, Leak Detection.

4 Valves will be installed at the locations on the list referenced in Response #2 above.

5 See Appendix I, Need Issues.

6 Appendix H is a reproduction of a document prepared by the Northern Pipeline Company for landowners whose land will be crossed by the pipeline. DNR had no control over the preparation of this document; it is provided only for the interest of readers.

7 A great deal of information has been provided about the streams in question as well as the general matter of the potential for pollution of surface waters. See Sections, 2.2, 2.5.3, 3.1.2. and Appendix B of the Draft Addendum; and Section 2.2, 2.5.3, 3.1.2. of the original Draft EIS. Also, see Appendix II, Spill/Pollution Concerns, in this Final EIS.

RESPONSE

Alvin Houston

8

The Minnesota Department of Agriculture prepared the following analysis of the soil segregation method proposed in the attachment to the Houston letter, as follows:

> An alternative to the "double ditching" technique of segregating topsoil and subsoil is the removal of the topsoil from the entire work area of the right-of-way. This would be accomplished by blading the topsoil to one side of the right-of-way prior to any construction activity. Upon removal of the topsoil, ditching equipment could commence the actual ditching operation. This procedure will minimize the compaction of topsoil caused by construction equipment. Because topsoil would be mounded on topsoil and subsoil on subsoil, it is theorized that there would be less mixing of the soil horizons.
>
> It is difficult to determine which method of segregation will provide the greatest overall protection of the topsoil. The characteristics of the individual fields would have to be taken into consideration when making this decision.
>
> There are a number of disadvantages to the "right-of-way blading" approach which may make this method less advantageous than "double-ditching". Because the depth of the soil horizons are not constant, there is the probability that there will be more soil mixing associated with this method. This would occur by removing some subsoil with the topsoil if the blading level is set to remove most of the topsoil. If the blading depth is set high enough to eliminate the removal of subsoil, large amounts of topsoil would be left behind and would be mixed and compacted with the subsoil.
>
> Also, that right-of-way width would have to be increased to accommodate the larger stockpile of topsoil. This would result in a larger disturbance area and more area taken out of production during construction.
>
> The removal of topsoil from the entire work area would result in less compression protection for existing drainage tile in that area. With less protective cover, there would be a greater likelihood that the weight of the construction equipment would crush or otherwise disrupt existing tiling.
>
> Finally, although blading would minimize compaction of the topsoil in the work area, it would not reduce compaction of the subsoil region important for root growth. Depending on the type of subsoil, this could result in increased compaction of this area.
>
> Woodward-Clyde Consultants, retained to review some of the proposed methods of construction for this pipeline, recommended that, "the topsoil should be saved in cultivated and grazing lands". They concluded that "double ditching" was the most appropriate method for accomplishing this.

Roger and Donna Bhend
R. R. # 2
Le Roy, Minnesota 55951

Minnesota Portion of Crude Oil Pipeline
Environmental Impact Statement
3rd Floor Cenntennial Building
St. Paul, Minnesota 55155

March 13, 1978

Gentlemen:

1 This is a letter concerning the letter my father, Froderio Bhend sent you earier. We are enclosing a map showing the well locations and the names of the house owners along with the depth of the soil above the bedrock. These well depths were obtained from our local well driller, Clarence Folgero.

1. Fred Bhend, 40' of sand and 10' of sand and clay mixture, then bedrock. Total depth 105'. This is situated on a hill at least 15' to 20' higher than the proposed pipeline route.

2. Art Berg, 30' of sand and clay, then bedrock, total depth 105'

3. Carroll Byrd, 10' sand, 20' sand mixture then Bedrock. Total 100'.

4. Dr. Roger Morse, 35' of sand, then Bedrock. Total depth of well 95'.

5. George Bergland, 25' of sand then bedrock. Total depth 95'.

6. George Flikki, has a spring he gets all of his water from. This spring comes up through the rock layer in back of his home.

7. This is the ground fault in the field the tractor tire fell through. It was about 7' deep and 4' accross.

There are several rock quarries east and north of Le Roy and within 2 miles of proposed route. There is blasting in this area, and no mention of this in the E.I.S.,and how this could affect proposed pipeline in the way of ruptures. The soils in sections 29 and 30 of Le Roy Township are quite sandy, and this would let spilled oil through quite rapidly. Section 19, 31 and 32 also have spots of sandy soil along the proposed route, With some even containing a type of quick sand.

We seriously question the surrounding conditions of the soil, lay of the land in this area. In this area certain very important [illegible]

answers need to be given concerning the crossing of proposed pipeline before finalization be given. More information need be found, before this is finalized.

We mailed a letter with this and more information to the Minnesota Geological Survey. On Friday,March 3, 1978, a Bruce Olsen called and asked if it would be all right to come down and talk to us. On Tuesday, March 6, 1978 he alsong with a Bruce Bloomgren came to Le Roy to talk with Clarence Fologero and us about these conditions. We found with what we had told them along with Clarence's information this area is very critical in passing through. They informed us with leakage of the crude oil a possiblityit could cause an irrevesible water comtamination or water pollution. They also said we had just reason to be concerned. This containation would not only affect our personal well but the Le Roy area. This is the time to think of these possibilities before they become a reality. Let us stress they said once polluted there would be no clean up.

Another interesting thing we found was the map compiled by Joseph E. Goebel, Minnesota Geological Survey showing the till thickness in Southeast Minnesota is different from the one on page 53 of the EIS. Their maps and research show we have less than 50' of soil over bedrock. This area is critical for there are faults in the limerock and deep sinkholes. They said Clarence's information seemed to confirm this. Please check with these fellows. One thing that concerns us is if the map on page 53, came from the Minnesota Geological Survey why does it vary from the one compiled by Mr. Goebel? In showing the original map, which we have a copy, others too are wondering how it came about that they differ!? We beleive we have an explanation coming from you, the DNR.

2 In section 30 of Le Roy Township theproposed pipeline crosses two branches of the Upper Iowa River. We think they should be treated like main branches of the Upper Iowa River. The south branch, which is crossed in Fred Bhend farm is spring fed from the Richard Koch farm, in section 31. The other branch which is crossed on the Gaylord Winfeild farm, drains several sections in Lodi Township. The main branch of the Upper Iowa River and the feeder branches are the home of abundance of fur bearing animals: Mink, muskrat, raccoon and beavers. Any oil spills would be dangerous to the natural environment of these animals along with the fish in these branches.

Rog's folks and we have fished off the bridge on the township road which lies on the southside of hwy #56 and the railroad tracks, and behind bergland's, Berg's and Flikki's residences. There is good fishing of pan fish in the Upper Iowa River leading to the State Park. Please check your information and go out find what we have told is correct.

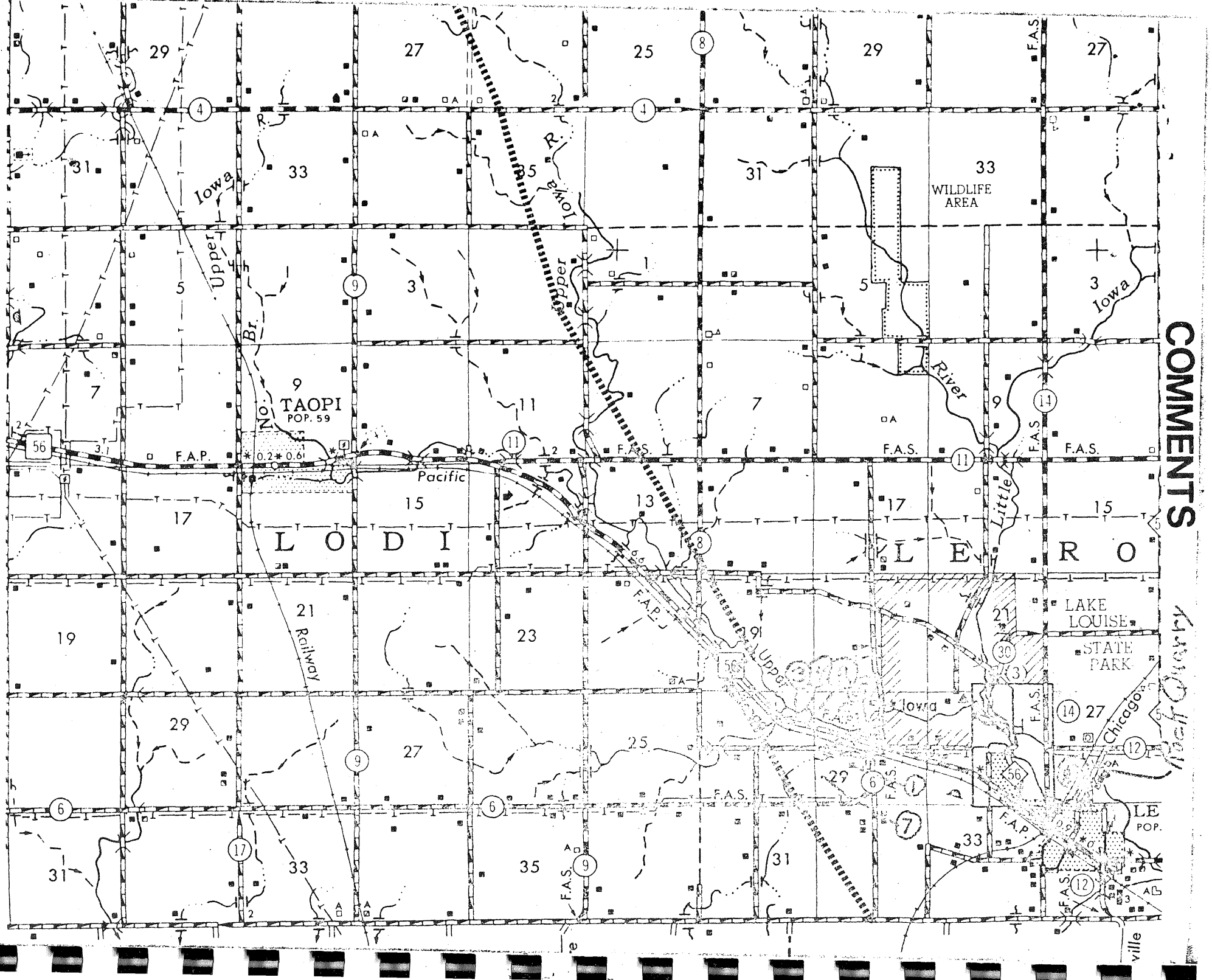
Please feel free to contact us: 507-324-5964.

Sincerely,

Rogers & Donna Bhend

Roger and Donna Bhend

COMMENTS


TAOPI
POP. 59
LODI
LE RO
WILDLIFE AREA
LAKE LOUISE
STATE PARK
Upper Iowa R.
Little
Pacific
Railway
Chicago
F.A.P.
F.A.S.
COMMENTS

RESPONSE

To Letter of Roger and Donna Bhend
LeRoy, Minnesota

1 The Minnesota Geological Survey has produced a new map of the thickness of the glacial till over bedrock in the LeRoy area (see Figure 2). In those areas shown on the map as having less than 50 feet of till over bedrock, Northern Pipe Line Company will be required to x-ray 100 percent of the girth welds, to use thicker walled pipe (½", similar to that used at stream crossings), and to install additional valves at stream crossings to be identified by the Department of Natural Resources.

2 DNR fisheries biologists have indicated that the Upper Iowa River itself is generally shallow and is basically a minnow stream. Suitable habitat for game fish does not exist during most of the year. However, some of the tributaries may contain game fish populations as stated in the letter. DNR will consider requiring additional valves at the streams cited, for added protection.

R.R. 2
Le Roy, Minn., 55951
Feb. 16, 1978

RECEIVED
FEB 20 1978
BUREAU OF PLANNING

Department of Natural Resources
Environmental Review Coordinator
3rd Floor Centennial Building
St. Paul, Minn., 55155

In re: Northern Pipeline Project & Soil conditions near Le Roy, Minn.

Gentlemen:

1 This morning, Gaylord Winfield, Le Roy Township R.C.O. chairman, and I met with the local well-driller and his assistant, namely Clarence Folgero and Kenneth Brownlow and got the following information. I live less than 2 miles west of Le Roy on the south side of highway #56, and these homes and farms mentioned had wells drilled by Mr. Folgero.

Frederic Bhend, myself, 320 acre farm. Drilled well in 1951 on the hill before building a new home. Well is in a small room just off the basement & water piped to hogs and cattle also. Drilled through 40 feet of sand and 10 feet of sand & clay. Total depth 125. Hit a crevice in lime rock and got the bit stuck for a day or two.

Geroge Bergland home on the north side of Highway #56, directly north of our home about 1/4 mile. Drilled through 25 feet of sand and well is 95 feet deep.

One half mile further west on north side of Highway #56, Art Berg home and 1 acre of land. Drilled through 30 feet of sand & clay and depth of well 105 feet.

Roger Morse home and 1 acre of land, next to Bergs. Drilled through 35 feet of sand. W ell 95 feet deep.

Carroll Byrd, home and 1 acre of land, neighbor of Morses. Drilled through 10 feet of sand, then 20 feet of sand mixture. Well 100 feet deep.

Boe Brothers, Stanley & Elwood, 2 miles southeast of here, just across the Iowa border in first section of land. Drilled well 137 feet deep. Hit a crevice in the rock. Had to put down a 5-inch pipe for 100 feet with a 4-inch pipe inside of it, because they couldn't stop the sand from coming down.

These places mentioned are all within a mile or less of where the proposed crude pipe line will go. It isn't a very pleasant thought to think if the line should spring a leak, you could have it seep into your well. Most of this soil is not clay, but sand with a fast seepage.

(58)

They have a hard time to dig basements in Le Roy on the east side of town because the lime rock is so close to the surface.

There are sink holes on the farms just north of Le Roy.

We do not approve of the way the Northern Pipe Line Co. is trying to railroad this pipe line through. On Feb. 9th, we received by certified mail, a copy of the easement they want us to sign. We feel every effort should be made to stop them, or at least postpone the project for a year until further studies and proposals can be made.

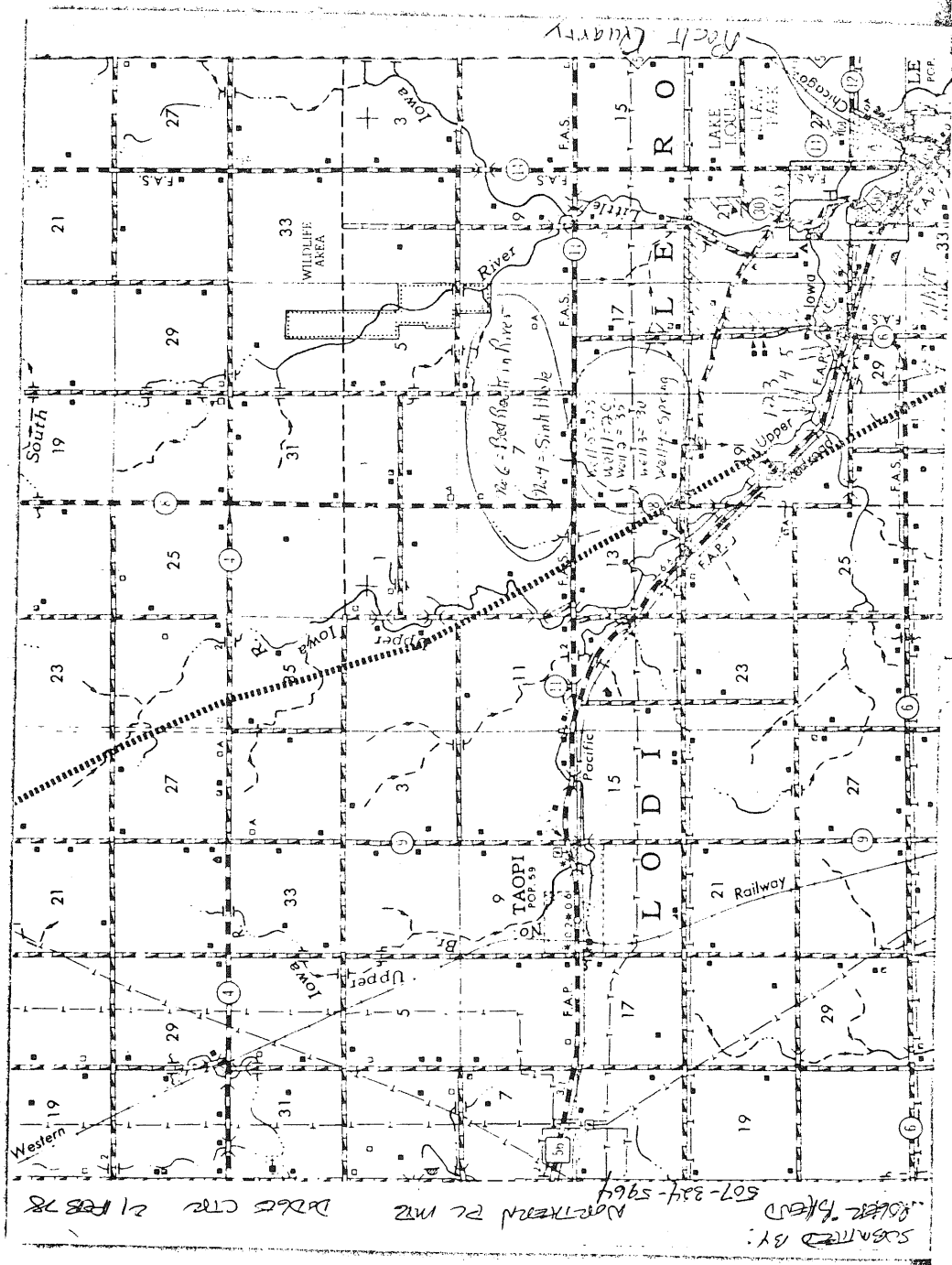
Sincerely yours,
Frederic Bhend
Gertrude Bhend

FB/GB

Frederic & Gertrude Bhend

COMMENTS

COMMENTS


LE ROY
LODI
TAOPI
POP. 59
LAKE LOUISE
WILDLIFE AREA
Little Cottonwood River
Upper Iowa River
Iowa River
Pacific
Railway
Western
South
FAS
FAP

RESPONSE

To Letter of Frederic and Gertrude Bhend

1 See response to Comment #1 of letter of Roger and Donna Bhend.

March 17, 1978

Department of Natural Resources
Environmental Review Coordinator
3rd Floor Centennial Building
St. Paul, Minnesota 55155

Dear Sir:

The enclosed written comments are submitted in behalf of the Iowa Reroute Crude Oil (RCO) Association to address section 10 of the Draft and Addendum of the Environmental Imp act Statement regarding the proposed crude oil pipeline of Northern Pipe Line Co. of Delaware.

Any correspondence to the organization may be sent to the address below.

Sincerely,

James Lein, Executive Director
RCO, IA*IL-MN
Arlington, Iowa 50606

(12)

COMMENT

on

10. MULTI-STATE RESPONSIBILITIES

of the

MINNESOTA DRAFT ADDENDUM

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR THE PROPOSED

NORTHERN PIPELINE PROJECT

WOOD RIVER, ILLINOIS TO PINE BEND, MINNESOTA

by

IOWA REROUTE CRUDE OIL (RCO), INC.

to

DEPARTMENT OF NATURAL RESOURCES
Environmental Review Coordinator
3rd Floor Centennial Building
St. Paul, Minnesota 55155

MARCH 17, 1978

COMMENTS

CONCERNS REGARDING MULTI-STATE RESPONSIBILITIES

1 At the time of this writing there is not a petition before the Iowa Commerce Commission, however a proposed line has been established. Similiar environmental consideration has not been given to the state of Iowa as has not been given to the state of Minnesota or Illinois.

Figure 1. Suggested Corridor for Crude Oil Pipeline Northern Pipeline Company of Delaware, Inc. issued by the Iowa Geological Survey, November 1977 (Exhibit 1) is again a straight-line, diagonal proposal. The new proposal does not honor the corridor. It passes through a karst area where out croppings of limestone and sinkholes are very evident. A spill would very likely affect water supplies of towns, rural residents and/or municipalities. A town which is located near an area of exposed limestone has already experienced some water contamination thought to have entered sinkholes. The proposed line is outside the corridor for nearly 8 miles along side this town.

The land in the area of Iowa which Northern proposes to cut diagonally has become productive and efficient due to the vast underground drainage systems that have been and are being installed. The method of repair, described and displayed by Northern, has not been proven reliable or the answer in the varied situations that would be encountered. Disecting farms into triangles is not compatible with agricultural practices and cutting approximately 70 lines of tile per mile is wasteful and is not being a good neighbor.

No environmental study has been prepared regarding the route in Illinois. A large drainage district of over 80,000 acres is proposed to be crossed as identified in the "Brief of Iowa RCO Assocaition, Inc." for the Illinois Commerce Commission, Exhibit 2. The Exhibit also includes testimony that the oil spill clean-up procedures do not meet EPA standards. Also the policy of the U. S. Department of Energy to support projects which are reasonable and environmentally sound is set forth. The Northern proposal is inadequate on both counts.

U. S. ARMY CORP OF ENGINEERS MISSISSIPPI RIVER CROSSING

A public hearing has been granted by the Army Corp of Engineers on the proposed crossing of the Mississippi River at milepost 462.7 for March 30, 1978, 7 p.m., Holiday Inn, Muscatine, Iowa. The adequacy of planning and the suitability of crossing location will be examined at this hearing.

The area of the crossing is underlain by limestone and has bedrock exposure. Difficulty may be encountered because of the bedrock on the river bottom on the Iowa side. In addition to the limestone and bedrock, the area also contains loess deposits which are very susceptable to errosion. Errosion problems are already being encountered in the area. The need for blasting in the area will have a fatal effect on nearby aquatic animals. In the Assessment Northern prepared for the Corp it is admitted that "further engineering considerations should be given to the geologic features to avoid an unexpected and prolonged commitment of the Mississippi River." But Northern further states that this difficult construction will "not represent a serious environmental effect." If "further considerations" are needed an assumption that the environmental effects will not be serious is irresponsible. Some of the serious effects are covered below.

Wetlands are to be crossed by the Northern proposal. Destruction of substrata produces serious effects and siltation which may not only destroy wildlife at the site and downstream but benthic communities that are a vital part of the food chain in the aquatic environment. There has been a drastic decline in waterfowl population in the past 10 years in the Pool 16 area of the proposed crossing due to a decrease in the availability of wildlife

COMMENTS

habitat. Northern contradicts this statistic in addressing their projects disturbance of wetlands and sloughs by saying that "adequate waterfowl habitat can be found" elsewhere. Less than 1% of the original waterfowl production wetlands remain today in Iowa. Wetland destruction has already eliminated over 90 percent of the habitat in Iowa.

Northern projects that "potentially adverse impacts related to leaks in the crude oil pipeline will exist, posing a potentially significant impact upon the aquatic environment found in the Mississippi River." The monitoring system this company proposes to install allows the undected loss of over 2,000 gallons per day.

Northern proposes to destroy 632 trees with an average basal diameter of 3.4 feet, including some on the Iowa riverbank with basal areas up to 10 feet. There will be long-term esthetic impact from the destruction of the huge native timber and from the essential natural errosion protection they afford the river.bank. Errosion of the river channel bank also triggers an increase in the rate of natural errosion siltation for an indefinite period. The loss of 632 trees is an impact this company is not prepared to mitigate.

Historic values are one of the relevant factors to be considered in a permit evaluation. The "cart before the horse" method, characteristic of this project, is again evident in pursuing an Army Corp of Engineer permit. It would seem prudent to establish where a crude oil crossing is allowable, if anywhere, prior to drawing a line. Existing information given by Northern in the Assessment to the Corp is that "systematic surveys will likely be required to substantiate the effect of the proposed construction on historic and archaeological sites in both Iowa and Illinois." On March 8, 1978 the State Historic Society of Illinois informed Northern that "it will be necessary for you to include an archaeological survey of the entire

area in your planning of the pipeline in Illinois." Lack of adequate information will similiarly necessitate an archaeological reconnaissance of the proposed pipeline right-of-way in Iowa.

SUMMARY STATEMENTS

There were no historical or archeological field surveys done prior to the establishment of a line, and it is now known that the line proposed would traverse valuable data. The governmental agencies of Iowa and Illinois were not made a part of the hearings held in Minnesota. Conversely, however, the Minnesota Energy Agency intervened in behalf of Koch Industries before the Illinois Commerce Commission, began intervention regarding the old route in Iowa before the Iowa Commerce Commission and state that they intend to intervene again in Iowa.

2 The decision of the Minnesota Energy Agency to expedite a pipeline through three states, intervening in procedings in Iowa and Illinois in behalf of a private company is out of order. Reasonable and environmentally sound proof did not accompany such intervention. A certificate of need was issued for this interstate project addressing only the petroleum needs of a minority of the public. Adverse environmental impacts on the citizenry of three states were not addressed.

A criteria followed by regulatory agencies is that benefits must balance detriments. An example of balance between public interest and environmental impact is the Northern Tier Pipeline project. The state of Washington may encounter impacts. However, they have refineries that will be served by the pipeline as does every other state it would cross—including Minnesota—with the exception of the short distance in Idaho. It would be the shortest, most inexpensive route for shipment of domestic Alaska crude. Refineries that serve Iowa and Illinois can also be served by this All-American project. That is public interest ! And multi-state responsibility !

COMMENTS

RESPONSE

To Letter of James Lein, Executive Director
RCO, Iowa, Illinois, Minnesota
Arlington, Iowa

1 This letter was submitted specifically as a Comment on Section 10 of the EIS, Multi-State Responsibilities. The comments relate primarily to the routing of the line in Iowa and Illinois, and the Mississippi River crossing. The comments are noted and we hereby incorporated as part of the EIS. The states of Iowa and Illinois and the federal government (Corps of Engineers) have their own approval and renew processes over which the State of Minnesota has no control.

2 See Appendix I, Need Issues.

COMMENTS

SECTION II

LETTERS WITH GENERAL COMMENTS ON THE PROJECT

The letters in this section do not specifically address deficiencies in the draft addendum to the Environmental Impact Statement (E.I.S.). They do, however, state concerns and raise questions on a number of issues for which information has been developed and presented elsewhere in this series of documents which constitute the final E.I.S. In the interest of avoiding duplication, the reader is asked to refer to the responses provided to other public comments in Sections I and III, as well as to several of the Appendix items, especially those on Need, Spills, the Railroad Alternate Route, Soil Compaction, Tile Repair, the State Liaison Procedure and the Agricultural Impact Addendum.

COMMENTS

Hagen

Jim Voelz
Fuller Trailer Court
Hansfield
Minn 55940

DNR.

Is this crude oil pipe line from Wood River, ill to Dakota Co. Minn. really necessary? If it is then should come down railway & high way right aways and by all means should be installed much larger to meet the future demands & not this little one & lath another little one as much damage is involved to the land installing it. Our valuable farm land must be protected if we are to feed the hungry of the world as the land we have is all there is and everything should be done to protect it. By putting it where proposed pipeline routing would be extreme damage to farm land damaging the expensive tile lines and the top soil would loose its value to produce crops this has been proven by other pipe lines installed. Once the soil has been damaged to that extent remains in that condition. If its necessary then should be installed much larger to handle future demand and routed down railway & high way rights aways to preserve

(52)

valuable farm land. **COMMENTS**

By installing this pipeline under ground great danger to water supply in this area are many sink holes and also springs that feed water the year around into the drainage ditch which goes to Rock river to the Mississippi River A oil spill or oil leak would ~~would~~ destroy the water supply and pollute the rivers killing fish, wild life. 2,000 gals of oil leak per day can be without showing on their checks

This is a serious matter and should be given lot of consideration. There are other means of transporting this oil without ~~destroying~~ the precious farm crop land and protect the water supplies of the world.

If its a must then put it down the rail way & high way right of way install much larger to meet the future demands of world

Kim Voelty
Eagle Trail Court
Hayfield
Minn 55940

Rural Route 1 Vonny Hagen
Faribault, Minn
March 9, 1979

RECEIVED
MAR 13 1979
BUREAU OF PLANNING

To Department of Natural Resources:

In a neighborhood a small percentage of landowners are directly involved in the proposed route leaving foreign oil to the Koch Refinery at Rosemount. A larger percentage of land owners will be involved in the environmental impact of this pipeline for countless years and future generations. The proposed route passes through the entire length (160 rods) of our farm. My husband and I purchased this farm in 1939. To increase the productivity and conserve the invaluable, irreplacable black loam soil, we made many sacrifices to periodically install needed drainage tile and waterways.

As proposed the pipeline would run very near an established grass waterway. The water flowing (draining) through this waterway empties into the Straight River at Faribault. The Straight River is a tributary of the Cannon River. Oil spill would contaminate this waterway and ditch for six miles. If we get a heavy rain during or following installation of the pipe, the waterway will fill with soil which will be carried to the ditch that empties into the Straight River.

The representatives of your department are to mention concerning the irreparable damage that could result — to tile lines (every 90' in the proposed route through our farm), waterways, and the water supply. The disturbing of precious top soil would mean to erosion not only in the corridor, but in adjacent fields (causing gullies and areas where water will collect (subsoil will pack from the trenching) creating pot holes), and reduction of crop production.

Along the proposed Koch pipeline route is found some of the most fertile soil in the world. In the next 35 years the impact to the precious farm land in the catastrophic event of a spill which looms as a constant possible danger.

Because as the adage cautions, "An ounce of prevention is worth a pound of cure", should'nt you in your clear thinking unbiased judgment, recommend that pipeline owners company (Koch) follow railroad right-of-ways or electric lines? Thank you for giving due consideration of what (how much) is fair to the grave damages to all farm land included in the proposed pipeline route not only during and after construction and to the water supply of those farmers and their neighbors.

Sincerely yours,
Mr. and Mrs. John Allison

Wheatland Twp - Sec 30
Rice County

COMMENTS

F

RECEIVED

MAR 7 1978

BUREAU OF

Kw

F

Le Roy
March 5, 1978

Dear Sirs

I am Emma Albrecht and I live with my brother Robert Albrecht on a farm that we own + pay the taxes on. We could not build a building unless we had a permit. We have more or less the start of the upper Iowa River, which we can not change. As it has to stay as is. Then why can a pipe line tell us what they are going to do? why do we need that pipe line when it will not have America or Alaska oil in it. When United States and its people paid out how Much money? So to have all the oil to us we would need from alaska. where is it? What about gasohal? Now that would help the environment and the farmer. But all the oil Company's against it, it can never Wind. And the pipe line will carry crude oil the most contaminated oil there is. when all the bulk oil tanks in town have to have earthen basins around them and what not. And that's clean refined oil. And what about that water they put in pipes before oil is put in. Where is the place they will dump that contaminated water? And what about tile lines already in when

COMMENTS

III

that heavy Machinery going over it. And when they have to be changed. how can they work them. also we have some very wet ground where the pipe line will go and in the future want to tile it. But it says Can't go over a under and responsible for any thing that goes wrong. we own the farm and have to spent money + time for something we never ask for. And what about future things in farming. we are told can't do nothing. But the pipe line has the right to spray survey construct reconstruct renew operate maintain inspect alter repair remove change size of a relay pipeline and add additional

IV

pipes along the routes. And this is suppose to be United State where we are suppose to have equal rights what about all that heavy Machinery going over the ground. Well that land will raise a crop. we have grass runway so ground does not wash away. So here in Lodi township + Clayton township it get very wet the ground and it will wash. And we will have a ditch across the farm that we would be able to cross. And if there a leak in the pipe line I have read + heard a piece by the pipeline president say. a leak in a pipe is not the End of the world. It isn't for them. But to us clean water Clean ground and we would like to keep it that way

COMMENTS

V

And would like your help so it stays that way
thank you
Emma Albrecht
LeRoy Minn
55951

P.S.
After reading over some of my answers I got from writing to people. We received this when I wrote to Gov. Perpich he sent it to Minn energy agency. This is what it said If the final route selected goes through your property. The Certificate of need requires the pipeline company to send you a copy of landowners rights. Before right of way agents approaches you. Please let me know if this provision is not complied with

VI

signed by John Millhaus.
It is not final and we have received letters that say just name the price we want. when we do not no what is all being done. also some landowners have been approached and have offer Money and not the same price at each farm. I think it should be looked for a year to find out really what is going on.

The Minn energy agency wrote letter Jan 25, 1978

COMMENTS

RECEIVED

MAR 16 1977

BUREAU OF PLANNING

Dear Sirs

In regard to the 24 inch proposed oil pipeline that is crossing southern Minn., there are a number of questions in my mind that are not answered. 1. Is this pipeline really needed, or is it a means of one man, who is rich, to get richer? 2. Will it benefit not only southern Minn., but all of Minn? I feel that the Northern pipeline will supply this need of [redacted]. 3. What will this pipeline do to our water supply if it should develop a leak? If it did it wouldn't be just southern Minn. but ~~Iowa~~ and all the states down the line that the Upper Iowa River dumps into that would suffer. 4. The D.N.R. says that there are no fish in the Upper Iowa River; but yet it runs straight through a state park that the States says there are fish in. & What about our drinking water? This can not be neglected for overlooked. The communities of southern Minn. and northern Iowa not only depend on clean water for human consumption, but also for livestock consumption. Would the state or federal government or the owner of owners of the pipeline be willing to drill a new well or to re-locate 20 years from now for hundreds of farmers and thousands of city folks? The answer No.

I'm not saying that this pipeline will ever develop a leak, but the odds are to great to take a chance on. Every man-made object is not 100% sure. All it takes is for the pipeline welder to miss one spot while welding and our clean water could be polluted. The pipeline might be used for more than the purpose of transporting crude oil, say refined products, which could be done very easily once the pipe is in the ground. These refined products and the crude oil can and will rust the pipe from the inside out.

There is a fuel supply shortage now and in the future; I agree, but will this pipeline solve the problem? No. It will only increase it. Why doesn't our government do more research on developing and improving gasahol, which would improve our farm economy and cut our nations oil imports by 10 percent by 1985, some experts feel.

I for one, am strongly against this pipeline and I'm sure that there are others that feel the same way I do. This pipeline doesn't cross my land, but the

COMMENTS

underground water supply does. so you should see why I'm concerned. I'm concerned for myself and my family and the future generations of my family.

If you were in the shoes of the people along and around this proposed pipeline, I'm sure you would do everything possible to stop it before there is damage that no human being can repair; which would be polluting our water supply that we need to survive.

Thank you kindly for your time. I hope you consider all the possibilities before you make any major decisions in regard to this pipeline and the well being of our future generations and our clean water supply.

Sincerely yours,
Sue H. Winfield

COMMENTS

Mr. Ken Wald
Mr. David Brostrom.

I am writing on the 24" crude Pipeline proposed by Northern Pipeline Co. a subsidiary of Koch Refinery

While talking with many people that have been to your meetings that Northern Pipeline held, with D.N.R. clarying them and attending them my self, along with three Senate Hearing (Feb 20th, Feb 24th & Feb 27th.) practically all the people would say there is no use writing to the D.N.R. as it would be a waste of time as their mind is made up.

I sincerely hope that this isn't true, David Brostrom made a statement at the Feb 24th Senate Hearing, that he was completly neutral although it hasn't seemed that way.

I hope that you have done some more research on Fish and Wild Life along this area that the pipeline would cross. I wish that you could be here, in the evening, just before dark and see the herd of Deer that come out of Lake Louise State Park, there must be one Hundred head or more, And this is less then a mile from this proposed pipeline.

Also every Summer there is bragging size Northern Pike come out of the Upper Iowa River in this area, along with Pan Fish and great Small Mouth Bass Fishing.

Bruce Olson and Bruce Bloomgren from the Minn. Geological Survey, were down and visited with people in this area March 7th including myself. if they have not talked to you as yet, I would suggest that you contact them for their opinion on Soil Type and ground formation that we have in this area.

I think maybe in Closing I would ask that you would consider the Consequence, if this Pipeline would have a leak, and we should realize that it will get older, and it is almost a Conclusion that some day and time, there will be leaks, and a leak that would get in our tile lines and feed to our creeks and rivers, and our under ground water supply.

(Harry Weed = quoted from Rochester Post: an Oil Spill isn't the end of the World.)

If those Deer I was telling you about, drank water that was polluted, got sick and started dying, along with our other Wild Life and our livestock, not to mention if it got in our Well and polluted our ground water.

I doubt if it would bother Harry Weed, but to the people that it would affect and Yes the D.N.R it would seem like the end of the World.

I sincerely hope that the D.N.R

COMMENTS

does not make a mistake here that could affect our future Generations by polluting our water and killing our fish and Wild Life.

(From Minneapolis Tribune Sunday March 12) states this Pipeline would be only for the the near future. also in same article Tom Kryzer Phisident of Northern Tier Pipeline Co. says. Northern Tier could be completed by 1981 and financing no real problem.

I would hope that you would take a whole new look at this project.

And not make a mistake that could affect not only this generation but our future Generations.

Thank You for Your time

Mr & Mrs Gaylord Winfield

LeRoy. Minn.

55951

COMMENTS

10 Pages

March 14, 1978

Dear Sir:

In regard to the proposed Rock pipeline I have spent a considerable amount of time studying the draft addendum and I believe there are a lot of unanswered questions in regard to tile lines and underground water supplies.

On my farm in Rice Co., the pipeline apparently will go through an area that is tiled. The pipe will cross five tile lines that are approximately four feet deep, and because the field is so flat, the tile have only 1/10 of 1% slope. The black dirt in this area is from 2 ft. to 4 ft. in depth. The soil is very porous. Several years ago I had a problem with a waterway overflowing into this area. The water was absorbed in to the soil at a terrific rate. The tile lines ran at nearly full capacity for days.

The last three summers have been so dry and yet the tile lines have never quit running. Apparently there is a high water table or some springs. If there was an oil spill in this area of about 30 acres I would guess the oil would seep in to the ground much faster than under normal conditions, then into the tile system which drains into a county ditch, and then into the Zumbro river.

Under Condition that I have described can this land be made productive again? If so, how? Would a spill like that be considered an act of God? Would the Company be liable? Or would I be just out 30 acres of prime farm land, now valued at, the least $1,500 an acre.

In regard to tile repair, I am not a tiling Contractor, but I do own a tiling machine & surveying equipment. I have

tiled my two farms, and the last
year ago, so I do have some
knowledge of tiling systems, the design,
installation, and repair of the lines.

The Company proposal to repair
the tile lines is probably inadequate.
Unless the pipe line is installed under
ideal conditions, moving heavy equipment
and pipe over the right of way will
probably result in misalignment, or
broken tile, even if there is good cover.
When tile are installed at a very flat
grade, it takes very little misalignment
to greatly reduce capacity. Under these
conditions the tile in the entire right
of way should be replaced.

In regard to the ditching on this
project, the Company says it will
double ditch, if the ~~land~~ individual farmer
requests it. In ~~reality~~ reality I believe it to
be little more than a farce.

In a 50 ft. strip, there would be a
row of pipe, a ditching machine, a large
continous pile of dirt on one side, a
smaller continous pile of dirt on the other
side, men working on pipe, welding,
heavy equipment lifting and lowering the
pipe into the ditch.

How does the Company plan on getting its
men and supplies from roads to where they
are working, by helicopter? I don't it?
I'm sure they will use trucks, tractors,
and pick up trucks back and forth on the
right of way, sometimes for a mile or more,
to the nearest road. The end result will
be the top soil that was put on one side
will be ~~packed~~ packed ~~to~~ so hard that
it will disappear into the ground, And
the rest of the right of way will be the same
or a quagmire of mud.

I believe the only proper way to correct
is to grade the top soil completely

COMMENTS

from the fifty ft. right of way, with road graders, then to dig, and install the pipeline, check for damage to tile lines, repair the tile, cover and smooth the right of way, then grade the top soil back into the right of way.

Understandably this would increase their construction cost. However with land in this area selling for $1500, $2,000 or more per acre, I believe it to be a reasonable request.

In the draft there is mention of some 5 miles of shallow bedrock. The pipeline co. proposes to use a minimum of .25 % X-rayed pipe, I believe if the pipeline is to be built in this area, 100% of the pipe should be X-rayed.

It seems to me that from the very start of this pipeline project the major concern of the company has been to get the pipe in the most direct route, and the cheapest

possible way. However the people of this area will need clean water and rich productive soil long after oil is an obsolete fuel.

If a safe route cannot be found, then perhaps a Koch refinery should be closed, and finished fuels shipped up from the south.

It is my understanding they are not meeting air quality standards now. It seems to me that after fighting with Reserve Mining for years to stop them from polluting, the State of Minnesota should enforce their pollution laws instead of giving Koch Pipeline the right of eminent domain, to build their pipeline and continue their pollution of the air and possible water contamination, plus the damage to prime farm land for at best a short term solution to their oil supply.

In summary I believe the best way to describe this project is that it is

COMMENTS

the wrong pipeline, in the wrong
place, to move the wrong oil,
Without a doubt the Northern Tier pipeline
will be built because it would provide
a dependable supply of oil, and would be
in local as well as national interest to
build it.

Sincerely
Albert Story
R.R. #2
Kenyon, Minn. 55946

COMMENTS

Vonny Hagen

March 9, 1979

Department of Natural Resources
658 Cedar St
Centennial Office Bldg.
St. Paul, Mn. 55155

RECEIVED
MAR 13 1978
BUREAU OF PLANNING

Dear Sirs:

Could you please take a few minutes to answer some questions about Koch Refineries?

Should it spring a leak, would the oil get into the tile lines and follow them to the rivers? I know that two of the tile lines being crossed run into the Straight River & the Cannon River.

Also, if the spill were a large one would the aquafers under Faribault and Northfield be contaminated?

Quotation! Revelations Ch 8, vers 10-12,

Then the third angel blew his trumpet. A large star, burning like a torch, dropped from the sky and fell on a third of the rivers and on the springs of water. ("The name of the star is Bitterness.") A third of the waters turned bitter, and many people died from drinking the water because it had turned bitter.

Thank You for your time.

Duane Bauerfeind
Mahnie Bauerfeind
RR1 Box 268, Faribault Mn. 55021

(18)

Vonny Hagen

RECEIVED
MAR 13 1978
BUREAU OF PLANNING

Faribault Minn
March 10th 1979

Dear Sir;

I write in regard to the "Koch pipe line" that is to go through [illegible]

I live to the Faribault of the old Spills which caused definetly Carcinomia and cancer Cancer Cancer which caused Directly in addition to the Faribault Community.

I sincerely hope you will Consider this matter.

Sincerely
Vern Hagen

(17)

COMMEN

R.D. #2, Elkton, Minn. 55933
February 28, 1978

RECEIVED
MAR 2 1978
BUREAU OF PLANNING

Mr Ken Wald
Commissioner of D.N.R.
Centinnial Building
St Paul, Minn. 55101

Dear Mr. Wald,

The meeting held at Hodge Centr, Minn. 2/21/78 was a disappointment to the R.C.O. organizations. I don't know how much you personally are responsible for what goes on at these hearings. It was chaired by D.N.R agent only for the benefit of the Northern Pipeline Co.

During the meeting the D.N.R. showed it was biased in its actions to push this pipeline through agricultural Lands.

Many of the questions asked by the farmers were evaded or else directed to (1) Pollution Control Agency, (2) Environmental Protection Agency, (3) or Department of Health. These agencies weren't even represented at the meeting to our knowledge. In other words, D.N.R. spokesmen was "passing the buck."

He made the statement D.N.R has jurisdiction over Prisons and parks only, not agricultural land. yet D.N.R wants written comments to them before March 17. Before they issue any permits.

What's the point in writting + wasting our time + stamp if D.N.R has nothing to do with Agriculture land. One of those two statements is incorrect.

It looks to me like D.N.R is trying to divert the opposing responces into the wrong channel. This way the agency responsible ~~for Pollution~~ ~~complaints~~ doesn't receive the complaints against the Koch Industries Inc. Their (D.N.R) way of helping the pipeline through

At the meeting the pipe line officials made statements not relative to southern Minnesota soil or rainfall. Their scientific tests they claimed to have preformed were not complete. The farmers were dissatisfied by the ridiculous answers given to them.

Dr C.E. Buckwald, geologist of Carlton College gave reports of his study and the pipeline "hired" hydrologist comes along with conflicting study. I understand he was instructed to sit down at Northfield hearing. He isn't a qualified geologist or hydrologist. Then the pipeline Co uses him at Hodge Centr to deceive the farmers there

It is quite evident and suspicion can easily be aroused that money is being passed between oil company + agencies to give out distorted statistics to gain permits.

COMMENTS

That was their answer to several significant questions.

We aren't waiting to see how they handle the problem. The risk is to great to entrust our lives, cattle, + property to such unconcerned people

It was very rude the way the chairman closed the meeting. Ignoring Al Houston's raised hand to make a comment. Mr. Daly called his attention to it. The chairman said, "I closed the meeting". Somebody needs investigating.

Our farm has deer, ducks, racoon, rabbits, pheasants, red and brown squirrels, jack rabbits, quail, fox as well as numerous birds. We don't even permit hunting to destroy these animals. Our farm is as much an animal refuge as any national or state park.

I had written earlier the great risk that would be taken by putting the pipeline over 2 miles of our farm diagonally. Crossing 650,000 feet of plastic tile 80 feet apart.

The oil spill couldn't help but contaminate large amounts of water into the Iowa River.

The latest propaganda from the Northern Pipeline Co. about Canada's oil problems — If Canada feels it the benefit of the Kitimat project would not outweigh the dangers of an oil spill" — Why would D.N.R. promote Kaid Industries Inc. to put a crude oil pipeline through our prime farm land. Pollute our water, destroy our cattle, and top soil.

Hearing @ Capitol building 4/23/75
at Legislative Interim Committee
DNR speaker

The question was asked, "What will happen when there is an oil spill with tile carrying water into North Iowa River?

The D.N.R. chairman stated the oil wouldn't go through the slots in the tile.

How ridiculous! This chairman isn't qualified for the "position" he holds

Even a R.N. a Registered Nurse with a Bachelor of Science degree in Nursing knows better than that.

They certainly don't give the farmers an ounce of intelligence.

Water running through oil naturally contaminates water! On the other hand does he think the tile will remain in place as oil "leaks" with pressure of 1000 PSI to 1500 PSI behind it, with oil and soil erupting in all directions. The plastic tile stays in one piece as it is bounced around. It's asinine thinking.

I'm taking for granted the chairman gained his information from the pipeline Co. to po[illegible]

With illogical thinking as this, these [illegible] aren't qualified to engineer any pipeline even along the railroad right of way. Much less prime farm land.

When questions about the problem of getting pure H_2O to replace the contaminated H_2O to the [illegible] and animals — the oil company said, "[illegible] will not just take that. [illegible]"

COMMENTS

P3476

R.D.2 Elkton, Minnesota 55933
February 7, 1978

Pollution Control Agency
1935 W. Co. Rd. B2
Roseville, Minnesota, 55113

Dear Sir,

The opposition to the Northern Pipeline Co. putting a crude oil line through Minnesota, Iowa, and Illinois is continually mounting.

Property owners and farmers received on Saturday, February 11, 1978 a Grant of Easements by registered mail. The legality of this procedure is questioned since they have not received permits from the Department of Natural Resources to go ahead.

The feeling of the Reroute Crude Oil organization is that the pipeline Co. is trying to push it across before the public is aware of what is going on. This pipeline is proposed to go a direct route from central Illinois to Pine Bend, Minnesota. It will take the best highly cultivated farm land of Minnesota; two miles over our dairy farm.

Also, as printed in the Austin Daily Herald, January 28, 1978, Al Huston, president of Minn. R.C.O. and A.E. Buckwald, Carlton College geology professor, also pointed out that Minnesota is situated over a major freshwater source that could be polluted by spills from an oil pipeline. This would affect the whole population. "It's one of the finest aquifus in the world not just in the United States." said Buckwald. The route will inculde crossing one of the finest trout streams in southern Minn. Everyone knows what oil pollution will do to fish and animals.

The Northern Pipeline Company has a great number of the public believing the oil line is needed. Studies are being made on their distorted figures that prove to be otherwise. They state that the Canadian government will cutoff oil by 1982. (In the meantime Canada will learn they can't afford to do that economically.) The Company does have other methods to transport the oil but as they say it isn't as "practical or economical" for them. They'd rather cheat the farmer out of his equal rights and use land cleared by him andmade productive through tiling. This way there are very little obstacles in the way. Also, pay the farmer what they please or take it by eniment domain. If a pipeline is needed concerned citizens should push for the passage of the Kitimat line which would be built in Canada and would complete a pipeline now existing and would allow Alaskan oil to be piped to northern Minn. rather then the Arabian oil that Northern Pipeline would be importing through their proposed line. Also, the Kitimat line would not affect as many people or distroy as productive farm land if any.

This pipeline proposed by Northern will be a detriment to the progress made in making our farms into prime farm land by disturbing the fertile top soil and uprooting stones and rocks. It also will distroy our newly installed tiling system as it will cross two miles in length right smack through the middle of our farm. The same will happen on other farmers land as well. It will undo the aid which the government gave farmers in an effort to increase acreage and production by tiling out wet land. It will cause an economical disaster to the whole of Minnesota in time to come. Lowering farmer's income even further than now is unnecessary.

Oil leaks cause unrepairable dama e to soil.and burning them off after a spill pollutes the air. Don't think there aren't any oil leaks! They happen all too often. It can happen very easily and if drinkin water becomes contaminated loss of humen and animal life can occur. This is very important to us as we have 200 head of dairy cattle. Also our tilin system flows directly into the mouth of the Iowa River,as do many others.

In part here is Northern Pipeline Company's conflicting proposal t the farmer. They will pay $1.00 a foot with fifty foot right-of-way. At the end of their Exhibit "A" they print, "Grantee may teporarily use additional work space adjacent to said right-ofwway strip at locations where needed during construction, maintenance and removal of it's pipeline and appurtenance".

Just imagine the large territory of ruined soil and crop damage that would teke place, They make no mention of payment for this.

In one paragraph they claim to pay all damages occurin from their operations and two paragraphs down, "Grantee shall have the right to clear, and keep cleared, all trees, undergrowth and other obstructions from the right-of-way, and after the pipeline has been installed, Grantee shall not be liable for damages for clearing trees and underbrowth from the right-of-way."

Prior to this they told the farmer the soil would be returned to it's former fertile state so crops would grow. Crops could be an obstruction. Should they use spray material to kill brush, there go the crops nearby.

When the Grant of Easement is signed The Northern Pipeline Co. takes the right, "at any time, to survey, to construct, reconstruct, renew, operate, maintain, inspect, alter, repair, remove, change size of and relay pipeline and additional pipeline along route or routes selected by Grantee for the transportion of oil, gas, petroleum or any of it's products, together with such valves, fittings, meters, and other equipment and appurtenance as may be necessary or convenient for such operation, with the right of ingress and egress to and from the same on, over and through certain land situated in _____."

This doesn't leave much privacy and security for a property owner. Again no mention of compensation for damages or crop lose in this section.

What is one to think of this statement? "The said Grantee to fully use and enjoy the said premises except for the purpose herein above granted to the said Grantee which hereby agrees to bury all pipes to a sufficient depth so as to not interfere with normal tilling methods employed at the time of such construction and to pay any damage directly resulting to crops or fences from the construction andoperation of the said pipeline."

Two paragraphs down, "Grantor agrees to not build, create or construct nor permit to be built, created or constructed, any obstruction, building, improvement or other structures over, under said pipelines after such pipeline or line after such pipelines or lines have been constructed by Grantee,without first obtaining written consent of Grantee."

If Grant of Easement isn't signed to the company's desires they have the right to use eniment of domain. against property.

The Reroute Crude Oil organization needs everyone's support at the meeting to be held February 21 1978 in the High School, Dodge Center, Minn. 7;30p.m. The Deparment of Natural Resource Environmental Hearing will present statics.

Write to your Congressmen and County Comissioners to support the C.O. Also Mr. Ken Wald, Commissioner of Dept. of Natural Resources, Centennial Building, St.Paul, Minn.,55101 before March 197[illegible].

Help Save Minnesota Agriculture From This Devastating Monster of Soil, Air, and Water pollution!

P.S. This pipeline would be sabotage on the economy of people of Minn. as a whole. Even the U.S.

Yours truly,

Mrs. John Kessler

Mrs. John Kessler

We are collecting for Minnesota Legislature [illegible] Free "rip-off"

COMMENTS

DL

Faribault, Mn.
March 4, 1978

To- The Dept. of Natural Resources:

I am writing because of my concern of the crude oil pipeline that Northern Pipeline of Delaware proposes to build through our area.

This pipeline should not be built here because:

1- It will disrupt thousands of tile lines, diagonally, that pass through many prime acres of farmland. I feel it will be impossible to repair these adequately.

2- Precious top soil will be lost forever.

3- Oil spills can occur and contaminate wells, and our huge underground water supplies.

4- I feel at present there has'nt been enough research to definately determine our underground conditions to take such a chance on our water supply. Too much, is being taken for granted.

Sincerely,
Mrs. Reuben Hohnstein
Traverse Rice Co. RCO
Faribault, Mn. 55021 R#1. Box 308

RECEIVED
APR 13 1978
BUREAU OF PLANNING

Vonny Hague

Dept of Natural Resources
St Paul, Minn

Gentlemen

The D N R and Agriculture are closely knit! Rock Northern changing the route in Minnesota and Iowa from the original does not make a different route through prime farmland appropriate. The new proposal still uses these aquifer areas

The long range effect of the Rock Northern proposal to pipe foreign crude through the agricultural Heartland of America is not in the best interest of the public. The heavy, viscous crude they use require tremendous expenditures of energy to pump

The contamination of water supply from potential leaks will affect hundreds or thousands of people. Contamination from spills would leave fields unproductive for years to come. Is topsoil in 500 to 4000 acre quantities, for sale anywhere?

Rock Refinery near St Paul plans expansion. This will result in more pumping stations and increased pressure in the line, which in turn create greater potential for leaks & spills

Our land and crops are our livelyhood our clean water wells are precious and cool bubbly springs precious

It is imperative that Rock Northern finds an alternative.

SAVE UNITED STATES HEARTLAND

Sincerely C A Hindemith

COMMENTS

COMMENTS

Hayfield Minn.
3-25-78

Minn. Depl. Nat. Resources
Centennial Bldg.
St. Paul Minn.

Dear Sirs;

In regard to the oil pipe line coming to Minn. from Ill. we feel very strongly this line should not go across Prime farm land but should follow Township & Railroad lines. Otherwise great harm could be done to our land.

Sincerely
Sam & Louise Steiner
Hayfield Minn.
R.R. # 2 55940

West Concord, Mn.
March 15, 1978

To Whom it May Concern,

Re: Proposed Pipeline Project from Wood River, Ill. to Pine Bend, Mn.

I am very much concerned about our great fresh water supply in this area. Let's not destroy what we have been given.

Mrs. Emma Hanson

(35) R 1
West Concord,
Mn.

RECEIVED
MAR 16 1978
ENVIRONMENTAL QUALITY PLANNING

Northfield, Minn.

RECEIVED
MAR 16 1978
ENVIRONMENTAL QUALITY PLANNING

Environmental Review Coordinator
St. Paul, Minn. 55155

Dear Sir,

We are opposed to the proposed crude oil pipeline. Why do you have to bring in the imported oil, don't we have enough in the U.S.? Or is it for trade relations with foreign countries? I am sure there is enough oil right here in the U.S.

Why do you propose to pipe through the farms east of Northfield? There is very productive land in that area, almost all of it tillable. We read in the Feb 9th issues of the Northfield News that it wasn't a good decision to go thru Rice Co. Wilderness Park or Springbrook area. Why? Because the DNR said so. You should remember it will be even a greater loss if the productive farm land is contaminated with oil leakage.

We still ful it shouldn't be piped through farm land regardless of where it's located, there has to be better routes. There is only so much farm land to produce crops for the world, when it's contaminated so it can't produce food, just how hungry will we all become. Forget the pipeline.

Sincerely,
A. Concerned Farmer & His Wife

29A

COMMENTS

FIVED

20 1978

March 15, 1978

To the Department Of Natural Resouces
Environmental Review Coordination
LANSING

I am a farmer and landowner in Greenvale Township, which is located in Dakota County. I have read both the Origanal draft and the Draft Addendum. I will be affected by the new proposed west route, as will my father Clarence Volkert, also a landowner and farmer in this area. I am quite concerned with a number of items and points brought forth in this study.

On the air photos of Stream Crossings Appendex B, our farms are shown on the Club Creek (West Alternate). Our farm is crossed for what seems like a great distance. We feel that such a crossing, on prime farmland, isn't right. I'm sure that you will hear many such testimonies. We have heard direct from a relative who has a pipeline crossing his farm. He stated that the land on which the pipeline has been built grows half the expected crops, compared to the other land he owns. I have also seen aireial photos of pipelines in Dakota County. I saw these at a hearing held at Carleton College by Mr. John Millhone, head of the MEA, in fact he stood next to me and stated, in a private conversation, that streaked white lines where pipelines have been dug are easily noticable.

I feel it is very hard to be able to dig up the ground and then put it back in the same place without damaging the fertility of the soil. Also heavy equipment which is used in the installation of the pipeline will cause compaction of the soil. We have another problem in that we have tile lines on our farm. If that isn't enough, we are experencing a battle with the beavers, which are very numerous in this area. The proposed creek crossing is located on our neighbors farm, but possibly ours too. The Game Warden for this area Mr. Kermit Piper is familiar with our problems. The beavers dam up the creek so bad that our tilelines don't drain, because of the backup of water in the creek. This causes excess water to lie on our fields, especially the fields on the south and northwest sides of the proposed crossing. The concern that we have is that if the pipeline goes through we will no longer be able to use dynamite to blast the dams. The only way to effectively be able to get rid of these dams, is by the blasting of them. Would there be a possibility of break—again the pipeline when blasting? An oil spill in the creek would be a terrible thing to have happen. Yet I still feel that we should have the right to protect our valuable cropland. We as landowners should have the right to protect our property, as well as our business. At least I would think that we should. There is no way we will sign an easement without this problem being resolved to our satisfaction.

The west route also has a problem concerning the Cannon River Crossing. It stems around the wilderness park crossing, mentioned on page 101 of the Draft Addendum. This states that the bedrock is below the fifty foot or more soil cover. Another thing about the west route, is the fact that there is a greater amount of tilelines. The western route is made up of a heavy soil where drainage is very important.

I also believe that the fifty foot right of way will have to be enforced. With the big machines they have, it will be hard to keep them within their area. They will go out of the easement and should compensate the farmer for all the damages that should occur.

The west route, is shown on a comparison sheet on page 97 of the Draft Addendum. On the listing of Environmental Impacts the disadvantages of both are shown. The west route has far steeper banks along the Cannon River. Also the bedrock cover on the crossing is shallow. There is also an area that is very likely to become eroded. More tiles will be crossed in the west route than in the east route. The argument many have against choosing either route is the fear that the underground aquifers may become contaminated from a spill. Until some way is found to clean spills 100% efficiantly, NO CROSSINGS OF WATER SHOULD BE ALLOWED!

Also I feel an annual payment would make a far more equal amount of compensation to the landowners. Having the pipeline crews around during the crop growing season will be a major headache to the farmers. One idea I have is, the DNR has land from Spring Valley to Rochester Minnesota. This is now under proposal for a biking and hiking trail, why not put the pipeline on this ground, with the trails above. This makes more sence than going onto the prime farmland.

I'm a member of the Dakota County RCO (Reroute Crude Oil). I'm presently serving as Vice-chairman of this group. I've taken part at many meetings and have attended hearings at the State Capitol. The Senate Department of Transporation Committee, which was headed by Senator Clarence Purferest, of my district, had legistlature on the pipeline which would require that the underground pipelines would have to be buried at least $4\frac{1}{2}$', and that the liability of any damage wouldn't be on the farmers or landowners, but on the companies.

I do agree with the need for energy, but I feel that the Northern Teir pipeline would better serve the long range needs of Minnesota. The Canadian curtailment as shown on table 1 page 3 of the Origional Draft Env. Impact Statement, proves that we will become dependant on the Middle East for oil. But if the Northern Teir Pipeline were to be built and Alasken oil were piped down we would avoid the cost of the line and of Arabian oil. The recent interest in this project looks improving for the Northern Teir Pipeline.

I wish to thank you for your time and the right to express my concern on this project.

Sincerely yours,
Victor F. Volkert

Victor F. Volkert

COMMENTS

Department of Natural Resources

We are concerned over the proposed Northern Pipeline Project which is coming a ½ mile of our farm in what it will do to the water supply. We have shallow wells the water table is 15 feet the drainage ditches are about 5 feet deep so if they go below them it puts the pipe very close to the water table which is used for human consumption by most residents on the south side of the Dearmilla river plus our dairy cattle.

It is our understanding from attending meeting that the line was changed once already because of objections of Board of Health findings of endangering the water supply. It seems to me it should be studied around here also before easements are send around to be signed.

Mr & Mrs Laurence Pelletier
Rt 1 Box 205 Clayton Ave.
Farmington Maine
04938

COMMENTS

COMMENTS

Jerry Reis
Sargeant
Minn
55973

Dear DNR.

Is there really a need for this pipe line and if its that important for future then why isn't it installed large enough so another line does not have to be installed. The pipeline should be installed along railroad lines & high way rights away. This land is already out of crop production. Our farm land is valuable and we, treasure it as we have served our lifetime of hard work to prepare for future production and terrific expense preparing the land for high production, tiling, correct drainage, fertilizer, weed control. This is something not done in a year. Facts prove this. Today's crop production & is most important to feed the world. This pipe line can come down railroad & high way right aways and our valuable land be saved but the problem is its so easy to demand eminent domain and slap the farmers down then we are tied down long hours of hard work.

The fact is if its really important put it down railway & high way right aways & install it large enough

Jerry Reis
Sargeant Minn 55973

(50)

COMMENTS

to protect the future and at same time reserve our valuable farm land to feed the hungry of world.

Mar. 14, 1978

Department of Natural Resources

Subject:
Hazel River to Pine Bend
pipeline

Dear Sir;

After attending several meetings and gathering information on our energy for Minnesota, the question seems to be, is this line needed?

You guys say we need this line while last night (Mon.) the energy department report on T.V. stated we are running out of energy and we have to find different sources.

We can't pump oil through a line if we don't have the oil. I don't have all the answers but if this line is needed there would be a better place to run it then through choice farm land.

It not only scars our farm land but presents danger to our streams and water systems.

Also to be considered: chemicals we use today react differently to our organic soils which are found after trenching.

I trust that all subjects are seriously considered before this project is "ok-ed" by our state.

Sincerely
Emil Sovinja
Dorothy Sovinja

(61)

COMMENTS

March 16, 1978

Dear Sirs;

I am writing this letter in regard to the proposed crude oil pipeline coming from Wood River, Illinois to Pine Bend, Minn. I am a landowner in Dodge County. Although the proposed route doesn't go through my land, it will be within ½ mile. Therefore, I am concerned and have been attending some of the meetings about it. I feel that it is still in question whether there is a need for it with the talk of this line coming across from the west coast in the very near future. That would seem to satisfy the need for more crude quickly, and would therefore be a much more efficient and economical product for the whole upper midwest. (4) Of the line from Wood River is okayed and will be built, I would think there would be b alternate routes that would n affect as many good agricultur acres. After all, our prime agricu land is dwindling a few acres year. It won't be too many ye and we will be looking and won where we can get more acres to raise more food.

I feel you should take all th facts into consideration before yo make any final decisions.

Gary Dahle
Hayfield, M

COMMENTS

Hayfield, Minn
Mar. 22, 1978

Minn. Department of National Resources
St. Paul, Minn.

Dear Sir, -

I'm writing about the crude oil pipe-line that is spose to cross our good farm land. I don't think that there's been enough research done on it. I think it would be harm-ful to our land, because of the oil spills etc. I don't think also that they aren't going to pay enough for our land.

Why don't they go along the railroad right of way?

Or go along township lines?

By the papers I have read we don't really need this pipe line.

We are spose to be raising enough food on our farms to feed lots of people, & by Father good farm land to do it.

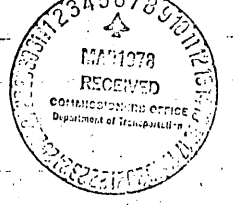
I'm strongly against it.

Mrs. Frances Eklund

COMMENTS

March 3, 1978

Bill Walker
Dept. of Agriculture
State Office Bldg
St. Paul, Minn. 55155



Dear Sir,

I am writing this letter not only as a concerned farmer but also as a citizen concerned about the welfare and safety of other families as well as that of our natural resources + wildlife.

This letter is in regard to the proposed pipeline running from Pine Bend, Minn. thru the southeastern part of our state. The pipeline is being built by Northern Pipeline Co., which you already know. I believe that it is very important that this pipeline be stopped! Not because of any ill feelings against the company or its people (I don't know them personally), but because it is vital to the people of this area to preserve their farmland + water supplies.

As you undoubtedly know there have been 72 oil spills in this state in the last five years. Each time this happens water supplies are contaminated and our wildlife suffers. How can I impress upon you that these incidents must stop?

If the Northern pipeline is built, it will only be one of many because it cannot supply the needs of the entire state. I believe that it is essential that we wait until the Northern Tier pipeline is built, because it will be able to supply the whole state and then there will only be one pipeline to be concerned about instead of two or more. The fewer the pipelines the smaller the danger of spills.

We in southeastern Minnesota are proud to have the purest supply of underground water in the state. These supplies must be preserved for future generations.

If an oil spill should occur in this area, where our bedrock is so shallow, our water could become contaminated for miles around. This would include towns as well as farms and rivers which flow into Iowa. To say nothing of the farmland it would ruin.

I implore you to think long and hard, not only about present situation of these resources but future as well.

COMMENTS

53

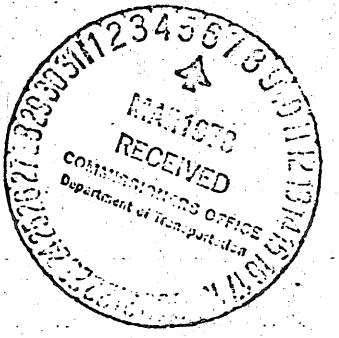
COMMENTS

God forbid, if it should ever come down to the "bottom line", I daresay we will need all the food and water we can get. Ruined farmland and water supplies will not help us then; nor will oil!

Thank you very much for your time and consideration on this matter.

Dennis + Anita Winfield
LeRay, Minn. 55951
507 324-5819

cc: Peter Vandenpael
Sarah Gottschling
Jim Harrington
John Milhalm



Dear DNR.

Would you please send me the book of Draft Environmental Impact Statement.

I missed the meeting these books were given out.

Albert Reis
Sargeant
Minn
55973

(51)

Albert Reis
Sargeant
Minn
55973

DNR.

In this proposed crude oil pipe line routing from cities to Wood River, Ill which country needs it just easy way for big company to make easy money. Just claim the right to cross agricultural farm land damaging our costly investment of tile & ruining our top soil for production. This farm land is important to preserve to feed the world. Why make it so easy by eminent domain for this to be done. Preserve the farm land. Use the right aways of railroads & highways. Design pipe much larger to meet future demands. ~~This~~ This easy way out for big company is not always the answer. In this area there are many, many sink holes and even springs feed water year around regardless how dry it gets. When oil leaks occurs will get into the soil, & feed into our ditches that lead to Mississippi river. This would destroy our wild life & fish besides destroy human water supplies.

Albert Reis

RECEIVED
MAR 17 1978
PLANNING

COMMENTS

Ken

RECEIVED
MAR 17 1978
BUREAU OF
PLANNING

Dear Sir,

We are very concerned about the proposed northern pipe-line project from Wood River, Illinois to Pine Bend, Minn.

Because we are one of the land owners involved in it. We have a shallow well & are concerned about our water. Also about the low production of our soil, for our life depends on this & our animals. And also because of not being able to build over this project.

With much concern,
Robert Osterag
3896-200th St E
Farmington, Minn.
55024
(612) 463-4363

(39)

Vonny Hagen

March 13, 1978

RECEIVED
MAR 16 1978
BUREAU OF
PLANNING

Dept. of Natural Resources
Centennial Office Bldg.
St. Paul, Minn. 55155

Gentlemen:

We wish to inform the D.N.R of our feeling on the proposed pipeline of Northern Pine Line Co. thru Hayfield Township.

It seems very irresponsible to ruin good agricultural land crossing it diagonaly when it could be crossed at township lines or possibly could be run on existing right of ways which are in this area.

It also seems to us that there has not been enough research done on the damage that could be done to our prime agricultural lands.

Sincerely,
Elroy & Lorna Voelker
Rt. Box 24
Hayfield Minn. 55940

(31)

COMMENTS

Crude oil Pipeline

I am most concerned about the Pipeline, which is coming thru our farm. It that is coming thru the main tiles (drainage). The water well might be flooded with oil. if there is a leakage into the water well Cattle cant drink oil mixed with water. and a loss of Crops. which can go on for many years To Come. if there is a leakage in the Crude oil Pipeline.

Landowner
of Rice County
Hubert Rowe
Kenyon Minn
R 2. 55 '46

Dept of Natural Resources

I am most concerned about our Water Well We have dairy cows & feeder Cattle, and if there Will ever be a breakdown in the Crude oil Pipeline. and it gets in the well. The only thing we will be able to do. is sell off all the Cattle. dairy cattle is leaving the farms much faster each year. then it should be. this way. many more will be leaving the farms. our main drainage tiles are where the Pipeline "line" will do the most damage and if there is a leakage the Crops will just wilt up & die. If the Crops can't save our energy, the next best thing is to put whole counties on a Ration basis. for there is just so much waste in everything in the United States especially in all of the energies.

Landowner of Rowe
Kenyon Minn R 2 - 55 '46

COMMENTS

Faribault Minn.
March 6th 1968

Dept. of Natural Resources!

Sirs:-

Just a few years ago - I had to mortgage my farm - to pay $12,000 for tiling my 160 acre farm.

I certainly would hate to have that ruined by the digging etc. that would be required to dig in a pipeline.

I am a widow and do not know much about these things - but trust my neighbors to keep me informed and explain these things to me.

I beg of you not to ruin my farm.

I seriously object to having a pipe line with its potential for serious trouble

Sincerely

Mrs G. M. Eigenbrodt

MRS G M EIGENBRODT
RT 1 BOX 302
FARIBAULT MN 55021

(22)

Vonny Hagen

9-4th Avenue N.W.
Faribault, Minnesota

March 10, 1978

Dear Sir,

I am writing to protest the proposed Koch Refinery oil line. The proposed line will endanger the Faribault area water supply. This is wrong and a great risk to the people of this area. The oil line should be re-routed around our water supply or, use existing pipe lines.

Sincerely

Joseph X. Endert

(15)

COMMENTS

Vonny Hagen

RECEIVED
MAR 15 1978
BUREAU OF
PLANNING

March 9, 1978

Sirs:

I am against the Crude Oil Pipeline. It is an unnecessary waste of time and energy — it also could be very detrimental to the land and its water supplies.

David R. Hoffmann
Kenyon, Mn.

(28)

Vonny Hagen

RECEIVED
MAR 13 19[illegible]
BUREAU OF
PLANNING

Dept of Nat Resources
658 Cedar St.
Centennial Bldg
St Paul, Mn 55155

Dear Sirs:

I am opposed to the Crude Oil Pipeline. I am concerned about the top soil damage and the oil spill possibilities- what it will do to the top soil and also the water.

I also feel that it is an unnecessary pipeline even though the state has granted its permission.

Sincerely,
Alyce Hoffmann
Kenyon Mn

(14)

COMMENTS

COMMENTS

William Radil
Box 15 RR 1
Hayfield Minn
55940

Dear Sir:

My letter is in regard to the pipe line that will go through our farm.
You ask for reason.
1. After the company is done with the line. Do you know how much it will cost to put the land back into production? Will the company pay? What other damage will be done to the crops that are planted around? there goes our crops we waited for to pay our bills. to make our farm payment. Will the company pay for that?
2. What about the Wild life that will be disturb? we heard about that when a farmer what to do something all of sudden there is a Man there telling the farm he is disturbing the wild life. where is the Wild life society now?

10

COMMENTS

3. What happens if there is a oil spill? the damage it would do to the crops. It can effect the well water, we drink. Maybe we may not be able to dril a New Well. What happens if we didnt know anything and some got sick. Maybe died because of that! What would the company do? we could lose livestock. would the company replace them? where is the pollution County?

4. What if we wanted to tile? there would be a pipe line in our way. would the company come out a Mine their line out of our way so we can tile. No! and you know there is some place you need to go deeper than in other place

5. Would you buy a farm that has a pipe line going through it? No. why? because you would think of all those ~~thing~~ things I wrote about.

I think that the company can find another way than take good ground out of production thank you Mr + Mrs William Radel

Ken

West Concord Mn.
March 16, 1978

Dear Sirs

I am writing Concerning the proposed pipeline project to be built between Rood River, Ill and Pine Bend, Mn. The line within 1½ miles of the proposed route are are deeply Concerned about what such Construction might do to our water supply.

We urge that this Construction not be permitted in the area now being Considered!

RECEIVED
MAR 17 1978
PLANNING

Sincerely,
Mrs. [illegible] Smith

Ken

Rt. 2,
Kenyon, Mn. 5594
Mar. 14, 1978

Dear Sirs,

I am writing in regard to Charles Koch's proposed pine line from Illinois to Pine Bend. The line will be running close to my property and I am concerned about oil spills running into my pasture stream. If the line is changed a few rode it will run through my land and I have a tile system which will be affected.

I favor the Alaskan Natural gas Transportation System for several reasons. One, there is not the tile systems we have in Minn. and Iowa. Also, I prefer Alaskan crude to foreign oil, and and the long run it seems to be cheaper.

RECEIVED
MAR 15 1978
PLANNING

Sincerely yours,
Alfred Hildebrandt

COMMENTS

(6)

(25)

RECEIVED

MAR 17 1970

BUR... OF
PLAN...

Hagen

3-15-70

Dear Sir!

In reference to the proposed northern pipeline. My farm is to be crossed. I'm not concerned about the crossing of all the tile lines. I still think the chance of oil leaks getting into the lines are a real problem and can travel a long way before seen. We've had that problem with a water line that has caused leaks under a tile line. It seems that if any would follow a common boundary it would help. Even though the oil is contained it's the loss in really needed. I also think there should be at least 2 feet of fill on lines.

Sincerely

[illegible]

I'm concerned [illegible] I don't object to this Northern Pipeline Project. It would mean tremendous loss of property value to my neighbors and friends, to say nothing of the destruction of their tile lines even though repaired, would never be the same due to settlement of the ground.

In the event of an oil spill the company assures that they will clean it, but where crops get destroyed by it, not there. Also where ground ends up ponds from it, not there!

Thank you for letting me express my opinion on the matter.

Eric Hagen

COMMENTS

March 14, 1978

RECEIVED
MAR 16 1978
BUREAU OF PLANNING

To Whom It May Concern,

Minnesota Department of Natural Resourses
Centennial Office Building
St.Paul, Minnesota 55101

Dear Sir:

We are writing in regard to the proposed crude oil pipeline from Wood River, Ill. to Pine Bend, Minnesota. We live along this proposed route and are very concerned about this pipeline going over these huge fresh water aquifers that supply us with our water. Some of the wells in this part of the county are approximately 13 feet deep and in case of an oil leak the contamination would be a great disaster. Do you realize that the proposed route of this line would be going over one of our biggest water supplies in this country. Can you imagine what it would be like not to have water.

We wonder how come this line is not allowed to go thru any State Parks, recreational area, trout streams, duck ponds and etc., yet it is allowed to go thru prime farm land giving no thought to all the tile lines it will disrupt.

We favor the pipeline from Washington using our own Alaskan oil, not imported oil.

Thank-you for your time and we hope you will give this your attention.

Sincerely,

Gilbert Tatge
Pipe Lines

Mr. & Mrs. Gilbert Tatge
R. R. #1 Box 273
Faribault, Minnesota 55021

(30)

RECEIVED
MAR 16 1978
BUREAU OF PLANNING

LeRoy, Minn.
March 13, 1978

Dear Ms. Hagen,

We, the people of the LeRoy area, are very much against the proposed pipe line running through our farm lands.

Our main concern is the contamination of our water supply. Contamination at some time could not be avoided, beaause of our lime rock formations which are very close to the surface here in this part of the state. In the lime rock we have what are commonly called "sink Holes'. These are large openings in the lime rock which runs into large caverns where our water supply is located. So as you can see, any spill or leak in the pipe line would go directly into our drinking water.

Our next concern is the contamination of the Upper Iowa River. Many wild aniamals use this river as their natural habitat, which include deer, beaver, racoon, muskrat, mink, fox, and rabbits just to name a few. There would be an additional threat to the ducks and the fish that are in the river.

Pleass consider these facts, and think of our children and their children, and how you would be destroying their lively hood by voting for the pipe line.

Thank you very much, from the people of Mower County, if you decide in our favor and vote against the pipe line.

Sincerely,
Mrs. Herbert Soltau, LeRoy, MN.

(36)

COMMENTS

RECEIVED

MAR 17 1978

Division of Waters

Rural Route 1, Box 127-B
Farmington, Mn. 55024
March 16, 1978

Minnesota Department of Natural Resources
Centennial Office Building
St. Paul, Mn. 55101

To whom it may concern:

In reference to the Northern Pipeline Project, from Wood River, Ill. to Pine Bend, Mn., I have three issues concerning our natural resources, for which I am against the construction of this pipeline. These three items are as follows:

I am concerned about contamination of our water supply. At the present time I, as well as several neighbors, have a shallow well of sixteen feet. This provides the source of water for the dwelling and the livestock, which comprise an important part of my farm business. This water has been tested as recently as 1975, and has been reported to be adequate for human consumption.

Secondly, I question the means in which the pipeline will cross the Vermillion River, so as not to obstruct the water flow. This river divides my property, including tillable acreage. Because of the flooding from melting snow in the spring, any other obstacles may cause a greater back-up of water.

Finally, there is evidence from already existing pipelines that the soil, and therefore crop production, is disrupted. My soil is sandy, and by displacing the soil and gravel layers, it would be less productive. Because of the friction in the pipeline, due to the movement of oil, the soil directly above the line has a tendency to be warmer and, subsequently, drier. Thus earlier melting of snow, to quicker drying of the soil, and therefore the growing crop, during periods of infrequent rainfall during the summer months, there is a noticeable difference in the usability and productivity of this land.

In closing, and in addition to the three previous statements concerning water supply, flooding, and soil productivity, I have a personal objection to the construction of this pipeline. Since a Northern States Power line already exists on my property, and since these fields are just 1320 feet (¼ mile) wide, I do not wish to relinquish the jurisdiction over any more land. However, if construction of this pipeline is inevitable, I request that it be located within the same easement of the power line, in order that I may continue to efficiently farm this narrow acreage. I ask that these issues be given careful consideration. Thank you for any time spent in reviewing this letter.

Sincerely,

William H Sacks

(65)

Farmington, Minn.
March 9, 1978

Dept. of Natural Resources
Environmental Review Coordinator
3rd Floor Centennial Bldg.
St. Paul, Minn. 55155

RECEIVED
MAR 10 1978
BUREAU OF PLANNING

Dear Sirs.

I am a Dakota county Farmer effected by the pipeline. I have been attending meetings and I am concerned about a break in the line and what it will do to my water supply and what it will do to my land. According to the maps it will go the whole length of my farm and a short distance of my buildings. I am sure a leak would destroy my crops and livestock. I dont think a pipeline is safe thru my farm.

yours truly
Roy Zellmer.

(10)

COMMENTS

I am concerned due to the wildlife because the dill line picking up the leakes and going into the creek which I have running through my land, and the creek has fish, beaver, muskrat, ducks and along with the other birds.

Darrell Beaver

Wood River Ill.
To.
Pine Wood Minnesota

(48)

RECEIVED
MAR 17 1978
BUREAU OF
PLANNING

RECEIVED
MAR 20 1978
LAND BUREAU
Dept. of Natural Resources
Adm. Sls. Acq.
Rec. Lss. Exc.

RECEIVED
MAR 21 1978
BUREAU OF
PLANNING

Feb 14 - 78

Bureau Of Planning.
Dept. of Natural Resources;
Gentlemen;—

I am deeply concerned about the proposed Northern Oil pipeline designated to cut my farmland for several reasons; — first it would be a hazard to my land should the pipeline develop a leak near our wells, it would cut the lines, fences, roadways probably the well — etc — Should our crop be ready for harvest and the leak occur then — the loss — Here are alternatives for the pipeline it need not damage your farmland.

Very Concerned
Mrs Bessie M Lucas

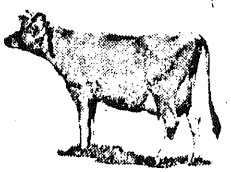
(62)

COMMENTS

PHONE: (507) 477-2177

Kvasnicka Jersey Farm

Route 1 Box 33
HAYFIELD, MINNESOTA 55940



RECEIVED
MAR 17 1978
BUREAU OF PLANNING

3/15/78

To Whom it may Concern,

I have five major concerns with my property concerning the proposed pipeline.

a) I have many tile lines in my farm in which the proposed pipeline would be cutting through.
b) I have two county mains (18" tile) that empty into the start of the Zumbro River.
c) All my grass waterways empty into the Zumbro River.
d) I milk 40 head of cows and my well is only 60 feet deep. I am very much concerned with well contamination.
e) I have 5 acres of land that is in woods, left for wildlife, if this line should come in, it would cut right threw this area.

Please check into these matters,

Sincerely
John Kvasnicka
Dodge County
Hayland Township
Section 34

(41)

Rt 1, Box 33

March 2, 1978

To Whom It May Concern:

We would like to take this opportunity to inform you of our opposition to the proposed pipeline running through Mower County.

We are not farmers, but live in the city of LeRoy. We have been following this pipeline ocverage in the local newspapers and have talked to several area farmers and other townspeople. We definitely do not want this pipeline running through our area. We don't feel this just concerns the farmers - if this pipeline leaks (which eventually it will because of age and corrosion or accident) what will our water be like? It may not seem really threatening to you - you don't live in this area. We do! Our children are growing up hereand we have to think of the future.

Is this pipeline really a necessity? We have heard several comments that it is not!! Isn't the DNR supposed to be concerned with the upkeep and preservation of our State of Minnesota? I wouldn't think that approving something that is going to pollute our water and land is very feasible. How much money will then have to be spent to correct the situation - if in all it could be corrected.

Please check into this matter further and give considerable thought to prevent this pipeline.

Sincerely,

Mr & Mrs. Tom Hovde

Mr. and Mrs. Thomas B. Hovde
Box 2
LeRoy, Minnesota 55951

(64)

COMMENTS

Rice County
March 8, 1978

Dept. of Natural Resources
St. Paul, Minnesota

Gentlemen:

Crude oil and prime farmland should not be competitive and they are in no way comparable.

Construction of a crude oil line through Rice county - as well as Mower, Dodge, Steele & Goodhue - would create potentials for serious ground water pollution.

This is a matter of great concern. Farmers are probably this nation's richest, and a tiberish of people for many years to come. Pipeline wells must bow to the forces of pressures of the time without regard to the potential consequences of the future.

(24) Mrs. W. Gerdes

Dundas, Minn.
Mar 9, 1978

Dept of Natural Resources.

Dear Sir;

In regard to the proposed pipeline in this area we are opposed to it.

We feel that the need is not that great at the present time.

If a pipeline is needed in the future, we believe the Northern Tier pipeline would be more practical. It could serve refineries in Montana & North Dakota also, and would be less dependent on ~~foreign~~ foreign crude.

It would also use less energy as less fuel would be used for tankers and barges.

There also should be less chance for oil spills as there would be no loading and unloading of tankers & barges.

The cost of handling crude that way should also be less as less manpower would be needed.

Yours truly

(23) Mr & Mrs Floyd Swartwout
R 1, Box 63
Dundas, Minn 55019

COMMENTS

Hayfield, Minn.
March 22, 1978

RECEIVED
MAR 27 1978
Division of Waters

Dear Sirs,

I'm writing in regard to the route of the crude oil pipeline. The feeling of most farmers, if they have any direct dealings with the pipeline or not, is to follow the rail road track + keep out of field drainage lines. A lot of time + money has been spent on tiling to keep our land producing. We know from experience any tampering, regardless of how careful, can cause problems. Giving them access to cut into our ground can cost many bushels of grain for the farmer. The railroad land is the most practical answer. I hope you will take into consideration the many, many farmers you will be dealing with.

(81)

Thank you,
Norman Swanson
Landowners in Dodge
County, Hayfield Minn.

Ken

RECEIVED
MAR 28 1978
DIVISION OF WATERS
MAR 24 1978
Division of Waters

March 23, 1978

To: Department of Revenue

Dear Sir:

I have a farm 2 miles East of Hayfield and I guess you have marked on your map to put a crude oil line through.

This is probably no definite decision but I hope that it never happens.

It seems to me that you could just as well follow the Railroad track and you wouldn't be interferring with tile lines.

Yours truly,
Vernon Holst
Vernon Holst
P. O. Box 663
Austin, Minnesota 55912

(9)

COMMENTS

March 6, 1978

Dear Sir:

We attended the meeting in Dodge Center and found it to be very informative. There were many questions raised and several left unanswered. According to the proposed map the pipe line will be going through about a mile on our land. Our big concern is the many lines of tile that it will be crossing. We have many branch lines and 5 main lines since we have an open ditch in our pasture that they empty into. These drain ours and the neighbor's land. Many tile lines are 4½ to 5 feet in depth and the pipe line will have to go below these. We feel that a recommendation should be stipulated that all tillable land have the pipeline below 5 feet. If not buried this deep it would be impossible to tile more land in the future where this pipe line would cross.

Other concerns about the tile line are: how long would the tile remain open after it was cut through and the amount of dirt that would wash into the line when water fills in the ditch; who bears the cost when the ghbor comes on us that the main outlet is not working; is there a time limit to settling a release as sometimes it takes two or three years before the damage shows up in the tile line.

We would also like to mention that we have cattle in our pasture at all times and the fences and open ditch could cause problems.

Of course, a seepage or break in the pipe line is a possibility and this is a constant concern for getting oil in our wells. A breakage ten miles from our place could follow the water main and show ip in our well. How can we protect ourselves from the cost of this damage?

Progress for the future must go on, but we feel there are many questions and answers unresolved concerning the need and how and where the pipe line should be built.

Sincerely,

Mr. & Mrs. LaVerne Stringer

(20)

RECEIVED
MAR 10 1978
WILDLIFE
ECOLOGICAL SERVICES SECTION

Vonny Hagen

RECEIVED
MAR 13 1978
BUREAU OF PLANNING

Route 1, Box 270
Faribault, Minnesota 55021
March 9, 1978

Department of Natural Resources
658 Cedar Street
Centennial Office Building
St. Paul, Minnesota 55155

Re: Environmental Impact Statement on the
Northern Pipeline Project

Gentlemen:

As a resident of Wheeling Township, Rice County, Minnesota, we are very concerned about potential hazards of the Northern Pipeline Project due to the possibility of contaminating our water supply.

We live within a very short distance of where the proposed pipeline is to go and our well is only thirteen feet. So in case of any breakage in the pipeline, it would quite possibly contaminate our water supply and in this particular area, I am sure it would effect the water for most farmers.

Yours very truly,

Thomas J. Laughlin

TJL:fd

(16)

COMMENTS

COMMENTS

Kerr

Hayfield Minn
Mar 6, 1978

Dear Sirs:-

Will you please send us a copy of both the Draft Addendum and the original Draft and Final E.I.S.

I think you should use the property around the rail road tracks for such things and avoid Good farm Ground.

Perking Christenson
PO Box 17
Hayfield, Minn
55940

(6)

RECEIVED
MAR 7 1978
BUREAU OF PLANNING

RECEIVED
MAR 8 1973
BUREAU OF PLANNING

R. R. 1 Box 278
Faribault, Minn 55021
March 6, 1978

Vonny Hagen

Dept Of Natural Resources
St Paul Minn 55155

Gentlemen:

Is this trip necessary? Is there not another route, does this pipeline have to go through our prime farm land? What will happen to the plastic tile lines, the rock formations, the underground water supply, our good top soil. We understand that the D. N. R is planning to use an inferior grade of steel pipe from Japan. In case of an oil leak, we would be wiped out. Please, we beg of you, is there not another way to go!

Sincerely
Mr. & Mrs. W. E. Schlemm

(8)

March 25, 1978

Dept. of Natural Resources
Centennial Office Bldg.
St. Paul, Mn. 55101

RECEIVED
MAR 27 1978
Division of Waters

Gentlemen:

In writing this letter we hope to express our great concern for the proposed pipeline which would cross our land located east of Hayfield, Minnesota.

The first point we would like to make, is that it has been proven without a doubt that pipeline companies who already have a line constructed can supply oil for the next 25 years, especially if they put any new lines in where there is a previous easement.

If a pipeline is needed as badly as the pipeline companies claim, why can they not put their lines in along railroad right of ways? This would affect only 10% of tile lines to be crossed on prime farmland. In talking with farmers from Iowa whose farmland was used for one such pipeline, it was noted that

(82)

tile lines cut for the placement of the pipeline are not working now. In fact, many are very disgusted because their tile lines were not repaired properly, if at all, and definitely would not allow another pipeline to cross their farmland.

Another point to consider is why the pipeline companies are not consistent on easements? For instance, farmers with farmland that has a monetary value less than our land value received an easement settlement 3 times higher than what we were even offered!!

It appears to us that certain people are out to take advantage of farmfolk who are considered to be of inferior intelligence! Let it be known that we are doing our "homework" and do not intend to be taken advantage of, especially for a pipeline that, as near as can be determined, is not needed! It has also been most obvious to us that pipeline company officials

COMMENTS

have not done their "homework" and seem to care less whether they disrupt an important business such as farming. One wonders what the reaction of company officials would be if their business were to be disrupted in such a way with no thought to the cost of repairing damage done, especially if there were much more economical alternatives!! Just remember, a little research will tell anyone that without farmers and farming this country would be in sad shape!

Sincerely,

Randy & Carol Swanson
R.1 Box 85
Hayfield, Mn. 55940

cc-file

COMMENTS

Route 1 Box 283
Faribault, Mn. 55021
March 13, 1978

RECEIVED
MAR 15 1978
BUREAU OF
PLANNING

Department of Natural Resources
Centennial Office Bldg.
St. Paul, Mn. 55101

To Whom It May Conern:

I am writing this letter as a concerned and interested citizen for the welfare of our state, our people, and our future.

A couple of months ago we became aware of the possibility of a 24" crude oil pipeline being installed by Northern Pipeline Co. of Delaware for the Koch Refining Co. which would bisect the prime agricultural land which we have acquired through the work of our lifetime. There are 3 good reasons for my writing this letter (not necessarily in the order of their priority):

(1) We have recently returned from the barren reaches of Saskatchewan in the area of Weyburn and Estevan oilfields, sparsely populated because of the lack of water despite a landscape dotted with oil wells, proving the importance of water as a resource for both industrial and private use which vastly affects the standard of living. There, it is a law that anyone drilling for oil must report any find of water to the provincial government. Here we sit on the world's largest and purest water supply which is now in jeopardy because of a pipeline which could destroy it in the event of an oil spill.

(2) A major concern of affected landowners is the threat to their existing tile lines which they have sacrificed to install. Without proper drainage and aeration no amount of fertilization can produce the adequate food supply that our people need. The proposed 3 foot cover is definitely a detriment to the productivity of our land. There should be no less than a 5½ foot cover on any pipeline going through agricultural land for the simple reason that tile lines are installed on grade for gravity flow and must follow the watershed of the terrain.

(3) We are appalled by the proposed pipeline route going so close to one of the only (if not the only) remaining virgin hardwood forest, the Nerstrand Woods State Park. In the event of a pipeline spill there is a definite possibility that the oil could run through the tile lines emptying into the woods itself thus destroying what it has taken centuries to create.

We are writing to you, who are in authority, so that you may be made aware of facts which will aid you in making the right decision. We know there is a need for crude oil, but we feel that the pipelines could be installed within existing pipeline corridors along railway right-of-ways or public highways thus eliminating the unnecessary jeopardy to our water supply, our prime farmlands and our natural forests.

(29)

Yours truly,
Harold E. Wagener
Harold E. Wagener

COMMENTS

Austin Minn
Feb. 22, 1978

Dear Sir
We live in Sec. 35, in Clayton
Township mower county
Pipe line is marked to cross
1 mile of our farm 44 Acres
I wish you was owner of
this farm results maybe
would be different
Pipe line is to cross our farm
N W corner to S. E. Corner
We have spent over $30,000.00
tiling since 1939 I am 67 yrs
have helped tile for 50 yrs.
there is now a pipe line
can put tile back 100%
we know Yours truly
Mr Oscar Bustad

Please reply

over

COMMENTS

Brother has just 3 new machines
My Son Ryan has 2 new machine
Was worked at State Park
at LeRoy Minn.
Put in Rain tile there at Park
Why not come a see for yourself
Their is lots of tiling done
around here. You are
welcome! or ½ dozen
will. Even pay for meals when
here and drive our car
Yours truly
Oscar Bustad
Austin Minn
Looking forward to seeing you
folks

[redacted]
Territory Representative
[redacted]
GRAND MEADOW MINNESOTA 55936
Phone: [redacted]

Beans Yield was 51½ bushel per
acre here

COMMENTS

We have a letter from
Albert Quie dated
Nov. 23, 1977. In Reply
from talk with him in
Austin Nov. 21 1977
he does not think the
pipe line is not in need

Please Reply

Yours truly
Oscar Bustad
Rep. Jim Nunn

12-77

RECEIVED
FEB 24 1978
BUREAU OF
PLANNING

the Alaskan earth quake, our well was good, the water had a very good taste, and plenty of it. but abant a week before the earth quake, our children would draw a glass of water, but instead of drinking it, they would hold it near their ear and hear the water fizz, like an Alka-Seltzer does. but then the day before the earth quake, the water had such a bad taste and oder that a person just could not drink it. well, the morning after the earth quake, we did not have any water, the preasure got so great it broke the check value in the well, and the water level droped abant 30 ft. it was hard to believe an earth quake that far away could have an effect on our well, but serval other wells were effected here in Dodge County. so who would be able to tell how far an oil spill could effect or contaminate our drinking water. here in Dodge County we relie very much on our tile to drain our soil, we need it very much. We would like you to take a good, long look at this if this pipe line would follow the road along our farm, even though they would be in our fields, they would not cross a tile line. but the way they plan to go they would cross abant 30 tile lines on our farm alone.

COMMENTS

Thank you
Paul Wascheing
Hayfield, Minn.
55940

Department of Natural Resources
Environmental Review Coordinator
St. Paul Minn.

I am writing because we are very much concerned about the proposed Northern Pipeline Project, from Wood River, Ill to Pine Bend, Minn. as the proposed line will run through our farm on both sides of the road, in this same area, we just put in some 70,000 ft. of tile a couple years ago. and as our farm lies on the deride of the water shed. so some of our tile outlet drains toward the Cedar river, and the other tile drains toward the south fork of the Zumbro river. Now, we are almost certain that some day there will be an oil spill, how large or how soon, we do not know, but it is certain to happen on different places along this line, and when it does, what will happen to our streams & rivers when this gets into our tile lines and is dumped into these streams. now when the tile lines are only about six inches from the pipe line, the oil will be flowing in these tile lines much sooner than it will reach the surface. and then what will happen when this oil gets down into our water table, our drinking water will be contaminated, and this could go several miles under ground. how many miles? I would say no one can realy say. why? We had a new well drilled a little less than a year before

COMMENTS

Mar 2-24-78

Feb. 20, 1978

Dear Person,

Please send me copies of the Draft Addendum, the original Draft E.I.S. and Final Draft E.I.S.

Comments- The minimum Cover over the pipeline should be sixty inches (The pipeline Company will have fewer problems if the pipeline is below the frost ~~line~~ line.

(2) Where the pipe line crosses the field tile the pipeline should run below the tile line.

(3) The pipelines should follow roads, railroads, rivers and go across wasteland as much as possible, instead of going across good agricultural farm land.

Carlyle H. Hanson
Frost, Mn. 56033

March 14, 1978

Dept. of Natural Resources
658 Cedar St
Centennial Office Bldg.
St. Paul, Mn. 55155

Jonny Hagen

Dear Sir

I am concerned about the the pipeline in this area, because we have the best water supply possible but don't have a solid rock bed to keep a spill from reaching it. Also we are next to a creek and a heavy rain during construction could send our top soil down stream.

Eylet Flom
Lil Flom

COMMENTS

March 15, 1978.

Dept of Interior
Bureau of Indian Affairs
Fort Totten, N.D.

RECEIVED
MAR 16 1978
BUREAU OF
PLANNING

Gentlemen:

In regards to the proposed Garrison Diversion pipeline from Woodworth, N.D. to Pingree, N.D.:

We are concerned about water contamination from a possible oil spill, which would affect a vast area. There is inadequate knowledge as to the extent of underwater contamination, if a spill should occur in Tonka area (5 mi. East of Faulkert).

Having had considerable experience with tile lines and problems arising when they are not through and especially when under cut, it is unthinkable to allow a pipeline to be constructed through prime agricultural land with tile systems existing.

24

COMMENTS

The pipeline would disturb valuable cropland to such an extent, it would never be fully restored to its original use and value. The land value of the farms involved would be greatly devaluated by such a pipeline.

If the pipeline is proven to be actually needed, all the environmental problems possible should be avoided. That is; underground water contamination, destroying prime farmland, & tile drainage systems. The existing corridors of Railroads, highways, & pipelines should be used.

Trusting you will strongly oppose the pipeline, especially the present proposed route.

Sincerely,
H Tolbert Hillebrand
MAJOR USAF, Retired
Betsy Hillebrand

St. Paul, Minnesota
March 16, 1978

Mr. Jim Harrington
Dept. of Transportation
St. Paul, Minnesota

Dear Mr Harrington:

I am writing in regard to Minn. Pipeline Company's proposed crude oil line through Southeast Minnesota. We are especially concerned with the damage which will be done to the farmland in this area since our topsoil is very shallow in many areas. We feel these lines, when necessary, could be routed along roads and railroads to minimize damage to production.

It is our feeling that Minnesota's energy needs could be met in as much more practical way by supporting a pipeline bringing in our own crude oil from Alaska at a much lower cost to the people of Minnesota.

We also feel that there is much potential in promoting research in Gasohol a renewable product, to help relieve our energy shortage. At the same time, help the agricultural economy by converting our surplus grains to meet some of our energy needs.

It seems to us, from the facts and figures presented to us, that our energy needs here in Minnesota can be met with the existing supply lines, even when Canada's quotas are lowered, by bringing the existing lines up to full capacity while we await completion of the Northern Tier line.

Sincerely,
Mr. & Mrs. Clarence Anderson

(55)

COMMENTS

Tues. March 14, 1978

Department of Nat. Resources

Dear Sirs:

Before you issue a final Environment Impact Statement on the proposed pipeline carrying crude oil through southern Minn., we ask that you consider carefully the danger to our underground water supply that a massive oil spill or leak would cause.

We have, in our immense aquifers, the finest supply of underground water in the world. But the structure of our rock and soil is such that a massive oil spill could seep down to this underground water and would contaminate not only the water for a small area, but the water supply to the cities of Faribault, Northfield, and all the surrounding area.

We don't know what would happen to Faribault + Northfield. We do know that such contamination would definitely end our hog operation on our farm.

There is also the possibility that farm tile and natural waterways would carry any oil spilled into the Straight River and the Nerstrand Woods State Park. If there were a spill in our area the drainage goes either north to Nerstrand Woods or south to the Straight River.

Sincerely
Vernon + Esther Buschs
R. 1 Box 269
Faribault, Minn.

COMMENTS

334

COMMENTS

March 7, 1978

Department of Natural Resources
St. Paul
Minn.

Dear Sirs:

This is in relation to the crude oil pipeline which proposes to go through southern Minn. to Pine Bend. In preparing your impact statement we hope you will place sufficient importance on possible damage to farm tile lines and topsoil. But we consider even more important than that the possible pollution of underground water. Particularly where our income comes largely from livestock the contamination of our underground water supply would ruin us. It would not be a matter of inconvenience, but of a matter of losing our livelihood. And in addition to this, an oil spill could ruin the best cropland in Minn., as the pipeline wants to go through the best cropland. Isn't our land and our water the the most important natural resource southern Minn. has?

We are depending on you to protect it.

Sincerely,

Vernon & Esther Busch

Faribault, Minn. 55021
Rt. 1 Box 269

(20)

Ken

RECEIVED
MAR 10 1978
BURLAU OF
PLANNING

March 1, 1978

Dear Sir:

I am writing in regards to the Northern Pipeline from Wood River, Illinois to Pipe Bend, Minnesota. I feel that the present route should not be recommended for the following reasons.

It was mentioned by a geologist that sinkholes are present in the area of the pipeline route. A sinkhole or sink is a large sunken place in the earth which has no outlet. Obviously these cannot be seen unless extensive x-rays, diggings, and studies are conducted on the land. So far, I have seen no sign of studies done to check for sinkholes.

This leads to the problem of possible oil leakage. Pipeline leakage is very probable because it has happened before. It may be stopped if caught in time in some places. But what happens when sinkholes are present which quickly lead to the groundwater supply; contamination of the water will result. Once the water is contaminated, then what?

What I would like to know is, when was the last geological survey taken as to where these sinkholes are located, especially in the area of section 24, Empire Township, along the Pipline route. Or don't you know where they are located, and if not, measures should be taken to locate these sinkholes before we cannot correct the underground problem, since I cannot be guaranteed of 100 percent non-oil leakage).

I would want can answer to my questions. ~~by March 10th~~. Thank-you.

Yours truly,
Laurence Brockman.

COMMENTS

COMMENTS

Rt. 2
Le Roy, Minnesota 55951
March 10, 1978

Mr Ken Wald
Comm. of Dept. of Natural Resources
Centennial Bldg.
St Paul, Minnesota

Dear Mr Wald:

I am writing in regards to Minnesota Pipeline Company's proposed crude oil line through South East Minnesota. We are especially concerned with the damage which will be done to the farmland in this area since our topsoil is very shallow in many areas.

Also, there is considerable footage of this line in Southern Mower County which is underlain with sand and quick sand, which could lead to contamination of an excellent, high quality water supply. There are also sink holes on the proposed route south of Highway 56.

We feel these lines, <u>when necessary</u>, could be routed along roads or rail lines to minimize damage to productive land. It is our feeling that Minnesota's energy needs could be met in a much more practical way by supporting a pipeline bringing in our own crude oil from Alaska at a much lower cost to the people of Minnesota.

Sincerely
Mr. & Mrs. Clarence Arndorfer

COMMENTS / RESPONSES

Section III

COMMENTS RECEIVED AT PUBLIC MEETINGS

DODGE CENTER AND NORTHFIELD, MINN.

February 21, 1978

The following are written summaries of the public hearings which were held at Dodge Center and Northfield, Minnesota on February 21, 1978. These are not verbatim transcripts, but represent an edited and paraphrased account of the hearings. Public participants are by an underlined name and are listed in the account according the sequence in which they asked questions or made statements. Questions and answers are identified by numbers to assist in matching up inquiries with responses. Answers which are identified as "Supplemental Responses" represent information added subsequent to the hearings. Every effort has been made to record the questions in summary form as closely as possible to the original wording. Responses often have been paraphrased or substituted in order to provide the most current and accurate replies to the questions.

Participants

Department of Natural Resources - Bob Johnson, Vonny Hagen, and Al Wald

Northern Pipeline Company - Roger Williams (President), Harry Weed, Bill Martin, Jack Riffe (Construction Consultant), Bob Arco (National Biocentrics Consultant), Bruce Hansen (Attorney)

Philip Heydt Q1: You say you are going to have four inspectors and one chief, are they employed by you or another agency?

Q2: Another question, in our area we do alot of field tiling and I am very concerned that repair and replacement of these broken tile lines is going to be done to the manner I feel it should be and I feel the only way that can be done is to leave it in the hands of the County SCS Commission. And what type of materials should be used to repair and replace them should be left to each County's discretion.

Bill Martin A1: The inspectors are ours, they are company personnel.

(Supplemental Response) (The state will also provide an on-site liaison worker to monitor construction activities.)

Jack Riffe A2: The procedure for repairing the tile should be the same up and down the entire length of the line because if you change, sooner or later someone won't know what they're doing. There should be one precedent set and stay with that. We repair the tile with channel irons and we dig back into the dig wall two feet or further into solid dirt. We use cement tile the whole way because it is impossible to repair plastic tile with plastic.

(Supplemental Response) (Northern Pipeline Company has now proposed tile repair methods tailored for clay, plastic and fiberglass tiles. See Appendix VIII)

Henry Burzlaff Q: How deep do you go to avoid tile lines? Suppose the tile is laid 4½ feet deep on the average, do you go deeper than that?

Jack Riffe A: May be to the discretion of the contractor as to whether he wants to raise and then lower the pipe to avoid tile lines or put the whole line deeper than 3 feet in an area to avoid lines.

(Supplemental Response) (The pipeline will always be installed below the grade of existing tile lines. In areas where there are many tile lines, the pipeline will be buried consistently at the depth necessary to be below tile line; that is, the grade of the pipeline will not be continually raised and lowered just to avoid tile lines. Because the area through which it passes is so heavily tiled, this will mean in effect that much of the pipeline will be below the 3 and 4½ foot depths where tile lines are most commonly found.)

Steve Hoysler Q1: I would like to direct this to one of the people from the pipeline company. He said that the right-of-way would be for a single line, single line rights. Is this easement you sent to us the easement you would be expecting us to sign?

Q2: What I'm wondering is these valves and fittings and so forth, are these going to be put on our property in the middle of the fields? How are you going to lay that out, do you know?

Bill Martin A1: Yes, that is the easement we will be expecting you to sign, but that section (double line rights) would be marked through and initialed.

A2: We want permission to lay the line. We want permission to check and maintain the line. As for valves and meters, we want to put them in areas where they are easily accessible - along roads and near the edge of fields.

C. R. Holland Q: How many line failures do you expect to form a rupture in your line in the foreseeable future?

Bill Martin A: Naturally, my answer to you is that we are not expecting any. The standards to which these lines were laid and how they are constructed are much better than twenty years ago.

(Supplemental Response) (It is extremely likely there will be spills during the life of this pipeline, and the EIS recognizes this fact. In addition, from the history of previous spills (Appendix III) it is evident that spills will continue to occur in the future. An attempt has been made, by rerouting and other measures, to minimize the possibility of groundwater contamination if a spill does occur. See PCA response, Appendix II.)

Murill Bromlow Q: Why don't you send out easements that you don't have to scratch out?

Bill Martin A: Well, I guess maybe we are tight, conservative. We had these easements printed up and we wanted to use them.

Theodore Winfield Q: If you are spending 150 million dollars for a pipeline, it seems like you are saving pennies by having and easement you got to scratch out. The Environmental Impact (Statement) says, and I could be wrong, that there would be a foot of cover over the entire line, between pipe and tile.

What is being said here tonight, does that apply to just one line?

Bill Martin A: Well, after you have spent that much money you have to try and save money somewhere.

(Supplemental Response) (A standard easement agreement for the Northern Pipeline has been prepared by several of the Environmental Quality Board Member Agencies and the company for use in Minnesota.)

Al Wald A: There is a minimum of 14" from the top of the pipe to the bottom of the tile line - on page 83.

Bob Johnson A: The pipeline officials say that is too much. That is definitely something we will look into in the final document.

Jack Riffe A: The reason I want to speak against this is because some of that tile line is 4 1/2 to 5 feet deep. Now if the tile is 5 feet deep and the pipe is 2 feet in diameter and we're talking about 14 more inches, that is a trench more than 8 feet deep. A minimum of 6 inches is enough to repair the tile and do a real good job.

(Supplemental Response) (The pipeline is required by American National Standard Code for Pressure Piping, B31.4 - Liquid Petroleum Transportation Piping Systems, Section 434.6(c), to provide a minimum clearance of 12 inches between the outside of the pipe and the extremity of any other underground structures. This does not include drain tile which requires only 2 inches of clearance.)

Pat Daly Q: In the event this pipeline ruptures and pollutes our underground water, who's going to be responsible for furnishing us with potable water?

And is there any possible way to clean up our underground water, who's responsible?

Will you be bonded or anything?

If you affect a quite large area of underground water, how are you going to haul the water?

Bill Martin A: It is the company's responsibility, it is my responsibility to see it is cleaned up. You have the company behind this, and yes, how much bond do they carry to lay this pipeline?

Harry Weed A: It is a fantastic amount, and we have insurance that has a million dollar deductible.

Bill Martin A: I have got to handle it at the time it comes up and if it means going out to this man who makes cement mixers on the back of trucks and having him make water tanks to haul it to your farm, then that is what I will do.

Alan Scott A: What does DNR propose as far as burying underground fuel storage tanks a distance from tile lines. I buried underground fuel storage tanks and was advised not to run tile lines near there because of possible contamination.

Vonny Hagen A: That is the Pollution Control Agency. I'm sorry but the DNR does not have regulatory authority regarding water quality, that is the Pollution Control Agency.

Bill Martin A: Do you have a testing requirement on your fuel storage tank?

Al Wald A: ...Refers to page 13 to 15 on what the company does in case of spills. Discussion follows concerning preventive measures company has taken to guard against spills.

Pat Daly Q: I could take you down to farms in Iowa where leaks from the Williams Brother's pipe caused pumphouses to blow up. Because gas got into the water, came up through the casing, the pressure switch contact hit, produced a spark and blew it up.

Bill Martin A: In the area you are speaking of, the line is quite old and there has been many a house built next to the line. And those wells have been drilled since the construction of that old line.

C. R. Holland Q: After the pipe goes through the farmer's land and the farmer wants to put in drain tiles, does he have to get the easement back from the pipeline company?

Bill Martin A: No, it is your land. Just contact the company and let us know that you are going to be working over the pipe and the company will send someone out there.

Harold Froelich Q: In the original EIS on page 12, it says the pipeline will be placed under the tile at least 4 inches of clearance.

(Supplemental Response) (Comment noted.)

John Ressler Q: I am very much concerned about the water situation. What is going to happen when our water is polluted. I live, and my tile lines drain into the Upper Iowa River. What is going to happen when there is a spill and the oil runs down our tile lines into the Upper Iowa River? It is going to pollute some water.

(Supplemental Response) (Clean-up of oil spills is done under the direction of the Minnesota Pollution Control Agency. The time required for clean-up will vary depending on the circumstances, but in most cases the pooled oil will be cleaned up within 75 hours, at which point percolation of oil into the soil or further spreading of the oil along the ground or on surface waters will greatly diminish. The final clean-up may take longer, but little additional damage will occur.

Oil passing through tile lines will usually be detected upon entering surface waters, in which case it would be cleaned up much like any other surface spill. Effects of crude oil on tile systems are unknown. The viscosity of the oil may plug or clog the tile rendering it nearly useless. Cleaning of such damaged tile would probably be impossible, and the old tile line would have to be removed and a new one installed.)

Harold Froehlich Q: Yesterday, at one of the legislative sessions, Tim Scherkenbach gave testimony regarding oil spills in Minnesota for the period 1972 to 1977. In this period, which is 5 years, there have been 72 pipeline spills. Three and a half million gallons of petroleum products have leaked out onto Minnesota soil in that time. The percentages that he gave which were hit by a machine - 13 spills for 18%; corrosion related spills - there were 17 - 24 percent of the total; equipment failure - seams, gaskets, valves, seals, manufacturing defects - 33 leaks for 46 percent; operator error - 9 leaks for 12%. This totals up to 72 leaks and 100 percent. Thank you.

(Supplemental Response) (Comment noted.)

Dr. Dennis Cortese Q: I have a couple of questions, but I think we are missing the point on spill potential. The petition which the company has filed under is just for crude oil and to pump crude oil from north to south. Yet the easement we are negotiating for is for a lot more than just crude oil; it is for gas and petroleum products. Why not make the easement spell out that it is only for crude oil and if something else changes and they want to ship gas

or petroleum products, they will have to negotiate the easement. Now this is important because the spill potential for the calculations based in the Draft Addendum of the EIS, the initial EIS, was based on the crude oil characteristics just like you were talking about. Well, what happens if products are shipped? Then the whole game is different. There is no excuse for sending out an easement that is not as clear as you intend it to be, unless you don't intend it to be clear. It is the only conclusion I can come to.

The other question I have is why not route the pipeline near the railroad tracks that are nearby?

(Unidentified) Q: I would like to know why you cannot follow the rail lines.

(Supplemental Response): (See Appendix IV, Railroad Alternative. A new application for a Certificate of Need would be required if the company was to propose a change in the substances to be shipped.)

Dick Bhend Q1: I would like to address this question to A1 (Wald). How many channels or major fractures in the bedrock are crossed by the pipeline on its present proposed location? The ones that lie close to the surface like in Dakota County near the mining operations, or are very close to the pipeline itself, say 25 feet from the pipeline. Do you control mining operation in the locality of the pipeline where there is blasting occurring?

Q2 The other question I have is how good is the detection system? Can it detect within one percent long term leakage like one that can accumulate for months and drain into the subsoil or rock formations and water systems?

A1 Wald A1: There are no fractures in the bedrock near the pipeline as shown on the maps provided by the U.S.G.S. I can assure you that hard rock excavation in the vicinity of the line would not be allowed.

Harry Weed A2: Our detection system is good within a quarter of one percent.

(Unidentified) Q: I don't really think you answered the young man's question in the front row about the easements. He stated it and no one really answered it, will you please answer that. You talked about crude oil and then you talked about pumping the other products through the line. Nobody ever said if it's going to be other products.

Bob Johnson A: I understood that to be more of a statement than a question, am I correct?

Dennis Cortese Q: You can take it either way, but he is now asking the question.

Bill Martin A: That form was one we used for years and years for all kinds of lines and what our agents would have

done in the past is just mark out things which were appropriate. Obviously, we made a mistake in trying to use the same easement form here. I guess just through ignorance. Now, we can certainly identify things which you would like to identify in that easement, and that is a single pipeline for crude oil use. We would be tickled to reprint the thing. Was there another part to your question?

Dennis Cortese Q: The only other part to my question was directed at the DNR. I guess they don't have the authority to regulate crude oil, but what happens if other products are pumped?

Bob Martin A: We are forbidden from doing that. I would have to look at the Certificate of Need, but it specifically says crude oil.

Vonny Hagen A: And therefore, the only proposal we are acting on is the one that has been certified by the Energy Agency. So it would seem that other state approvals would have to be within these same limits.

Dennis Cortese Q: But my question really is this: Is Mr. Weed and his company allowed to then begin shipping products ten years down the road without renegotiating easements?

Vonny Hagen A: I think that is an interesting legal question.

Bill Martin A: As far as our Certificate of Need is concerned, we are not permitted to ship anything other than crude oil. Now let's say we run out of crude oil and something else needs to be shipped up years later. I'm sure we will have to go back and start all over again.

(Unidentified) Q: I have another question. I was at an earlier meeting and I was told when this line was being excavated that the topsoil would be separated from other soils. Would it be backfilled the same way?

Bill Martin A: That is correct. Now, as I said when I started, have that written into your easement when the right-of-way agent comes around.

Emile Sowieja Q: And was I right to say that this proposed line has a minimum cover of three feet? I think further down we might be re-tiling someday and it just seems to me you should start out with a minimum cover of five feet.

Harry Weed A: There are some areas that you know you will never tile, so it would seem silly to put the entire pipeline five feet deep. But, if you feel you are going to tile in the future and want it deeper, have that written into your easement.

Emile Sowieja Q: You are talking about individuals here. How about the guy who wants the pipe to go through his farm at 3 feet deep? In the future, I see some of these tiles going to be crossed and this presents a problem. Am I clear on that? It seems it is going to cost us more to tile. It would be better if you used four feet. Why don't you look more at the railroad?

Bill Martin A: Even if you use the railroad right-of-way, you would still have to leave it and cross fields.

(Supplemental Response): (See Appendix IV, Railroad Alternative)

Richard Grats Q: I attended an earlier meeting here in November and we were told very definitely at that meeting, that it was far too expensive to double ditch this ditch and put the black dirt back on top. Now tonight, I think we have been informed that they are going to put the black dirt back on top and I think it would be a good idea if they set the record straight.

Harry Weed A: It has never been company policy to blanket double ditch, but if you want it written into your easement, then if you want it you can have it.

Richard Bhend Q1: With a detection scheme of .25%, that equates out to about 525 gallons of oil a day, barrels a day, pardon me, or 16,000 barrels a month. Is there any way we could enhance that detection system?

Q2: You said that your detection system was going to be worth a quarter of a percent, that equates to 500 barrels a day, or about 16,000 barrels a month. That could leak before you deduce that you don't have a flaw in your detection system.

Q3: Are you monitored by an independent agency?

Harry Weed A1-3: No, we are not monitored by an independent agency.

Richard Bhend Q: So, you have no detection scheme other than that for catastrophic failure? The small leakage is the one that would eventually destroy southern Minnesota.

(Supplemental Response): (A further explanation is contained in Appendix IX.)

Pat Daly Q: Do you feel your pipeline is as sophisticated as the Trans-Alaskan pipeline? Do you feel it is that sophisticated? All right, I have a newspaper article here that the Associated Press put out and are you aware of the oil pipeline in Alaska that was sabotaged. If they are sophisticated, highly sophisticated they say, these detection systems did not pick up this spill - a line flyer found it. My point is, a highly sophisticated detection system failed.

Roger Williams A: I don't know if you can believe all you read in the newspapers. Remember that no matter how sophisticated the detection system is, you still have a man reading those meters who can make mistakes.

Terry Peach Q: This fellow over there said that oil leaks always come to the surface. Oil does sterilize ground or kills ground, correct? If you have a leak and get alot of oil coming out, what is going to insure us of our ground that we are going to get our money back out of the leak?

Roger Williams A: We will pay all damages.

Dale Taylor Q: Will these leaks surface through frozen ground?

(not identified) A: Yes, they will.

Winfield Q: The Upper Iowa River runs through my place and in your statement you said there is no fish in the Upper Iowa River. Well, within a short two miles is a state park and then LeRoy and there is good fishing there and in northern Iowa the Upper Iowa River is noted as the best bass fishing river in the state of Iowa. Chances are there will be a refined product pipe running the other way and some time there is going to be some leaks as they get older and corrode, and no doubt who build the pipeline might not be here in 10, 15, 20 years. I might not be here, but my children and grandchildren will be here and that is why I am here at this meeting tonight. I would think that I would like to see the energy department take another good look at the need for this pipeline and get it out so we can understand it. I don't know if I'm talking to the right people here, but the letters don't seem to do much good.

Al Wald A: Your comment on the fishing in the river is very good, and we will note that. We will check with our fisheries to correct any inaccuracies in the document. We cannot address the need issue. That was addressed by the Energy Agency in their Certificate of Need procedure.

(Supplemental Response): (The Upper Iowa River is generally shallow and basically a minnow stream. Suitable habitat for game fish does not exist during most of the year. In Lake Louise, however, additional stream flows and deeper water provide suitable habitat for blue-gills, orange-spotted sunfish, crappies, northern pike, and bullheads.)

David Hansen Q: I would like to ask now, once the DNR has made it's Environmental Impact Statement, which we know there are some gross errors at this time. How will we know that this correction will take place and that it is taking place? Who is going to police this to see to it that what is said actually happens and follows up on it? Who does it?

Al Wald A: There is a whole series of regulatory authorities that this process still has to go through. The purpose of the EIS is to collect information on the impact of the line and not to specify engineering design(...Discussion follows concerning the Environmental Impact Statement procedure, composition of the Environmental Quality Board and who regulates the pipeline and policies actual construction.)

(Supplemental Response): (The State has proposed that a liaison worker representing the state observe the construction for compliance with pertinent agreements and permits.)

Randy Swanson Q 1: On the Dome pipeline, just to give you an example so far as police action. The farmers on the line did not approve of some things that were being done on the easement and they would not sign an easement and they went through and put in anyway and it was not what they thought. They put money they thought they would allow in this which didn't cover even half this in escrow

and the only way they can draw the money out now is to sign the easement which they didn't approve in the first place.

Q 2: I would like to bring up one other question too. This will concern everybody. You dig through these lines, these tile lines, do you locate them before you cut through them or does the machine go through and tear up everything?

Jack Riffe A 1-2: It's almost impossible to locate tile lines, but your trencher doesn't do as much damage as you might think. Now, on your clay tile, it will break it.

Randy Swanson Q: This works fine with clay and cement tile, but I have done some research on this on plastic tiles and found people were dissatisfied where the trencher comes through, it pulls, stretches and breaks connections and they have found these connections were broken as far back as fifty feet from the edge of the trench.

Jack Riffe A1 : I'm going to have to say to you that that tile is not strong enough to pull that fifty feet.

Steve Henslin Q: In the EIS, as I understand it, they say you are going to X-ray 10% of the welds through farmland and 25% by stream crossings. Last Tuesday at a senate transportation committee hearing, Paul Fray, from Williams, told us that, or testified that they X-rayed 100% of their welds on their 18 inch line last year and found 4 to 5 percent that were defective and had to be re-welded. Now why isn't it necessary to X-ray 100% of this, what about bringing up these questions of acquisition pollution, what about the areas where 5% bad weld are that don't get X-rayed?

Bill Martin A: (...Discussion follows on tape concerning X-raying techniques to be used on the pipeline.)

Steve Henslin Q: You mean all the defective welds will show up in the hydrostatic testing? They will all break and you'll repair them? When do they show up?

Bill Martin A: Hydrostatic testing tests the whole integrity of the entire pipe.

(Supplemental Response): (Woodward -Clyde Consultants, in their report , prepared for the Minnesota Energy Agency, states that "In our opinion it is appropriate for the State of Minnesota to require 100 percent radiological testing of girth welds on pipe to be installed in areas it considers sensitive, even though some areas the state might classify as sensitive would not be specifically included in areas requiring such testing according to the regulations quoted above." (refers to Federal DOT Regulations).

On the other hand, the U.S. Department of Transportation in a letter to the Energy Agency (March 1, 1978) states that the Office of Pipeline Safety Operations (OPSO) "considers these requirements (the Federal requirements for X-raying 10% of all girth welds and 100 % of girth welds in specified areas) to be reasonable and adequate to assure the quality of the welding performed during the manufacture and construction of the pipeline. The post construction pressure test required by the regulations (Sub-part E) is further and more

positive assurance of the quality of all welds, materials, and construction procedures used prior to placing the pipeline in operation." It should be noted that Federal regulations require 100% X-raying of longitudinal welds.

Steve Henslin Q1: Well, I think that I would like to recommend to the DNR that possibly you should recommend that this whole line be 100% X-rayed to insure against leaks.

(Supplemental Response) (The DNR will require 100% X-raying for sensitive areas.)

Q2: Another question that Jack Riffe should know from his experience and that you guys should know from your cost projection. How much is it going to cost to repair each tile crossing - $50, $100, $10?

Jack Riffe A2: Well, that can vary. I'd say approximately you're speaking of $150 to $200 a crossing.

Steve Heslin Q: Well, it would seem to me that through Dodge County, where I would estimate there are 700 tile lines, that would have to be crossed, that is just rough figuring on my part. That would come to a substantial dollar figure, at $200 a crossing, of about $140,000. I would think that the pipeline company would find it alot more economical to put it along the railroad where we, in Dodge County, could only find 8 tile lines.

(Supplemental Response): (See Appendix IV, Railroad Alternative)

Steve Henslin Q: My other question is that you said there is a release that the farmers have to sign on the repair work that the contractor does and you said there is money held back. How much money is held back and is the contractor definitely not paid that, even if there is just one farmer who doesn't sign his release?

Bill Martin A: The amount we withhold is ten to fifteen percent of the money due him.

Steve Henslin Q: So every farmer then must sign his release before the contractor can collect his ten to fifteen percent. Is that correct?

Bill Martin A: Yes, that is correct.

Mark Moenning Q: I have a question. I think maybe alot of people are wondering here tonight if this thing spills, what is the safety aspect, is it combustible at all? If something gets it on him, will it hurt him in any way? Things like this, that's my first question.

Bill Martin A: We have a doctor in the house and perhaps he'll help with what crude oil does to the skin. You obviously don't want to drink it, and yes, it will burn.

Dr. Dennis Cortese The problem is the phenols in it. If you get it on your skin, you get boils and alot of problems with the skin, but that's reversible. If it gets in the water, one part

per million of phenol is hazardous to human health, but it is actually unpalatable much earlier than that, so you know about it. But the skin is irritated.

Mark Moenning Q: In general, are they safer than natural gas lines or what would you compare them to?

Bill Martin A: Probably you would rather cut into a crude line, than a liquid gasoline line, then an LPG line, and the last thing you would not want to do is cut into a natural gas line.

Mark Moenning Q: What is the amount of oil that DNR used to figure this 50 foot as adequate. I believe the EIS said 1000 barrels of oil. I guess they used PCA figures that were presented at the transportation hearings and something like 1160 barrels has been the average spill over the last five year period.

Bob Arco A: The amount of oil used by the PCA in their calculations was 1000 barrels over a 1000 square feet, which works out to a depth of five feet average.

Mark Moenning Q: Has the PCA or you as a geologist, done any study as far as the percolation of how this will do for different soils?

Bob Arco A: ...Discussion follows concerning his experiments on the percolation of oil through glacial till.

(Supplemental Response): The 50 foot criteria was developed by the PCA, and accepted by the Department of Health as providing an adequate safety margin.

Mark Moenning Q: What soil types have you done this study on?

Bob Arco A: We have used two types of glacial till. This is clay soils with varying amounts of sand in them. And then we used two types of sand. One that is a fine sand, the kind you would typically find in a glacial lake. And we got the outwash type sand which is more the kind you find in Dakota County.

Mark Moenning Q: What is the name of these types of soils?

Bob Arco A: First of all, I used a sample from the Des Moines lobe ... (remainder inaudible).

Mark Moenning Q: We know the soil types on our farm and we wanted to build a strictly run-off basin for a feedlot, it was very small, we did it six years ago. We had to take borings to check on the amount of sand and different things in that soil so we would not pollute our own wells. I don't believe anything like this has been done along this whole route to speak of.

Vonny Hagen A: What you're suggesting (in regard to pipelines) the state doesn't have the authority to require.

Mark Moenning Q: Well, there are alot of people out here with sand points on their farms. Some of them use them as

wells, some of them don't because they aren't good for wells. I think alot of people would be relieved if there were borings or if somehow this were addressed and a report sent out to the people.

Dale Rossow Q: This gentleman said he made test on the Des Moines lobe which is Wisconsin glaciation, which is fairly recent. We sit on the Kansas glaciation which is very ancient. Why wasn't the test made on where we are at instead of somewhere where we are not?

Bob Arco A: The study is applicable anywhere.

Dale Rossow Q: What is the bedding requirement for your pipeline?

(Supplemental Response) A: In those cases where the material excavated from the ditch consists primarily of rocks, a soil pad of "select" material (soil which does not contain rocks) will be placed around and over the pipe. (Response by Northern Pipeline Co.).

Harold Froelich Q: I would like to ask the geologist how much rainwater was superimposed on top of this soil when he made these tests for permeability. How did you account for rainfall?

Bob Arco A: We didn't look at rainfall per se.

Harold Froelich Q: Isn't it true that crude oil migrates through the soil and that rainfall with the water carrying it along that the migration is much faster, is accelerated, which is a real life situation?

Bob Arco A: I'm not sure about that.

Harold Froelich Q: I would suggest you read some of the recent Environmental Pollution Control Agency reports, they describe that particular phenomenon where the water in the soil drives the crude oil along.

Bob Johnson (Mediator) What I would like to do at this time is adjourn the meeting and please, if you have any comments, we welcome and solicit your letters in the Department and thank you all for your interest.

Unidentified Q: I live right near the refinery and the purpose of that pipeline is to expand production of that refinery. Now, how can they attempt to increase production when they are not meeting their clean air standards now?

(Supplemental Response) (Any significant expansion of the Koch Refinery at Pine Bend, Minnesota would require a Certificate of Need from the Energy Agency.

The Koch Refinery is currently in violation of ambient SO_2 standards. The Minnesota Pollution Control Agency is currently negotiating a stipulated agreement to bring the refinery into compliance).

The meeting continued with Harry Weed explaining the justification for the pipeline and the progress on it to date. Bill Martin concluded the preliminary remarks by discussing the construction procedure for the pipeline.

John Dudley Q: I would like to know why you haven't contacted the township about this? (Remainder of statement is inaudible on tapes.)

Al Wald A: The Environmental Impact Statement process is a preliminary process to the regulatory process. I'm sure the townships will be contacted.

Bill Sachs Q: I am concerned about the water. I am only 16 feet to water. My question is, what happens in case of a spill? Does the oil pollute all our water? I have another question on this right-of-way. How close will your new route be, or would you be in the same right-of-way that Northern States Power Company has? They have a power line on my property and your pipeline is going to follow the same direction. Are you going to be in Northern States right-of-way, are you going to be 50 feet from it, or right next to it, can you tell me where? I have one more question. Are you going to bury the pipeline very deep or is it going right on top of the water table? In case of flood, I would imagine that you will have it deep. And the man said he is going to put one pipeline in. I got this brown envelope a week ago on the pipeline and it sounds like they are going to put in more than one line in. My farm is located on Vermillion Road on County Road 66 between County Road 81 and 79. I am 16 feet from the surface of the water.

Al Wald A: If I could point out one thing, a number of these concerns that you raised are addressed in the Environmental Impact Statement. I would strongly suggest that you read the document for further information. We will still attempt to answer those questions.

Bill Martin A: The part about putting more than one line in will be marked out on the easement.

Roger Williams A: The pipeline will be laid five feet below the deepest part of the river.

Harry Weed A: The pipeline will be running parallel to Northern States right-of-way. They would not let us on their right-of-way.

Bob Arco A: ...Lengthy discussion follows concerning the types of groundwater acquifers and the way water moves through the acquifers.

Ed Buchwald Q: I thought you were here to listen to us and I hear an awful lot of talking from up in front and I think a lot of your statements can be challenged, especially from Mr. Arco and I wonder if you really mean to listen or do you mean to talk. I'm not sure if gasoline in Forest Lawn Cemetery is right to the point. You ignore the statements by this gentleman about need. You stopped questions about need and you allow someone else to make a statement. I don't mean to make complications, but I am not sure if the questions are being answered.

My name is Ed Buchwald and I am a geologist here at Carleton and I have some questions that I would like to ask of Mr. Arco here, that I have written down. I have not had an opportunity to completely read this (the EIS), but first of all I would like to ask him if he knows the biological effects of phenols on people when you drink water that has phenols in it. He passed that off rather lightly.

Bob Arco A: It depends on concentration. I'm not a biologist or chemist.

Ed Buchwald Q: Let me interrupt for a minute and then ask this question and have it put into the record. The effect of phenol on people who drink it. Also on the separation of the two water systems in the ground. You said that there was a separation between the till or outwash groundwater and the limerock, as it is now being called, and I want to know if you are indeed positive that there is no connection between those?

(Supplemental Response) (See response of Dr. Dennis Cortese at the Dodge City meeting, regarding effects of phenols on humans.)

Bob Arco A: I didn't mean to imply that all they are mostly connected. The point I tried to get across is the contamination problem is different.

Ed Buchwald Q: I have another question then, if they are connected and we look at the worst case, which I can't quite agree with, if we look at the Draft Addendum on page 91, about the middle of the page, where the MPCA says that if approximately 1,000 barrels of oil might be spilled on 1,000 square feet of area, then it could be contained within 50 feet of glacial till. This is a major spill and has a relatively low probability of occurrence. We've heard the figure this afternoon that approximately 240,000 barrels of oil per day would be the projected ultimate level of pumping. If my arithmetic is right, twenty-four hours into 240,000 barrels of oil is 10,000 barrels per hour. My questions is whether or not one would be able to detect the leak and call up the operator and turn the valve off or whatever within an hour's

time. Even at that point 10,000 barrels is ten times the size of the spill the MPCA calls a major spill. Now, it would seem to me that this spill would be a super/major spill which might be produced in one hours time. That would be a short time. I don't know how many of the farmers here could walk up and down the pipeline once it is put in.

Bill Martin A: (... Discussion follows concerning the magnitude of oil spills.)

(Supplemental Response) (See Appendixes II and III for further discussion of magnitude of spills.)

Marie Jensen Q 1 I would like to ask a question of Mr. Martin. When you were discussing the process of laying the pipeline you dind't mention the final inspection before the ground is refilled. I wonder when that takes place. I have a few more questions. Is the farmer notified when the inspection will take place so that he can go along, and is somebody from DNR going to go along or some representative from the state?

Bill Martin A: I'm glad you brought that up because I failed in my presentation to tell you, We will have company inspectors who will be inspecting the contractor.

(Supplemental Response) (Every reasonable attempt will be made to notify the landowner and obtain permission prior to surveying. In cases where this cannot be done, care is taken not to disturb livestock or damage crops. In the event damages result the landowner will be compensated for these damages based on his negotiation with the company. The concerns noted here are recognized, and various methods have been considered to guarantee landowner rights and assist landowners in dealing with these problems. The best way for landowners to safeguard their rights and interests is through their right-of-way or easement agreement with the pipeline company. The State also proposes to have a liaison worker on sites during construction - see Appendix XI).

Al Huston Q: I'll step over here so that I can talk to these folks too, because I think anybody who has anything to say ought to speak up where everybody can hear you. And I would like to say about the inspection of the pipeline, you notice that this inspection is being carried on by the inspectors, and it doesn't make any difference whether you have a chief inspector or four flunkies below him. It is a company inspection, not the state, or not someone who is concerned with your interests. They are concerned with the company's interests and the saving of their own oil, their own problem.

(Supplemental Response) (See Appendix XI.)

Al Huston (continuing): Now getting back to the question of the DNR. The Department of Natural Resources is conducting hearings on the Environmental Impact Statement on the route of this pipeline to discover if there are environmental impacts along the route of this pipeline. I would get back to one other point and that is the DNR exercises regulatory authority for the inspection

of the pipeline under rivers or streams. You control that and I think from your book you would make spot checks so that 25% of the welds are inspected at stream crossings and the company will make, has offered to make, random checks over the line so that at least 10% of the welds of the pipeline are inspected. And I say let's have 100% inspection of all of these welds so there is no chance for leakage from the seams. And I think there is something we could get through the state regulatory authority, but there is not any legal authority by which we can enforce this sort of requirement. This is a pathetic situation. I realize the DNR is not in the position of being a regulatory authority. They are assigned certain responsibilities, but they do not extend to the whole area. But we do wish we had something in this state and this is something people need to write their legislators, contact your representatives and let them know exactly what we need. I would like to defer to more information about our environment to our geologist, Ed Buchwald.

(Supplemental Response) (Mr. Huston recognizes the limitations of State authority over pipelines. However, the DNR has determined it has regulatory authority to require 100% x-raying of welds in sensitive areas where there is generally less than 50 feet to bedrock.)

Ed Buchwald Q: I don't have a statement, but I have come to ask questions and I have some more if you're willing to take them. In the Draft Addendum there is a figure 6, if I can find it for you, which has a line with a depth to bedrock in this region and it is very, very difficult map to read. There is a line on it called an isopaches line and it doesn't tell whether the fifty feet is on this side or on that side of the line so it is impossible to read it and I would think that you would want to be sure to correct that before you go on, because it makes it very difficult for anyone who understands maps, much less for someone who doesn't understand maps, to understand what it is trying to say. Furthermore, there is no source for that and I have spent considerable time in the libraries of the state and talking to other geologists about where that information might have come from and it turns out there are several publications which show important differences of opinion with respect to those thicknesses. I would like to think that the Department of Natural Resources ought to farm out that question as to whether the thickness is fifty feet. We have heard that the thickness is very, very important in terms of its sponging effect in holding the oil before it gets into the very best acquifers. That is not clear at all.

(Supplemental Response) (The source and legend were inadvertantly omitted in the draft. This information is provided in Figure 1.)

Ed Buchwald (continuing): There is also some question here about the solution channels that the geologists has remarked about. Solution channels and sinkholes known as karst features are not likely to appear through fifty feet of soil. There is a misunderstanding on the part of whoever wrote that statement as what a karst

feature might be. They can exist well below the till. They can be places where the oil can easily seep into. And we have already heard that there is a hydraulic connection between the overlying deposits and the underlying deposits. So there is the possibility of rather large quantities of water soluble phenols leaking, and you will want to look at their effect on human beings, if they get into some major acquifers. That's on page 91, it is the last sentence in the middle paragraph. It starts with the statement "the solution channels and sinkholes known as karst features are not likely to appear as surface features through fifty feet of soil." That is true, and what it means is that it is very hard to tell if they are around. It takes a very, very special technique to discover whether those sinkholes are underneath the soil. If you go down south of Rochester you can see them right at the surface and it makes the job easier. You can just move your pipeline away from those, but here it is more difficult because they are hidden. And it seems to me that the actual proposed route and exactly where it goes has to be known.

(Supplemental Response) (We concur with the comment. The pipeline route was moved from the Rochester area to an area which generally has more than 50 feet of glacial till. It is recognized that there are areas where these are less than 50 feet of till and special protective measures have been proposed in these areas. It is recognized these may be hidden sinkholes or fractures beneath the till.)

Ed Buchwald (continuing): And one other question , at least at this point, and that is I have not been able to find out what the depth of burial will be beneath rivers when you have river crossings, how far down is the pipe below the bed of the river itself? Can someone answer that?

(Supplemental Response) (Federal regulations require four feet of cover over the pipeline where it passes under all water courses.

Ed Buchwald Q: Five feet below the water surface or below the bed? So, crossing the Cannon River for example...You are in the business here to do it so you got to have the answers, not me. I am a citizen who asked a question.

There is nothing in here that I have been able to find where the DNR and their hydrologist tried to determine what happens to the bed of the river during flood stage and whether the bed of the river goes down. And this is a common occurrence in most rivers in the United States that are in the alluvium, that is, they are not in bedrock themselves. During flooding, the river not only goes up, but the bed of the river goes down and as the flood ends, the soil and gravel gets filled up again and there is a distinct possibility and I really don't know if five feet is right or not,but I would like to see that the question has been addressed at least by the hydrologist and geologist of the DNR.

Vonny Hagen A: That question will be addressed by the DNR hydrologist at the time it comes to issue the stream crossing permit.

Al Wald A: The Draft Addendum notes a minimum cover of forty inches. Now if you think there is more than forty inches of channel scour on these rivers, I would like to see your figures.

Ed Buchwald Q: As I said, it is not my job to do these calculations. I'm not part of the DNR. It is my job to make sure that you people understand what you are doing. It is not my job unless you want to hire me to do it.

John McNaughton Q: After a flood I've seen channel scour ten feet deep. I know the telephone company put a cable through there three feet deep and it lasted one year during a flood. Another question I got for your friend on your right is Northern States would not let you on their right-of-way, is that correct? I was just going to suggest that you folks take them to court under eminent domain law. That is what they did to me. May I make a further statement? They do not need the space under the ground except to hold their poles up, so they shouldn't object to you. Now that is one thing us fellows are objecting to and that is creation of a corridor through the section on the half section line about as wide as a double lane highway and just another one or two companies want to go up through there and you are going to have the land under easement from that blacktop east, just east of Farmington up to that refinery. You're going to have the land under easement up to the half section lines on either side.

Don Ratzlaff Q: Rosemount, as you are aware, has become somewhat of a hub of the pipeline industry. We are becoming increasingly alarmed at the division of our property. At this time, Rosemount has one major concern on the proposed pipeline and that is north of County Road 42 to south of County Road 38. We feel that with minor realignment the pipeline could follow existing property lines and easements.

Eric Johnson Q: I have a couple of questions about the draft EIS. On page 111 of the original statement there is talk about long term effects. You talk about biological and other effects. I was wondering what kind of long term effects are being considered beyond the term that is being considered in the Impact Statement, that is, what sort of time frame are you talking about with how long oil supplies will be carried in the pipeline, the length of time the pipeline will last without corroding, and the length of time your company will be in business. And once that's answered, what goes beyond the time frame covered in your statement. Is there provisions made for the removal of the pipeline after it is no longer useful. What sort of protection do property owners have at that point.

(Supplemental Response) (In the event Northern Pipeline Company goes out of business, the pipeline is treated as an asset of the firm and would become the property of a surviving corporation or in the case of bankruptcy, its trustees. The pipeline could be sold to another corporation for its use. If this use is other than to transport crude oil, additional permits would be required. The pipeline could be dug up and the materials used for another pipeline in another location or sold as scrap. The pipeline could be abandoned and left in the ground.

Eric Johnson Q: The point of that question was to ask what kind of provisions does the DNR have for easements under waterways and other public lands for removal or somehow handling these, because if there is protection of this pipe when they are in business and they go out of business, what happens then? Any other possibility I can't imagine other than the pipe corroding and caving in. That is something landowners as well as those of us paying taxes should be concerned about. I have another question too and that is on page 110 of the EIS, excuse me, page 100. There is a statement about what to do if there is a spill and you talk about water, phenols, and so forth. But there is a statement pertaining to farmland. It says if there is a spill and the topsoil is affected, the topsoil will be hauled away. My question is, where does it go? And I am asking the question particularly because of my concern for landfill, or where do we put all our refuse because many people in the state are concerned for the future. How long will we have landfills and what kind of alternatives are there and where do we put topsoil that has been contaminated.

(Supplemental Response) (In the event of a leak or a spill in the pipeline, every effort will be made to recover the oil and to correct the damages. These efforts will be closely coordinated with local and state agencies having control over the situation. Historically, contaminated soil has been treated and disposed of under the direction of the Minnesota Pollution Control Agency. They have maintained very close control over the handling of such soils. The applicable regulations for the handling of such soils will be compiled with.

Dean Empery Q: What effect does this pipeline have on the assessed valuation of property. Does the assessor consider it an improvement, if so, who pays the taxation on it? Or is that considered under the easement?

Bill Martin A: To my knowledge, there has been no landowner that has had increased taxes. We pay ad valorum tax on the pipeline itself. I don't know of any place where the landowner had to pay more taxes.

Mackey Q: I do know that fuel oil has gone up. What will happen to the price?

(Supplemental Response) (Northern Pipeline Company expects the effect upon fuel prices will be to keep the prices at a lower level than any other transportation option.

Randy Young A: I am with the Minnesota Department of Agriculture and we have had an opportunity to review this document and make a few comments. As a matter of background, we have been reviewing this document in light of the agricultural concerns which were raised in it and should have been raised in it. We hope other state agencies will review it in light of their regulatory authority. We reviewed this document in light of two basic areas. First of all, how this document envisioned the pipeline affecting the farmer, and secondly, how this document envisioned the pipeline affecting the natural resource of agricultural land. With that in mind, I have a number of comments on some of the items in the document.

On page 14 of the document, where we discuss leak detection systems, there is a quotation there from the company dealing with a worst case of 308 barrels a day. I think that the section should be clarified indicating that the worst case is the worst case for a minor leak or infraction and not actual worst case situation where in the whole line might rupture or a worst case situation where it might be more than just a few minutes to turn off the line. Those types of worst case situations would be substantially more devasting than that.

(Supplemental Response) (See Appendix IX, Leak Detection, and various responses in Comments/Responses Section)

Randy Young, Continuing: On page 79 of the document where the document gets into the environmental impacts. The lead paragraph, about the third line down, our agency feels that the word "possibly" should be deleted there, talking about soil dilution due to the construction of the pipeline. There are three or four places in the document where soil dilution will be an impact and the word "possibly" should be taken out of there. Later on in that paragraph, there is a discussion of soil productivity over the three foot wide trench. I think the section should also include a discussion about a decrease in soil fertility due to a compaction caused by heavy equipment along the entire right-of-way area.

(Supplemental Response) (See Appendix VII, Soil Compaction Effects).

Randy Young, Continuing: Also, the last two sentences of that paragraph deal with damage, "the landowner will be reimbursed for damages due to certain items" and it lists three of them. I think a more general statement should be included there so that if there are more general damages to fences, crops, and drainage tiles, that they should be included as well.

(Supplemental Response) (The Grant-of-Easement will require complete restoration of land and improvements. Damage not repaired will entitle the landowner to compensation, as a breach of contract).

Randy Young, Continuing: On page 81 of the document, dealing with drainage tile, mitigating measure that is proposed to be used in this section outlines a steel channel that will be placed over the pipeline in the area that has been excavated. I have some questions depending on the depth of the tiling in that area. First of all, what the size and the depth of the anchor blocks on either side of this channel will be and if they will be underneath the frost line, and if not, what types of problems will upheavel of these blocks in the spring cause in disrupting the tiling system.

(Supplemental Response): (See revised Tile Repair Procedures, Appendix VIII).

Randy Young, Continuing: On page 87 of the document the second paragraph down discusses the fact that there will be small economic impact associated with yield reduction resulting from topsoil disturbance, et cetera. Also, later on in that paragraph, discussion is again made of the three foot wide trench estimating the loss of productivity due to the actual excavation. I think that section should be expanded to also cover the entire right-of-way when compaction from heavy equipment might result.

(Supplemental Response): (See Appendix VII, Soil Compaction Effects).

Randy Young, Continuing: On page 88 of the document,the top of the paragraph, there is a discussion of the decrease or increase of assessed value of the land, I think that it should be made clear that you are talking about tax purposes and not about possible market value and resale. If possible, a discussion about decreases or increases or no change in market value would be helpful in that area as well.

(Supplemental Response): (Comment noted. See response to Ken Betzold, p.___).

Randy Young, Continuing: Section four of the document which is page 99, deals with impact mitigation and I think one comment should be made here. Our Department is concerned about addressing mitigative measures and should any additional mitigative measures come about through the regulatory process, that these should also be addressed. Our concern there is that possibly some mitigative measures that might be anticipated or proposed in the regulation process might create other impacts upon agricultural land. Those should be addressed too, and a mitigative measure should not be weighed by itself, but should be taken in relation to the impacts that the original mitigative measures may have created.

(Supplemental Response): (See Introduction to Final EIS).

Randy Young, Continuing: Page 102 of the document, that is section five, deals with alternatives and page 102 deals with the railroad right-of-way alternative. I think a little more depth in that alternative might be reasonable to ask in this document.

There are some concerns that are raised that possibly this might be a more reasonable alternative to the ones presently being proposed. And I think both the pros and cons of that alternative should be addressed a little more thoroughly than they have been in the document so far.

(Supplemental Response) (See Appendix IV of the Final EIS)

Randy Young, Continuing: I assume that the omission of Appendix A on emergency procedures is an oversight and will be provided later.

(Supplemental Response) (See Appendix A of original Draft EIS)

Randy Young, Continuing: Finally, Mr. Moderator, the final appendix Appendix H, landowners rights in the document. The second page of that appendix, indication is made here, by way of reference to the audience, this is the statement which will be going out from the company to the landowners. Indication is made in there by the company to the landowners. Indication is made in there by the company that the purchase of easement will be made by information furnished to the company by various sources. I think it would be helpful to the landowners to know what sources of information the company used in arriving at a purchase price.

(Supplemental Response) (A new Information Booklet has been prepared and will be distributed to all affected landowners).

Randy Young, Continuing: The bottom paragraph of that section indicates that the landowner has a right to negotiate for a greater depth and also the segregation of topsoil in agricultural cropland areas. I think that should be specified maybe a little more clearly so that the landowner knows at what point in the process he has to negotiate for this. The way its written now, it is rather unclear as exactly when this should take place. And I would hate to see a situation where the easement is signed and the landowner wants to talk about segregation of topsoil and his opportunity has passed already.

(Supplemental Response) (The new landowners Information Booklet makes these points clear).

Randy Young, Continuing: I hope that these comments will be of use to you in completing your final document.

Unidentified Q: (inaudible comment)...the notification of townships and local procedures the company must go through for obtaining permits.

Bob Johnson A: The company will have to obtain all the necessary permits from the townships.

Unidentified Q: On double ditching, how deep is the first cut. Is the topsoil going to be piled over where it is later worked on.

Bill Martin A: It depends on the depth of your topsoil

(Supplemental Response) (The topsoil is leveled over a 4-5 foot area (2-7 feet from the trench) on the working side.

The pipe is strung alongside the ditch being laid on skids directly over the leveled topsoil. The skids are placed at least 40 feet apart. This will remove the possibility of the topsoil becoming packed by vehicles or heavy equipment. Welding personnel will walk on the fringe of the topsoil area.)

Unidentified Q: How far away from the buildings is the pipeline?

Harry Weed A: The pipeline would be 300 feet away from any buildings.

Sarah McEneany Q: I guess I don't have a question, just got a statement. You expressed that your inspectors would do the inspection, does that amount to regulating yourself? Also, your right-of-way agent will be making that easement and I just wonder how you regulate yourself. How will you know what you have done is correct with your evaluation, your easement. Does the farmer have any source to go to or does he have to pay his own lawyer? I question the company regulating itself.

(Supplemental Response) (The concerns noted here are recognized, and various methods have been considered to guarantee the landowner rights and assist landowners in dealing with these problems. The best way for landowners to safeguard their rights and interests is through their right-of-way or easement agreement with the company. Several state agencies who are members of the Environmental Quality Board have worked with the pipeline company to incorporate many of these concerns into the right-of-way contract and a Landowners Information Booklet. However, landowners should consider consulting a lawyer before signing any agreement with the company.)

Vernon Bushnell Q: There has only been one mention here about heavy equipment crossing land. Now, when it rains, I can't go out there in the field. You people, are you going to put that pipeline through if it's raining, or will you stop. You have some heavy equipment out there, what about compaction of my ground. If you get a four inch rain, are you going to stop and wait until the conditions are right?

Roger Williams A: We don't let the contractor weld when its raining and if he can't weld, he can't lay any pipe.

(Supplemental Response) (See Appendix VII, Soil Compaction Effects. Also, landowners will be eligible for additional compensation if unforeseen damages occur, such as abnormal compaction caused by working during wet weather.)

Vernon Bushnell Q: If you have heavy equipment working over shallow tile you

could bust it, but you won't see it because it won't be near the ditch, it will be forty feet away. Now, how are you going to check it? Are you going to go back forty feet and check it out?

Jack Riffe A: We will check tile lines within the entire width of the right-of-way.

Leonard Wunderlich Q: My concern is relative to the situation here that he is mentioning. You come out with a release so that when we sign, we don't know if our tile is still operational or not. You say you check the tile. How do you go about checking the tile after you have driven across there with big trucks and heavy equipment and have crushed tile? How do you know what's under there, how do you check it out?

Jack Riffe A: We run a sewer snake both ways from the ditch to a distance of forty feet.

Leonard Wunderlich Q: If our tiles are broken after we've signed the release, who do we go to after we've signed the release. We may have tile out there that isn't working, but we've signed the release. Is that the end of the road for us?

Roger Williams A: You come to us, who else can you go to.

Leonard Wunderlich Q: Another thing I was going to ask - are we to assume that the information listed in this latest impact statement from the DNR is correct. I was reading through it and there is one place where they got $480 labor per foot. Is that correct?

Harry Weed A: No,that is not correct. It is $4.80 per foot.

Leonard Wunderlich Q: It is just like with your easement, it is not correct. If you had received an easement like that, would you sign it where someone just took a pencil and just scratched the thing out? I don't think we should have to deal with antiquated easements and figures.

Roger Williams A: I would call it localized easements. We're still using them. Now, you got the pencil, so you just write down what you want to write.

Marv Rechtzigel Q: I was listening to the majority of your comments and I can see a real easy alternative. If you put this line in and feel it is necessary, how about following existing lines. You wouldn't have any of the problems of, at least of tile or destroying the farmland and the production of the soil, if you follow a highway right-of-way or a railroad right-of-way. At one of an earlier meetings, it was mentioned that 2300 acres of prime farmland is involved and you are going to take

it out of production forever.

Al Wald A: Is there any reason why farmland is out of production just because a line is there. I've flown over miles of pipeline and it appears there is as much corn on the same section of the line as in other places.

Marlin Schwartz Q: You cannot disturb topsoil and bring it back into maximum production. Never.

Bob Johnson A: Now the question I believe was following parallel lines such as railroads.

(Supplemental Response) (Because of the northwest-southeast orientation of the proposed route, paralleling property lines which generally run north-south and east-west and would also add several miles to the length of the pipeline. The primary advantage of paralleling property lines would be that fewer tile lines would be intercepted. However, homes, fences, telephone and powerlines, and other facilities are usually located along or near property lines. Therefore, a route paralleling property lines other than the "railroad route" has not been identified or evaluated in the EIS. The primary purpose of the EIS is to evaluate the impacts of the project as proposed and of feasible alternatives. The EIS process has no authority to require specific routing. See Appendix IV, Railroad Alternative)

Ken Betzold Q: First of all, on this topsoil production. We have a pipeline running through our farm. There is definitely no crops through there, they tend to dry out. The other thing I was wondering about is what do you take into consideration in the future for the price of these easements, about what it is going to cost you in devaluation of your land in case some industry or something comes, you have an easement running through the middle of your 80 or 160 and probably is going to mean they are going to not want the whole thing because it is right in the middle of where they want to build. Where the farm right next to you, the value of that land will probably be alot more, due to the fact that there was no easement running through it.

(Supplemental Response) (At this time, it is not possible to determine if and how a pipeline would affect the property values of agricultural land. Although the affect may have not been substantial in the past, the increased awareness of the impacts of pipelines and powerline may very well change this in the future. Over the past 3 years the public's consciousness of these issues have been raised by farmers protecting such projects and the news media's coverage of the issues. The market value of property, among many other things, is based upon the buyer's "perception" of the desirability of the property. A negative perception of property containing a pipeline may, in some cases, be translated into a lower market value for the property. The Minnesota Department of Agriculture is presently conducting an attitude survey of farm owners in an attempt to shed some light on this theory.)

Al Huston Q: You raised the question that has been suggested several times that the pipeline be routed along the Great Western Railroad, which is probably a little bit out of the way. But I would like to ask a question of DNR. Have you taken soil borings on soil test along the railroad right-of-way?

Vonny Hagen A: The Department hasn't done soil borings anywhere. We're limited in the amount of money that can be expended on this original data. We depend on other agencies for information.

Al Huston Q: Mr. Chairman, If the pipeline must be routed in an area where there is not that 50 feet of glacial till, what requirement do you recommend?

(Supplemental Response) (The DNR and the PCA have concluded that requiring the standards for stream crossings in these sensitive areas is appropriate. This will be a permit condition.)

Mark Godfrey Q: I had a question on pages 14 and 15 of the Environmental Impact Statement. I was wondering when you say that there is a worst case analysis that is on the order of 154 barrels. On a ten minute short term sampling time that assumes a 10 percent detection capability, then you go on to give an example of multiplying the number of barrels per hour times the number of minutes, then multiplying that by .10. I think that with a ten percent detection capability you would increase the amount of a spill instead of decrease for one thing. And another thing, you go on to say in the case of a spill, a pilot would be put into the air to determine the exact location of the spill within a couple miles of the nearest valve, if the spill had not been located already. And then, also you say the manual shut off valves are located every 15 miles and automatic shutoff valves controlled electronically to reduce the amount of oil loss. If a break occurs far downstream from a valve, the time it takes to shut off makes it virtually worthless because of the flow of gravity. I am just wondering how close are these meters and actually how close is the actual response time to ten minutes.

Roger Williams A: The meters are 475 miles apart, one at either end of the line and the response is immediate.

(Supplemental Response) (See also Appendix IX, Leak Detection).

Unidentified Q: I noticed where it said in the Impact Statement that the pipeline would have to stay 100 to 200 feet away from the railroad in case of derailment. How shallow are you planning on putting in the pipe? If you put it 5 feet deep would that be protection?

Bill Martin A: We were still planning to put 3 feet of cover.

(Supplemental Response) (Unless greater cover is required by terms of the easement agreement.)

Unidentified Q: Are you going to pick up all those rocks if they keep coming up several years later?

(Supplemental Response) (Rocks are to be removed by the contractor to prevent them from frost-heaving into a farmer's field at a later date.)

Unidentified Q: What are the sources of your research?

Vonny Hagen A: Several sources. Biocentrics was the consulting firm.

Unidentified Q: In the Impact Statement on Reserve Mining the researchers worked for the company. Was that true of this statement?

Al Wald A: The expertise of that document reflects the participation of the state agencies, including the Pollution Control Agency and the Energy Agency.

(Supplemental Response) (Consultants were also used in the Reserve EIS. In the case of Northern Pipeline, the State subsequently retained an agricultural engineering firm.

Unidentified Q: On the map you show the route going right through my farm, but I wasn't even contacted.

Al Wald A: That alignment is just a general one for the discussion of environmental impacts.

(Supplemental Response) (There is no State requirement that a pipeline company must notify landowners regarding a proposed route.)

Unidentified Q: What about frost heaving up this pipeline?

(Supplemental Response) (The weight of the pipe plus the weight of the product will prevent the pipe from being frost-heaved).

Unidentified Q: Once the water is polluted, no amount of money will make the water clean again.

Al Wald A: I think our geologist friend can help, some of those aquifers are difficult to contaminate. Do you want to comment on that. I know you have much information.

Ed Buchwald A: As a matter of fact, I don't have nearly as much information as you might think I have.One of the great concerns in southern Minnesota, southeastern Minnesota, is where the recharge areas are for the deep aquifers we are dealing with and our knowledge of how that entire hydraulic system works is about equivalent to the kind of knowledge people have about the automobile. You get in and turn the key and somehow it works if you press the right pedals. Compared to the knowledge a superb mechanic might have, and that is about where we are in understanding the relationship of where the water comes in and how it moves through the rocks and what happens when we take it out. There are some very difficult questions to answer about that and one of the things that truly disturbs me is that somehow that there is a lot of tax money in these kind of reports and I don't have confidence in what I read here and it bothers me. By and large, I sort of know the rocks and soils and water of these areas and I don't see how these people here are going to make judgements and that is what we are really asking them to do. I mean, you talk as though this line were already built or about to be layed down and you are trying to sooth these people and yet you have not given them the kind of information where they can feel confortable with what's happening. If I can't feel comfortable with it, by God, I don't see how they can feel comfortable and that is the point I'd like to make.

Mahlon Hildebrand Q: I go along with that and I think first of all we should have some research and know what we are doing here. We can't afford to contaminate our water supply. We need oil, everybody here uses it, but you know we need water a lot worse and I think that is one thing we ought to take into consideration. Another thing is, I think every effort should be made to avoid prime farmland. It just doesn't make any sense in this day and age to cut through at random, through prime farmland unless it is absolutely necessary. It just doesn't make any sense. You should use corridors, existing corridors, whether it be an existing pipeline, or highway, a rail or whatever, but not start brand new corridors.

(Supplemental Response) (The Department of Health is presently conducting studies in southeastern Minnesota as is the Minnesota Geological Survey.)

Erran Brasky Q: I have a question about the use of the railroads. As I understand it, the limitation is the threat of derailment and you would have to go too deep to avoid damage to the pipe. Assuming that this is the major problem in the use of the Great Western, which goes on, as I see from the map, if figure 6 is correct. But as far as Hayfield, there was a proposal to use the Great Western just as far as Hayfield south.

I see that up to the bluffs north of Hayfield, the Great Western is supposedly within this 50 foot line. I would like to know how deep these railroad cars go in case of derailment. I realize that there is a problem about going around towns, but again that is true under the present line also.

(Supplemental Response) (See Appendix IV, Railroad Alternative.)

Bob Johnson Q: Does anyone else want to make a statement or ask a question? If not, we will consider this meeting adjourned and thank you for your attention.