Bay West

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

April 7, 1993

Mr. Mark Koplitz
Pollution Control Specialist
Tanks and Spills Section
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

RE: Progress Report - Cargill Molasses Liquid Products
Leak No. 00004526

Dear Mr. Koplitz:

At the request of Cargill Molasses Liquid Products (Cargill), Bay West, Inc. (Bay West) has prepared this letter to summarize the results of the ground water sampling conducted at the Cargill Molasses Liquid Products facility on March 15, 1993. The facility is located within Port Cargill at 12120 Lynn Avenue South in Savage, Minnesota.

BACKGROUND

The facility is located north of the City of Savage, in the NW¼ of the SE¼ of the NE¼ of Section 31, Township 27N, Range 24W of the Bloomington, Minnesota 7.5-minute topographic quadrangle (Figure 1). The site latitude is 45° 47' 15", the longitude is 93° 20' 00". The Minnesota River is immediately to the north and west of the Port Cargill flood control dike. The dike is located approximately 300 feet to the west of the release area.

In September 1991, Cargill personnel noticed sheens on standing rain water near the aboveground fuel oil tank. A leak in either the supply or return line was suspected. These lines run from the fuel oil storage tank, beneath two railroad tracks, to the facility's standby boiler. Excavation activities and subsequent remedial activities are summarized in Bay West's December 19, 1991 report entitled "Subsurface Investigation and Line Excavation, Cargill Molasses Facility, Port Cargill, Savage, Minnesota, LEAK No. 4526."

Approximately 25 cubic yards of contaminated soil were removed and stored on plastic during the excavation of the two trenches. After the lines were exposed, it was found that both lines were corroded with visible pinholes. It was estimated that approximately 50 to 60 gallons of fuel oil were released. Due to the presence of active railroad tracks, it was not possible to remove all the contaminated soil. Eight soil borings were completed in and around the leak site in October 1991 to determine the horizontal and vertical extent of the contamination from the leak source.

Following a review of the Bay West report on April 3, 1992 the Minnesota Pollution Control Agency (MPCA) requested the completion of monitoring wells at the site.

Four soil borings, with three borings completed as monitor wells, and laboratory analysis of two rounds of ground water samples are summarized in Bay West's November 25, 1992 report entitled "Remedial Investigation Report, Cargill Molasses Liquid Products, Inc., Port Cargill, Savage, Minnesota, Leak No. 4526."

Based on the results of the remedial investigation, surficial soil contamination remains in the release area and the removal of this contamination would require the extended shutdown and removal of the active railroad tracks. The variable nature of the soil, the shallow depth to water, and the presence of the railroad tracks make a soil venting system impractical for this site. During the first two sampling rounds, each monitor well contained concentrations of toluene, ethyl benzene, xylenes (BTEX), and/or TPHs, and/or other volatile organic compounds (VOCs). Bay West recommended no further remedial action at the site pending the collection of one additional round of ground water samples and water level elevations. To that end, this report summarizes the results of the additional round of ground water sampling.

SCOPE OF WORK

The field work for the investigation was completed on March 15, 1993 and included the collection of one round of ground water samples for laboratory analyses.

Monitor Well Sampling

Monitor wells were developed by surging with a bailer to remove any sediment from the well and purged by bailing at least three well volumes of water. Ground water samples were taken only after three consecutive, consistent readings of pH, conductivity, and temperature were recorded or after the well was bailed dry.

Ground Water Chemical Analyses

Ground water samples were analyzed by Bay West Analytical Laboratory. Ground water samples were analyzed for BTEX by EPA Method 5030/8020 modified, and for total petroleum hydrocarbons (TPH) as fuel oil.

Ground Water Flow

Water level elevations were collected from all three wells on March 15, 1993 with a ORS Oil/Water Interface Probe. The results of the water level measurements indicate that the surficial water table is present at approximately 6.1 to 7.5 feet bg. Ground water elevation data suggest that ground water flows to the east at a gradient of approximately 0.015 ft/ft (Figure 2). This is in general agreement with previous flow directions of northeast to north-northeast. Surveying notes and monitor well elevations are contained in Table 1. The Field Sampling Data Sheets for March 15, 1993 are attached to this letter.

Ground Water Analytical Results

Ground water analytical results from the sampling event are attached to this letter. Analytical results from the three sampling rounds are summarized in Table 2.

None of the samples collected from the monitor wells during the March 15, 1993 sampling round contained concentrations of BTEX, or TPH as fuel oil above the method detection limits (MDLs).

CONCLUSIONS AND RECOMMENDATIONS

Surficial soil contamination remains in the release area. The removal of this contamination would require the extended shutdown and removal of the active railroad tracks. The variable nature of the soil, the shallow depth to water, and the presence of the railroad tracks would make a soil venting system impractical.

Bay West recommends no further remedial action at the site due to the following: 1) The release location is an industrial site; 2) the contamination is below grade, thereby restricting human contact; 3) the surficial water-bearing zone is not used for drinking water; and, 4) ground water samples from the September 4, 1992 and March 15, 1993 sampling rounds indicated no detections of the parameters above the MDLs.

DISCLAIMER

The conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions on this information, please call us at 291-0456.

S McMaster for

Camilla Pederson, E.I.T.
Geological Engineer

Shirley McMaster

Shirley McMaster, P.E.
Vice President, Technical Services

c/enc: R. Rarick, Cargill
S. Larson, Cargill
G. Rimy, Cargill

BayWest

TABLE 1
Monitoring Well Construction Summary/Water Level Elevations

Well ID	MW-1	MW-2	MW-3
TOC Elevation (feet)	100.69	99.32	102.49
Grade Elevation (feet)	100.69	97.71	100.81
Casing OD (in.)	2	2	2
Borehole Diameter (in.)	8.25	8.25	8.25
Depth to TOS (feet btoc)	4.73	3.72	3.82
Depth to BOS (feet btoc)	8.73	8.72	8.82
Water level (feet btoc)			
7/21/92	5.1	3.97	5.78
9/4/92	6.32	4.58	6.42
3/15/93	7.50	6.10	6.98
Water table elevation (feet)			
7/21/92	95.59	95.35	96.71
9/4/92	94.37	94.74	96.07
3/15/93	93.19	94.59	95.51

NOTE: Elevation data is referenced to top bolt of fire hydrant located to the northwest of the scale which is northeast of well MW-1 (nominal elevation 100.00 feet).

TIC = top of casing
OD = outside diameter
TOS = top of screen
BOS = bottom of screen
btoc = below top of casing

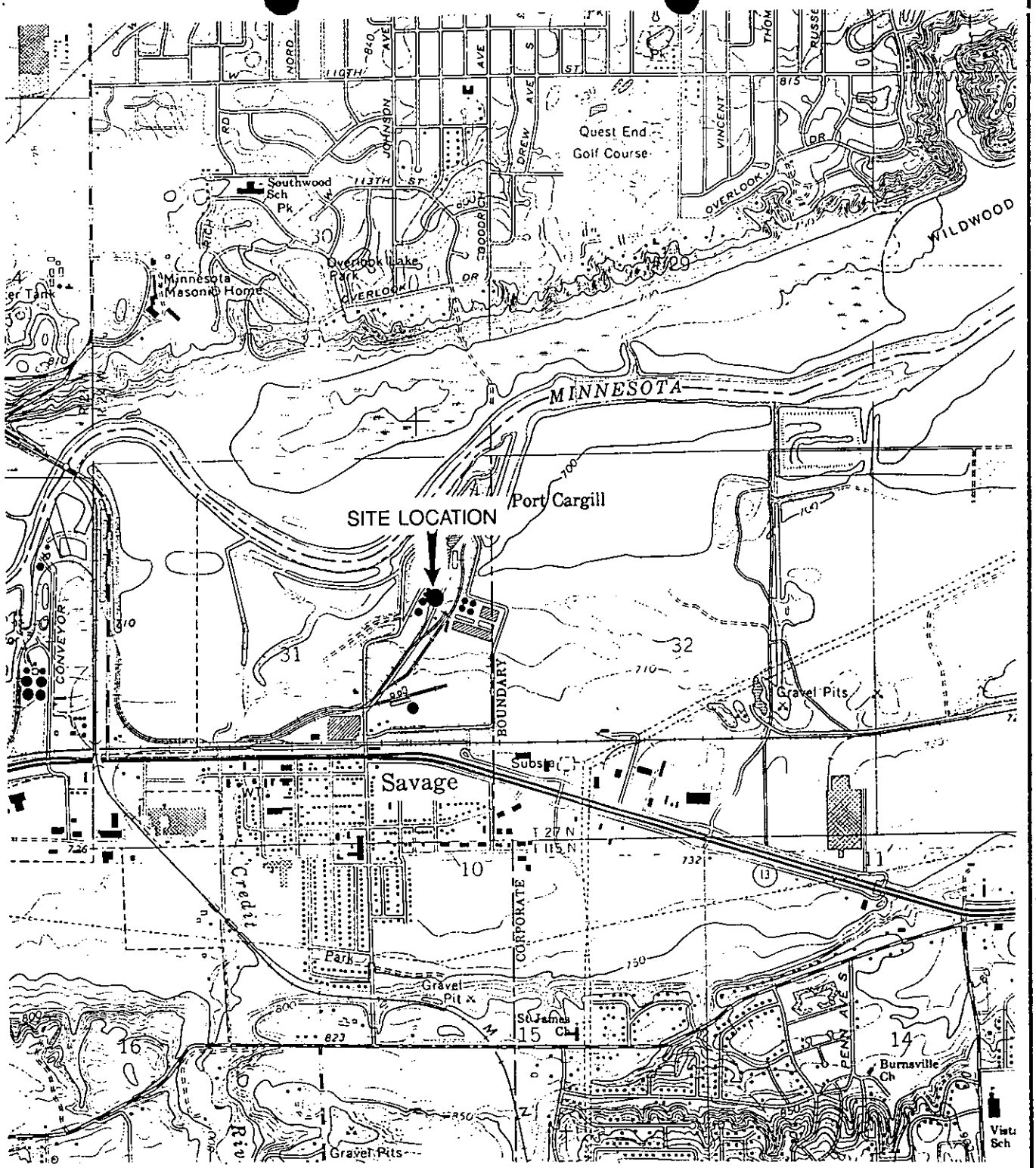
PVC/Glue PVC/Glue PVC/Flush

TABLE 2

Summary of Detected Compounds from Ground Water Samples

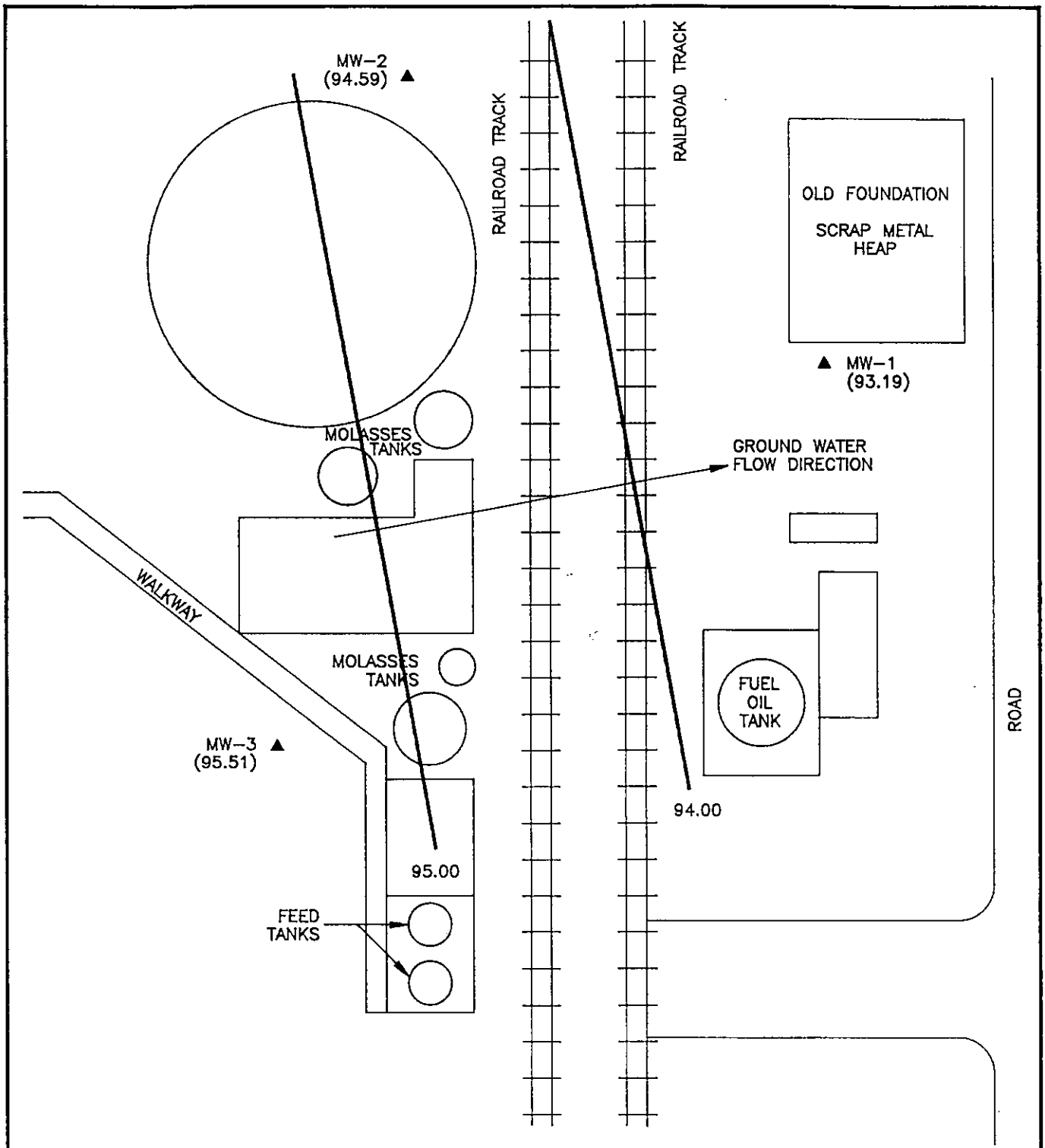
Parameters	GC MW-1 7-21-92	GC/MS 9-4-92	3-15-93	GC MW-2 7-21-92	GC/MS 9-4-92	3-15-93	GC MW-3 7-21-92	GC/MS 9-4-92	3-15-93	RAL
TPH	ND	ND	ND	ND	ND	ND	300	ND	ND	ND
Benzene	ND	ND	ND	2.3	ND	ND	ND	ND	ND	10
Toluene	3.6	ND	ND	3.3	ND	ND	28.8	ND	ND	1000
Ethyl Benzene	ND	ND	ND	2.4	ND	ND	19.9	ND	ND	700
Xylenes	2.5	ND	ND	7.8	ND	ND	121	ND	ND	10000
MEK	190	ND	NA	5830	160	NA	77.3	ND	NA	300
Tetrahydrofuran	63.8	20	NA	3940	30	NA	21.5	ND	NA	100
Acetone	ND	ND	NA	50.1	14	NA	ND	ND	NA	700
Choroethane	ND	ND	NA	2.3	ND	NA	ND	ND	NA	NL
1,2-Dichlorobenzene	ND	ND	NA	1.2	ND	NA	1.2	ND	NA	600
1,2,4-Trimethylbenzene	ND	ND	NA	2.3	ND	NA	14.7	ND	NA	NL
1,3,5-Trimethylbenzene	ND	ND	NA	ND	ND	NA	14.7	ND	NA	NL
Isoproplybenzene	ND	ND	NA	ND	ND	NA	3.7	ND	NA	300
Naphthalene	ND	ND	NA	ND	ND	NA	1.8	ND	NA	30

NOTES:
NL = No RAL Listed
ND = Not Detected above the MDL
NA = Parameter not analyzed
All results in µg/L



SOURCE:
USGS 7.5 MINUTE
TOPOGRAPHIC
BLOOMINGTON, MN.
QUADRANGLE

ENGR'G S.M.	DATE		BAY WEST Inc.
DRAWN K.M.	12/3/91		ENVIRONMENTAL SERVICES
REV.			St PAUL MN
PROJECT NAME	CARGILL- MOLASSES		
TITLE	SITE LOCATION MAP		
DWG. NO. 2436-A1	SCALE	FIGURE # 1	



LEGEND:

▲ MONITORING WELL LOCATION

GROUND WATER CONTOUR, 3/15/93

95.00 GROUND WATER CONTOUR ELEVATION, 3/15/93

(95.51) GROUND WATER ELEVATION AT MONITORING WELL, 3/15/93

W — N — E

S

ENGR'G S.M.	DATE		BAY WEST Inc.
DRAWN K.M.	12/9/91		ENVIRONMENTAL SERVICES
REV.	3/29/93		St. PAUL, MN
PROJECT NAME	CARGILL– MOLASSES		
TITLE	GROUND WATER CONTOUR MAP, 3/15/93		
DWG. NO.	2436-A2	SCALE NONE	FIGURE # 2

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
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FAX 291-0099
1-600-279-0456

March 24, 1993

Bay West Environmental Services
5 Empire Drive
St. Paul, MN 55103

Attn: Ms. Shirley McMaster

Bay West Environmental Services Project No.: **2436** **(COC: GW-1882)**
Bay West Laboratory Project ID: **5-3461**
Samples Collected: March 15, 1993

The following are results from the samples you submitted for analysis on March 15, 1992.

The data is reported in Table 1.

Please contact me if you have any questions or comments.

Sincerely,

Peter Hanson

Peter Hanson
Laboratory Manager

PH/ly

encl.

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
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Table 1

Bay West Environmental Services Project No.: **2436**
Bay West Laboratory Project ID: **5-3461**

BTEX - TPH In Water

Parameter	Quantitation Limit ug/L	TB (34427) ug/L	MW-2 (34428) ug/L	MW-3 (34431) ug/L	MW-1 (34434) ug/L
Benzene	1.0	ND	ND	ND	ND
Toluene	1.0	ND	ND	ND	ND
Ethyl Benzene	1.0	ND	ND	ND	ND
Xylenes	1.0	ND	ND	ND	ND
Total Petroleum Hydrocarbons[a]	50	ND	ND	ND	ND

Date Collected: March 15, 1993
Date Analyzed: March 18-19, 1993

Method: EPA 5030/8020 Modified

[a]TPH reported as Fuel Oil and/or Gasoline.

ND = Not Detected, concentration less than Quantitation Limit.

GROUND WATER CHAIN-OF-CUSTODY RECORD 3461

BW-GW: 8/91

Bay West

LAB: BAY WEST | SEND RESULTS TO: SHIRLEY MCMASTER | CHAIN-OF-CUSTODY NO: GW- 1092

PROJECT NUMBER	PROJECT MANAGER	TURNAROUND REQUEST	SAMPLE RETENTION: RETURN	SAMPLE RETENTION: DISPOSE
2436	S.M.	STANDARD		X

ITEM NO.	SAMPLE NUMBER (PROJECT NO. - SAMPLE ID)	SAMPLE DATE / TIME	MATRIX	NUMBER & TYPE OF CONTAINER	ANALYSIS CODE(S)	DESCRIPTION / COMMENTS
1	2436 - TB	3-15-93 8:00	W	1x40ml	01	TRIP BLANK 2359335
2	2436 - MW-2	3-15-93 12:40	W	3x40ml	01	
3	2436 - MW-3	3-15-93 1:05	W	3x40ml	01	
4	2436 - MW-1	3-15-93 1:35	W	3x40ml	DI	
5	-					
6	-					
7	-					
8	-					

SAMPLER: DAVID OLSON | AFFILIATION: BAY WEST | DATE: 3-15-93

TRANS NO.	ITEM NO.	RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-4	David Olson	P. Vanegas	3/15	3150
2					
3					
4					
5					

Preservative:

All samples must be preserved on ice (4°C), unless specified otherwise.

Matrix:

W= Water
L = Liquid Sample
S = Soil Sample
SD = Solids Sample
SL = Sludge Sample
O = Other (Specify _____)

ANALYSIS CODES

- Cross out any unwanted parameter.
- List any additional parameters in the "Description / Comments" column.

BTEX, ~~MTBE~~, TPH AS FO	01
VOC'S- Drinking Water (EPA 502.2)	02
VOC'S- Ground Water (EPA 601/602)	03
VOC'S- Soil/Solids (EPA 8010/8020)	04
VOC'S (by GC/MS) (EPA 624/8240)	05
Semi-Volatiles (by GC/MS) (EPA 625/8270)	06
VOC'S- Water/Soil (MDH 465 list)	07
Pentachlorophenol (PCP) (EPA 604/8040)	08
Phenols (EPA 604/8040)	09
Phthalates (EPA 606/8060)	10
PCBs/Pesticides (EPA 608/8080)	11
PAHs (EPA 610/8100/8310)	12
Herbicides (EPA 615/8150)	13
Lead (total)	14
Priority Pollutant Metals (13)	15
MWCC Metals (4)	16
RCRA Metals (8)	17
BOD, COD (EPA 405.1/410.1)	18
pH, TSS (EPA 150.1/160.2)	19
Oil/Grease (EPA 413.1/9071)	20
_____	21
_____	22
_____	23
_____	24

Bay West — FIELD SAMPLING DATA SHEET

PROJECT NAME: CARGILL	SAMPLE #: 2
ADDRESS:	PROJECT #: 2436
CITY, STATE, ZIP: SAVAGE, MN	DATE: 3-15-93
NAME OF SAMPLER: DAVID OLSON	ANALYTICAL LABORATORY: BAY WEST
AFFLIATION: BAY WEST	COC #: GW-1882

WELL DATA		PURGE DATA	
WELL #:	MW-2	PRE-PUMP METHOD:	BAILER
CASING MATERIAL:	PVC	PRE-PUMP RATE (GPM):	
WELL DIAMETER (IN):	2	I.D.# PROBE/ TAPE USED:	19890
WELL DEPTH (FT BTOC):	8.72	I.D.# PUMP USED:	
DEPTH TO WATER BEFORE PURGING (FT BTOC):	6.10	BAILER TYPE:	VOSS BAILER
LENGTH OF WATER COLUMN (FT):	2.62		
WELL VOLUME (GAL):	.42		

VOLUME CONVERSION FACTOR: .16 – 2" .65 – 4" 1.47 – 6" 2.61 – 8"

STABILIZATION TEST

VOL #	TIME	VOL (GAL)	TEMP °C	COND (umhos/cm)	pH	OTHER
1	12:33	.4	4.2	1580	7.51	
2	12:35	.8	4.0	1520	7.53	
3	12:38	1.2	4.1	1550	7.56	
4						
5						
6						
7						
8						

STABILIZATION DATA		SAMPLING DATA	
TOTAL VOLUME (GAL):	1.2	TIME OF SAMPLING:	12:40
# CASING VOLUMES:	3	SAMPLE TYPE:	H_2O
STAB. TEMP °C:	4.1	SAMPLE CONTAINERS:	3 40 ml ___ 1 LA
STAB. CONDUCTANCE (umhos/cm):	1550		___ OTHER ___ 0.5 LA
STAB. pH:	7.56	SAMPLE VOLUME:	120 ml
		SAMPLE FILTERED:	\ YES X NO
		SAMPLE PRESERVATION:	HCl

COMMENTS

SAMPLE DESCRIPTION– COLOR: LT. BROWN ODOR: MUSTY

OTHER:

OBSERVATIONS:

WEATHER DATA– TEMPERATURE: 25° SKY: SUNNY WIND: W @ 10-15

Bay West — FIELD SAMPLING DATA SHEET

PROJECT NAME: CARGILL	SAMPLE #: 3
ADDRESS:	PROJECT #: 2436
CITY, STATE, ZIP: SAVAGE, MN	DATE: 3-15-93
NAME OF SAMPLER: DAVID OLSON	ANALYTICAL LABORATORY: BAY WEST
AFFLIATION: BAY WEST	COC #: GW-1882

WELL DATA		PURGE DATA	
WELL #:	MW-3	PRE-PUMP METHOD:	BAILER
CASING MATERIAL:	PVC	PRE-PUMP RATE (GPM):	
WELL DIAMETER (IN):	2	I.D.# PROBE/ TAPE USED:	19890
WELL DEPTH (FT BTOC):	8.82	I.D.# PUMP USED:	
DEPTH TO WATER BEFORE PURGING (FT BTOC):	6.98	BAILER TYPE:	VOSS BAILER
LENGTH OF WATER COLUMN (FT):	1.84		
WELL VOLUME (GAL):	.29		

VOLUME CONVERSION FACTOR: .16 – 2" .65 – 4" 1.47 – 6" 2.61 – 8"

STABILIZATION TEST

VOL #	TIME	VOL (GAL)	TEMP °C	COND (umhos/cm)	pH	OTHER
1	12:58	.3	4.9	6,500	6.87	
2	1:01	.6	4.7	6,800	6.92	
3	1:03	.9	4.7	6,800	6.97	
4						
5						
6						
7						
8						

STABILIZATION DATA		SAMPLING DATA	
TOTAL VOLUME (GAL):	.9	TIME OF SAMPLING:	1:05
# CASING VOLUMES:	3	SAMPLE TYPE:	H_2O
STAB. TEMP °C:	4.7	SAMPLE CONTAINERS:	3 40 ml ___ 1 LA
STAB. CONDUCTANCE (umhos/cm):	6,800		___ OTHER ___ 0.5 LA
STAB. pH:	6.97	SAMPLE VOLUME:	120 ml
		SAMPLE FILTERED:	\ YES X NO
		SAMPLE PRESERVATION:	HCl

COMMENTS

SAMPLE DESCRIPTION– COLOR: LT. BROWN ODOR: NONE

OTHER: SILTY

OBSERVATIONS:

WEATHER DATA– TEMPERATURE: 25° SKY: SUNNY WIND: W @ 10-15

Bay West — FIELD SAMPLING DATA SHEET

PROJECT NAME: CARGILL	SAMPLE #: 4
ADDRESS:	PROJECT #: 2436
CITY, STATE, ZIP: SAVAGE, MN	DATE: 3-15-93
NAME OF SAMPLER: DAVID OLSON	ANALYTICAL LABORATORY: BAY WEST
AFFILIATION: BAY WEST	COC #: GW-1882

WELL DATA		PURGE DATA	
WELL #:	MW-1	PRE-PUMP METHOD:	BAILER
CASING MATERIAL:	PVC	PRE-PUMP RATE (GPM):	
WELL DIAMETER (IN):	2	I.D.# PROBE/ TAPE USED:	19890
WELL DEPTH (FT BTOC):	8.73	I.D.# PUMP USED:	
DEPTH TO WATER BEFORE PURGING (FT BTOC):	7.50	BAILER TYPE:	VOSS BAILER
LENGTH OF WATER COLUMN (FT):	1.23		
WELL VOLUME (GAL):	.19		

VOLUME CONVERSION FACTOR: .16 – 2" .65 – 4" 1.47 – 6" 2.61 – 8"

STABILIZATION TEST

VOL #	TIME	VOL (GAL)	TEMP °C	COND (umhos/cm)	pH	OTHER
1	1:26	.2	6.2	1280	7.20	
2	1:29	.4	6.3	1200	7.24	
3	1:32	.6	6.3	1200	7.25	
4						
5						
6						
7						
8						

STABILIZATION DATA		SAMPLING DATA	
TOTAL VOLUME (GAL):	.6	TIME OF SAMPLING:	1:35
# CASING VOLUMES:	3	SAMPLE TYPE:	H_2O
STAB. TEMP °C:	6.3	SAMPLE CONTAINERS:	3 40 ml ___ 1 LA
STAB. CONDUCTANCE (umhos/cm):	1200	___	OTHER ___ 0.5 LA
STAB. pH:	7.25	SAMPLE VOLUME:	120 ml
		SAMPLE FILTERED:	\ YES X NO
		SAMPLE PRESERVATION:	HCl

COMMENTS

SAMPLE DESCRIPTION– COLOR: BLACK ODOR: MUSTY

OTHER: SILTY

OBSERVATIONS:

WEATHER DATA– TEMPERATURE: 25° SKY: SUNNY WIND: W @ 10-15

RECEIVED

APR 08 1993

MPCA, HAZARDOUS WASTE DIVISION

SITE NAME: Cargill Molasses Liquid Products

SITE ID NUMBER: 4526

PETROLEUM TANK RELEASE REPORT CHECKLIST

In order to facilitate report review, the MPCA staff requests your assistance in completing this form which should be attached to all incoming reports. The form will be used to screen reports for completeness and to characterize the degree of contamination at the site.

SITE CHARACTERIZATION

	YES	NO
Emergency:		
Vapor or explosive hazard?	___	x
- if yes, has this been addressed	___	___
Actual drinking water supply impacts	___	x
- if yes, has alternate supply been provided?	___	___
Ground Water and Soil:		
Has ground water been impacted?	x	___
Is there free product?	___	x
- if yes, has recovery been initiated?	___	___
Are there downgradient receptors at risk?	___	x
Did you answer "yes" to any question, 7 through 14, on the Hydrogeologic Setting and Ground Water Characterization Worksheet?	___	x
Is this a progress report?	x	___
- if yes, is it quarterly or annual?	quarterly	

REPORT CONTENTS

Check the appropriate report type and completed sections (as outlined in the "Petroleum Tank Release Reports" document).

( ) Excavation Report Form
[ ] All Applicable section completed
[ ] Figures
[ ] Lab reports with chain of custody forms

( ) IR Report
[ ] Introduction
[ ] Background, incl Twp/Rng, Lat/Long
[ ] Excavation form
[ ] RI Results
[ ] Discussion
[ ] Conclusions
[ ] Recommendations
[ ] Proposed CAD
[ ] Appendices, incl IGWIS form
[ ] Tables, figures
[ ] Hydrogeologic Characterization Worksheet

( ) CAD Report
[ ] Proposed CAD
[ ] Appropriate sections of appendices
[ ] Figures

(x) Progress Reports
[x] Introduction
[x] Background
[ ] Corrective action
[x] Ground Water monitoring results
[x] Discussion
[x] Conclusions
[x] Recommendations
[x] Appendices
[x] Tables, figures

If recommendations are included in the report, provide a brief description (e.g., no further action, modification of ground water recovery system, additional monitoring, etc.): No further action

If a CAD is proposed, provide a brief description (e.g., soil venting, pump and treat, bioremediation, etc.): _____