SAHLBERG EQUIPMENT, INC. PROPERTY

Seattle, Washington

Prepared For

U.S. Bank

W-7497

April, 1991

RITTENHOUSE-ZEMAN & ASSOCIATES

Geotechnical & Environmental Consultants

RZA

RZA
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5 April 1991

W-7497

U.S. Bank
Trust Department
P.O. Box 720, WWH 587
Seattle, Washington 98111-0720

Attention: Mr. Harry Rubin

Subject: Level I Environmental Site Assessment
Sahlberg Equipment, Inc. Property
5950 4th Avenue South
Seattle, Washington

Dear Mr. Rubin:

In accordance with your request, we are pleased to present this report containing our Level I Environmental Site Assessment of the above referenced property. This evaluation has been based on: our understanding of the local soils, hydrogeology, and geology; our past work in the general vicinity; interviews with various governmental agency personnel; and a visit to the site. Verbal authorization to proceed with this study was granted on 22 March 1991.

We appreciate this opportunity to be of service to you and would be pleased to discuss the contents of this report or other aspects of the study with you at your convenience.

Respectfully submitted,

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Anders F. Olin
Environmental Assessor

Level I Environmental Site Assessment

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5950 4th Avenue South
Seattle, Washington

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LEVEL I ENVIRONMENTAL SITE ASSESSMENT **W-7497**
SAHLBERG EQUIPMENT, INC. PROPERTY
5950 4TH AVENUE SOUTH
SEATTLE, WASHINGTON

1.0 SUMMARY

Rittenhouse-Zeman & Associates, Inc., (RZA) has performed a Level I Environmental Site Assessment of the subject property located in Seattle, Washington. The object of our study was to identify indications or reports of past or current potentially contaminating activities or situations on the subject site or in the immediate area. We then reviewed this data to evaluate possible negative impacts on the subject site and local environment to determine if, in our opinion, they appear to pose a threat to the local environment. A brief summary of the results of our study is included below:

- In the course of our current site visit, we did not encounter visible indications of severe contamination existing on the subject property.
- Drinking water supplies for the subject area are obtained from the City of Seattle, which in turn obtains its water supplies from sources distantly located relative to the subject site. These drinking water supplies would not be impacted by contaminants, if present, on the subject site.
- Governmental environmental and health agencies have reported that they have no knowledge of any hazardous material problems associated with the subject site.
- In view of:
    1) Our visual survey of the property;
    2) The lack of known reported hazardous material problems associated with the subject site;
    3) The past land use history of the subject property and immediately surrounding area;

  it is our opinion that the possibility of significant environmental contamination existing on the subject site from on-or off-site sources may be considered relatively low to moderate.

This summary is presented for introductory purposes only and should be used in conjunction with the full text of this report. The project description, site conditions, and results of our assessment are presented in the text of this report.

2.0 INTRODUCTION

The purpose of this study was to evaluate the subject property for reports or indications of soil or groundwater contamination due to previous or on-going site activities and to review the surrounding area for facilities which handle or produce substances which may have an adverse effect upon the soil and groundwater at this site. The scope of work for this report consisted predominantly of gathering existing available information. The objective of the record search and the site visit was to identify potentially contaminating activities that may have occurred on or near the site. Based on these findings, this report presents our opinion concerning environmental conditions at the site which may have resulted from both on-site and off-site activities. Our assessment of the parcel included:

- Visiting the site and vicinity to make relevant observations;
- Reviewing historical aerial photographs of the site and vicinity to evaluate visible indications of past land use activities;
- Reviewing available reports published by Federal, State, and local governmental agencies involved in environmental concerns;
- Reviewing records and historical data from the Cole Directory for Greater Seattle and Vicinity;
- Reviewing records and historical data from the Polk City Directory for Seattle;
- Interviewing knowledgeable governmental employees and private individuals;
- Reviewing available Washington State Department of Ecology (Ecology) records of water wells located in the general vicinity of the property;
- Evaluating a summary of the contamination incident data reported to us as a result of this study;
- Developing an opinion of the potential that contamination may be present at the site due to either on-site or off-site activities.

During our visit, we visually assessed the area for the presence of underground and above ground storage tanks, chemical storage drums, indications of groundwater and soils contamination, transformers that might contain polychlorinated biphenyls (PCB's), and any other apparent hazardous or toxic substances, or waste materials. A review of the surrounding area included attempting to locate nearby facilities such as service stations, automobile service centers, dry cleaning establishments, and garden shop/nurseries.

It should be understood that any parcel is vulnerable to environmental impairment from such activities as unreported or illicit dumping or spillage of deleterious materials that may not be readily apparent. The opinions and conclusions in this report are based on the data reported to us, our review of readily available information, and our visual evaluation of current site conditions. The collection of quantitative information in the form of laboratory analyses of soil and groundwater samples was beyond the scope of work for this type of study.

This report has been prepared for the exclusive use of U.S. Bank, and its agents, for specific application to this property in accordance with generally accepted environmental assessment practices. No other warranty, express or implied, is made. In the event that there are any changes on the existing site or nearby properties, the conclusions and recommendations contained in this report should be reviewed and modified by our office, if necessary, to reflect updated site conditions.

2.1 Current Site Description

The subject property is located at 5950 4th Avenue South, in the Duwamish industrial area of Seattle, Washington (Section 20, Township 24 North, Range 4 East, W.M.). The site is shown on Figure 1, the Site Vicinity Map.

This rectangular-shaped parcel measures approximately 409 feet along the east side of 4th Avenue South, with a depth of approximately 108 feet along the north side of South Front Street. The subject property is presently occupied by Sahlberg Equipment, Inc., a wholesaler/retailer of new construction heavy equipment and safety supply equipment. There are three main buildings on the property. See Figure 2, the Site Plan, for building locations. The northernmost building (Building 1 on Site Plan), a two story structure, was

originally constructed sometime around the mid-1950's with additions completed by 1970. The upper level of the building consists of a reception area and executive offices, while the lower level of the building consists primarily of parts and supply concerns.

The central building, (Building 2 on Site Plan), also known as the Anderson Building, was constructed sometime around 1940, and is a two story warehouse storage facility for safety supply equipment.

The southernmost of the main buildings (Building 3 on Site Plan) was constructed sometime in the late 1940's to early 1950's. The upper level of this two story structure consists of service department offices. The lower level of the structure is comprised of the service department shop.

A smaller, open, shed-like structure (Building 4 on Site Plan) is situated adjacently south of Building 3. The shed is utilized for equipment storage and minor maintenance purposes.

Aside from a relatively small area near the extreme southeast portion of the property, the grounds of the property is predominantly asphalt and/or concrete paved. Two entryways provide ingress to, and egress from, the subject property; adjoining 4th Avenue South and South Front Street, respectively. The property is fully enclosed by a steel chain link fence.

According to the City of Seattle Department of Construction and Land Use (DCLU), the subject property, as well as properties adjoining, is currently zoned for industrial development.

3.0 RESULTS OF EVALUATION

3.1 Geology, Hydrogeology, and Soils

The geology of the greater Puget Sound region is characterized by glacially derived sediments, the most recent of which were deposited toward the end of the Vashon Stade of the Fraser Glaciation which ended approximately 13,500 years ago. The advance of the Vashon Glacier deepened and widened north-south trending valleys. Thick bodies of sand, gravel, and till were deposited over much of the area. With the retreat of the

glacier, ice-contact stratified drift was deposited over much of the area, followed by a period of alluvial valley filling, localized peat deposition, minor erosion, and soil development. Surficial geological maps show the subject site environs generally to be mantled by either alluvium or artificial fill. The alluvium in the Duwamish River valley consists primarily of sand, intermixed with lenses or interbeds of silt and clay. Occasionally, zones of peat are encountered within the alluvial deposits, and they are most likely associated with ancient or abandoned river channels. Much of the Duwamish River valley has been developed using fill materials, consisting primarily of dredged sediments made up of silts and sands.

Groundwater aquifers in the Duwamish River valley can be found in the valley floor alluvial sediments and also in the glacially consolidated deposits beneath the alluvium. Typically, groundwater is quite shallow in the valley bottom. Because of its near-surface character, the local groundwater is susceptible to contamination from surficial sources. Due to the presence of alluvial and artificial fill deposits, the groundwater gradient may vary locally due to zones of preferential flow, although it is assumed that groundwater flow in the immediate subject area is generally west-northwestward, toward the Duwamish River. If off-site contaminants entered onto the subject property from off-site sources, it is assumed ingress would likely be from the property's eastern and southeastern perimeters.

Although water resource data for the Greater Puget Sound area show widespread development of groundwater resources for municipal and domestic use, our review of published geological and groundwater literature, as well as Washington Department of Ecology (WDOE) water well records, indicate that there are currently no major developed groundwater resources reported in the immediate vicinity of the subject property. Drinking water supplies are obtained from the City of Seattle's Tolt and Cedar River watersheds in the Cascade foothills. These drinking water sources would not be impacted by contaminants, if present, on the subject property.

1929

868

6000

100'

6001

4TH AV. S.

CHIP BIN

1

2B 1B SHEET METAL WKS & WELDING

5950

7700

60'

8'

OFF

5956

1B C.B.L.C. MACH. SHOP

5972

5972½

THESE RISKS
SHOWN ON SHE

5974

5976

898

FRONT

60'

FRONT

60'

16'

6101

4TH AV.

70'

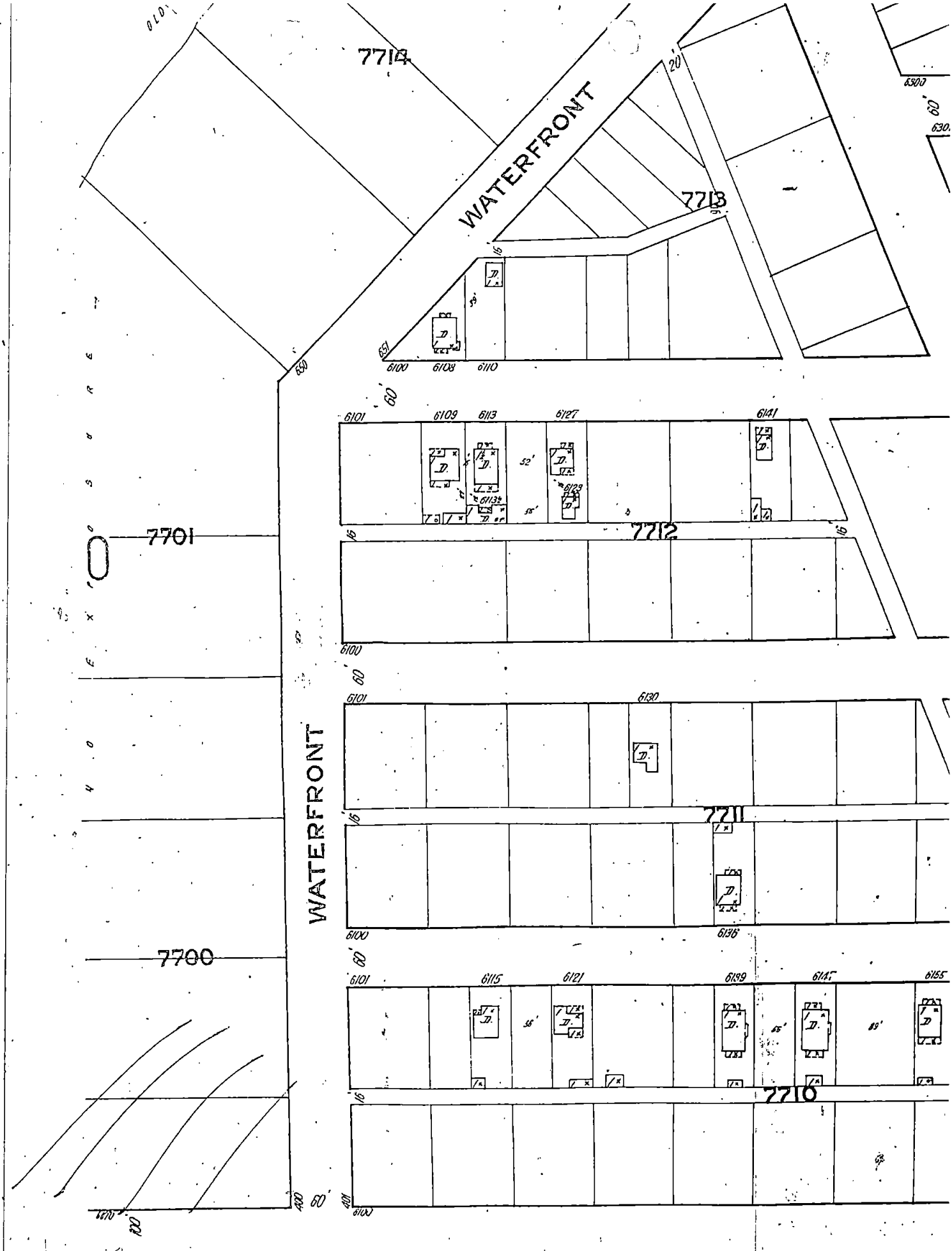
FRONT

4TH AV. S.

60'

one

S.


7714
WATERFRONT
7713
7712
7701
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7716
WATERFRONT
EXCHANGE PLACE
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6101
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6136
6170
1917

3.2 Site History/Past Activities

The land use history of the subject property was reviewed, utilizing governmental zoning information, the Cole Directory for Greater Seattle and Vicinity, the Polk City Directory for Seattle, along with various anecdotal information sources. We also reviewed historical aerial photographs of the subject area for the years 1936, 1946, 1956, 1960, 1969, 1974, 1980, 1985, and 1990.

Based upon information derived from these sources, the subject site history may generally be summarized as follows:

Historical aerial photographs show the subject property to be vacant and undeveloped in 1936.

By the early 1940's, Anderson Blowpipe & Manufacturing Company, a sheet metal manufacturer, had established itself on the subject property at 5960 4th Avenue South. Joseph Conradi & Company, machinists, had also established itself just south of Anderson Blowpipe at 5972 4th Avenue South. Two single-family residences comprised the extreme southern portion of the property at 5974 and 5976, respectively. In 1951, the Polk City Directory for Seattle indicates that two new businesses had established themselves on the property - Seattle Pacific Engineering and United Cleaners, at 5970 and 5976 4th Avenue, respectively. United Cleaners operated on the site for only a year or so, apparently reverting back to a single-family residence.

By the mid-1950's, Jack Sahlberg Equipment Company had established itself on the property just north of Anderson Blowpipe at 5950 4th Avenue South. United Textile Company, followed shortly thereafter by Aero Electric Company, had begun operating on that portion of the site formerly occupied by Joseph Conradi & Company, machinists.

In 1957, the Polk City Directory indicates that Western Processing Company had established itself on the subject property, south of Sahlberg Equipment and Anderson Blowpipe, at 5970 4th Avenue South. Western Processing operated on the property up until 1960 or 1961, whereupon the company moved to its present site in Kent. The two single-family residences, at 5974 and 5976 4th Avenue South, were occupied by Joseph A. Conradi and Mrs. Tillie Conradi, respectively.

By the early to mid-1960's, Anderson Blowpipe and Western Processing were no longer operating on the site. The two single-family residences on the extreme southern portion of the property had been razed, leaving Sahlberg Equipment, Inc. as the sole activity on the property, as it is presently.

There is a note of interest to be mentioned regarding Western Processing. During the years of operation on the subject property, the nature of Western Processing's business involved reprocessing animal byproducts and brewer's yeast. See Appendix, Seattle Times, February 9, 1958. Subsequent to the move to its present site in Kent, the company had expanded operations to reprocess chemical wastes, including numerous heavy metals, electroplating solutions and sludges, pesticides/herbicides, spent acids and caustic solutions, waste oils and solvents, battery mud, flue dust from secondary smelters, aluminum slag, and galvanized skimmings, among other chemical compounds. Western Processing has since become infamous as the major toxic waste Superfund site in Western Washington.

3.3 Evaluation of On-Site Conditions

For this environmental assessment, we performed a site visit on 27 March 1991 under the escort of Mr. John Sahlberg. During the course of this site visit, Mr. Sahlberg informed us that Sahlberg Equipment, Inc. is a wholesaler/retailer of construction heavy equipment and safety supply equipment. With respect to construction heavy equipment machinery, Mr. Sahlberg explained that the company prepares new heavy equipment machinery for sale and delivery. He also informed us that, aside from adding motor oil and/or hydraulic fluid to new machinery prior to delivery, no significant maintenance or repair activities occur on-site. We observed no evidence of petroleum product leakage near any of the several heavy equipment pieces we observed stored on the property.

An underground heating oil storage tank (UST) presently exists in the northwest portion of the property, beneath asphalt pavement. According to Mr. Sahlberg, this UST, apparently 300 gallons in capacity, was associated with a former oil furnace which heated Building 1 from 1956 up until sometime around 1970, at which time the building's oil heating system was converted over to natural gas. Upon investigation, we found that an undetermined amount of heating oil still remains present within the UST. See Figure

2, the Site Plan, for UST location.

We also observed the presence of an approximately 200 gallon above ground storage tank, situated upon concrete pavement, adjacent to the southwest portion of Building 3, which Mr. Sahlberg informed us contains waste oil. Mr. Sahlberg further informed us that the above ground tank is pumped out, when necessary, by Northwest Enviroservice, Inc. Although the top side of the tank exhibited some oil residue, no apparent indication of product leakage in the form of stained ground surface areas was observed in the vicinity of the tank. See Figure 2, the Site Plan, for above ground storage tank location. See also Appendix for color photograph.

During the course of our site visit, we observed the presence of several dozen 55 gallon storage drums situated at various locations on the southern portion of the property. See Figure 2, the Site Plan, for storage drum locations. Most of the drums, which contained motor oil and hydraulic fluid, were stored in an orderly fashion, upon concrete flooring, inside the small, open shed or along the shed's outer, southern perimeter. Aside from some minor surficial staining in the vicinity of the drums stored within the shed, no apparent indications of severe product leakage or spillage were observed near any of the above drums. Of more significance, however, was a group of approximately one dozen storage drums (most of which empty) observed stored just inside the South Front Street gate, which we were informed contain used anti-freeze and hydraulic fluid. Whereas the previously mentioned drums were stored upon concrete pavement, these drums, although situated upon wooden pallets, were stored upon an area of exposed soil. We observed some indication of product leakage and spillage, in the form of darkened, stained soils, in the vicinity of these drums, the extent of which we were unable to determine. See Appendix for color photograph.

Aside from the above observations, the property management appears to maintain and enforce relatively good housekeeping practices on the site. The parking and yard area, as well as the dumpster areas, appeared relatively free of litter and other debris. Human wastes are discharged into the Metro sanitary sewer system. Surface water is collected in sumps, which are situated at various locations of the property. We were informed that these sumps are pumped out on a regular basis. The locations of sumps are indicated on Figure 2, the Site Plan.

3.4 Evaluation of Off-Site Conditions

Various local, State, and Federal sources were reviewed to identify the reported hazardous waste sites located within a one-mile radius of the subject property. Copies of reports compiled by State and Federal environmental agencies obtained and reviewed include the U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) report of potential hazardous waste and Superfund sites; the EPA's Resource Conservation and Recovery Act (RCRA) report of regulated generators, handlers, transporters and disposers of hazardous substances; and the Washington State Department of Ecology (Ecology) Site Management Information System (SMIS) list of potential and confirmed hazardous waste sites.

The current EPA CERCLIS report lists eleven separate sites, located within a one-mile radius of the subject property, as potential and confirmed hazardous waste sites. These sites are:

And-All Electrochrome, Inc.	6332 6th Ave. So.
Boeing Co. - North Field	Ellis Ave. So. & So. Willow St.
Chemical Processors, Inc.	734 So. Lucille St.
Ideal Basic Industries-Cement Plant	5400 W. Marginal Wy. S.W.
Inland Transportation Co., Inc.	6737 Corson Ave. So.
North Coast Chemical Co.	6300 17th Avenue So.
Northwest Cooperage Co., Inc.	5531 Airport Wy. So.
Preservative Paint Co.	5410 Airport Wy. So.
Reichold Chemical-Duwamish Waste Site	5900 W. Marginal Wy. S.W.
Seattle, City of - 1st Avenue Bridge Landfill	E. Marginal Wy. So. & So. Fidalgo St.
Seattle, Port of - Terminal 115	6020 W. Marginal Wy. S.W.

And - All Electrochrome, Inc., Boeing Co. - North field, Chemical Processors, Inc., Inland Transportation Co., Inc., Northwest Cooperage Co., Inc., Pioneer Porcelain Enamel Co, Inc., and Reichold Chemical - Duwamish Waste Site also appear on the current Ecology SMIS list of potential and confirmed hazardous waste sites. Other Ecology sites within a one-mile radius of the subject property include:

Bayside Disposal Co.	7201 W. Marginal Wy. S.W.
Duwamish Shipyard, Inc.	5658 W. Marginal Wy. S.W.
Great Western Chemical	6900 Fox Ave. So.
Marine Vacuum Service, Inc.	1516 So. Graham St.
MST Chemicals, Inc.	6020 W. Marginal Wy. S.W.
Sammis Land Co. Site	647 So. Alaska St.
VIOX Corp.	551 So. River Street

Marine Vacuum Service, Inc. and Pioneer Porcelain Enamel Co., Inc. have recently undergone Site Hazard Assessment by Ecology and, based upon the Assessment results, have been ranked for future remedial cleanup activities. Although it appears, based upon published topographic and geologic data, that several of the above listed EPA CERCLIS and Ecology SMIS sites (ie., And-All Electrochrome, Inc., Boeing Co. - North Field, Island Transportation Co., Marine Vacuum Service, Inc., Pioneer Porcelain Enamel Co., Inc., and Presentative Paint Co.) are located at positions which potentially may be hydrologically tributary to the subject property, the relatively unpredictable nature of near-surface groundwater in the immediately surrounding area renders it difficult to quantify which of the above off-site sources, if any, would negatively impact the subject property in the event of a hazardous substance release. Distance factors, however, appear to mitigate the likelihood of negative environmental impact to the subject property.

The underground storage tank (UST) site location list published by the Hazardous Waste Section of the Washington Department of Ecology (Ecology) was obtained and reviewed for data concerning underground petroleum product storage tanks in the site vicinity. Leaking UST's are a potential source of environmental contamination. The current UST list indicates that there are at least 85 separate sites with UST's that are located within a

one-mile radius of the subject property. These locations include construction companies, auto repair facilities, service stations and trucking companies, among other establishments. According to Ecology, 31 of these sites appear on Ecology's current list of facilities with reported leaking underground storage tanks. Of the 31 reported leaking UST sites, 8 of these appear to be located at positions which potentially are hydrologically tributary to the subject property. These sites are:

Ben's Trucks	6655 Corson Avenue So.
Boeing Co. - North Field	Ellis Ave. So. & So. Willow St.
DNR - Corson Avenue	6737 Corson Ave. So.
Owl Transfer	6323 6th Ave. So.
Peninsula Truck Lines	6314 7th Ave. So.
Scougall Rubber	6239 Corson Ave. So.
Seattle City Light-Georgetown	1131 So. Elizabeth St.
Shell Service Station	6200 Corson Ave. So.
Texaco Service Station	6235 Airport Wy. So.

Although near-surface groundwater movement within the general subject area is relatively unpredictable, the relative distance of the above listed sites to the subject property mitigates the likelihood of negative environmental impact to the subject property.

The current RCRA report lists over 130 separate locations within a one-mile radius of the subject property that are regulated generators, transporters or storers of hazardous substances. No environmental problems associated with any of the RCRA facilities were reported to us.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the available data we have obtained for this report, and taking into account the past and present land use history of the subject property and immediately surrounding area, it is our opinion that the potential for significant environmental contamination existing on the subject property may be considered relatively low to moderate.

During our site visit, we encountered visible evidence of petroleum product leakage or spillage, in the form of stained soil surface, in the vicinity of a group of 55 gallon drums which were stored on the southeast portion of the property upon exposed soil. We also observed the presence of a no longer utilized heating oil UST near the northwest corner of the property, which we found upon further investigation, to still contain a significant amount of petroleum product. While we were unable to determine whether the UST is leaking, the quantity of still-remaining product, even after the passage of approximately twenty years of non-use, tends to suggest that the UST may be structurally sound, and not leaking. If product leakage has occurred, however, it is conceivable that there may be locally confined zones of petroleum contamination of the soils immediately surrounding the UST.

We recommend, however, that the UST be pumped empty of product, and appropriately decommissioned, by way of either in-place abandonment or removal. If the UST is removed, surrounding soils may be observed at that time for petroleum impact, and remediated, if necessary.

We also feel that it would be prudent to perform a limited program of sampling and chemical analysis of near-surface soils in the vicinity of the drums which are stored upon exposed soil. We further recommend that storage drums, empty or otherwise, no longer be stored on that portion of the site, but only upon concrete or asphalt-paved surfaces.

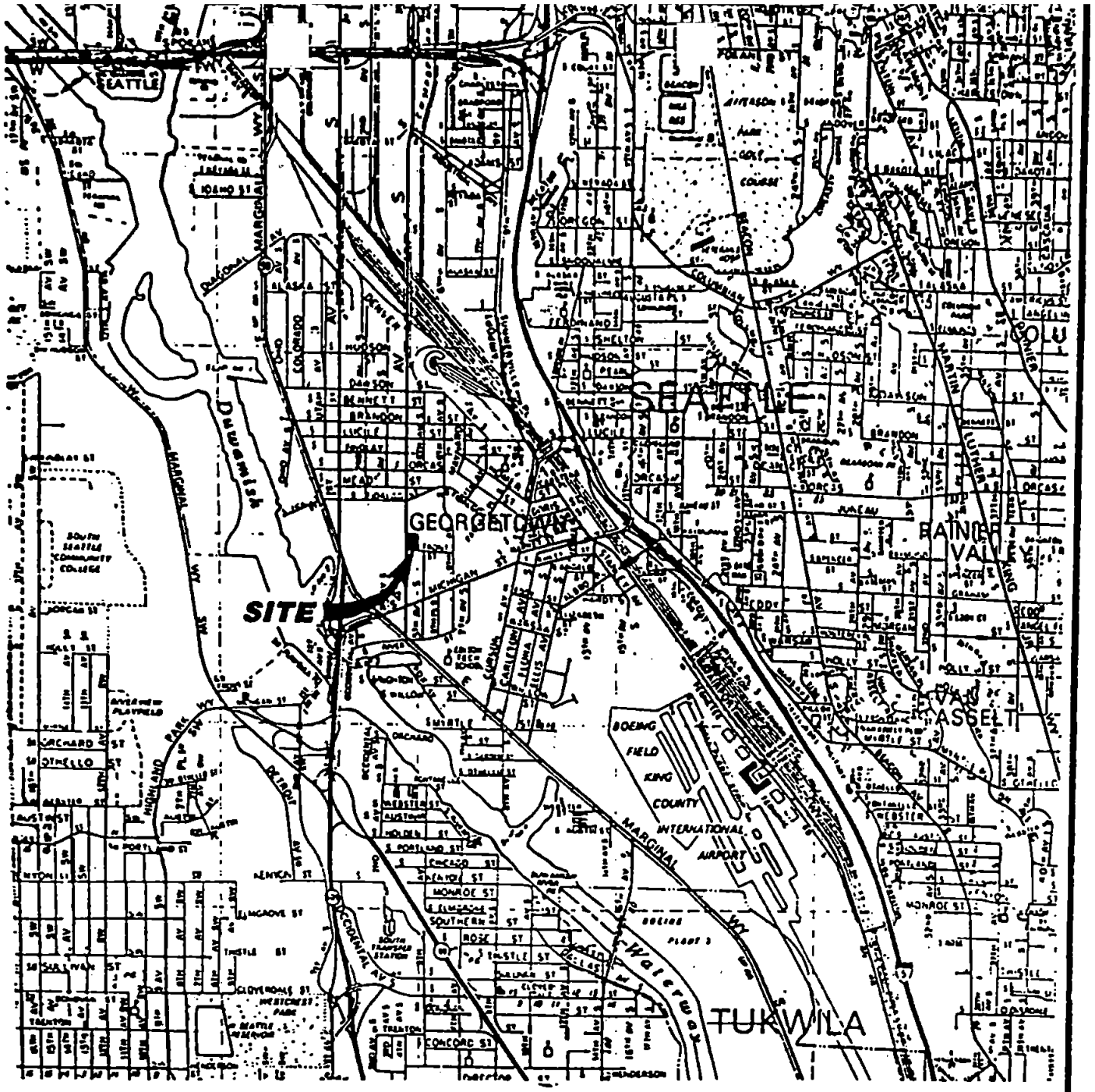
We appreciate the opportunity to present this Level I Environmental Site Assessment. We are available for any additional studies should you so desire. If you have any questions concerning the findings and conclusions contained within this report, please feel free to call at your earliest convenience.

Respectfully submitted,

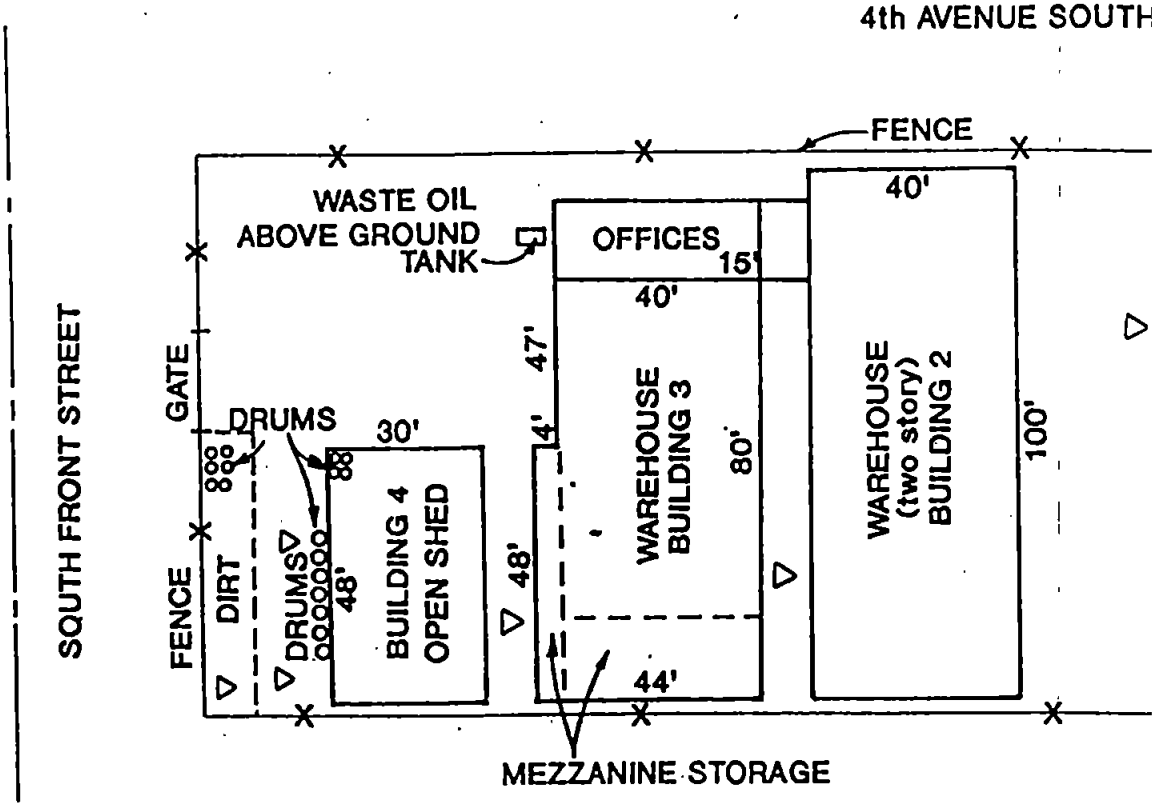
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Anders F. Olin
Environmental Assessor

Daryl S. Petrarca
Environmental Site Assessments Manager



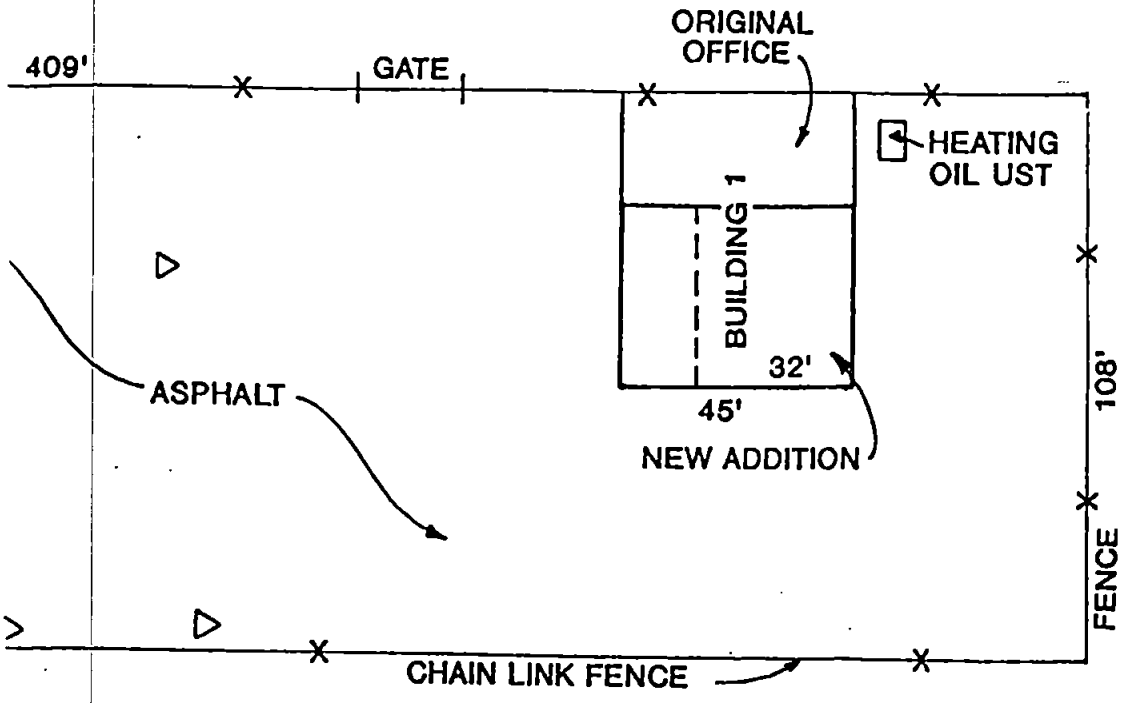
RZA-AGRA ENGINEERING & ENVIRONMENTAL SERVICES *11335 N.E. 122nd Way* *Suite 100* *Kirkland, Washington* *98034-6918*	W.O. W-7478-1 DESIGN DAS DRAWN DMW DATE MAY 1992 SCALE N.T.S.	**SAHLBERG EQUIPMENT FACILITY** **SEATTLE, WASHINGTON** **LOCATION MAP** **FIGURE 1**



LEGEND

- STORAGE TANKS
- STORAGE DRUMS
- SUMPS

N



SAHLBERG EQUIPMENT, INC.
SEATTLE, WASHINGTON

SITE PLAN

FIGURE 2

W.O.	W-7497
BY	AFO
DATE	APR 1991
SCALE	N.T.S.

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
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Bellevue, Washington 98005

RZA

APPENDIX A
SITE PHOTOGRAPHS

ABOVE GROUND WASTE OIL TANK

FILL PORT UNDERGROUND HEATING OIL TANK

SAHLBERG EQUIPMENT, INC.
SEATTLE, WASHINGTON

SITE PHOTOGRAPHS

W.O. W-7497
BY AFO
DATE APR 1991
SCALE N.T.S.

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55 GALLON DRUMS STORED UPON EXPOSED SOIL

STAINED SOILS NEAR STORED DRUMS

SAHLBERG EQUIPMENT, INC.
SEATTLE, WASHINGTON

SITE PHOTOGRAPHS

W.O. W-7497
BY AFO
DATE APR 1991
SCALE N.T.S.

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APPENDIX B

SEATTLE TIMES ARTICLE, FEBRUARY 9, 1958

Felix Walvor, a brewery employe, coupled hoses to top spent-yeast storage tanks.

C. Clary Harrison checked the level of the liquid yeast in one of the receiving tanks.

A large quantity of natural gas is burned in the process of converting spent yeast.

Spent Brewer's Yeast Increases Luster of Mink Stoles

MINKS have glossier coats and beefsteak is juicier because of the ingenuity of a Dutch candymaker and a Seattle engineer.

The Western Processing Co., 5972½ Fourth Av. S., was formed by Garmt J. Nieuwenhuis, Netherlands-trained food technologist, and C. Clary Harrison, University of Washington engineering graduate.

The firm converts spent brewer's yeast, recovered as a by-product of a Seattle brewery, into brewer's dried yeast—an ingredient of stock food.

"Our method begins with the spent yeast in a liquid state," says Nieuwenhuis. "We pump this solution into an instantaneous dryer fired to 2,000 degrees Fahrenheit. The soggy mass hits a rapidly spinning disk, and poof—it's a fine, dry powder."

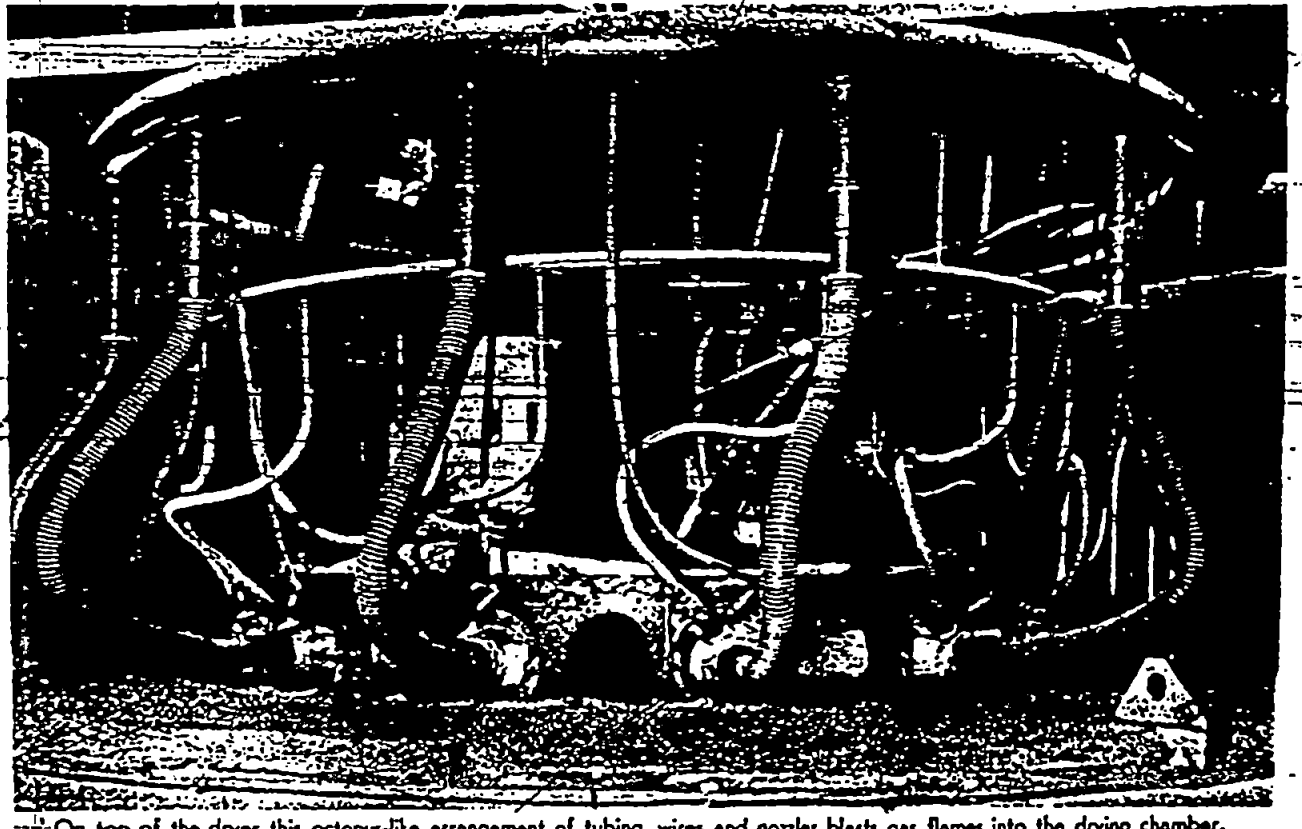
The Vitamin B complex and protein composition of brewer's dried yeast make it valuable as a feed additive or for pharmaceuticals. Beef stock lay on added pounds of prime meat, chicken fryers grow more tender, fur-bearing animals deliver better pelts.

Developing and managing a candied-fruit plant in Holland trained Nieuwenhuis in food chemistry.

In 1953 Garmt's inventive nature sought an outlet in America. Harrison, formerly chief engineer at a Seattle steel-construction company, and Nieuwenhuis conceived the process together.

Nieuwenhuis is appalled at United States industry's spendthrift operations. "There are many opportunities for making something useful out of discarded substances," he says.

Photos by Peter Clarke



On top of the dryer this octopus-like arrangement of tubing, wires and nozzles blasts gas flames into the drying chamber.

The large inverted cone at right is a drying chamber where the spent yeast's moisture is evaporated instantaneously. The silky powder remaining then is blown into loaders, at left, and sacked for shipment.

Garmt J. Nieuwenhuis recorded a day's production. In the background was filtering apparatus which cleanses exhaust gasses, preventing air pollution arising from escape of the dust-like yeast powder.