WE CARE

Foster Motors Inc.

P.O. BOX 499, MIDDLEBURY, VERMONT 05753

802-388-9961

JEEP
EAGLE
DODGE
CHRYSLER
PLYMOUTH
DODGE TRUCKS
CHRYSLER IMPORTS

Aug. 14, 1990

AUG 17 1990

Agency of Natural Resources
103 So. Main St.
Waterbury, Vt. 05676

Dept of Environmental Conservation
Att: Chuck Schwer

Dear Mr. Schwer

In response to your letter dated June 13th, Foster Motors has done the work that your office requested.

We retained the services of Dubois & King, Inc., Randolph, Vt. to do a limited site assessment. Enclosed please find the letter Bob Nelson sent to me with the assessment of this site.

If there is anything else you may need, please feel free to contact me.

Sincerely

FOSTER MOTORS INC.

Scott Foster

Scott Foster, Vice President

ESF/rrp

Enc.

DuBois & King inc.

ENGINEERING • PLANNING • DEVELOPMENT • MANAGEMENT

R11766P2
August 10, 1990

Mr. Scott Foster
Foster Motors
P. O. Box 499
Middlebury, Vermont 05753

SUBJECT: Limited Site Assessment
Foster Motors, Inc.
Middlebury, Vermont

Dear Mr. Foster:

We have completed the subject assessment and present our findings in the following paragraphs. The assessment was required as an outcome of tank removal activities (in April 1990) when an inspection from the Petroleum Sites Management Section (PSMS) identified petroleum in the soil and groundwater. The assessment requirements were summarized in a letter you received from Mr. Chuck Schwer of the PSMS and included: a) the installation of monitoring wells, b) groundwater sampling and analysis using EPA Method 802 and 418.1, c) the preparation of a groundwater flow map and, d) a risk assessment to determine the impact of any contamination on surrounding receptors. We have addressed each of these items as summarized below.

FINDINGS

1. Monitoring Well Installation

Two monitoring wells were installed at the locations shown on Figure 1. The number and locations of these wells, as we understand, was pre-approved by Mr. Marc Coleman of PSMS, who was the State inspector at the time of the tank removal. The wells were installed in May 1990 by Gary Dupuis of Fiske and Dupuis Engineers. The wells were installed about 5 feet into the groundwater table and were of the design acceptable to the State of Vermont (i.e. flush joint PVC casing, bentonite seals, sand pack around slotted casing and protective casing).

2. Sampling and Analysis

The wells were sample on July 17, 1990 and analyzed July 23, 1990 by EPA Methods 8020 and 418.1 for purgible aromatics and oil and grease respectively. Sampling was conducted in accordance with standard protocol including purging at least three well volumes prior to sampling, decontamination of the samples between wells and preservation of samples prior to analysis.

The results of these analyses are shown in the attached laboratory report and summarized in the following table.

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-3376

P.O. Box 2287
South Burlington, Vermont 05403-2287
(802) 864-6717

P.O. Box 1463
Concord, New Hampshire 03302-1463
(603) 228-0574

13 Park Street
Saco, Maine 04072
(207) 282-9997

MONITORING WELL NUMBER WITH COMPOUND LEVELS IN PPB

Compound	MW-1	MW-2	Vermont Enforce Standard (ppb)
Benzene	469	30	5
Toluene	2,300	46	2,420
Ethylbenzene	2,020	BPQL	680
Total Xylene	17,500	163	400
n-Hexane	670	2	4,000
MTBE	164	1,000	None Established

As indicated in the table, several of the gasoline component compounds exceed the Vermont Standards in MW-1 (benzene, ethylbenzene, total xylene). Only one compound (benzene) in MW-2 exceeds these standards. MTBE (methyl tertiary butyl ether) is a non-regulated highly soluble gasoline additive, which is tested for because it usually moves through the groundwater ahead of the other gasoline compounds.

3. Groundwater

The direction of groundwater flow at the site is depicted on Figure 1. This was determined by measurement of the relative water level elevations in the monitoring wells and by hydrogeologic assumptions based on USGS topographic mapping and field observations.

Based on water level measurements, it was determined that the static water level in MW-2 was about 0.44 feet higher in relative elevation than the static level in MW-1 (utilizing survey instrument). This suggests a groundwater table flow direction generally to the west at a gradient of about .004 (or a slope of about 5 inches per 100 feet). The topographic mapping available for this area (Conwall, Vermont and East Middlebury, Vermont) indicates that the site is located on the west side of a topographic divide with the land sloping toward Otter Creek on the west and Beaver Brook on the east. The expected flow direction of the water table at the site, therefore, would be to the west and this is confirmed by the well measurements. Figure 2 shows this regional concept.

The groundwater flow rate through the ground at the site could range from 15 to 150 feet per year (assuming sandy soils).

4. Risk Assessment

Based upon discussions with Mr. Bill Hageman of the Middlebury Public Works Department, town water extends to a point about 2,000 feet beyond the site (see Figure 2). It is assumed, therefore, that all of the homes within a thousand feet or so of Foster Motors (about 10 to 12 homes) are on city water. There are no known private drinking water supplies within this area, and the

surface water sources, namely Beaver Brook and Otter Creek, and associated wetlands are several thousand feet or more from the site. Therefore, the fact that city water is available to all potential groundwater receptors in the immediate area and the absence of any information indicating the presence of private wells, practically eliminates the possibility that the reported petroleum contamination will impact area drinking water quality.

In addition, the fact that no record of any petroleum contamination was found in state and local agency offices (see April 11, 1990 Hazardous Waste Site Assessment by DuBois & King, Inc.) suggests that surface water receptors (Beaver Brook, Otter Creek, etc.) have not been impacted by the reported contamination (the distance to these receptors i.e. 3,000+/- feet and estimated groundwater flow velocities; i.e. 15 to 150 feet per year suggests that sufficient time probably has elapsed for any contaminant transport to have occurred.

Also, since the source of the reported contamination has been removed from the ground eliminates the potential for any additional petroleum entering the ground from this source and suggests that over time, the natural processes of attenuation (principally dilution, adsorption and biodegradation) will reduce the reported contamination to levels below enforcement standards.

Furthermore, the extensive marshland to the west of the site, which would be the primary discharge area for groundwater from the site (see Figure 2) would provide an excellent biodegradation environment for any trace quantities of petroleum compounds.

Based on the above, therefore, it is our opinion that the reported contamination will have negligible impact on surrounding receptors.

LIMITATIONS

The opinions expressed in this report are based on site conditions and data obtained by DuBois & King, Inc., on the dates in this report and depths and locations indicated and are not intended to be a guarantee that these conditions and data will not change in the future or will not change at different depths and locations.

Should any additional information become available of a relevant public health or environmental nature, or if conditions change, DuBois & King, inc., would request to review this data, reserving the right to re-evaluate or amend any opinions made in this report. DuBois & King, Inc. shall not be held liable for the outcome of any action taken by others as a result of any

opinions expressed in this report. We appreciate the opportunity to work with you on this project.

If you have any questions concerning the work performed, please feel free to contact me.

Very truly yours,

DuBOIS & KING, INC.

Robert L. Nelson, P.G.
Senior Hydrogeologist

Russell W. Rohloff, P.E.
Project Engineer

RLN:bfb
Enclosure

SCITEST
LABORATORY SERVICES

P.O. Box 339
Randolph, Vermont 05060-0339
(802) 728-3376

LABORATORY REPORT

CLIENT NAME:	Foster Motor	LABORATORY NO.:	954-90
ADDRESS:	c/o DuBois & King P.O. Box 339 Randolph, VT 05060	PROJECT NO.:	80439
		DATE OF RECEIPT:	7/17/90
		DATE OF ANALYSIS:	7/18/90
		DATE OF REPORT:	7/23/90
ATTENTION:	R. Nelson	DATE OF SAMPLE:	7/17/90

RESULTS

(ug/l micrograms per liter)

PARAMETER	MW - 2	MW - 1
Benzene	30	469
Toluene	46	2300
Ethylbenzene	BPQL	2020
Total Xylenes	163	17500
BTEX	239	22289
Chlorobenzene	BPQL	BPQL
1,2-Dichlorobenzene	BPQL	BPQL
1,3-Dichlorobenzene	BPQL	BPQL
1,4-Dichlorobenzene	BPQL	BPQL
n-Hexane	2	670
Total FID Hydrocarbons (including BTEX) as n-Hexane	1120	40300
Methyl tertiary Butyl Ether	1000	164
Surrogate % Recovery	94%	94%

EPA Method 602 with FID scan
Detection Level: 5 ug/l for MTBE & Total FID Hydrocarbons
1 ug/l for all 602 Parameters and n-Hexane

Respectfully submitted,

SCITEST, INC.

Roderick J. Lamothe
Laboratory Director

RJL/trs

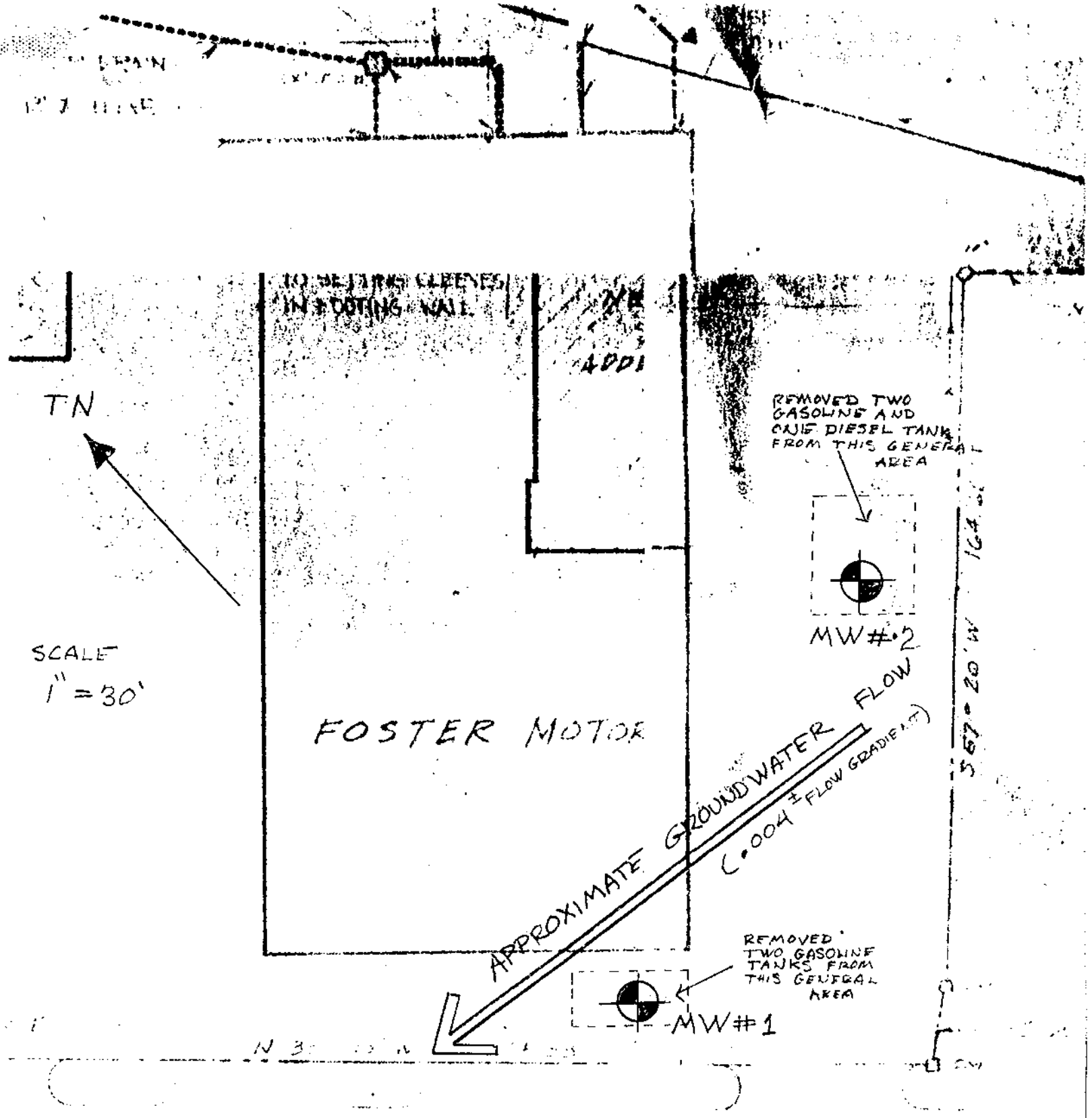

FIG 1

GROUNDWATER FLOW MAP

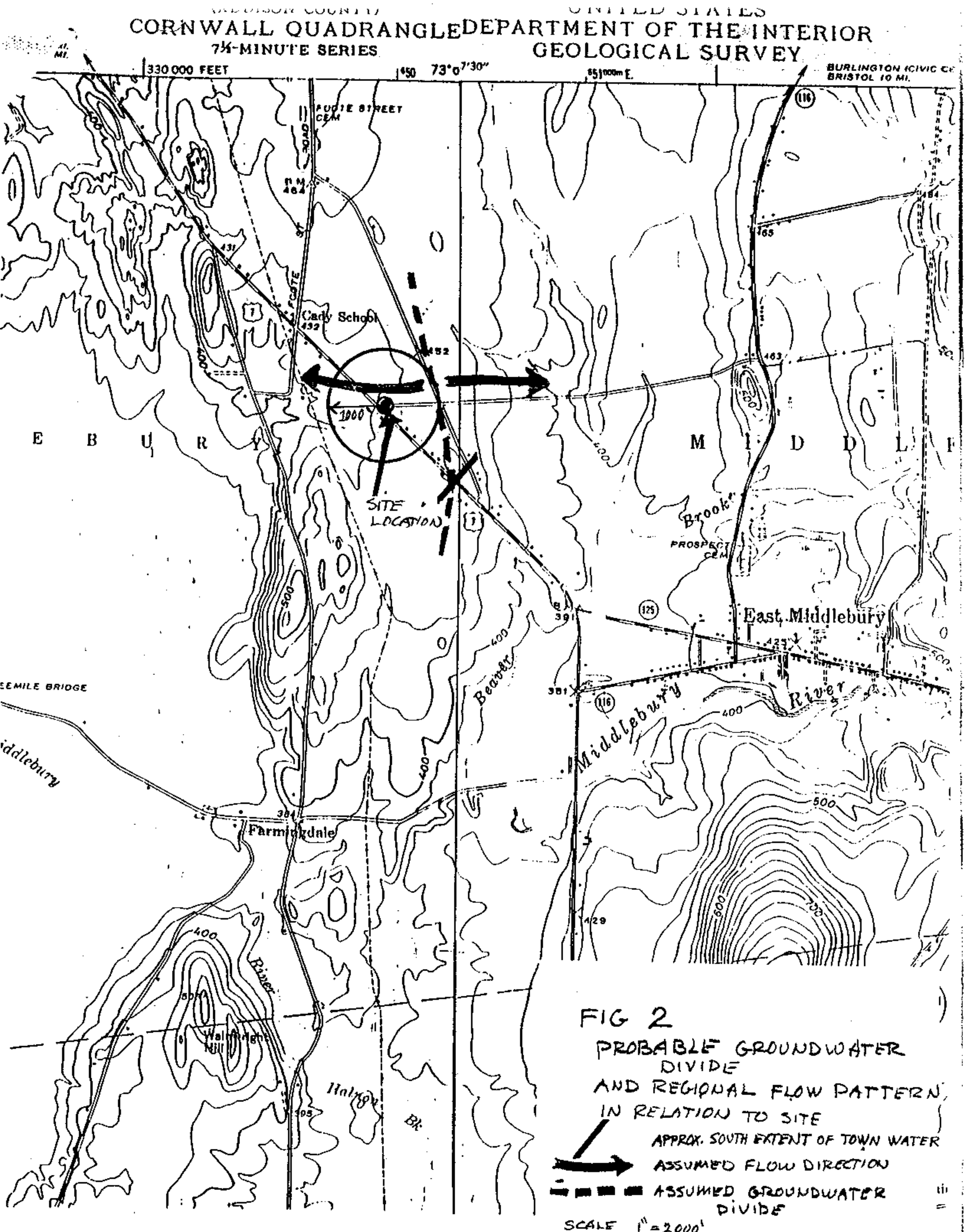

FIG 2
PROBABLE GROUNDWATER DIVIDE
AND REGIONAL FLOW PATTERN,
IN RELATION TO SITE

APPROX. SOUTH EXTENT OF TOWN WATER
ASSUMED FLOW DIRECTION
ASSUMED GROUNDWATER DIVIDE

SCALE 1" = 2000'