

Preferred Id: 5361

Interest Name: HUMBOLDT BULK SITE

Address1: Highway 75 & Kittson County Road 6

City: Humboldt

State: MN

Zip: 56731

<u>Interest Remarks</u>	<u>Date and Time Printed:</u>
7/31/92 Letter from Cooperative Services committing to clean up, they have hired West Central.	9/12/2006 09:15:01
1/25/93 File transfer to RHN.	
9/15/93 RHN: phone message from Matt Johnson,WCEC; reported freeproduct in monitoring well.	
9/17/93 RHN: conf. call with DAT & Matt Johnson, WCEC; they have begun bailing/.6'freeproduct/Rp will bail everyday/they need to install a MW downgradient of freeproduct well/BNR property, could be difficult to achieve access/Matt did take a gw sample through hand auger boring downgradient that came back clean/Matt will include a plan for limited excavation of the source area/.	
10/18/93 JS: Received free product recovery worksheet.	
1/19/94 JS: Received RI report from WCEC.	
3/24/94 JS: Issued memo to Petrofund Staff. Cannot issue a CSR at this time since staff have yet to review the CAD that was received on 01/19/94.	
5/16/94 JS: Received quarterly monitoring worksheet.	
7/25/94 JS: Received quarterly monitoring worksheet.	
8/02/94 RHN: SITE VISIT; JWS & I met with Harlen Iverson; general discussion/we will review reports & then send letter/.	
11/14/94 RHN: cad approval with modifications letter sent/.	
11/23/94 RHN: rec. fact sheet #7 from WCEC/.	
11/23/94 RHN: adequate CSR sent to Commerce/.	
12/02/94 RHN: returned phone call from Harlen Iverson; they cannot begin work until they get reimbursement from other leak site in after the first of the year/I explained that they can perform the work in the spring and that he should contact me in the spring if they need more time/.	
1/27/95 RHN: rec. voice mail message from Harlen Iverson, Coop Services requesting list of pre-approved land treatment sites/.	
1/30/95 RHN: mailed above mentioned land treatment list to Harlen/.	
05/25/95 RW: Reviewe supp. petrofund app. dated 4/3/95. (OK)	
6/01/95 RHN: rec. quarterly report.	
7/10/95 RHN: phone call from Allison Kaurer (sp?) @ Commerce; BNR has been involved in some matter & is insured. What is the relationship? I do not know. BNR tracks pass on or near site.	
Allison will contact Cooperative Services.	
11/20/95 RHN: Rec. quarterly report from WCEC .	
1/25/96 RHN: Rec. quarterly report from WCEC.	
06/10/96 EMH: Rec'd and reviewed supp petrofund app dated 4/17/96. Okay	
08/26/96 JWS: Review quarterlies; approve discontinuation of sampling until remedial excavation.	
12/23/96 RHN: I called Glenn Anderson; Glen had questions about compost-	

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ing. He has composted contaminated soil in the past (L#3166).

I explained the permitting process and double moving.

2/18/97 RHN: Phone call from Glenn Anderson concerning composting.

General questions. He will contact Great Plains about putting

an application together.

11/05/98 RHN: File transferred from RHN/Metro District to Detroit Lakes/

North District. I recommend a phone call or wakeup letter

to RP.

05/09/00 DDO - Called Jason at GPE. He said that they have not done any work at this site. I then called the contact person, Harlen Iverson. He said that the Co-op had been bought out by another Co-op from North Dakota and they did not assume any of the environmental liabilities of the original Co-op. Since there has not been a bulk plant at this site for several years, the new owners did not purchase this piece of property and Mr. Iverson was not sure who currently owned it. He said that I should call Merl Schwenzfeier (218-843-2089) to find out if he knows if the investigation is proceeding. Merl S. was the chairman of the original Co-op board and is now a board member for the new Co-op. I tried to call Mr. S., but he was not in. Mr. Iverson was fairly sure that nothing has been done at this site since the sale of the original Co-op. Mr. Iverson thought that I would have a difficult time contacting Mr. Schwenzfeier so I will send a wake up letter to him with a 30 day response deadline.

6/22/00 DDO - Rec'd a letter from the Warmbach & Hanson Law Office stating that Co-op Services did not have any money to complete any more work at the site. They requested that the MPCA close the site because if we did do the required work "any legal action by the MPCA to recover costs would be fruitless since the only funds which Co-op Services has is approximately \$1,000,00". I will discuss the site with Arlene Furuseth, MPCA Project Leader, to determine if this site could be transferred to the fund financed program.

6/23/00 DDO - Called Mr. Eroy Hanson (attorney) to discuss the Fund Financed program with him. I told him that I would send a Financial Disclosure form that they could fill out to prove that they do not have any assets. He said that he would get together with Mr. Schwenzfeier and they would fill it out and return it to me asap.

11/9/00 DDO - Called and left a message for Mr. Hanson to call me ASAP.

11/20/00 DDO - Called and left a message for Mr. Hanson to call me ASAP.

12/12/00 DDO - Called and left a message (with the secretary again) for Mr. Hanson to call me ASAP

12/18/00 DDO - Talked with Eroy Hanson (lawyer hired by the Coop) rg the financial disclosure form He had just received the info from the Coop about a week ago. He will look through it and forward the info on to me within the next few days.

1/2/01 DDO - Rec'd a completed copy of the Financial Disclosure Form. I will forward it to Jim

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Interest Remarks Date and Time Printed: 9/12/2006 09:15:01
McCann and the AGs today.

03/16/01 JMC Contacted Elroy Hanson - Attorney for Co-Op. Company went out of business in '96 sold to another co-op who also assumed some debt. They did not buy all the property and excluded the part on which the tanks had been located. The Articles

of Dissolution have not been submitted to the SoS office awaiting decision from PCA
12/12/01 JMC Discussed situation with Bob McCarron more information would be needed to give a complete picture of the finances of the Co-op. However reviewing submitted info it appears the business was small and salaries were not out of line with an average of \$21k. Called up property assessors office Farmers Union Cenex owns the gas station and the property is valued at \$7,800. assessors office does not have a listing for Cooperative services possibility that property may be connected to the Burlington Northern Railroad. As business has been liquidated and no further income site should go fund financed. Prior to a no cost recovery memo being issued MPCA staff should revisit the issue of the active bank account with a current balance of \$2k as we may be able to access some of these funds. Contact Elroy Hanson of Wambach and Hanson Law office 304 Northeast Main Street, P.O. Box 340, Mahnommen, MN (218)935-2266. Also listed Merle Schwenzfeier.

12/17/01 JMC Discussed site with Merle Schwenzfeier. Business was mainly petroleum supply which was not as profitable. The Company also ran into problems with the site investigation and contractor and recorded an "Out of Pocket" expense of \$54,020. All three sites were in clean-up a Total of \$208,173 was spent. Three people worked at the Hallock site and one at the Humboldt site. Bank account is now down to approx \$1,000 and is being held to close the corporation. Articles will be filed when investigation complete. The property concerned with the investigation is owned by Burlington and Northern so they will have to be involved in access.

12/18/01 DDO - Discussed site with AWF and decided that a CO is not required for this site because it is a bankrupt corporation so there is no RP. I completed a FF Evaluation Form and transferred the site file to AWF.

3-25-02 Transferred PL responsibility to MEH. AWF

8/19/02 MEH Matt Johnson of WCEC called about problems getting access from BN, who leased the site to Humboldt. I talked with Greg Jeffries, who told me who to call - Toni Gaiser 817/230-2630. Matt called, and found out this is a 6-week process. We will need to do a change order for the access permit process for the rt.

4/24/03 MEH I talked with Mike Woolridge of BN. WCEC will be doing both this site and Stephens at the same time (end of May). I told Mike that, if additional work needs to be done at this site after our work order is completed on 6/30, I will pass the site over to BN as a volunteer to complete the necessary work. This is what BN wants us to do.

5/1/03 MEH WCEC will be sampling the wells in May.

5/20/03 MEH Matt Johnson of WCEC sent me an e-mail that they will be doing geoprobe work this week.

6/25/03 SHV: deleting leaksite #13530 as PMs have indicated t is a duplicate of this leaksite, see remarks below: 05/13/03 Upon further review of the site it appears as though this may be a site that is actively being worked through the fund financed program, Leak number 5361. File sent to Stacey Van Patten for review and determination of a duplicate leak site. LEO.

Interest Remarks

Date and Time Printed: 9/12/2006 09:15:01

09-15-03 MAG - Reviewed Site Status Report, dated 6-30-2003. Long gap in activity at site from 1997 to 2000.

Free product in MW-2 in 1993, none found in May 2003.

MW-2 in May 2003: benzene 150 ppb, xylene 61 ppb, GRO of 2,400 ppb, and DRO of 35,000 ppb.

May03 soil samples tested no detect north, east, and south of layout area (TH9, 10, 12, and 13), and

TH11 had small values of GRO and DRO (220 and 150 ppm).

Water samples tested highest in TH13 with GRO and DRO of 8,700 and 280,000, with ethyl benzene over HRL at 3,000 ppb.

List of other contaminants detected in water from TH13.

500 foot walking survey and groundwater receptor survey completed with no potential receptors.

Three wells found from MDH records and all found to be at low risk for contamination due to depth and soil conditions.

RECOMMENDATION:

Agree with the recommendation for one year of quarterly groundwater monitoring and analytical sampling to report BTEX, MTBE, GRO and DRO. After one year of sampling, an Annual Monitoring Report shall be submitted using Fact Sheet 3.26. Recommendations for further work, or closure, should be included in the report.

9/16/03 MEH I left a message with Mike Woolridge (BNSF 763/782-3483). Does BNSF want to take over the site and complete the year-long monitoring, or do they want us to do it?

9/22/03 MEH I left another message for Mike.

10/9/03 MEH WCEC will be getting us a work plan. BNSF doesn't want to take it over for year monitoring program.

12/3/03 MEH Work order LWC-0422 (\$15,048) with WCEC signed 12/2/03.

12/10/03 MEH E-mail from WCEC:FY1...WCEC will be sampling monitoring wells at the Humboldt Bulk Facility(8669) in Humboldt, MN during the month of December.

2/17/04 MEH I received notification from WCEC that they will be sampling monitoring wells in March.

4-7-04 Site reassigned to AWF. AWF

03-22-05 [MAG] - Review of Annual Monitoring Report/Closure Request, dated October 4, 2004 (rcvd Nov 15, 2004). Wellhead area assessment completed and site is not in any MDH SWA, or other type area. Site spatial data determined using LUST tool. Entries made in Tales.

Twelve quarterly MW sampling events conducted since 12/1995. FP in MW-2 in 8 events between 9/1993 through 12/1995 with thicknesses in range of 0.6 in to 6.0 in. MW-1 and MW-3 has never had measurable BTEX levels. Walking survey completed in 2003. MW-1 is a damaged well and difficult to sample. GW flow direction varies between NE and NW. Vapor survey not completed due to lack of potential vapor receptors. Horizontal extent of contamination limited to former AST storage and loading rack area. Migration potential is limited by clay-rich soils and lacustrine deposits. No water supply wells in vicinity. Water supplied by public water supply. FP no longer found in MW-2. Contaminant levels are stable or declining. Source of contamination removed and levels appear to have stabilized. Environmental risks should remain minimal if site is left undisturbed.

Recommend site closure.

8-31-06 Wells are being sealed under a joint workorder for 6 leaksites. Documentation for workorders LDE06022 and LDE07001 will be maintained with the file for Leak 869. AWF

**MINNESOTA POLLUTION CONTROL AGENCY
TANKS AND SPILLS SECTION
PETROLEUM TANK RELEASE REPORT**

Report Taken By: SLM Date/Time Occurred: _____

Date/Time Reported: 6/26/92 Date/Time Discovered: 6/26/92

LEAK# 5361 PROJECT MANAGER: DJF USTIS # _____

CALLER
Name: Bruce Gayler
Phone: 1800 422 8556
Relationship to site: West Central Env.

SITE
Name: Humboldt Porek Site
Street: Hwy 75 + Kittson Co # 6
City: Humboldt Zip: 56731
County: Kittson Region: III 1A

TANK OPERATOR
Name: _____
Street: _____
City: _____ Zip: _____
Contact Person: _____
Phone: _____

TANK OWNER
Name: Cooperative Services
Street: Box 24
City: Humboldt St. Zip: _____
Contact Person: George Rindy
Phone: 218/379-8288

Own tanks/product/property?
Share in profits?
Control over inventory, maintenance and tank decisions?

SITUATION
Material Released/Amount: #2.0 Diesel/Gas
Source of Release: AST
Release Discovery: Geoprobe

TANK INFORMATION	Removed	Condition	Registered
Contents	<u>NO</u>	<u>NO</u>	_____
Age	<u>NO</u>	<u>NO</u>	_____
Size	<u>NO</u>	<u>NO</u>	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
State or Federal Excavation Contractor:	Notification prior to removal: _____ Consultant: _____		

SOIL
Contaminated soil excavated: N
Was it a total excavation?
Vapor readings: 460 ppm 17 feet
Soil samples:
Borings: Geoprobe
Native soil type: dark clay
Stockpiled properly/disposal arranged:
Other: _____

WATER

Groundwater in excavation: water at 1 1/2 feet

Free product present:

Depth to groundwater:

City water/wells private/municipal:

Surface water: N

VAPORS

Sewers/buildings: N

SITE INFORMATION

Description of area:

Previous release(s):

INSTRUCTION GIVEN

Hire consultant
Submit report
Staff will call
Contact staff

CONTACTS

Local Fire/Police
Local Officials
Regional Staff
Other

CONCLUSIONS AND OTHER RELATED INFORMATION

Leak #5361
Humboldt Bulk Plant
Humboldt, MN

PM: Arlene Furuseth
Hydro Review By: Mike Gilgosh
Consultant: West Central Environmental Consultants: Morris, MN (Matt Johnson, 320-589-2039)
March 22, 2005

RE: Review of Annual Monitoring Report/Closure Request, dated October 4, 2004 (revd Nov 15, 2004)

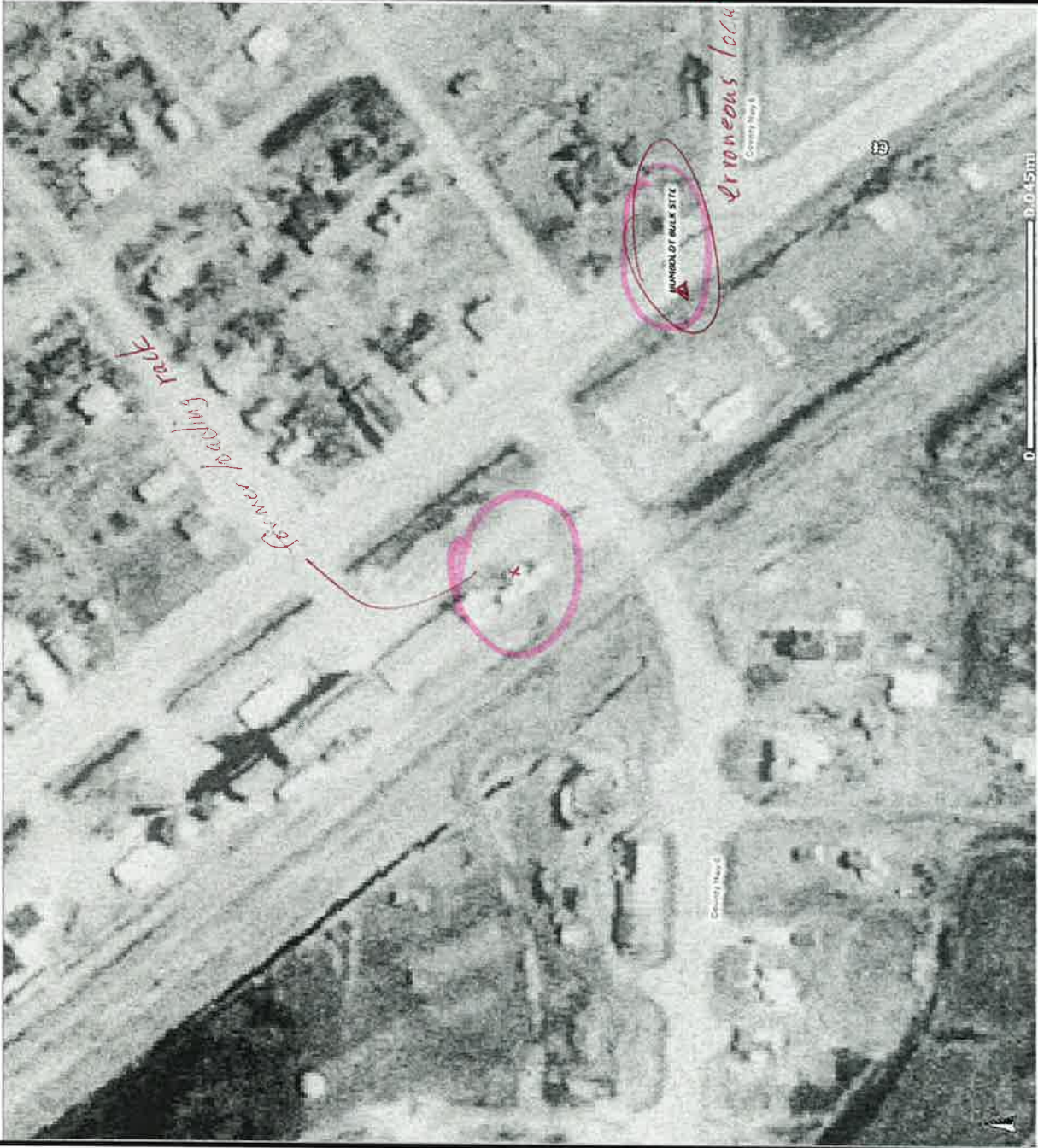
NOTES:

Wellhead area assessment completed and site is not in any MDH SWA, or other type area. Site spatial data determined using LUST tool. Entries made in Tales.

Twelve quarterly MW sampling events conducted since 12/1995. FP in MW-2 in 8 events between 9/1993 through 12/1995 with thicknesses in range of 0.6 in to 6.0 in. MW-1 and MW-3 has never had measurable BTEX levels. Walking survey completed in 2003. MW-1 is a damaged well and difficult to sample. GW flow direction varies between NE and NW. Vapor survey not completed due to lack of potential vapor receptors. Horizontal extent of contamination limited to former AST storage and loading rack area. Migration potential is limited by clay-rich soils and lacustrine deposits. No water supply wells in vicinity. Water supplied by public water supply. FP no longer found in MW-2. Contaminant levels are stable or declining. Source of contamination removed and levels appear to have stabilized. Environmental risks should remain minimal if site is left undisturbed.

Recommend site closure.

Leak #5361 - Humboldt Bulk Site, Humboldt, MN



Not in a SWA, etc

Disclaimer: Map and site information is believed to be accurate but accuracy is not guaranteed. No portion of the information should be considered to be, or used as, a legal document. The information is provided subject to the express condition that the user knowingly waives any and all claims for damages against MPCA that may arise from the use of this data.

MAG 3/22/05

Minnesota Pollution Control Agency

Legend

- Private Wells
- ▲ Leaking Underground Storage Tank
- Wellhead Protection Area
- Drinking Water Supply Management Area
- Source Water Assessment Area
- ▨ Moderate Vulnerability
- ▩ High Vulnerability

SITE MONITORING WORKSHEET

Fact Sheet #7

Minnesota Pollution Control Agency
Tanks and Spills Section

April 1993

RECEIVED

JAN 25 1996

MPCA, HAZARDOUS
WASTE DIVISION

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- quarterly, after the remedial investigation (RI) is complete, but before corrective action is taken;
- quarterly, during corrective action design (CAD) installation; and
- quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet" (Fact Sheet #11).

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (Fact Sheet #3). [Note: MPCA staff may reduce the frequency of progress reporting on a site specific basis.] Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: **00005361**

WCEC Project Number **92-405-30**

Date Form Completed: **01/11/96**

I Ground Water Monitoring

Please attach the following:

- Cumulative table of groundwater monitoring results, including all sample blanks.
- Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
- Cumulative table of groundwater elevation and product thickness results.
- Hydrograph for all monitoring and recovery wells.
- Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
- Groundwater contour map based on the most recent groundwater elevation data.
- Table of dissolved oxygen sample results (if collected).

Please describe unusual circumstances that may have influenced the sampling results: **NA**

Please detail significant observations made at the site: **NA**

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach:

- NA** A cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (e.g., sewer manholes, basements, etc.).
- NA** A map of vapor monitoring locations.

Sampling instrument used: **NA**

Sampling method: **NA**

NOTE: If vapor concentrations exceed ten percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required.

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

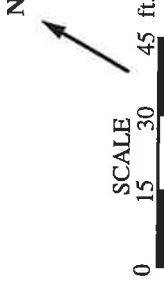
Results from twelve sampling events indicate the contaminant plume is stable and the remaining free product is relatively immobile. For these reasons, WCEC recommends that continued monitoring be discontinued until the remedial excavation takes place. Co-op personnel should continue to bail free product from well #2 periodically until the remedial excavation. Once the excavation is complete, well #2 should be replaced and sampled quarterly for one year to document product removal and groundwater quality.

The rose diagram is used to summarize the groundwater flow direction history at the site. The circle is divided into 10° segments, 0° being north. Concentric circles represent increased frequency of groundwater flow in a given direction.

Date	Flow Direction	Gradient
3/11/92	295.7°	0.0065
6/10/93	59.9°	0.0215
6/20/94	59.1°	0.0252
9/20/94	63.7°	0.0240
3/28/95	51.1°	0.0459
6/8/95	67.1°	0.0173
9/19/95	55.8°	0.0155
12/11/95	58.2°	0.0194

KEY

- Hand augered water sample
- ⊙ Test Hole
- Monitoring Well

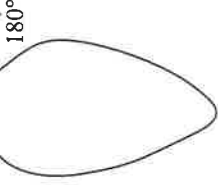
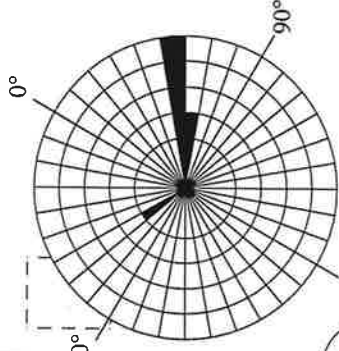


Highway 75

HA ●

1 ●

2 ●



Kittsen County Road 6

**WEST CENTRAL
ENVIRONMENTAL
CONSULTANTS**

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
FIGURE 1: Groundwater flow directions summarized on a rose diagram.

TABLE 5

GROUNDWATER QUALITY

WCPC Project No. 92-405-30
Co-op Services Bulk, Humboldt

Each sample is a composite of the groundwater in a monitor well. All results in mg/L (ppm). ND indicates that compound was not detected above the laboratory's method detection limit. Spaces indicate sample was not analyzed for that hole. Recommended allowable limits (RALs) are established by the MDH (Minnesota Rules, Parts 4717.7100 to 4717.7800, revised December 1994). NA is used when an RAL, abd/or an HRL have not been set for that compound. @ indicates the MPC's standard 1 ppm cleanup goal. * indicates peaks present in range but below detection limits. Dup, indicates duplicate sample was taken. MAS indicates Midwest Analytical Services, Energy indicates Energy Laboratories, Inc., analysis by GC/MS methodology. MB indicates Method Blank.

TH 3 & 5 Sampled: 6/26/92
HA Sampled: 6/11/93

Sampling Event I: 3/11/93
II: 6/10/93
III: 9/14/93
IV: 12/15/93

V: 3/23/94
VI: 6/20/94
VII: 9/20/94
VIII: 12/20/94
IX: 3/28/95
X: 6/8/95
XI: 9/19/95
XII: 12/11/95

ANALYSIS	MN		Sample												Laboratory				
	RAL / HRL (ppm)	TH 3	TH 5	HA	I	II	III	IV	V	VI	VII	VIII	IX	X		XI	XII	MW 1	MW 2
Chloroethane	NA / NA	1.0 / 1.0	0.004 / 0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0013	ND
Ethyl ether	NA / NA	1.0 / 1.0	0.005 / 0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0094	0.0183
1,2-Dichloroethane	0.004 / 0.004	0.005 / 0.005	0.004 / 0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	0.006
n-Butylbenzene	NA / NA	NA / NA	NA / NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	0.006
n-Propylbenzene	NA / NA	NA / NA	NA / NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	0.006
Methyl isobutyl ketone	0.3 / 0.3	0.3 / 0.3	0.3 / 0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	0.006
1,3,5-Trimethylbenzene	NA / NA	NA / NA	NA / NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0062	0.1
tert-Butylbenzene	NA / NA	NA / NA	NA / NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0688	0.0462
p-Isopropyltoluene	NA / NA	NA / NA	NA / NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0013	0.0025
Isopropylbenzene	0.3 / 0.3	0.3 / 0.3	0.3 / 0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0019	0.004
Naphthalene	0.03 / 0.3	0.01 / 0.01	0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0091	0.0091
Benzene	0.01 / 0.01	1.0 / 1.0	0.0036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0036	0.0876
Toluene	1.0 / 1.0	1.0 / 1.0	0.245	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0793	0.245
Ethylbenzene	0.7 / 0.7	0.7 / 0.7	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0045	0.007
m- and p- Xylene	10 / 10	10 / 10	0.0066	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.0066
o- Xylene and Styrene	10 / 10	10 / 10	0.102	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.018	0.102
o- Xylene	10 / 10	10 / 10	0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0339	0.137
Styrene	0.01 / NA	0.01 / NA	0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.122	0.0905
BTEX	0.01 / 0.01	0.004	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0154	ND
Benzene	0.01 / 0.01	0.003	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0154	ND
Toluene	1.0 / 1.0	0.001	0.003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0083	ND
Ethylbenzene	0.7 / 0.7	0.003	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0083	ND
Xylene	10 / 10	0.003	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0083	ND
TOTAL HYDROCARBONS	1 @	1 @	1 @	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	4.8
GRO	1 @	1 @	1 @	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	1.64
DRO	1 @	1 @	1 @	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	4.3
TPH-GAS	1 @	1 @	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	1.64
TPH-FUEL	1 @	1 @	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	1.64
MTBE	NA / NA	0.093	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.015	<0.0025

TABLE 6

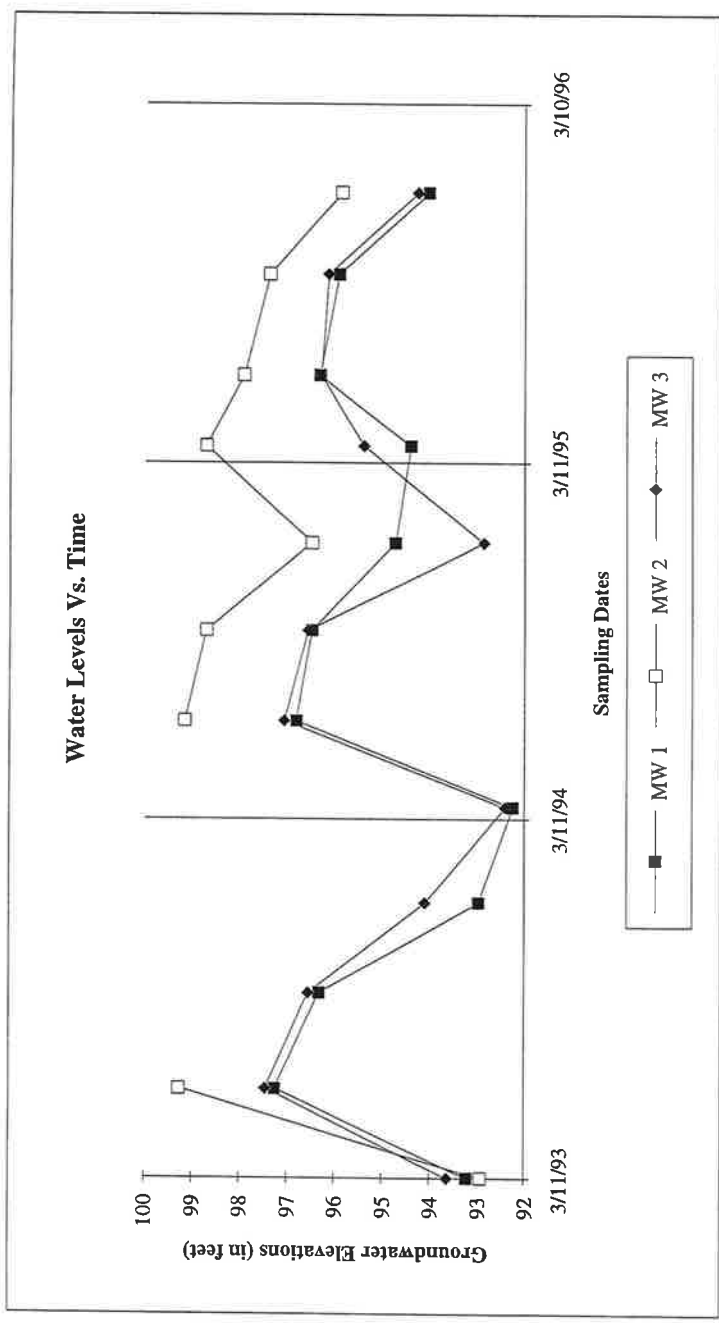
MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Measurement Date	Depth to Groundwater (ft)	Dissolved Oxygen (ppm)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65		ND	93.22
	###	6/10/93	3.61		ND	97.26
		9/14/93	4.54		ND	96.33
		12/15/93	7.89		ND	92.98
		3/23/94	8.63		ND	92.24
	100.94	6/20/94	4.12		ND	96.82
		9/20/94	4.45		ND	96.49
		12/20/94	6.21	4.00	ND	94.73
		3/28/95	6.54	3.90	ND	94.40
		6/8/95	4.61	2.00	ND	96.33
		9/19/95	5.02	14.40	ND	95.92
		12/11/95	6.90		ND	94.04
MW 2 Depth to screen: 5.02'	102.61	3/11/93	9.68		ND	92.93
	###	6/10/93	3.34		0.02	99.27
		9/14/93			0.60	
		12/15/93			0.33	
		3/23/94			0.30	
	102.62	6/20/94	3.46		100% sheen	99.16
		9/20/94	3.90		0.20	98.72
		12/20/94	6.14		0.40	96.48
		3/28/95	3.90		100% film	98.72
		6/8/95	4.70		0.20	97.92
		9/19/95	5.24		0.18	97.38
		12/11/95	6.76		0.40	95.86
MW 3 Depth to screen: 4.82'	101.53	3/11/93	7.89		ND	93.64
	###	6/10/93	4.08		ND	97.45
		9/14/93	4.97		ND	96.56
		12/15/93	7.43		ND	94.10
		3/23/94	9.13		ND	92.40
	101.46	6/20/94	4.39		ND	97.07
		9/20/94	4.89		ND	96.57
		12/20/94	8.59	3.75	ND	92.87
		3/28/95	6.07	5.10	ND	95.39
		6/8/95	5.16	4.10	ND	96.30
		9/19/95	5.31	20.90	ND	96.15
		12/11/95	7.20		ND	94.26

92-405-30 TABLE 6 continued



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

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December 28, 1995

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 14324
Date Sampled: 12-11-95
Date Received: 12-15-95
Date Analyzed: 12-19-95
Matrix: Water
Sample Identification:
Lab ID: 95-11323B MW3-405-water-12
95-11324 MW1-405-water-12
95-11325 Trip Blank

Samples were analyzed for GRO by the Wisconsin Modified GRO procedure. The results are reported on the following page.

Sincerely,

Lon Jones
Organic/Bio Group Leader

Parameter:	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	Total Hydrocarbons as GRO (mg/L)
Units:	1.0	1.0	1.0	3.0	0.1
MDL:					
95-11323B	BDL	BDL	BDL	BDL	BDL
MW3					
95-11324	BDL	BDL	BDL	BDL	BDL
MW1					
95-11325	BDL	BDL	BDL	BDL	BDL
Trip Blank					

BDL = Below Detection Limit, MDL = Method Detection Limit

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SITE MONITORING WORKSHEET

Fact Sheet #7

Minnesota Pollution Control Agency
Tanks and Spills Section

April 1993

NOV 2 1993
MPCA HAZARDOUS
WASTE DIVISION

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- quarterly, after the remedial investigation (RI) is complete, but before corrective action is taken;
- quarterly, during corrective action design (CAD) installation; and
- quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet" (Fact Sheet #11).

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (Fact Sheet #3). [Note: MPCA staff may reduce the frequency of progress reporting on a site specific basis.] Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: **00005361**
WCEC Project Number **92-405-30**
Date Form Completed: **11/07/95**

I Ground Water Monitoring

Please attach the following:

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Cumulative table of groundwater monitoring results, including all sample blanks. |
| <input checked="" type="checkbox"/> | Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody. |
| <input checked="" type="checkbox"/> | Cumulative table of groundwater elevation and product thickness results. |
| <input checked="" type="checkbox"/> | Hydrograph for all monitoring and recovery wells. |
| <input type="checkbox"/> | Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells. |
| <input checked="" type="checkbox"/> | Groundwater contour map based on the most recent groundwater elevation data. |
| <input checked="" type="checkbox"/> | Table of dissolved oxygen sample results (if collected). |

Please describe unusual circumstances that may have influenced the sampling results: NA

Please detail significant observations made at the site: NA

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach:

- NA A cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (e.g., sewer manholes, basements, etc.).
- NA A map of vapor monitoring locations.

Sampling instrument used: NA
Sampling method: NA

NOTE: If vapor concentrations exceed ten percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required.

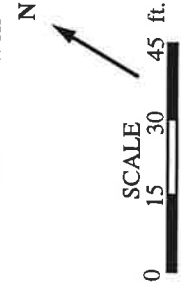
III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

Over 2.5 years (eleven sampling events) of quarterly groundwater monitoring have been completed at this site. Results from the last 2.5 years suggest that the contaminant plume is stable and the remaining free product is relatively immobile. WCEC recommends that monitoring well #2 be bailed periodically to remove any accumulation of free product until the remedial excavation is completed. Once the remedial excavation has been completed well #2 should be replaced and monitored quarterly for no longer than one year to document product removal and groundwater quality. Water level measurements in wells #1 and #3 will be collected during each quarterly sampling event.

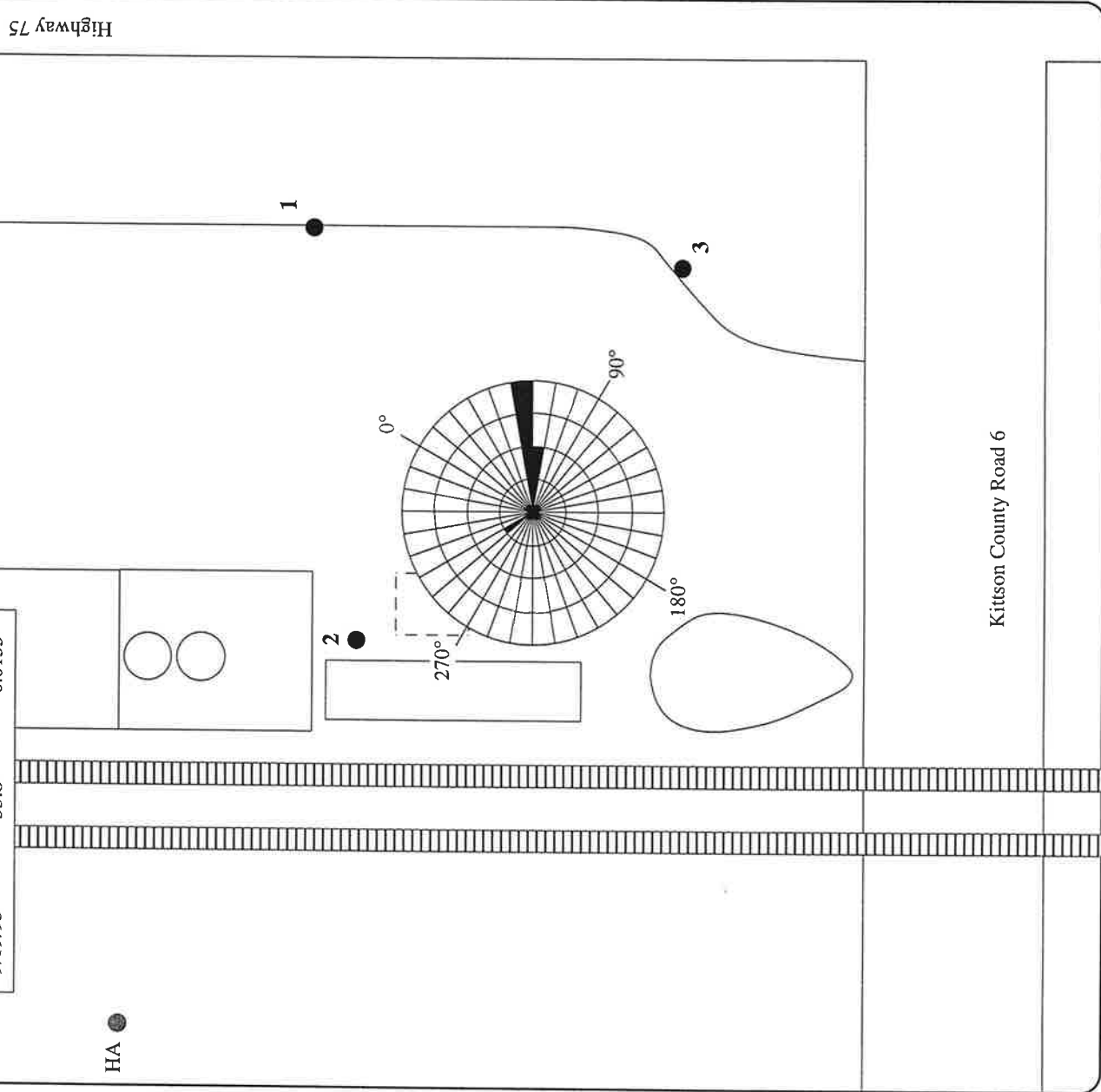
KEY

- Hand augered water sample
- ⊙ Test Hole
- Monitoring Well



The rose diagram is used to summarize the groundwater flow direction history at the site. The circle is divided into 10° segments, 0° being north. Concentric circles represent increased frequency of groundwater flow in a given direction.

Date	Flow Direction	Gradient
3/11/92	295.7°	0.0065
6/10/93	59.9°	0.0215
6/20/94	59.1°	0.0252
9/20/94	63.7°	0.0240
3/28/95	51.1°	0.0459
6/8/95	67.1°	0.0173
9/19/95	55.8°	0.0155



WEST CENTRAL ENVIRONMENTAL CONSULTANTS

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
 FIGURE 1: Groundwater flow directions summarized on a rose diagram.

TABLE 6

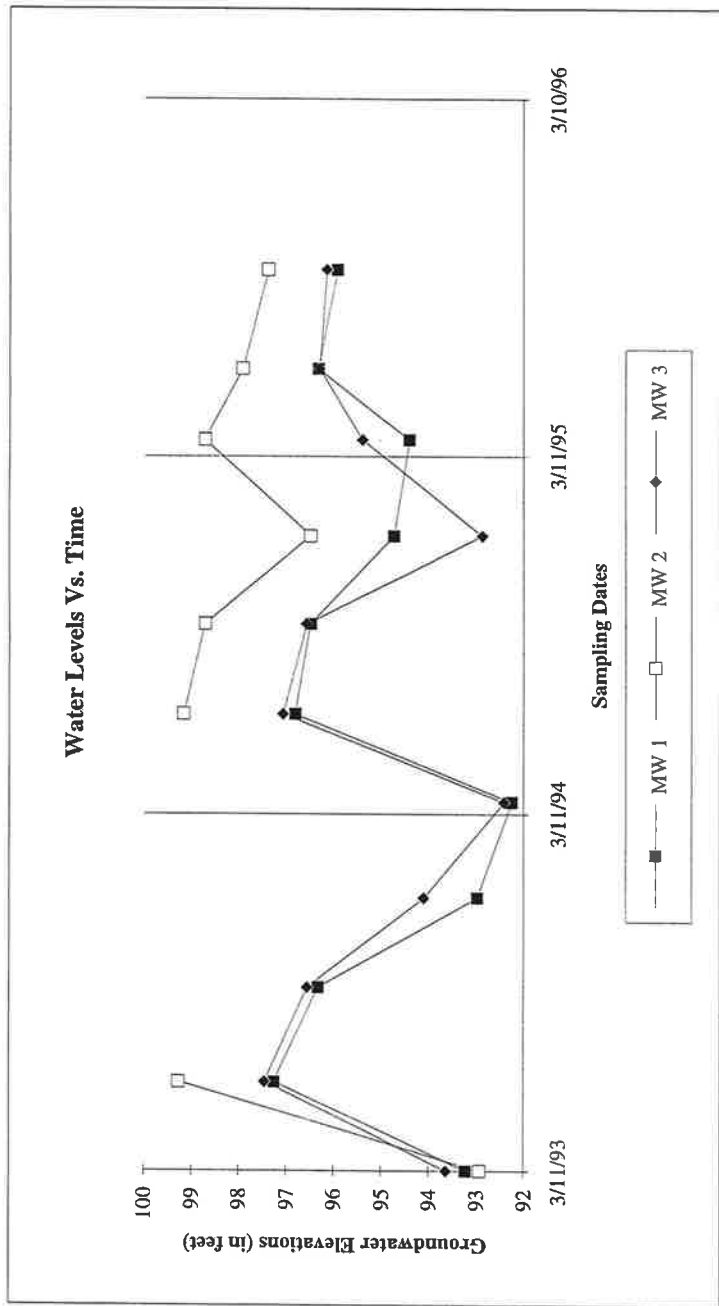
MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Measurement Date	Depth to Groundwater (ft)	Dissolved Oxygen (ppm)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65		ND	93.22
	###	6/10/93	3.61		ND	97.26
		9/14/93	4.54		ND	96.33
		12/15/93	7.89		ND	92.98
		3/23/94	8.63		ND	92.24
	100.94	6/20/94	4.12		ND	96.82
		9/20/94	4.45		ND	96.49
		12/20/94	6.21	4.00	ND	94.73
		3/28/95	6.54	3.90	ND	94.40
		6/8/95	4.61	2.00	ND	96.33
		9/19/95	5.02	14.40	ND	95.92
MW 2 Depth to screen: 5.02'	102.61	3/11/93	9.68		ND	92.93
	###	6/10/93	3.34		0.02	99.27
		9/14/93			0.60	
		12/15/93			0.33	
		3/23/94			0.30	
	102.62	6/20/94	3.46		100% sheen	99.16
		9/20/94	3.90		0.20	98.72
		12/20/94	6.14		0.40	96.48
		3/28/95	3.90		100% film	98.72
		6/8/95	4.70		0.20	97.92
		9/19/95	5.24		0.18	97.38
MW 3 Depth to screen: 4.82'	101.53	3/11/93	7.89		ND	93.64
	###	6/10/93	4.08		ND	97.45
		9/14/93	4.97		ND	96.56
		12/15/93	7.43		ND	94.10
		3/23/94	9.13		ND	92.40
	101.46	6/20/94	4.39		ND	97.07
		9/20/94	4.89		ND	96.57
		12/20/94	8.59	3.75	ND	92.87
		3/28/95	6.07	5.10	ND	95.39
		6/8/95	5.16	4.10	ND	96.30
		9/19/95	5.31	20.90	ND	96.15

92-405-30 TABLE 6 continued



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



October 2, 1995

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 14242
Date Sampled: 09-19-95
Date Received: 09-22-95
Date Analyzed: 09-30-95
Matrix: Water
Sample Identification:
Lab ID: 95-07887 MW3-405-water-11
95-07888 MW1-405-water-11
95-07889 Trip Blank

Samples were analyzed for GRO by the Wisconsin Modified GRO procedure. The results are reported on the following page.

Sincerely,

Chad Holzsnagel
Chemist

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LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

MIDWEST ANALYTICAL SERVICES

Page 2
COC 14242

Parameter:	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO
Units Method	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Detection Limit	1.0	1.0	1.0	3.0	0.1
<u>Sample Number</u>					
95-07887 MW3	BDL	BDL	BDL	BDL	BDL
95-07888 MW1	BDL	BDL	BDL	BDL	BDL
95-07889 Trip Blank	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

AND

REQUEST FOR ANALYSIS

(Instructions on Back of Form)

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

14242

SHADED AREAS FOR LABORATORY USE ONLY

SAMPLER NAME: Justin J. Cody	PROJECT ID: 92-405-30	CLIENT: WCEC		REPORTS TO BE SENT TO: WCEC		
SAMPLER SIGNATURE: <i>Justin J. Cody</i>						
REMARKS: Justin J. Cody						
REPORTS TO BE SENT TO: WCEC						

SAMPLER NO.	LABORATORY I.D. NO.	SAMPLE	MATRIX			DATE	GRAB	COMP.	NO. OF CONTAINERS
			WATER	SOIL	OTHER				
95-07887		IND-405-10AIV-11	X			6/19/92	X	X	3
7888		IND-405-WATER-11	X			6/19/92	X	X	3
7889		Tap Stand							

SAMPLE IDENTIFICATION		DATE / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Comments:
LABORATORY I.D. NO.	SAMPLER NO.					
95-07887			<i>Justin J. Cody</i>			
7888						
7889						

<input type="checkbox"/>	CHECK HERE FOR DRINKING WATER DETECTION LIMITS
<input type="checkbox"/>	TURNAROUND TIME REQUIRED:
<input type="checkbox"/>	NORMAL
<input type="checkbox"/>	RUSH
DATE REQUIRED: _____	

SITE MONITORING WORKSHEET

Fact Sheet #7

Minnesota Pollution Control Agency
Tanks and Spills Section

April 1993

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- quarterly, after the remedial investigation (RI) is complete, but before corrective action is taken;
- quarterly, during corrective action design (CAD) installation; and
- quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet" (Fact Sheet #11).

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (Fact Sheet #3). [Note: MPCA staff may reduce the frequency of progress reporting on a site specific basis.] Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: 5361

WCEC Project Number 92-405-30

Date Form Completed: 07/06/95

I Ground Water Monitoring

Please attach the following:

- | | |
|----|---|
| X | Cumulative table of groundwater monitoring results, including all sample blanks. |
| X | Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody. |
| X | Cumulative table of groundwater elevation and product thickness results. |
| X | Hydrograph for all monitoring and recovery wells. |
| NA | Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells. |
| X | Groundwater contour map based on the most recent groundwater elevation data. |
| X | Table of dissolved oxygen sample results (if collected). |

Please describe unusual circumstances that may have influenced the sampling results: **NA**

Please detail significant observations made at the site: **NA**

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach:

- NA** A cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (e.g., sewer manholes, basements, etc.).
- NA** A map of vapor monitoring locations.

Sampling instrument used: **NA**

Sampling method: **NA**

NOTE: If vapor concentrations exceed ten percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required.

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

The current monitoring schedule was dictated in an MPCA correspondence dated 14 November 1994. The schedule consists of quarterly groundwater monitoring through September 1995. The next sampling event will conclude the recommended schedule.

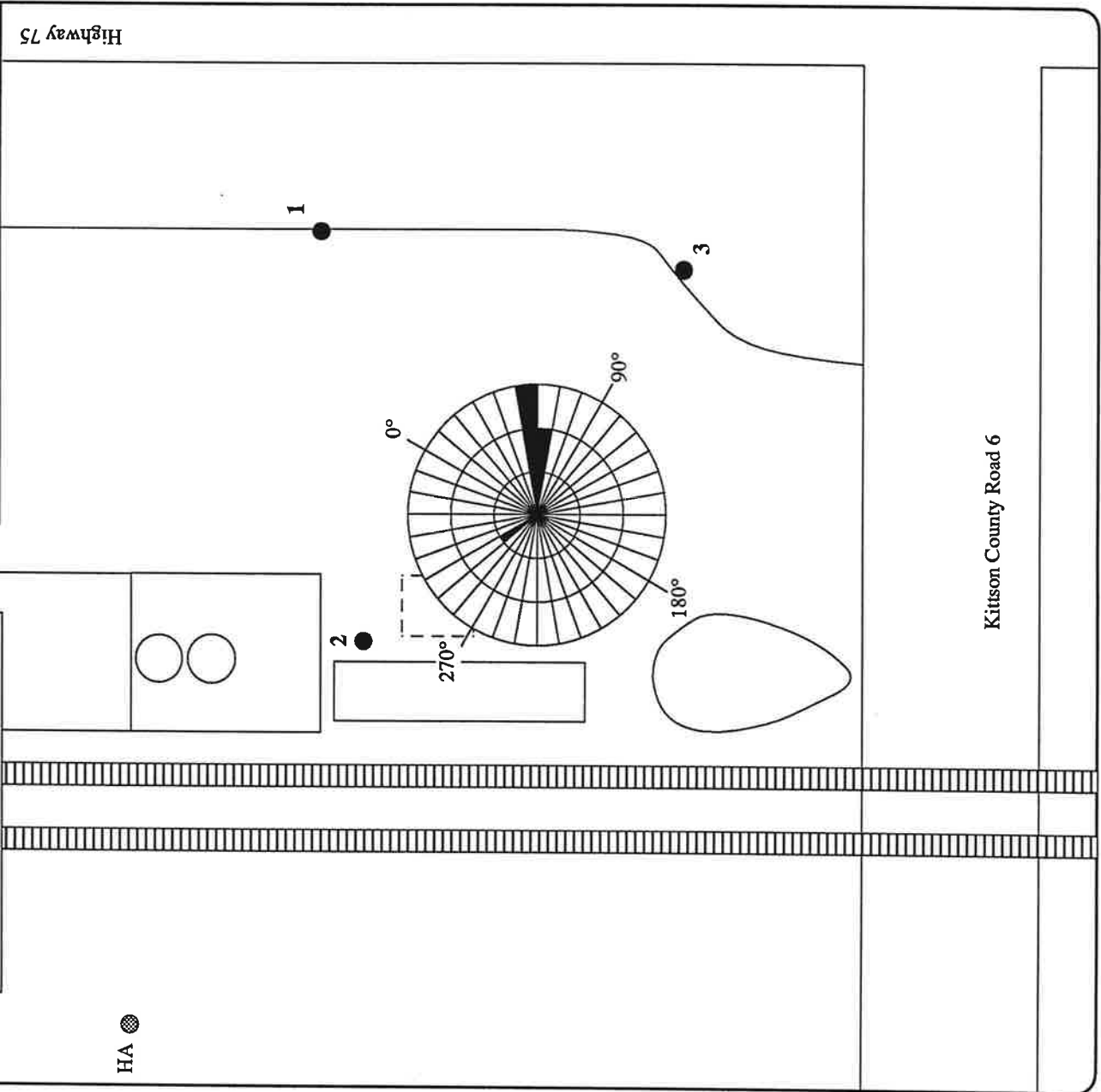
KEY

- Hand augered water sample Monitor
- ⊙ Test Hole
- Well



The rose diagram is used to summarize the groundwater flow direction history at the site. The circle is divided into 10° segments, 0° being north. Concentric circles represent increased frequency of groundwater flow in a given direction.

Date	Flow Direction	Gradient
3/11/92	295.7°	0.0065
6/10/93	59.9°	0.0215
6/20/94	59.1°	0.0252
9/20/94	63.7°	0.0240
3/28/95	51.1°	0.0459
6/8/95	67.1°	0.0173



WEST CENTRAL ENVIRONMENTAL CONSULTANTS

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
FIGURE 1: Groundwater flow directions summarized on a rose diagram.

WCCEC Project No. 92-405-30
Co-op Services Bldg, Humboldt

GROUNDWATER QUALITY

TABLE 5

ANALYSIS	RAT / HRL (ppm)	TH 3		TH 5		TH 3		TH 5		TH 3		TH 5		TH 3		TH 5		TH 3		TH 5		Laboratory																								
		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water																										
		HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA																									
VOC																						Chloroethane	1 / 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
BTEX																						Benzene	0.01 / 0.01	0.004	0.007	0.003	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
TOTAL HYDROCARBONS																						GRO	1 @	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TYPICAL																						DRO	1 @	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
TPH-GAS																						TPH-FUEL	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
MTBE																																														
DUP.																																														
MW 1																																														
MW 2																																														

TH 3 & 5 Sampled: 6/26/92
HA Sampled: 6/11/93

Sampling Event I: 3/11/93
V: 3/23/94 IX: 3/28/95
II: 6/10/93 VI: 6/20/94 X: 6/8/95
III: 9/14/93 VII: 9/20/94
IV: 12/15/93 VIII: 12/20/94

Each sample is a composite of the groundwater in a monitor well. All results in mg/L (ppm). ND indicates that compound was not detected above the laboratory's method detection limit. Spaces indicate sample was not analyzed for that compound. Dup. indicates duplicate sample was taken. HA indicates hand augered test hole. * indicates peaks present in range but below detection limits. MAS indicates Midwest Analytical Services. Energy indicates Energy Laboratories, Inc., analysis by GC/MAS methodology. MB indicates Method Blank. @ indicates that GRO number is a cleanup goal. RAL indicates the recommended allowable limits (RALs) for drinking water established by the Minnesota Department of Health (MDH, Release #3, January 1991). HRL indicates the health risk limits for drinking water established by the MDH (MDH, Rules Parts 4717.7100 to 4717.7800, November 1993).

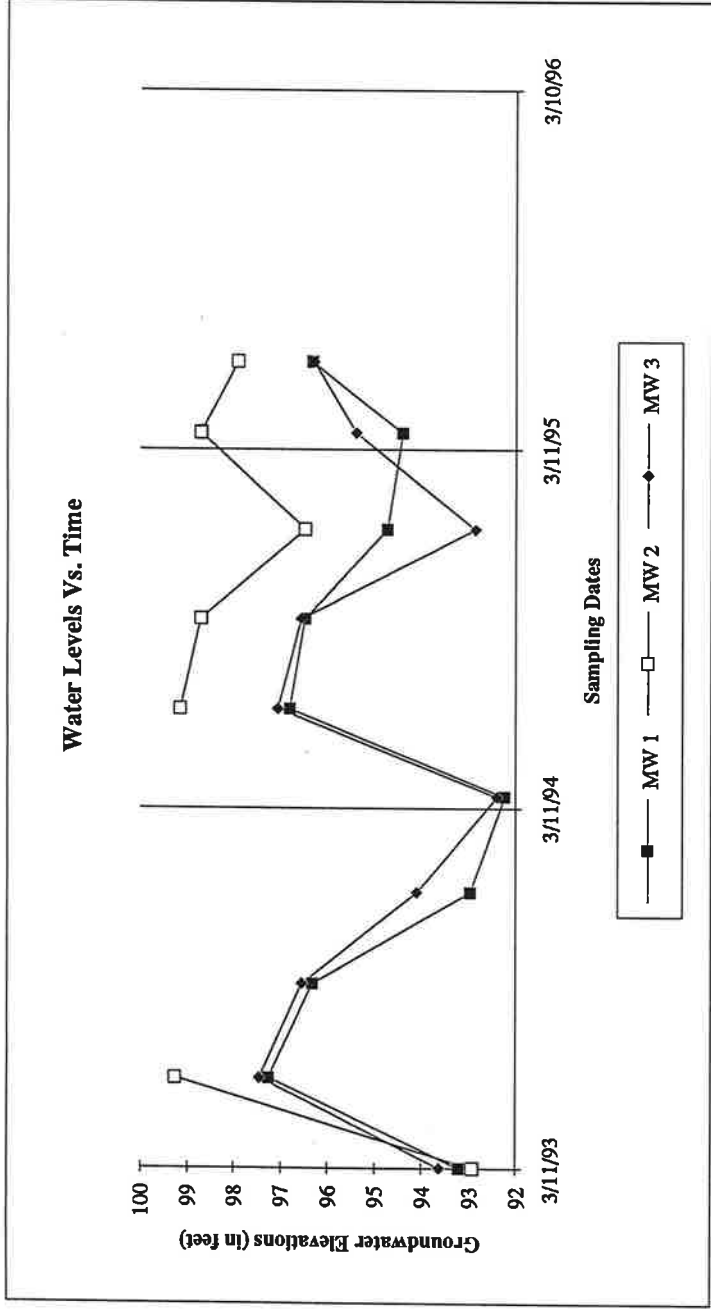
TABLE 6
MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Measurement Date	Depth to Groundwater (ft)	Dissolved Oxygen (ppm)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65		ND	93.22
	###	6/10/93	3.61		ND	97.26
		9/14/93	4.54		ND	96.33
		12/15/93	7.89		ND	92.98
		3/23/94	8.63		ND	92.24
	100.94	6/20/94	4.12		ND	96.82
		9/20/94	4.45		ND	96.49
		12/20/94	6.21	4.00	ND	94.73
		3/28/95	6.54	3.90	ND	94.40
		6/8/95	4.61	2.00	ND	96.33
MW 2 Depth to screen: 5.02'	102.61	3/11/93	9.68		ND	92.93
	###	6/10/93	3.34		0.02	99.27
		9/14/93			0.60	
		12/15/93			0.33	
		3/23/94			0.30	
	102.62	6/20/94	3.46		100% sheen	99.16
		9/20/94	3.90		0.20	98.72
		12/20/94	6.14		0.40	96.48
		3/28/95	3.90		100% film	98.72
		6/8/95	4.70		0.20	97.92
MW 3 Depth to screen: 4.82'	101.53	3/11/93	7.89		ND	93.64
	###	6/10/93	4.08		ND	97.45
		9/14/93	4.97		ND	96.56
		12/15/93	7.43		ND	94.10
		3/23/94	9.13		ND	92.40
	101.46	6/20/94	4.39		ND	97.07
		9/20/94	4.89		ND	96.57
		12/20/94	8.59	3.75	ND	92.87
		3/28/95	6.07	5.10	ND	95.39
		6/8/95	5.16	4.10	ND	96.30

92-405-30 TABLE 6 continued



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



June 19, 1995

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 11422
Date Sampled: 06-08-95
Date Received: 06-12-95
Date Analyzed: 06-16-95
Matrix: Water
Sample Identification:
Lab ID: 95-04426 MW3-405-water-10
95-04427 MW1-405-water-10
95-04425 Trip Blank

Samples were analyzed according to method GRO. The results are reported on the following page.

Sincerely,

Chad Holzmagel
Chemist

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

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MIDWEST ANALYTICAL SERVICES

Page 2
COC 11422

Parameter:	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Method					
Detection Limit	1.0	1.0	1.0	3.0	0.1
<u>Sample Number</u>					
95-04426 MW3	BDL	1.4	BDL	BDL	BDL*
95-04427 MW1	BDL	2.3	1.2	4.6	BDL*
95-04425 Trip Blank	BDL	2.6	1.1	3.6	0.10

BDL = Below Detection Limit

* = Peaks present in range but below detection limit.

CHAIN OF CUSTODY RECORD
 AND
 REQUEST FOR ANALYSIS

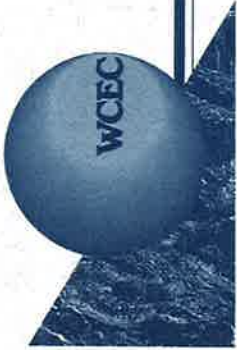
(Instructions on Back of Form)

LAB (612) 689-2175
 METRO (612) 444-9270
 FAX (612) 689-3660

NO 11422

CLIENT:		PROJECT ID:		REPORTS TO BE SENT TO:		DATE	TIME	MATRIX	NO. OF CONTAINERS	COMP.	GRAB	DATE	WATER	SOIL	OTHER			
SAMPLE NAME:		SAMPLE ID:		SIGNATURE:												REMARKS:		
SAMPLE NO.:		LABORATORY I.D. NO.: <td colspan="2">SAMPLE NO.:</td>		SAMPLE NO.:														
SAMPLE IDENTIFICATION																		
SAMPLE	SAMPLE NO.	LABORATORY I.D. NO.	GRO (includes BTEX)	DRO	BTEX	VOC (465-D)	PH	Pb (DISS. OR TOTAL)	PCRA 8 METALS	BOD OR CBOD	TSS	Fcol. OR Tcol.	HCl	HNO ₃	H ₂ SO ₄	ICE	OTHER	
WCC	92-H05-30	95 4926	X										X	X		X		
WCC	92-H05-30	95 4927	X										X	X		X		
SHADED AREAS FOR LABORATORY USE ONLY																		
PRESERVATIVE																		

Received for Laboratory By: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Comments:		Date REQUIRED: <input type="checkbox"/> NORMAL <input type="checkbox"/> RUSH			
DATE REQUIRED:		TURNAROUND TIME REQUIRED:			
CHECK HERE FOR DRINKING WATER DETECTION LIMITS <input type="checkbox"/>					



West Central Environmental Consultants

14 Green River Road • P.O. Box 594 • Morris, MN 56267-0594
(612) 589-2039 or 1-800-422-8356 • Fax: (612) 589-2814

May 30, 1995

RECEIVED

JUN 01 1995

**MPCA, HAZARDOUS
WASTE DIVISION**

Mr. Rick Newquist
Minnesota Pollution Control Agency
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155

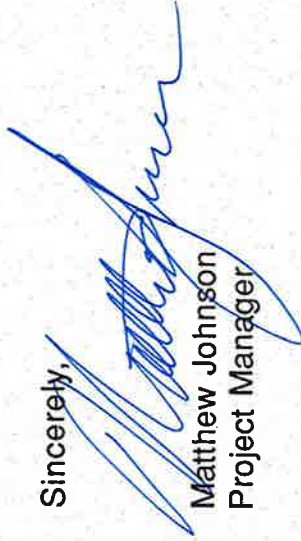
RE: Site Monitoring Worksheet (Fact Sheet #7)
Co-op Services Bulk, Humboldt, Minnesota
WCEC Project Number: 92-405-30
MPCA Leak Number: LEAK00005361

Dear Mr. Newquist:

Enclosed please find the completed Fact Sheet #7 for the above referenced site.

If you have any questions regarding this site, please contact me at 1-800-422-8356.

Sincerely,



Matthew Johnson
Project Manager

Enclosure

SITE MONITORING WORKSHEET

RECEIVED

Fact Sheet #7

JUN 01 1995

Minnesota Pollution Control Agency
Tanks and Spills Section
April 1993

**MPCA, HAZARDOUS
WASTE DIVISION**

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

quarterly, after the remedial investigation (RI) is complete, but before corrective action is taken;

quarterly, during corrective action design (CAD) installation; and

quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet" (Fact Sheet #11).

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (Fact Sheet #3). [Note: MPCA staff may reduce the frequency of progress reporting on a site specific basis.] Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: **5361**
WCEC Project Number **92-405-30**
Date Form Completed: **05/10/95**

I Ground Water Monitoring

Please attach the following:

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Cumulative table of ground water monitoring results, including all sample blanks. |
| <input checked="" type="checkbox"/> | Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody. |
| <input checked="" type="checkbox"/> | Cumulative table of ground water elevation and product thickness results. |
| <input checked="" type="checkbox"/> | Hydrograph for all monitoring and recovery wells. |
| <input type="checkbox"/> | Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells. |
| <input checked="" type="checkbox"/> | Ground water contour map based on the most recent ground water elevation data. |
| <input checked="" type="checkbox"/> | Table of dissolved oxygen sample results (if collected). |

Please describe unusual circumstances that may have influenced the sampling results: **NA**

Please detail significant observations made at the site: **NA**

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach:

- NA** A cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (i.e., sewer manholes, basements, etc.).
- NA** A map of vapor monitoring locations.

Sampling instrument used: **NA**

Sampling method: **NA**

NOTE: If vapor concentrations exceed ten percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required.

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

Nine sampling events over the last two years have provided sufficient evidence to indicate that groundwater flow is to the east-northeast, away from the nearest receptor, and that the plume is not expanding at a significant rate. WCEC recommends that groundwater monitoring be discontinued and that the remedial excavation described in the Remedial Investigation Report be completed as soon as possible. The MPCA approved the remedial excavation in a 14 November 1994 correspondence.

The rose diagram is used to summarize the groundwater flow direction history at the site. The circle is divided into 10° segments, 0° being north. Concentric circles represent increased frequency of groundwater flow in a given direction.

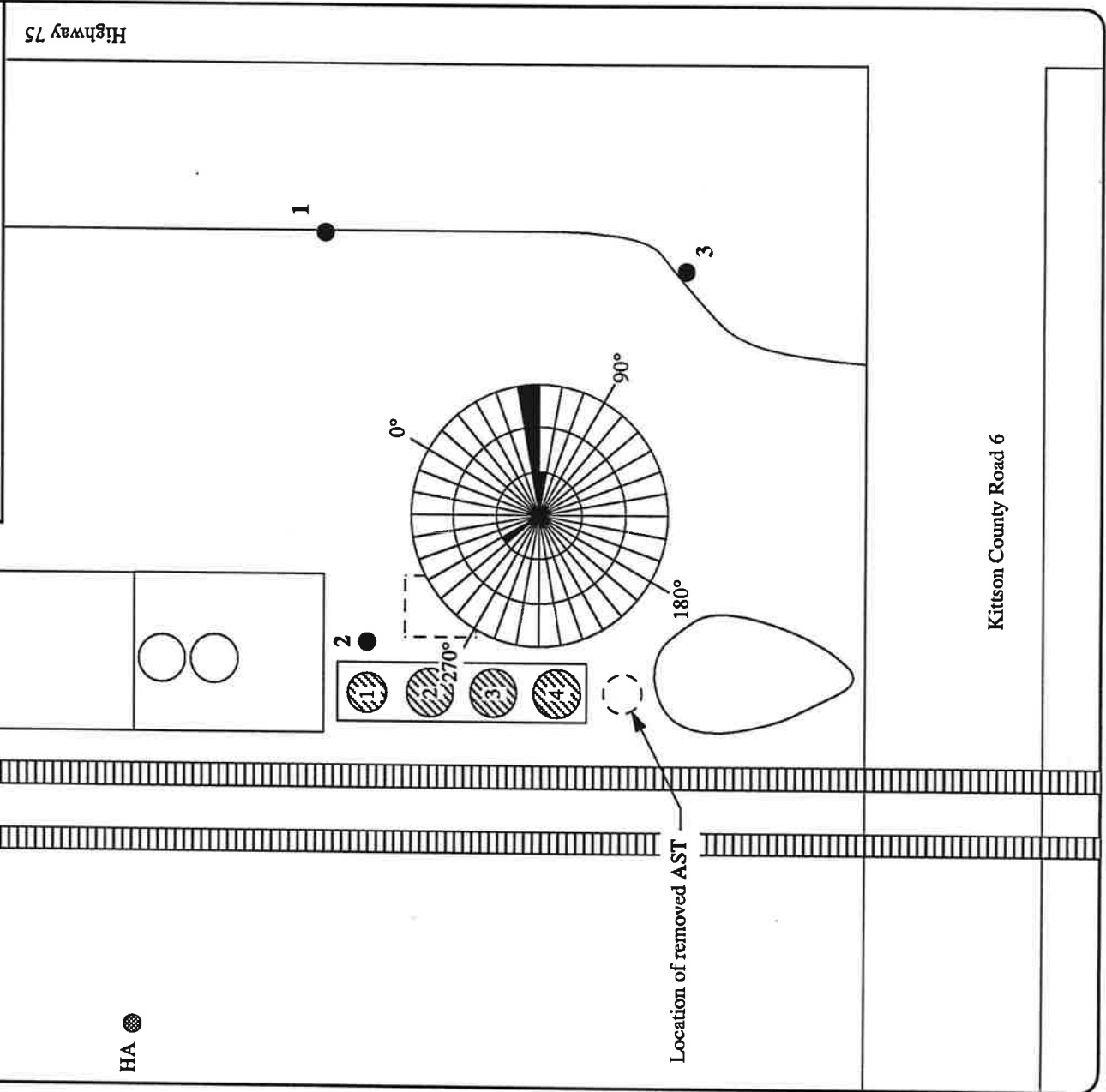
Date	Flow Direction	Gradient
3/11/92	295.7°	0.0065
6/10/93	59.9°	0.0215
6/20/94	59.1°	0.0252
9/20/94	63.7°	0.0240
3/28/95	51.1°	0.0459

KEY

- AST
- Hand augered water sample
- Test Hole
- Monitor Well

SCALE 0 15 30 45 ft.

N



WEST CENTRAL ENVIRONMENTAL CONSULTANTS

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
FIGURE 1: Groundwater flow directions summarized on a rose diagram.

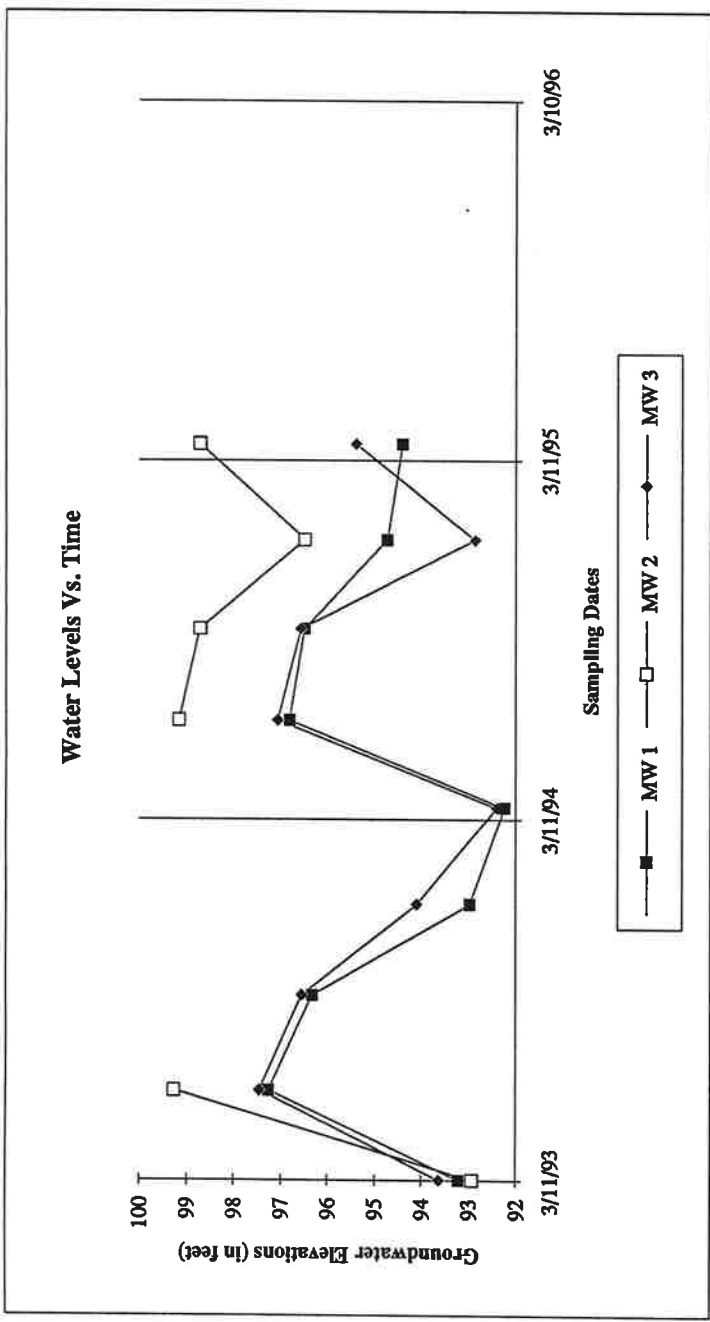
TABLE 6
MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Measurement Date	Depth to Groundwater (ft)	Dissolved Oxygen (ppm)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65		ND	93.22
	###	6/10/93	3.61		ND	97.26
		9/14/93	4.54		ND	96.33
		12/15/93	7.89		ND	92.98
		3/23/94	8.63		ND	92.24
	100.94	6/20/94	4.12		ND	96.82
		9/20/94	4.45		ND	96.49
		12/20/94	6.21	4.00	ND	94.73
		3/28/95	6.54	3.90	ND	94.40
MW 2 Depth to screen: 5.02'	102.61	3/11/93	9.68		ND	92.93
	###	6/10/93	3.34		0.02	99.27
		9/14/93			0.60	
		12/15/93			0.33	
		3/23/94			0.30	
	102.62	6/20/94	3.46		100% sheen	99.16
		9/20/94	3.90		0.20	98.72
		12/20/94	6.14		0.40	96.48
		3/28/95	3.90		100% film	98.72
MW 3 Depth to screen: 4.82'	101.53	3/11/93	7.89		ND	93.64
	###	6/10/93	4.08		ND	97.45
		9/14/93	4.97		ND	96.56
		12/15/93	7.43		ND	94.10
		3/23/94	9.13		ND	92.40
	101.46	6/20/94	4.39		ND	97.07
		9/20/94	4.89		ND	96.57
		12/20/94	8.59	3.75	ND	92.87
		3/28/95	6.07	5.10	ND	95.39

92-405-30 TABLE 6 continued



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



April 7, 1995

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 12308
Date Sampled: 03-28-95
Date Received: 03-29-95
Date Analyzed: 04-03-95
Matrix: Water
Sample Identification:
Lab ID: 95-02166 MW3-405-water-9
95-02167 MW1-405-water-9
95-02168 MW2-405-water-9
95-02169 Trip Blank-405

Samples were analyzed according to methods GRO, DRO and 465-D. The results are reported on the following pages.

Sincerely,

Chad Holzsnagel
Chemist

RECEIVED APR 12 1995

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

MIDWEST ANALYTICAL SERVICES

Page 2
COC 12308

Parameter:	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Method					
Detection Limit	1.0	1.0	1.0	3.0	0.1
					0.1

Sample Number	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO
95-02166 MW3	BDL	BDL	BDL	BDL	BDL
95-02167 MW1	BDL	BDL	BDL	BDL	BDL
95-02168 MW2					4.30 656
95-02169 Trip Blank					BDL

BDL = Below Detection Limit

MIDWEST ANALYTICAL SERVICES

Page 3
COC 12308

Lab ID:	95-02168 MW2 (µg/L)	95-02169 Trip Blank (µg/L)	MDL / PQL (µg/L)
Dichlorodifluoromethane	<2.5	BDL	0.2/2.0
Chloromethane	<2.5	BDL	0.4/4.0
Vinyl chloride	<2.5	BDL	0.3/3.0
Bromomethane	<2.5	BDL	0.4/4.0
Chloroethane	<2.5	BDL	0.4/4.0
Dichlorofluoromethane	<2.5	BDL	0.4/4.0
Trichlorofluoromethane	<2.5	BDL	0.5/5.0
Ethyl ether	<2.5	BDL	0.6/6.0
Acetone	<2.5	BDL	0.3/3.0
1,1-Dichloroethene	<2.5	BDL	0.5/5.0
Methylene chloride	<2.5	BDL	0.6/6.0
Allyl chloride	<2.5	BDL	0.4/4.0
Trichlorotrifluoroethane	<2.5	BDL	1.0/10.0
Methyl tert-butyl ether	<2.5	BDL	0.3/3.0
trans-1,2-Dichloroethene	<2.5	BDL	0.4/4.0
1,1-Dichloroethane	<2.5	BDL	0.3/3.0
Methyl ethyl ketone	<2.5	BDL	2.8/28.0
cis-1,2-Dichloroethene	<2.5	BDL	0.3/3.0
Bromochloromethane	<2.5	BDL	0.2/2.0
Chloroform	<2.5	BDL	0.2/2.0
2,2-Dichloropropane	<2.5	BDL	0.8/8.0
Tetrahydrofuran	<2.5	BDL	0.6/6.0
1,2-Dichloroethane	35.3	BDL	0.3/3.0
1,1,1-Trichloroethane	<2.5	BDL	0.4/4.0
1,1-Dichloropropene	<2.5	BDL	0.3/3.0
Carbon tetrachloride	<2.5	BDL	0.4/4.0
Benzene	851	BDL	0.5/5.0
Dibromomethane	<2.5	BDL	0.3/3.0
1,2-Dichloropropane	<2.5	BDL	0.3/3.0
Trichloroethene	<2.5	BDL	0.3/3.0
Bromodichloromethane	<2.5	BDL	0.4/4.0
cis-1,3-Dichloropropene	<2.5	BDL	0.3/3.0
Methyl isobutyl ketone	712	BDL	0.7/7.0
trans-1,3-Dichloropropene	<2.5	BDL	0.2/2.0

BDL = Below Detection Limit, MDL = Method Detection Limit, PQL = Practical Quantitation Limit

MIDWEST ANALYTICAL SERVICES

Page 4
COC 12308

Lab ID:	95-02168 MW2 (µg/L)	95-02169 Trip Blank (µg/L)
MDL / PQL (µg/L)		
1,1,2-Trichloroethane	<2.5	BDL
Toluene	<2.5	BDL
1,3-Dichloropropane	<2.5	BDL
Dibromochloromethane	<2.5	BDL
1,2-Dibromoethane	<2.5	BDL
Tetrachloroethene	<2.5	BDL
1,1,1,2-Tetrachloroethane	<2.5	BDL
Chlorobenzene	<2.5	BDL
Ethylbenzene	<2.5	BDL
m- and p-Xylene	112	BDL
Bromoform	<2.5	BDL
Styrene	<2.5	BDL
O-Xylene	90.5	BDL
1,1,2,2-Tetrachloroethane	<2.5	BDL
1,2,3-Trichloropropane	<2.5	BDL
Isopropyl benzene	<2.5	BDL
Bromobenzene	<2.5	BDL
n-Propyl benzene	<2.5	BDL
2-Chlorotoluene	<2.5	BDL
4-Chlorotoluene	<2.5	BDL
1,3,5-Trimethylbenzene	36.8	BDL
tert-Butyl benzene	<2.5	BDL
1,2,4-Trimethylbenzene	83.9	BDL
sec-Butyl benzene	<2.5	BDL
1,3-Dichlorobenzene	<2.5	BDL
1,4-Dichlorobenzene	<2.5	BDL
p-Isopropyl toluene	<2.5	BDL
1,2-Dichlorobenzene	<2.5	BDL
n-Butyl benzene	45.8	BDL
1,2-Dibromo-3-chloropropane	<2.5	BDL
1,2,4-Trichlorobenzene	<2.5	BDL
Naphthalene	111	BDL
Hexachlorobutadiene	<2.5	BDL
1,2,3-Trichlorobenzene	<2.5	BDL

BDL = Below Detection Limit, MDL = Method Detection Limit, PQL = Practical Quantitation Limit

**CHAIN OF CUSTODY RECORD
 AND
 REQUEST FOR ANALYSIS**
 (Instructions on Back of Form)

LAB (612) 689-2178
 METRO (612) 444-9270
 FAX (612) 689-3660

CLIENT:

SAMPLER NAME: *WJEC*
 PROJECT ID: *92-405-30*
 REPORTS TO BE SENT TO: *WJEC*

SAMPLER SIGNATURE: *Eric Poissant*
 REMARKS:

NO. OF CONTAINERS	COMP.	GRAB	DATE	TIME	MATRIX			SAMPLE NO.	LABORATORY ID NO.	SAMPLE IDENTIFICATION
					WATER	SOIL	OTHER			
3	X	1050	10/5							MW3-405-Sub-7-95-02106
3	X	1105								MW1-405-Water-9
4	X	1130			X					MW2-405-Water-9
1	X									Field Blank-405

GRO (Includes BTEX)	DRO	BTEX	VOC (465-D)	Pb	Pb (Diss. or Total)	RCRA 8 METALS	BOD or CBOD	TSS	Fcol or Tool	HCl	HNO ₃	H ₂ SO ₄	ICE	OTHER
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DATE RECEIVED: _____

TURNAROUND TIME REQUIRED: NORMAL RUSH

WATER DETECTION LIMITS:

Comments: _____

Received on Laboratory by: (Signature) _____ Date / Time _____

Received by: (Signature) _____ Date / Time _____

Reinquired by: (Signature) _____ Date / Time _____

Reinquired by: (Signature) _____ Date / Time _____

Reinquired by: (Signature) _____ Date / Time _____



West Central Environmental Consultants

14 Green River Road • P.O. Box 594 • Morris, MN 56267-0594
(612) 589-2059 or 1-800-422-8586 • Fax: (612) 589-2814

November 21, 1994

Mr. Rick Newquist
Minnesota Pollution Control Agency
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155

RE: Site Monitoring Worksheet (Fact Sheet #7)
Co-op Services Bulk, Humboldt, MN
WCEC Project Number: 92-405-30
MPCA Leak Number: LEAK00005361

Dear Mr. Newquist:

Enclosed please find the completed Fact Sheet #7 for the above referenced site.

If you have any questions regarding this site, please contact me at 1-800-422-8356.

Sincerely,

Matthew Johnson
Project Manager

Enclosure

RECEIVED

NOV 23 1994

MPCA, HAZARDOUS
WASTE DIVISION

SITE MONITORING WORKSHEET

Fact Sheet #7
Minnesota Pollution Control Agency
Tanks and Spills Section
April 1993

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NOV 23 1994

MPCA, HAZARDOUS
WASTE DIVISION

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- * quarterly, after the remedial investigation (RI) is complete but before corrective action is taken;
- * quarterly, during corrective action design (CAD) installation; and
- * quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet," (fact sheet #11)

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (fact sheet #3). [NOTE: MPCA staff may reduce the frequency of progress reporting on a site specific basis.]

Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: 5361
WCEC Project Number: 92-405-30
Date Form Completed: 11/15/94

I. Ground Water Monitoring

Please attach the following:

- Cumulative table of ground water monitoring results, including all sample blanks.
- Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
- Cumulative table of ground water elevation and product thickness results.
- Hydrograph for all monitoring and recovery wells.
- ~~NA~~ Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
- Ground water contour map based on the most recent ground water elevation data.
- ~~NA~~ Table of dissolved oxygen sample results (if collected)

Please describe unusual circumstances that may have influenced the sampling results: **NA**

Please detail significant observations made at the site: **NA**

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach: **NA**

- a cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (i.e., sewer manholes, basements, etc.)
- a map of vapor monitoring locations.

Sampling instrument used:

Sampling method:

NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required. **NA**

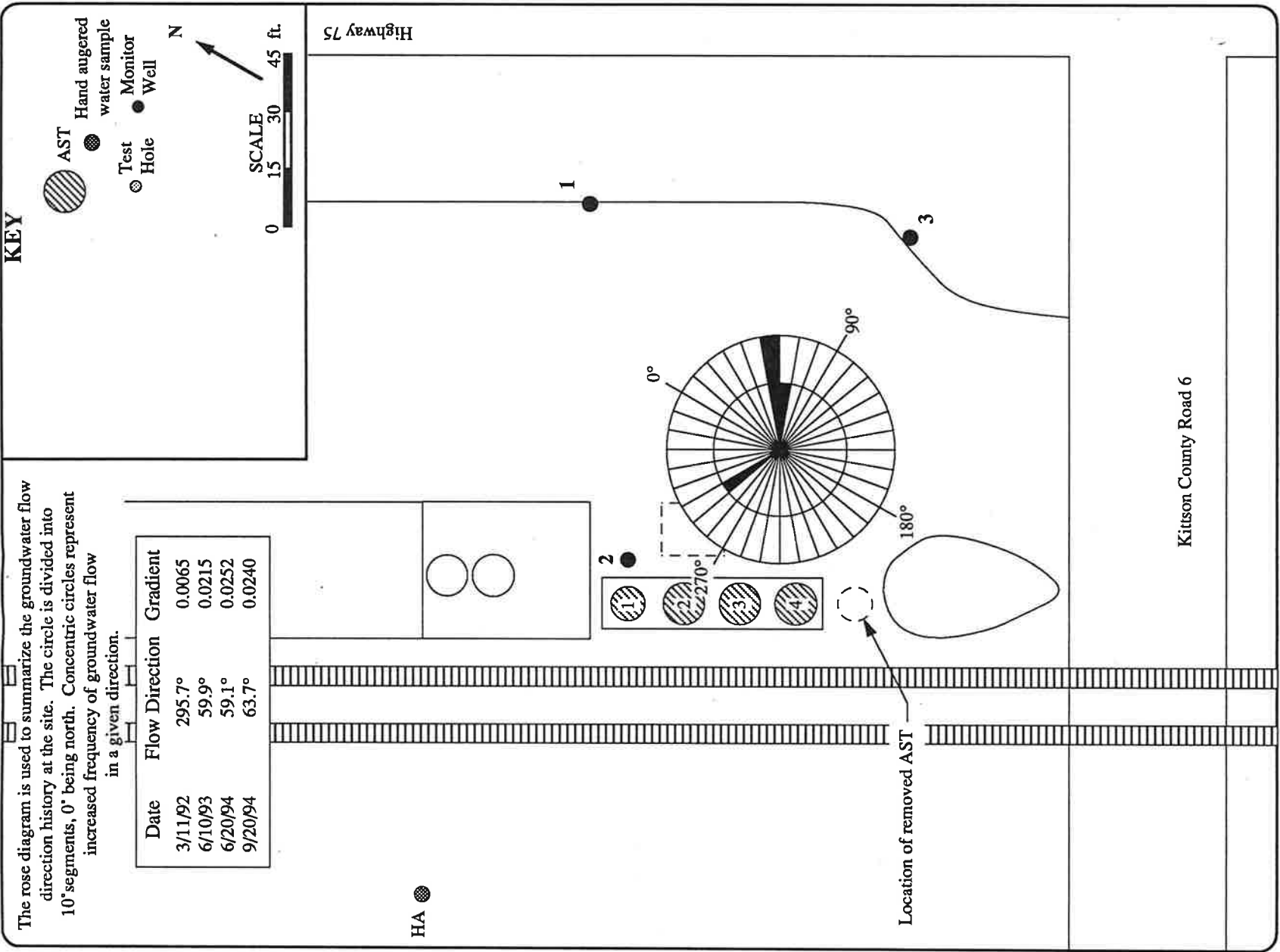
III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

WCEC recommends quarterly sampling of well #2, and collecting only groundwater level data on wells #1 and #3.

The rose diagram is used to summarize the groundwater flow direction history at the site. The circle is divided into 10° segments, 0° being north. Concentric circles represent increased frequency of groundwater flow in a given direction.

Date	Flow Direction	Gradient
3/11/92	295.7°	0.0065
6/10/93	59.9°	0.0215
6/20/94	59.1°	0.0252
9/20/94	63.7°	0.0240



KEY

- AST
- Hand augered water sample
- Test Hole
- Monitor Well



WEST CENTRAL ENVIRONMENTAL CONSULTANTS

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
 FIGURE 1: Groundwater flow directions summarized on a rose diagram.

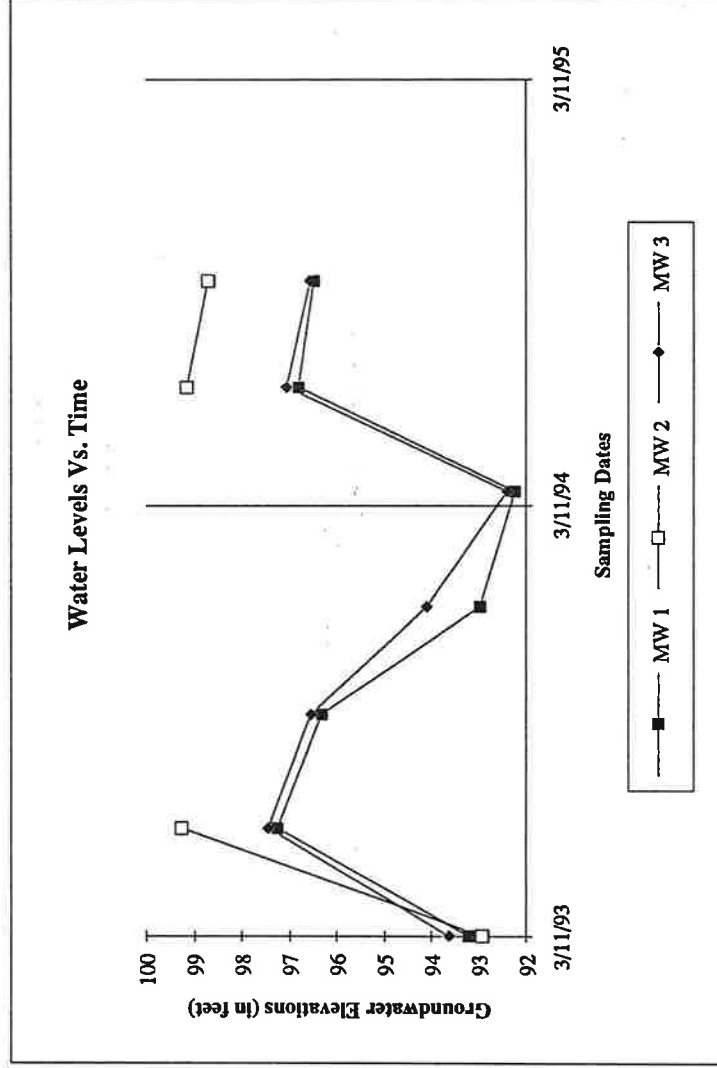
TABLE 6

MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Sampling Date	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65	ND	93.22
	###	6/10/93	3.61	ND	97.26
		9/14/93	4.54	ND	96.33
		12/15/93	7.89	ND	92.98
		3/23/94	8.63	ND	92.24
		6/20/94	4.12	ND	96.82
MW 2 Depth to screen: 5.02'	100.94	9/20/94	4.45	ND	96.49
	102.61	3/11/93	9.68	ND	92.93
	###	6/10/93	3.34	0.02	99.27
		9/14/93		0.60	
		12/15/93		0.33	
		3/23/94		0.30	
MW 3 Depth to screen: 4.82'	102.62	6/20/94	3.46	100% sheen	99.16
		9/20/94	3.90	0.20	98.72
	101.53	3/11/93	7.89	ND	93.64
	###	6/10/93	4.08	ND	97.45
		9/14/93	4.97	ND	96.56
		12/15/93	7.43	ND	94.10
	3/23/94	9.13	ND	92.40	
	6/20/94	4.39	ND	97.07	
	9/20/94	4.89	ND	96.57	



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



October 4, 1994

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 9654
Date Sampled: 09-20-94
Date Received: 09-23-94
Date Analyzed: 10-01-94
Matrix: Water
Sample Identification:
Lab ID: 94-07565 MW1-405-water7
94-07566 MW3-405-water7
94-07567 Trip Blank

Samples were analyzed according to method GRO. The results are reported on the following page.

Sincerely,

Chad Holzknagel
Chemist

RECEIVED OCT 07 1994

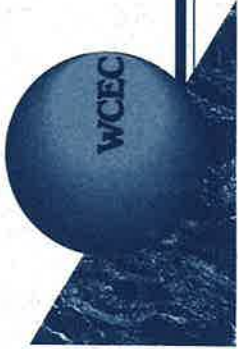
LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

MIDWEST ANALYTICAL SERVICES

Page 2
COC 9654

Parameter:	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Xylenes (ug/L)	Total Hydrocarbons as GRO (mg/L)
Units Method					
Detection Limit	1.0	1.0	1.0	3.0	0.1
<u>Sample Number</u>					
94-07565 MW1	BDL	BDL	BDL	BDL	BDL
94-07566 MW3	BDL	BDL	BDL	BDL	BDL
94-07567 Trip Blank	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit



West Central Environmental Consultants

14 Green River Road • P.O. Box 594 • Morris, MN 56267-0594
(612) 589-2039 or 1-800-422-8356 • Fax: (612) 589-2814

May 11, 1994

Mr. Rick Newquist
Minnesota Pollution Control Agency
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155

RE: Site Monitoring Worksheet (Fact Sheet #7)
Co-op Services, Hallock, MN
WCEC Project Number: 92-405-30
MPCA Leak Number: LEAK00005361

Dear Mr. Newquist:

Enclosed please find the completed Fact Sheet #7 for the above referenced site.

If you have any questions regarding this site, please contact me at 1-800-422-8356.

Sincerely,

Matthew Johnson
Project Manager

Enclosure

cc: George Rinde

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MAY 16 1994

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WASTE DIVISION

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MPCA, HAZARDOUS
WASTE DIVISION

SITE MONITORING WORKSHEET

Fact Sheet #7
Minnesota Pollution Control Agency
Tanks and Spills Section
April 1993

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- * quarterly, after the remedial investigation (RI) is complete but before corrective action is taken;
- * quarterly, during corrective action design (CAD) installation; and
- * quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet," (fact sheet #11)

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (fact sheet #3). [NOTE: MPCA staff may reduce the frequency of progress reporting on a site specific basis.]

Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: 5361
WCEC Project Number: 92-405-30
Date Form Completed: 5/10/94

I. Ground Water Monitoring

Please attach the following:

- Cumulative table of ground water monitoring results, including all sample blanks.
- Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
- Cumulative table of ground water elevation and product thickness results.
- Hydrograph for all monitoring and recovery wells.
- NA Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
- NA Ground water contour map based on the most recent ground water elevation data.
- NA Table of dissolved oxygen sample results (if collected)

Please describe unusual circumstances that may have influenced the sampling results: NA

Please detail significant observations made at the site:

The presence of free product in Monitor well #2 prevented taking a water level reading, which prevented the construction of a groundwater contour map.

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach: **NA**

- ___ a cumulative table of vapor monitoring results. The table should identify the
- ___ location of all vapor monitoring points (i.e., sewer manholes, basements, etc.)
- ___ a map of vapor monitoring locations.

Sampling instrument used:

Sampling method:

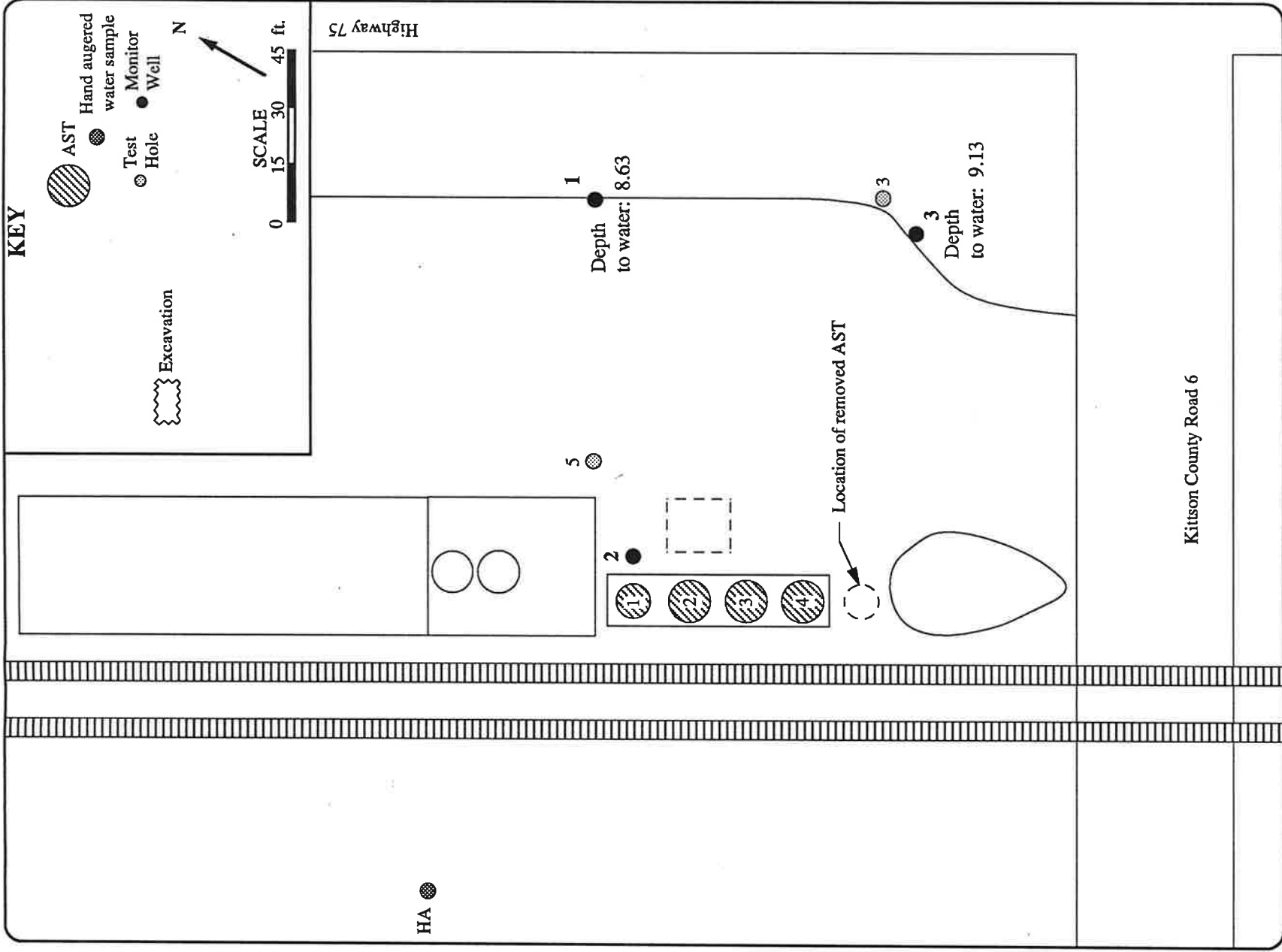
NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required. **NA**

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

WCEC recommends continued quarterly monitoring of well #2; sampling of wells #1 and #3 should be discontinued. Groundwater levels should be measured quarterly in each monitor well.



**WEST CENTRAL
ENVIRONMENTAL
CONSULTANTS**

PROJECT No. 92-405-30 Humboldt Bulk

FIGURE 8: Monitor well locations and depths to water.

TABLE 5

GROUNDWATER QUALITY
WCEC Project No. 92-405-30
Humboldt Bulk Site

Each sample is a composite of the groundwater in a monitor well.
All results in mg/L (ppm). ND indicates that compound was not detected above
the laboratory's method detection limit. Spaces indicate sample was not
tested for that compound. Dup. indicates duplicate sample was taken.
HA indicates hand augered test hole.

TH 3 & 5 Sampled: 6/26/92 Quarter I Sampling: 3/11/93 Quarter IV Sampling: 12/15/93
HA Sampled: 6/11/93 Quarter II Sampling: 6/10/93 Quarter V Sampling: 3/23/94
Quarter III Sampling: 9/14/93

ANALYSIS	Sample							
	TH 3 Water	TH 5 Water	HA Water	I	II	III	IV	V
VOC				Dup.				
Chloroethane				ND	ND			
Ethyl Ether				ND	ND			
1,2-Dichloroethane				ND	ND			
1,2-Dichloropropane				ND	ND			
Methyl isobutyl ketone				ND	ND			
n-Propylbenzene				ND	ND			
n-Butylbenzene				ND	ND			
1,2,4-Trimethylbenzene				ND	ND			
1,3,5-Trimethylbenzene				ND	ND			
tert-Butylbenzene				ND	ND			
p-Isopropyltoluene				ND	ND			
Isopropylbenzene				ND	ND			
Naphthalene				ND	ND			
Benzene				ND	ND			
Toluene				ND	ND			
Ethyl-benzene				ND	ND			
m- and p- Xylene				ND	ND			
o- Xylene and Styrene				ND	ND			
o- Xylene				ND	ND			
Styrene				ND	ND			
BTEX								
Benzene	0.004	0.011	ND		ND		ND	ND
Toluene	0.003	0.007	ND		ND		ND	ND
Ethyl-benzene	0.001	0.003	ND		ND		ND	ND
Xylene	0.003	0.008	ND		ND		ND	ND
TOTAL HYDROCARBONS								
GRO			ND	ND	0.2	ND	ND	ND
DRO			ND	ND	5.6	ND	ND	ND
TPH-GAS	ND	0.3						
TPH-FUEL	ND	2.2						
MTBE	0.093	0.015	ND	ND				

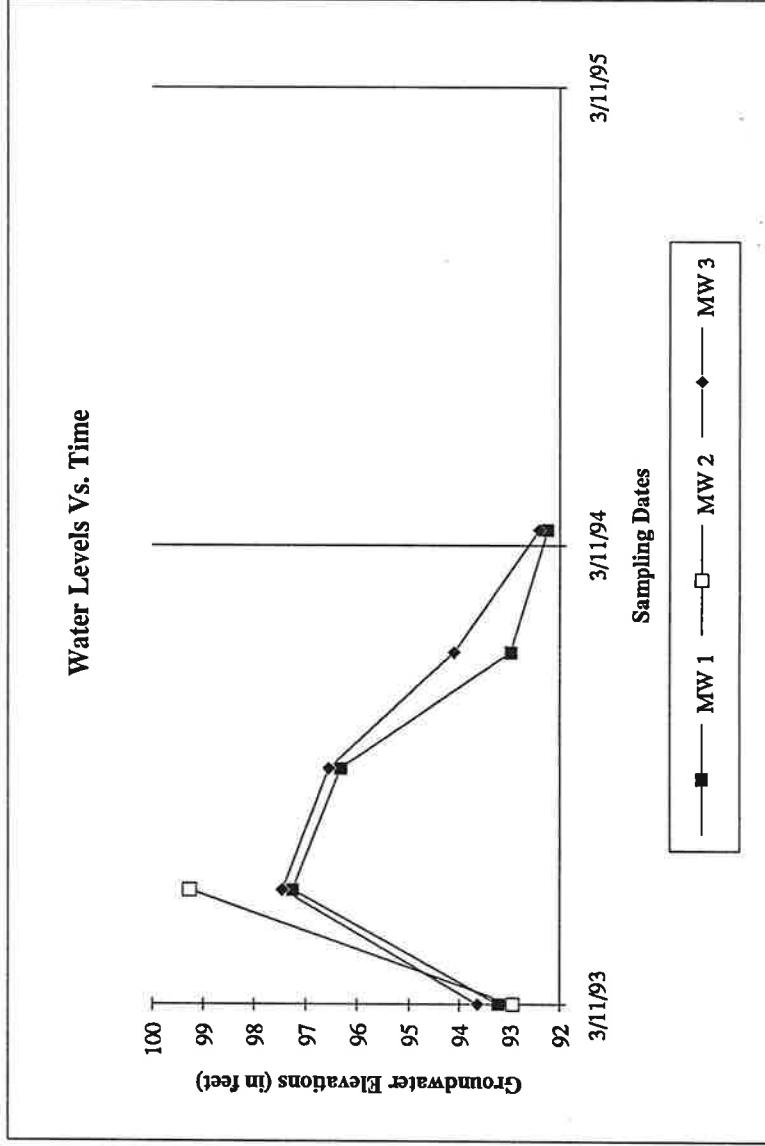
TABLE 6

MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Humboldt Bulk Site

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Sampling Date	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66	100.87	3/11/93	7.65	ND	93.22
	###	6/10/93	3.61	ND	97.26
	###	9/14/93	4.54	ND	96.33
	###	12/15/93	7.89	ND	92.98
	###	3/23/94	8.63	ND	92.24
MW 2 Depth to screen: 5.02	102.61	3/11/93	9.68	ND	92.93
	###	6/10/93	3.34	0.02	99.27
	###	9/14/93		0.60	
	###	12/15/93		0.33	
	###	3/23/94		0.30	
MW 3 Depth to screen: 4.82	101.53	3/11/93	7.89	ND	93.64
	###	6/10/93	4.08	ND	97.45
	###	9/14/93	4.97	ND	96.56
	###	12/15/93	7.43	ND	94.10
	###	3/23/94	9.13	ND	92.40



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

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MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

April 5, 1994

Eric Poissant
West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 7853
Date Sampled: 03-23-94
Date Received: 03-24-94
Date Analyzed: 03-31-94
Matrix: Water
Sample Identification:
Lab ID: 94-01661 MW3-405-water-5
94-01662 MW1-405-water-5
94-01663 Trip Blank

Samples were analyzed according to methods GRO and DRO. The results are reported on the following page.

Sincerely,

Lon Jones
Senior Chemist

MIDWEST ANALYTICAL SERVICES

Page 2
COC 7853

Parameter:	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO	DRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)
Detection Limit	1.0	1.0	1.0	3.0	0.1	0.1

Sample Number

94-01661 MW3	BDL	BDL	BDL	BDL	BDL	BDL
94-01662 MW1	BDL	BDL	BDL	BDL	BDL	BDL
94-01663 Trip Blank	BDL	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit

MIDWEST ANALYTICAL SERVICES



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

CHAIN OF CUSTODY RECORD
AND
REQUEST FOR ANALYSIS

(Instructions on Back of Form)

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

7853

SAMPLER NAME:		CLIENT:	
SAMPLER SIGNATURE:		PROJECT ID:	
REMARKS:		REPORTS TO BE SENT TO:	
SAMPLE IDENTIFICATION SAMPLE NO. LABORATORY I.D. NO.		MATRIX	NO. OF CONTAINERS
		DATE	COMP.
GRAB	TIME	DATE	GRAB
WATER	SOIL	OTHER	MATRIX
OTHER	DATE	TIME	DATE
GRO (includes BTEX)	DRO	BTX	PH
VOC (A65-D)	PH	Pb (Disse. or Total)	RCRA & METALS
BOD OR CBOD	TSS	Fcol. OR Tool	PRESERVATIVE
HCl	HNO ₃	H ₂ SO ₄	ICE
OTHER	DATE / Time	RECEIVED BY: (Signature)	DATE / Time
DATE / Time	RECEIVED BY: (Signature)	DATE / Time	RECEIVED BY: (Signature)
DATE / Time	RECEIVED BY: (Signature)	DATE / Time	RECEIVED BY: (Signature)
DATE / Time	RECEIVED BY: (Signature)	DATE / Time	RECEIVED BY: (Signature)

SHADED AREAS FOR LABORATORY USE ONLY

DATE REQUIRED: TAPPA URTH
TURNAROUND TIME REQUIRED:
CHECK HERE FOR DRINKING WATER DETECTION LIMITS



West Central Environmental Consultants

14 Green River Road • P.O. Box 594 • Morris, MN 56207-0594
(612) 589-2039 or 1-800-422-8556 • Fax: (612) 589-2814

July 22, 1994

Mr. Rick Newquist
Minnesota Pollution Control Agency
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155

RE: Site Monitoring Worksheet (Fact Sheet #7)
Co-op Services, Humboldt, Minnesota
WCEC Project Number: 92-405-30
MPCA Leak Number: LEAK00005361

Dear Mr. Newquist:

Enclosed please find the completed Fact Sheet #7 for the above referenced site.

If you have any questions regarding this site, please contact me at 1-800-422-8356.

Sincerely,


Matthew Johnson
Project Manager

Enclosure

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JUL 25 1994

MPCA, HAZARDOUS
WASTE DIVISION

SITE MONITORING WORKSHEET

Fact Sheet #7

Minnesota Pollution Control Agency
Tanks and Spills Section
April 1993

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MPCA, HAZARDOUS
WASTE DIVISION

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Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (fact sheet #3). [NOTE: MPCA staff may reduce the frequency of progress reporting on a site specific basis.]

Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA LEAK Number: 5361
WCEC Project Number: 92-405-30
Date Form Completed: 7/15/94

I. Ground Water Monitoring

Please attach the following:

- Cumulative table of ground water monitoring results, including all sample blanks.
- Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
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- NA Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
- Ground water contour map based on the most recent ground water elevation data.
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Please describe unusual circumstances that may have influenced the sampling results: **NA**

Please detail significant observations made at the site: **NA**

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach: **NA**

- ___ a cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (i.e., sewer manholes, basements, etc.)
- ___ a map of vapor monitoring locations.

Sampling instrument used:
Sampling method:

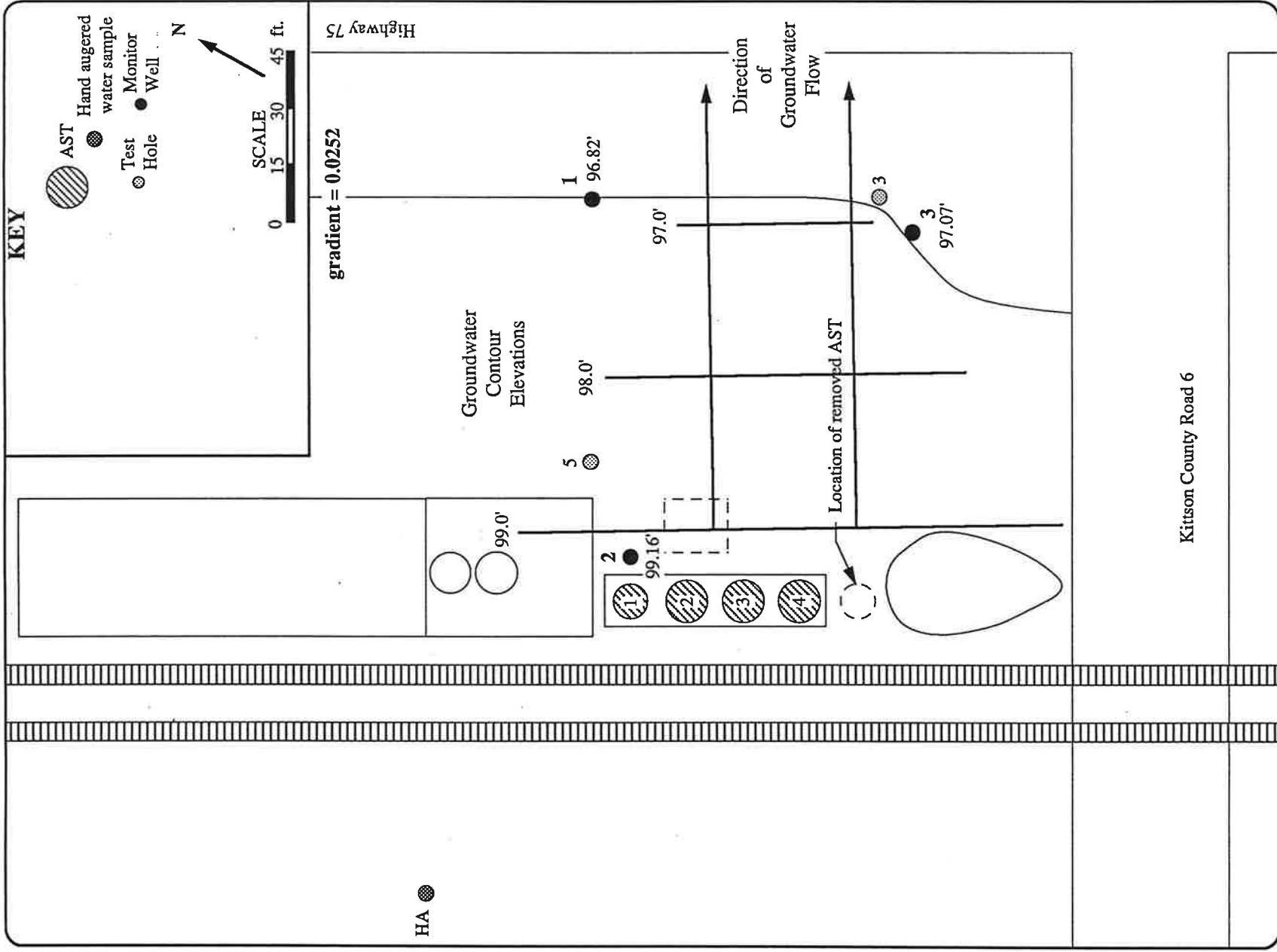
NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required. **NA**

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

WCEC recommends continued quarterly monitoring of well #2; sampling of wells #1 and #3 should be discontinued. Groundwater levels should be measured quarterly in each monitor well.



**WEST CENTRAL
ENVIRONMENTAL
CONSULTANTS**

PROJECT No. 92-405-30 Co-op Services Bulk, Humboldt
 FIGURE 9c: Groundwater contours map, using 6/20/94 static
 water levels.

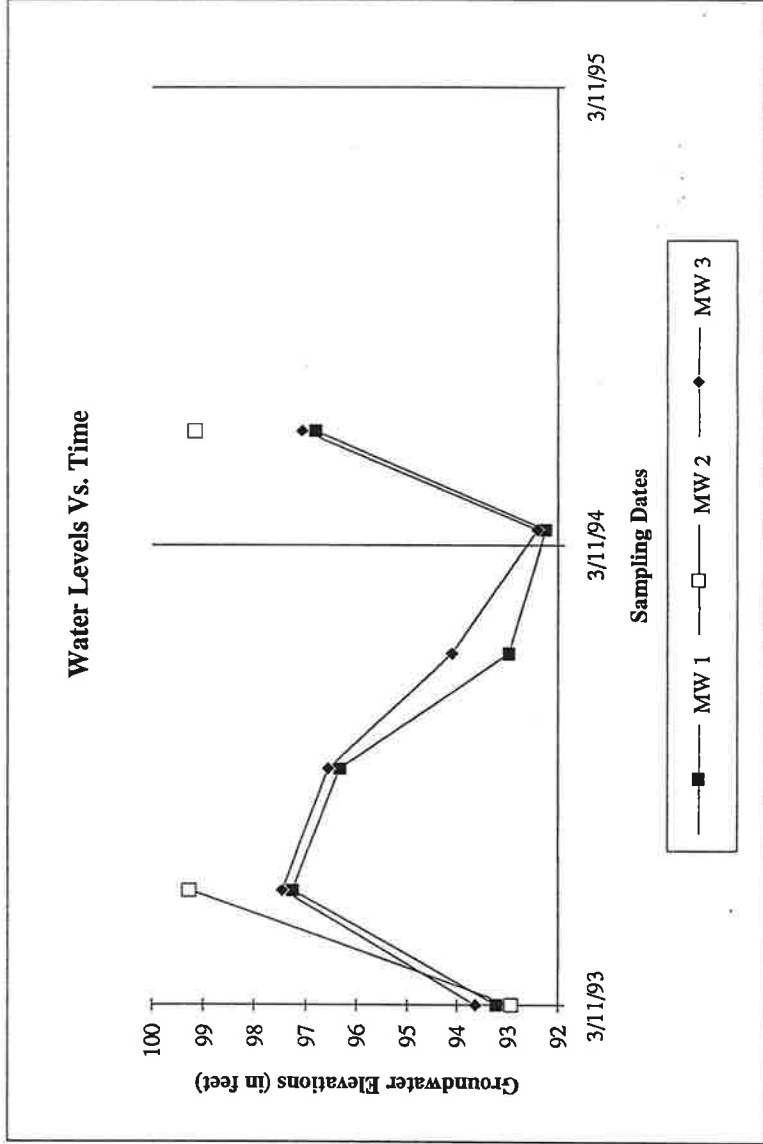
TABLE 6

MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
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		12/15/93	7.89	ND	92.98
		3/23/94	8.63	ND	92.24
		6/20/94	4.12	ND	96.82
MW 2 Depth to screen: 5.02	102.61	3/11/93	9.68	ND	92.93
	###	6/10/93	3.34	0.02	99.27
		9/14/93		0.60	
		12/15/93		0.33	
		3/23/94		0.30	
		6/20/94	3.46	100% sheen	99.16
MW 3 Depth to screen: 4.82	101.53	3/11/93	7.89	ND	93.64
	###	6/10/93	4.08	ND	97.45
		9/14/93	4.97	ND	96.56
		12/15/93	7.43	ND	94.10
		3/23/94	9.13	ND	92.40
		6/20/94	4.39	ND	97.07



330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



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LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

July 6, 1994

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267-0594

Project ID: 92-405-30
Chain of Custody: 7693
Date Sampled: 06-20-94
Date Received: 06-24-94
Date Analyzed: 06-30-94
Matrix: Water
Sample Identification:
Lab ID: 94-04582 MW1-405-water6
94-04583 MW3-405-water6
94-04584 MW2-405-water6
94-04585 Trip Blank

Samples were analyzed according to methods GRO and DRO. The results are reported on the following page.

Sincerely,

Chad Holznagel
Chemist

MIDWEST ANALYTICAL SERVICES

Page 2
COC 7693

Parameter:	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO	DRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)
Detection Limit	1.0	1.0	1.0	3.0	0.1	0.1
<u>Sample Number</u>						
94-04582 MW1	BDL	BDL	BDL	BDL	BDL*	
94-04583 MW3	BDL	BDL	BDL	BDL	BDL	
94-04584 MW2	15.4	BDL	BDL	8.5	1.64	3.7
94-04585 Trip Blank	BDL	BDL	BDL	BDL	BDL	

BDL = Below Detection Limit

* = Peaks present in range but below detection limit.



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ENERGY LABORATORIES, INC.

P.O. BOX 2470 • RAPID CITY, SD 57709 • PHONE (605) 342-1225
610 FARNWOOD STREET • RAPID CITY, SD 57701 • FAX (605) 342-1397

West Central Environmental Consultants
P.O. Box 594
Morris, MN 56267

92-405-30
Sampled: 06-20-94

July 7, 1994
94-22648
Submitted: 06-24-94

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed
------	-------	---------	-------------	----------	---------	-------	----------

Water Analysis

92-405-30 94-22648 METHOD 8260

	POL ¹	µg/L ppb
1,1-Dichloroethane	<10	
Methylene Chloride	<10	
trans-1,2-Dichloroethane	<10	
1,1-Dichloroethane	<10	
2,2-Dichloropropane	<10	
cis-1,2-Dichloroethane	<10	
Bromochloromethane	<10	
Chloroform	<10	
1,1,1-Trichloroethane	<10	
Carbon Tetrachloride	<10	
1,1-Dichloropropene	<10	
Benzene	460 ²	
1,2-Dichloroethane	43	
Trichloroethane	<10	
1,2-Dichloropropane	<10	
Dibromomethane	<10	
Bromodichloromethane	<10	
trans-1,3-Dichloropropene	<10	
Toluene	<10	
cis-1,3-Dichloropropene	<10	
1,1,2-Trichloroethane	<10	
Tetrachloroethane	<10	
1,3-Dichloropropane	<10	
Dibromochloromethane	<10	
1,2-Dibromoethane	<10	
Chlorobenzene	<10	
1,1,1,2-Tetrachloroethane	<10	
Ethylbenzene	<10	
M+P-Xylenes	33	
O-Xylenes	122	
Styrene	<10	
Bromoform	<10	
Isopropylbenzene	<10	
Bromobenzene	<10	
1,1,2,2-Tetrachloroethane	<10	
1,2,3-Trichloropropane	<10	
n-Propylbenzene	<10	
2-Chlorotoluene	<10	
4-Chlorotoluene	<10	
1,3,5-Trimethylbenzene	120	
tert-Butylbenzene	<10	
1,2,4-Trimethylbenzene	36	
sec-Butylbenzene	<10	
1,3-Dichlorobenzene	<10	
1,4-Dichlorobenzene	<10	
p-Isopropyltoluene	13	
1,2-Dichlorobenzene	<10	
n-Butylbenzene	24	

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed
------	-------	---------	-------------	----------	---------	-------	----------

92-405-30 cont. 94-22648

Analysis	Results	Units	Analyzed
METHOD 8260			
1,2-Dibromo-3-Chloropropane	<10	10	µg/L ppb
1,2,4-Trichlorobenzene	<10	10	
Naphthalene	<10	10	
Hexachlorobutadiene	<10	10	
1,2,3-Trichlorobenzene	<10	10	
Methyl Tertiary Butyl Ether	<10	10	
Dichlorodifluoromethane	<10	10	
Chloromethane	<10	10	
Vinyl Chloride	<10	10	
Bromomethane	<10	10	
Chloroethane	<10	10	
Trichlorofluoromethane	<10	10	
Acetone	<100	100	
Methyl Ethyl Ketone	<100	100	
Methyl Isobutyl Ketone	<100	100	
2-Hexanone	<100	100	
1,1-Bisoxethane (Ethylether)	<10	10	
Tetrahydrofuran	<100	100	
Allyl Chloride	<10	10	

Surrogate Recoveries	102	%	Recovery
1,2-Dichloroethane-d4	102		
Toluene-d8	97		
4-Bromofluorobenzene	105		

* Sample diluted 10x at analysis due to the high level of Benzene present.

‡ Value derived from a 100x dilution.

Kurt R. Sientz

 Laboratory Manager

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed
------	-------	---------	-------------	----------	---------	-------	----------

QUALITY ASSURANCE DATA

Method Blank
92-406-30

94-22648

METHOD 8260

PQL $\mu\text{g/L ppb}$

1,1-Dichloroethane	<1.0	1.0
Methylene Chloride	<1.0	1.0 RH; 06-30-94
trans-1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethane	<1.0	1.0
2,2-Dichloropropan	<1.0	1.0
cis-1,2-Dichloroethane	<1.0	1.0
Bromochloromethane	<1.0	1.0
Chloroform	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
1,1-Dichloropropene	<1.0	1.0
Benzene	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
Trichloroethane	<1.0	1.0
1,2-Dichloropropene	<1.0	1.0
Dibromomethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
trans-1,3-Dichloropropane	<1.0	1.0
Toluene	<1.0	1.0
cis-1,3-Dichloropropane	<1.0	1.0
1,1,2-Trichloroethane	<1.0	1.0
Tetrachloroethane	<1.0	1.0
1,3-Dichloropropane	<1.0	1.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Chlorobenzene	<1.0	1.0
1,1,1,2-Tetrachloroethane	<1.0	1.0
Ethylbenzene	<1.0	1.0
M+P-Xylenes	<1.0	1.0
O-Xylene	<1.0	1.0
Styrene	<1.0	1.0
Bromoform	<1.0	1.0
Isopropylbenzene	<1.0	1.0
Bromobenzene	<1.0	1.0
1,1,2,2-Tetrachloroethane	<1.0	1.0
1,2,3-Trichloropropane	<1.0	1.0
n-Propylbenzene	<1.0	1.0
2-Chlorotoluene	<1.0	1.0
4-Chlorotoluene	<1.0	1.0
1,3,5-Trimethylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
1,2,4-Trimethylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
p-Isopropyltoluene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
n-Butylbenzene	<1.0	1.0
1,2-Dibromo-3-Chloropropane	<1.0	1.0
1,2,4-Trichlorobenzene	<1.0	1.0
Naphthalene	<1.0	1.0
Hexachlorobutadiene	<1.0	1.0
1,2,3-Trichlorobenzene	<1.0	1.0
Methyl Tertiary Butyl Ether	<1.0	1.0
Dichlorodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl Chloride	<1.0	1.0

Site	Depth	Lab No.	Methodology	Analysis	Results	Units	Analyzed
------	-------	---------	-------------	----------	---------	-------	----------

92-405-30 cont.

94-22648

Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
Acetone	<10	10
Methyl Ethyl Ketone	<10	10
Methyl Isobutyl Ketone	<10	10
2-Hexanone	<10	10
1,1-Dioxoethane (Ethylether)	<1.0	1.0
Tetrahydrofuran	<1.0	1.0
Allyl Chloride	<1.0	1.0

Surrogate Recoveries

1,2-Dichloroethane-d4	101	% Recovery
Toluene-d8	101	
4-Bromofluorobenzene	102	

**CHAIN OF CUSTODY RECORD
 AND
 REQUEST FOR ANALYSIS**

LAB (612) 689-2175
 METRO (612) 444-9270
 FAX (612) 689-3660

7693

CLIENT: **WCEC**
 PROJECT I.D.: **92-405-30**
 REPORTS TO BE SENT TO: _____

SAMPLER NAME: **Joe Oles**
 SAMPLER SIGNATURE: _____
 REMARKS: _____

NO. OF CONTAINERS	COMP.	GRAB	DATE	TIME	MATRIX			SAMPLE IDENTIFICATION		LABORATORY I.D. NO.	SAMPLE NO.	REMARKS
					WATER	SOIL	OTHER	SAMPLE	LABORATORY			
3	X	X	4/29/92	3:24	X			M1-405-Label	94-04582	X		
3	X	X	3:00	X	X			M13-405-Label	4583	X		
4	X	X	4:00	X	X			M12-405-Label	4584	X		
1					X			Trip Blank	4585	X		

SHADED AREAS FOR LABORATORY USE ONLY

PRESERVATIVE	HCl	HNO ₃	H ₂ SO ₄	ICE	OTHER
	X	X		X	

SHADING: GRO (Includes BTEX), DRO, BTEX, VOC (465-D), PH, Pb (Dist. or Total), RCHA & METALS, BOD OR CBOD, TSS, Foul or Tool

DATE REQUIRED: NORMAL RUSH

TURNAROUND TIME REQUIRED:

CHECK HERE FOR DRINKING WATER DETECTION LIMITS

Comments: _____

Date / Time: 3:30
 Temperature: 22C

Received by Laboratory by: (Signature) _____
 Date / Time: _____

Received by: (Signature) _____
 Date / Time: _____

Received by: (Signature) _____
 Date / Time: _____

Received by: (Signature) _____
 Date / Time: _____



West Central Environmental Consultants

14 Green River Road • P.O. Box 594 • Morris, MN 56267-0594
(612) 588-2050 or 1-800-422-8356 • Fax: (612) 589-2814

FACSIMILE TRANSMITTAL COVER SHEET

DATE: 10/16/94 TIME: 10:00am

TO: MPCA
Attn: Tim Serberg

FAX NO.: 612-297-8676

NUMBER OF PAGES (Including This Cover): 2

SENDER: Doug Stakman

WCEC Project No.: _____

COMMENTS:

TABLE 6

MONITOR WELL WATER LEVEL DATA

WCEC Project No. 92-405-30
Co-op Services Bulk, Humboldt

All measurements are from the top of the well casing. Elevations are based on a 100-foot datum.
ND indicates no free product present in well. ### indicates wells were resurveyed
but no significant change in top of casing elevation was observed.

Sampling Location	Elevation (ft)	Sampling Date	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW 1 Depth to screen: 4.66'	100.87	3/11/93	7.65	ND	93.22
	###	6/10/93	3.61	ND	97.26
		9/14/93	4.54	ND	96.33
		12/15/93	7.89	ND	92.98
		3/23/94	8.63	ND	92.24
		6/20/94	4.12	ND	96.82
MW 2 Depth to screen: 5.02'	100.94	9/20/94	4.45	ND	96.49
	102.61	3/11/93	9.68	ND	92.93
	###	6/10/93	3.34	0.02	99.27
		9/14/93		0.60	
		12/15/93		0.33	
		3/23/94		0.30	
MW 3 Depth to screen: 4.82'	102.62	6/20/94	3.46	100% sheen	99.16
		9/20/94	3.90	0.20	98.72
	101.53	3/11/93	7.89	ND	93.64
	###	6/10/93	4.08	ND	97.45
		9/14/93	4.97	ND	96.56
		12/15/93	7.43	ND	94.10
	3/23/94	9.13	ND	92.40	
	6/20/94	4.39	ND	97.07	
	9/20/94	4.89	ND	96.57	

