

GEOPHYSICAL SURVEY

Commercial Building
1626 Freeway Drive
Mount Vernon, Washington

DAHLGREN FAMILY PARTNERSHIP

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ENVIRONMENTAL ASSOCIATES, INC.

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December 4, 1996

JN 6362-2

Dahlgren Family Partnership #3, L.P.
% Dahlgren & Dauenhauer, P.C.
701 Fifth Avenue, Suite 5800
Seattle, Washington 98104-7096

Attention: Don Dahlgren

Subject: **GEOPHYSICAL SURVEY
Commercial Building
1626 Freeway Drive
Mount Vernon, Washington**

Dear Mr. Dahlgren:

Environmental Associates, Inc. has completed a geophysical survey of the property located at 1626 Freeway Drive in Mount Vernon, Washington. This report, prepared in accordance with the terms of our proposal dated November 18, 1996, summarizes our approach to the project along with results and conclusions.

The contents of this report are confidential and are intended solely for your use and those of your representatives. Four copies of this report are being distributed to you. No other distribution or discussion of this report will take place without your prior approval in writing. Additional copies are available for a small fee.

No evidence for the presence of an underground storage tank was found in the area of the subject property surveyed for this project.

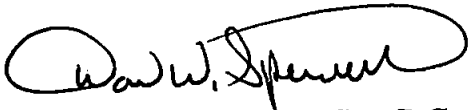


Dahlgren Family Partnership #3, L.P.
December 4, 1996

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We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,
ENVIRONMENTAL ASSOCIATES, INC.



Don W. Spencer, M.Sc., P.G., R.E.A.
Principal

EPA-Certified Asbestos Inspector/Management Planner
I.D. # AM 48151

Registered Site Assessor/Licensed UST Supervisor
State Certification #947458636

License: W000010 (Washington)
License: 11464 (Oregon)
License: 876 (California)

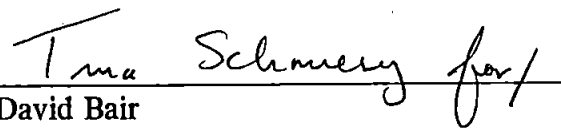
GEOPHYSICAL SURVEY

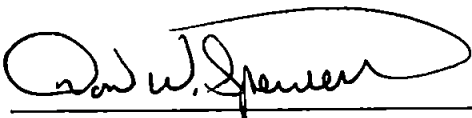
**Commercial Building
1626 Freeway Drive
Mount Vernon, Washington**

Prepared for:

**Dahlgren Family Partnership #3, L.P.
% Dahlgren & Dauenhauer, P.C.
701 Fifth Avenue, Suite 5800
Seattle, Washington 98104-7096**

Questions regarding this investigation, the conclusions reached and the recommendations given should be addressed to one of the following undersigned.


David Bair
Environmental Engineer
EPA-Certified AHERA Building Inspector
I.D. No. J&J960222-BIR-06


Don W. Spencer, M.Sc., P.G., R.E.A.
Principal

EPA-Certified Asbestos Inspector/Management Planner
I.D. # AM 48151

Registered Site Assessor/Licensed UST Supervisor
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Reference Job Number: JN 6362-2

December 4, 1996

ENVIRONMENTAL ASSOCIATES, INC.

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SCOPE OF WORK

A Preliminary Environmental Property Screen of the subject property dated September 10, 1996 performed by Environmental Associates, Inc. (EAI) reported that the property was formerly the site of a Chevron gasoline station. The underground storage tanks (USTs) associated with the gasoline station were thought to have been removed, but their former location on the property was not available. A subsequent investigation performed by EAI consisted of drilling, sampling, and laboratory analysis and found evidence of gasoline-range petroleum hydrocarbons in groundwater samples at two locations on the property. The source of the petroleum could not be determined within the scope of work for that investigation.

Our scope of work for this supplemental study formulated through discussion with you included:

- A geophysical survey of the subject property to evaluate the potential for the presence of USTs (if any) and to attempt to locate the former UST pad.
- Preparation of a summary report documenting the investigation and its findings.

FINDINGS

SITE DESCRIPTION

The subject property includes an regular-shaped parcel of land covering approximately 15,525 square feet (0.36 acre). Improvements to the property include a one-story wood-framed building with a stucco exterior, enclosing approximately 4,800 square feet of space, which was reportedly erected in 1985. Currently the western half of the building is occupied by Car Stereo Plus, a seller and installer of car stereos, while the eastern half is vacant. Additional features include asphalt paving parking areas located on the north and west sides of the building. The approximate location of the site is shown on the Vicinity Map, Plate 1, appended herewith.

The subject site is located in an area of mixed retail and commercial land use approximately one quarter mile north of the downtown core of Mount Vernon, Washington. A brief description of land use on nearby parcels is provided below.

- North:** College Way defines the subject site's northern property boundary. Across this east-west arterial is a Kwik-N-Kleen Car Wash/Texaco gasoline station. Farther north is a restaurant.
- East:** Located to the east of the subject site is Interstate 5.
- South:** Immediately south of the subject property is Q-Lube, an automotive oil change facility. Farther south is an undeveloped area covered with grass and other low vegetation.
- West:** Adjacent to the west is a parcel of land containing a traffic light switch box, a pole-mounted transformer, a soil venting apparatus, a City of Mount Vernon pump station. Farther west is Freeway Drive. Across Freeway Drive are tow restaurants.

Limited research by EAI suggests that a Chevron Station was located on the subject site from at least 1969 (or earlier) until the early 1980's when it was demolished. According to Mr. Dan Mitzel, former owner of the subject site, the underground storage tanks (USTs) associated with the former on-site gasoline station were removed when the building was demolished. Mr. Ervin Lindall, Assistant Fire Chief for the City of Mount Vernon Fire Department, confirmed that the on-site USTs were removed from the site when the station was demolished in the early 1980's. No additional information regarding the size of the USTs or condition of site soil and/or groundwater were available from the City of Mount Vernon Fire Department or other public sources.

GEOLOGIC SETTING

Geographically, the subject site is situated on the floor of a broad alluvial valley known as the Skagit Valley. The Skagit River is located one half mile to the south of the site. This surface water course flows in a southwesterly direction and discharges into Puget Sound. Based upon previous work at the site performed by EAI, subsurface material consists of a loose to very dense silt with sand and gravel to approximately 12.5 feet subsurface underlain by a medium dense fine gray sand. Depth to groundwater was estimated at approximately 14 feet subsurface.

Topographically, the site is level at approximately 20 feet above sea level, within a loop of the Skagit River. Based upon inference from topography and local drainage patterns, it appears that shallow-seated groundwater (if present) in the vicinity of the subject property may flow in a southwesterly direction.

GEOPHYSICAL SURVEY

A geophysical survey using an electro-magnetic (EM) device and ground penetrating radar (GPR) was conducted on November 24, 1996 to attempt to locate any USTs which may remain on the property. The EM device was used to look for buried metal targets. Small metal objects in the near surface (1 to 2 feet) produce an EM response equivalent to a larger object (USTs, for example) at depth. The objects discovered using the EM device can then be investigated more closely using GPR. The GPR system provides a means to map the subsurface stratigraphy, to identify anomalous soil conditions, and to located buried objects. The field procedure consists of towing a radar antenna, at a walking pace, over the area of interest. During the traverse, the antenna, which is connected by a cable to a processor and display recorder, alternatively transmits and receives high frequency radar pulses. The received pulses, which represent reflections from subsurface features such as changes in sediment lithology, changes in porosity and moisture content, the presence of contaminants, or the presence of discrete objects such as utilities, pipes, USTs, and drums, are immediately processed and displayed on a graphic recorder.

The equipment used for the GPR survey was a GSSI SIR System 3 ground penetrating radar with a 500 MHz antenna. The system was set at a scale of 80 nanoseconds (ns). The GPR record represents a cross-sectional view to approximately 8 feet below ground surface. A total of eleven survey lines were made with GPR, six east-west lines and five north-south lines. The location of the lines are shown on the GPR Survey Map, Plate 2. The interior of the vacant portion of the structure was also swept with the EM device.

No evidence of a UST on the property was found during the EM and GPR explorations. The only major EM anomaly found was a buried concrete pad with steel reinforcement. Its location is shown on the GPR Survey Map, Plate 2 which would appear to be a pump island for the former gasoline service station. Conditions below this reflection were not discernable. Small EM anomalies were also found in various locations that were the result of buried metallic debris and/or pipes.

Clear and distinct evidence of the excavation which would have been created during the removal of the USTs was not identified in this activity. Several pipe-like images appeared on GPR Lines 8 and 9 that may represent the debris (pipes, etc.) typically left in UST excavations. The EM sweep of the existing structure turned up the obvious buried pipes, but no evidence for USTs was found. The concrete floor of the building did not contain sufficient amounts of steel reinforcement to block the EM wave. There was the typical attenuation through concrete with the GPR device, with depth of penetration limited to approximately seven (7) feet.

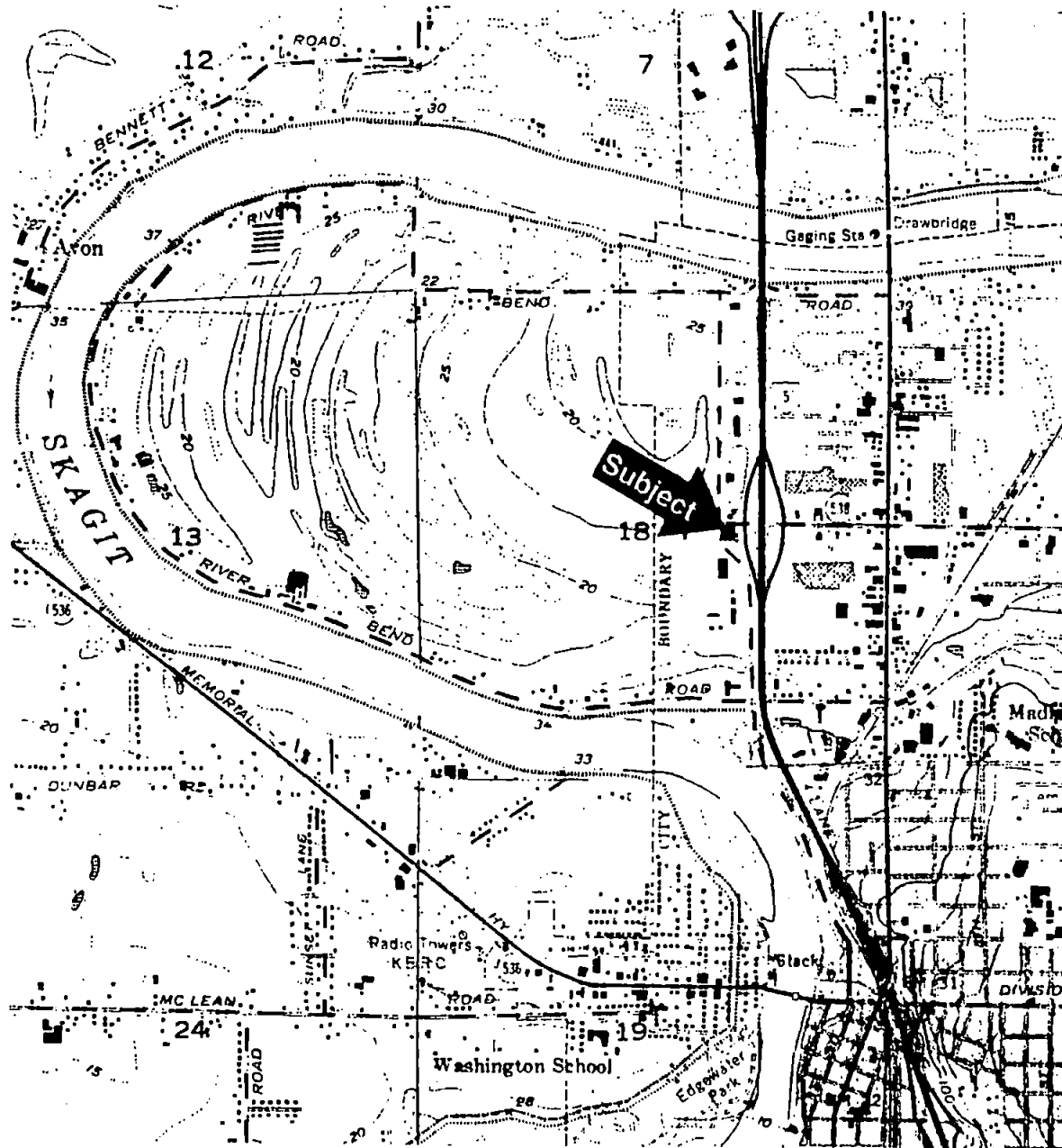
CONCLUSIONS

As noted earlier in the report, a geophysical survey of the subject property using both an electromagnetic device and ground-penetrating radar found no evidence to suggest the presence of a UST.

LIMITATIONS

This report has been prepared for the exclusive use of the Dahlgren Family Partnership #3, L.P. along with Mr. Don Dahlgren and their several representatives for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated November 18, 1996.

No other warranty, expressed or implied, is made. If new information is developed in future site work which may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.



Scale
0 1/2 1 mile



USGS Topographic Map of Mount Vernon, Washington Quadrangle



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VICINITY MAP

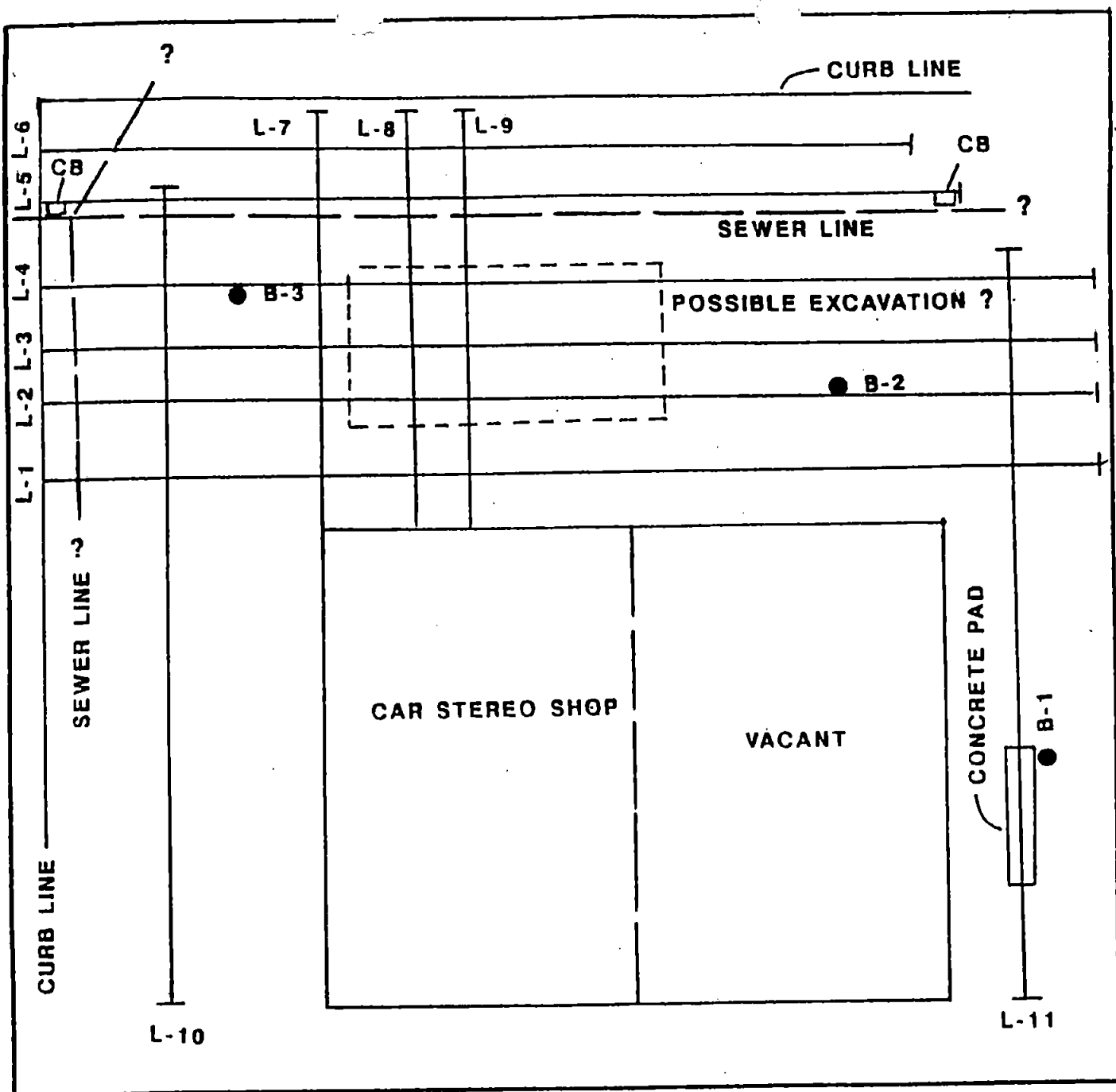
Commercial Property
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Job Number:
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Date:
December 1996

Plate:

1



SCALE



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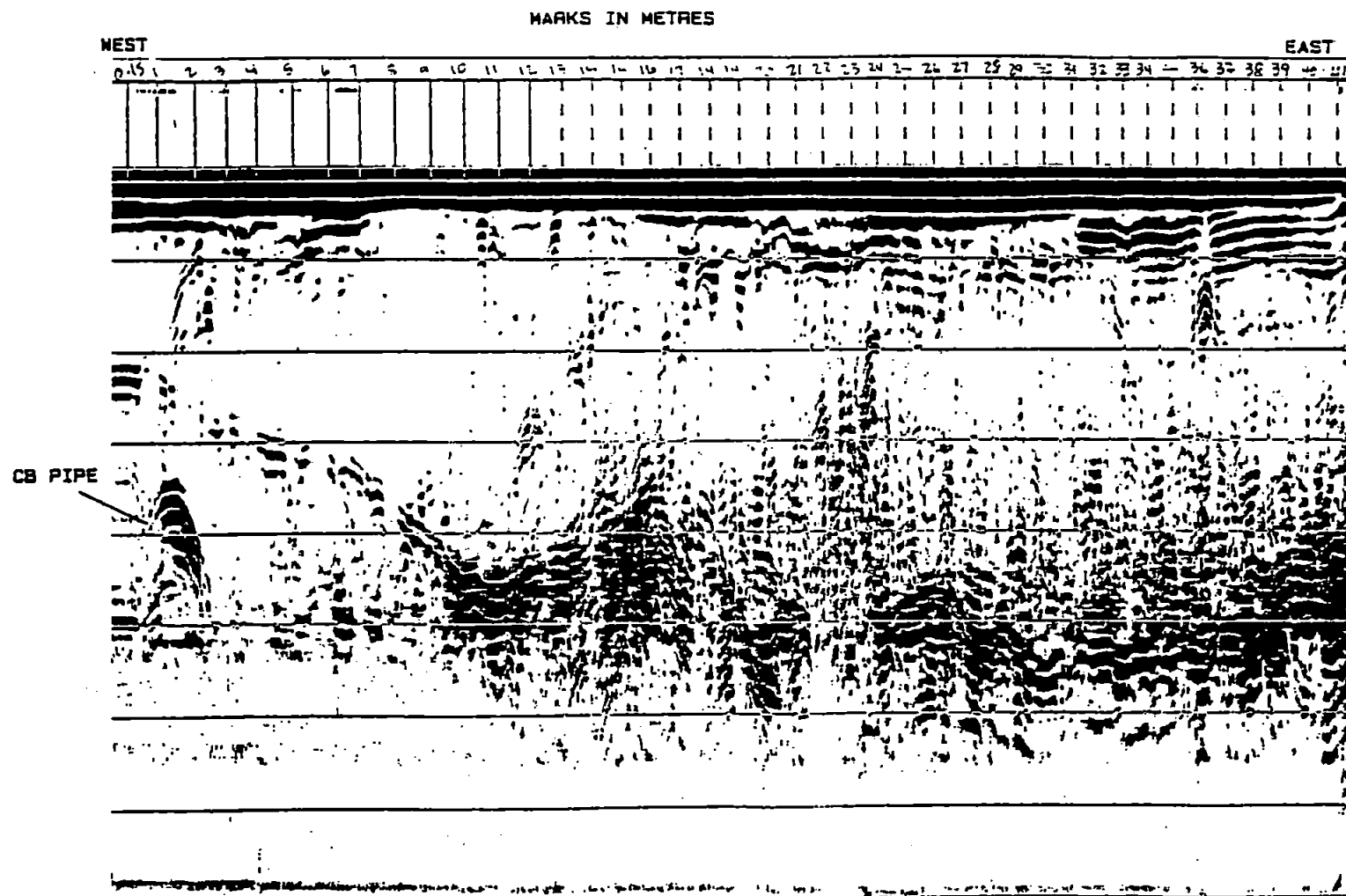
GPR SURVEY MAP

Commercial Property
1626 Freeway Drive
Mount Vernon, Washington

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JN 6362-2

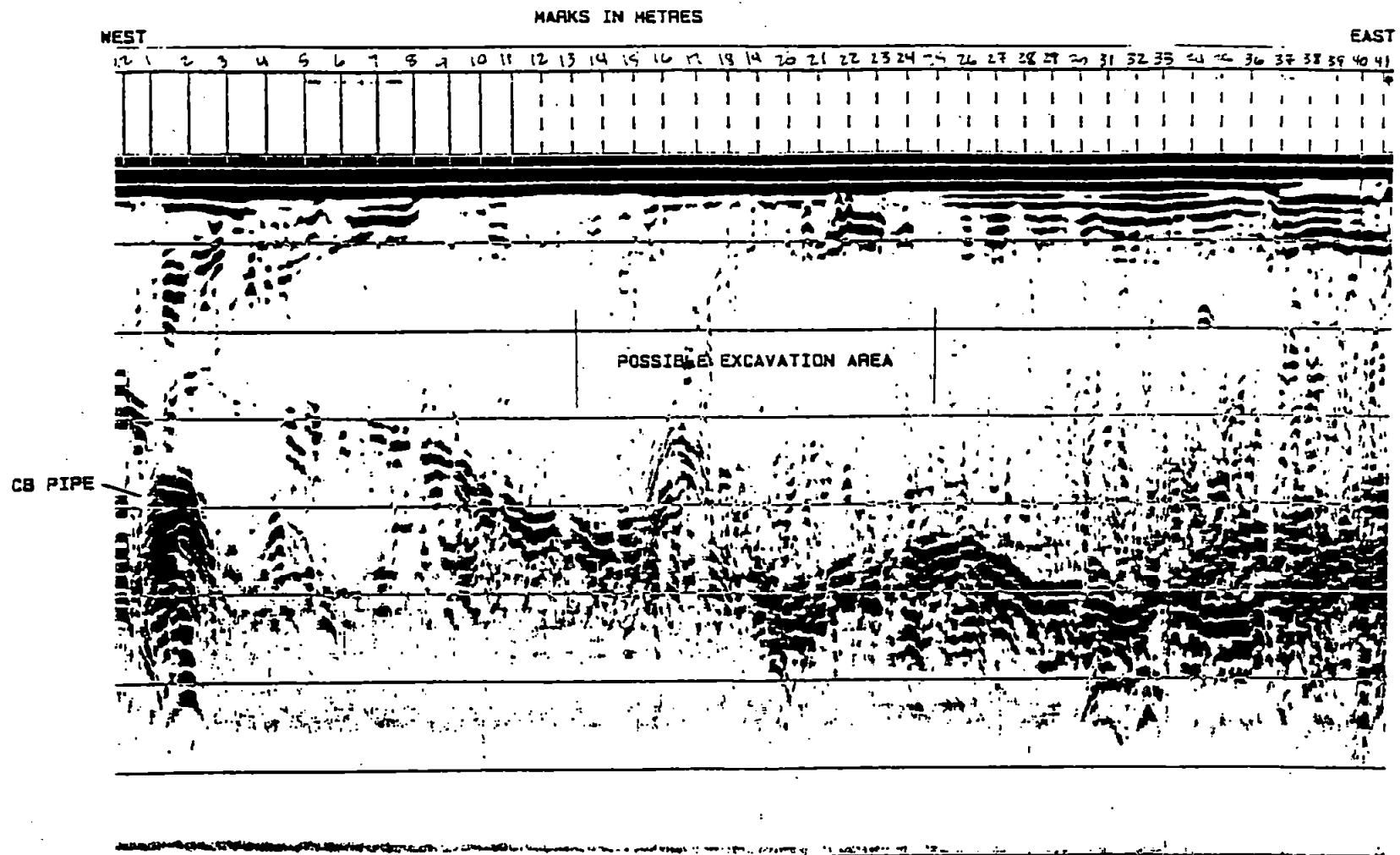
Date:
December 1996

Plate:
2



1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 1
500 MHZ ANTENNA	
J88-648/AC	

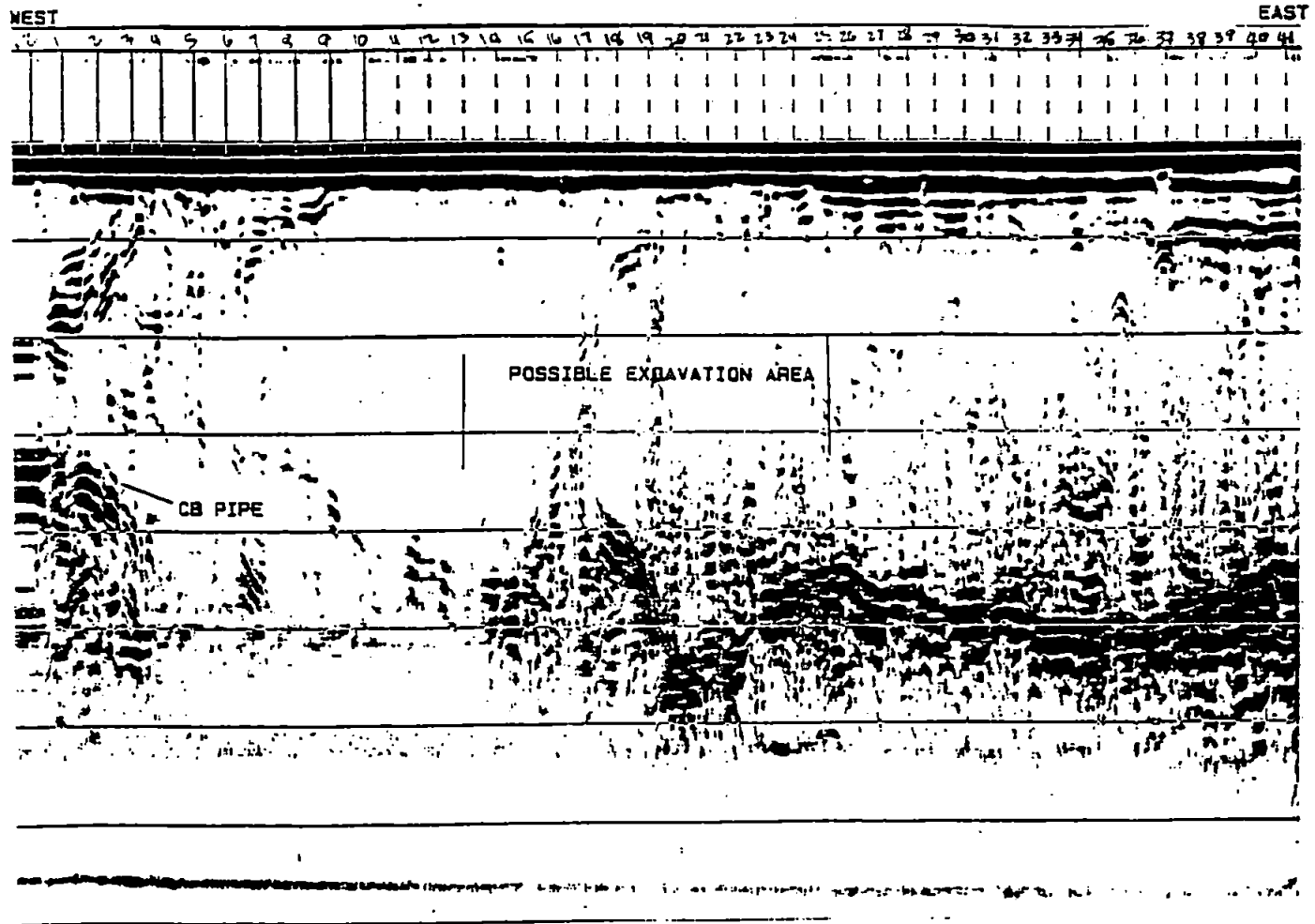
FIG 3



1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 2
500 MHZ ANTENNA J96-648/AC	

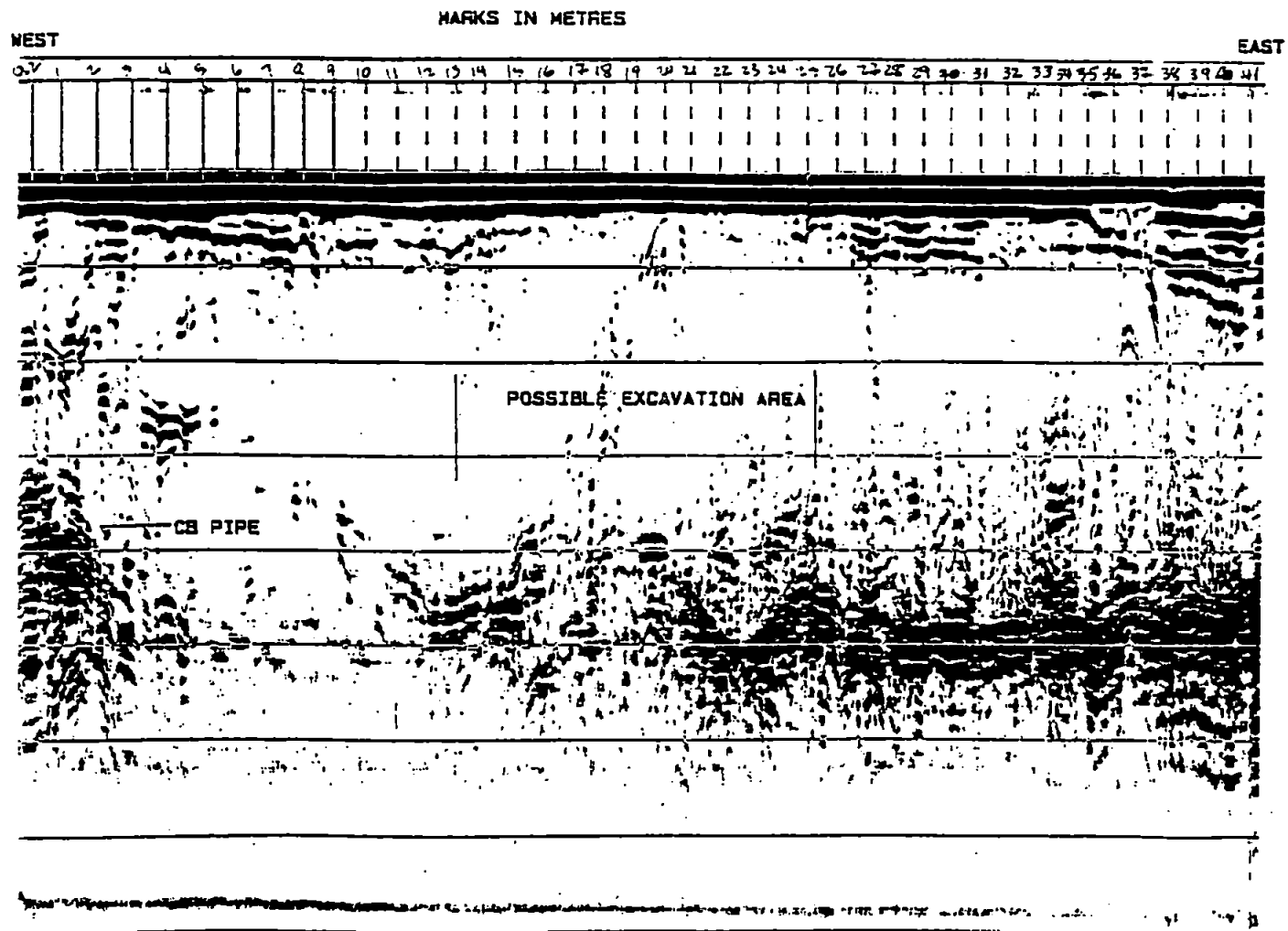
FIG 4

MARKS IN METRES



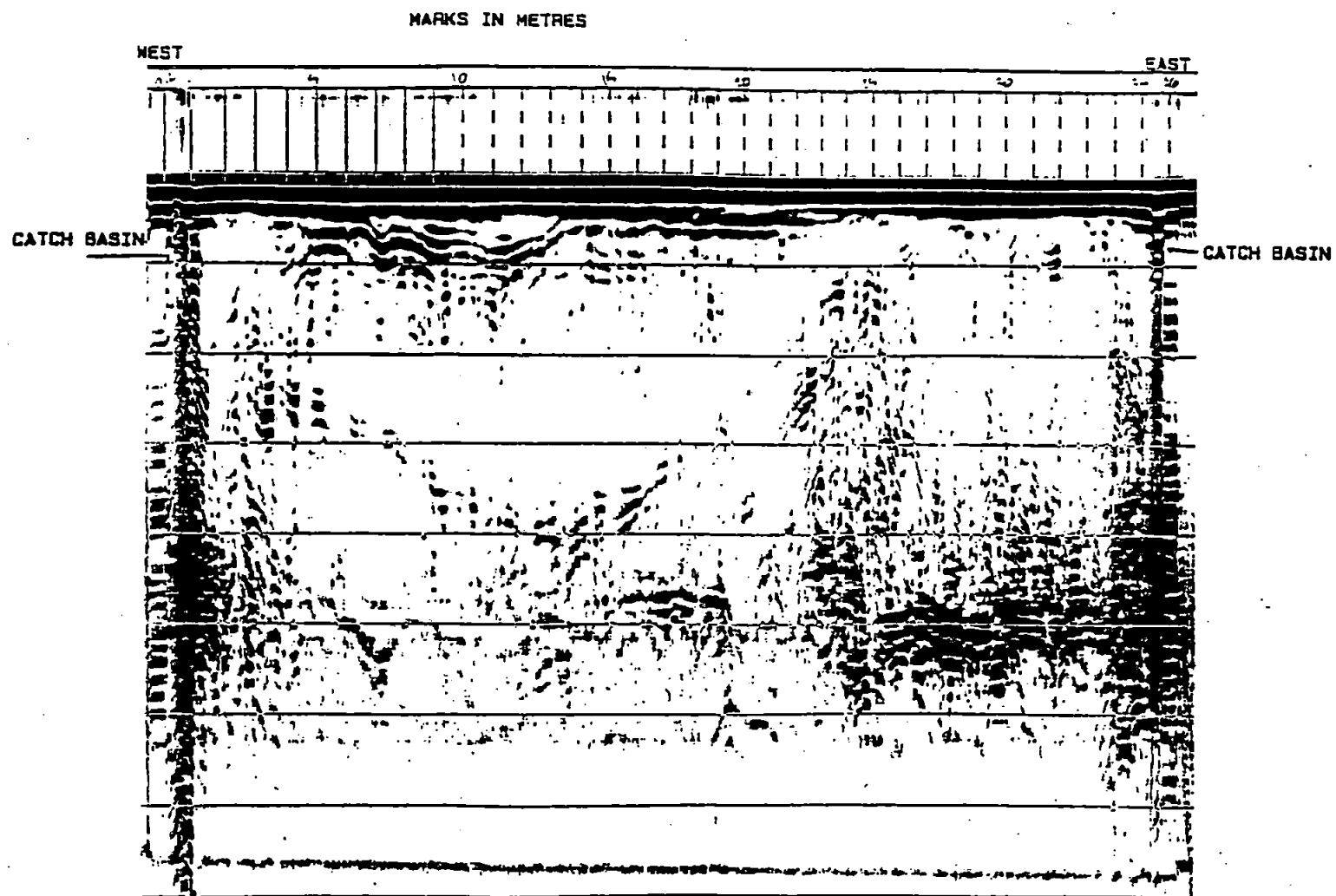
1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 3
500 MHZ ANTENNA J95-648/AC	

FIG 5



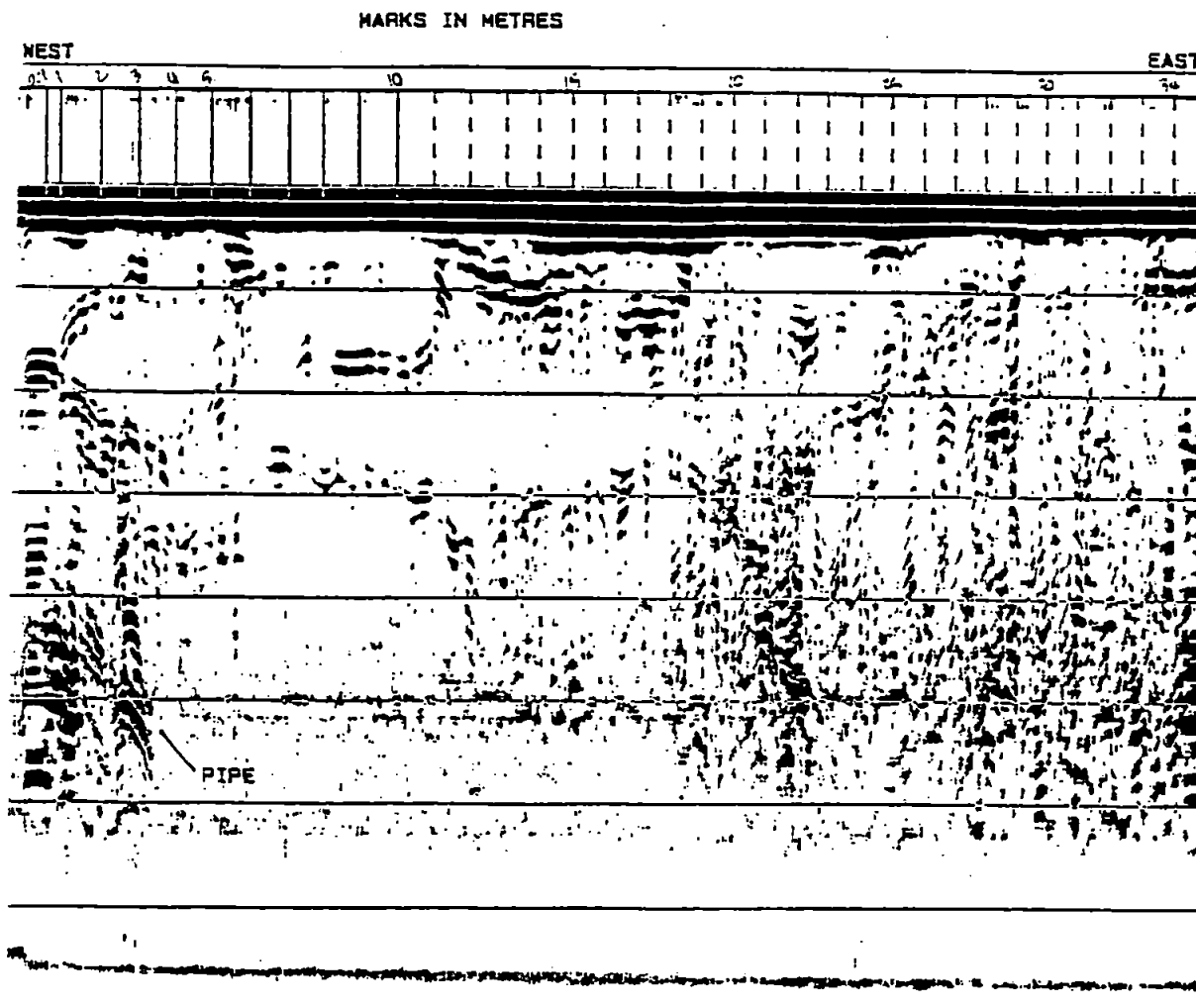
1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 4
300 MHZ ANTENNA J96-648/AC	

FIG 6



1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 5
500 MHZ ANTENNA	
J96-648/AC	

FIG 7



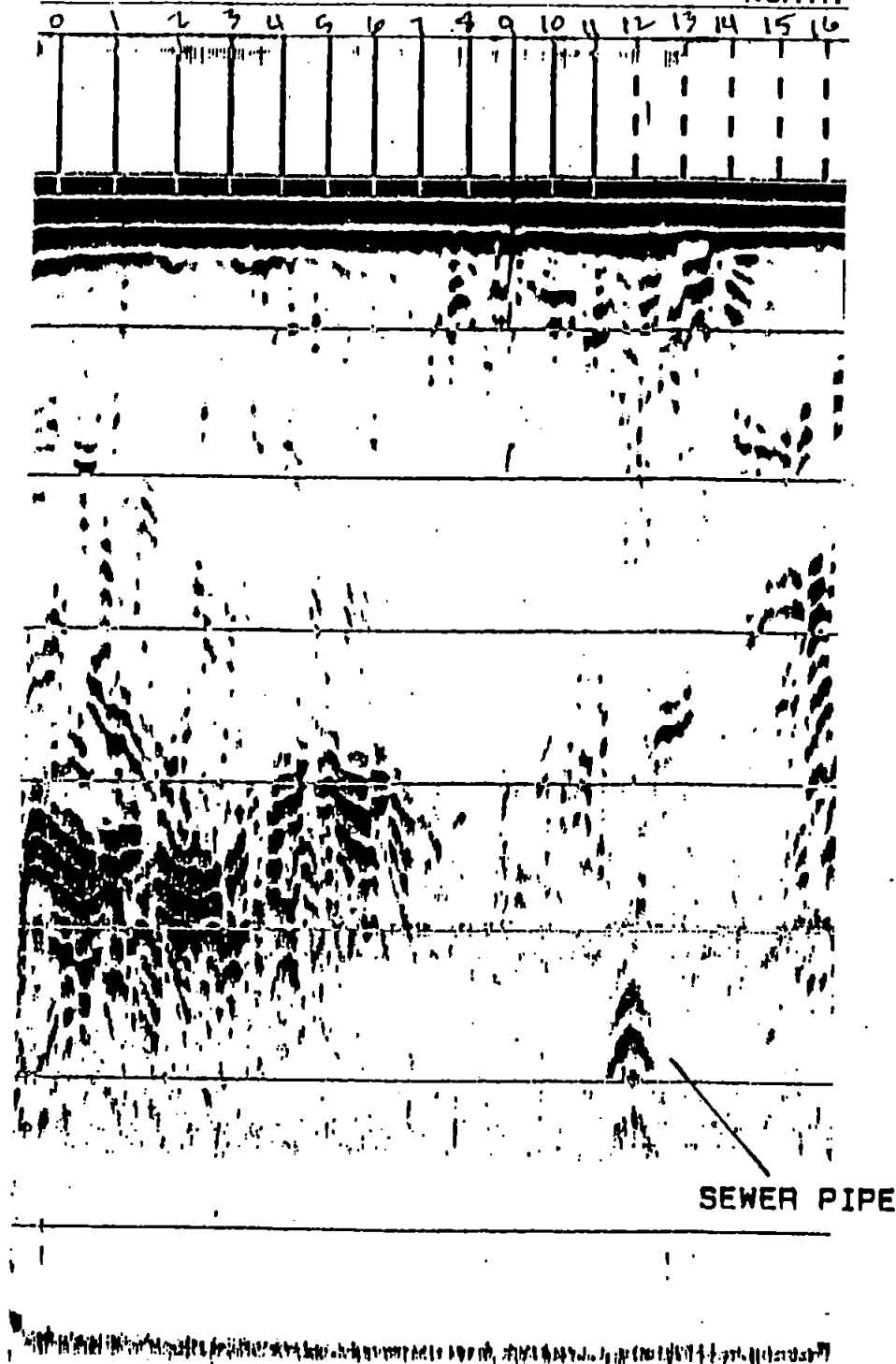
1626 FREEWAY DR. MT. VERNON WA	
GPR IMAGERY	GPR LINE 6
500 MHZ ANTENNA J96-646/AC	

FIG 8

MARKS IN METRES

SOUTH

NORTH



1626 FREEWAY DR. MT. VERNON WA

GPR IMAGERY

GPR LINE 7

500 MHZ ANTENNA

J98-848/AC

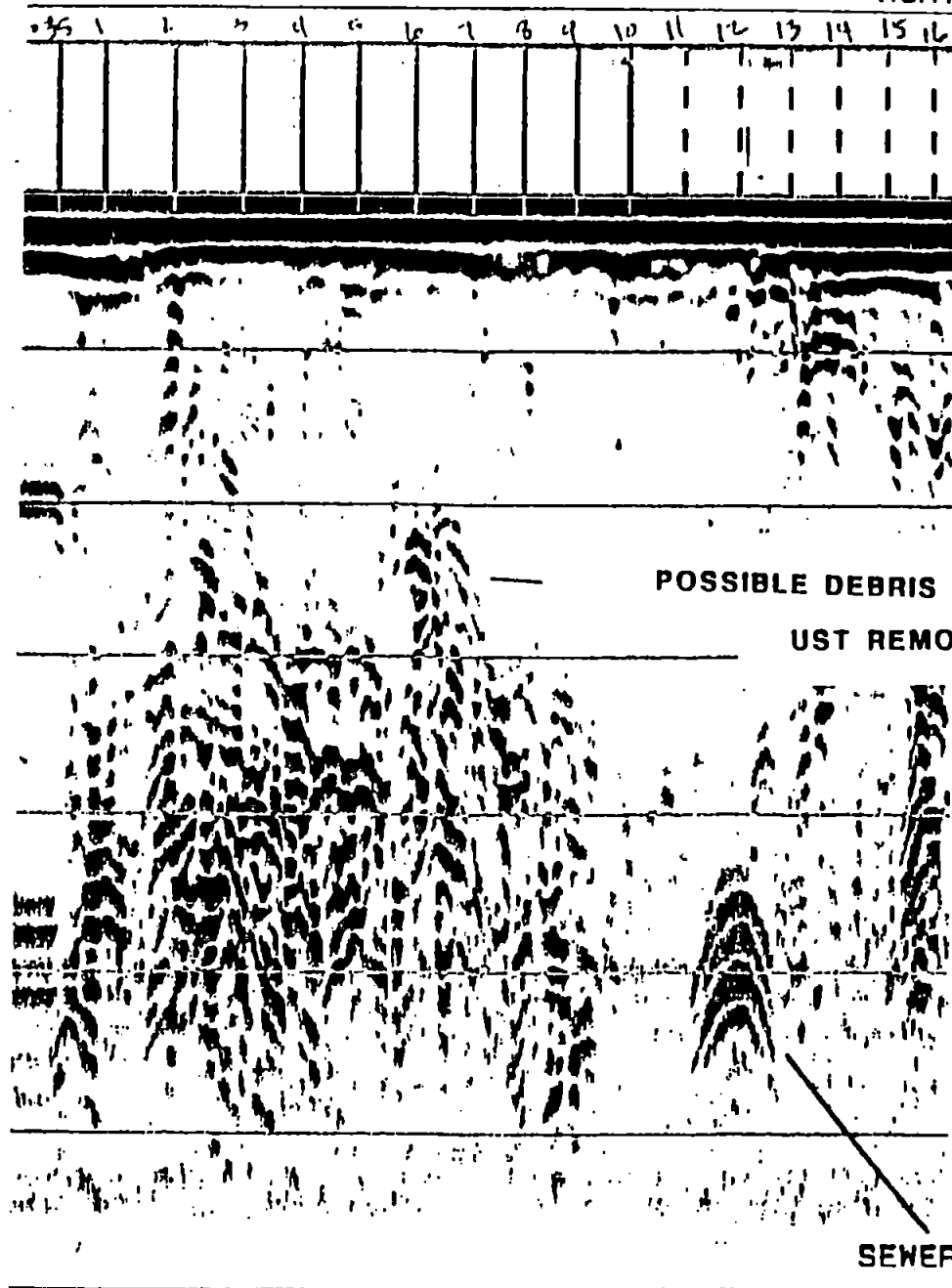
GEO-RECON INTERNATIONAL

FIG 9

MARKS IN METRES

SOUTH

NORTH



1626 FREEWAY DR. MT. VERNON WA

GPR IMAGERY

GPR LINE 8

500 MHZ ANTENNA

J96-648/AC

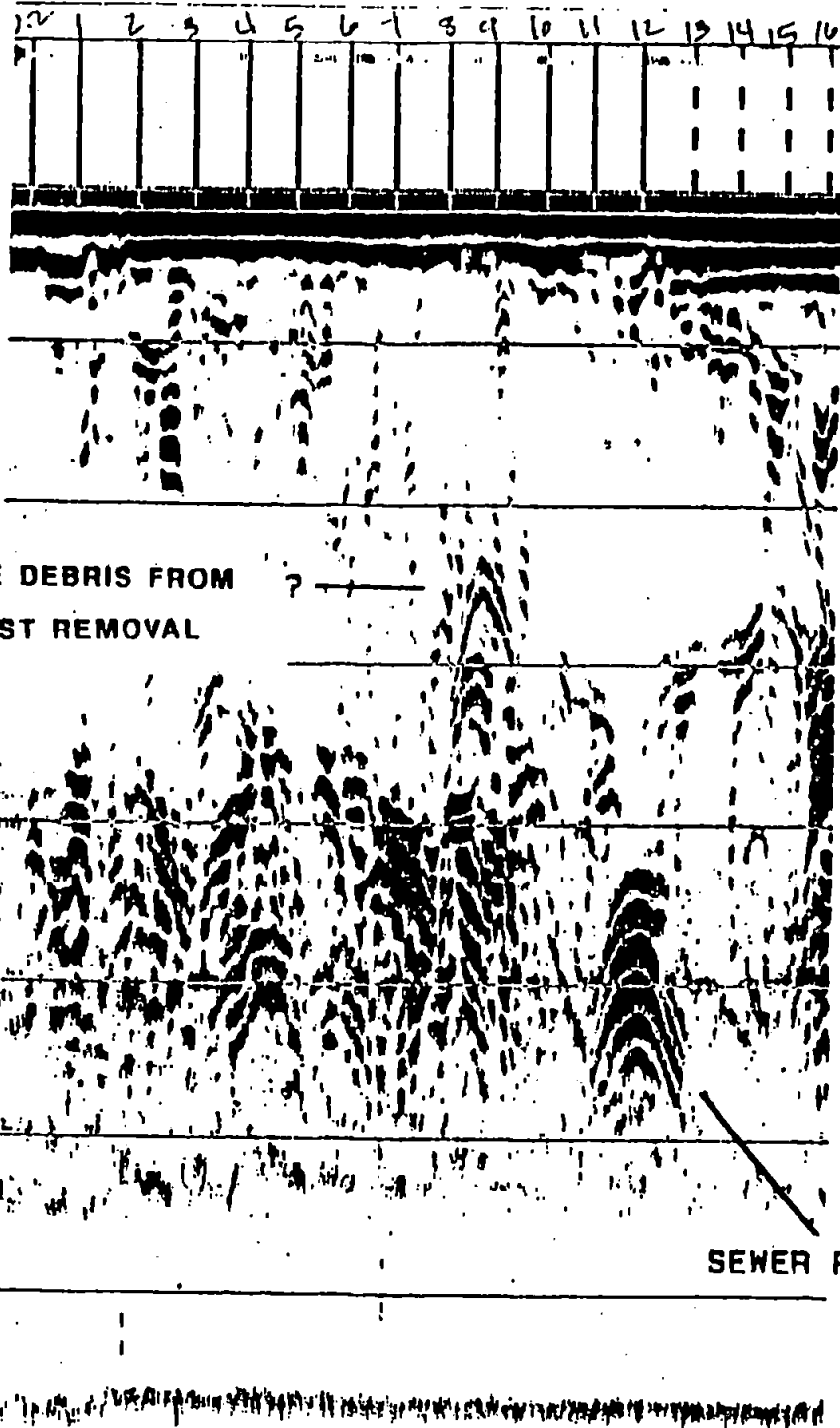
GEO-RECON INTERNATIONAL

FIG 10

MARKS IN METRES

SOUTH

NORTH



1626 FREEWAY DR. MT. VERNON WA

GPR IMAGERY

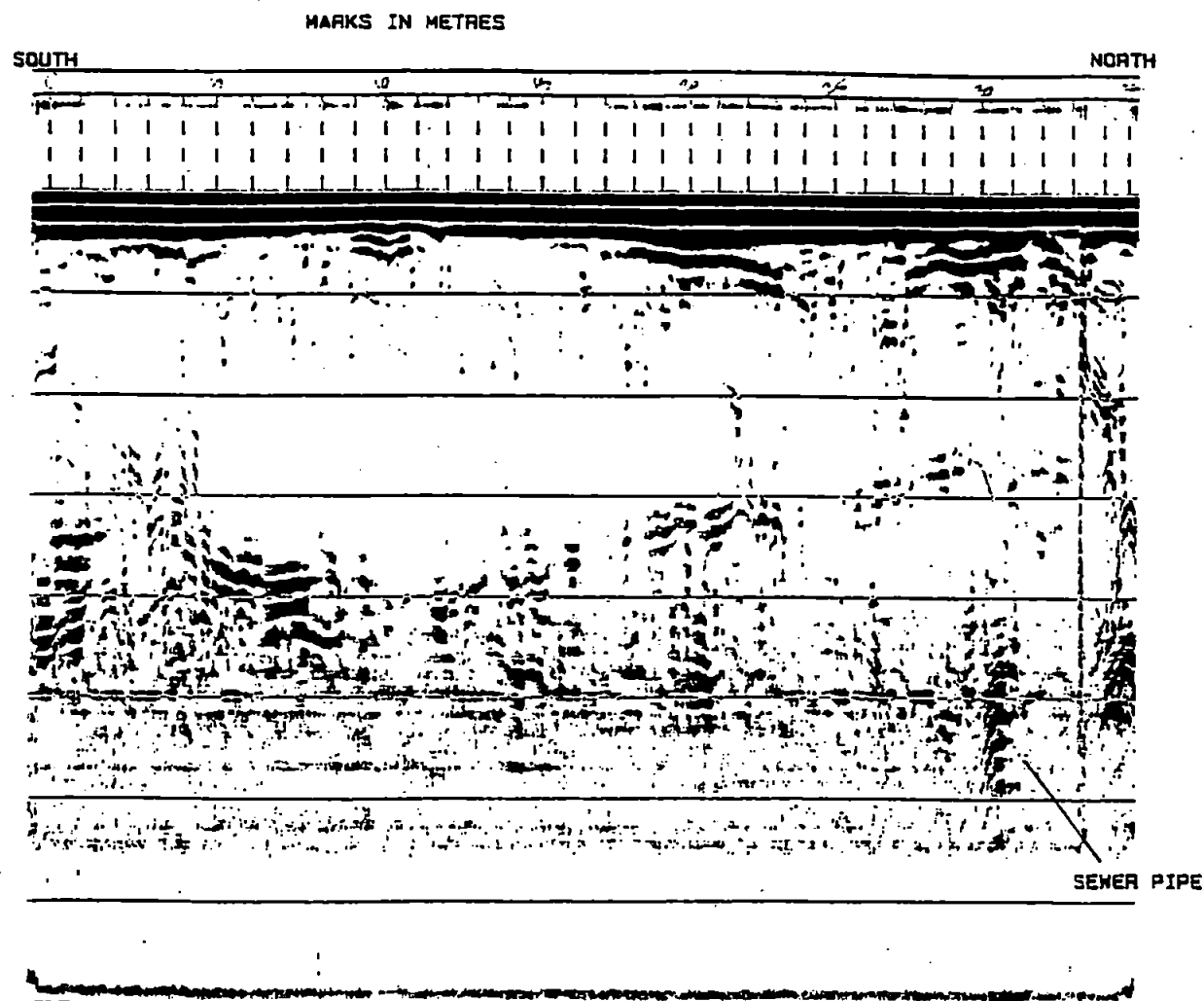
GPR LINE 9

500 MHZ ANTENNA

J96-648/AC

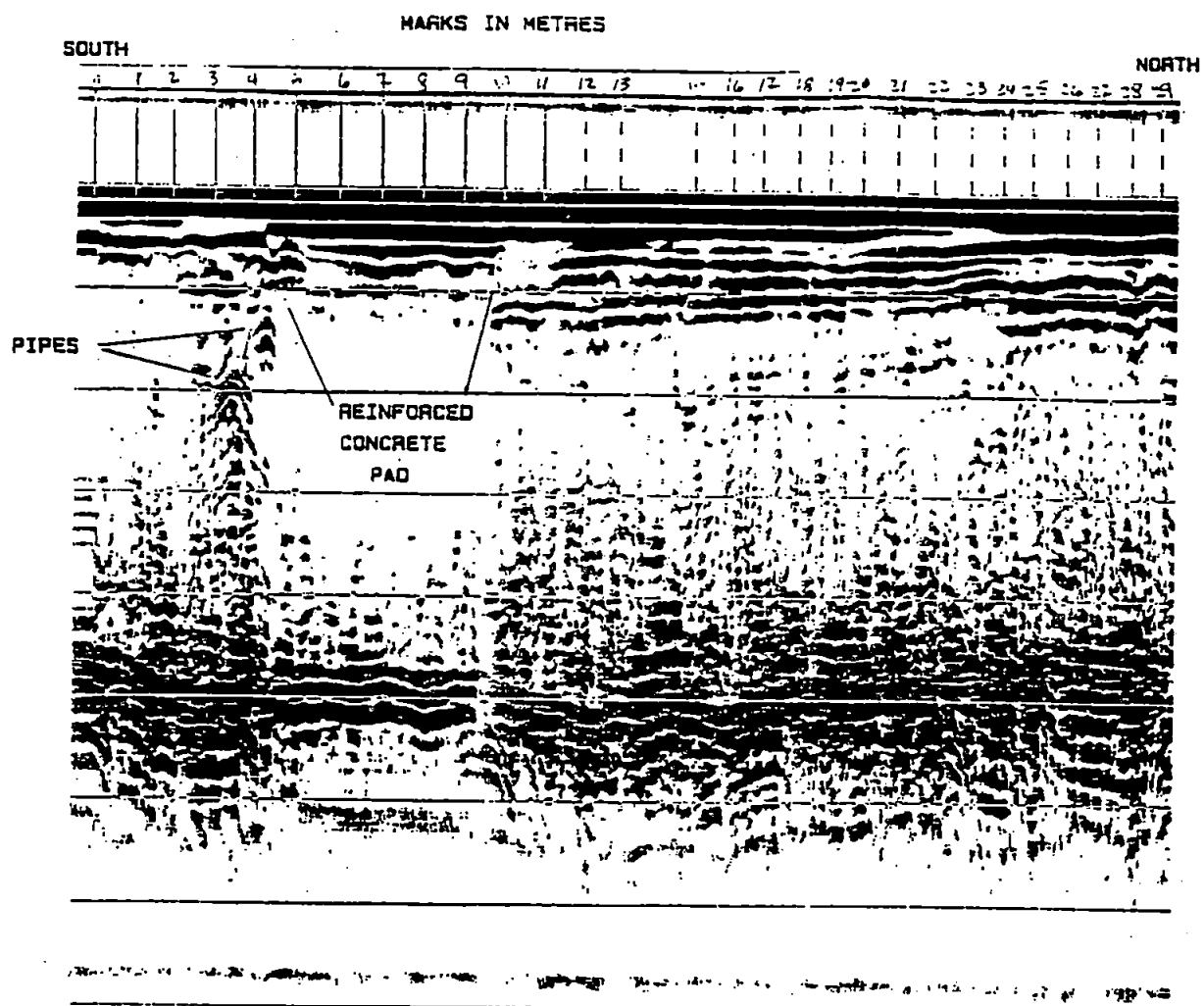
GEO-RECON INTERNATIONAL

FIG 11



1626 FREEWAY DR. MT VERNON WA	
GPR IMAGERY	GPR LINE 10
500 MHZ ANTENNA J96-648/AC	

FIG 12



1626 FREEWAY DR. MT VERNON WA

GPR IMAGERY

GPR LINE 11

500 MHZ ANTENNA
J96-648/AC

FIG 13