WASHINGTON STATE DEPARTMENT OF ECOLOGY

Southwest Regional Office
Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775
360-407-6240

TRANSMITTAL MEMO

Date: March 4, 2013

TO: Mr. James M. Kinane
Quality Assurance Manager
Tetra Pak Materials LP

RE: Tetra Pak
SW0377

Subject: Explanation of Timeline

NOTE: **The determination date is the date Ecology approved the No Further Action status for the site. Final payment, EIM Data submission, once received, the NFA letter was released.**

Ecology Determination date: December 27, 2012

Email Customer Notification: December 27, 2012

Payment received date: March 4, 2013

EIM Data successfully uploaded: March 4, 2013

Ecology Determination letter mailed/sent: April 23, 2013

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 27, 2012

Mr. James M. Kinane
Quality Assurance Manager
Tetra Pak Materials LP
1616 West 31st Street
Vancouver, WA 98660

Re: No Further Action at the following Site:

- **Site Name:** Tetra Pak
- **Site Address:** 3125 Thompson Avenue, Vancouver
- **Facility/Site No.:** 34822454
- **Cleanup Site ID No.:** 2615
- **VCP Project No.:** SW0377

Dear Mr. Kinane:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Tetra Pak facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The Site encompasses a single tax parcel (Clark County Parcel #50000). This parcel is one of multiple parcels that make up the Tetra Pak facility. Prior to 1974, the Site was undeveloped rural land and was owned by the former Burlington Northern Railroad, now the BNSF Railway Company. Roberts Consolidated Industries constructed a facility on the Site in 1974 to formulate wood treatment products, and subsequently closed their facility in March 1986. The Site was transferred to Beecham Home Improvement Products in 1986, and to Strebor Incorporated in late 1987. Tetra Pak purchased the Site in 1989. Tetra Pak manufactures, prints on, and stores beverage containers made from paper products (milk and juice cartons) at their main facility located adjacent to the east of the Site. The 14,000-square-foot building located on Site is currently known as the West Warehouse Building and is used by Tetra Pak for office space, maintenance activities, and certain photolithographic (label making) processes.

Until 1986, Site operations consisted primarily of receiving raw material, and mixing, packaging, and storing of wood-treating solutions, consisting of 91 % naphtha, 6.4 % water repellents and inert material, approximately 2 % pentachlorophenol (PCP), 0.2 % other chlorinated phenols, and 0.3 % bis-tri-butyltin oxide. Raw material was delivered to the Site by trucks, tanker trucks, and rail tanker cars. A former railroad spur on the east side of the building was primarily used for receiving bulk shipments of petroleum hydrocarbon-based raw materials such as naphtha and mineral spirits used as carriers for the wood preservatives.

- **Former Tank Farm:** This area was located outside the former mixing room on the north side of the building *(see attached Figure 2)*. In this area, eleven 10,000-gallon USTs were used to store product and raw materials. The USTs were removed in February 1986. This area is elevated approximately 3 feet above the adjacent railroad spur and paved driveway entrance and parking area. This area is paved and is currently used for temporary storage of pallets, miscellaneous equipment, and employee parking. Shallow (1 to 2 feet bgs) soil samples collected from the tank farm area in 1985 contained PCP ranging in concentration from 3.6 to 35.3 mg/kg.

- **Former Rail Spur:** A rail spur on the east side of the building was formerly used for receiving bulk shipments of petroleum-hydrocarbon-based raw materials such as naphtha and mineral spirits. The rail spur and associated contaminated soil was removed in September 2006. Analytical results of confirmation soil samples, as well as samples from subsequent soil borings, indicated the presence of residual dioxin ranging in concentration from 14.76 to 597.57 nanograms per kilogram (ng/kg). The MTCA Method B cleanup level for dioxin in soil (based on protection of direct contact) is 11 ng/kg.

- **Catchbasins (Dry Wells):** There are four stormwater catchbasins located on the west side of the building in a paved parking area. These catchbasins are connected to individual dry wells located adjacent to each catchbasin. Some historical spills reportedly flowed into the catchbasins. Soil samples collected in 2002 from a boring advanced next to the catchbasin closest to the tank farm detected dioxin at 64.8 and 5.5 ng/kg at 20 and 23 feet bgs, respectively.

A total of eight monitoring wells are located on Site. Groundwater data collected in 2002 and 2003 identified concentrations of PCP ranging from 1.48 to 7.58 micrograms per liter (µg/L). The current MTCA Method B cleanup level for PCP in groundwater is 0.22 µg/L. Other contaminants detected in groundwater include tetrachloroethylene (PCE) and trichloroethylene (TCE). PCE was historically detected in MW-3 (6 µg/L) and MW-5 (11 µg/L), and TCE was historically detected in MW-3 (up to 8.7 µg/L), MW-5 (up to 26 µg/L), and MW-6 (up to 9.69 µg/L). The MTCA Method A cleanup level for both PCE and TCE is 5 µg/L.

There are no indications that PCE or TCE have been used at the Site and the on-Site detections were likely from an off-Site source. These compounds and concentration levels were similar to those seen in off-Site wells installed for the investigation of the nearby Cadet Manufacturing Company PCE/TCE plume. Regardless, subsequent monitoring of groundwater from these wells has seen a drop in concentration of PCE and TCE to below cleanup levels, and they are no longer considered contaminants of concern.

In 1986, the USTs in the tank farm were removed. Some contaminated soil was reportedly also removed from the former tank farm and clean soil was used to backfill the excavation although there is no specific documentation of soil removal activities. The other two USTs beneath the building were decommissioned in place by rinsing with mineral spirits and filling with a cement grout, and remain beneath the floor of the former mixing room in the on-Site building.

In October 2002, Kennedy/Jenks contracted with West Coast Marine Cleaning to remove and properly dispose of the contaminated sediment materials from each of the four on-Site catchbasins.

In September 2006, the rail spur was removed from the Site. An estimated 104 tons of soil and debris were transported off Site to the Hillsboro Landfill in Hillsboro, Oregon for disposal. Four confirmation soil samples were collected from the excavation for analysis for dioxin. Dioxin exceeded the MTCA Method B cleanup level in all four confirmation soil samples at concentrations ranging from 14.22 to 597.57 ng/kg. No additional soil was removed.

Soil sampling in May 2008 delineated the extent of residual dioxin in soil in the former rail spur area. In February 2011, an engineered asphalt cap was placed over the former rail spur area, covering areas where dioxin-impacted soils are present and preventing exposure to the soil via direct contact *(see Attachment C of Enclosure B)*. While the cap is also likely to prevent leaching to groundwater, dioxin has not been detected in groundwater beneath the Site to date, nor is it expected to impact groundwater given its low solubility.

In August 2012, an environmental covenant *(attached as Enclosure B)* was filed with Clark County for the Site documenting the use of institutional controls for the soil containing PCP below the floor of the former mixing room in the on-Site building, as well as soil containing dioxin beneath the asphalt cap in the former rail spur area. Although PCP has not been present in groundwater since 2010 *(see attached Table 2)*, groundwater monitoring on an 18-month frequency is required as part of the institutional controls.

Post-Cleanup Controls and Monitoring

Post-cleanup controls and monitoring are remedial actions performed after the cleanup to maintain compliance with cleanup standards. This opinion is dependent on the continued performance and effectiveness of the following:

Listing of the Site

Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.

That process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Enclosure A

Description and Diagrams of the Site

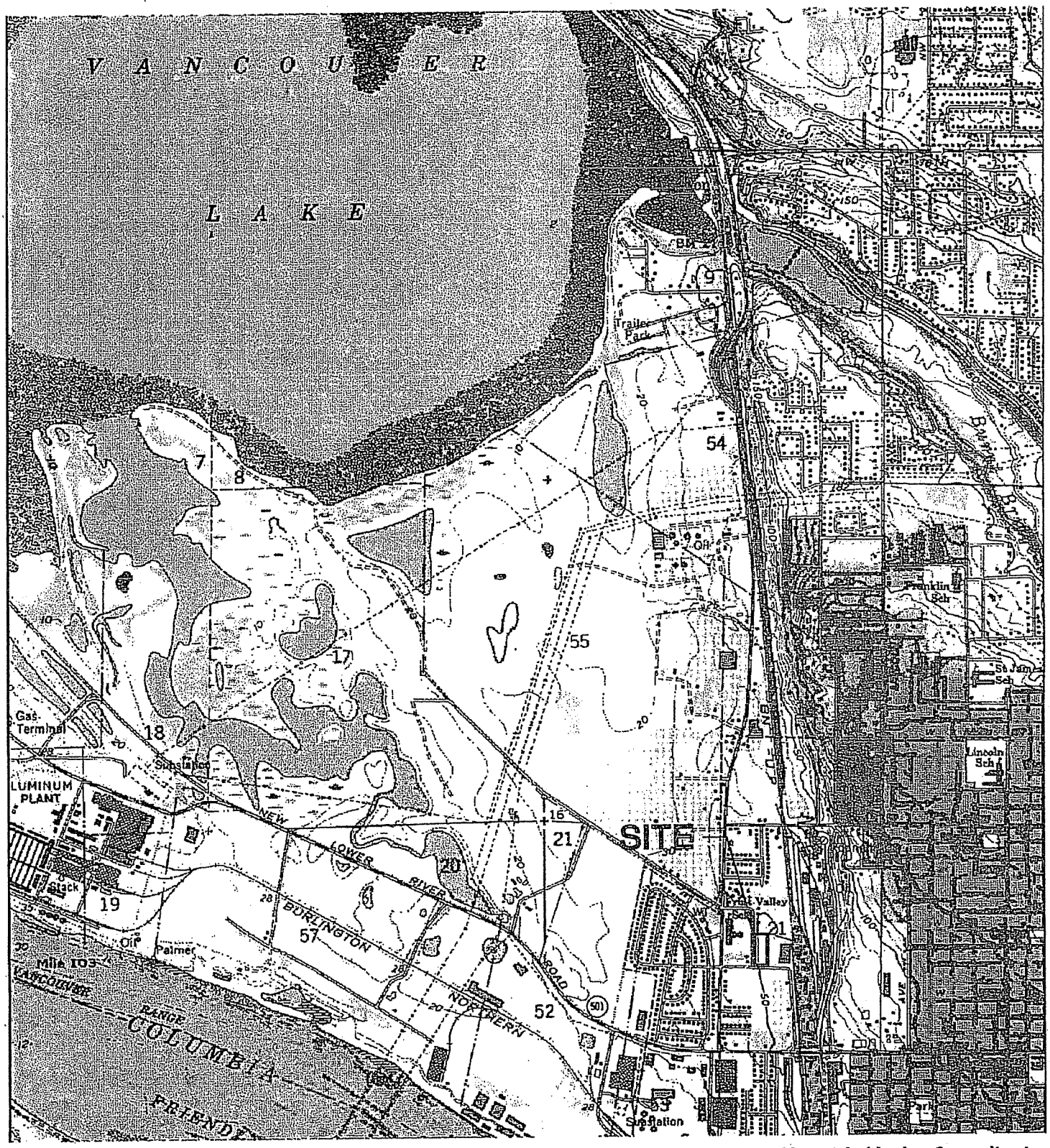
Site Description

The Tetra Pak site is located at 3125 Thompson Avenue in Vancouver, Clark County, Washington. The site is located on 3.7 acres in the Vancouver Lake/Columbia River lowland area about 0.25 miles north of the Port of Vancouver property and Cadet Manufacturing Company site, and about 1 mile north of the Columbia River. The site topography is flat, and the area not covered with buildings is comprised of grassy areas or parking areas paved with asphalt. There are four stormwater catchbasins located on the west side of the building in a paved parking area. These catchbasins are connected to individual dry wells located adjacent to the catchbasin.

Hydrogeologic data has been collected throughout the investigative history of the site. Bay West, Inc. reported that there is a west-northwesterly flow direction with a relatively flat gradient of 0.00026 to 0.00019 feet/feet when monitoring was done in June 1988. Kennedy/Jenks Consultants reported that groundwater levels varied from 38 to 50 feet below ground surface (bgs) between February 2002 and February 2003 and that the groundwater flow direction was to the southeast/south-southeast during February, March, and April 2002; to the north-northwest during May and August 2002; and to the west-southwest during November 2002 and February 2003.

An evaluation by Ecology of the water level data generally confirms the northwesterly groundwater flow during June to November and southwesterly and south during February to April. In two of the nine groundwater level monitoring events (May 2002 and February 2003) the groundwater flow direction could not be determined from the water level data. For those two months, the groundwater flow is split at the site with flow in northwesterly and southeasterly directions.

Kennedy/Jenks indicated that a flat gradient of about 0.0002 feet/feet existed. The flat gradient is confirmed by extensive work done at the nearby Port of Vancouver, ST Services, and Cadet Manufacturing sites. Interpretation of groundwater flow direction at these sites is difficult because of the very flat gradient and cyclic changes in water levels from tidal fluctuations in the Columbia River. Water level data indicates the tidal effect becomes more dampened with increased distance from the Columbia River. Tidal influence on groundwater levels at the Tetra Pak site is suspected although data was not furnished to indicate that there is a tidal influence.



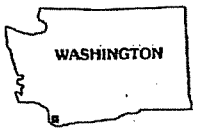
Kennedy/Jenks Consultants

TETRA PAK
FORMER STREBOR SITE

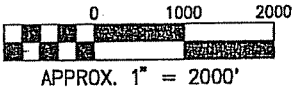
VICINITY MAP

K/J 016066.11/P01SK001

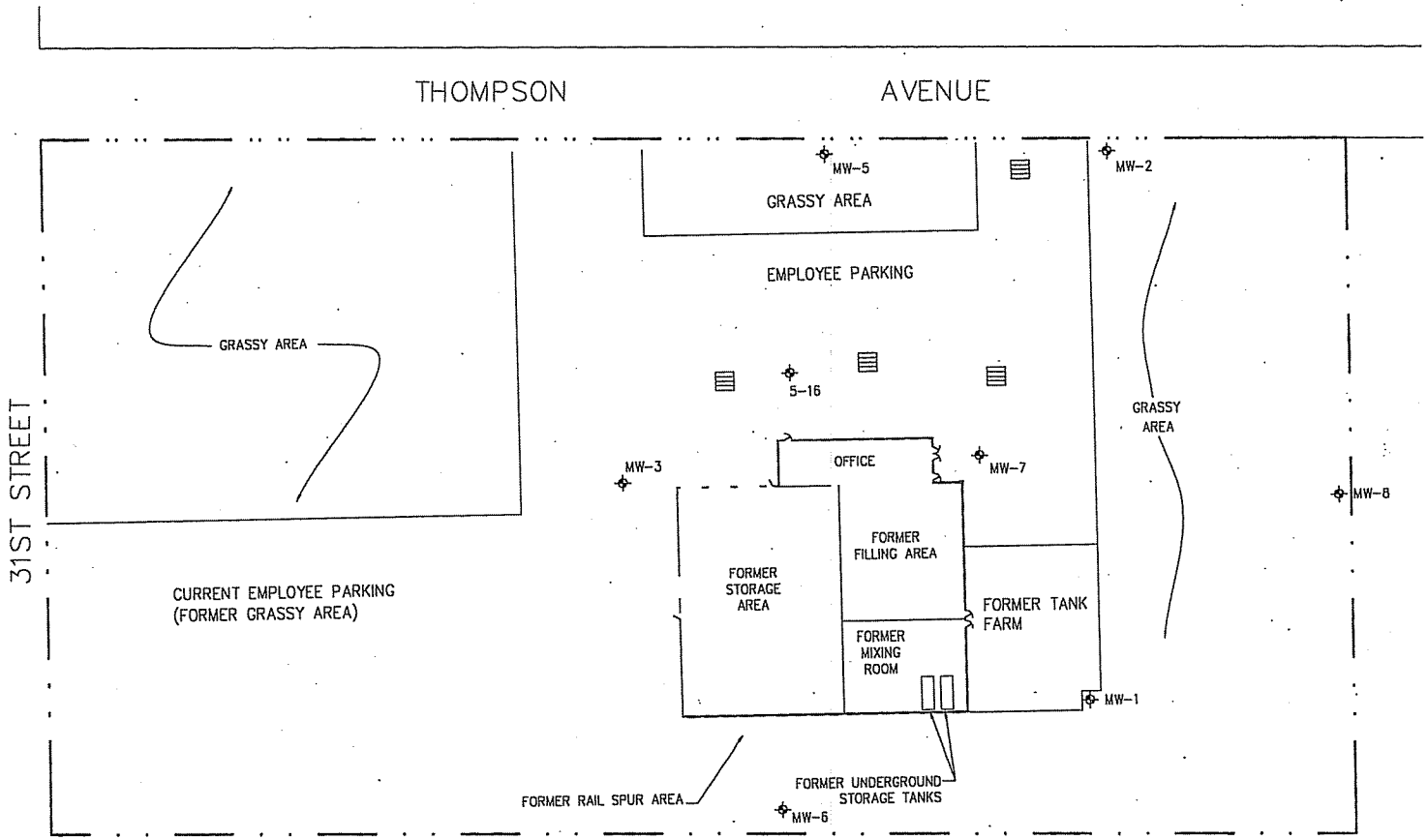
FIGURE 1



QUADRANGLE LOCATION



APPROX. 1" = 2000'



LEGEND

MW-1 MONITORING WELL LOCATION

STORMWATER CATCH BASIN

APPROXIMATE SITE BOUNDARY

NOTE:
ALL LOCATIONS APPROXIMATE.

N

0 25 50

APPROX. 1" = 50'

REFERENCE: SITE PLAN PROVIDED BY TETRA PAK

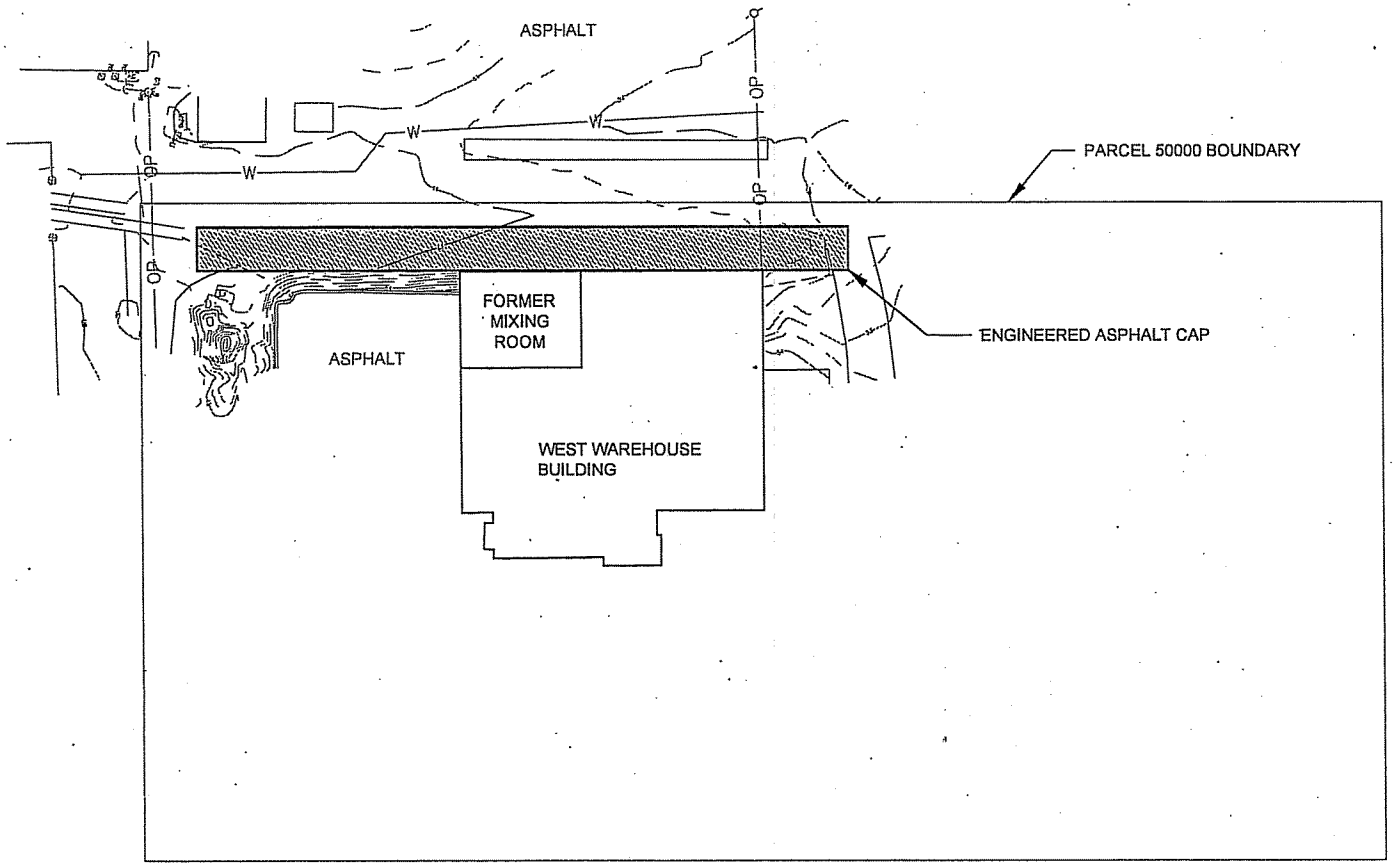
Kennedy/Jenks Consultants

TETRA PAK
FORMER STREBOR SITE

MONITORING WELL LOCATIONS

K/J 016066.11/P02SK003

FIGURE 2



0 25 50

APPROXIMATE SCALE IN FEET

Kennedy/Jenks Consultants

TETRA PAK MATERIALS LF
VANCOUVER, WASHINGTOI

PROPERTY MAP SHOWING
WEST WAREHOUSE AND CAPPED AREA

016066.1
SEPTEMBER 201

FIGURE

P:\cad\01\016063.11\Paving_May2010\Figures\016066.11_Fig_1.dwg STAN LASSELLE 2/16/2012 10:02 AM

Table 2: Summary of SVOC Groundwater Analytical Results

Monitoring Well Number	Date Sampled	Semivolatile Organic Compounds (mg/l)[a,b] Pentachlorophenol	2,3,4,6 Tetrachlorophenol	2,3,5,6 Tetrachlorophenol	2,4,5 Trichlorophenol	2,4,6 Trichlorophenol
MW-1	04/19/02	<0.8[c]	NA[d]	NA	NA	NA
	08/21/02	1.48	NA	NA	<0.8	<0.8
	11/19/02	1.67	NA	NA	<1.6	<1.6
	02/25/03	<0.19	NA	NA	<0.19	<0.19
	07/06/06	1.2	<0.10	0.078 J[e]	<0.051	<0.083
	12/28/06	0.68	0.033 J	0.044 J	<0.0083	<0.0097
	01/06/09	<0.33	<0.33	<0.19	<0.19	<0.29
	04/28/09	<0.36	<0.36	<0.20	<0.20	<0.30
	07/13/10	0.78 B / 1.3 B[f]	0.046 J / 0.071 J	0.019 J / 0.034 J	<0.0094 / <0.010	<0.013 / <0.014
	03/19/12	<0.943	<0.377	<0.377	<0.472	<0.472
MW-2	04/18/02	<0.8	NA	NA	NA	NA
	08/21/02	<0.8	NA	NA	<0.8	<0.8
	11/19/02	<0.8	NA	NA	<0.8	<0.8
	02/25/03	<0.19	NA	NA	<0.19	<0.19
	07/06/06	<0.11	<0.11	<0.056	<0.055	<0.089
	12/28/06	0.15 J	<0.0089	<0.019	<0.0091	<0.011
	01/06/09	<0.33	<0.33	<0.19	<0.19	<0.29
	07/13/10	0.055 J B	<0.0083	<0.012	<0.0096	<0.014
	03/19/12	<0.935	<0.374	<0.374	<0.467	<0.467
MW-3	04/18/02	<0.8	NA	NA	NA	NA
	08/20/02	<0.8	NA	NA	<0.8	<0.8
	11/18/02	<0.8	NA	NA	<1.6	<1.6
	02/24/03	0.254	NA	NA	<0.189	<0.189
	07/06/06	<0.11	<0.11	<0.055	<0.054	<0.087
	12/28/06	0.13 J	<0.0081	<0.018	<0.0083	<0.0098
	01/06/09	<0.34	<0.34	<0.19	<0.19	<0.29
	07/13/10	<0.011	<0.0083	<0.012	<0.0096	<0.014
	03/19/12	<0.943	<0.377	<0.377	<0.472	<0.472
MW-5	04/19/02	<0.8	NA	NA	NA	NA
	08/21/02	<0.8	NA	NA	<0.8	<0.8
	11/19/02	<0.8	NA	NA	<1.6	<1.6
	02/25/03	<0.189	NA	NA	<0.189	<0.189
	07/06/06	<0.11	<0.11	<0.053	<0.052	<0.083
	12/28/06	<0.013	<0.0081	<0.018	<0.0083	<0.0098
	01/06/09	<0.33	<0.33	<0.19	<0.19	<0.29
	07/13/10	<0.011	<0.0082	<0.012	<0.0094	<0.013
	03/19/12	<0.935/<0.935[f]	<0.374/<0.374	<0.374/<0.374	<0.467/<0.467	<0.467/<0.467

Enclosure B

Environmental Covenant for Institutional Controls

4879836 COV
RecFee - $137.00 Pages: 26 - CHICAGO TITLE INSURANCE
Clark County, WA 08/07/2012 10:22

RETURN ADDRESS
Susan T. Alterman
Kell, Alterman & Runstein, L.L.P.
520 SW Yamhill, Suite 600
Portland, OR 97204

Document Title(s)

Environmental Covenant

W7212

Reference Number(s) of related documents:

None

Grantor(s)

Tetra Pak Materials LP

Grantee(s)

State of Washington, Department of Ecology

Trustee

None

Abbreviated Legal Description:

#69 and #70 David Armstrong DLC 3.14A

Assessor's Property Tax Parcel/Account Number

Tax Parcel 50000

The Auditor/Recorder will rely on the information provided on this form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein. **I am requesting an emergency nonstandard recording for an additional fee as provided in RCW 36.18.010. I understand that the recording process may cover up or otherwise obscure some part of the text of the original document.**

Susan T. Alterman, WSB No. 30623

A remedial action (hereafter "Remedial Action") is ongoing at the Property that is the subject of this Covenant. The Remedial Action is described in the Request for a No further Action Determination and Transmittal of the Draft Environmental Covenant (Kennedy/Jenks Consultants, 2 September 2011).

Although impacted soil was removed and an engineered asphalt cap has been installed over the impacted area or is covered by the west warehouse building, this Covenant is required because residual concentrations of the contaminants of concern (COCs, pentachlorophenol [PCP] and dioxins) remain in place to a limited extent that exceed the Model Toxics Control Act Method B Cleanup Level for soil established under WAC 173-340-745. Although the land use at the Property is zoned commercial/industrial, the Property does not qualify for the use of soil cleanup levels for industrial properties under MTCA, as defined in WAC 173-340-745. In addition, long-term groundwater monitoring has been and is being implemented at the Property to ensure that the implemented Remedial Action remains protective of groundwater. Groundwater is being monitored for PCP (the COC in groundwater, which has only been detected periodically and currently only in concentrations that slightly exceed the MTCA Method B cleanup level) on a schedule consistent with the Ecology-approved Long Term Groundwater Monitoring Plan (Kennedy/Jenks, 9 January 2009), which is included as Attachment B.

Tetra Pak Materials LP makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owner").

Section 1.

1. A portion of the Property contains COC-impacted soil located beneath the area labeled as "Former Mixing Room" on Figure 1 (Attachment C) in the west warehouse building and under an engineered asphalt cap. Figure 1 illustrates the locations of the west warehouse building and the engineered asphalt cap. The Owner shall not alter, modify, or remove the existing west warehouse building or engineered asphalt cap in any manner that may result in

any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Tetra Pak Materials LP

By Tetra Pak Converting GP LLC, Its General Partner

By _____
Brian Kennell
Vice President Finance & CFO

By _____
James E. McClain
Vice President & General Counsel

STATE OF ILLINOIS)
)
COUNTY OF LAKE)

On this 13TH day of MARCH, 2012, I certify that Brian Kennell and James E. McClain personally appeared before me, acknowledged that they are the Vice President Finance & CFO and Vice President & General Counsel, respectively, of the corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument for said corporation.

OFFICIAL SEAL
MARY ELLEN KELLY
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:06/23/12

_____
Notary Public in and for the State of Illinois, residing at INVERNESS, IL.
My appointment expires 6/23/12.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

_____
Rebecca S. Lawson, P.E., LHG
Section Manager
Toxics Cleanup Program
Southwest Regional Office

Dated: 7/23/12

STATE OF WASHINGTON_____
COUNTY OF CLARK_____

Attachment B
Long Term Groundwater Monitoring Plan

Table of Contents

List of Tables

List of Figures

Section 1: Introduction

This document presents the Long Term Groundwater Monitoring Plan (Monitoring Plan) for the former Strebor property (Site) located at 3125 Thompson Avenue in Vancouver, Washington. Investigation and cleanup activities have been conducted at the Site under the Voluntary Cleanup Program (VCP) (VCP No. SW0377) of the Washington State Department of Ecology (Ecology). The Monitoring Plan is required as part of the Restrictive Covenant (RC) proposed for soil and groundwater at the Site, which will be developed after the Monitoring Plan is approved by Ecology.

1.1 Purpose and Objectives

The purpose of long term groundwater monitoring at the Site is to ensure that the implemented remedy (impacted soil removal) remains protective of groundwater. Ecology requires that four quarters of groundwater monitoring be conducted to show that the concentrations of chemicals of concern are below the MTCA Method A (chromium) or B (pentachlorophenol [PCP]) cleanup levels. The first long term groundwater monitoring event will coincide with the third quarter 2008 groundwater monitoring event. Subsequent long term monitoring events will be conducted once every 18 months.

Section 3: Constituents of Concern and Compliance

This section presents a summary of the constituents of concern (COC) in groundwater, cleanup levels, and conditional points of compliance.

3.1 Constituents of Concern

Pentachlorophenol (PCP) is identified as the COC at the site. Low levels (near the laboratory detection limit) of volatile organic compounds (VOCs), including tetrachloroethene (PCE), trichloroethene (TCE), and 1,2-dichloroethene (1,2-DCE) were detected in groundwater samples collected at the Site. These compounds are part of a regional groundwater contamination plume and are not Site COCs.

3.2 Groundwater Cleanup Levels

MTCA Method B cleanup levels for groundwater are appropriate comparison standards for the Site and will be used as the compliance concentrations for the long term groundwater monitoring. The MTCA Method B groundwater cleanup level for PCP is 0.73 micrograms per liter (ug/L) (Ecology 2007). A MTCA Method A cleanup value is established for chromium (50 ug/l) and will be used for comparison for the quarterly monitoring events.

PCP has been occasionally detected in three monitoring wells (MW-1, MW-3, and MW-7) above laboratory detection levels. On three occasions, the PCP concentration was detected in groundwater samples collected from these wells above the cleanup level. Active remediation of PCP in groundwater is impractical since PCP has not been consistently detected and active remedial technologies cannot be effectively employed to remove PCP at sporadic trace concentrations. Therefore, since it is impractical to actively treat groundwater, a combination groundwater use restrictions and monitoring will be employed to address PCP in groundwater. These measures will be described in the restrictive covenant or the Site.

This approach is consistent with MTCA in that the point of compliance with cleanup levels can be established at the site boundary when groundwater remediation is impractical. Since consistent detections of PCP have not been found to date, it is not expected that PCP would migrate beyond the site boundary at detectable concentrations, especially following source control. Ongoing monitoring at the site boundary will provide a mechanism to evaluate whether PCP might migrate offsite above cleanup levels.

3.3 Conditional Points of Compliance

The conditional point of compliance is the point where cleanup levels established for the site are to be achieved. The conditional point of compliance for this Site is the site boundary. The groundwater monitoring wells that are nearest the Site boundary will be used as the conditional points of compliance and include MW-1, MW-2, MW-3, MW-5, MW-6, and MW-8.

Section 4: Groundwater Monitoring Activities

Groundwater samples will be collected as part of the quarterly and long term groundwater monitoring program described in this section. The groundwater monitoring sampling requirements are included as Table 1 of this Work Plan.

4.1 Field Methods

This section presents the methods for obtaining depth-to-water measurements and for obtaining groundwater samples for laboratory analysis.

4.1.1 Water Level Measurement

Prior to groundwater sample collection activities, the depth to water will be measured in each of the groundwater monitoring wells to evaluate the groundwater flow direction and gradient.

4.1.2 Groundwater Sample Collection Methods

Groundwater samples will be collected using a peristaltic pump applying low-flow sampling techniques to reduce the turbidity in the groundwater samples as much as possible. Groundwater field parameters of pH, electrical conductivity, temperature, dissolved oxygen, and redox potential will be measured with a flow-through cell and documented in Kennedy/Jenks field notes. The groundwater sample from each well will be collected after these field parameters have stabilized. Non-dedicated field equipment will be decontaminated prior to sampling each monitoring well. Upon collection, the groundwater samples will be labeled and placed in an insulated cooler chilled with ice for transport to an EPA accredited laboratory under proper chain-of-custody procedures for analysis.

4.2 Groundwater Laboratory Analytical

As requested by Ecology, Table 1 presents a groundwater sampling and analytical method schedule for the short term (quarterly) and long term (18 Month) monitoring. Short term quarterly groundwater sample analysis will include PCP and associated compounds (monitoring well MW-1), total chromium (monitoring well MW-1), halogenated volatile organic compounds (HVOCs), monitoring wells MW-3, MW-5, and MW-6). Analysis for PCP will be conducted using Environmental Protection Agency (EPA) Method 8270C. Total chromium will be analyzed using EPA Method 6020. HVOC analysis will be conducted using EPA Method 8260D.

Analysis conducted on groundwater samples collected in long term sampling events will include PCP. In addition, a groundwater sample will be collected from monitoring well MW-7 for analysis of PCP and dioxins during the initial long term groundwater monitoring event and again in five years. Analysis for dioxins will be conducted using EPA Method 8290.

For quality assurance/quality control (QA/QC) purposes, a field duplicate sample will be collected during each long term groundwater monitoring event. The duplicate will be submitted to the analytical laboratory for analysis of PCP and associated compounds.

Section 5: Reporting

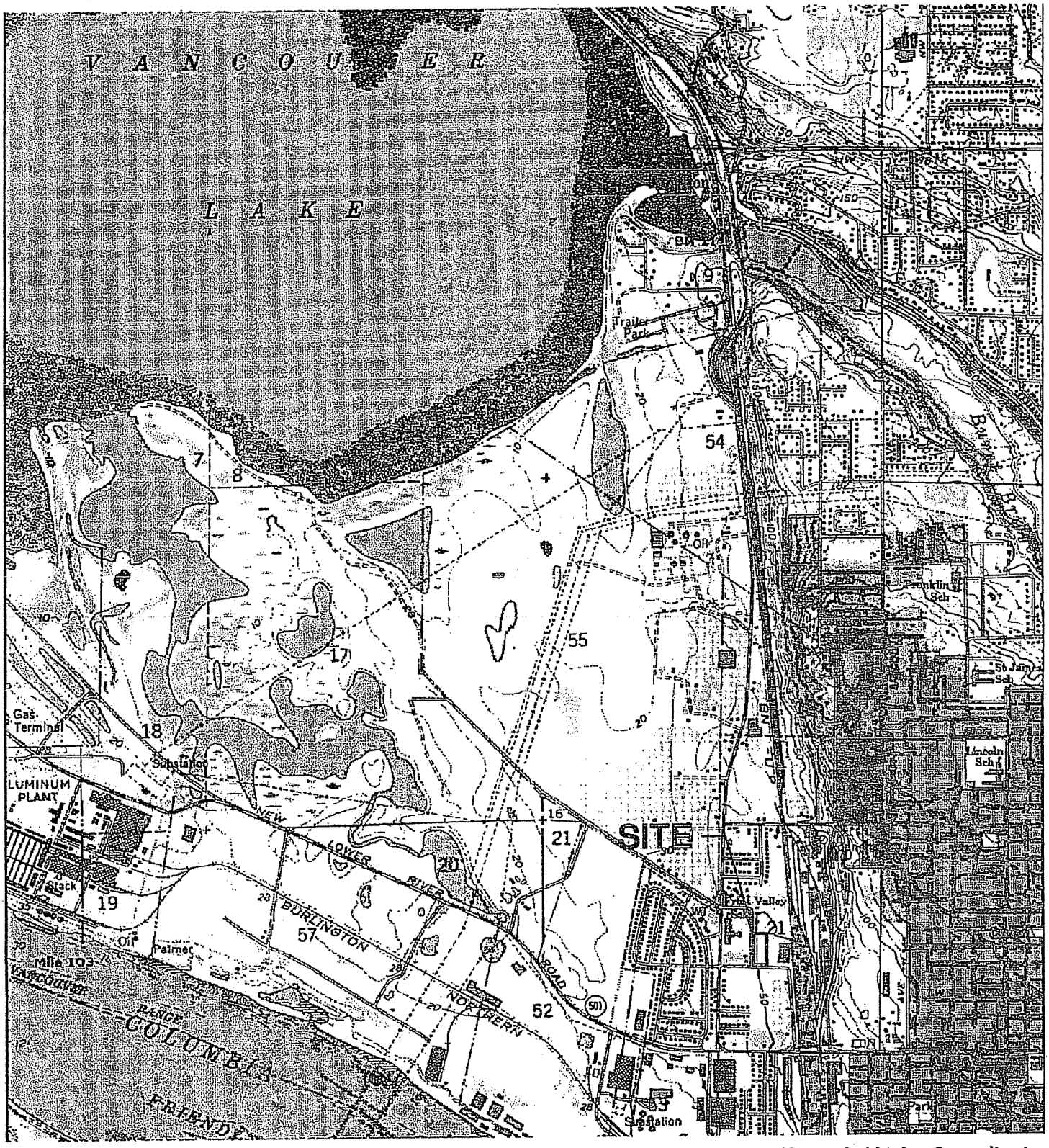
Following completion of the fieldwork and receipt of laboratory analytical data for each monitoring event, Kennedy/Jenks will prepare a groundwater monitoring report for submittal to Ecology. The report will include a summary of field activities, tabulated results, and a Site map showing the locations of each monitoring well. Each report will be submitted to Tetra Pak in draft format for review. The final reports will be submitted to Ecology with incorporated comments from Tetra Pak.

Table

Table 1. Groundwater Sample Schedule and Analytical Parameters

	Laboratory Analysis						
Monitoring Event	Pentachlorophenol[a]	Tetrachlorophenol (2,3,4,6 and 2,3,5,6)[a]	Trichlorophenol (2,4,5 and 2,4,6)[a]	Dioxins/Furans[b]	Total Chromium[c]	Tetrachloroethene[d]	Trichloroethene[d]
Subsequent Long Term Monitoring Events							
MW-1	X	X	X				
MW-2	X	X	X				
MW-3	X	X	X				
MW-5	X	X	X				
MW-6	X	X	X				
MW-7[f]							
MW-8	X	X	X				

(a) Pentachlorophenol, Trichlorophenol, and tetrachlorophenol will be analyzed using Envirinmental Protection Agency (EPA) Method 8270C.
(b) Dioxins/Furans will be analyzed using EPA Method 8290.
(c) Total chromium will be anlayzed using EPA Method 6020.
(d) Tetrachloroethene and trichloroethene will be analyzed using EPA Method 8260D.
(e) "X" = Collected sample will be analyzed for the indicated constituent.
(f) Groundwater samples will be collected from monitoring well MW-7 for analysis for PCP and dioxins/furans once every five years.



Kennedy/Jenks Consultants

WASHINGTON

QUADRANGLE LOCATION

N

0 1000 2000

APPROX. 1" = 2000'

TETRA PAK
FORMER STREBOR SITE

VICINITY MAP

K/J 016066.11/P01SK001

FIGURE 1

Attachment C
Figure 1