BY-LAW NO. 1579
of the

COUNTY OF GRANDE PRAIRIE NO. 1

A by-law of the County of Grande Prairie in the Province of Alberta, to adopt an Area Structure Plan for the Hamlet of Bezanson.

WHEREAS, Section 64 of the Planning Act, Chapter P-9, Revised Statutes of Alberta, 1980 and amendments thereto, authorizes a Council to provide a framework for the subdivision and development of an area of land within the Municipality; and

WHEREAS the Council of the County of Grande Prairie has undertaken to have prepared such a plan; and

WHEREAS the Council of the County of Grande Prairie has properly notified the owners of land within the development area, pursuant to Section 139 of the Planning Act, R.S.A. 1980, and

WHEREAS the Council of the County of Grande Prairie held a public hearing pursuant to Section 139 of the Planning Act, R.S.A. 1980.

NOW THEREFORE, the Council of the County of Grande PRairie No. 1 duly assembled, hereby enacts as follows:

1. That this By-law shall be known as the "HAMLET OF BEZANSON AREA STRUCTURE PLAN BY-LAW".

2. That the Hamlet of Bezanson Area Structure Plan shall provide the framework and policies for future development of the lands described therein.

3. Any background studies, research, or document attached as an appendix are provided for information purposes only and do not form part of this By-law.

4. That this by-law shall take effect on the date of its final passage by Council.

READ A FIRST, SECOND AND BY UNANIMOUS CONSENT OF THE COUNCILLORS PRESENT A THIRD AND FINAL TIME AND FINALLY PASSED THIS 3rd DAY OF JUNE, A.D. 1985.

W Houseman
REEVE

COUNTY ADMINISTRATOR

BEZANSON AREA STRUCTURE PLAN

PREPARED BY:

BEAIRSTO, STEWART, WEIR

IN CONJUNCTION WITH:

STEWART, WEIR & CO.

MAY, 1985

TABLE OF CONTENTS

1.0 ACKNOWLEDGEMENTS

This plan is largely based on information provided by the following individuals and agencies. Their observations regarding development issues affecting Bezanson and their provision of factual information with regard to development constraints and opportunities were invaluable.

Mr. Ron Pfau, County Administrator, County of Grande Prairie

Mrs. Jackie Gee, Deputy Superintendent of Schools, County of Grande Prairie

Alberta Transportation, and particularly, Mr. Clarence Dewald and Mr. Ed Piebiak of the Grande Prairie District Office and Mr. Peter Balko in Edmonton.

Mr. John Simpson of the South Peace Regional Planning Commission.

Councillor Phyllis Stewart, Division No. 1.

Councillor Jim Stewart, Division No. 11.

We would also like to thank the residents of Bezanson who attended the public meeting held in Bezanson and who provided constructive comments on the first draft of this plan.

2.0 INTRODUCTION

The purpose of this Area Structure Plan is to provide guidance to future development in Bezanson. An Area Structure Plan enables developers to put forward proposals which are consistent with an overall development framework. It also allows residents and approval agencies to respond to such proposals in an informed, consistent, and more predictable fashion.

This plan is not intended to be interpreted as a prediction or a projection of future growth. It does not necessarily represent an ideal or final state which must be fulfilled through the expenditure of extraordinary effort. Rather, it is intended to ensure that any development which does occur proceeds in an orderly and coordinated fashion. This approach is consistent with the provisions of the South Peace Regional Plan and with the County of Grande Prairie General Municipal Plan, both of which provide for the accommodation of growth as it occurs. Neither plan sets specific limits or goals for the growth of Bezanson.

Every attempt has been made to produce a plan which will not unduly restrict development options, but which will minimize the conflicts that are often associated with development.

3.0 PREPARATION OF THE PLAN

The first step in the preparation of an area structure plan is to gather relevant information regarding the past, present, and future circumstances affecting the plan area. Two types of information are required. The first is factual and deals with such topics as physical constraints to development, legal constraints imposed by existing higher order plans, the type and extent of existing development, transportation and utility services, social services, etc. The second is more concerned with such value-laden topics as the goals and objectives of interested parties (residents, County Council, service agencies), the function or role of the settlement in the context of the larger municipality (in this case the County of Grande Prairie), and specific development issues which are of concern to residents and which suggest the need for a plan.

In order to gather these types of information, series of interviews were conducted with County officials, members of the County Council, the staff of the South Peace Regional Planning Commission, and representatives of various agencies which provide services to the Hamlet of Bezanson. The factual information obtained provided an understanding of the circumstances affecting development in Bezanson. The information concerning development issues, etc., gave direction to the development guidelines set out in the plan.

A draft plan was prepared which described the advantages and disadvantages of two development alternatives, one of which provided generally for urban growth to be restricted to the area north of Highway 34, and the other called for the restriction of urban growth to the south side of the highway. The draft plan was reviewed by the County's Council in an informal meeting to obtain their responses, and to ensure that (with revisions) the draft plan was appropriate for presentation to the residents of Bezanson for their reaction.

A public meeting attended by over 100 people was held at the Bezanson School. The plan was then circulated to various agencies providing services to the County of Grande Prairie and Bezanson itself for their comments.

The County's Council again reviewed the plan and by resolution, indicated their preference for the development alternative which restricted urban growth to the south side of Highway 34. This final draft of the plan was then prepared for presentation to a statutory public hearing as the first step toward the enactment of the Bezanson Area Structure Plan as a County Bylaw.

4.0 BACKGROUND INFORMATION

4.1 Location

The Hamlet of Bezanson is located within the County of Grande Prairie on Highway 34, approximately 2 miles north and 15 miles east of the City of Grande Prairie. It is approximately 3 miles west of the Smoky River Valley.

4.2 Regional Setting

The land around Bezanson is rated as Classes 2 and 3 by the Canada Land Inventory. The Alberta Research Council Soil Survey Rating is Fairly Good to Very Good Arable. Consequently, the majority of the land is in agricultural use, while the remainder (20-25%) consists of bush with numerous low, wet areas. (See Figure.1).

The area around Bezanson has some potential for recreational use. There is potential for big game hunting in the area, and where Highway 34 crosses the Smoky River, approximately 3 miles east of Bezanson, the Government of Alberta maintains a campsite. Aside from the scenic attractions of the Smoky River Valley itself, the river is also the route of the annual Smoky River Jet Boat Race.

4.3 Urban Function

The role of the Hamlet of Bezanson within the County of Grande Prairie is that of agricultural service center. Commercial services include a general store and gas station and a few home operated businesses. Recreation and cultural facilities are available in the form of two churches, the Bezanson school, and a number of recreational playing fields and facilities.

The Hamlet is, and is expected to continue to be, a center for retirement of area farmers. This however is not expected to result in substantial population increase.

Finally, Bezanson has a minor dormitory function for commuters between the Hamlet and the City of Grande Prairie. Given the number of attractive alternatives with respect to this function, and given the County of Grande Prairie General Municipal Plan's emphasis on Clairmont as the principle dormitory community serving the City of Grande Prairie, it is unlikely that this aspect of the Hamlet's functions will result in significant population growth.

4.4 Planning Context

Regional Plan

The South Peace Regional Plan recognizes the role of small urban settlements as service centers, rural retirement centers. It provides for the accommodation of limited growth in hamlets such as Bezanson.

The Regional Plan also makes provision for the identification of an approximate boundary (or "planning area") by the County of Grande Prairie. This boundary is significant in terms of the implementation of this plan in that outside the boundary of a hamlet, Regional Plan policies dealing with the subdivision of agricultural land apply. Within the boundary preservation of agricultural land in production becomes secondary to the requirements of the settlement itself.

General Municipal Plan

The County of Grande Prairie General Municipal Plan provides for the accommodation of moderate growth in Bezanson.

The General Municipal Plan identifies an approximate boundary for the Hamlet. Although the plan does recognize the existence of urban development north of Highway 34, it excludes this area from the approximate boundary, and restricts future growth to the area south of the Highway.

Land Use Bylaw

The County of Grande Prairie Land Use Bylaw designates the area south of the Highway, and an area north of the Highway, under land use categories prefaced by the "Hamlet" designation. This suggests that development north of the Highway is to be regarded as part of Bezanson. (See Figure 2).

5.0 EXISTING DEVELOPMENT

5.1 Land Use

The bulk of urban development in Bezanson is located south of Highway 34. It consists for the most part of residential development in the form of permanent and mobile dwelling units. South of the highway, and east of the County road, a substantial area of land is devoted to recreational use in the form of the Legion Hall, the curling rink, and the Bezanson Hall. Commercial development consists of the general store and gas bar which occupies the southwest corner of the intersection of Highway 34 and the County road and is oriented toward the Highway. South of the store are a few dwellings and the Bezanson elementary school. The area immediately west of the school is devoted to recreational use in the form of a skating rink. The remainder of the area south of Highway 34 is in agricultural use. (See Figure 2).

North of the Highway, the land is essentially in agricultural use, although some residential development has taken place. Two church sites exist just north of the Highway on opposite sides of the County road.

Residential lot sizes in Bezanson range from 0.075 ha. (0.2 ac.) to over 1 ha. (2.5 ac.). The 1981 population, according to the Alberta Bureau of Statistics, was approximately 90.

5.2 Circulation

Development on the south is accessed by a service road which has two points of access to Highway 34 and by the County road itself. Some provision for the extension of streets south from the service road through the residential development has been made. Development on the north side of the Highway gains access directly from the Highway or from the County road.

5.3 Utility Servicing

Water

The water system consists of private water wells and a small distribution system which supplies a number of residences from a single well.

According to well logs and information from the Alberta Research Council, water wells in the area produce on the average, long term safe yields of from 0.1 to 0.4 litres per second (1 - 5 Imp.Gal/Min) from depths between 100 and 150 meters (300 - 500 feet).

The chemical quality of the water is generally suitable for domestic use, but it is high in alkalinity and sodium. Doctors do not recommend it for some patients and for some elderly people. (See Appendix).

Possible alternative water supplies are the Smoky River to the east and an area near the north boundary of Tp. 73- Rg. 3- W6. In this latter area the Alberta Research Council believes there is a buried channel of gravel which may result in water wells that produce long term safe yields in the range of 5 litres per second (70 Imp. Gal/Min). (See the Appendix and area "C" on the plan of ground water probability).

Sanitary Sewer

Designs for an initial sanitary sewer system must consider water availability, market areas, population, and the usual financial barriers. It would appear that these factors preclude basing such a design on the probability of fast growth in the Hamlet. In any event, this is the case in a preliminary sanitary sewer design prepared by GCG Engineering Partnership. The effects of this preliminary design are shown on Figure 3.

A preliminary design for a sanitary sewer system prepared by the GCG Engineering Partnership is very likely based on the need to serve the

existing population and very limited growth during the next 10-15 years. The final design for the initial system will probably have geographical limitations (shown approximately on Figure 3) rather than any population limitation which is relevant. This is because government regulations require minimum pipe sizes which are in most cases suitable for a minimum population of at least 1800. (The capacity of pump stations can usually be increased when warranted by an increased population).

Figure 3 was prepared in order to assist in the designation of a preferred growth area (based on engineering needs). The contours shown on the plans are accurate on the perimeter of the quarter sections but do not show detail in the interior of the quarter sections. The contours are, however, sufficient to show the overall drainage pattern and the general land slopes.

Engineering considerations point to the S.E. of 15-72-13-6 as the preferred growth area. The S.W. of 14 and the N.W. of 11 are both beyond the range of the first stage of the proposed sanitary sewer system. This leaves the N.W. of 10 and the S.E. of 15. If the assumption is then made that the County is committed to at least one sewer crossing of Highway 34, then the system has more potential for expansion in the S.E. of 15 than in the N.E. of 10. (Particularly if the design takes into consideration the necessity of servicing the S.E. of 15). This situation occurs for two reasons. One is that the S.E. of 15 has better continuous slope, and the second is that it is not affected by the proposed location of the sewage disposal area. There are other minor factors which point to the S.E. of 15.

It should be noted that if the Hamlet has a long term future involving very limited growth then the engineering advantages of the S.E. of 15 as compared to the N.E. of 10 almost disappear.

Further to the geographical limitations of the preliminary design for an initial sanitary sewer system, adaption may be necessary in order to get better coverage in the N.E. of 10. The timing of this adaption would depend on economics.

It must be noted that Alberta Government regulations do not permit residential development within 305 m (1000 feet) of a public sewage lagoon. This restriction is illustrated on Figure 3.

Storm Drainage

Storm drainage is by surface runoff, conducted to natural water courses via streets and/or ditches.

The N.E. of 10 has a relatively gentle slope which will require careful design of roadways with respect to other their function as a storm drainage facility.

Soil Conditions

For foundation purposes it is expected that except for locations near pot holes and sloughs the whole area is much the same. Water well logs show top soil followed by clay to depths of at least 30 meters (100 feet), and they show the main water table as being below this.

Gas, Power, Telephone

The Hamlet is served with electricity by Alberta Power; with gas by Northwestern Utilities; and with telephone by A.G.T. It is expected that because of the nature of these utilities they can easily be expanded to service any preferred development area. Efficiency as with all utilities is greatly improved, however where services are not widely scattered.

6.0 COMMUNITY SERVICES

The most significant community service provided in the Hamlet of Bezanson is the Bezanson Public School which serves grades 1 to 9. Because the school is currently very near its capacity in terms of the number of students attending, it represents one of the most significant limiting factors with respect to further residential development in the Hamlet. Discussions with officials of the County of Grande Prairie School District indicate that some additional capacity may be provided in the form of portable classrooms, and that some alteration in the school catchment boundary may be possible to further minimize the impact of additional residential development.

Police, ambulance, and fire protection are currently provided from the City of Grande Prairie.

Some discussion has taken place regarding the possibility of the provision of a Senior Citizen's facility in Bezanson. Currently however, this project is being held in abeyance pending further analysis of the specific needs of the community.

With the exception of the two churches and the recreational facilities existing in Bezanson, all other social services are provided from the City of Grande Prairie.

7.0 LAND OWNERSHIP

The land within the developed area of Bezanson is, for the most part, in private ownership. The largest single holding consists of approximately 53 ha. (130 acres) in private ownership. This parcel is currently in agricultural use, although a proposal for urban density residential development was prepared, but not approved, in 1981.

The 3.0 ha. (7.4 acre) school site is owned by the County of Grande Prairie. The west half of legal subdivisions 12 and 13 in the northwest quarter of Section 11-72-3-W6M is held by the Crown in right of the Province of Alberta.

8.0 DEVELOPMENT ISSUES

As has been noted, the South Peace Regional Plan and the County of Grande Prairie General Municipal Plan do not identify specific goals or objectives for Bezanson other than the accommodation of moderate growth. There are, however, a number of specific development issues which were identified through the interview process and which concern future development in Bezanson. These issues are identified below in order that this plan might address them directly and explicitly.

8.1 Direction of Development

Past development in the Hamlet of Bezanson has occurred on both the north and south sides of Highway 34. Although, historically, the earliest development occurred north of the Highway, since that time the land to the south has been developed to a greater extent in terms of area, population, and variety of land uses occurring. Because the Highway divides the Hamlet, and because no plans exist for changes in the status of the Highway, movement between the north and south parts of the Hamlet will become more and more hazardous as urban development occurs.

8.2 Limits to Development

Although this plan is intended to provide for the accommodation of moderate urban growth in Bezanson, there are three types of urban service which, if their capacities are not expanded, will limit the growth potential of the Hamlet.

As has been noted, the Bezanson School is at its design capacity at the present. As further residential growth in the Hamlet can be expected to result in an increase in the number of students to be accommodated, some alteration in the service provided must be contemplated. Three types of adjustments are possible. First, portable classrooms could be added to the school site. Second, there may be some potential for adjustment of

areas such that other schools which may have excess capacity serve some of the students currently attending the Bezanson school. Third, an alteration of the grade structure may be possible such that students in grades seven to nine would attend a specialized junior high school elsewhere.

As was discussed in Section 5.3, the supplies of potable water for Bezanson are severely limited. Upon detailed investigation of this situation, it may be discovered that Bezanson can be permitted to grow only minimally before a substantial investment must be made to obtain additional sources of potable water.

The third limit to growth relates to the sanitary sewer system. Although the design of the initial sanitary sewer system has not been finalized, it will, as mentioned, have geographical limitations such as shown approximately on Drawing 3 which would be adjusted after final design.

8.3 Hamlet Boundary

The South Peace Regional Plan provides that the boundaries of hamlets should be identified (approximately) by the rural municipality authority, which in this case is the County of Grande Prairie. Although the County of Grande Prairie General Municipal Plan identifies an approximate boundary, the County of Grande Prairie Land Use Bylaw acknowledges in its land use designations that a portion of the Hamlet does in fact lie north of the Highway. As was indicated during the interviews conducted as part of the preparation of this plan, the question of the approximate location of the boundary of the Hamlet of Bezanson has not yet been completely resolved.

This question is of particular significance in light of the intended construction of a communal sanitary sewage disposal system for the Hamlet. The boundary should coincide with the area which will be served by and which will contribute to the payment for the new sewer system.

8.4 Access to Highway 34

Alberta Transportation has indicated that it wishes to maintain the current status of Highway 34 through Bezanson. The Department does not see a bypass of the Hamlet as a viable development option due to its high cost. An alternative to a bypass might be a significant reduction in the speed limit through Bezanson. However, Alberta Transporation is disinclined to implement such a change because of the detrimental effect it would have on the level of service currently provided by Highway 34.

Given the maintenance of the Highway as it is, the number of points of direct access to development existing west of the County road on the north side of the Highway is excessive and represents a hazard.

9.0 DEVELOPMENT CONCEPT AND POLICIES

The development concept and policies described below respond to the issues identified in the previous section. They are the result of County Council's consideration of input from the citizens of Bezanson, County staff, numerous service agencies, and the planning and engineering consultants who prepared the plan. County Council has identified these concepts and policies as appopriate to guide the future development of the Hamlet of Bezanson.

9.1 Development Concept

The development concept calls for growth to be directed away from Highway 34 to the south and occurring for the most part in the N.E. of Section 10. Only limited urban development is to be permitted north of the Highway.

The bulk of the quarter is designated as residential, with densities to be determined on the basis of detailed analysis of utility service capacities and service areas. Such an analysis should be undertaken prior to development beyond Stage I (see Figure 4) which is based on the estimated service area of the sanitary sewer system first stage. [Note: All lots to be served by private water supply must be a minimum of 3050 m^2 (10,000 square feet] in area and 30.5 m (100 feet in width).

As a guide to future development, a possible alignment for a 20 m wide residential collector right-of-way is included on Figure 4. The western-most point of access from the Highway might require the relocation of the existing access.

Commercial land use is designated for the southwest corner of the intersection of Highway 34 and the County road. The designation has been extended beyond the existing store to the underdeveloped area to the west. When and if more commercial land is required, more redevelopment of the existing residential along the Highway 34 service road should be encouraged.

This location is more appropriate for commercial development, given access and visibility considerations, than it is for residential development. New commercial development along the south side of the Highway would act as a buffer between the Highway and residential development. Residential development should be relocated and reoriented in exclusively residential areas.

Relatively substantial areas for public uses are already established in the N.W. of Section 11 and in the Bezanson School site. Should the senior citizen's facility now being contemplated become a reality, an appropriate central location would be at the west end of the school site. This land is currently privately owned, but it may become the subject of a development proposal in the future and be required to give up land as required reserve.

The two church sites north of the Highway on opposite sides of the County road are inconsistent with the development concept. No further development of this type should be permitted north of the Highway, and both these institutions should be encouraged, when and if the opportunity arises, to relocate south of the Highway.

It should be noted that the development concept assumes that existing development north of the Highway would be served by Hamlet utilities, and would be included within the approximate boundary of the Hamlet although further urban development will not be permitted.

9.2 Limits to Growth

Development must be restricted to the area which can be served by the proposed sanitary sewer system until such time as additional facilities are installed. All new development should be required to connect to the system and private sanitary sewer disposal within the Hamlet should no longer be permitted.

No new development in any part of the Hamlet should be considered without an investigation of its implications for the water supply and student enrollments. No such development should be approved unless and until the County is satisfied that all potential problems in these two areas have been or can be resolved.

Development proposals which are not capable of being served by the proposed system should be considered only on the basis of a specific proposal for the expansion of urban services, and an appropriate updating amendment to this plan.

9.3 Approximate Boundary

In order to maintain consistency, the approximate boundary of the Hamlet should be extended to include the existing development to the north and the sewage lagoon to the west. The proposed approximate boundary is shown on Figures 4 and would require a minor amendment to the County of Grande Prairie's General Municipal Plan.

9.4 Access to Highway 34

Every attempt should be made to minimize the number of points of direct access to Highway 34 from the north side. If the construction of an internal access road proves impractical, residents should be encouraged to consolidate their points of access through the use of common approaches and easements.

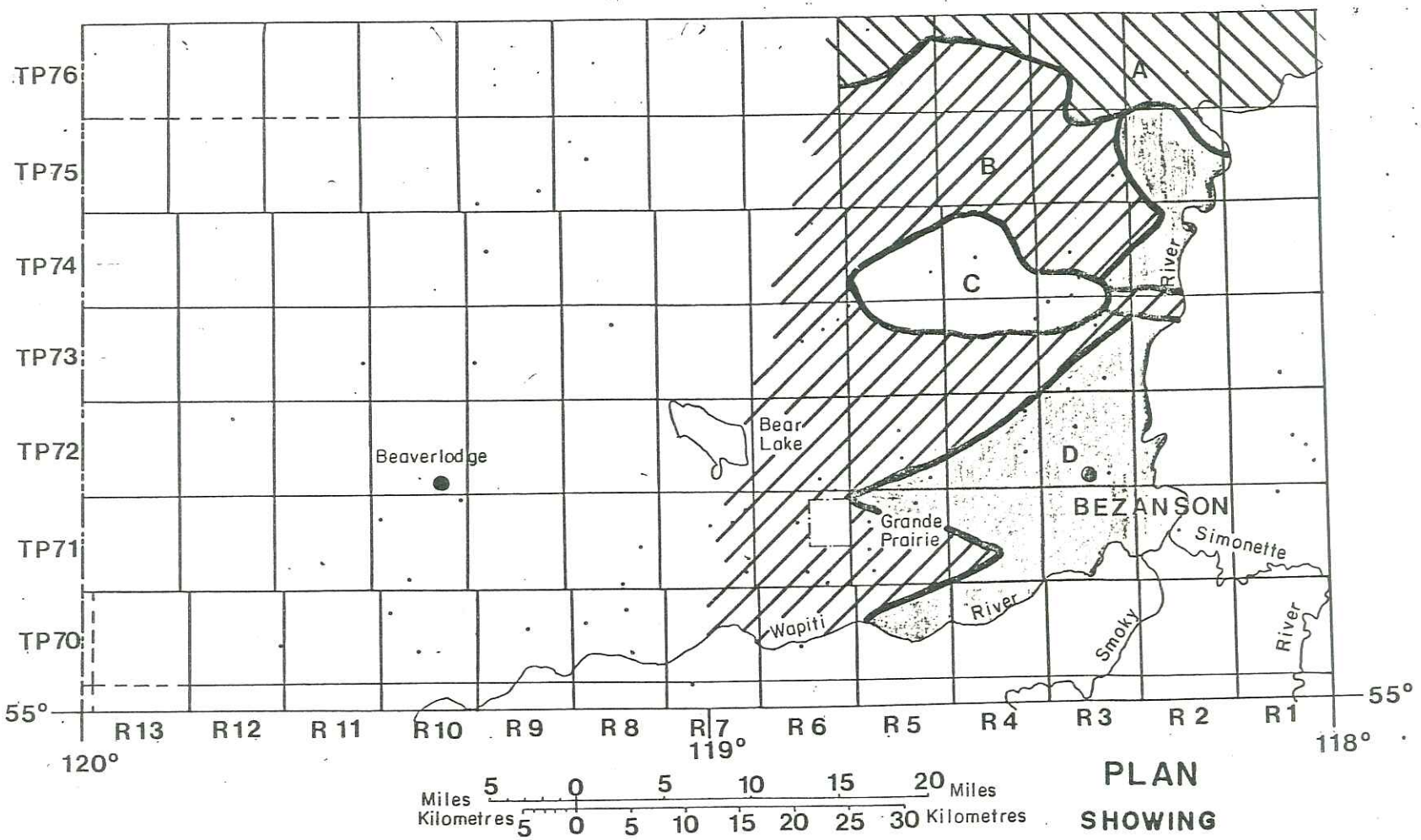
A P P E N D I X

G R O U N D W A T E R P R O B A B I L I T Y

For

B E Z A N S O N A R E A

(Based on information from the Alberta Research Council)



PLAN
SHOWING

GROUND WATER PROBABILITY
BEZANSON AREA

Based on
ALBERTA RESEARCH COUNCIL INFORMATION

PROBABILITY

	Imp. G.P.M.	Litres/second
A	<1	< 0·1
B	5-25	0·1-2
C	25-100	2-8
D	1-5	0·1-0·4

• Recorded Water Wells

STEWART, WEIR & Co.

TYPICAL WATER WELL LOG - BEZANSON AREA

ENVIRONMENT
Earth Sciences and Licensing Division

WATER WELL DRILLERS REPORT

① WELL CONTRACTOR

Peterson Drilling
Address 1977
Box 4
La Glace Alta

② WELL OWNER

County of Grande Prairie
Address
#611 - 108 St
Grande Prairie

③ TYPE OF WELL:

Rotary ☑ Bored ☐ Cable tool ☐
Jet ☐ Dug ☐ Other ☐

④ TYPE OF WORK:

New Well ☑ Deepen ☐
Recondition ☐ Abandon ☐

⑤ PROPOSED USE:

Domestic ☑ Stock ☐ Irrigation ☐
Municipal ☐ Industrial ☐ Test ☐

⑥ FORMATION LOG DESCRIPTION

Depth in Feet from	to	Use key to formation
Ground Level	318	Till
318	371	silty S.S
371	380	Green shale
380	391	Grey S.S
391	405	Dk Grey shale
405	428	Grey shale
428	431	Green shale
431	448	Grey S.S
448	454	Dk Grey Brown shale
454	459	Grey shale
459	460	Green shale
460	463	Grey shale
463	475	Green shale
475	501	Grey S.S
501	506	Brown shale
506	511	Grey S.S.
511	519	Dk Grey Brown shale
519	539	Grey S.S
539	540	Coal
540	552	Grey shale
552	559	Green shale
559	588	Dk Grey Brown silty shale
588	603	Grey S.S
603	606	Green shale
606	616	Grey shale
616	621	Green shale
ELECTRIC LOG		Dk Grey Brown Green
1,345 Standard		Electric ☑ S
TC Sandstone		Grey shale

⑦ WELL COMPLETION DATA

DESIGN:
Open hole ☑ Slotted casing ☐
Screen ☐ Gravel pack ☐
Diameter of hole: 5⅝
Bottomed in: Clay ☐ Sand ☐
Sandstone ☑ Shale ☐ Coal ☐
Depth to top of bedrock: 368
Total depth: 700'

⑩ CASING:
Type: Black casing
Size O.D. 5½ Wall thickness: 1.50
Wt. per ft. 9.6
Bottom set at: 1387 ft.

⑪ SEAL: Yes ☑ No ☐
Packer ☐ Grout ☐ Driven ☐
Loose ☐ Puddled clay ☐
Depth of seal: 380 : 387

⑫ LINER: Yes ☐ No ☑
Type:
Size O.D. I.D.
Weight: lbs.
Bottom set at: ft.
Perforated from: ft. to ft.
How perforated: Knife ☐
Torch ☐ Machine ☐
Size perforations: in. by in.

⑬ SCREEN: Yes ☐ No ☐
Make:
Material:
Size I.D. (clear):
Length:
Slot size:
Top at: Bottom at:
Fittings top:
Fittings bottom:

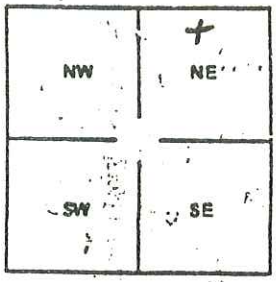
⑭ SAND PACK: Yes ☐ No ☑
Size Amount:

⑮ PUMP: Yes ☐ No ☑
Type: H.P.
Size Voltage:
Drop pipe size: Length:
Intake at:

⑯ LOCATION

¼	Sec.	Twp.	Rge.	West of Meridian
NE	10	72	3	W6

Mark Well location with an "X" in diagram below
Lot A Block 3 5149 MC



1 SQUARE MILE

⑰ WATER QUALITY:

Hard ☐ Medium Hard ☐
Soft ☑ Turbid ☐
Chemical Analysis: Yes ☐ No ☐
Bacterial Analysis: Yes ☐ 3 No ☐
18
190

⑱ WATER TEST:

Pump ☐ Bailer ☐
Static water level 193
Rate of yield: 5 I. G. P. M.
Duration of test: 12 hrs. min.
Pumping level or bailing level: 215
Total drawdown: 19
Recommended pump setting:
(Attach readings of any detailed pump test)

CERTIFICATION

⑲ WATER WELL DRILLER (operator)

This well was constructed under my direct supervision and all information given is true to the best of my knowledge and belief.
A copy of this report has been supplied to the owner.

Signature: Ken Lee Reid
Date: Nov 22 19 77

THIS REPORT TO BE SUBMITTED WITHIN 60 DAYS AFTER WELL COMPLETION, TO:
CONTROLLER OF WATER RESOURCES
ALBERTA ENVIRONMENT
MILNER BUILDING, EDMONTON

WATER WELL DRILLERS REPORT

Alberta ENVIRONMENT
Earth Sciences and Licensing Division

THIS REPORT TO BE SUBMITTED WITHIN 60 DAYS AFTER WELL COMPLETION, TO: CONTROLLER OF WATER RESOURCES, ALBERTA ENVIRONMENT, OXBRIDGE PLACE, EDMONTON

① WELL CONTRACTOR

Petiven Drilling 1977
Address Box 4
De Gluve

② WELL OWNER

Hazel Weegar
Address Box 90
Bezanson, Alta
TOHOGO

⑯ LOCATION

¼	Sec.	Twp.	Rge.	West of Meridian
SE	10	72	3	W6

Mark Well location with an "X" in diagram below

NW | NE
SW | SE X

1 SQUARE MILE

② Licence No. 0054
Permit No. 106
Date started Sept 1 19 78
Date completed Sept 6 19 78

③ TYPE OF WELL: Rotary ☑ Bored ☐ Cable tool ☐ Jet ☐ Dug ☐ Other ☐

④ TYPE OF WORK: New Well ☑ Deepen ☐ Recondition ☐ Abandon ☐

⑤ PROPOSED USE: Domestic ☑ Stock ☐ Irrigation ☐ Municipal ☐ Industrial ☐ Test ☐

⑨ WELL COMPLETION DATA

DESIGN:
Open hole ☑ Slotted casing ☐
Screen ☐ Gravel pack ☐
Diameter of hole: 6 7/8
Bottomed in: Clay ☐ Sand ☐ Sandstone ☐ Shale ☑ Coal ☐
Depth to top of bedrock: 330
Total depth: 470

⑩ CASING:

Type: Blankasent
Size O.D. 5 1/2 Wall thickness: .188
Wt. per ft. 11
Bottom set at: 363 ft.

⑪ SEAL: Yes ☑ No ☐

Packer ☐ Grout ☐ Driven ☐
Loose ☐ Puddled clay ☐
Depth of seal:

⑫ LINER: Yes ☐ No ☑

Type:
Size O.D. I. D.
Weight: lbs.
Bottom set at: ft.
Perforated from: ft. to ft.
How perforated: Knife ☐
Torch ☐ Machine ☐
Size perforations: in. by in.

⑬ SCREEN: Yes ☐ No ☑

Make:
Model:
I. D. (clear):
Bottom at:
top:
bottom:
PACK: Yes ☐ No ☐
Amount:

⑭ PUMP: Yes ☐ No ☑

Type: H. P.
Size: Voltage:
Drop pipe size: Length:
Intake at:

⑥ FORMATION LOG DESCRIPTION

Depth in Feet from	to	Use key to formation		
Ground Level	330	Till & Bouldery		
330	351	Brown SS		
351	357	Green shale		
357	370	Brown shale		
370	378	Green shale		
378	385	Grey shale		
385	388	Grey SS		
388	407	Grey shale		
407	414	Grey SS		
414	416	Grey shale		
416	430	mixed colored shale		
430	470	Grey SS		
			8	HO1 PO1
			2.78	HO2 PO2
		Location Verified		HO3 PO3
		by	90	
			65.24-	#
		Alberta Environment		HO4 PO4
			153	
			4.73-	#

⑰ WATER QUALITY:

Hard ☐ Medium Hard ☐
Soft ☑ Turbid ☐
Chemical Analysis: Yes ☐ 8 No ☐
Bacterial Analysis: Yes ☐ 2.78 No ☐
90
153

⑱ WATER TEST:

Pump ☐ Bailer ☐
Static water level 210
Rate of yield: 8 I. G. P. M.
Duration of test: 1 hrs. min.
Pumping level or bailing level: 300
Total drawdown at end of test: 90
Pump setting: ft. 308 I.G.P.M.
Additional Yield Test Information Attached Yes/No

CERTIFICATION

⑲ WATER WELL DRILLER (operator)

This well was constructed under my direct supervision and all information given is true to the best of my knowledge and belief.
A copy of this report has been supplied to the owner.
Signature: K. Lee Kaza
Date: Sept 7 19 78

⑳ WELL OWNER

Anticipated Use 500 gal. per day
I have received a copy of this report.
Signature: Hazel C. Weegar
Date Sept 7 19 78

Alberta Environment Copy

⑦ ELECTRIC LOG: Yes ☐ No ☑
Gamma ☐ Electric ☐

78 C Oct 77

MERIDIAN: 5TH 6TH 4TH 3RD | TOWNSHIP: 2 1 SF 0 (HUNDS) ? 4 (TENS) 2 1 SF 0 (UNITS) | RANGE: 7 4 (TENS) 2 1 SF 0 (UNITS) | SECTION: 2 (TENS) 1 SF 0 (UNITS) 7 4 (TENS) 2 1 SF (UNITS)

YIELDS
- WATER SAMPLES: •
- SUITABLE (HUMAN):

QUALITY	PPM	>
TOTAL SOLIDS		1 500
IGN. LOSS		—
HARDNESS		100
SULFATES		500
CHLORIDES		500
ALKALINITY		750
NITRITES		2
NITRATES		10
IRON		0.3
FLUORIDES		1.5
SODA		500
GLAUBER'S SALTS		400
COLOR		20
SOFT	✓	<100

- SUITABLE (STOCK):

AQUIFERS
- SHALE (SILT)
- SANDSTONE
- COAL
- TILL
- BURIED GRAVEL
- OUTWASH S. & GR.
- WATER TABLE

HYDROL TYPE
- ARTESIAN NON-FLOW
- ARTESIAN FLOW
- PARTIALLY CONFINED
- OTHER

DATE: 3/12/63 CO-ORDS. L.S.D. SEC. 10 TP. 12 R. 3 W. OF 6 M.

SITE: Bezanson school DRILLER: L. K. Nepstad ADDRESS: Valhalla Centre

CITY TOWN:

ALTITUDE: EST. SURV. DEPTH OF WELL REPT. MEAS. 545 DEPTH TO WATER REPT. MEAS. 180 DIAM. 5"

CASING: LENGTH 520 DIAM. 4½" TYPE FINISH (A) driven (B)

(C) SCREEN GRAVEL PACK DETAILS

AQUIFERS: NAME THICKNESS (S) WATER AT 530-545

OTHER

FLOW: G.P.M. LBS. OF PRESSURE HT. ABOVE G.L. SINCE

PUMP: TYPE H.P. PUMPING RATE

TEST: ( ) RATE 2½ G.P.M. for 10 hrs.

DRAWDOWN: 400 FT. AFTER DAYS HRS.

RECOVERY: to 180 FT. IN 30 MINS.

SPEC. CAP. TRANS STOR. COEFF. POROSITY %

DISCHARGE CORE PERM OTHER

MECH. ANAL. YES / NO SIZE M.M.S. INS. UNIF. COEFF. GR. PACK RATIO

USE WATER SAMPLE DATE OF

QUAL. OF WATER: TURBIDITY Clear ODOR PRESENCE OF GAS OIL OTHER

SEISMIC SHOT HOLE (OIL CO.) E-LOGS (OIL CO.)

SEISMIC DATA (G.W.) RESISTIVITY DATA (G.W.) E-LOGS (G.W.)

REMARKS: Well owned by County of Grande Prairie, Little slow supply, bottomed in loose sand, 190' to bedrock

GROUNDWATER REPORTS: REC 1964-2

PUB.

TYPE
- DUG
- BORED
- DRILLED ✓
- DRIVEN
- OTHER

DEPTH
- 0 - 50 FT.
- 51 - 100 FT.
- 101 - 200 FT.
- 201 - 300 FT.
- 301 - 500 FT.
- 501 - 750 FT. ✓
- 751 - 1 000 FT.
- 1,001 + FT.

USE
- DOM.
- STOCK
- PUBLIC
- IND.
- IRRIG.
- OBSERV.

LOGS
- DRILLER'S ✓
- E-LOGS
- SEISMIC
- R.C.A.T.H.
- LITH. SAMPLES

YIELD
- 0 - 5 G.P.M.
- 5 - 25 G.P.M.
- 25 - 125 G.P.M.
- 125 + G.P.M.

1001

FORMATIONS | IN | USE MASTER CODE LIST F

255 STEWART, WEIR & CO.

LITHOLOGIC LOGS (R.C.A. ETC.)	E-LOGS	PUMP DETAILS
1-2 Top soil 2-120 Clay 120-190 Sand, caving boulders (sic) 190-300 Shale 300-350 Silt or fine sand 350-355 Hard rock 355-500 Shale 500-530 Hardpan 530-545 Sand-water bearing.		Plunger – Setting: 400' – 2" working Barrell
		OTHER

D30065

TYPICAL WATER ANALYSIS - BEZANSON AREA

Table 1. Average Values in Parts per Million of Various Chemical Parameters in Groundwater in the Grande Prairie Area, Alberta

Parameter	Glacial drift	Bedrock 0-150	Bedrock 150-300	Bedrock 300-450	Alberta Standards*	Number of Samples: Drift	Bedrock 0-150	Bedrock 150-300	Bedrock 300-450
Total dissolved solids	1227	1251	1130	936	1000	210	288	287	79
Hardness (as $CaCO_3$)	274	164	93	49	500	210	288	287	79
Sulfate	384	394	234	87	250	210	288	287	79
Chloride	12	10	15	16	250	210	288	287	79
Alkalinity (as $CaCO_3$)	627	691	772	723	500	210	288	287	79
Fluoride	0.5	0.7	1.0	1.6	1.5	153	218	223	59
Calcium	60	33	21	18	200	146	216	224	69
Magnesium	22	14	6	4	150	146	216	224	60
Sodium	377	399	394	359	300	133	192	195	52
Potassium	2.9	2.2	1.7	1.6	-	133	192	195	52
Carbonate (as $CO_3^{=}$)	1.9	7	6.8	7.6	**	133	192	195	52
Bicarbonate (as HCO_3^{-})	836	829	913	870	**	133	192	195	52

Explanation: *Standards from: Canada Department of National Health and Welfare (1969).
**Carbonate Plus Bicarbonate (as $CaCO_3$) are subject to the same standard as alkalinity.
Data includes analyses from wells in Townships 69 through 76 only.
Glacial drift - samples obtained from a well terminating in glacial drift.
Bedrock - Water samples obtained from wells 0 to 150, 150 to 300, or 300 to 450 feet deep which terminate in bedrock.

FIELD OBSERVATIONS:

Type of observation ..... Date .....

Comments: .....

Observed by: .....

WELL AND BOREHOLE DATA

Owner H Sadler ..... Address Benjamin ..... Date .....

Driller ..... Type of Rig .....

Completed Depth of Well 350

Water-Bearing Intervals			Depth to Water
From		to	
From		to	
From		to	
From		to	

Well Construction

(a) Slotted casing From ..... to .....
(b) Open hole From ..... to .....
(c) Screen From ..... to .....
(d) Dug
(e) Bored

Depth to water in Finished Well 200 ..... Water Temp. ..... °F ..... °C

AQUIFER TESTS

Type	Transmissivity	Q
Pump Test		
Bail Test		
Recovery Test		
Apparent-Yield Test		

Test rate igpm. for ..... min.
Total Drawdown
Original available drawdown
Storage Coeff. at r_1 ..... at r_2 ..... at r_3 .....

CHEMISTRY 4-75

	ppm	epm %
Calcium	13	3
Magnesium	<1	-
Sodium	489	97
Potassium	1.1	.1
Iron	3.9	-
Nitrate (NO_3^-)	<.45	-
Chloride	27	4
Sulfate ($SO_4^=$)	105	11
Fluoride	1.34	.3
Carbonate ($CO_3^=$)	-	85
Bicarbonate (HCO_3^-)	1082	
Silica (H_4SiO_4)		
Hardness (as $CaCO_3$)	35	
Alkalinity (as $CaCO_3$)	887	

LITHOLOGY

Total Solids	ppm	1176	epm
Conduct. at 25°C	lab	1700	field
pH	lab	6.3	field
Cation: Anion Balance		5.4	%
Total Solids Balance		1.05	%

Comments:

Map Sheet No. ..... Coordinates 83 ..... Mer. 6 Tp. 72 R. 3 Sec. 10 ¼ or LSD ..... Identification No. ..... Altitude .....

CHEM ANALYSIS Contents

FIELD OBSERVATIONS:

Type of observation

Comments:

Date

Observed by:

WELL AND BOREHOLE DATA (Audet Tap)

Owner Bezanson Waterwell Service Address Bezanson Date 1977

Driller Type of Rig

Completed Depth of Well 700'

Identification No. 2345

Altitude

¼ or LSD NE

Sec. 10

Tp. 3

R. 72

Mer. 6

Co-ordinates

Map Sheet No. 83H/1W

Contents CHEM ANALYSIS

Water-Bearing Intervals	Depth to Water
From ..... to	
From ..... to	
From ..... to	/
From ..... to	

Depth to water in Finished Well 210'

Well Construction

(a) Slotted casing From ..... to .....

(b) Open hole From ..... to .....

(c) Screen From ..... to .....

(d) Dug

(e) Bored

Water Temp. .....°F .....°C

AQUIFER TESTS

Type	Transmissivity	Q_{20}
Pump Test		
Bail Test		
Recovery Test		
Apparent-Yield Test		

Test rate ..... igpm. for ..... min.

Total Drawdown .....

Original available drawdown .....

Storage Coeff. ..... at r_1 .....

..... at r_2 .....

..... at r_3 .....

CHEMISTRY 17/6/80

	ppm	epm %
Calcium	3.00	0.85
Magnesium	1.00	0.47
Sodium	378.00	98.51
Potassium	1.00	0.15
Iron	0.06	0.01
Nitrate (NO_3)	1.37	0.13
Chloride	26.00	4.2
Sulfate (SO_4)	33.00	3.96
Fluoride	1.56	0.46
Carbonate (CO_3)	21.00	4.03
Bicarbonate (HCO_3)	924.00	87.20
Silica (H_4SiO_4)	8.10	
Hardness (as $CaCO_3$)	13.00	
Alkalinity (as $CaCO_3$)	793.00	

Total Solids	ppm	940.00	epm
Conduct. at 25°C	lab	1549.00	field
pH	lab	8.60	field
Cation: Anion Balance			1.12 %
Total Solids Balance			0.90 %

LITHOLOGY

Comments:

HAMLET OF BEZANSON
AREA STRUCTURE PLAN

NOTE : See Figure 3
re: Servicing Constraints)

FIGURE 4
DEVELOPMENT CONCEPT

REVISED JUNE 25, 1985

STEWART, WEIR & Co.
DATE: OCTOBER 22, 1984 FILE: 8-84-13298