CITY OF VANCOUVER

CITY CLERK'S DEPARTMENT
Access to Information & Privacy

File No.: 04-1000-20-2020-041

February 27, 2020

s.22(1)

Dear s.22(1)

Re: **Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")**

I am responding to your request of January 16, 2020 for:

> **Copies of letters from the Environmental search letter for 1550 West 75th Avenue from the following dates: February 28, 1996, December 18, 2002, July 17, 2006, July 11, 2007, July 13, 2007 and July 16, 2007.**

All responsive records are attached.

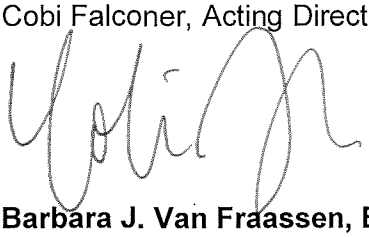
Under section 52 of the Act you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your request. The Act allows you 30 business days from the date you receive this notice to request a review by writing to: Office of the Information & Privacy Commissioner, info@oipc.bc.ca or by phoning 250-387-5629.

If you request a review, please provide the Commissioner's office with: 1) the request number assigned to your request (#04-1000-20-2020-041; 2) a copy of this letter; 3) a copy of your original request for information sent to the City of Vancouver; and 4) detailed reasons or grounds on which you are seeking the review.

Please do not hesitate to contact the Freedom of Information Office at foi@vancouver.ca if you have any questions.

Yours truly,

Cobi Falconer, Acting Director, ATIP,



Barbara J. Van Fraassen, BA
Director, Access to Information & Privacy
Barbara.vanfraassen@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4

*If you have any questions, please email us at foi@vancouver.ca and we will respond to you as soon as possible. Or you can call the FOI Case Manager at 604.871.6584.

Encl.

:kt

FRANSEN ENGINEERING LTD.
CONSULTING ENGINEERS
210 - 3031 Viking Way • Richmond, B.C. V6V 1W1
Tel: (604) 270-7728 • Fax: (604) 270-6252

TRANSMITTAL

TO: DIST. BUILDING INSPECTOR
PERMITS & LICENSES DEPT.
CITY OF VANCOUVER
453 W. 12TH AVE
VANCOUVER BC V5Y 1V4

DATE: 11TH SEPT., 1996

FILE: 9604

PROJECT: BORDEN FORMALDEHYDE TANK

ATTENTION: A. MOTHE

RE: BUILDING PERMIT APPLICATION: 1556 75TH AVE.

Sheet 1 of 1

No. of Copies	Item or Drawing No.	Status	Rev No.	Description
ONE				GEOTECHNICAL REPORT ON THE
				ABOVE NAMED SITE
ONE				OWNER'S UNDERTAKING FORM

REMARKS:

COPY TO:

BY: VIC CHAN

Golder Associates Ltd.

500 - 4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone (604) 298-6623
Fax (604) 298-5253

Golder Associates

REPORT ON

GEOTECHNICAL INVESTIGATION
PROPOSED CHEMICAL STORAGE TANKS
AND CANOPY ADDITION
BORDEN CHEMICALS PLANT
1550 RAND AVENUE, VANCOUVER, B.C.

Submitted to:

Fransen Engineering Ltd.
Consulting Engineers
210 - 3031 Viking Way
Richmond, B.C.
V6V 1W1

DISTRIBUTION:

3 copies -	Fransen Engineering Ltd. Richmond, B.C.
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February 28, 1996 962-1020

Golder Associates Ltd.

500 - 4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone (604) 298-6623
Fax (604) 298-5253

February 28, 1996 962-1020

Fransen Engineering Ltd.
Consulting Engineers
210 - 3031 Viking Way
Richmond, B.C.
V6V 1W1

Attention: Mr. Bill Chu, P.Eng.

RE: GEOTECHNICAL INVESTIGATION
PROPOSED CHEMICAL STORAGE TANKS AND CANOPY ADDITION
BORDEN CHEMICALS PLANT
1550 RAND AVENUE, VANCOUVER, B.C.

Dear Mr. Chu:

As requested, Golder Associates has carried out a geotechnical investigation to determine the subsurface conditions in the vicinity of the proposed storage tanks, canopy and warehouse additions at the above site. This report presents the factual results of the investigation together with our comments and geotechnical recommendations as input to the overall design and construction of the proposed expansion facilities.

This report is limited to the determination of the engineering properties of the foundation soils. Investigation, chemical testing, or assessment of possible soil or groundwater contamination at the site are beyond the scope of this investigation and are not addressed herein.

1.0 SITE AND PROPOSED DEVELOPMENT

The Borden property is located along the north bank of the Fraser River, just to the west of the north embankment of the Arthur Laing Bridge, see Figure 1. The site area is bounded by 75th Avenue to the north, the Fraser River to the south, and industrial developments to the east and west. The site is relatively flat and is currently occupied by a number of chemical processing and storage facilities, including dry products and resin plants, maintenance buildings and tank farm areas, see Figure 2. A major portion of the

ground surface is covered with a layer of asphalt within access corridors and by concrete containment slabs within the tank farm areas.

It is understood that various new structures will be constructed within the site area and will be integrated with the existing facilities (see Figure 2). The proposed expansion facilities include:

- an 8.8 x 21.3 m open canopy situated over existing rail tracks, with the southernmost row of columns being located within an existing dock area and founded directly on the base of a concrete retaining wall structure. There is an existing block wall located about 0.5 m to the south of the proposed canopy area. The reaction at each column location will be in the order of 175 kN;

- a new resin storage tank resting on a base no larger than 5.0 m square due to existing obstructions. The maximum toe pressure under the design seismic condition will be about 90 kPa;

- a new formaldehyde tank resting on a base no larger than 7.9 m square. This tank will be located within an existing tank farm area which is currently supported on a concrete slab on grade with thickened edges. The new tank will be located within about 1.2 m of an existing tank. The maximum toe pressure under the design seismic condition will be about 75 kPa, and;

- a new warehouse measuring approximately 9 x 18 m in plan to be constructed at existing grade in an area of the site which is currently undeveloped. The sustained static loading on column footings and floor slabs is anticipated to be about 100 and 50 kPa, respectively.

It is understood that preliminary foundation design concepts currently favour shallow foundation systems, primarily due to site access constraints for large construction equipment. It is further understood that it would be preferable to develop the new resin and formaldehyde tank foundations directly on the existing concrete containment slab.

2.0 GEOTECHNICAL FIELD INVESTIGATION

The field work for this investigation was carried out on February 1 and 2, 1996 at which time four augerholes and four adjacent dynamic cone penetration test probes (AH/DCPT-1 through AH/DCPT-4) were put down to depths of 4.0 to 15.8 m below the existing ground surface at the approximate locations indicated on Figure 2. These test hole locations were selected in consultation with Mr. Doug Reid of Borden Chemicals, to obtain subsurface information as close as possible to the locations of the proposed

expansion facilities while avoiding existing buried utilities. The augerholes and DCPT's were put down using a moderate capacity truck-mounted auger rig supplied and operated by SDS Drilling Ltd.

All field work was carried out under the full-time inspection of a member of our geotechnical staff who located the test holes in the field in consultation with Borden personnel, visually examined and logged the subsurface conditions, and collected disturbed overburden samples for further examination and testing in our Burnaby laboratory facility.

3.0 SUBSURFACE CONDITIONS

Detailed descriptions of the stratigraphy encountered at each of the boreholes and the results of the laboratory index testing are presented in the Record of Borehole logs following the text of this report. The following is a summary of the inferred subsurface conditions at the site. Dynamic Cone Penetration Test (DCPT) results are also shown on these records.

Based on the results of this geotechnical investigation, the following is a summary of the inferred subsurface conditions across the Borden property.

3.1 Loose to Compact Sand

All test holes encountered a surficial layer of brown to black sand containing trace gravel directly beneath the grass cover, gravel surfacing, or concrete slab. The sand stratum was present to depths ranging from 2.4 to 3.0 m below the existing ground surface at the augerhole locations. This sand layer is inferred to represent the natural Fraser River sand deposits. However, it is also possible that this sand layer may represent dredged or imported fill. It should be noted that a strong ammonia odour was detected during drilling and soil sampling of the near surface sand deposits at augerholes AH96-2 and AH96-3.

Standard Penetration Test (SPT) "N" values of 3 to 8 blows per 0.3 m penetration and dynamic penetration resistance measurements (DCPT) of 1 to 16 blows per 0.3 m penetration were recorded in the sand layer, indicating that this deposit is very loose to compact.

The gradation results of a soil sample recovered in a split-tube sampler over a depth interval of 1.5 to 2.0 m below the ground surface in augerhole AH96-1 are shown in Figure 3. The natural moisture contents of representative samples recovered from the sand stratum were measured in the lab and ranged from 11.4 to 23.5 percent.

3.2 Soft to Firm Silt to Silty Sand

Underlying the surficial sand layer, all test holes encountered a grey to brown silt to sandy silt layer containing a trace to some clay and black organics, which ranges in thickness from 0.6 m at AH96-3 up to 4.9 m thickness in AH96-3. In general, the thickness of the silt stratum was found to increase gradually from north to south across the site. A 0.3 m thick wood obstruction was encountered in AH96-2 at the base of the silty stratum.

SPT-N values of 2 to 6 and DCPT field test measurements ranging from 1 to 15 blows per 0.3 m penetration indicate that the silty stratum is soft to firm. An in-situ vane shear test carried out in AH96-1 at a depth of 4.3 m below the existing ground surface yielded an undrained shear strength of 41 kPa, with a remoulded value of about 4 kPa, indicating that the silty soils are firm, but sensitive.

Laboratory Atterberg limit tests were carried out on a soil sample recovered from AH96-1 at a depth of about 5 m below ground surface, with the following results:

Liquid Limit	= 22.3 percent
Plastic Limit	= 18.7 percent
Natural Water Content	= 39.8 percent

A gradation analysis of a representative sample obtained over a depth interval of 4.6 to 5.0 m at AH96-1 is presented in Figure 4. The natural moisture content of samples obtained from within the silt deposit across the site ranged from 31.8 to 52.0 percent.

3.3 Compact to Dense Sands and Gravels

All augerholes put down across the site encountered a deposit of compact to dense grey-brown to black, coarse gravelly sand to sandy gravel, with a trace of silt to silty. This deposit was encountered at depths varying from 3.2 m at AH96-3 to 7.3 m below existing ground surface at AH96-4. The thickness of this coarse grained deposit ranges from about 2.9 to 4.6 m.

SPT- N values of 32 to 52 and variable DCPT blowcounts ranging from 3 to 75 blows per 0.3 m penetration were recorded in the gravelly soil horizon, indicating that the soils are generally compact to dense, with some possible very loose or loose zones. During the field investigation, it was observed that depth intervals with very high DCPT blowcounts were correlated with material that consisted of coarser gravel layers and lower natural moisture contents.

A representative sample obtained from the sand and gravel deposit at a depth of about 4.2 m in AH96-3 yielded a natural moisture content of 17.2 percent.

3.4 Loose to dense Silty Sand to Sandy Silt

In augerholes AH96-1 and AH96-4 put down in the southern portion of the site, a 3 to 4.5 m thick layer of silty sand to sandy silt containing trace to some clay and gravel was encountered beneath the sand and gravel deposits. Dynamic penetration measurements varied from 12 to 41 blows per 0.3 m penetration, indicating a variable but generally compact soil density.

The natural water content of two soil samples obtained from approximately 12 m and 13.3 m depth below ground surface were measured to be 21.1 and 32.9 percent, respectively.

3.5 Dense to Very Dense Glacial Till Stratum

All augerholes put down across the site encountered a deposit of grey to dark grey sand to silty sand containing trace to some gravel, inferred to represent glacial till soils. The till stratum was encountered at variable depth across the site, ranging from 7.0 m in AH96-3 to 14.9 m depth below ground surface in AH96-4. In general, the depth to the till stratum from ground surface increases gradually from north to south across the site. All of the augerholes were terminated at or near refusal following shallow penetration into the till stratum.

DCPT measurements ranging from 71 to well in excess of 100 blows per 0.3 m penetration were recorded in the till deposit, indicating that the soils are generally very dense.

The natural moisture content of representative samples of the till stratum obtained from across the site ranged from 8.2 to 17.1 percent.

3.6 Groundwater Conditions

At the time of the investigation, groundwater levels were observed to be between about 0.8 to 1.2 m below the existing ground surface in the open augerholes prior to backfilling. The observed groundwater level is approximate only since the water level in the open hole was only allowed to stabilize for a few minutes and was not likely to a state of equilibrium at the time of measurement. It is anticipated that groundwater levels will vary seasonally and may rise close to ground surface during periods of sustained wet weather. The groundwater level may also fluctuate with the tidal conditions of the adjacent Fraser River.

4.0 SEISMIC DESIGN CONSIDERATIONS

The Borden facility is located within Seismic Zone 4 of the British Columbia and 1990 National Building Code (NBCC), which is one of the highest risk zones in Canada. In the absence of a site specific evaluation, it is recommended that the design "firm ground" horizontal accelerations and velocities for Vancouver of 0.23 g and 0.2 m/s, respectively, be considered applicable to this site. It is recommended that a maximum vertical acceleration of 0.15 g (2/3 of the maximum horizontal ground acceleration) be utilized for design purposes.

Since the site is underlain by loose to compact near surface soils, it is estimated that the above firm ground motions will be amplified by approximately 30 percent during upward propagation through the overburden soils. The ground motion parameters described above are considered to correspond to a Richter M7 earthquake representative of 15 effective cycles of loading.

4.1 Foundation Factor

Based on the presence of generally loose to compact and soft to firm near surface soils underlain by dense to very dense glacial soils at depths of less than 15 m below existing ground surface, it is recommended that a Foundation Factor, F, of 1.3 be used in design.

It should be noted that the actual dynamic response of a structure is a function of not only the input firm ground acceleration characteristics, but also the dynamic response characteristics of the structure, such as ductility, fundamental period of vibration, and material damping, and may vary from the general recommendations.

4.2 Liquefaction Potential

The liquefaction potential of the sandy subsurface soils encountered at the site were assessed based on Seed's method of analysis. Based on this analysis, it is anticipated that the very loose to compact sands encountered from existing ground surface to depths of 2.4 to 3.0 m are susceptible to liquefaction under the design earthquake loading, resulting in significant ground deformations.

The soft to firm silty soils that underlie the surficial sands and are present to depths of between 3.2 and 7.3 m below the existing ground surface are both fine grained and have some plasticity. The resistance to liquefaction of this layer has been evaluated using the Chinese Criteria outlined in the Earthquake Design in the Fraser Delta Task Force Report (June 1991):

Item	Criteria	Lab Result
Percent finer than 0.005 mm	<15%	19.9
Liquid Limit	<35%	22.3
Water Content	>0.9 LL	1.8 LL
Liquidity Index	>0.75	5.87

Based on the laboratory results of a representative soil sample obtained in AH96-1 at a depth of about 5 m below existing ground surface, the silty soils are also considered susceptible to liquefaction. However, due to the significant proportion of fines that are present (approximately 80 percent passing by dry weight finer than 0.075 mm), this layer may have greater than predicted resistance to liquefaction, although significant loss of strength and earthquake induced settlement should be anticipated.

5.0 SHALLOW FOUNDATION DESIGN

5.1 General

Based on the subsurface information obtained during this investigation, the site is underlain by 2.5 to 3.0 m of loose to compact sand followed by soft to firm, compressible silt to 3.2 to 7.3 m depth. Glacial till soils underlie the site at depths ranging from 7 to 15 m depth below ground surface, with the shallower depths to till being encountered at the northern extent of the site.

The proposed storage tanks may be supported on the existing containment slab using a suitably reinforced stiffened mat or raft foundation, provided that some settlements under static loads as well as more substantial settlements and deformations under seismic conditions are fully recognized and considered acceptable. The tank foundation should be designed to have sufficient strength and rigidity to prevent localized settlements or deflections across the structure and to provide uniform bearing pressures. A minimum depth of foundation embedment is not considered necessary as the relatively clean sandy subgrade soils are not expected to be susceptible to frost penetration.

The proposed, relatively lightly loaded canopy and warehouse facility may be supported on conventional spread and strip footings founded within loose to compact sand. It is recommended that the widths of nominally reinforced spread and strip footings be at least 600 and 450 mm, respectively. All perimeter footings and those in unheated areas should

be carried down at least 450 mm below final grade. The southern-most row of columns for the canopy may be supported on the existing concrete retaining wall footing provided that the column is located within the middle third of the footing base width.

5.2 Static Design Bearing Pressures and Anticipated Settlements

The allowable static bearing capacity of the existing subgrade soils at the locations of the various proposed structures are as follows:

Proposed Structure	Allowable Static Bearing Capacity	
	(kPa)	(lb./sq. ft.)
Resin Tank (5x5 m slab foundation)	105	2,190
Formaldehyde Tank (7.5x7.5 m slab)	95	1,985
Canopy (strip or spread footings)	150	3,130
Warehouse - strip or spread footings - floor slabs	 150 100	 3,130 2,085

The allowable bearing pressures given above have been computed using a Factor of Safety of 3 with respect to the ultimate bearing capacity, and are understood to be in excess of the current design service loads for the various structures which range from about 50 to 100 kPa.

Settlements as a result of sustained static loads should be anticipated and are largely due to consolidation of the soft to firm silt stratum. The following total settlements should be anticipated for the various static loading conditions of the proposed facilities:

Proposed Structure	Anticipated Service Load	Estimated Total Settlement	
		(mm)	(in.)
Resin Tank	60 kPa	25 to 50	1 to 2
Formaldehyde Tank	50 kPa	12.5 to 37.5	0.5 to 1.5
Canopy	100 kPa	12.5 to 25	0.5 to 1
Warehouse	100 kPa	37.5 to 75	1.5 to 3

It should be noted that larger future settlements are anticipated at the warehouse and resin tank locations, where the thickness of the silt stratum is greatest. Differential settlements are expected to be significant only at the warehouse location, and will likely be in the order of 25 to 50 mm. It is anticipated that at least some of the settlements within the compressible silt stratum have already occurred due to the past loading events of the site. Settlement of adjacent facilities (within about 1 m of the new foundation) due to construction of the new structures is not expected to exceed 25 mm.

Preloading over the plan area of the proposed warehouse facility may be utilized to reduce the expected total and differential settlements under static loading conditions. Preload treatment of the other facilities is not considered feasible due to access constraints. For the warehouse, it is also suggested that consideration be given to use of continuous strip footings with sufficient reinforcing to serve as relatively rigid grade beams such that local differential settlements are minimized.

5.3 Bearing Capacity and Anticipated Movements under Seismic Loads

It is expected that there will be a significant decrease in the bearing capacity of the liquefiable subgrade soils under the design earthquake loading. The post-liquefaction ultimate bearing capacity of the existing subgrade soils at the locations of the various proposed structures are anticipated to be as follows:

Proposed Structure	Ultimate Bearing Capacity (Post Liquefaction)	Design Max. Toe Pressure (kPa)	Factor of Safety w.r.t. Max. Toe Pressure
Resin Tank	110 kPa	90 kPa	1.2
Formaldehyde Tank	90 kPa	75 kPa	1.2
Canopy (1 m square footing)	130 kPa	not given	1.5
Warehouse (1 m square footing)	130 kPa	not given	1.5

As indicated in the above table, it is estimated that the ultimate bearing capacity of the liquefied subgrade soils will provide a Factor of Safety of about 1.2 with respect to the design maximum toe pressure under seismic loading for the resin and formaldehyde tanks.

Settlements due to consolidation of the loose near surface soils following liquefaction are expected to be at least 150 mm for the resin tank and 75 mm for the formaldehyde tank. If the relatively high edge pressures of the tank foundations result in a decrease of the Factor of Safety to 1.0, settlements and associated tilting of the order of 500 to 750 mm may occur.

Considering the average ground surface and underlying base of loose liquefiable soils to dip towards the Fraser River at slopes up to about 1 percent, it is estimated that lateral foundation movements of about 500 mm may occur, with an upper bound movement estimated to be up to 1200 mm. Lateral movements can be expected to take place generally in a southerly direction, towards the river bank.

The magnitude of expected post-liquefaction ground deformations will likely result in significant damage to the structure as well as adjacent facilities.

5.4 Subgrade Preparation and Backfilling (Canopy and Warehouse Only)

The excavation base should be inspected prior to placement and compaction of structural fill material by an experienced geotechnical engineer and any disturbed areas identified should be subexcavated and replaced with suitable structural fill and compacted to 95 percent of the modified Proctor maximum dry density.

All structural fill beneath footings and floor slabs should consist of clean, free draining, well-graded 75 mm minus pit-run sand and gravel having less than 5 percent passing the 0.075 mm (USS 200) sieve. This select granular fill should be placed in lifts not exceeding 300 mm loose thickness and compacted to 95 percent of the modified Proctor maximum dry density using light compaction equipment. The materials excavated during site preparation are not expected to be suitable for re-use as structural fill, but may be utilized as general fill in areas which are not considered to be settlement sensitive.

For the warehouse, provision should be made for placement of an underslab base course layer consisting of a minimum of 100 mm thickness of clean, well graded 19 mm minus crushed sand and gravel having less than 5 percent passing the 0.075 mm (USS #200) sieve. This base layer should be placed and compacted to 95 percent of the modified Proctor maximum dry density.

Care should be taken to prevent disturbance of the surrounding existing storage tank foundations and other sensitive facilities during the site preparation and fill placement and compaction.

6.0 PILED FOUNDATIONS

As an alternative to shallow foundation support of the proposed warehouse, consideration may be given to supporting the structure on low capacity timber piles driven into the compact to dense sand and gravel stratum located some 7.5 m below the existing ground surface. For timber piles having a minimum tip diameter of 200 mm, an allowable axial compression capacity of up to 175 kN (20 tons) per pile may be used in design if a set of at least 2 blows/25 mm can be achieved using a hammer with an effective driving energy of some 20 kJ (15,000 ft. lb.). Provided that all piles are driven to a suitable set, it is anticipated that settlements of the structure under static loading conditions will be less than 25 mm.

To minimize the risk of loss of end bearing support or displacement during earthquake loading, it is recommended that the piles be driven at least 5 times the pile tip diameter into the dense bearing stratum to obtain some "fixity" at the pile tips.

It should be noted that the timber piles will experience some loss of lateral support due to liquefaction of the near surface soils and will also be subject to significant lateral movements. Suitably designed steel pipe piles may be used to accommodate these potential movements.

Piled foundation support of the proposed storage tanks and canopy structures is not considered practical due to site access restrictions and potential risk of damage to adjacent facilities during pile installation.

7.0 CONSTRUCTION CONSIDERATIONS

It is recommended that Golder Associates carry out a geotechnical review of the final construction drawings and specifications prior to tendering. It is also recommended that any foundation soil subgrade preparation be inspected during construction by Golder personnel.

8.0 SUMMARY AND CONCLUSIONS

It must be fully recognized and accepted that shallow foundation treatment will not eliminate the risk of significant loss of support and settlement or lateral movements under the design earthquake loadings. It is recommended that Borden Chemicals review and confirm the level of risk and potential damage to the proposed facilities which are considered acceptable. It should also be noted that connections from the new storage tanks to other facilities are likely to be subject to the effects of significant differential movements in the event of a major earthquake.

We trust that the information provided in this report is sufficient for your requirements at this time. If you have any questions or comments regarding the above, please do not hesitate to contact us directly.

Yours very truly,

GOLDER ASSOCIATES LTD.

R.C. Butler, P. Eng.
Principal

T.C. Bryski, E.I.T.
Geotechnical Group

RCB/TCB/tcb/gc
962-1020

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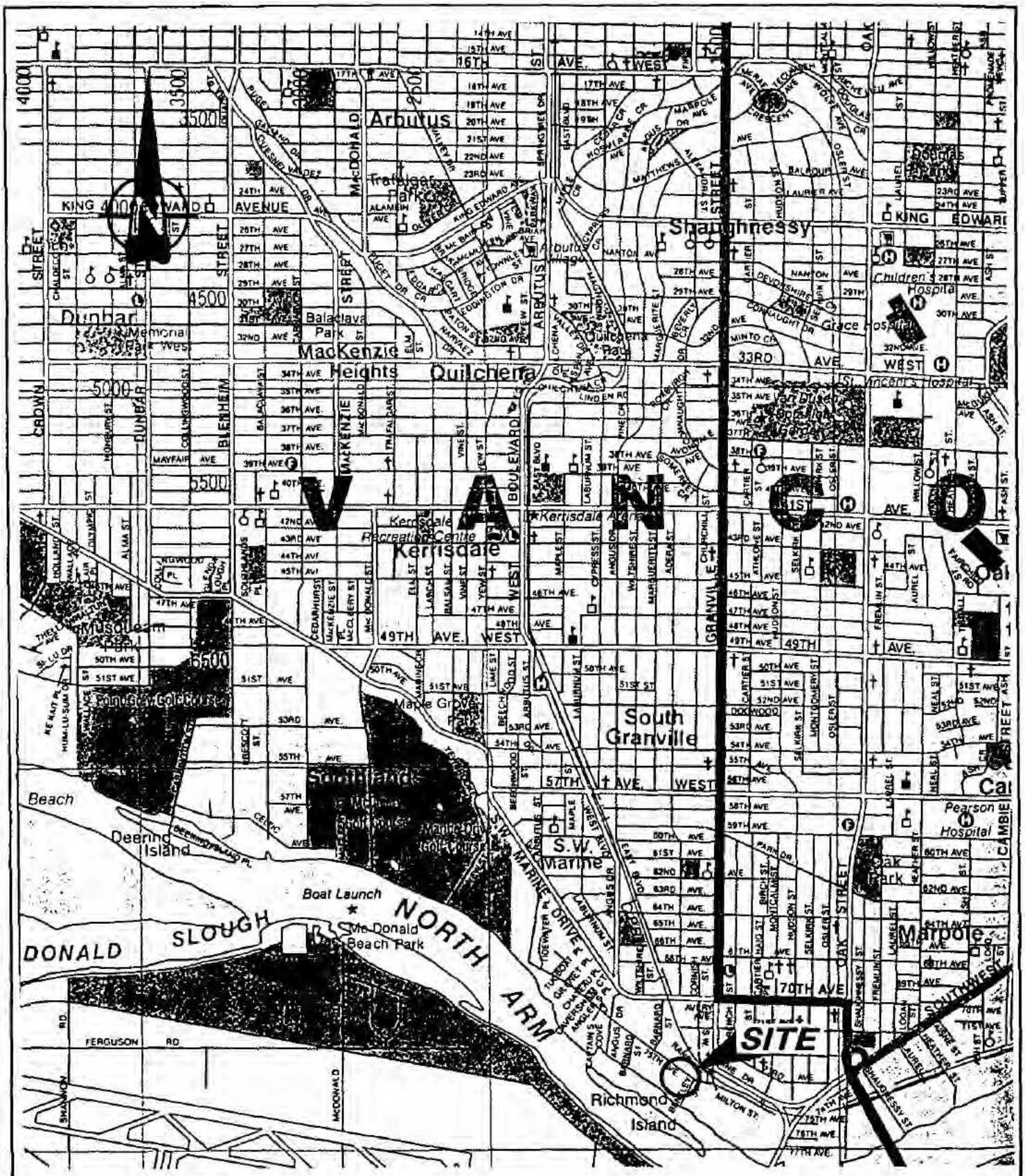
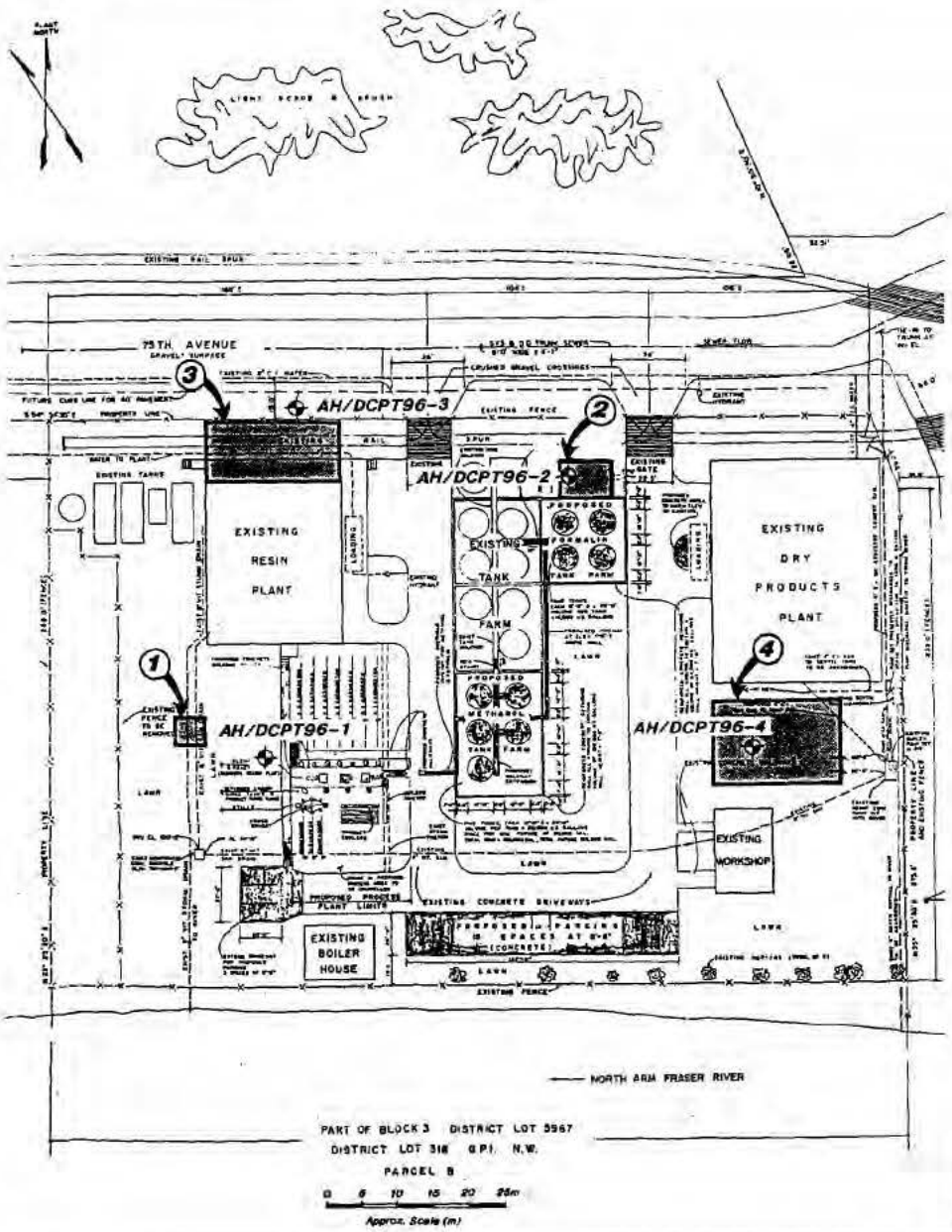


Project No. 962-1020 Drawn BAD Reviewed TB Date Feb '96

Golder Associates	**KEY PLAN**	Figure **1**

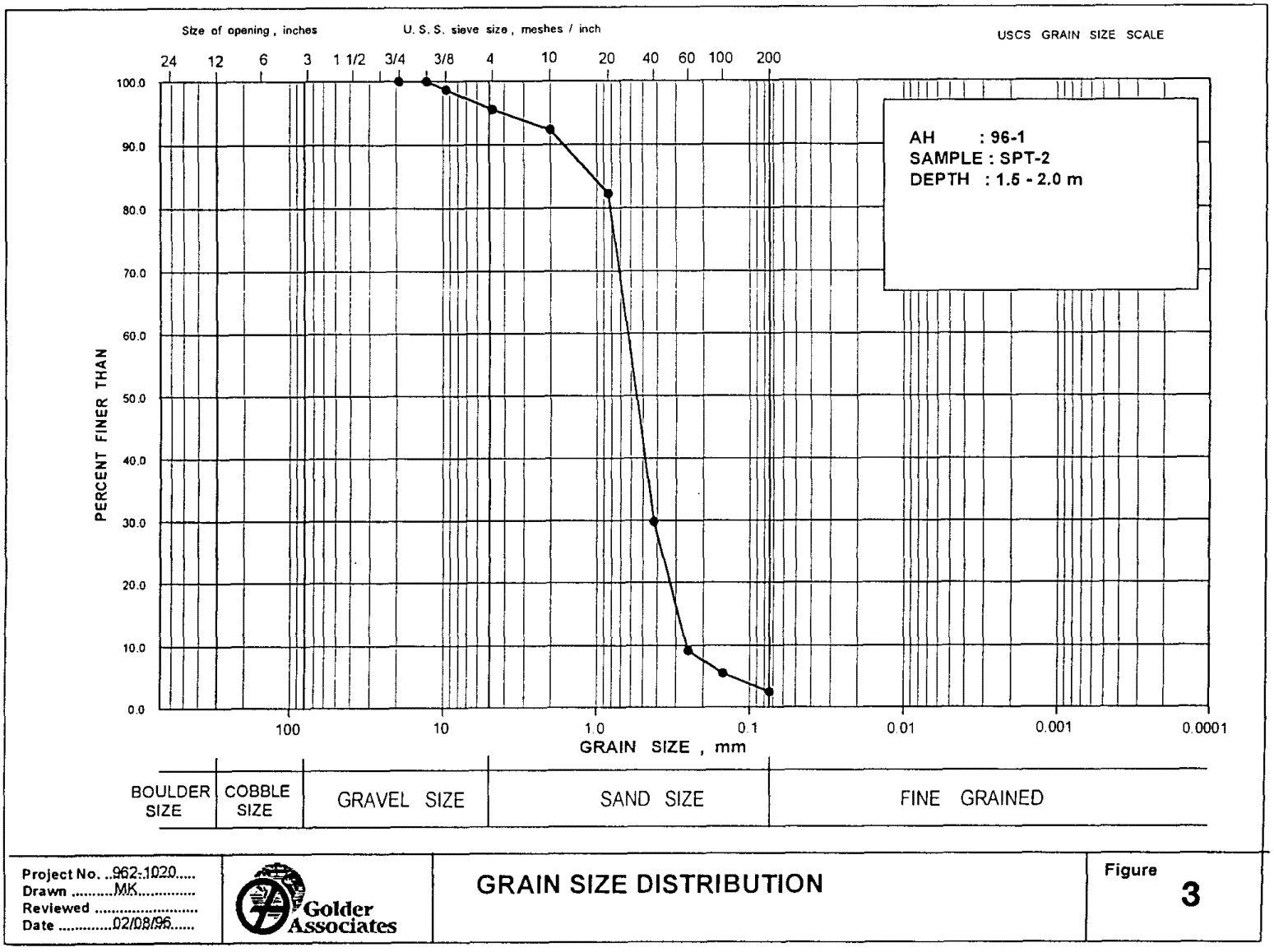


Legend:

- ***Approximate location of Augerhole/Dynamic Cone Penetration Test***
- (1) ***Proposed Resin Tank Location***
- (2) ***Proposed Formaldehyde Tank Location***
- (3) ***Proposed Canopy Addition***
- (4) ***Proposed Warehouse Location***

Golder Associates	**TEST HOLE LOCATION PLAN SHOWING PROPOSED FACILITIES**	Figure **2**

Project No. 962-1010 Drawn BAD Reviewed T.B. Date Feb. '96



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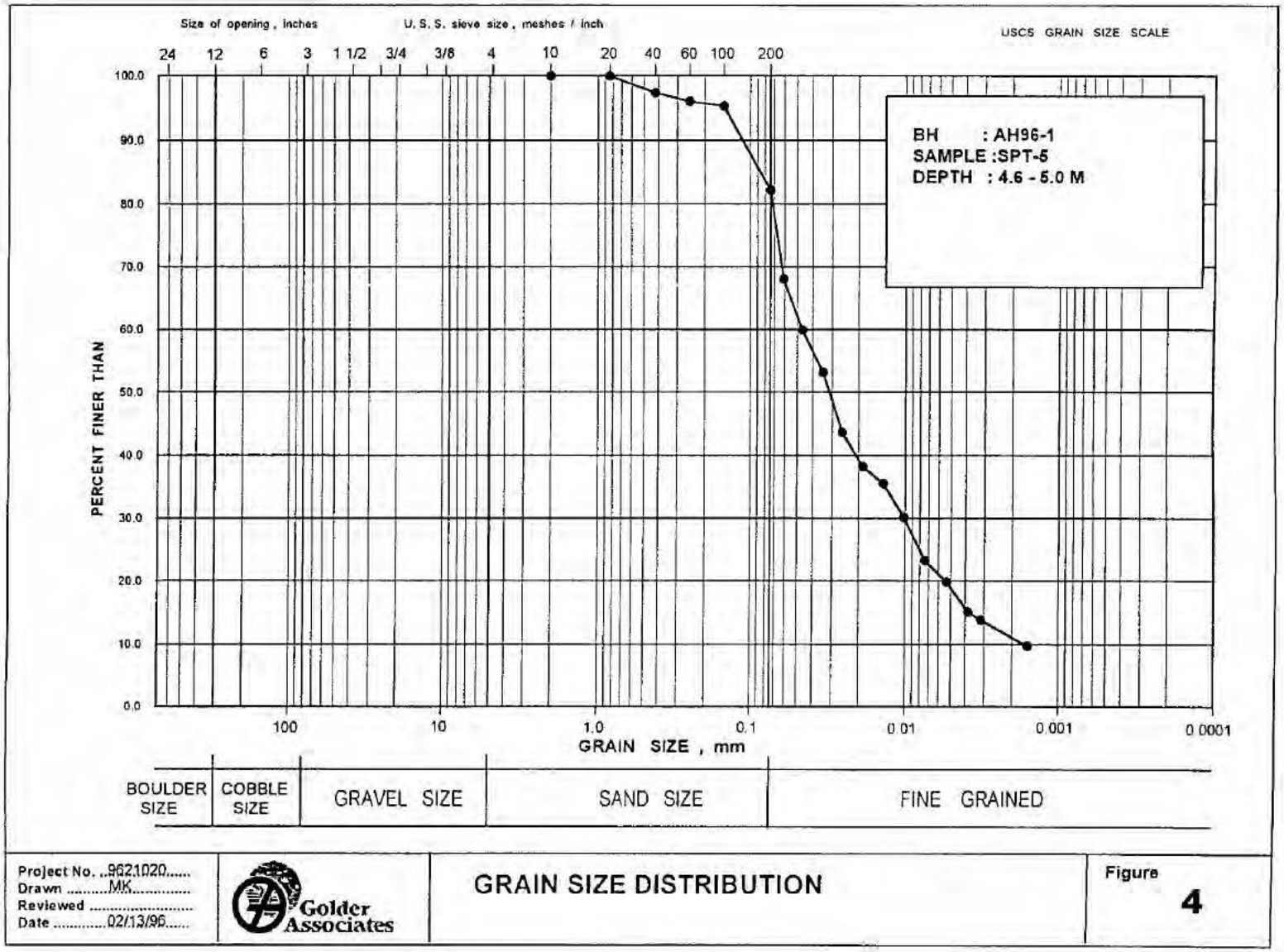
Drawn MK
Reviewed
Date 02/08/96

Golder Associates

GRAIN SIZE DISTRIBUTION

Figure 3



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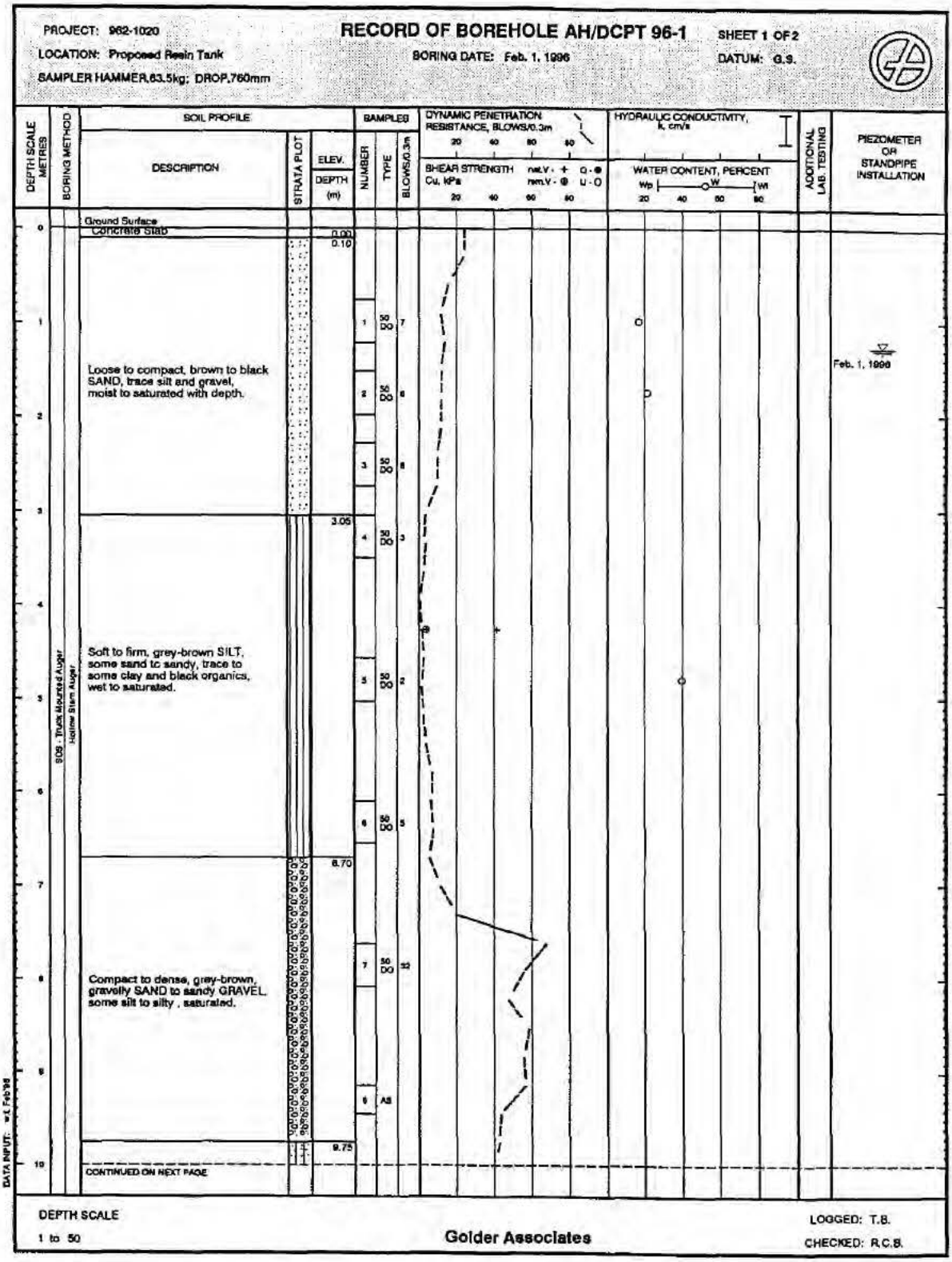
Reviewed .....
Date .....02/13/96.....

Golder Associates

GRAIN SIZE DISTRIBUTION

Figure 4


PROJECT: 962-1020
LOCATION: Proposed Resin Tank
SAMPLER HAMMER,63.5kg; DROP,760mm
RECORD OF BOREHOLE AH/DCPT 96-1
SHEET 1 OF 2
BORING DATE: Feb. 1, 1996
DATUM: G.S.
DEPTH SCALE METRES
BORING METHOD
SOIL PROFILE
DESCRIPTION
STRATA PLOT
ELEV. DEPTH (m)
SAMPLES
NUMBER
TYPE
BLOWS/0.3m
DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m
SHEAR STRENGTH Cu, kPa
nat.V. + rem.V. ⊕
Q - ● U - ○
HYDRAULIC CONDUCTIVITY, k, cm/s
WATER CONTENT, PERCENT
Wp W Wl
ADDITIONAL LAB. TESTING
PIEZOMETER OR STANDPIPE INSTALLATION
Ground Surface
Concrete Slab
0.00
0.10
Loose to compact, brown to black SAND, trace silt and gravel, moist to saturated with depth.
3.05
Soft to firm, grey-brown SILT, some sand to sandy, trace to some clay and black organics, wet to saturated.
6.70
Compact to dense, grey-brown, gravelly SAND to sandy GRAVEL, some silt to silty , saturated.
9.75
CONTINUED ON NEXT PAGE
Feb. 1, 1996
909 - Truck Mounted Auger
Hollow Stem Auger
DATA INPUT: w.t. Feb'96
DEPTH SCALE
1 to 50
Golder Associates
LOGGED: T.B.
CHECKED: R.C.S.

PROJECT: 962-1020

LOCATION: Proposed Resin Tank

SAMPLER HAMMER,63.5kg; DROP,760mm

RECORD OF BOREHOLE AH/DCPT 96-1

BORING DATE: Feb. 1, 1996

SHEET 2 OF 2

DATUM: G.S.

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat.V. +, rem.V. ⊕; Q ●, U ○; 20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s / WATER CONTENT, PERCENT (Wp, W, Wl; 20 40 60 80)	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10	609 - Truck Mounted Auger; Hollow Stem Auger	CONTINUED FROM PREVIOUS PAGE									
11		Compact to dense, grey, fine silty SAND, trace to some gravel, saturated.			9	AS					
12					10	AS					
13		Firm to stiff, grey SILT and fine SAND, trace to some clay, trace gravel, wet.		12.19	11	AS			O		
14											
15		Very dense, grey to dark grey silty SAND, trace to some gravel, moist.		14.48	12	AS			O		
		End of Auger/DCPT hole.		15.24					200/200mm		
16											
17											
18											
19											
20											

DATA INPUT: w.l. Feb/96

DEPTH SCALE

1 to 50

Golder Associates

LOGGED: T.B.

CHECKED: R.C.B.

PROJECT: 962-1020

LOCATION: Proposed Formaldehyde Tank

SAMPLER HAMMER,63.5kg; DROP,760mm

RECORD OF BOREHOLE AH/DCPT 96-2

SHEET 1 OF 1

BORING DATE: Feb. 2, 1996

DATUM: G.S.

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat.V - + Q - ● rem.V - ⊗ U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s / WATER CONTENT, PERCENT Wp W Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	SDS - Truck Mounted Auger; Hollow Stem Auger	Ground Surface									
		Concrete Slab		0.00							
				0.10							
1		Loose to compact, brown to black SAND, trace silt, moist to saturated with depth.			1	SS	3		○		▽ Feb. 2, 1996
					2	SS	4				
2											
				2.44							
3		Soft to firm, brown SILT to sandy SILT, trace organics, saturated.			3	SS	5		○		
				3.35							
		Wood obstruction.									
4				3.66					192 100/50+mm		
					4	SS	45				
5											
		Dense, grey-brown, gravelly SAND to SAND and GRAVEL, trace to some silt, saturated.			5	SS	32				
6											
7											
		Dense, grey, SAND, some silt to silty, some gravel, moist.		7.62	6	SS	42		○		
8		End of Auger/DCPT hole.		8.08							
9											
10											

DATA INPUT: W.L. Feb'96

DEPTH SCALE

1 to 50

Golder Associates

LOGGED: T.B.

CHECKED: R.C.B.

PROJECT: 962-1020

LOCATION: Proposed Canopy

SAMPLER HAMMER,63.5kg; DROP,760mm

RECORD OF BOREHOLE AH/DCPT 96-3

SHEET 1 OF 1

BORING DATE: Feb. 1, 1996

DATUM: G.S.

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20, 40, 60, 80) / SHEAR STRENGTH Cu, kPa (nat.V. +, rem.V. ⊕, Q ⊕, U ○)	HYDRAULIC CONDUCTIVITY, k, cm/s / WATER CONTENT, PERCENT (Wp, W, Wl; 20, 40, 60, 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	SDS - Truck Mounted Auger; Hollow Stem Auger	Ground Surface		0.00							
1		Loose, dark brown to black SAND, trace silt, moist to saturated with depth.			1	AS			○		Feb. 1, 1996
2					2	AS					
3		Soft, brown, sandy SILT, trace to some organics, wet.		2.59	3	AS			○		
4		Loose to dense, brown to black, gravelly SAND, trace to some silt, saturated.		3.20	4	AS			○		
5											
6					5	AS					
7				7.01	6	AS			105 86 100/50mm		
8		Very dense, grey SAND, some gravel and silt, wet.									
9		End of Auger/DCPT hole.		9.14							
10											

DATA INPUT: w.l. Feb'96

DEPTH SCALE

1 to 50

Golder Associates

LOGGED: T.B.

CHECKED: R.C.B.

PROJECT: 962-1020

LOCATION: Proposed Warehouse

SAMPLER HAMMER,63.5kg; DROP,760mm

RECORD OF BOREHOLE AH/DCPT 96-4

BORING DATE: Feb. 2, 1996

SHEET 1 OF 2

DATUM: G.S.

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat.V - + C - ● rem.V - ⊕ U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s / WATER CONTENT, PERCENT (Wp W Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	909 - Truck Mounted Auger, Hollow Stem Auger	Ground Surface									
		Gravel Surfacing.		0.00							
				0.30	1	AS					▽ Feb. 2, 1996
1		Very loose to loose, brown to black SAND, trace silt, moist to saturated with depth.									
2					2	AS					
				2.44							
3					3	AS			o		
4											
		Soft to firm, grey-brown, sandy SILT, trace organics and clay, wet to saturated.			4	AS					
5											
6											
7											
				7.31							
8					5	AS					
		Compact to dense, SAND and GRAVEL, some silt to silty, saturated.									
9											
10		CONTINUED ON NEXT PAGE									

DATA INPUT: w.z. Feb'96

DEPTH SCALE

1 to 50

Golder Associates

LOGGED: T.B.

CHECKED: R.C.B.

PROJECT: 962-1020

LOCATION: Proposed Warehouse

SAMPLER HAMMER,63.5kg; DROP,760mm

RECORD OF BOREHOLE AH/DCPT 96-4

BORING DATE: Feb. 2, 1996

SHEET 2 OF 2

DATUM: G.S.

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20, 40, 60, 80); SHEAR STRENGTH Cu, kPa (nat.V - +, rem.V - ⊗, Q - ⊗, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT, PERCENT (Wp, W, Wl; 20, 40, 60, 80)	ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10	608 - Truck Mounted Auger; Hollow Stem Auger	CONTINUED FROM PREVIOUS PAGE									
11		Compact to dense, SAND and GRAVEL, some to silty, saturated.									
12				11.89	6	AS					
13		Compact to dense, grey silty SAND to sandy SILT, trace to some gravel, trace clay, wet.									
14					7	AS					
15		Very dense, grey SILT and fine SAND, moist.		14.93	8	AS			200/200mm		
16		End of Auger/DCPT hole.		15.85							
17											
18											
19											
20											

DATA INPUT: w.l. Feb'96

DEPTH SCALE

1 to 50

Golder Associates

LOGGED: T.B.

CHECKED: R.C.B.

BORDEN CHEMICAL CANADA, INC.

RE: 1550 W 7STH AVE
DB415255

1550 W 75th

December 18, 2002

Mr. Doug Roberts, Manager
Environmental Protection Branch
City of Vancouver
453 West 12th Avenue
Vancouver, BC V5Y 1V4

Dear Sir:

Subject - Soil and Building Foundation
Legal Description: Part of Block 3, District Lot 5967,
District Lot 318 G.I.P., N.W. Parcel B, Zoning = M2

For the placement of new ancillary office minimal soil disturbance will occur, and no soil will be removed from the site.

When erecting the new office, only the sod at the proposed new office location will be stripped, which will remain on the site.

When providing services to the new office, a 2-foot deep trench will be dug. The soil and sod of the trench will be repaired to the original shape after the ancillary office is completed.

If you have any queries, please do not hesitate to contact me, or our site engineer (Samsun Tom, P. Eng.).

Yours truly,

J. Chapman

Joe Chapman
Plant Manager

This will suffice as an exemption i.e no soil disturbance

P.O. BOX 58098, 1550 RAND AVENUE, VANCOUVER, B.C. V6P 6C5 - TELEPHONE 604-261-9356 - FAX 604-263-2329

SCHEDULE 1
Site Profile

I CONTACT IDENTIFICATION

A. Name of Site Owner:

Last Chapman **First** Joe **Middle Initial(s)** _____ **(and/or, if applicable)**
Company Borden Chemical Inc.
Owners Civic Address 1550 Rand Ave.
City Vancouver **Province/State** BC
County Canada **Postal Code/ZIP** V6P 6C5

B. Person Completing Site Profile (Leave blank if same as above):

Last Chapman **First** Joe **Middle Initial(s)** ____ **(and/or, if applicable**
Company Borden Chemical Inc.

C. Person to Contact Regarding the Site Profile:
Last Chapman **First** Joe **Middle Initial(s)** _____ **(and/or, if applicable)**
Company Borden Chemical Inc.
Mailing Address 1550 Rand Ave.
City Vancouver **Province/State** BC
County Canada **Postal Code/ZIP** V6P 6C5
Telephone (604) 267 - 6907 **Fax** (604) 263 - 2329

II SITE IDENTIFICATION *Please attach a site location map*

IF Legally Titled, Registered Property

Site Street Address (if applicable) 1550 West 75th Ave.
City Vancouver **Postal Code** V6P 3G3

PID numbers and associated legal descriptions. ***Attach an additional sheet if necessary.***

PID	Legal Description
N.W. Parcel B	Part of Block 3, District Lot 5967
	District Lot 318 G.I.P.

Total number of titled parcels represented by this site profile is:

SCHEDULE 1
Site Profile

IF Untitled Crown Land

1) **PIN** numbers and associated Land Description. *Attach an additional sheet if necessary*

PIN	Land Description
	NOT APPLICABLE

Total number of untitled crown land parcels represented by this site profile is: _____

OR

2) Coordinated (using the North American Datum 1983 convention) for the centre of the site:

Latitude:	Degrees	Minutes	Seconds
Longitude:	Degrees	Minutes	Seconds

Please attach a map of appropriate scale showing the boundaries of the site.
(and, if available)

Crown land file numbers. ***Attach an additional sheet if necessary.***

_____ _____ _____ _____ _____

III COMMERCIAL AND INDUSTRIAL PURPOSES OR ACTIVITIES

Please indicate below, in the format of the example provided, which of the industrial and commercial purposes and activities from Schedule 2 have occurred or are occurring on site.

EXAMPLE

Schedule 2 Reference	Description
E1	appliance, equipment or engine repair, reconditioning, cleaning or salvage
F10	solvent manufacturing or wholesale bulk storage.

Please print legibly. Attach an additional sheet if necessary

Schedule 2 Reference	Description
A13	Resin Manufacturing Formulation or Bulk Storage

***** If there is no schedule 2 activity indicated, do not answer questions in section IV to X but section XI must still be signed**

SCHEDULE 1
Site Profile 1

IV	AREAS OF POTENTIAL CONCERN		
	Is there currently or to the best of your knowledge has there previously been on the site any landfilling, deposit or dumping of the folowing materials (please mark the appropriate column opposite the question):	YES	NO
A.	Petroleum, solvent or other polluting substance spills to the environment greater than 100 litres?		✔
B.	Residue left after removal of piled materials such as chemicals, coal, ore, smelter slag, air quality control system baghouse dust?		✔
C.	Discarded barrels, drums or tanks?		✔
D.	Contamination resulting from migration of substances form other properties		✔
V	**FILL MATERIALS**		
	Is there currently or to the best of your knowledge has there previously been on the site and (please mark the appropriate column opposite the question):	YES	NO
A.	Fill dirt, soil, gravel, sand or like materials from a contaminated site or from a source used for any activities listed under Schedule 2?		✔
B.	Discarded or wasted granular materials such as sand blasting grit, asphalt paving or roofing materials, spent foundry casting sands, mine ore, waste rock or float?		✔
C.	Dredged sediments, or sediments and debris materials originating from locations adjacent to		✔
VI	**WASTE DISPOSAL**		
	Is there currently or to the best of your knowledge has there previously been on the site any landfilling, deposit or dumping in pits, ponds, lagoons or natural depressions of (please mark the appropriate column opposite the question):	YES	NO ✔
A.	Materials such as household garbage, mixed municipal refuse, or demolition debris?		✔
B.	Waste or byproducts such as tank bottoms, residues, sludge, or flocculation precipitates from industrial processes or wastewater treatment?		✔
C.	Waste products from smelting or mining activities, such as smelter slag, mine tailings, or cull materials from coal processing?		✔
D.	Waste products from natural gas and oil well drilling activities, such as drilling fluids and muds?		✔
E.	Waste products from photographic developing or finishing laboratories; asphalt tar manufacturing; boilers, incinerators or other thermal facilities (e.g. ash); appliance, small equipment or engine repair or salvage; dry cleaning operations (e. g. solvent); or automobile and truck parts cleaning or repair?		✔

SCHEDULE 1
Site Profile 1

VII	TANKS OR CONTAINERS USED OR STORED		
	Are there currently or to the best of you knowledge have there been previously on the site any (please mark the appropriate column opposite the question):	YES	NO
A.	Underground fuel or chemical storage tanks? SEE NOTES BELOW *		
B.	Above ground fuel or chemical storage tanks? SEE NOTES BELOW *		

VIII	SPECIAL (HAZARDOUS) WASTES OR SUBSTANCES		
	Are there currently or to the best of your knowledge have there been previously on the site any (please mark the appropriate column opposite the question):	YES	NO
	PCB-containing electrical transformers or capacitors either at grade, attached above ground to poles, located within buildings, or stored?		✔
	Waste asbestos or asbestos containing materials such as pipe wrapping, blown-in insulation or paneling buried?		✔
	Paints, solvents, mineral spirits or waste pest control products containers stored in volumes greater that 205 litres?		✔

IX	LEGAL OR REGULATORY ACTIONS OR CONSTRAINTS		
	To the best of your knowledge are there currently any of the following pertaining to the site (please mark the appropriate column opposite the question):	YES	NO
A.	Government orders or other notifications pertaining to environmental conditions or quality of soil, water, groundwater or other environmental media?		✔
B.	Liens to recover costs, restrictive covenants on land use, or other charges or encumbrances, stemming from contaminants or wastes remaining onsite or from other environmental conditions?		✔
C.	Government notifications relating to past or recurring environmental violations at the site or any facility located on the site?		✔

X ADDITIONAL COMMENTS AND EXPLANATIONS

(Note 1: Please list any past or present government orders, permits, approval, certificates and notifications pertaining to the environmental condition, use or quality of soil, surface water, groundwater or biota at the site.

Note 2: If completed by a consultant, receiver or trustee, please indicate the type and degree of access to information used to complete this site profile. Attach extra pages, if necessary):

* VII – A & B: Currently, there are underground fuel storage tanks and above ground fuel/chemical storage tanks in the plant site. However, in the area within the plant selected for building the new office, there has never been any underground fuel/chemical storage tanks or above ground fuel/chemical storage tanks.

SCHEDULE 1
Site Profile 1

XI SIGNATURE

The person completing the site profile states that the above information is true, based on the person's current knowledge as of the date completed.

J. Chapman
Signature of person completing site profile

Dec 17/02
Date completed: (YY-MM-DD)

XII OFFICIAL USE

Local Authority

Reason For Submission *(Please check one or more of the following)*

Soil Removal • **Subdivision Application** • **Zoning Application** • **Development Permit** • **Variance Permit** • **Demolition Permit** •

Date Received:	Assessed by/local contact: Name _____ Agency _____ Address _____ Telephone _____ Fax _____	Date Submitted to Site Registrar:	Date forwarded to BC Environment Manager:

BC Environment Manager

Reason For Submission *(Please check one or more of the following)*

Under Order • **Site Decommissioning** • **Foreclosure** •

Date Received:	Assessed by: Name _____ Region _____ Telephone _____ Fax _____ If site profile entered, SITE ID# _____	Investigation Required:	Decision date:

Site Registrar

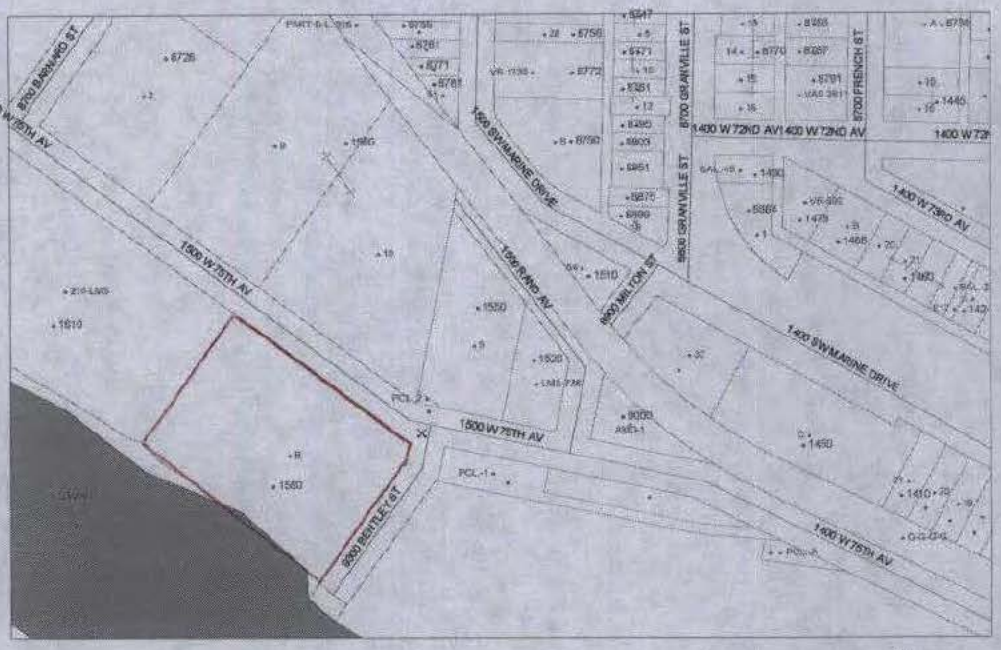
Date received:	Entered onto site registry by:	SITE ID #:	Entry date:

Property Information

- Property Addresses
- Property Address No.
- Lot Number
- Tie Lines
- Property/Lot Lines
  - Lot Line
  - Property Line
- Private Encroachment

City Streets Network

- Shore Lines and Sea



SCALE 1 : 4,178

200 0 200 400 600

FEET

N

McCreedy, Neil

From: Petersen, Lauren
Sent: Thursday, July 05, 2007 9:43 AM
To: McCreedy, Neil
Subject: RE: Contamination at 1550 West 75th Avenue, Vancouver, BC

We have received a Notice of Migration of Contamination to Neighbouring Property July 18/06, it was CC'd to Cascade Lead Properties, the City, Hexion & the MOE. We also have on file a Site Profile from 2003, otherwise that's it.

Lauren Petersen, A.Sc.T.
Environmental Protection Officer
604.873.7732

-----Original Message-----
From: McCreedy, Neil
Sent: Tuesday, July 03, 2007 3:54 PM
To: Petersen, Lauren
Cc: 'Harm Gross'
Subject: RE: Contamination at 1550 West 75th Avenue, Vancouver, BC

Lauren please review our files for this siteand respond to me Thanks Neil

-----Original Message-----
From: Harm Gross [mailto:hgross@next.bc.ca]
Sent: Wednesday, June 27, 2007 12:30 PM
To: neil_mccreedy@city.vancouver.bc.ca
Subject: Contamination at 1550 West 75th Avenue, Vancouver, BC

Hi Neil,

Next Environmental represents the strata units at 1616 West 75th Avenue, which have been contaminated by industrial activities of Hexion Specialty Chemicals at 1550 West 75th Avenue, which is the adjacent property to the south-east. The contaminant is dissolved ammonia above CSR standards for protection of aquatic life.

A February 27, 2006 report by Arcadis G&M of Ohio Inc., one of Hexion's consultants, identified the existence of this contamination on the City street as well. Has the City been advised of this contamination? We are contacting you to inquire whether suitable arrangements have been made with Hexion to remediate that contamination and prevent its travel along 75th to our client's property.

Would you please give me a call or send an email to advise me of the status of this issue with the City, so that our client will know how to proceed in preventing further migration onto its property from Hexion and perhaps from the City?

All the best,

Harm

Dr. Harm P. Gross
President
NEXT ENVIRONMENTAL INC.
215 - 2550 Boundary Road
Burnaby, BC V5M 3Z3
Canada
Dir Tel (604) 419 - 3838
Cell (604) 220 - 0021
Gen Tel (604) 419 - 3800
Fax (604) 419 - 3801

BRITISH COLUMBIA

July 17, 2006

Regional File: 26250-20/9734
Victoria File: 26250-20/9734
SITE 9734

VIA FAX ONLY: 604-687-3446

Jamie Natusch
Manager, Remediation Services
URS Corporation
PO Box 11507
1900 – 650 West Georgia Street
Vancouver BC V6B 4N7

Dear Jamie Natusch:

Re: Migration of Contamination to Neighbouring Property from 1550 West 75th Avenue, Vancouver, British Columbia

Thank you for copying the ministry on your notification to the owner(s) of neighbouring property as referenced above, pursuant to section 57 and/or 60.1 of the Contaminated Sites Regulation.

This letter outlines the ministry's expectations of you regarding the contamination. Specifically, the ministry expects you to advise any other affected persons (e.g. owners of rights-of-way, utility corridors, easements, etc.) of the contamination, determine the full extent of contamination and prepare and implement a remediation plan. We strongly encourage you to initiate discussion with all affected persons so that a mutually satisfactory remediation plan can be implemented.

Please be advised that any reports or other documentation submitted with your migration notice have not been reviewed by the ministry. It remains your responsibility to meet the requirements of the *Environmental Management Act* and regulations (e.g. Contaminated Sites Regulation, Hazardous Waste Regulation, etc.) and to identify and address any human health or environmental impacts, safety issues or impacts on utilities associated with the contamination. Information regarding ministry requirements may be accessed at: "**http://wlapwww.gov.bc.ca/epd/epdpa/contam_sites/index.html**".

Ministry of Environment
Environmental Protection Division
Environmental Management Branch
Land Remediation Section
Mailing Address:
PO Box 9342 Stn Prov Govt
Victoria BC V8W 9M1
Location:
3rd Floor, 2975 Jutland Road
Victoria BC

If you have any questions about this letter, please contact Kerri Skelly at 604-582-5357.

Sincerely,

M. Parker
Program Support

cc: John Turby, Cascade Lead Products Ltd., Fax: 604-261-8464
Hank Uyeyama, City of Vancouver, Fax: 604-873-7963
Bob Adamic, Hexion Specialty Chemicals Inc., Fax: 604-263-2329
Kerri Skelly, Ministry of Environment, Surrey, Fax: 604-584-9751

JUL 11 2007

CITY OF VANCOUVER

COMMUNITY SERVICES GROUP
Licences and Inspections
Environmental Protection Branch

FAX

TO:	Kelli Larson Ministry of Environment Environmental Management Branch Contaminated Sites Program	FROM:	Lauren Petersen, A.Sc.T. Environmental Protection Officer
CC:			
FAX:	604.584.9751	DATE:	July 11, 2007
PHONE:	604.582.5246	PAGES:	8, including this cover
SUBJECT:	Site Profile - 1550 W. 75th Street		

Please find attached the site profile for the above noted site. There is an application for demolition at the site which is currently occupied by Hexion Specialty Chemicals', former Bordon Chemical, adhesive manufacturing plant.

Yours truly,

Lauren Petersen, A.Sc.T.
Environmental Protection Officer
lauren.petersen@vancouver.ca
301-456 West Broadway Vancouver BC
Phone: 604.873.7732
Fax: 604.873.7963

/lp

SCHEDULE 1
Site Profile
(All Information Must be Provided and All Questions Answered) (Version 3.1)

I CONTACT IDENTIFICATION

A. Name of Site Owner:

Last Johnson First Bruce Middle Initial(s) ____ (and/or, if applicable)
Company Hexion Specialty Chemicals
Owner's Civic Address 470 South 2nd
City Springfield Province/State OR
Country USA Postal Code/ZIP 97477

B. Person Completing Site Profile (Leave blank if same as above):

Last Bloom First Kevin Middle Initial(s) J (and/or, if applicable)
Company Hazco Environmental Services

C. Person to Contact Regarding the Site Profile:

Last Bloom First Kevin Middle Initial(s) J (and/or, if applicable)
Company Hazco Environmental Services
Mailing Address 13611 Vulcan Way
City Richmond Province/State BC
Country Canada Postal Code/ZIP V6V 1K4
Telephone (604) 214-7000 Fax (604) 214-7098

II SITE IDENTIFICATION

Please attach a site location map

IF Legally Titled, Registered Property

Site Street Address (if applicable) 1550 West 75th Street
City Vancouver Postal Code V6P 3G3

PID numbers and associated legal descriptions. ***Attach an additional sheet if necessary.***

PID	Legal Description
	LOT-B BLK-3 DL-318 PLAN-14204

Total number of titled parcels represented by this site profile is: 1

SCHEDULE 1
Site Profile

(Version 3.1)

IF Untitled Crown Land

1) PIN numbers and associated Land Description. ***Attach an additional sheet if necessary.***

PIN	Land Description

Total number of untitled crown land parcels represented by this site profile is:_____

OR

2) Coordinates (using the North American Datum 1983 convention) for the centre of the site:
Latitude: Degrees_____ Minutes_____ Seconds_____
Longitude: Degrees_____ Minutes_____ Seconds_____

Please attach a map of appropriate scale showing the boundaries of the site.
(and, if available)

Crown land file numbers. ***Attach an additional sheet if necessary.***

_____ _____ _____ _____ _____

III COMMERCIAL AND INDUSTRIAL PURPOSES OR ACTIVITIES

Please indicate below, in the format of the example provided, which of the industrial and commercial purposes and activities from Schedule 2 have occurred or are occurring on this site.

EXAMPLE

Schedule 2 Reference	Description
E1	appliance, equipment or engine repair, reconditioning, cleaning or salvage
F10	solvent manufacturing or wholesale bulk storage

Please print legibly. Attach an additional sheet if necessary

Schedule 2 Reference	Description
A1	adhesives manufacturing or whole sale bulk storage

SCHEDULE 1
Site Profile

(Version 3.1)

IV	AREAS OF POTENTIAL CONCERN		
	Is there currently or to the best of your knowledge has there previously been on the site any (please mark the appropriate column opposite the question):	YES	NO
A.	Petroleum, solvent or other polluting substance spills to the environment greater than 100 litres?		X
B.	Residue left after removal of piled materials such as chemicals, coal, ore, smelter slag, air quality control system baghouse dust?		X
C.	Discarded barrels, drums or tanks?		X
D.	Contamination resulting from migration of substances from other properties?		X
V	**FILL MATERIALS**		
	Is there currently or to the best of your knowledge has there previously been on the site any deposit of (please mark the appropriate column opposite the question):	YES	NO
A.	Fill dirt, soil, gravel, sand or like materials from a contaminated site or from a source used for any of the activities listed under Schedule 2?		X
B.	Discarded or waste granular materials such as sand blasting grit, asphalt paving or roofing material, spent foundry casting sands, mine ore, waste rock or float?		X
C.	Dredged sediments, or sediments and debris materials originating from locations adjacent to foreshore industrial activities, or municipal sanitary or stormwater discharges?		X
VI	**WASTE DISPOSAL**		
	Is there currently or to the best of your knowledge has there previously been on the site any landfilling, deposit or dumping of the following materials (please mark the appropriate column opposite the question):	YES	NO
A.	Materials such as household garbage, mixed municipal refuse, or demolition debris?		X
B.	Waste or byproducts such as tank bottoms, residues, sludge, or flocculation precipitates from industrial processes or wastewater treatment?		X
C.	Waste products from smelting or mining activities, such as smelter slag, mine tailings, or cull materials from coal processing?		X
D.	Waste products from natural gas and oil well drilling activities, such as drilling fluids and muds?		X
E.	Waste products from photographic developing or finishing laboratories; asphalt tar manufacturing; boilers, incinerators or other thermal facilities (e.g. ash); appliance, small equipment or engine repair or salvage; dry cleaning operations (e.g. solvents); or automobile and truck parts cleaning or repair?		X

SCHEDULE 1
Site Profile

(Version 3.1)

VII	TANKS OR CONTAINERS USED OR STORED		
	Are there currently or to the best of your knowledge have there been previously on the site any (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	Underground fuel or chemical storage tanks?	X	
B.	Above ground fuel or chemical storage tanks?	X	

VIII	SPECIAL (HAZARDOUS) WASTES OR SUBSTANCES		
	Are there currently or to the best of your knowledge have there been previously on the site any (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	PCB-containing electrical transformers or capacitors either at grade, attached above ground to poles, located within buildings, or stored?		X
B.	Waste asbestos or asbestos containing materials such as pipe wrapping, blown-in insulation or panelling buried?	X	
C.	Paints, solvents, mineral spirits or waste pest control products or pest control product containers stored in volumes greater than 205 litres?		X

IX	LEGAL OR REGULATORY ACTIONS OR CONSTRAINTS		
	To the best of your knowledge are there currently any of the following pertaining to the site (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	Government orders or other notifications pertaining to environmental conditions or quality of soil, water, groundwater or other environmental media?		X
B.	Liens to recover costs, restrictive covenants on land use, or other charges or encumbrances, stemming from contaminants or wastes remaining onsite or from other environmental conditions?		X
C.	Government notifications relating to past or recurring environmental violations at the site or any facility located on the site?		X

X ADDITIONAL COMMENTS AND EXPLANATIONS

(Note 1: Please list any past or present government orders, permits, approvals, certificates and notifications pertaining to the environmental condition, use or quality of soil, surface water, groundwater or biota at the site.

Note 2: If completed by a consultant, receiver or trustee, please indicate the type and degree of access to information used to complete this site profile. Attach extra pages, if necessary):

site plan included, asbestos survey included

SCHEDULE 1
Site Profile

(Version 3.1)

XI SIGNATURES

The person completing the site profile states that the above information is true based on the person's current knowledge as of the date completed.

Signature of person completing site profile

Date completed: (YY-MM-DD) 07-07-11

XII OFFICIAL USE

Local Authority

Reason For Submission *(Please check one or more of the following)*

Subdivision Application ☐ **Zoning Application** ☐ **Development Permit** ☐ **Variance Permit** ☐ **Demolition Permit** ☒ **Soil Removal** ☐

Date received:	Local Government contact :	Date Submitted to Site Registrar:	Date forwarded to Director of Waste Management:
JUL 11 2007	Name Lauren Peterson Agency GoV Environmental Prot. Address 453 W. 12th Ave Vancouver BC Telephone 604 873 7737 Fax 873 7963		JUL 11 2007

Director of Waste Management

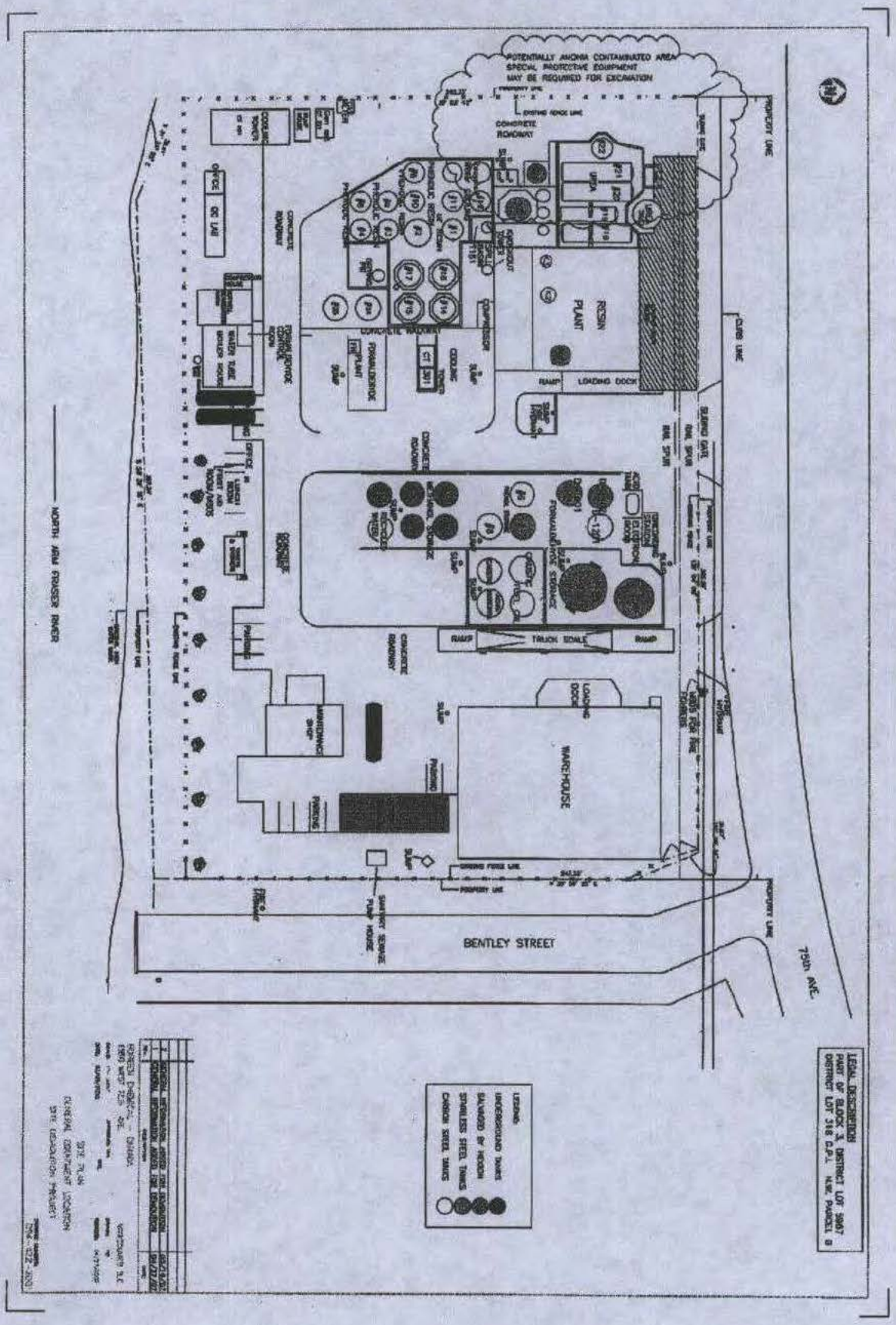
Reason For Submission *(Please check one or more of the following)*

Under Order ☐ **Site Decommissioning** ☐ **Foreclosure** ☐

Date received:	Assessed by: Name Region Telephone Fax If site profile entered, SITE ID #	Investigation Required? YES NO	Decision date:

Site Registrar

Date received:	Entered onto Site Registry by:	SITE ID #:	Entry date:


POTENTIALLY AMONIA CONTAMINATED AREA
SPECIAL PROTECTIVE EQUIPMENT
MAY BE REQUIRED FOR EXCAVATION
CONCRETE ROADWAY
PROPERTY LINE
RESIN PLANT
RAMP
LOADING DOCK
CURB LINE
FORMALDEHYDE PLANT
FORMALDEHYDE STORAGE
TRUCK SCALE
WAREHOUSE
BENTLEY STREET
75th AVE.
NORTH ARM FRASER RIVER
LEGAL DESCRIPTION
PART OF BLOCK 3, DISTRICT LOT 5967
DISTRICT LOT 318 G.P.I. N.W. PARCEL B
LEGEND
UNDERGROUND TANKS
BALMOND OF WOOD
STAINLESS STEEL TANKS
CARBON STEEL TANKS

Wednesday, July 11, 2007 3:18 PM

JUL 19 2007

CITY OF VANCOUVER

COMMUNITY SERVICES GROUP
Licences and Inspections
Environmental Protection Branch

FAX

TO:	Vince Hanemayer Ministry of Environment Environmental Management Branch Contaminated Sites Program	FROM:	Lauren Petersen, A.Sc.T. Environmental Protection Officer
FAX:	604.584.9751	DATE:	July 19, 2007
PHONE:	604.582.5246	PAGES:	2, including this cover
SUBJECT:	Demolition application - 1550 W 75th Ave		

Hi Vince

Please find attached a letter stating that the City is not opposed to a release letter of the above demolition.

Yours truly,

Lauren Petersen, A.Sc.T.
Environmental Protection Officer
lauren.petersen@vancouver.ca
301-456 West Broadway Vancouver BC
Phone: 604.873.7732
Fax: 604.873.7963

/lp

CITY OF VANCOUVER

COMMUNITY SERVICES GROUP
Licences and Inspections
Environmental Protection Branch

July 13, 2007

Ministry of Environment
10470 152 Street
Surrey, BC V3R 0Y3

Attn: Vince Hanemayer

Dear Sir:

RE: 1550 W 75th Ave - Demolition Application

This letter is to acknowledge that the City of Vancouver, Environmental Protection Branch is not opposed to the Ministry of Environment providing a release letter to allow for the demolition of the buildings (including footings) at the above noted address for the purpose of further site investigation and remediation.

Yours truly,

Neil McCreedy
Manager, Environmental Protection Branch
301 - 456 W. Broadway Vancouver BC
Phone: 604.873.7567
Fax: 604.873.7963

LP/lp

H:\ENVIRON\SOILS\1550 W 75.doc

HAZCO
A Division of CCS Income Trust

13511 Vulcan Way, Richmond, BC V6V 1K4 Canada
Telephone: (604) 214-7000 Fax: (604) 214-7017
www.hazco.com

FAX TRANSMISSION

Date: July 16/07

Number of pages including cover sheet: 2

To: Vince Hanemayer

Phone: 604 582 5377

Fax: 604 594 9751

From: Kevin Bloom

HAZCO Environmental Services

Phone: (604) 214-7000

Fax: (604) 214 7017

RE: 1550 West 75th Avenue, Vancouver, BC.

Letter to assist with the demolition permit application process for the above referenced site.

HAZCO
A CCS Income Trust Company

KEVIN BLOOM
PROJECT MANAGER

MOBILE: (604) 992-1387
DIRECT: (604) 214-7098
MAIN: (604) 214-7000
FAX: (604) 214-7017
E-MAIL: kbloom@hazco.com

www.hazco.com
1-800-667-0444

HAZCO ENVIRONMENTAL SERVICES LTD.
13511 VULCAN WAY
RICHMOND. B.C., CANADA
V6V 1K4

HAZCO
Environmental & Decommissioning Services

Decommissioning www.hazco.com

July 16, 2007

Ministry of Environment

Attention: **Vince Hanemayer**

RE: **SITE PROFILE -**
DEMOLITION OF PLANT,
1550 WEST 75th AVE,
VANCOUVER, BC

Dear Sir,

Hazco has been awarded the contract to dismantle equipment, salvage materials and demolish buildings at the above referenced site. We are seeking the approval to demolish the structures at this site through the City of Vancouver, part of the demolition approval process is to submit a site profile to the MOE, the site profile has been submitted for this site.
With the submittal of the site profile we are seeking the approval to strictly demolish the existing structures and remove those materials from site. A site investigation to determine if the site has any contamination will commence after the demolition phase.

If you have any questions or require further information, please do not hesitate to contact me at 604-214-7098.

Sincerely,
Hazco Environmental Services

Kevin Bloom
Project Manager

HAZCO
A Division of CCS Income Trust

13511 Vulcan Way, Richmond, BC V6V 1K4 Canada
Telephone: (604) 214-7000 Fax: (604) 214-7017
www.hazco.com

FAX TRANSMISSION

Date: July 11, 2007

Number of pages including cover sheet: 15

To: Lauren Peterson

Phone: 604 873 7732

Fax: 604 873 7963

From:

HAZCO Environmental Services

Phone: (604) 214-7000

Fax: (604) 214 7017

RE: Site Profile - Demolition Permit

Please review the attached + let me know when this may be submitted.

Thanks

HAZCO
A CCS Income Trust Company

KEVIN BLOOM
PROJECT MANAGER

MOBILE: (604) 992-1387
DIRECT: (604) 214-7098
MAIN: (604) 214-7000
FAX: (604) 214-7017
E-MAIL: kbloom@hazco.com

www.hazco.com
1-800-667-0444

HAZCO ENVIRONMENTAL SERVICES LTD.
13511 VULCAN WAY
RICHMOND, B.C., CANADA
V6V 1K4

Lauren Petersen
873-7732

SCHEDULE 1
Site Profile

(Version 3.1)

Preamble

Under section 40 of the *Environmental Management Act*, a person who knows or reasonably should know that a site has been used or is used for industrial or commercial purposes or activities must in certain circumstances provide a site profile.

Schedule 2 of the Contaminated Sites Regulation sets out the types of industrial or commercial purposes or activities to which site profile requirements apply.

If section 40 of the Environmental Management Act applies to you and you know or reasonably should know that the site has been used or is used for one of the purposes or activities found in Schedule 2 of the Contaminated Sites Regulation, you may be required to complete the attached site profile.

Notes/Instructions:

Persons preparing a site profile *must* complete Section I, II and III, answer all questions in sections IV through IX, and sign section XI. If the site profile is not satisfactorily completed, it will not be processed under the *Environmental Management Act* and the Contaminated Sites Regulation. Failure to complete the site profile satisfactorily may result in delays in approval of relevant applications and in the postponement of decisions respecting the property.

The person completing this site profile is responsible for the accuracy of the answers. Questions must be answered *to the best of your knowledge.*

Section 27 (1) of the *Freedom of Information and Protection of Privacy Act* requires that provision of personal information concerning an individual must be authorized by that individual. Persons completing the site profile on behalf of the site owner must be authorized by the site owner.

One (1) site profile may be completed for a site comprised of more than one titled or untitled parcel, but individual parcels must be identified.

If the property is legally surveyed, titled and registered, then all PID numbers (**P**arcel **ID**entifiers – Land Title Registry system) must be provided for *each* parcel as well as the appropriate legal description.

If the property is untitled Crown land (no PID number), then the appropriate PIN numbers (**P**arcel **I**dentification **N**umbers – Crown Land registry system) for each parcel with the appropriate land description should be supplied.

If available, the Crown Land File Number for the site should also be supplied.

If a PID or PIN number is *not* available for the site, a latitude and longitude (accurate to 0.5 of a second using North American Datum established in 1983) of the centre of the site is required. Also, please attach an accurate map, containing latitude, longitude and datum references, which shows the boundaries of the site in question. Please use the largest scale map available.

Anything submitted in relation to this site profile will become part of the public record and may be made available to the public through the Site Registry as established under the *Environmental Management Act.*

Under section 43 of the *Environmental Management Act,* corporate and personal information contained in the site profile may be made available to the public through the Site Registry. If you have questions concerning the collection of this information, contact the Site Registrar, at site@gov.bc.ca. For questions on site profiles, please send a message to siteprofiles@gov.bc.ca.

SCHEDULE 1
Site Profile
(All Information Must be Provided and All Questions Answered) (Version 3.1)

I CONTACT IDENTIFICATION

A. Name of Site Owner:

Last Johnson First Bruce Middle Initial(s) ____ (and/or, if applicable)
Company Hexion Specialty Chemicals
Owner's Civic Address 470 South 2nd
City Springfield Province/State OR
Country USA Postal Code/ZIP 97477

B. Person Completing Site Profile (Leave blank if same as above):

Last Bloom First Kevin Middle Initial(s) J (and/or, if applicable)
Company Hazco Environmental Services

C. Person to Contact Regarding the Site Profile:

Last Bloom First Kevin Middle Initial(s) J (and/or, if applicable)
Company Hazco Environmental Services
Mailing Address 13511 Vulcan Way
City Richmond Province/State BC
Country Canada Postal Code/ZIP V6V 1K4
Telephone (604) 214 - 7000 Fax (604) 214 - 7098

II SITE IDENTIFICATION

Please attach a site location map

IF Legally Titled, Registered Property

Site Street Address (if applicable) 1550 West 75th Street
City Vancouver Postal Code V6P 3G3

PID numbers and associated legal descriptions. ***Attach an additional sheet if necessary.***

PID	Legal Description
	LOT-B BLK-3 DL-318 PLAN-14204

Total number of titled parcels represented by this site profile is: 1

SCHEDULE 1
Site Profile

(Version 3.1)

IF Untitled Crown Land

1) **PIN** numbers and associated Land Description. ***Attach an additional sheet if necessary.***

PIN	**Land Description**

Total number of untitled crown land parcels represented by this site profile is:_____

OR

2) Coordinates (using the North American Datum 1983 convention) for the centre of the site:
Latitude: Degrees_____ Minutes_____ Seconds_____
Longitude: Degrees_____ Minutes_____ Seconds_____

Please attach a map of appropriate scale showing the boundaries of the site.
(and, if available)

Crown land file numbers. ***Attach an additional sheet if necessary.***

_____ _____ _____ _____ _____

III COMMERCIAL AND INDUSTRIAL PURPOSES OR ACTIVITIES

Please indicate below, in the format of the example provided, which of the industrial and commercial purposes and activities from Schedule 2 have occurred or are occurring on this site.

EXAMPLE

Schedule 2 Reference	**Description**
E1	appliance, equipment or engine repair, reconditioning, cleaning or salvage
F10	solvent manufacturing or wholesale bulk storage

Please print legibly. Attach an additional sheet if necessary

Schedule 2 Reference	**Description**
A1	adhesives manufacturing or whole sale bulk storage

SCHEDULE 1
Site Profile

(Version 3.1)

IV	AREAS OF POTENTIAL CONCERN		
	Is there currently or to the best of your knowledge has there previously been on the site any (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	Petroleum, solvent or other polluting substance spills to the environment greater than 100 litres?		X
B.	Residue left after removal of piled materials such as chemicals, coal, ore, smelter slag, air quality control system baghouse dust?		X
C.	Discarded barrels, drums or tanks?		X
D.	Contamination resulting from migration of substances from other properties?		X
V	**FILL MATERIALS**		
	Is there currently or to the best of your knowledge has there previously been on the site any deposit of (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	Fill dirt, soil, gravel, sand or like materials from a contaminated site or from a source used for any of the activities listed under Schedule 2?		X
B.	Discarded or waste granular materials such as sand blasting grit, asphalt paving or roofing material, spent foundry casting sands, mine ore, waste rock or float?		X
C.	Dredged sediments, or sediments and debris materials originating from locations adjacent to foreshore industrial activities, or municipal sanitary or stormwater discharges?		X
VI	**WASTE DISPOSAL**		
	Is there currently or to the best of your knowledge has there previously been on the site any landfilling, deposit or dumping of the following materials (please mark the appropriate column opposite the question):	**YES**	**NO**
A.	Materials such as household garbage, mixed municipal refuse, or demolition debris?		X
B.	Waste or byproducts such as tank bottoms, residues, sludge, or flocculation precipitates from industrial processes or wastewater treatment?		X
C.	Waste products from smelting or mining activities, such as smelter slag, mine tailings, or cull materials from coal processing?		X
D.	Waste products from natural gas and oil well drilling activities, such as drilling fluids and muds?		X
E.	Waste products from photographic developing or finishing laboratories; asphalt tar manufacturing; boilers, incinerators or other thermal facilities (e.g. ash); appliance, small equipment or engine repair or salvage; dry cleaning operations (e.g. solvents); or automobile and truck parts cleaning or repair?		X

SCHEDULE 1
Site Profile

(Version 3.1)

VII	TANKS OR CONTAINERS USED OR STORED		
	Are there currently or to the best of your knowledge have there been previously on the site any (please mark the appropriate column opposite the question)**:**	**YES**	**NO**
A.	Underground fuel or chemical storage tanks?	X	
B.	Above ground fuel or chemical storage tanks?	X	

VIII	SPECIAL (HAZARDOUS) WASTES OR SUBSTANCES		
	Are there currently or to the best of your knowledge have there been previously on the site any (please mark the appropriate column opposite the question)**:**	**YES**	**NO**
A.	PCB-containing electrical transformers or capacitors either at grade, attached above ground to poles, located within buildings, or stored?		X
B.	Waste asbestos or asbestos containing materials such as pipe wrapping, blown-in insulation or panelling buried?	X	
C.	Paints, solvents, mineral spirits or waste pest control products or pest control product containers stored in volumes greater than 205 litres?		X

IX	LEGAL OR REGULATORY ACTIONS OR CONSTRAINTS		
	To the best of your knowledge are there currently any of the following pertaining to the site (please mark the appropriate column opposite the question)**:**	**YES**	**NO**
A.	Government orders or other notifications pertaining to environmental conditions or quality of soil, water, groundwater or other environmental media?		X
B.	Liens to recover costs, restrictive covenants on land use, or other charges or encumbrances, stemming from contaminants or wastes remaining onsite or from other environmental conditions?		X
C.	Government notifications relating to past or recurring environmental violations at the site or any facility located on the site?		X

X ADDITIONAL COMMENTS AND EXPLANATIONS

(Note 1: Please list any past or present government orders, permits, approvals, certificates and notifications pertaining to the environmental condition, use or quality of soil, surface water, groundwater or biota at the site.

Note 2: If completed by a consultant, receiver or trustee, please indicate the type and degree of access to information used to complete this site profile. Attach extra pages, if necessary):

site plan included, asbestos survey included

SCHEDULE 1
Site Profile

(Version 3.1)

XI SIGNATURES	
The person completing the site profile states that the above information is true based on the person's current knowledge as of the date completed.	
Signature of person completing site profile	**Date completed: (YY-MM-DD)** 07-07-11

XII OFFICIAL USE

Local Authority

Reason For Submission *(Please check one or more of the following)*

Subdivision Application ☐ **Zoning Application** ☐ **Development Permit** ☐ **Variance Permit** ☐ **Soil Removal** ☐ **Demolition Permit** ☒

Date received:	Local Government contact : Name_____ Agency_____ Address_____ _____ Telephone _____ Fax_____	Date Submitted to Site Registrar:	Date forwarded to Director of Waste Management:

Director of Waste Management

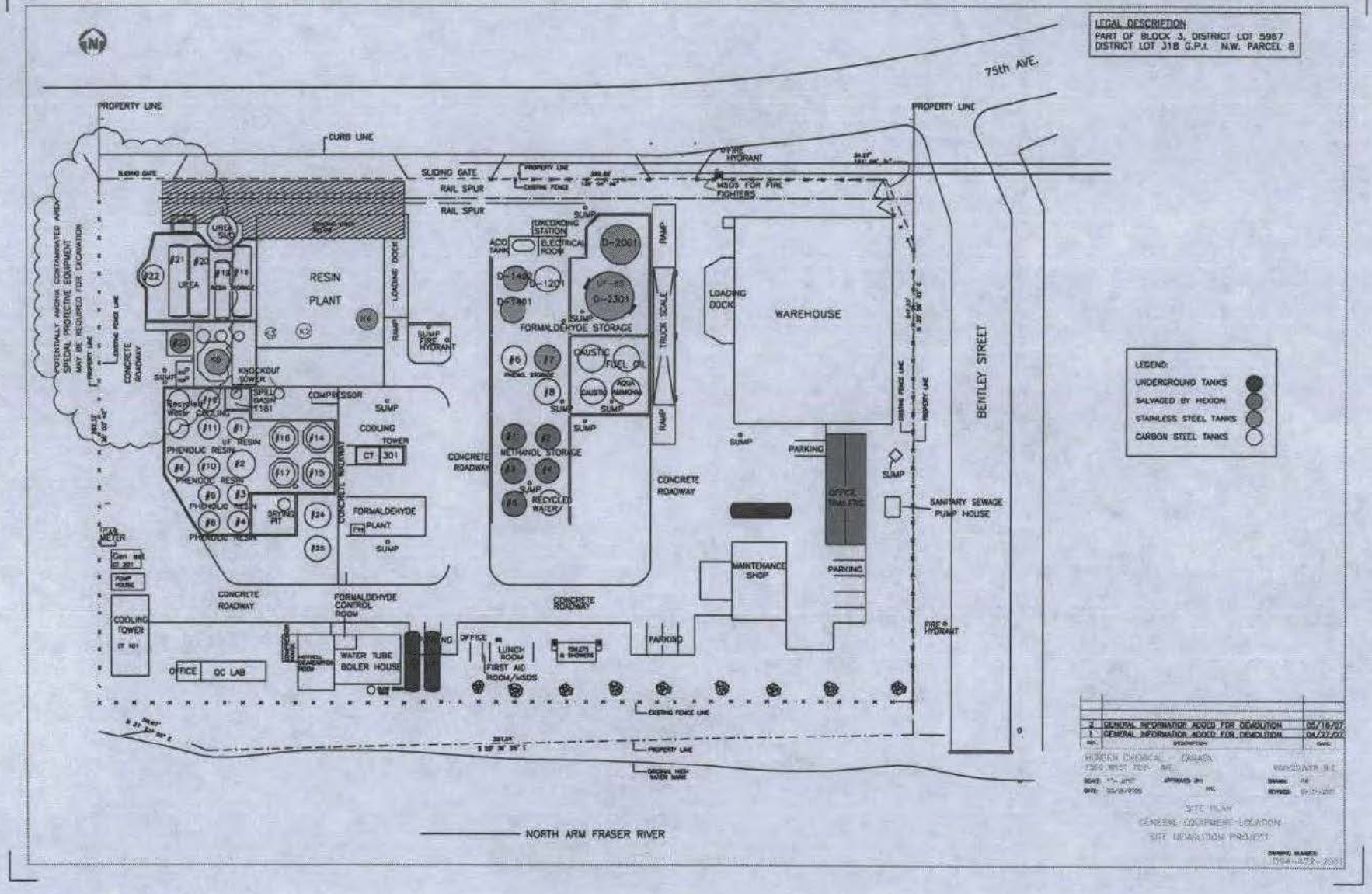
Reason For Submission *(Please check one or more of the following)*

Under Order ☐ **Site Decommissioning** ☐ **Foreclosure** ☐

Date received:	Assessed by: Name_____ Region_____ Telephone _____ Fax_____ If site profile entered, SITE ID #_____	Investigation Required? **YES NO**	Decision date:

Site Registrar

Date received:	Entered onto Site Registry by:	SITE ID #:	Entry date:



Asbestos Mechanical Insulation Inventory
Borden Chemical, Vancouver

Area of Plant: Dry Production Building

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
951215-53 951215-54	South East Corner – Mechanical Room	Pipe Lagging and Elbow Insulation	Chrysotile 50-90%	~ 200 Lineal Feet	
0324-1	South Wall – Office Areas	Pipe Lagging and Elbow Insulation	Chrysotile 10-20%	~ 40 Lineal Feet	
0324-2	North Side of Warehouse	Pipe Elbow Insulation	Chrysotile 60-70%	~ 12 Pipe Elbows and 2 End Caps	
0324-3	South West Corner – Building Exterior	Pipe Insulation Jacket	Chrysotile 60-70%	~ 40 Lineal Feet	
951215-52	Blending Area	Pipe Insulation	No Asbestos Detected		
951215-51	Dry Production Building	Pipe Insulation	No Asbestos Detected		

Area of Plant: Formaldehyde Tank Farm

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
Not Sampled	West of D1201 Tank	Pipe Lagging and Elbow Insulation	Labeled Asbestos	~ 50 Lineal Feet	Asbestos material is concealed
951215-46	West of D1201 Tank	Pipe Elbow Insulation	Chrysotile 1-10%	Unknown	
951215-48	Tank Farm at Walkway	Pipe Insulation	Amosite 50-70%		
0324-4	East side of Tank D230 – Vertical Pipe	Pipe Lagging Insulation	No Asbestos Detected		
0324-5	South of Tank D1201	Pipe Lagging Insulation (Black)	No Asbestos Detected		
0324-6	West of Tank D1201	Pipe Lagging Insulation	No Asbestos Detected		
0324-7	Underneath Catwalk	Pipe Lagging Insulation	No Asbestos Detected		
9767-4	Storage	Light Weave Wrap	No Asbestos Detected		
9767-1	Tank #3	Pipe Elbow Insulation	No Asbestos Detected		
0509-1	Middle of Tank Farm	Pipe Lagging	No Asbestos Detected		

THEODOR STERLING ASSOCIATES

Area of Plant: Phenol Tank Storage

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-8	Between Tank 6 & 7 at Ground Level	Pipe Lagging Insulation	Amosite 50-60%	~ 50 Lineal Feet	Metal jacket has slotted screws and runs North to South and runs vertical at South end.
Not Sampled	Between Tank 7 & 9 under Catwalk	Pipe Lagging Insulation	Amosite 50-60%	~ 30 Lineal Feet	Labeled
Not Sampled	South End of Phenol Storage	Pipe Lagging Insulation	Amosite 50-60%	~ 30 Lineal Feet	Vertical section
Tank 6	Tank #6	Upper Fitting	Chrysotile 1-10 %		Top Section of tank
Tank 7	Tank 7	Upper fitting	No Asbestos Detected		Top Section of tank
Tank 9	Tank 9	Upper fitting	Amosite 1-20 %		
Tank 1201	Tank 1201	Upper fitting	No Asbestos Detected		

Area of Plant: Methanol Tank Farm

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
9767-7	Cond Pipe	Canvas	Chrysotile 1-10%	Unknown	
951215-44	North East Corner	Pipe Lagging Insulation	Chrysotile 1-10%	Unknown	

Area of Plant: Raw Material Tank Farm

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
951215-47	Tank Farm	Pipe Insulation	No Asbestos Detected		
951215-45	Tank Farm	Pipe Insulation	No Asbestos Detected		

THEODOR STERLING ASSOCIATES

Area of Plant: Urea Resin Storage / Railcar Storage

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-17	East Side of Tank Storage at Pipe Elbows (North and South Ends)	Textile	Chrysotile 90-95%	~ 3 Lineal Feet	Only ~ 3 feet visible and expected to extend under fiberglass insulation

Area of Plant: Resin Building: Level 1

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
9767-20 9767-21 9767-22	Cold Room Walls	Spray insulation	Chrysotile 1-20%	~ 4000 square feet	Spray insulation is encapsulated with foam insulation
950222-2 950222-4 950222-7	South East Corner – Steam Main Line	Pipe Elbows and Couplings Insulation	Chrysotile 50-60%	~ 30 elbows	
950222-9	South East Corner – Water Main Line	Couplings Insulation	Chrysotile 50-60%		
950222-1	South East Corner – Steam Main	Insulation	No Asbestos Detected		
950222-3	South East Corner – Condensate Rtn	Insulation	No Asbestos Detected		
950222-5	South East Corner – Water Main	Pipe Lagging Insulation	No Asbestos Detected		
950222-6	South East Corner – Steam Main	Insulation	No Asbestos Detected		
950222-8	South East Corner – Steam Main	Insulation	No Asbestos Detected		
950222-10	South East Corner – Steam Main	Insulation	No Asbestos Detected		
950222-11	South East Corner – Water Main	Pipe Lagging Insulation	No Asbestos Detected		
950222-12	South East Corner – Steam Main Riser	Insulation	No Asbestos Detected		
950222-13	South East Corner – Steam Main Joint	Insulation	No Asbestos Detected		
950222-14	South East Corner – Steam	Tapered End	No Asbestos Detected		
9767-17	Resin Bldg	Canvas	No Asbestos Detected		

Area of Plant: Resin Building: Level 2

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-9	West side Adjacent to Man Door	Textile painted Red	Chrysotile 90-95%	~ 3 Lineal Feet	Only 3 feet visible and expected to extend under fiberglass insulation
401280019	Exterior Perimeter Walls	Transite Panels	Chrysotile 20-40%		
950424-22	Stairway – Caustic Pipe	Pipe Insulation	No Asbestos Detected		

Area of Plant: Resin Building: Level 3

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
Same as 0324-9	West side Adjacent to Man Door	Textile painted Red	Chrysotile 90-95%	~ 3 Lineal Feet	Only ~ 3 feet visible and expected to extend under fiberglass insulation
Not Sampled	Exterior Perimeter Walls	Transite Panels	Chrysotile 20-40%		
950424-23	Caustic Weight Tank	Insulation	No Asbestos Detected		
950424-24	HCHO Weight Tank	Insulation	No Asbestos Detected		

Area of Plant: K4

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
V70380-1	K4 Insulation Back Side	Insulation	Chrysotile 10-30%		
711200214	K4 Insulation Back Side	Insulation	Chrysotile 10-30%		
711200215	K4 Insulation Back Side	Insulation	Amosite 30-50%		
V70380-2	K4	Mud	No Asbestos Detected		
711200216	K4	Mud	No Asbestos Detected		
Tank K4	K4	Insulation top of tank	No Asbestos Detected		

Area of Plant: K5

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
401280017	2nd Floor	Pipe Elbow Insulation	Chrysotile 20-40%	~ 7 Elbows	
401280018	West Exterior Wall	Transite Panels	Chrysotile 20-40%		

Area of Plant: K2

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
K2	K4	Insulation top of tank	No Asbestos Detected		

Area of Plant: Moyno Pump Room

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-15	Ground Level – Heater Unit	Pipe Elbow Insulation	No Asbestos Detected		
0324-16	Ground Level – South Side Above Man Door	Pipe Elbow Insulation	No Asbestos Detected		
950425-25	Ground Level	Pipe Elbow Insulation	No Asbestos Detected		
950425-26	Ground Level	Pipe Elbow Insulation	No Asbestos Detected		
950425-27	Ground Level	Pipe Elbow Insulation	No Asbestos Detected		
950425-28	Ground Level	Pipe Elbow Insulation	No Asbestos Detected		

Area of Plant: South Over Head Pipe Run Over Road Way

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
Not Sampled	Pipe Run from Methanol Tank Storage to Southeast Corner of Resin Building	Pipe Lagging Insulation	Labeled Asbestos	~ 100 Lineal Feet	Asbestos insulation is concealed by new insulation

THEODOR STERLING ASSOCIATES

Area of Plant: Between Resin and K5 Buildings

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
Not Sampled	Between Resin and K5 Buildings (Exterior)	***Possible*** Asbestos Pipe Lagging and Elbow Insulation	Suspected	~ 15 Elbows	Area not inspected due to limited access

Area of Plant: Formaldehyde Plant

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-10	West Side South of Reactor Tank, 8 Feet Above Grade	Pipe Elbow Insulation	Chrysotile 10-20%	~ 12 Elbows	
404190039	Vaporizer Bottom	Insulation	No Asbestos Detected		
404190040	Vaporizer Top	Insulation	No Asbestos Detected		
404190041	Pre-Heater	Insulation	No Asbestos Detected		
9957-4	At Reactor	Insulation	No Asbestos Detected		
9957-5	Steal Drum	Insulation	No Asbestos Detected		
9957-6	2nd Level	Pipe Elbow Insulation	No Asbestos Detected		
9767-12	East Side	Pipe Elbow Insulation	No Asbestos Detected		
9767-13	West Side	Pipe Elbow Insulation	No Asbestos Detected		
9767-14	Boiler Drum	Insulation	No Asbestos Detected		
9767-15	Under Reactor	Insulation	No Asbestos Detected		
9767-16	Still Heat Exchanger	Insulation	No Asbestos Detected		
950424-29	W.H. Boiler	Insulation	No Asbestos Detected		
950424-30	W.H. Boiler Top Side	Insulation	No Asbestos Detected		
950424-31	Formaldehyde Plant	Pipe Elbow Insulation	No Asbestos Detected		
950424-32	Steam Drum	Insulation	No Asbestos Detected		
950424-33	Formaldehyde Plant	Pipe Elbow Insulation	No Asbestos Detected		
0324-12	West of Vaporizer Tank	12" Blue Pipe Elbow Insulation	No Asbestos Detected		
0324-13	Ground Level - East of Re-Boiler	12" Grey Pipe Elbow Insulation	No Asbestos Detected		
V70314-1	Steal Drum	Insulation	No Asbestos Detected		
V70314-2	Reactor / W.H. Boiler	Insulation	No Asbestos Detected		
V70314-3	Reactor / W.H. Boiler	Mud	No Asbestos Detected		

Area of Plant: Phenolic Resin Tank Farm

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
0324-14	South West Corner of Cooler 12 Tank	Pipe Elbow Insulation with Black Weave	No Asbestos Detected		

Area of Plant: Boiler House

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
404190042	North Exterior Wall	Transite Panels	Chrysotile 30-50%		
9767-8	South East Corner	Pipe Elbow Insulation	No Asbestos Detected		
9767-9	South West Corner	Pipe Elbow Insulation	No Asbestos Detected		
9767-10	South Side	Pipe Elbow Insulation	No Asbestos Detected		
9957-2	Condensate Pipe	Insulation	No Asbestos Detected		
9957-3	South East Corner	Pipe Elbow Insulation	No Asbestos Detected		
951215-43	Ext Water Line	Pipe Elbow Insulation	No Asbestos Detected		

Area of Plant: Cooling Towers

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
--	Large Cooling Tower	Transite Panels	Chrysotile 70-90%		
--	Small Cooling Tower	Transite Panels	Chrysotile 30-50%		

Area of Plant: Clayton Room

Sample #	Location	Material	Test Results	Estimated Quantity	Notes
950424-34	Clayton Room	Pipe Elbow Insulation	No Asbestos Detected		
950424-35	Clayton Room	Pipe Elbow Insulation	No Asbestos Detected		

THEODOR STERLING ASSOCIATES