AWQ-LGD

85-SDP-13-91

Con 12-1-1
Doc # 33001

FOX engineering

1601 Golden Aspen Drive • Suite 103 • Ames, Iowa 50010 • 800.433.3469 • www.foxeng.com

November 25, 2005

Ms. Nina Koger, Lead Engineer
Energy & Waste Management Bureau
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, Iowa 50319

RE: 2005 Annual Groundwater Quality Report
Ames-Story Environmental Landfill
85-SDP-13-91P
P.N. 6004.320

Ms. Koger:

Find attached 1 copy of the 2005 Annual Groundwater Quality Report for the Ames-Story Environmental Landfill.

A copy of this data has been forwarded to Mr. William Fedeler, Ames-Story Environmental Landfill and IDNR Field Office #5 as required by the Permit.

Sincerely,
FOX ENGINEERING ASSOCIATES, INC.

Todd Whipple

Todd Whipple, CPG
Project Manager

2005 ANNUAL GROUNDWATER QUALITY REPORT

OF

THE AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
AMES, IOWA

by:
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, Iowa 50010
(515) 233-0000

NOVEMBER, 2005

FOX engineering

6004-99A.323

Annual Groundwater Quality Report

November 14, 2005

Ms. Nina Koger, Lead Engineer
IDNR – Energy & Waste Management Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

RE: AMES/STORY ENVIRONMENTAL LANDFILL
ANNUAL GROUNDWATER QUALITY REPORT
IDNR #85-SDP-13-91P
FOX PN 6004.320

Dear Ms. Koger:

This Annual Report has been prepared in accordance with IAC 567-113.26(8)d. The semiannual inspection reports have been submitted to IDNR in accordance with the General Provisions of the Permit. The following information and comments are presented in accordance with the IAC section referenced above.

1. ANNUAL REPORT SUPPLEMENT

The report supplements are addressed in the numbered responses below as set out in the December 6, 2004 IDNR comment letter (Appendix A).

1) The geology and hydrogeology are described in the text included in Appendix B.

   Previous land use is undeveloped land.

   The solid waste stream includes construction and demolition waste from 1991 to the present.

2) The approved monitoring network is illustrated in Sheet 1.

3) The Water Table Contour Map is included as Sheet 1.

4) A Potentiometric Map of the Upper Aquifer is included as Figure 2.

5) Leachate collection exists above the liner at this facility. Leachate mounding is not apparent. The four (4) leachate pizometers that exist in the north portion of the site do not exhibit excessive leachate head.

   The upgradient water table monitoring well (MW-37) is situated in the east part of the site and does not appear to be impacted hydrologically by mounded leachate. Water movement appears to be from east to west at MW-37 (Figure 1). The remainder of the

monitoring network appears to be situated to effectively detect any migration to downgradient wells.

The upgradient upper aquifer monitoring well for the entire site (MW-36) does not demonstrate impact due to the potential mounding. The remainder of the upper aquifer monitoring network appears to be situated effectively to detect any migration to downgradient upper aquifer wells.

6) Current year water quality data is included in Appendix C. Current and historic water quality is included in Appendix D.

7) The upgradient wells appear to be functioning effectively as valid upgradient sampling points based on the hydrogeology and the water quality results.

The approved Monitoring System Monitoring Plan includes six (6) surface water monitoring points. Based on surface water movement and water quality, the surface water monitoring points appear to be functioning effectively as valid upgradient and downgradient sampling points.

8) Control limits are calculated in the spreadsheets included in Appendix D. Comparison of the downgradient water quality data to the calculated limits is presented in the text below.

9) Graphical representations of water quality data, calculated control limits, and EPA Maximum Contaminant Limits (MCL's) are included in Appendix D. Comparison of the downgradient water quality data to the calculated limits is presented in the text below.

10) Discussion of the groundwater quality data is presented in the text below.

11) Discussion of the surface water quality data is made in the text below.

12) Conclusions and recommendations are included in a separate section at the end of this report.

2. ENVIRONMENTAL EFFECTS

a. Groundwater

The Hydrologic Monitoring System Plan (HMSP) for the site is approved by Special Provision X.7 of the current SDP Permit, dated November 24, 2003 (Appendix A). Conditions in the Permit require semi-annual and annual sampling to be performed at designated monitoring wells at the site. Trenches 1 through 4 are located in the north portion of the site and were filled between 1991 and 1999. It follows that all first year quarterly sampling episodes have been completed for the Trench 1 through 4 fill area.

Trenches 5 & 6 are located in the south portion of the site. Trench 5 construction was completed and approved for waste acceptance June 16, 1999. Trench 6 construction was completed and approved for waste acceptance May 26, 2000 (Permit Amendment #1). First year quarterly water sampling in Trench 5 & 6 was completed in March, 2001.

The site (both the north and south fill areas) is characterized as having two (2) groundwater systems that are monitored as part of the HMSP; the Water Table system and the Upper Aquifer sand layer system. MW-36 and MW-37 are the upgradient monitoring points for the Upper Aquifer System and the Water Table System, respectively.

Chemical analytical results for 2005 and Summary Tables are included in Appendix C. The chemical analytical data is also presented graphically by chemical compound over time in Appendix D. The statistical computations are included in the tables in Appendix D. Graphs of the concentration versus time for the sampling points illustrate those compounds that exceed statistical limits. Review of the graphs and data indicate the following observations.

Water Table System - Test results from upgradient MW-37 (Appendix D.1) indicate detectable concentrations of arsenic, barium, COD, chloride, iron (exceeding the Secondary MCL), magnesium, nitrogen ammonia, TOX, and zinc. The presence of the noted compounds in the upgradient well may indicate that the compounds are migrating onto the site from an off-site source(s), or are endemic to the region.

Downgradient MW's indicate detection of compounds at concentrations that do not exceed primary MCL's. The compounds that exceed statistical limits are summarized by monitoring well below:

MW-6	Barium, chloride, and TOX
MW-28	COD, chloride, magnesium (3/92), and TOX
MW-23	Barium, chloride, lead (10/91), and TOX
MW-24	Barium, COD (9/92), chloride, lead (4/91), and TOX (9/93)
MW-31	Barium, COD, chloride, lead (10/91), and TOX
MW-25	Barium, COD, chloride, lead (10/91), and TOX
MW-33	Barium, COD, chloride, iron, ammonia, and TOX
MW-34	Barium, COD, chloride, lead (10/91), ammonia (3/96), and TOX
MW-35	Barium, COD (9/04), chloride, and TOX
MW-39	Arsenic (12/00), barium, COD (3/05), chloride, and TOX
MW-40	Barium, chloride and TOX (9/05)
MW-43	Barium, COD, chloride, ammonia, and TOX

Indicator compounds such as chlorides, COD, and TOX have been found to exceed statistical control limits in a number of the downgradient MW's. In addition, barium, iron, magnesium, and nitrogen ammonia have also been detected in several downgradient wells. However, due to the presence of detectable concentrations of these compounds in the upgradient wells, these results have not been interpreted as

a release of leachate into the groundwater. The lead concentrations detected in 1991 appear to be anomalous.

Upper Aquifer System - Test results from upgradient MW-36 (Appendix D.2) indicate detectable concentrations of arsenic, barium, COD, chloride, iron (in excess of secondary MCL's), magnesium, nitrogen ammonia, TOX, and zinc. The presence of the noted compounds in the upgradient well may indicate that the compounds are migrating onto the site from an off-site source(s), or are endemic to the region.

Downgradient MW's indicate detection of compounds at concentrations that exceed the primary MCL for arsenic at MW-8, MW-30, MW-38, MW-41, and MW-42. The secondary MCL for iron was exceeded at most wells for various sampling episodes. The secondary MCL for chloride was exceeded at MW-33 in March, 2003. The compounds that exceed statistical limits are summarized by monitoring well below:

MW-7	arsenic, barium, COD (9/05), and iron
MW-8	arsenic, barium, chloride (3/04), iron, ammonia, TOX (9/02), and zinc (3/01)
MW-29	arsenic, barium, COD (prior to 3/95), lead (10/91), iron (10/91), TOX (4/91), and zinc (3/01 & 3/02).
MW-30	arsenic (10/91), barium (4/91), COD (prior to 3/95), chloride (3/96), and lead (10/91)
MW-32	COD, chloride, iron, magnesium, lead (4/91 & 10/91), and TOX (9/02)
MW-25	COD, chloride, lead (10/91), magnesium, and TOX
MW-33	COD, chloride, iron, magnesium, nitrogen ammonia, and TOX
MW-34	COD, chloride, iron, lead (10/91), magnesium, nitrogen ammonia, and TOX
MW-35	COD, chloride, iron (9/97), magnesium, and TOX (9/02)
MW-38	arsenic, barium, COD (9/04), chloride, and iron (3/04)
MW-41	arsenic, barium, iron, and zinc (12/00)
MW-42	arsenic, barium, COD (9/04), chloride (9/01 & 9/05), iron, and lead (6/00)

Indicator compounds such as chlorides, COD, conductivity, and TOX have been found to exceed statistical control limits in a number of the downgradient MW's. In addition, arsenic, barium, iron, magnesium, and nitrogen ammonia have also been detected in excess of statistical control limits in several downgradient wells. However, due to the presence of detectable concentrations in the upgradient wells, these results have not been interpreted as a release of leachate into the groundwater. The detected lead concentrations appear to be anomalous.

Surface Water - Test results from upgradient SMP-1 (Appendix D.3) indicate detectable concentrations of barium, COD, chloride, iron (in excess of the secondary MCL), lead, magnesium, and TOX. The presence of the noted compounds at the upgradient monitoring point may indicate that the compounds are endemic to the stream.

Downgradient Surface Water sampling points indicate detection of compounds at concentrations that exceed the primary MCL for arsenic at SMP-4 and SMP-6. The secondary MCL for iron is commonly exceeded at SMP-6. The compounds that exceed statistical limits are summarized by monitoring well below:

SMP-2	COD (3/03), chloride (3/03) and lead (10/91)
SMP-3	barium (10/91), magnesium
SMP-4	arsenic, barium, COD, copper (9/02), magnesium, ammonia, and zinc (6/00 & 3/01)
SMP-5	barium (9/02), and ammonia
SMP-6	arsenic, barium, iron, magnesium, and ammonia (9/02 & 3/04)

3. STATISTICAL COMPUTATIONS

Statistical computations are summarized on the spreadsheets/graphs in Appendix D. It appears there is significant variation in background levels of certain measured constituents in upgradient groundwater and aquifer monitoring wells. The presence of the noted compounds in the upgradient well may indicate migration (run-on) of several compounds from an off-site source(s) or may indicate that the compounds are endemic to the area.

As stated in the May 5, 1992, Semi-Annual Report, the initial background concentrations of certain parameters were higher in downgradient monitoring wells than in the corresponding upgradient monitoring wells prior to acceptance of waste(s) at this landfill. Discussions of site conditions are offered in the May 5, 1992, Semi-Annual Report (Appendix E) and should be referenced.

4. WELL MAINTENANCE AND RE-EVALUATION PLAN

Monitoring Well Performance Evaluation Reports dated June 10, 1993; March 30, 1998; and June, 2003 were prepared and submitted in accordance with IAC 567-113.21. The 2003 Report (most recent) concluded that the integrity of all MW's was intact, and that no changes in the HMSP were recommended. Monitoring well reevaluation is tentatively scheduled for June, 2008, and will again include monitoring wells associated with Trenches 1-6.

Review of the water elevation data for 2005 does not indicate excessive variability compared to historic water elevation data. Water elevation data is summarized in Appendix F. Based on the available water elevation data, the assessment of well conditions, and the hydrologic conditions at the site, the semi-annual water level measurements are interpreted to be sufficient to gauge notable changes in the site hydrology. The September, 2005 Water Table Contour Map and the September, 2005 Potentiometric Water Surface Map for the Upper Aquifer Sand Layer are included as Figure 1 and Figure 2, respectively.

5. LCS PERFORMANCE

The leachate control system (LCS) consists of a series of gravity collection pipes that underlie the trench fills. Trenches 1 through 4 are located north of a topographic divide and the LCS drain north to a City of Ames interceptor sanitary sewer located along the stream to

the north. The LCS in Trenches 5 and 6 are located south of the topographic divide and drains south to a City of Ames interceptor sanitary sewer located along the railroad to the south.

Filling and capping on the north end of Trenches 1 – 4 is complete. As required by the approved Development and Operational Plans (DOPS), leachate head monitoring wells have been installed at the downgradient point within each Trench. The four (4) leachate piezometers were installed in May, 2003.

Leachate Head elevations at the four (4) piezometers has been recorded routinely since installation and are summarized in the Table and graphs included in Appendix G. In summary, the leachate head elevation data demonstrates that the LCS is functioning as intended. The piezometers in Trench 1 & 2 are most frequently recorded as dry. The leachate thickness in Trench 3 has been recorded as ranging from 1.5 feet to 0.3 feet. The leachate thickness in Trench 4 has been recorded as ranging from 3.6 feet to 1.0 feet.

Based on information provided by the City of Ames (Appendix H), pretreatment testing results for May 2, 2005; and September 26, 2005 are as follows:

Parameter	Permit Limit (mg/L)	Allowance Discharge (mg/L)	05/2/05 Results (mg/L)	09/26/05 Results (mg/L)
PH	6.0-10.0		7.68	6.94
TSS	1,500/300		40	62
Ammonia-N	200/40		36	42
COD	2,500/250	1,500	370	730
TKN	/40	250	46	NT
BTEX	0.75		<0.1	<0.020
Phenol	0.015		<0.05	NT
Zinc	0.11		<0.05	NT
TPH	10.0		NT	<0.1

Chemical analysis of the leachate indicates that all parameters are within permit limits. The volume of leachate conveyed to the Ames Water Pollution Control Plant is reported as 2,244 gallons per month (approximately 26,932 gpy).

The leachate system was cleaned November 29, 2002 as per IAC 567-113.26(11)a.8. Line cleaning is tentatively scheduled with Service Tech of Ames for the winter of 2005, or Spring of 2006, depending on accessibility.

6. EXPLOSIVE GAS MONITORING

Explosive gas monitoring was performed quarterly through September, 2005, per IAC 567-113.26(15). Results of the explosive gas monitoring indicate that explosive gases were within applicable limits in site structures and along the entire site perimeter. In addition, carbon monoxide (CO) and hydrogen sulfide (H_2S) gases were undetected. Gas monitoring results are summarized in the table in Appendix I.

7. RECOMMENDATIONS

a. Continue to perform semi-annual and annual sampling episodes in accordance with Special Provision X.7 of the Permit.
b. Continue to perform semi-annual water level measurements in March and September of each year and reevaluate the data in the Annual Groundwater Quality Report in November of each year.
c. Continue to perform quarterly leachate level measurements and continue to re-evaluated in the Annual Groundwater Quality Report/Leachate Control System Performance Evaluation in November of each year.
d. The leachate collection lines in Trenches 1 through 6 should be cleaned as necessary according to IAC 567-113.26(11)a.8 during the winter of 2005, or spring of 2006.
e. Continue to perform quarterly explosive gas monitoring and report the results in the Annual Groundwater Quality Report each November.

If the Department has any questions or if additional information is needed, contact Mr. William Fedeler, Owner, or myself at the FOX Engineering office in Ames.

LESLIE S. WOLFE LICENSED 8180 IOWA PROFESSIONAL ENGINEER

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

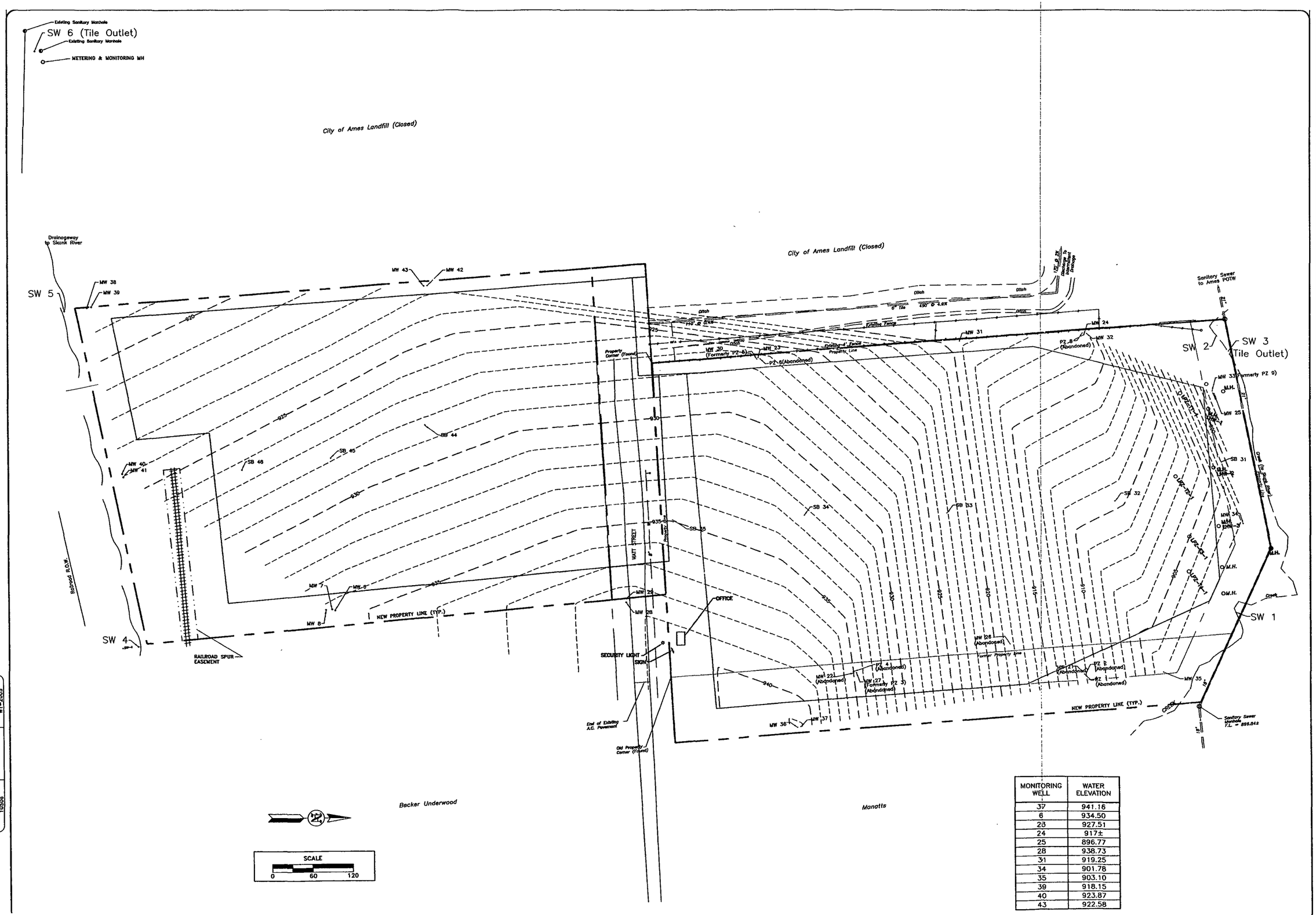
11/25/05

LESLIE S. WOLFE, P.E. DATE
IOWA REG. NO. 8180

My license renewal date is December 31, 2005.

Pages or sheets covered by this seal:

All



MONITORING WELL	WATER ELEVATION
37	941.16
6	934.50
23	927.51
24	917±
25	896.77
28	938.73
31	919.25
34	901.78
35	903.10
39	918.15
40	923.87
43	922.58

DRAWING FILENAME: 6004\99a\321\GW-2003.dwg
PLOT STYLE TABLE: LAYER WINDOW NAME: LAYOUT NAME: WY-2005

REVISION	DATE

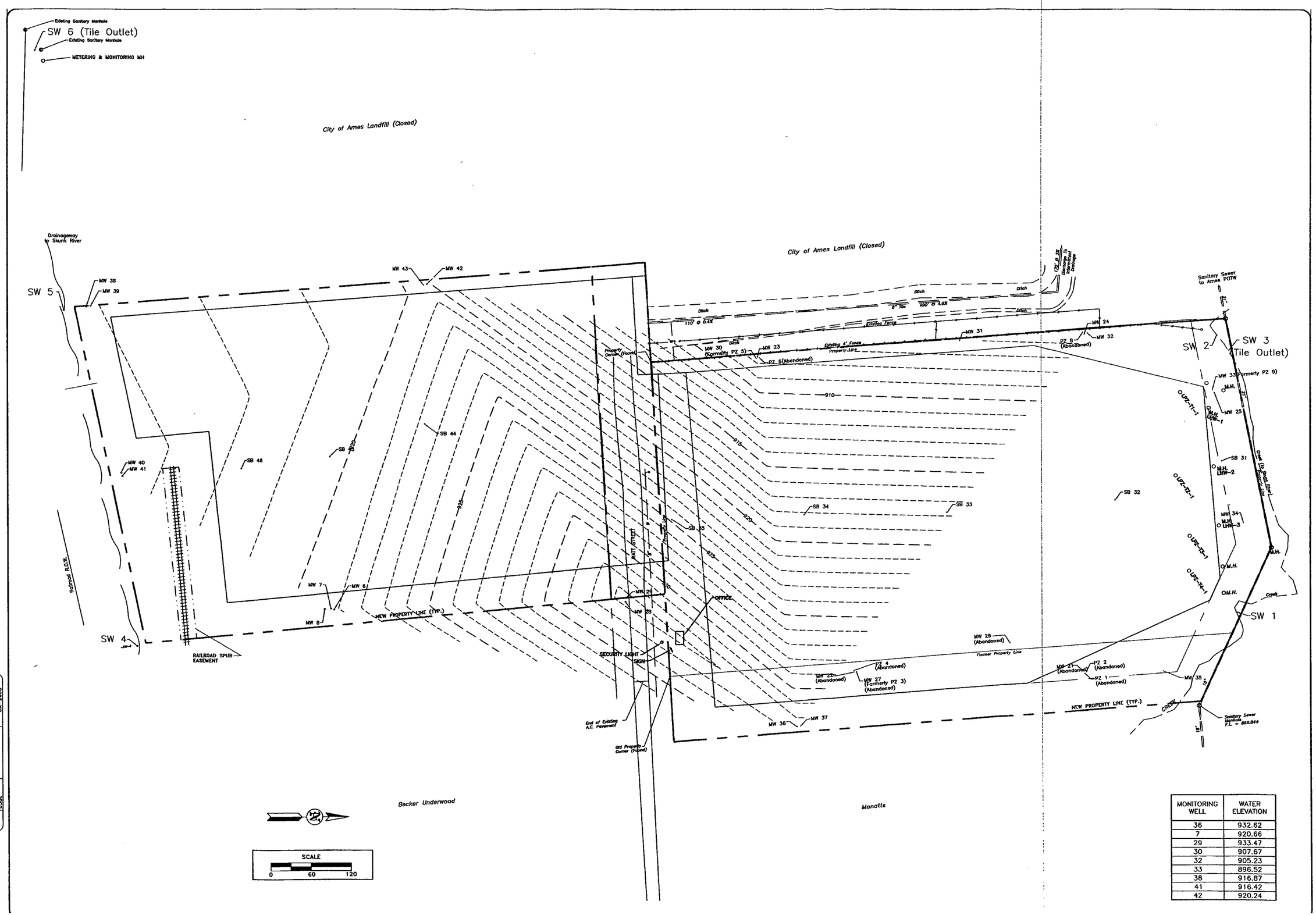
	BY	DATE
DESIGNED:	TDW	11-03
DRAWN:	JAK/JTP	11-03
CHECKED:		
LAST UPDATE:		10/4/05

PROJECT NO. 6004-99A

FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, Iowa 50010
Phone: (515) 233-0000
FAX: (515) 233-0103
FOX engineering

SITE PLAN
GROUNDWATER CONTOUR MAP
SETEMBER 2005
AMES C & D LANDFILL
AMES, IOWA

SHEET 1



MONITORING WELL	WATER ELEVATION
36	932.62
7	920.66
29	933.47
30	907.67
32	905.23
33	896.52
38	916.87
41	916.42
42	920.24

DRAWING FILENAME 6004\99a\321\GW-2003.dwg
PLOT STYLE TABLE 1050c
LAYER MNGR NAME
LAYOUT NAME UA-2005

DATE	REVISION

	BY	DATE
DESIGNED:	TDW	11-03
DRAWN:	JAK/JTP	11-03
CHECKED:		
LAST UPDATE:	10/4/05	

PROJECT NO. 6004-99A

FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, Iowa 50010
Phone: (515) 233-0000
FAX: (515) 233-0103
FOX engineering

POTENTIOMETRIC SURFACE COUNTOUR MAP
SETEMBER 2005
AMES C & D LANDFILL
AMES, IOWA

SHEET 2

APPENDIX A

Permit, Permit Amendment, and Correspondence

RECEIVED DEC 0 8 2004

IDJL

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

December 6, 2004

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
2004 Annual Water Quality Report
Permit No. 85-SDP-13-91P

Dear Mr. Fedeler:

We have reviewed the 2004 Annual Water Quality Report (AWQR), dated November 30, 2004, as submitted on your behalf by FOX Engineering Associates, Inc.

Based on our review of the report, the Department authorizes continued implementation of the recommended monitoring program, as follows:

1. Continued semiannual water quality analysis shall be conducted at all approved monitoring points as defined in the Special Provisions of the permit and/or any subsequent amendments.

In addition, all future AWQRs should include the following, starting with November 30, 2005 report:

1. A brief history of the site that describes the geology, hydrogeology, previous land-use, and solid waste streams.

2. An 11"x17" scaled site map delineating the approved monitoring network. All groundwater and surface water monitoring points shall be conspicuously marked and show its function as an upgradient, background, or downgradient sampling location.

3. A groundwater table contour map to evaluate groundwater pathways and to evaluate potential groundwater mounding. Data from leachate piezometers or wells should be included on the groundwater table contour map.

4. A potentiometric map should be included if a confined unit is being monitored.

5. A discussion of potential groundwater mounding and its influence on upgradient and downgradient wells.

6. A table showing all current and historic water quality data.

7. An evaluation of all upgradient groundwater and surface water points to determine whether they are currently functioning as a valid background/upgradient sampling points based on the groundwater table contour map and water quality data results.

8. Control limit calculations for each upgradient or background groundwater sampling point and whether the corresponding downgradient monitoring point falls within the calculated limits.

9. Graphical representation of water quality data in readable form. The current control limits and, if applicable, the Maximum Contaminant Levels (MCLs) should be clearly shown on each graph.

10. A discussion of the water quality data results stating whether potential leachate migration is occurring beyond the waste boundary at any groundwater monitoring point. If MCLs are exceeded, provide information on potential receptors.

11. A discussion, as applicable, of the potential impact of the landfill on surface water quality.

12. Conclusions and recommendations for future monitoring.

If you have any questions, you may contact me at (515) 281-8968.

Sincerely,

Jeff Simmons
Environmental Engineer
Energy and Waste Management Bureau

JNS\JNS\J:2004WaterQualityltrAmesStoryEnv.doc

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5

Nina Koger, DNR

Jeff Simmons, DNR

RECEIVED OCT 19 2005

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

October 14, 2005

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
Permit No. 85-SDP-13-91P
Amendment #3

Dear Mr. Fedeler:

Enclosed is Amendment #3 to the permit issued on October 14, 2005, for the Ames-Story Environmental C&D Landfill, Inc. The amendment and approved plans must be kept with the permit and the approved plans at the sanitary disposal project in accordance with solid waste rule 567 IAC 114.26(2)"c". Please review this amendment with your operators, as they must become familiar with it.

The enclosed amendment incorporates the revised final elevation drawing and cross section, dated September 12, 2005 and submitted by Fox Engineering Associates; as part of the permit documents.

If you have any questions, you may contact me at 515/281-8045.

Sincerely,

Michael B. "Mick" Leat
Environmental Engineer
Energy & Waste Management Bureau

ML\AmesStoryEnv03amd3X.doc

Attachment

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5
Nina Koger, DNR
Mick Leat, DNR

IOWA DEPARTMENT OF NATURAL RESOURCES
AMENDMENT #3

Issued by: _____
Michael Leat
Environmental Services Division

For: the Director

Date Issued: October 14, 2005

Permit number 85-SDP-13-91P, issued on November 24, 2003, for the Ames-Story Environmental C&D Landfill, Inc. is hereby amended by the following:

1. The revised final waste elevation drawing and cross section, labeled as Sheets 5 and 6, respectively, and dated September 12, 2005, as submitted by FOX Engineering Associates, Inc.; are hereby incorporated as part of the permit documents.

Accordingly, delete the text in Special Provision #2(a) and replace with the following:

2a. The approved site vertical height shall not exceed a maximum waste elevation of 1000 feet in the North waste area and 985 feet in the South waste area.

RECEIVED DEC 0 8 2004

DJL

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

December 6, 2004

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
Permit No. 85-SDP-13-91P
Amendment #2

Dear Mr. Fedeler:

Enclosed is Amendment #2 to the permit issued on November 24, 2003, for the Ames-Story Environmental C&D Landfill, Inc. The amendment and approved plans must be kept with the permit and the approved plans at the sanitary disposal project in accordance with solid waste rule 567 IAC 114.26(2)"c". Please review this amendment with your operators, as they must become familiar with it.

The enclosed amendment incorporates a reduction in the frequency of taking leachate elevation measurements related to a request contained in the 2004 Annual Water Quality Report dated November 30, 2004, as submitted by FOX Engineering Associates, Inc.; as part of the permit documents.

If you have any questions, you may contact me at 515/281-8968.

Sincerely,

Jeff Simmons
Environmental Engineer
Energy & Waste Management Bureau

JNS\JNS\J:AmesStoryEnv03amd2X.doc

Attachment

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5

Nina Koger, DNR

Jeff Simmons, DNR

IOWA DEPARTMENT OF NATURAL RESOURCES
AMENDMENT #2

Issued by: _____
Jeff Simmons
Environmental Services Division

For: the Director

Date Issued: December 6, 2004

Permit number 85-SDP-13-91P, issued on November 24, 2003, for the Ames-Story Environmental C&D Landfill, Inc. is hereby amended by the following:

1. A reduction in the frequency of taking leachate elevation measurements related to a request contained in the 2004 Annual Water Quality Report dated November 30, 2004, as submitted by FOX Engineering Associates, Inc.; is hereby incorporated as part of the permit documents.

Accordingly, delete the text in Special Provision #9(d) and replace with the following:

9d. Leachate head levels and elevations shall be measured semiannually at all piezometers and the volume of leachate collected and transported to the treatment works recorded. Records of leachate contaminants testing required by the treatment works and any NPDES permit for on-site treated leachate discharges shall be maintained.

JNS\JNS\J:AmesStoryEnv03amd2.doc

RECEIVED OCT 1 5 2004

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

October 12, 2004

LSW —
TDW —
binder ✓

2562 Permital Regulatory

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
2003 Annual Water Quality Report
Permit No. 85-SDP-13-91P

Dear Mr. Fedeler:

We have reviewed the 2003 Annual Water Quality Report (AWQR), dated November 24, 2003, as submitted on your behalf by FOX Engineering Associates, Inc.

Based on our review of the report, the Department authorizes continued implementation of the recommended monitoring program, as follows:

1. Continued semiannual water quality analysis shall be conducted at all approved monitoring points as defined in the Special Provisions of the permit and/or any subsequent amendments.

In addition, all future AWQRs should include the following, starting with November 30, 2005 report:

1. A brief history of the site that describes the geology, hydrogeology, previous land-use, and solid waste streams.

2. An 11"x17" scaled site map delineating the approved monitoring network. All groundwater and surface water monitoring points shall be conspicuously marked and show its function as an upgradient, background, or downgradient sampling location.

3. A groundwater table contour map to evaluate groundwater pathways and to evaluate potential groundwater mounding. Data from leachate piezometers or wells should be included on the groundwater table contour map.

4. A potentiometric map should be included if a confined unit is being monitored.

5. A discussion of potential groundwater mounding and its influence on upgradient and downgradient wells.

6. A table showing all current and historic water quality data.

7. An evaluation of all upgradient groundwater and surface water points to determine whether they are currently functioning as a valid background/upgradient sampling points based on the groundwater table contour map and water quality data results.

8. Control limit calculations for each upgradient or background groundwater sampling point and whether the corresponding downgradient monitoring point falls within the calculated limits.

9. Graphical representation of water quality data in readable form. The current control limits and, if applicable, the Maximum Contaminant Levels (MCLs) should be clearly shown on each graph.

10. A discussion of the water quality data results stating whether potential leachate migration is occurring beyond the waste boundary at any groundwater monitoring point. If MCLs are exceeded, provide information on potential receptors.

11. A discussion, as applicable, of the potential impact of the landfill on surface water quality.

12. Conclusions and recommendations for future monitoring.

If you have any questions, you may contact me at (515) 281-8968.

Sincerely,

Jeff Simmons

Jeff Simmons
Environmental Engineer
Energy and Waste Management Bureau

JNS\JNS\J:2003WaterQualityltrAmesStoryEnv.doc

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5

Nina Koger, DNR

Jeff Simmons, DNR

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

January 22, 2004

RECEIVED JAN 29 2004

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
Permit No. 85-SDP-13-91P
Amendment #1

Dear Mr. Fedeler:

Enclosed is Amendment #1 to the permit issued on November 24, 2003, for the Ames-Story Environmental C&D Landfill, Inc. The amendment and approved plans must be kept with the permit and the approved plans at the sanitary disposal project in accordance with solid waste rule 567 IAC 114.26(2)"c". Please review this amendment with your operators, as they must become familiar with it.

The enclosed amendment incorporates: 1) The construction documentation forms for leachate head piezometers LPZ-T1-1, LPZ-T2-1, LPZ-T3-1, and LPZ-T4-1, as submitted by FOX Engineering Associates, Inc. on November 24, 2003; and 2) The request letter from FOX Engineering Associates, Inc. dated December 18, 2003, concerning the waste tonnage calculation methodology; as part of the permit documents.

Note that the amendment contains conditions that may require a response or action by you which, if not properly complied with, may prompt enforcement action by this department.

If you have any questions, you may contact me at 515/281-8968.

Sincerely,

Jeff Simmons
Environmental Engineer
Energy & Waste Management Bureau

JNS\JNS\J:AmesStoryEnv03amd1X.doc

Attachments

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5

Nina Koger, DNR

Jeff Simmons, DNR

IOWA DEPARTMENT OF NATURAL RESOURCES
AMENDMENT #1

Issued by: Nina M. Koger

Nina M. Koger
Environmental Services Division

For: the Director

Date Issued: January 22, 2004

Permit number 85-SDP-13-91P, issued on November 24, 2003, for the Ames-Story Environmental C&D Landfill, Inc. is hereby amended by the following:

1. The documentation forms for the construction of leachate head piezometers LPZ-T1-1, LPZ-T2-1, LPZ-T3-1, and LPZ-T4-1 as submitted by FOX Engineering Associates, Inc. on November 24, 2003; are incorporated as part of the permit documents.

2. The waste tonnage calculation methodology described in the letter from FOX Engineering Associates, Inc. dated December 18, 2003; is hereby approved and incorporated as part of the permit documents. The following conditions shall apply:

   a. The permit holder shall be responsible for annually weighing on an off-site certified scale, a minimum of twelve of each type of vehicle and container waste load to use as a basis for determining the average waste tonnage for the various types of waste holding vehicles that utilize the landfill.

   b. The permit holder shall be responsible for attaching supporting documentation for tonnage calculations to the Solid Waste Fee Schedule and Retained Fee Report on a semiannual basis, commencing with the report due April 1, 2004.

NMK\JNS\J:AmesStoryEnv03amd1.doc

RECEIVED DEC 0 1 2003

Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

November 24, 2003

William K. Fedeler
P.O. Box 2483
Ames, IA 50010

RE: Ames-Story Environmental C&D Landfill, Inc.
Permit No. 85-SDP-13-91P
Permit Renewal

Dear Mr. Fedeler:

Enclosed is the renewed permit for the Ames-Story Environmental C&D Landfill, Inc. The permit and the approved plans must be kept at the sanitary disposal project in accordance with solid waste rule 567 IAC 114.26(2)"c". Please review the permit with your operators, as they must become familiar with it.

Note that the permit contains special provisions that may require a response or action by you which, if not properly complied with, may prompt enforcement action by this department.

Please note that Special Provision #11 requires that by January 1, 2004, either an on-site scale is provided or a plan is submitted that details an alternative method for determining waste tonnage, such as annually weighing several representative truckloads of waste at a certified scale to use as a basis for establishing the waste conversion weights for different types of trucks.

The submitted application was reviewed and placed in the permit record files. No plan updates were submitted with the application.

If you have any questions regarding this permit, please contact me at 515/281-8968 or Nina Koger at 515/281-8986.

Sincerely,

Jeff Simmons
Environmental Engineer
Energy & Waste Management Bureau

JNS\JNS\J:AmesStoryEnv03pmtX.doc

Attachment

copy: Douglas J. Luzbetak, P.E.
FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

DNR Field Office #5

Nina Koger, DNR

Jeff Simmons, DNR

IOWA DEPARTMENT OF NATURAL RESOURCES
SANITARY DISPOSAL PROJECT PERMIT

I. **Permit Number:** 85-SDP-13-91P
Ames-Story Environmental C&D Landfill, Inc.

II. **Permitted Agency:** Ames-Story Environmental Landfill, Inc.

III. **Project Location:** Parcel "A" [Lot 3 and the West 100 feet of Lot 2, Dayton Road Development Subdivision] and approximately the West 508.1 feet of Lot 1 in Block 5, Landfill Addition; both parcels located in the corporate limits of the city of Ames and in a portion of the E½ of Section 1, T83N, R24W, Story County, Iowa

IV. **Responsible Official**

Name: William K. Fedeler
Address: P.O. Box 2483
Ames, IA 50010
Phone: 515/232-5864

V. **Licensed Design Engineer**

Name: Douglas J. Luzbetak, P.E.
Address: FOX Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010
Phone: 515/233-0000
FAX: 515/233-0103

Iowa License Number: 12654

VI. **Date Permit Issued:** November 24, 2003

VII. **Permit Expiration Date:** November 24, 2006

VIII. **Issued by:** Gina M. Koger
Environmental Services Division
for the Director

IX. **General Provisions**

The above named permitted agency is hereby authorized to operate a sanitary landfill at the described location in conformance with Iowa Code Chapter 455B, the rules pursuant thereto existing at the time of issuance, and any subsequent new rules which may be duly adopted, and any provisions contained in Section X of this permit.

The project shall be operated according to the engineering plans and specifications approved by the Department of Natural Resources and these shall become a part of this permit. Any modifications or deviations from the engineering plans and specifications must have prior approval by the Department and an amendment to this permit issued.

The permitted service areas and conditions are specified in Special Provision #1 in Section X. Any deviations from the specified comprehensive planning documents, including changes in waste accepted from outside the permitted service areas, or any changes in the amount of waste, or changes in the waste stream shall have prior comprehensive planning approval by the Department.

The issuance of this permit in no way relieves the applicant of the responsibility for complying with all other local, state, and federal statutes, ordinances, and rules or other requirements applicable to the establishment and operation of this sanitary landfill.

No legal or financial responsibility arising from the construction or operation of the approved project shall attach to the State of Iowa or the Department of Natural Resources due to the issuance of this permit.

If title to this project is transferred, the new owner must apply to the Department for a transfer of this permit within thirty days of the date of title transfer. This permit is void sixty days after the date of title transfer unless the Department has transferred the permit.

The permit holder shall file a quarterly Solid Waste Fee Schedule and Retained Fee Report utilizing the Department's Form 542-3276 and tonnage fee payment, as applicable, for all wastes received, recycled/reused, and disposed at the sanitary landfill in accordance with Iowa Code section 455B.310. The quarterly report shall incorporate a detailed breakdown of all accepted solid waste authorized under this permit.

The permit holder is required to maintain records for the service area of tonnages accepted at this facility. Records shall be developed and maintained in such a way that tonnages from each county/state may be tracked in order to provide the local solid waste agency and the Department with accurate statistics from which generation/diversion rates will be derived. The reported tonnage shall be separated by Boone County, Greene County, Story County, Dallas County, and Calhoun County, consistent with the service area as detailed in Special Provision #1. The reports are due on a quarterly basis. The reports will be due January 1, April 1, July 1 and October 1 for the quarters ending September 30, December 31, March 31 and June 30, respectively. The permit holder shall mail the completed form to the Planning, Permitting and Engineering Services Section, Wallace State Office Building, 502 East Ninth Street, Des Moines, Iowa 50319. This reporting procedure supersedes any previous conflicting permit provisions.

The permit holder is prohibited from burying or burning yard waste as stipulated under 567 IAC 105.1(3) and Iowa Code sections 455D.9(1) and (6). Yard waste is defined in 567 IAC 100.2(455B,455D) as grass clippings, leaves, garden waste, brush and trees. Yard waste does not include tree stumps. Clearing and grubbing wastes generated at the landfill site and tree stumps may be buried. Only yard waste which has been separated at its source from other solid waste may be accepted by the permit holder for reuse purposes if authorized in Section X of this permit or after obtaining the necessary permit amendments. This prohibition supersedes any previous conflicting permit provisions.

Solid waste disposed at this site shall not exhibit free liquids, toxic or hazardous properties. No hazardous wastes as defined by Iowa Code section 455B.411 may be disposed at this landfill.

The permit holder is prohibited from disposing of nickel-cadmium, mercuric oxide, and sealed lead-acid household batteries, as specified in 567 IAC 145.1(455B,455D), effective beginning September 20, 1995.

This facility shall be staked as necessary and inspected on a semiannual basis by a professional engineer licensed in the State of Iowa. The engineer shall prepare a brief report describing the site's conformance

and nonconformance with the permit and the approved plans and specifications during the inspections. These reports shall be submitted by May 1 and November 1 each year to the Department's Main and local Field offices. The Department shall be notified if any inspection reveals any nonconformance with the permit and approved plans and specifications.

Failure to comply with Iowa Code Chapter 455B, or any rule of order promulgated pursuant thereto, or any or all provisions of this permit may result in 1) a civil penalty of up to $5000 for each day of violation, pursuant to Iowa Code section 455B.307, or 2) the suspension or revocation of this permit, pursuant to Iowa Code section 455B.305.

X. Special Provisions

1. The permit holder is authorized to accept construction and demolition wastes, diseased trees, tree stumps, nonhazardous petroleum-contaminated soils, and asbestos for disposal in accordance with the approved Central Iowa Solid Waste Management Association Comprehensive Plan, Part I. The Comprehensive Plan, Part I as approved by the Department on March 31, 2003; any approved amendments to the plan; and the latest plan update, are hereby incorporated as permit plan documents.

   The permitted service area includes: All cities and the unincorporated area, including Woodward State Hospital, in Boone County; all cities, excluding Jefferson, and the unincorporated area in Greene County; the cities of Ames, Cambridge, Colo, Gilbert, Huxley, Kelley, Maxwell, McCallsburg, Nevada, Roland, Slater, Story City, Zearing and the unincorporated area in Story County; the cities of Bouton, Granger, and Woodward in Dallas County; and the cities of Farnhamville, Lohrville, and Somers in Calhoun County.

   In accordance with 567 IAC 101.8(2), the permit holder shall submit the Comprehensive Solid Waste Management Plan, Part I update to the Department approved plan by November 1, 2005.

2. The permit holder shall develop and operate the site in accordance with: 1) The Revised Development Plan (RDP) dated March 29, 1996, as submitted by FOX Engineering Associates, Inc. and approved on May 14, 1996; and 2) Revised Figure 20 dated September 1998, Revised Figure 28 dated July 2, 1998, and Plan Sheet 4 updated September 24, 1998, all as submitted by FOX Engineering Associates, Inc. and approved on September 29, 1998.

   a. The approved site vertical height shall not exceed a maximum waste elevation of 970 in the North central waste area and 967 feet in the South central waste area.

   b. The approved horizontal site development is limited to Trenches #1, #2, #3, and #4 in the North waste area; and to Trenches #5 and #6 in the South waste area.

      Revised Figures 20 and 28 and updated Plan Sheet 4 of the RDP have been revised to show the omission of previously designated Trench #7.

   c. The Department acknowledges the deviation from IAC 567 IAC 114.26(1)"m"(6) relative to the separation distance from the adjacent property line, as documented by a waiver granted by the adjacent property owner on March 5, 1996.

   d. The Construction Certification dated May 13, 1996, as submitted by FOX Engineering Associates, Inc. and approved on May 14, 1996, is incorporated as part of the permit documents.

e. The detailed soils inventory for the liner system, and weekly, intermediate, and final cover usage as submitted by FOX Engineering Associates, Inc. under cover letter dated June 6, 1996 and approved on September 13, 1996, is incorporated as part of the permit documents.

f. In accordance with the variance approval of February 19, 1999, the permit holder was authorized to increase in the liner side slope from a maximum of 4:1 to a 3:1 side slope on the north perimeter slope of the Trench 5 expansion area as shown on Plan Sheet 4 of the RDP updated January 4, 1999, and prepared by FOX Engineering Associates, Inc.

g. The Construction Certification for Trench #5, dated June 11, 1999, as submitted by FOX Engineering Associates, Inc. and approved on July 12, 1999, is incorporated as part of the permit documents.

h. The Construction Certification for Trench #6, dated May 10, 2000, as submitted by FOX Engineering Associates, Inc. and approved on May 26, 2000, is incorporated as part of the permit documents.

3. Solid waste shall be deposited at the toe of the working face, spread in two foot layers, and compacted on a 3:1 slope.

4. Litter fences shall be used when needed to confine windblown materials to the operating area.

5. Surface water shall be diverted around the fill area and surface drainage shall be provided at the toe of the working face.

6. An all weather fill area accessible during all weather conditions under which solid waste is received and disposed at the site shall be provided at all times.

7. Hydrologic monitoring at the site shall be conducted in accordance with the Hydrologic Monitoring System Plan (HMSP) dated March 29, 1996, as submitted by FOX Engineering Associates, Inc. and approved on May 14, 1996; and the following provisions:

   a. The HMSP for the North and South waste areas shall include the following:

      Water table monitoring points, consisting of upgradient groundwater monitoring point MW-37; and downgradient groundwater monitoring points MW-6, MW-23, MW-24, MW-25, MW-28, MW-31, MW-34*, MW-35*, MW-39, MW-40, and MW-43.

      Uppermost Aquifer monitoring points, consisting of upgradient groundwater monitoring point MW-36; and downgradient groundwater monitoring points MW-7, MW-8, MW-29, MW-30, MW-32, MW-33, MW-34*, MW-35*, MW-38, MW-41, and MW-42.

      Surface Water monitoring points, consisting of upgradient surface water monitoring points SW-1 and SW-4; and downgradient surface water monitoring points SW-2, SW-3, SW-5, SW-6.

      * Screened across both the water table and the uppermost aquifer.

b. Monitoring points not designated for water quality monitoring shall be retained as water level measuring points.

c. Department construction documentation form 542-1277 and boring logs for all monitoring wells and piezometers shall be submitted within 30 days of installation. Department construction documentation form 542-1323 shall be submitted within 30 days of establishing surface water monitoring points. Abandonment of any monitoring well requires prior approval by the Department. Well abandonment document DNR FORM 542-1226 shall be submitted within 30 days of plugging a well.

d. First year quarterly samples shall be collected from any designated new monitoring well, dewatering system, and any monitoring point which lacks four quarterly samplings and analyzed for the parameters listed in 567 IAC 114.26(4)"d", "e" and "f". Baseline testing for the parameters listed in 567 IAC 114.26(4)"f" shall be conducted during the fall. All statistical evaluations shall include the updated baseline and subsequent sampling documentation.

e. Continued semiannual sampling shall take place in March and September of each year and be analyzed for the parameters listed in 567 IAC 114.26(4)"e". Routine annual testing for the parameters listed in 567 IAC 114.26(4)"f" shall be conducted during September of each year.

f. The Method Detection Limit (MDL) for the test parameters shall not exceed action levels as defined in 567 IAC Chapter 133. If the action levels cannot be feasibly achieved using procedures described in 567 IAC 114.26(5), then the MDL shall not exceed the lowest feasible level.

g. Samples collected for dissolved metals analysis shall be field filtered, preserved, and promptly transferred to a certified laboratory for analysis.

h. If laboratory results exceed the upgradient mean plus two standard deviations or the Maximum Contaminant Level (MCL) for any parameter, the Department shall be notified within 30 days of receipt of the analytical results.

i. Surface monitoring points must be clearly marked in the field and a method for measuring the flow rate at each sampling point shall be devised.

j. Results of all analysis and the associated Department sampling forms 542-1322 and 542-1324 shall be submitted to the Department's Main and local Field offices within 45 days of the sample collection.

k. An Annual Water Quality Report (AWQR) summarizing the effects the facility is having on groundwater and surface water quality shall be submitted to the Department's Main and local Field offices by November 30 each year. This report shall be prepared in accordance with 567 IAC 114.26(8)"d" by a Professional Engineer licensed in the State of Iowa. The AWQR shall include the results of the semiannual groundwater measurements and the routine groundwater analyses conducted at the monitoring points. The Special Waste Authorization information no longer needs to be addressed in the AWQR, but instead shall now be provided in the Solid Waste Fee Schedule and Retained Fee Report.

8. In accordance with the variance approval of November 10, 1998, the permit holder is authorized to reduce the frequency of groundwater level measurements from monthly, as required by 567 IAC

114.26(4)"b", to semiannually. The measurements shall be taken during the semiannual sampling events, with the results submitted in the corresponding semiannual monitoring reports and the Annual Water Quality Report.

9. The permit holder is authorized to construct and operate the leachate control system in accordance with the Leachate Control Plan (LCP) as provided in the RDP dated March 29, 1996, and prepared by FOX Engineering Associates, Inc. and approved on May 14, 1996; the revisions as noted in Special Provision #2 above; and the following conditions:

   a. Leachate collected from the leachate control system shall be disposed of either by treatment in an on-site facility with an NPDES permit or by discharge to the City of Ames publicly owned treatment works (POTW). If the discharge is to a POTW with a pretreatment program approved by the Department, the discharge must comply with the terms and conditions of a local permit issued for the discharge by the POTW. If the discharge is to a POTW without an approved pretreatment program a completed treatment agreement form shall be submitted to the Department's Wastewater Section. Copies of the local permit or treatment agreement shall be provided to the Department's Energy and Waste Management Bureau and the local Field office. The treatment agreement must be on DNR Form 31 (542-3221) and must comply with the requirements of 567 IAC 64.3(5).

   b. In accordance with 567 IAC 114.26(11)"d", the Department shall be notified and the site inspected when the initial construction of each phase of the leachate control system has been completed. Prior to the inspection, construction certification reports shall be submitted to the Department's Main and local Field offices. No waste disposal shall commence in a new phase until the site development has been inspected and approved by the Department.

   c. The leachate control system shall be operated and maintained in accordance with the approved permit documents. After implementation of the leachate control system, the permit holder shall routinely collect the necessary information and evaluate the effectiveness of the system in controlling the leachate. All documentation shall be summarized in a Leachate Control System Performance Evaluation (LCSPE) Report. Effective control shall be considered as maintaining compliance with maximum leachate head as defined in 567 IAC 114.26(11)"a"(1), achieving the lowest possible leachate head as required in 567 IAC 114.26(12)"b"(2), and maintaining surface and groundwater quality standards at compliance monitoring points.

   d. Leachate head levels and elevations shall be measured monthly at all piezometers and the volume of leachate collected and transported to the treatment works recorded. Records of leachate contaminants testing required by the treatment works and any NPDES permit for on-site treated leachate discharges shall be maintained.

   e. The permit holder shall annually submit the LCSPE Report, including record data, as a supplement to the facility Annual Water Quality Report, as defined in 567 IAC 114.26(8)"d". The performance evaluation shall include proposed additional leachate control measures and an implementation schedule in the event that the constructed system is not performing effectively.

   f. In accordance with the variance approval of April 12, 1991, on-site leachate storage is waived at this time. An on-site leachate storage system shall be required upon the event that any complications arise or if the city of Ames can no longer accommodate direct discharge from the landfill.

10. The permit holder shall quarterly monitor and annually report site methane concentrations in accordance with 567 IAC 114.26(15)"b" after May 18, 1994. Specific actions, as defined in the rules, shall be taken in the event of methane gas level limit exceedances.

    The annual report summarizing the methane gas monitoring results and any action taken resulting from gas levels exceeding the specified limits during the previous 12 months shall be submitted to the Department's Main and local Field offices by November 30 of each year.

11. The permit holder shall provide on-site scale facilities for the purposes of weighing and reporting solid wastes disposed of at the landfill. If conditions are such that make it impractical to provide an on-site scale, then off-site scale facilities or an alternative method to weighing may be used if justified and approved by the Department. The permit holder shall comply with the waste weighing, record keeping and tonnage fee reporting requirements defined in 567 IAC 101.9(455B,455D). The scale weighing facilities shall comply with the certification and licensing requirements of the Iowa Department of Agriculture and Land Stewardship. Certification shall be maintained current at all times. The permit holder shall submit a copy of the weighing scale facility licensing certificate issued by the Iowa Department of Agriculture and Land Stewardship and a copy of renewals shall be provided to the Department's Main and local Field offices.

    <u>The landfill does not currently have an on-site scale or an alternative method for determining waste tonnage approved. Therefore, the Department requires that the permit holder provide an on-site scale facility, or a request for approval of an alternative plan with included justification by no later than January 1, 2004.</u>

12. The Emergency Response and Remedial Action Plan (ERRAP) submitted by FOX Engineering Associates, Inc. and dated December 2001, in compliance with 567 IAC 114.30(455B) was approved by the Department on January 17, 2002. An updated ERRAP shall be submitted at the time of each permit renewal application. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

13. The permit holder shall close the landfill site in accordance with the Closure/Post Closure Plan (C/PCP) dated March 15, 1996, as prepared by FOX Engineering Associates, Inc. and approved on May 14, 1996.

    a. The clearance, dated May 13, 1996, from the Natural Resources Conservation Service relative to compliance with wind and soil loss limit regulations, in accordance with 567 IAC 114.26(1)"j" for all development areas, is incorporated as part of the permit documents.

APPENDIX B

HIR/HMSP

AMES-STORY ENVIRONMENTAL LANDFILL

HYDROGEOLOGIC INVESTIGATION REPORT
&
HYDROLOGIC MONITORING SYSTEM PLAN

IDNR PERMIT NO. 85-SDP-13-91P

by:
FOX Engineering, Inc.
1531 Airport Road
Ames, Iowa 50010
(515) 233-0000
(800) 433-3469

FOX ENGINEERING

PN 2562-95A.310

AMES-STORY ENVIRONMENTAL LANDFILL
HYDROGEOLOGIC INVESTIGATION REPORT
&
HYDROLOGIC MONITORING SYSTEM PLAN
PERMIT NO. 85-SDP-13-91P

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly registered Professional Engineer under the laws of the State of Iowa.

3/29/96

Douglas J. Luzbetak, P.E. Date
Iowa Registration No. 12654
My registration renews December 31, 1996

Prepared by
FOX Engineering Associates, Inc.
Ames, Iowa

Copyright 1996
All Rights Reserved
FOX P.N. 256295A.310

HYDROGEOLOGIC INVESTIGATION REPORT

HIR

I. INTRODUCTION 1

II. FIELD ACTIVITIES 1

Soils 1
- Soil Boring & Sampling
- Laboratory Testing

Groundwater 2
- Monitoring Wells
- Water Level Monitoring

III. SITE GEOLOGY 7

IV. HYDROGEOLOGIC UNITS & FLOW PATHS 7

V. INDUCED GROUNDWATER LEVEL VARIATIONS 8

HYDROLOGIC MONITORING SYSTEM PLAN

HMSP

I. INTRODUCTION 1

II. COMPONENTS OF THE HMSP 2
- Surface Water Monitoring Points
- Groundwater Monitoring Points

III. HYDROLOGIC MONITORING SYSTEM OPERATING REQUIREMENTS 5
- Operational Sampling
- Groundwater Levels
- Surface Water Levels
- First Year Sampling
- Routine Semi-Annual Sampling
- Routine Annual Sampling
- Leachate Sampling & Testing

IV. LABORATORY PROCEDURES 9

V. ANALYSIS OF SAMPLING DATA 10

VI. ADDITIONAL SAMPLING 10

VII. RECORD KEEPING 10
- Field Records
- Records of Analysis
- Quarterly Monitoring Analytical Results
- Annual Reports

VIII. GROUNDWATER QUALITY ASSESSMENT PLAN 11

IX. MONITORING WELL MAINTENANCE PERFORMANCE REEVALUATION 12

X. POST-CLOSURE MONITORING REQUIREMENTS 12

XI. CONCLUSIONS 13

Sheets

Sheet 1 - Site Layout
Sheet 2 - Top of Upper Aquifer Sand Layer
Sheet 3 - Thickness of Upper Aquifer Sand Layer
Sheet 4 - Top of Pre-Illinoian Till
Sheet 5 - Geologic Cross Sections
Sheet 6 - Water Table Contour Map
Sheet 7 - Potentiometric Water Surface - Upper Aquifer
Sheet 8 - Vertical Groundwater Flow Assessment Profiles

Tables

Table 1 - Falling Head Permeability Testing - Shelby Tube Samples
Table 2 - Falling Head Permeability Testing - Recompacted Samples
Table 3 - Water Elevation Data - September, 1995
Table 4 - Hydraulic Conductivity Testing Results

Appendices

Appendix A - Boring Logs & Grain Size Analysis
Appendix B - Monitoring Well Construction Documentation Forms
Appendix C - IDNR Letter - December 4, 1995
Appendix D - Proctor Tests Results
Appendix E - Hydraulic Conductivity Testing Results & Calculations
Appendix F - LF101 - Monitoring Point Survey Information
Appendix G - LF105 - Water Elevation Measurement Form
Appendix H - Field Procedures Manual
Appendix I - IDNR Form 542-1322 (Groundwater Sampling Record)
Appendix J - IDNR Form 542-1323 (Documentation of Surface Water Monitoring Point)
Appendix K - IDNR Form 542-1324 (Surface Water Sampling Record)
Appendix L - Schedule of Sampling, Operation & Maintenance

I. INTRODUCTION

Ames-Story Environmental Landfill (Permit # 85-SDP-13-91P) has recently purchased additional land situated east and south of the currently permitted facility (Sheet 1). The newly acquired land is intended for use as future lateral expansion areas. These areas are referenced as the east expansion area and the south expansion area. This study has been completed to document the subsurface conditions in the expansion areas.

Considerable hydrogeologic information was acquired and presented in 1991 during the original permitting process and is incorporated herein.

II. FIELD ACTIVITIES

Soils

Soil Boring & Sampling - Hydrologic assessment of the original site consisted of 22 soil borings, 18 of which were completed as monitoring wells and/or piezometers. Six (6) of the monitoring wells/piezometers were later plugged and abandoned. The monitoring wells that remain are designated MW-22 through MW-34 and are incorporated as part of the current Hydrologic Monitoring System. *Note that MW-28 and MW-29 were installed by the City of Ames as monitoring wells for the City of Ames Landfill (Permit #85-SDP-8-88P).* Boring logs for these monitoring wells are included in Appendix A, while Monitoring Well Construction Documentation Forms are included in Appendix B.

In February, 1995, nine (9) additional soil borings were advanced in the south expansion area (Sheet 1). Six (6) of the nine (9) borings were completed as monitoring wells. These wells are designated MW-38 through MW-43. The remaining soil borings are designated SB-44, SB-45, and SB-46. *Monitoring wells MW-6, MW-7, and MW-8 were installed by the City of Ames as monitoring wells for the City of Ames Landfill (Permit #85-SDP-8-88P).* Boring logs for these monitoring wells are included in Appendix A, while Monitoring Well Construction Documentation Forms are included in Appendix B.

Additionally, three (3) monitoring wells along the east side of the currently permitted area were plugged and replaced. Excavation in the east expansion area eliminated MW-22, MW-26, and MW-27. These wells were plugged by a certified well driller and were replaced by MW-35, MW-36, and MW-37 as approved by the Iowa Department of Natural Resources Letter dated December 4, 1995 (Appendix C). Boring logs for these monitoring wells are included in Appendix A, while Monitoring Well Construction Documentation Forms are included in Appendix B.

All soil borings were continuously sampled. Thin walled Shelby tube samples were also collected at each of the soil boring locations that extended below the planned landfill base. The tube samples were sealed and transported to a qualified laboratory for testing.

Laboratory Testing - Testing was conducted on select soil samples representing various subsurface strata at the site. Falling head permeability tests were performed on the undisturbed Shelby tube samples. The results are presented in Table 1.

Grain size analyses were also performed on select soil samples. The Grain Size Distribution Test Reports are included in Appendix A with each corresponding boring log. Standard Proctor density and soil moisture were determined utilizing several bag samples collected at the site. The Proctor test results are included in Appendix D.

Permeability testing has also been completed on recompacted soil samples. The samples were recompacted to 85%, 90%, and 95% of the Standard Proctor density and falling head permeability testing was performed. The results (Table 2) indicate that the on-site soil exhibits a permeability of less than 1×10^{-7} cm/sec when recompacted to 95% of standard proctor.

Groundwater

Monitoring Wells - All wells on site consist of 2" PVC screen and riser pipe and conform to IAC 110.11. The wells are situated in clusters, with each well cluster containing a water table monitoring well and an upper aquifer monitoring well. The well clusters are situated at intervals of less than 600' around the perimeter of the landfill site

Water Level Monitoring - The top of casing elevation is recorded for each of the site monitoring wells. Water level readings are routinely collected and are recorded. Water elevation data for September, 1995 is summarized in Table 3. Water elevation data is discussed further in sections of this report that follow.

In-Situ Hydraulic Conductivity Testing - Slug and/or bail tests were performed at each monitoring well to estimate the hydraulic conductivity in the screened interval. The results of hydraulic conductivity testing are summarized in Table 4. The field data and the calculation of hydraulic conductivity at each well are included in Appendix E.

The results of slug and/or bail tests indicate hydraulic conductivities in the range of 10^{-4} to 10^{-7} cm/sec.

TABLE 1

UNDISTURBED FALLING HEAD PERMEABILITY TEST RESULTS
AMES-STORY ENVIRONMENTAL LANDFILL

SAMPLE DESIGNATION	DEPTH (ft)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERMEABILITY (cm/sec)
PZ-2	24.5-26.5	12.0	117.2	2.3E-03
PZ-4	46-48	16.3	108.4	5.8E-08
PZ-4	66-67	17.3	116.6	4.4E-08
PZ-6	19.5-21.5	12.6	118.8	7.0E-07
PZ-8	29.5-31.5	13.7	118.4	5.6E-08
MW-25	29.5-31.5	15.1	120.2	2.4E-07
SB-31	9.5-11.5	13.3	117.1	4.0E-04*
SB-32	14-16	13.1	105.5	3.7E-06**
SB-34	30-32	15.9	112.5	3.0E-07
SB-35	14-16	14.6	121.7	9.3E-08
MW-38-12	50	15.1	122.0	3.3 X 10-8
MW-41-3	25	12.1	123.0	*
MW-41-8	40	12.0	124.0	6.2 X 10-8
MW-42-11	45	13.6	118.0	*
MW-43-1	25	—	—	*
B-44-8	35	14.6	118.0	1.1 X 10-7
B-45-7	30	—	—	*
B-46-7	25	11.8	130.0	1.5 X 10-8
B-46-10	35	13.0	122.0	1.0 X 10-6

* Samples were either loose or disturbed by large gravel.
** VERY SANDY

TABLE 2

RECOMPACTED FALLING HEAD PERMEABILITY TEST RESULTS
AMES-STORY ENVIRONMENTAL LANDFILL

SAMPLE DESIGNATION	COMPACTION (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERMEABILITY (cm/sec)
PZ-2	85.5	10.8	104.1	7.9E-06
PZ-2	90.6	10.8	110.3	4.6E-06
PZ-2	95.6	10.8	116.4	6.4E-08
PZ-4	87.6	12.4	109.0	1.7E-07
PZ-4	90.5	12.4	112.6	1.0E-07
PZ-4	95.6	12.4	118.9	8.5E-08
PZ-6	84.6	12.9	104.3	7.5E-09
PZ-6	89.9	12.9	110.8	1.2E-06
PZ-6	94.8	12.9	116.9	5.7E-08
PZ-8	86.8	11.9	105.9	3.0E-06
PZ-8	92.0	11.9	112.2	2.8E-06
PZ-8	96.9	11.9	118.2	8.9E-08
SB-32	85.9	13.2	104.3	3.7E-08
SB-32	90.9	13.2	110.3	3.4E-08
SB-32	95.7	13.2	116.2	1.4E-08
SB-33	86.6	13.8	102.9	7.0E-07
SB-33	90.7	13.8	107.8	9.0E-06
SB-33	95.4	13.8	113.3	2.8E-07
SB-34	85.8	12.7	107.1	5.7E-08
SB-34	95.7	12.7	119.4	3.7E-08
SB-35	84.6	14.4	104.7	1.6E-08
SB-35	89.5	14.4	110.8	8.1E-08
SB-35	94.5	14.4	117.0	1.5E-08

TABLE 3
WATER ELEVATION DATA
SEPTEMBER, 1995

MONITORING WELL #	TOP OF PVC ELEVATION	DEPTH TO WATER	WATER ELEVATION
4(28)	946.33	9.10	937.23
5(29)	946.62	13.7	932.92
6	943.31	10.2	933.11
7	943.50	22.2	921.3
8	943.09	33.5	909.59
22	950.59	13.87	936.72
23	945.98	16.62	929.36
24	939.44	20.9	918.54
25	906.34	9.67	896.67
26	950.51	20.84	929.67
27	950.51	35.0	915.51
30	945.54	36.15	909.39
31	941.43	21.9	919.53
32	939.86	32.92	906.94
33	906.32	9.54	896.78
34	909.50	7.86	901.64
38	936.59	36.22	900.37
39	935.93	18.52	917.41
40	933.07	7.56	925.51
41	933.46	13.08	920.38
42	940.64	15.26	925.38
43	940.83	12.30	928.53
44	936.94	3.0	933.94
45	937.07	5.4	931.67
46	938.21	7.0	931.21

TABLE 4

HYDRAULIC CONDUCTIVITY VALUES (cm/sec)
BASED ON SLUG & BAIL TEST RESULTS

WELL NO.	FORMATION TYPE vs. SCREENED INTERVAL		
	AQUIFER FM.	AQUITARD FM	
	UPPER AQUIFER	WISCONSINAN TILL	PRE-ILLINION TILL
MW-21	—	5.0E-06	—
PZ-1	—	—	3.0E-06
PZ-2	—	—	2.0E-07
MW-22	—	7.0E-06	—
PZ-3	1.0E-04	—	—
PZ-4	—	—	1.0E-06
MW-23	—	3.0E-06	—
PZ-5	1.0E-04	—	—
PZ-6	—	—	7.0E-05
MW-24	—	—	—
PZ-8	—	—	5.0E-06
MW-25	INSTANT *	—	—
PZ-9	5.0E-04	—	—
MW-38	3.4E-06	—	—
MW-39	—	6.54E-04	—
MW-40	—	5.68E-05	—
MW-41	1.79E-05	—	—
MW-42	4.09E-05	—	—
MW-43	—	3.96E-05	—

* SLUG & BAIL TEST WAS NOT PERFORMED DUE TO RAPID RECHARGE.
HYDRAULIC CONDUCTIVITY VALUE EXCEEDS 1E-04.

III. SITE GEOLOGY

Soil boring data collected at the site indicates several stratigraphic units of interest. The uppermost unit, the Wisconsinan till is oxidized to approximate depths of 10' to 13' below grade. Below depths of 10' to 13' the Wisconsinan till is unoxidized. The Wisconsinan till is described as 65' to 70' of silty sandy clay. Thin sand lenses are noted throughout this unit. A significant sand layer occurs throughout the site at an approximate elevation of 890' to 900' above MSL. Sheet 2 illustrates the top of this sand layer. Sheet 3 is an isopach map illustrating the thickness of this sand layer across the site. This sand layer is typically described as a fine sand with silt.

Underlying the Wisconsinan till, Pre-Illinoian tills ranging from 20' to 25' in thickness are encountered. This unit is described as a gray/brown-gray firm silt and is locally referred to as a buried loess deposit. Sheet 4 illustrates the top of the Pre-Illinoian till. Mississippian limestone is situated below the till units. Geologic cross sections (Sheets 5a-5c) illustrate the subsurface stratigraphy at the site.

IV. HYDROGEOLOGIC UNITS & FLOW PATHS

Hydrologic Units

Monitoring wells within the Wisconsinan till indicate a static water table approximately 10' below grade. The water table surface generally mimics the ground surface (Sheet 6). The unconsolidated Wisconsinan till is considered a distinct hydrologic unit and water movement is represented by the water table surface.

The significant sand layer near the base of the Wisconsinan till is interpreted to be the upper aquifer unit at this site. This layer is continuous across the site and exhibits a potentiometric surface (Sheet 7) that is separate from the water table surface. Water movement in this unit is anticipated to be horizontal and warrants monitoring as a separate aquifer unit.

Flow Paths

Surface Water - Surface water flow in the north portion of the site flows north to the creek, which in turn flows west to the South Skunk River. Surface water flow in the central portion of the site flows to a drainage ditch along Watt Road. This ditch flows to a 36" storm sewer that drains to the South Skunk River. In the southern portion of the site surface water flows west and south to drainage ditches along the railroad ROW. The drainage ditches flow west to the South Skunk River.

Groundwater - Based on the water level data collected in September, 1995 (Table 3), groundwater in the unconfined Wisconsinan till flows northeast in the northern portion of the site and east-southeast in the southern portion of the site (Sheet 6). Groundwater within the upper aquifer sand layer flows northeast in the northern portion of the site and east-southeast in the southern portion of the site (Sheet 7).

Downward movement of groundwater is controlled by the low permeability glacial clays. The Vertical Groundwater Assessment Profiles (Sheets 8a-8b) illustrate the flow characteristics based on available data. The greatest resistance to flow appears to be in the vertical direction, while the least resistance to flow appears to be horizontally. The sand seams and the upper aquifer sand layer appear to accelerate horizontal flow.

V. INDUCED GROUNDWATER LEVEL VARIATIONS

Construction of the proposed landfill expansions will affect the seasonal watertable level in the area. Groundwater diversion systems are currently in place in the originally permitted portion of the site. In addition, groundwater diversion will be installed below the baseliner in the east and south expansion areas. It is anticipated that the water table will be lowered in the vicinity of the expansion areas. The radius of influence due to drawdown by the groundwater diversion systems is not anticipated to extend appreciably beyond the property boundaries due to the presence of low permeability soils. The low permeability soils will also act to buffer the effects of heavy precipitation and/or drought. Likewise, sudden changes in the water level of the creek should have a limited effect on the water levels existing along the site perimeter.

I. INTRODUCTION

This Hydrologic Monitoring System Plan (HMSP) for the Ames-Story Environmental Landfill is the operational and maintenance plan for the hydrologic monitoring system. The purpose of the HMSP is to determine the impact, if any, the sanitary landfill is having on the adjacent ground and surface waters through groundwater monitoring wells and surface water monitoring points. The monitoring system should enable early detection of the escape of pollutants from a landfill. This HMSP is pertinent to the active and proposed landfill portions of the site.

The HMSP has been prepared in accordance with Iowa Administrative Code (IAC) Rule 567, Subrule 103.2(3): Hydrologic monitoring systems, 103.2(4): Hydrologic monitoring system operating requirements, 103.2(5): Laboratory Procedures, 103.2(6): Analysis of sampling data, 103.2(7): Additional sampling, 103.2(8): Record keeping and recording, 103.2(9): Groundwater quality assessment plan, 103.2(10): Postclosure monitoring requirements. Portions of Subrule 110: Design, Construction and Operation Standards for Solid Waste Management Facilities also apply.

II. COMPONENTS OF THE HYDROLOGIC MONITORING SYSTEM

All surface water and ground water monitoring points are listed on form LF-101 and LF-105 in Appendix F and G, respectively. LF-101 includes the landfill coordinate location, ground surface elevation, top of protective casing and the top of well casing information.

Surface Water Monitoring Points

Surface drainage in the northern portion of the site is north and northwest toward the creek. The creek flows west to the South Skunk River. Surface water monitoring point SW-1 is located in the creek immediately upstream of the site. Surface water monitoring point SW-2 is located in the creek immediately downstream of the site. SW-3 is located at the end of the groundwater diversion tile that drains into the creek along the north end of the site.

In the southern portion of the site, surface water flows south to the drainage ditch that runs along the railroad ROW. Surface water monitoring point SW-4 is located at the upgradient point in this drainage ditch, while SW-5 is located at the downgradient point. SW-6 is located at the end of the groundwater diversion tile that will be installed during development of the south expansion. This tile surfaces west of the site in a diversion ditch along the south side of the adjoining Ames Sanitary Landfill. Refer to Sheet 1 for an illustration of the surface water monitoring points.

Monitoring Wells

Existing and proposed monitoring wells are illustrated on Sheet 1. Copies of the boring logs and the Monitoring Well Construction Documentation Forms are included in Appendix A and B, respectively.

Well Cluster MW-21/PZ-1/PZ-2 - This well cluster is located in a downgradient position with respect to the water table and the potentiometric surface of the Upper Aquifer Sand Layer.

MW-21 was originally installed to monitor the water table. However, excavation in Trench No. 1 resulted in a drop in the water table . MW-21 was dry and was plugged and abandoned.

PZ-1 was screened at the interface of the gray unweathered Wisconsinan till and the basal Pre-Illinoian Till. PZ-1 was plugged and abandoned. PZ-2 was screened in the Pre-Illinoian Till and was plugged and abandoned.

Well MW-26 - MW-26 was installed as the replacement well for MW-21 and is a downgradient water table monitoring well. MW-26 was plugged (2/23/96) as the east expansion progresses. This well was replaced by MW-35 (as described in the December 4, 1995 IDNR Letter - Appendix C).

Well Cluster MW-22/MW-27(PZ-3)/PZ-4 - This well cluster was plugged (2/23/96) and was located in an upgradient position with respect to the water table and the potentiometric surface of the Upper Aquifer Sand Layer.

MW-22 was designated as the upgradient water table monitoring point for the site. This well was replaced by MW-37 as the east expansion progressed. MW-27(PZ-3) was screened in the Upper Sand Layer Aquifer and was designated as the upgradient Sand Layer Aquifer well for the site. MW-27 was replaced by MW-36 as the east expansion progressed. PZ-4 was screened in the Pre-Illinoian Till and was plugged and abandoned.

Well Cluster MW-28(City 12a)/MW-29(City 12b) - This well cluster was originally installed by the City of Ames for use as an upgradient well cluster for the existing Ames Landfill located immediately west of the site. This cluster is positioned cross gradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-28 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-29 is screened across several sand seams at depth, including the Upper Sand Layer Aquifer. MW-28 and MW-29 will be maintained as downgradient monitoring points.

Well Cluster MW-6(City 11a)/MW-7(City 11b)/MW-8(City 11c) - This well cluster was originally installed by the City of Ames for use as an upgradient well cluster for the existing Ames Landfill located immediately west of the site. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-6 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-7 is screened across several sand seams at depth, including the Upper Sand Layer Aquifer. MW-8 is screened in the Pre-Illinoian Till. MW-6, MW-7, and MW-8 will be maintained as downgradient monitoring points.

Well Cluster MW-40/MW-41 - This well cluster is located south of the south expansion area. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-40 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-41 is screened across the Upper Sand Layer Aquifer. MW-40 and MW-41 will be maintained as downgradient monitoring points.

Well Cluster MW-38/MW-39 - This well cluster is located southwest of the south expansion area. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-39 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-38 is screened across the Upper Sand Layer Aquifer. MW-38 and MW-39 will be maintained as downgradient monitoring points.

Well Cluster MW-42/MW-43 - This well cluster is located west of the south expansion area. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-43 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-42 is screened across the Upper Sand Layer Aquifer. MW-42 and MW-43 will be maintained as downgradient monitoring points.

Well Cluster MW-23/MW-30(PZ-5)/PZ-6 - This well cluster is located along the southwest side of the original site. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-23 is screened within the brown weathered Wisconsinan till and is the water table monitoring well. MW-30(PZ-5) is screened across the Upper Sand Layer Aquifer. PZ-6 was screened in the Pre-Illinoian Till and was plugged and abandoned. MW-23 and MW-30 will be maintained as downgradient monitoring points.

Well Cluster MW-24/MW-32(PZ-7)/PZ-8 - This well cluster is located along the southeast side of the original site. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-24 is screened within the brown weathered Wisconsinan till and is the water table monitoring well and is frequently dry. MW-32(PZ-7) is screened across the Upper Sand Layer Aquifer. PZ-8 was screened in the Pre-Illinoian Till and was plugged and abandoned. MW-24 and MW-32 will be maintained as downgradient monitoring points.

MW-31 - This well was installed to supplement MW-24 as a downgradient water table monitoring point along the west property line, since MW-24 is frequently dry.

Well Cluster MW-25/MW-33(PZ-9) - This well cluster is located in the northwest corner of the original site, near the creek. This cluster is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

MW-25 is screened across the top of the thick (21.5') alluvial sand layer (water table). MW-33(PZ-9) is screened across the lower portion of this thick alluvial sand and is considered the Upper Sand Layer Aquifer monitoring point. MW-25 and MW-33 will be maintained as downgradient monitoring points.

MW-34 - This well is located in the north-central portion of the original site, near the creek. This well is positioned downgradient of the upgradient well cluster (MW-22/MW-27(future MW-36/MW-37)).

The screened interval of MW-34 is screened across both the Upper Aquifer Sand Layer and the water table surface. This well will be maintained as a downgradient monitoring point for both the water table and the Upper Aquifer Sand Layer.

MW-35 - This well was installed in the northeast corner of the east expansion area, near the creek. This well is positioned downgradient of the upgradient well cluster (MW-36/MW-37(former MW-22/MW-27)). The screened interval of MW-35 is screened across both the Upper Aquifer Sand Layer and the water table surface. This well will be installed as a downgradient monitoring point for both the water table and the Upper Aquifer Sand Layer.

Well Cluster MW-36/MW-37 - This well cluster is located in an upgradient position with respect to the water table and the potentiometric surface of the Upper Aquifer Sand Layer.

MW-37 is designated as the upgradient water table monitoring point for the site. This well replaces MW-22. MW-36 is screened in the Upper Sand Layer Aquifer and is designated as the upgradient Sand Layer Aquifer well for the site. MW-36 replaces MW-27.

III. HYDROLOGIC MONITORING SYSTEM OPERATING REQUIREMENTS

A. Operational Sampling Requirements:

All sampling will be in accordance with subrule 110.8: Sampling protocol. A Field Procedures Manual for Landfills and Environmental Assessments (FPM) was developed to supplement this HMSP to meet the requirements of 110.8. The FPM is in Appendix H of this report. All procedures in the FPM are generic and apply to all landfills. This HMSP is tailored to the Ames-Story Environmental Landfill and supplements the FPM. The FPM is intended as a manual to be used in the field. References for the tests, guidelines and procedures are included with the FPM. The HMSP and FPM detail the following items as required by subrule 110.8 (the HMSP or FPM designation in the parenthesis shows where information on the item may be found):

1. Order in which monitoring points are sampled. (HMSP)

2. The tests and procedures required at each monitoring point and the order in which the procedures will be carried out. (HMSP)

3. Equipment and containers to be used. (HMSP and FPM)

4. Precautions to avoid introducing contaminants from outside sources in the monitoring wells or samples. (FPM)

5. How equipment shall be cleaned between uses. (FPM)

6. Procedures for evacuating each monitoring well prior to each water quality sampling. (FPM)

7. Procedures for handling field and equipment blanks and other quality assurance samples at the facility and in transit to the laboratory. (FPM)

8. Procedures for field filtration of samples, if required. (FPM)

9. Procedures for sample preservation. (FPM and HMSP)

10. Procedures for sample collection, labeling and handling at the facility and during transport to the laboratory. (FPM and HMSP)

11. Procedures for records maintenance and data analysis. (HMSP)

12. Procedures for sampling surface water monitoring points including exact sampling locations and depths. (HMSP)

B. Groundwater Levels:

The elevation of the water in each monitoring well will be measured monthly and recorded to the nearest 0.01 foot. Level measurements must be made before a well is evacuated for sample collection. Updated Water Contour Maps (Sheets 6 & 7) are included herein as required for approval of the HMSP.

Groundwater levels will be measured by the procedures as detailed in the FPM. The monitoring points will be sampled in the order specified on the attached form LF-105: Monitoring Well/Piezometer Groundwater Elevation Measurement Form (Appendix G). The sampling (or testing) order begins from the least likely to be contaminated monitoring point to the most likely to be contaminated point.

Where groundwater elevations are the only information gathered and the well is not being sampled, use form LF-105 to record the water table elevation information. Form LF-105 shows the order in which the elevations should be taken, type of well and top of well casing elevation.

Where groundwater elevations are being taken in conjunction with sampling, record the groundwater elevation on IDNR form 542-1322 (Appendix I). IDNR form 542-1322 is for groundwater sampling and/or groundwater elevation measurement. The monitoring wells should be purged, sampled and tested in the order specified on form LF-105. All monitoring wells and piezometers will be sampled before the surface monitoring points are sampled.

C. Surface Water Levels.

The flow rate of each surface water body sampled will be measured and recorded at the time of sample collection. Details for the sampling procedures are contained in the FPM. IDNR form 542-1323: Form for Documentation of Surface Monitoring Point has been prepared for each surface monitoring point and is included in Appendix J. IDNR form 542-1324: Form for Surface Water Sampling (Appendix K) will be completed during sampling for each surface monitoring point. The sampling order is shown on form LF-105. All surface monitoring points are sampled after the monitoring wells and piezometers. Surface monitoring points are sampled from the least likely to be contaminated point to the most likely to be contaminated point.

D. First-year Water Sampling:

After the approval of this HMSP and during the first year of operation of the hydrologic monitoring system, samples will be collected quarterly from each groundwater monitoring well and surface monitoring point. The monitoring schedule will be determined upon approval of this report. A tentative Schedule of Sampling, Operations and Maintenance (Appendix L) details the proposed sampling schedule. The purpose of the first year sampling is to determine baseline water quality information and enable initial estimations of water quality variability. Samples will be analyzed quarterly for the first year only for the following parameters as required by subrule 103.2(4)"d":

1. Arsenic, dissolved.
2. Barium, dissolved.
3. Cadmium, dissolved.
4. Chromium, total dissolved.
5. Lead, dissolved.
6. Mercury, dissolved.
7. Magnesium, dissolved.
8. Zinc, dissolved.
9. Copper, dissolved.
10. Benzene.
11. Carbon tetrachloride.
12. 1,2-Dichloroethylene.
13. Trichloroethylene.
14. 1,1,1-Trichloroethane.
15. 1,1-Dichloroethylene.
16. Paradichlorobenzne.

Additional parameters may be required at the discretion of the Iowa Department of Natural Resources (IDNR).

Before sampling the monitoring points the person responsible for obtaining the water quality samples should contact the laboratory and request the proper sample containers, preservatives, shipping containers and documentation forms needed for the parameter(s) sampled.

Refer to the Field Procedures Manual in Appendix H for detail procedures for sampling and testing. In brief, for the first year sampling parameters the following will be required for sample collection at each monitoring point:

Items 1 through 9 (dissolved metals): A single sample should be field filtered through a 0.45 micron membrane filter into a 200+ mL plastic container. The sample should be preserved with nitric acid to a pH less than 2. One container will be enough for analysis of all of items 1 through 9.

Items 10 through 16 (volatile compounds): Triplicate samples are taken in 40 mL glass vials capped with a Teflon faced septums. One triplicate sample set is all that is required to test for parameters 10 through 16.

E. Routine Semiannual Water Sampling:

Quarterly the first year and semiannually after the first year, each monitoring point will be sampled as specified in the operation permit and analyzed for the following parameters as required by subrule 103.2(4)"e":

1. Chloride
2. Specific Conductance (field measurement).
3. pH (field measurement).
4. Ammonia nitrogen.
5. Iron, dissolved.
6. Chemical oxygen demand (COD).
7. Temperature (field measurement).

Additional parameters may be required at the discretion of the Iowa Department of Natural Resources (IDNR).

The semiannual water sampling will require the following sample collection procedures for each monitoring point (FPM):

Chloride: Collect one unfiltered, unpreserved sample in a 200 mL plastic bottle.
Specific Conductance, pH, Temperature: These parameters are field measurements. Consult the FPM for sampling and testing procedures.
Ammonia nitrogen, Chemical oxygen demand: Collect one unfiltered 200+ mL sample in a plastic bottle. The sample should be preserved with sulfuric acid to a pH less than 2 and cooled to 4 degrees centigrade for transport. A single sample can be used for both parameters.
Iron, dissolved: The same procedures required for metals in part D for items 1 through 9 apply for iron also. Iron can be tested in the same sample as items 1 through 9 if a sample for items 1 through 9 is required.

F. Routine Annual Water Sampling:

One sample per year from each monitoring point collected in a quarter specified in the operation permit will be analyzed for the following parameters as required by 103.2(4)"f":

1. Total organic halogen.
2. Phenols.
3. Additional parameters may be required at the discretion of the Iowa Department of Natural Resources (IDNR).

The annual water sampling will require the following sample collection procedures for each monitoring point:

Total Organic Halogen: Collect duplicate unfiltered samples in a 240 mL glass, amber bottles capped with a Teflon faced septums. The bottles should be transported at 4 degrees centigrade.
Phenols: Collect a single unfiltered sample in a 1000+ mL glass jar and preserve to a pH less than 2 with sulfuric acid. The jar should be transported a 4 degrees centigrade.

See the FPM or consult with the laboratory concerning the details of sample collection.

G. Leachate Sampling and Testing:

Leachate will be routinely sampled and tested as specified by the City of Ames as part of the Pretreatment Agreement that is currently in effect between the City of Ames and the Ames-Story Environmental Landfill. Refer to the Leachate Control Plan (LCP) for additional information concerning leachate quality and management.

IV. LABORATORY PROCEDURES

Groundwater and surface water samples will be analyzed by a laboratory that certifies to the IDNR that appropriate analytical procedures are utilized. All analyses of parameters not covered in the Safe Drinking Water Act (SDWA) must be performed according to methods specified in SW-846 or approved by the United States Environmental Protection Agency (EPA). Any analytical method used on non-SDWA parameters deviating from those specified in SW-846 or approved by EPA must be approved by the IDNR.

All analyses will be recorded on forms which, in addition to the analytical results, show the precision of the data set, bias and limit of detection. All method detection limits will be set at or below current action levels.

V. ANALYSIS OF SAMPLING DATA

For each parameter analyzed during the first year of operation of the hydrologic monitoring system, the mean and standard deviation will be calculated for each upgradient monitoring well using the first year of data. For routine semiannual monitoring parameters, the mean and standard deviation will be recalculated annually using all available analytical data.

If the analytical results for a downgradient monitoring point do not fall within the control limits of two standard deviations above the mean parameter(s) level in the corresponding upgradient monitoring point, the information will be submitted to the IDNR within 30 days of receipt of the analytical results. If the analytical results from an upgradient monitoring point do not fall within two standard deviations of the mean parameter(s) level for that monitoring point, the IDNR will also be notified within 30 days.

VI. ADDITIONAL SAMPLING

The IDNR will determine if additional sampling is warranted if the analysis of sampling data indicates a possible release has occurred. The IDNR may require any additional samples to be split and analyzed to determine if the values obtained outside the control limits were the result of laboratory or sampling error. Any additional analytical results will be submitted to the IDNR within 7 days of receipt. The IDNR will review the information and determine if monitoring or preparation of a groundwater quality assessment plan, in accordance with subrule 103.2(9), is necessary.

VII. RECORD KEEPING AND RECORDING

A. Field Records:

The person(s) conducting the sampling will record the procedures, measurements and observations at the time of sampling. Copies of the applicable forms follow this HMSP. A copy of all testing forms will be retained by the landfill manager at the completion of a day's testing. Copies of the field records will be submitted to the IDNR if so requested. Copies of the field sampling forms required by the testing laboratory will also be left at the landfill office at the end of each day's sampling.

B. Records of Analyses:

Records will be kept of analyses and the associated groundwater surface elevations for the active life and postclosure period of the facility. These records will be kept on file at the office of the manager and will be available for review by the IDNR upon request.

C. Quarterly Monitoring Analytical Results:

Copies of the quarterly monitoring analytical results will be submitted to the IDNR by the date specified in the landfill's operating permit. After the first year of quarterly testing, copies of the semiannual analytical results will be submitted to the IDNR by the date specified in the landfill's operating permit.

D. Annual Reports:

An annual report summarizing the effect the landfill is having on groundwater and surface water quality will be submitted to the IDNR by November 30 each year. The summary will be prepared by an engineer registered in the State of Iowa. The contents of the Annual Report will include the following items:

1. Amounts and kinds of wastes accepted under SWA's.

2. A narrative describing the effects the facility is having on surrounding surface water and groundwater quality and changes made or maintenance needed in the monitoring network.

3. Graphs showing concentrations versus time for all monitoring parameters for each well for as long as records exist for that parameter. Control limits will be shown on each graph. The control limits are defined as two standard deviations from the initial background value.

4. Results of activities and tests required by the well maintenance and performance reevaluation plans described in 567--110.9(455B) and Part X. of the HMSP.

VIII. GROUNDWATER QUALITY ASSESSMENT PLAN

A groundwater quality assessment plan will be required by the IDNR <u>if leachate migration has occurred</u>. Refer to 567--103.2(9) for the requirements for a groundwater quality assessment plan.

IX. WELL MAINTENANCE PERFORMANCE REEVALUATION PLAN

A monitoring well maintenance performance reevaluation plan (MWMPRP) is required by 567--110.9(455B). The purpose of the plan is the ensure that all monitoring points remain reliable. The MWMPRP includes the following items:

1. Every two years an examination of high and low water levels accompanied by a discussion of the acceptability of well location (both vertically and horizontally) and exposure of the screened interval to the atmosphere.

2. A biannual evaluation of water level conditions in the monitoring wells to ensure the effects of waste disposal or well operation have not resulted in change in the hydrologic settling and resultant flow paths. This information will be included in the biannual engineering report.

3. Annually conducting well depth measurements to ensure wells are physically intact and not filling with sediment.

4. Conduct in-situ permeability tests on monitoring wells every 5 years. Compare slug, bail or pump test data with the original test(s) to determine if well deterioration is occurring.

The MWMPRP is scheduled for March, 1998.

X. POSTCLOSURE MONITORING REQUIREMENTS

Postclosure monitoring is not required for the Ames-Story Environmental Landfill at this time. In the unlikely event the landfill is closed prior to its expected life expectancy, the following will be required:

1. At least six months prior to closing the landfill, a plan will be submitted to the IDNR for approval that details a 30 year postclosure monitoring program.

2. The IDNR will review the facility's postclosure monitoring records at five year intervals to determine if changes in the monitoring frequencies or parameters are required.

3. The commission may adopt rules on a site-specific basis identifying additional monitoring requirements for the landfill for which the postclosure monitoring period is to be extended.

XI. CONCLUSIONS

The Hydrologic Monitoring System Plan provides an effective operational and maintenance plan for the hydrologic monitoring systems. The Field Procedures Manual for Landfills and Environmental Assessments is the field guide for this plan and should be referenced.

APPENDIX C

Analytical Data & Summary Tables

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

NORTH TRENCHES

SAMPLING DATE: March 17, 2005

PARAMETER	ACTION LEVEL	U.G.W MW 22	U.G.W MW 28	U.A.W MW 27	U.A.W MW 29	D.G.W MW 23	D.G.W MW 24	D.G.W MW 26	D.G.W MW 31	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	SURFACE MONITORING PTS. SW 1	SW 2	SW 3
ug/L																	
Benzene *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Carbon tetrachloride *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,4-Dichlorobenzene *	75	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,2-Dichloroethane *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,1-Dichloroethene *	7	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,1,1-Trichloroethane *	200	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Trichloroethene *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
mg/L																	
Arsenic, dissolved	0.05	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Barium, dissolved	2.0	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Cadmium, dissolved	0.005	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Chromium, dissolved	0.1	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Lead, dissolved	0.015	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Mercury, dissolved	0.002	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Magnesium, dissolved	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Zinc, dissolved	2	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Iron, dissolved	--	Plugged	0.222	Plugged	0.039	<0.030	<0.03	Plugged	0.121	0.218	<0.030	0.073	6.07	0.046	0.052	0.048	dry
Copper, dissolved	1.3	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Chloride	--	Plugged	96	Plugged	<10	16	25	Plugged	46	<10	12	125	48	30	147	125	dry
Nitrogen, Ammonia	--	Plugged	<1.0	Plugged	<1.0	<1.0	<1.0	Plugged	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	dry
Chemical Oxygen Demand	--	Plugged	21	Plugged	<10	10	12	Plugged	25	<10	<10	<10	22	54	<10	<10	dry
Total Organic Halogens	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Phenols	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
pH	--	Plugged	6.9	Plugged	7.4	5.9	7.1	Plugged	5.8	6.3	6.6	7.5	7.6	7.5	7.3	7.8	dry
Temperature, celsius	--	Plugged	9	Plugged	13	11	10	Plugged	10	13	11	9	9	8	10	11	dry
Conductivity, mv	--	Plugged	1413	Plugged	733	1229	1138	Plugged	1739	742	1028	1407	1228	1432	966	923	dry

U.A.W - Upgradient aquifer well

NT - Not tested

D.G.W. - Downgradient groundwater well

D.A.W. - Downgradient aquifer well

U.G.W - Upgradient groundwater well

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

SOUTH TRENCHES

SAMPLING DATE: March 17, 2005

PARAMETER	ACTION LEVEL	FIELD	TRIP	BOTH MW 35	U.A.W MW 36	U.G.W MW37	D.G.W MW 6	D.A.W MW 7	D.A.W MW 8	D.A.W MW 38	D.G.W MW 39	D.G.W MW 40	D.A.W MW 41	D.A.W MW 42	D.G.W MW 43	SURFACE MONITORING PTS. SW 4	SW 5	SW 6
ug/L																		
Benzene *	5	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1	NT
Carbon tetrachloride *	5	NT	<0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.3	NT
1,4-Dichlorobenzene *	75	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1	NT
1,2-Dichloroethane *	5	NT	<0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.4	NT
1,1-Dichloroethene *	7	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1	NT
1,1,1-Trichloroethane *	200	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1	NT
Trichloroethene *	5	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1	NT
mg/L																		
Arsenic, dissolved	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.002	NT
Barium, dissolved	2.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.096	NT
Cadmium, dissolved	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.001	NT
Chromium, dissolved	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	NT
Lead, dissolved	0.015	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	NT
Mercury, dissolved	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0005	NT
Magnesium, dissolved	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	24.6	NT
Zinc, dissolved	2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.01	NT
Iron, dissolved	--	NT	NT	<0.030	<0.030	<0.030	<0.030	1.96	3.17	0.905	0.288	<0.030	<0.030	2.26	<0.030	0.032	<0.03	4.96
Copper, dissolved	1.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.005	NT
Chloride	--	NT	NT	235	<10	15	69	12	<10	30	29	27	10	16	37	136	36	75
Nitrogen, Ammonia	--	NT	NT	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	151	1.7	<1.0
Chemical Oxygen Demand	--	NT	NT	<10	<10	<10	18	<10	<10	<10	23	19	<10	<10	<10	75	30	11
Total Organic Halogens	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Phenols	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
pH	--	NT	NT	7.6	8	7.3	7.1	7.1	7.7	7.2	7.2	7.9	7.8	6.4	6	6.9	7.5	7.2
Temperature, celsius	--	NT	NT	9	13	10	7	12	12	12	11	9	12	12	11	5	4	14
Conductivity, mv	--	NT	NT	1275	650	1564	1225	704	709	1079	1364	1044	670	745	947	3622	886	1378

Keystone LABORATORIES, INC.

RECEIVED APR 0 1 2005

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

March 31, 2005

Work Order: 15C0978

Report To

Todd Whipple
Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

Work Order Information

Date Received: 03/21/2005 11:05AM
Collector: Mitch Brown
Phone: 515-233-0000
PO Number:

Project: Ames/Story C&D SLF
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C0978-01 MW 38			Matrix: Water		Collected: 03/18/05 09:15	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/22/05 11:14	
Chloride	**30 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Determination of Dissolved Metals						
Iron, dissolved	**0.905 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	
15C0978-02 MW 39			Matrix: Water		Collected: 03/18/05 09:25	
Determination of Conventional Chemistry Parameters						
Chloride	**29 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	**23 mg/l**	**10**	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/22/05 11:14	
Determination of Dissolved Metals						
Iron, dissolved	**0.288 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	
15C0978-03 MW 40			Matrix: Water		Collected: 03/18/05 10:15	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Chloride	**27 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	**19 mg/l**	**10**	EPA 410.4	MAQ	03/23/05 8:22	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/23/05 17:00	
15C0978-04 MW 41			Matrix: Water		Collected: 03/18/05 10:25	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Chloride	**10 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/23/05 17:00	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

March 31, 2005

Work Order: 15C0978

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C0978-04 MW 41			Matrix:Water		Collected: 03/18/05 10:25	
15C0978-05 MW 36			Matrix:Water		Collected: 03/18/05 10:45	
Determination of Conventional Chemistry Parameters						
Chloride	<10 mg/l	10	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/23/05 17:00	
15C0978-06 MW 37			Matrix:Water		Collected: 03/18/05 10:55	
Determination of Conventional Chemistry Parameters						
Chloride	**15 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/23/05 17:00	
15C0978-07 MW 35			Matrix:Water		Collected: 03/18/05 11:15	
Determination of Conventional Chemistry Parameters						
Chloride	**235 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/23/05 17:00	
15C0978-08 MW 34			Matrix:Water		Collected: 03/18/05 11:25	
Determination of Conventional Chemistry Parameters						
Chloride	**30 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	**54 mg/l**	**10**	EPA 410.4	MAQ	03/23/05 8:22	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	**0.046 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	
15C0978-09 MW 25			Matrix:Water		Collected: 03/18/05 11:35	
Determination of Conventional Chemistry Parameters						
Chloride	**125 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/23/05 8:22	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone
LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

March 31, 2005

Work Order: 15C0978

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C0978-09 MW 25			Matrix:Water		Collected: 03/18/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	**0.073 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	
15C0978-10 MW 33			Matrix:Water		Collected: 03/18/05 11:50	
Determination of Conventional Chemistry Parameters						
Chloride	**48 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	**22 mg/l**	**10**	EPA 410.4	MAQ	03/23/05 8:22	
Determination of Dissolved Metals						
Iron, dissolved	**6.07 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	
15C0978-10RE1 MW 33			Matrix:Water		Collected: 03/18/05 11:50	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	**1.5 mg/l**	**1.0**	SM 4500-NH3 F	SAA	03/28/05 11:35	
15C0978-11 SW 6			Matrix:Water		Collected: 03/18/05 09:45	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/28/05 11:35	
Chloride	**75 mg/l**	**10**	EPA 9252	MAQ	03/23/05 13:33	
Chemical Oxygen Demand	**11 mg/l**	**10**	EPA 410.4	MAQ	03/23/05 8:22	
Determination of Dissolved Metals						
Iron, dissolved	**4.96 mg/l**	**0.030**	EPA 6010B	SNT	03/23/05 17:00	

End of Report

Jeffrey King

Keystone Laboratories, Inc.
Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Phone 641-792-8451 | 600 East 17th Street South, Newton, IA 50208 | Fax 641-792-7989

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames C+D 6004-99A
ADDRESS:
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames
PHONE: (515) 290-9004 (Mitch)
FAX:

BILL TO:
NAME: Mr. William Fedeler
COMPANY NAME:
ADDRESS: PO Box 2483
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: "e"								SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW 38	3/18	9:15 AM	Monitor Well 38	3	W	X	X									01
MW 39	3/18	9:25	Monitor Well 39	3	W	X	X									02
MW 40	3/18	10:15	Monitor Well 40	3	W	X	X									03
MW 41	3/18	10:25	Monitor Well 41	3	W	X	X									04
MW 36	3/18	10:45	Monitor Well 36	3	W	X	X									05
MW 37	3/18	10:55	Monitor Well 35	3	W	X	X									06
MW 35	3/18	11:15	Monitor Well 35	3	W	X	X									07
MW 34	3/18	11:25	Monitor Well 34	3	W	X	X									08
MW 25	3/18	11:35	Monitor Well 25	3	W	X	X									09
MW 33	3/18	11:50	Monitor Well 33	3	W	X	X									10

LAB USE ONLY

LABORATORY WORK ORDER NO.: 15C0978

SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date	Received by: (Signature)	Date	Turn-Around:
Mitch Brown	3/18/05			☐ Standard ☐ Rush _____ Contact Lab Prior to Submission
	Time 2:30PM		Time	
Relinquished by: (Signature)	**Date**	**Received for Lab by: (Signature)**	**Date**	**Remarks:**
		Bill	3/21/05	
	Time		Time 11:05 AM	

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames CtD
ADDRESS: Ames, IA
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames
PHONE: (515) 290-9004 (Mtch)
FAX:

BILL TO:
NAME: Mr William Fedeler
COMPANY NAME:
ADDRESS: PO Box 2483
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: "e"								LAB USE ONLY: SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
SW 6	3/18	9:45	Surface Water 6	3	W	X	X									11

LABORATORY WORK ORDER NO.: 15C0978

SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date	Received by: (Signature)	Date	Turn-Around:
Mitch Bro	3/18/05			☐ Standard ☐ Rush ____ Contact Lab Prior to Submission
	Time 2:30PM		Time	
Relinquished by: (Signature)	Date	Received for Lab by: (Signature)	Date 3/21/05	Remarks:
	Time	Bill	Time 11:05 AM	

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

RECEIVED APR 0 6 2005

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

April 05, 2005

Work Order: 15C1109

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 03/23/2005 11:02AM Collector: Brown, Mitch Phone: 515-233-0000 PO Number:

Project: Ames/Story C&D SLF
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C1109-01 SW-1			Matrix: Water		Collected: 03/21/05 12:55	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SNT	03/25/05 11:35	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**147 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Determination of Dissolved Metals						
Iron, dissolved	**0.052 mg/l**	**0.030**	EPA 6010B	SNT	03/25/05 11:21	
15C1109-02 SW-2			Matrix: Water		Collected: 03/21/05 13:20	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**125 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SNT	03/25/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	**0.048 mg/l**	**0.030**	EPA 6010B	SNT	03/25/05 11:25	
15C1109-03 MW-32			Matrix: Water		Collected: 03/22/05 09:15	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**12 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SNT	03/25/05 11:35	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/25/05 11:29	
15C1109-04 MW-31			Matrix: Water		Collected: 03/22/05 09:30	
Determination of Conventional Chemistry Parameters						
Chloride	**46 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	**25 mg/l**	**10**	EPA 410.4	SNT	03/25/05 11:35	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.121 mg/l**	**0.030**	EPA 6010B	SNT	03/25/05 11:34	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

April 05, 2005

Work Order: 15C1109

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C1109-04 MW-31			Matrix:Water		Collected: 03/22/05 09:30	
15C1109-05 MW-23			Matrix:Water		Collected: 03/22/05 09:45	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**10 mg/l**	**10**	EPA 410.4	SNT	03/25/05 11:35	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**16 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/25/05 11:38	
15C1109-06 MW-30			Matrix:Water		Collected: 03/22/05 09:55	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	<10 mg/l	10	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/30/05 12:43	
Determination of Dissolved Metals						
Iron, dissolved	**0.218 mg/l**	**0.030**	EPA 6010B	SNT	03/25/05 11:42	
15C1109-07 MW-42			Matrix:Water		Collected: 03/22/05 10:25	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**16 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/30/05 12:43	
Determination of Dissolved Metals						
Iron, dissolved	**2.26 mg/l**	**0.030**	EPA 6010B	SNT	03/25/05 11:55	
15C1109-08 MW-43			Matrix:Water		Collected: 03/22/05 10:35	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/30/05 17:00	
Chloride	**37 mg/l**	**10**	EPA 9252	SAA	03/29/05 15:36	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	03/30/05 12:43	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	SNT	03/25/05 11:59	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

Work Order: 15C1109

April 05, 2005
Page 3 of 3

End of Report

Keystone Laboratories, Inc.
Jim Eggers For Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames C+D
ADDRESS: 6004-99A
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames
PHONE: (515) 290-9004
FAX:

BILL TO:
NAME: Mr William Fedler
COMPANY NAME:
ADDRESS: PO Box 2483
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: "e"								SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
SW-1	3/21	12:55	Surface Water 1	3	W	X	X									01
SW-2	3/21	1:20	Surface Water 2	3	W	X	X									02
MW 32	3/22	9:15	Monitor Well 32	3	W	X	X									03
MW 31	3/22	9:30	Monitor Well 31	3	W	X	X									04
MW 23	3/22	9:45	Monitor Well 23	3	W	X	X									05
MW 30	3/22	9:55	Monitor Well 30	3	W	X	X									06
MW 42	3/22	10:25	Monitor Well 42	3	W	X	X									07
MW 43	3/22	10:35	Monitor Well 43	3	W	X	X									08

LAB USE ONLY

LABORATORY WORK ORDER NO.: 15C1109

SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
Mitch Brown	Date 3/22/05 Time 1:00 PM			☐ Standard ☐ Rush _____ Contact Lab Prior to Submission
Relinquished by: (Signature)	Date / Time	Received for Lab by: (Signature) Bill	Date 3/23/05 Time 11:05 AM	Remarks: Dissolved metals samples are field filtered

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

March 29, 2005

Work Order: 15C0741

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 03/15/2005 10:20AM Collector: Brown, Mitch Phone: 515-233-0000 PO Number:

Project: City of Ames Landfill
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C0741-01 MW-8			Matrix:Water		Collected: 03/14/05 13:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SAA	03/17/05 15:52	
Nitrogen, Ammonia	**1.5 mg/l**	**1.0**	SM 4500-NH3 F	SAA	03/17/05 15:45	
Chloride	<10 mg/l	10	EPA 9252	SAA	03/17/05 15:54	
Determination of Dissolved Metals						
Iron, dissolved	**3.17 mg/l**	**0.030**	EPA 6010B	LAR	03/16/05 14:27	
15C0741-02 MW-7			Matrix:Water		Collected: 03/14/05 13:20	
Determination of Conventional Chemistry Parameters						
Chloride	**12 mg/l**	**10**	EPA 9252	SAA	03/17/05 15:54	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SAA	03/17/05 15:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/17/05 15:45	
Determination of Dissolved Metals						
Iron, dissolved	**1.96 mg/l**	**0.030**	EPA 6010B	LAR	03/16/05 14:31	
15C0741-03 MW-6			Matrix:Water		Collected: 03/14/05 13:15	
Determination of Conventional Chemistry Parameters						
Chloride	**69 mg/l**	**10**	EPA 9252	SAA	03/17/05 15:54	
Chemical Oxygen Demand	**18 mg/l**	**10**	EPA 410.4	SAA	03/17/05 15:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/17/05 15:45	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	03/16/05 14:35	
15C0741-04 MW-~~5~~ 29			Matrix:Water		Collected: 03/14/05 12:50	
Determination of Conventional Chemistry Parameters						
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/17/05 15:45	
Chloride	<10 mg/l	10	EPA 9252	SAA	03/17/05 15:54	
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	SAA	03/17/05 15:52	
Determination of Dissolved Metals						
Iron, dissolved	**0.039 mg/l**	**0.030**	EPA 6010B	LAR	03/16/05 14:39	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

March 29, 2005

Work Order: 15C0741

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15C0741-04 MW-~~B29~~			Matrix:Water		Collected: 03/14/05 12:50	
15C0741-05 MW-~~428~~			Matrix:Water		Collected: 03/14/05 12:25	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**21 mg/l**	**10**	EPA 410.4	SAA	03/17/05 15:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	03/17/05 15:45	
Chloride	**96 mg/l**	**10**	EPA 9252	SAA	03/17/05 15:54	
Determination of Dissolved Metals						
Iron, dissolved	**0.222 mg/l**	**0.030**	EPA 6010B	LAR	03/16/05 14:43	
15C0741-06 Trip Blank 2-17-05 JNK Sealed			Matrix:Water		Collected: 03/14/05 00:00	
Determination of Volatile Organic Compounds						
1,1-Dichloroethylene	<1.0 ug/l	1.0	EPA 8260B	TVK	03/16/05 16:24	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	EPA 8260B	TVK	03/16/05 16:24	
Carbon Tetrachloride	<0.3 ug/l	0.3	EPA 8260B	TVK	03/16/05 16:24	
Benzene	<1.0 ug/l	1.0	EPA 8260B	TVK	03/16/05 16:24	
1,2-Dichloroethane	<0.4 ug/l	0.4	EPA 8260B	TVK	03/16/05 16:24	
Trichloroethylene	<1.0 ug/l	1.0	EPA 8260B	TVK	03/16/05 16:24	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	EPA 8260B	TVK	03/16/05 16:24	
Surrogate: Dibromofluoromethane	*119 %*		*83-123*	TVK	03/16/05 16:24	
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*79-128*	TVK	03/16/05 16:24	
Surrogate: Toluene-d8	*97.9 %*		*83-114*	TVK	03/16/05 16:24	
Surrogate: 4-Bromofluorobenzene	*89.1 %*		*81-114*	TVK	03/16/05 16:24	

End of Report

Jeffrey King

Keystone Laboratories, Inc.
Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Phone 641-792-8451 | 600 East 17th Street South, Newton, IA 50208 | Fax 641-792-7989

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames SLF 6001-04A
ADDRESS:
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames, IA
PHONE: 1 800 433 3469
FAX:

BILL TO:
NAME: Mr. John Joiner, Interim Director
COMPANY NAME: Public Works Dept. City of Ames
ADDRESS: 515 Clark
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED "e"								SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW 8	3/14/05	1:35	Monitor Well 8	3	W	X	X									01
MW 7	3/14/05	1:20	Monitor Well 7	3	W	X	X									02
MW 6	3/14/05	1:15	Monitor Well 6	3	W	X	X									03
MW 5	3/14/05	12:50	Monitor Well 5	3	W	X	X									04
MW 4	3/14/05	12:25	Monitor Well 4	3	W	X	X									05
Trip Blank	3/17		JNK Sealed												match #10 on 15C0687	

LAB USE ONLY

LABORATORY WORK ORDER NO.: 15C0741

SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around: ☐ Standard ☐ Rush _____ Contact Lab Prior to Submission
Relinquished by: (Signature)	Date / Time	Received for Lab by: (Signature) Bill	Date 3/15/05 Time 10:20 AM	Remarks: Metals samples field filtered, Mitch - geo add the trip blanks - same as the samp #10 yesterday. MJM

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-6 Upgradient ✓
Downgradient

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 942.88 Ground Elevation 940.65
Depth of Well 21.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/14 AM	9.06	
*After Purging	3/14 AM	≈20	
*Before Sampling	3/14 1:15PM	9.03	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 3.75 gallons
No.of Well Volumes (based on current water level) 1.9 volumes
Was well pumped/bailed dry? yes

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer no
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, slight breeze, 35°
Field Measurments (after stabilization):
Temperature 5°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1358 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-7 Upgradient ✓
Downgradient

Name of person sampling Mutch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 943.21 Ground Elevation 940.65
Depth of Well 53' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/14 A.m	23.60	
*After Purging	3/14 AM	49.35	
*Before Sampling	3/14 1:20 PM	37.75	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 3.75 gallons
No.of Well Volumes (based on current water level) 1.1 volumes
Was well pumped/bailed dry? yes

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer no
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, slight breeze, 35°
Field Measurments (after stabilization):
Temperature 14°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 726 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-8 Upgradient ✓
Downgradient

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 942.76 Ground Elevation 940.65
Depth of Well 71.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/14 Am	35.80	
*After Purging	3/14 Am	45.20	
*Before Sampling	3/14 1:35 pm	36.25	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10 gallons
No.of Well Volumes (based on current water level) 1.1 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, slight breeze, 35°
Field Measurments (after stabilization):
Temperature 13°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.1
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 679 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-23 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.98 Ground Elevation 943.62
Depth of Well 27.86 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/24 AM	~~[illegible]~~ 15.35	
*After Purging	3/24 AM	26.30	
*Before Sampling	3/22 9:45	15.56	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6.5 gallons
No.of Well Volumes (based on current water level) 3.1 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°
Field Measurments (after stabilization):
Temperature 11°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 5.9
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1229 µs/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-24 Upgradient _____
Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain _____ If yes, explain _____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 939.44 Ground Elevation 936.94
Depth of Well 20.60 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	Dry	Dry	
*After Purging	/	/	
*Before Sampling	/	/	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) _____
No.of Well Volumes (based on current water level) _____
Was well pumped/bailed dry? _____

Equipment used:
Bailer type _____ 'Dedicated Bailer _____
Pump type _____ 'Dedicated Bailer _____
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions _____
Field Measurments (after stabilization):
Temperature _____ Units _____
Equipment Used HACH COMPANY POCKET PAL
pH _____
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions _____ Units _____
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-25 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 906.34 Ground Elevation 903.94
Depth of Well 19.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 PM	9.88	
*After Purging	3/17 PM	10.02	
*Before Sampling	3/18 11:35	9.86	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 4.8 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 9°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1467 µs/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-28 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 946.02 Ground Elevation 942.55
Depth of Well 22.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/14 Am	7.73	
*After Purging	3/14 Am	10.55	
*Before Sampling	3/14 12:25	7.72	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, slight breeze, 35°
Field Measurments (after stabilization):
Temperature 9.0°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 6.9
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1413 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-29 Upgradient ____ Downgradient ✓

Name of person sampling Mutch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.61 Ground Elevation 942.55
Depth of Well 53.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/14 A.M	13.25	
*After Purging	3/14 A.M	49.16	
*Before Sampling	3/14 1250	21.60	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10 gallons
No.of Well Volumes (based on current water level) 1.4 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, slight breeze, 35°
Field Measurments (after stabilization):
Temperature 13°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 733 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-30 Upgradient _____
Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain _____ If yes, explain _____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.54 Ground Elevation 943.62
Depth of Well 58 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/21/05 PM	37.45	
*After Purging	3/21 P.M.	53.60	
*Before Sampling	3/22 9:55	38.91	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°
Field Measurments (after stabilization):
Temperature 13°F Units
Equipment Used HACH COMPANY POCKET PAL
pH 6.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 742 µs/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-31 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 941.43 Ground Elevation 938.21
Depth of Well 36' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/21 PM	20.01	
*After Purging	3/21 PM	≈35	
*Before Sampling	3/22 9:30	27.01	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6 gallons
No.of Well Volumes (based on current water level) 2.1 volume
Was well pumped/bailed dry? dry

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy 35°
Field Measurments (after stabilization):
Temperature 10°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 5.8
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1739 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-32 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 939.86 Ground Elevation 937.39
Depth of Well 50.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/21 AM	34.81	
*After Purging	3/21 AM	47.80	
*Before Sampling	3/22 9:15	34.90	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 8 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? NO

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°
Field Measurments (after stabilization):
Temperature 11°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 6.6
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1028 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-33 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 906.32 Ground Elevation 904.06
Depth of Well 28.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 PM	10 16	
*After Purging	3/17 PM	12 35	
*Before Sampling	3/18 11:50	10 13	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7.8 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, Cloudy, 35°
Field Measurments (after stabilization):
Temperature 9°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.6
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1228 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-34 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 909.5 Ground Elevation 906.85
Depth of Well 17.3 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 PM	6.70	
*After Purging	3/17 PM	≈13	
*Before Sampling	3/18 11:25	6.74	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 4.75 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy 35°
Field Measurments (after stabilization):
Temperature 8°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1432 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-35 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 916.19 Ground Elevation 914.04
Depth of Well 20.6 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 PM	12.98	
*After Purging	3/17 PM	13 –	
*Before Sampling	3/18 11:15	13 –	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 2.5 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer *Dedicated Bailer No
Pump type ____ *Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 9°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.6
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1275 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-36 Upgradient ✓
Downgradient

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 948.97 Ground Elevation 947.30
Depth of Well 53.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 AM	17.35	
*After Purging	3/17 AM	48.95	
*Before Sampling	3/18 10:45	23.77	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10 gallons
No.of Well Volumes (based on current water level) 1.2 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 13°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 8.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 650 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-37 Upgradient ✓
Downgradient

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 949.49 Ground Elevation 947.43
Depth of Well 30.6 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 PM	8.81	
*After Purging	3/17 PM	23.05	
*Before Sampling	3/18 10:55	8.81	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 11 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Windy cloudy, 35°
Field Measurments (after stabilization):
Temperature 10°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1564 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name Ames-Story Environmental Landfill Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-38 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 936.59 Ground Elevation 934.05
Depth of Well 55.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 AM	17.71	____
*After Purging	3/17 AM	≈54	____
*Before Sampling	3/18 5:15	19.51	____

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6.5 gallons
No.of Well Volumes (based on current water level) 1.1 volumes
Was well pumped/bailed dry? Yes

Equipment used: disposable bailer
Bailer type ____ 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 12°C Units ____
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1079 µS/cm Units ____
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name Ames-Story Environmental Landfill Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-39 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 935.93 Ground Elevation 933.96
Depth of Well 30.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 AM	15.57	
*After Purging	3/17 AM	21.80	
*Before Sampling	3/18 9:25	15.40	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7.25
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 11.°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1364 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-40 Upgradient _____
Downgradient ✓

Name of person sampling Mitch BROWN

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain _____ If yes, explain _____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 933.07 Ground Elevation 931.11
Depth of Well 20' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 AM	6.47	
*After Purging	3/17 AM	19.72	
*Before Sampling	3/18 10:15	6.35	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? NO

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Windy cloudy, 35°
Field Measurments (after stabilization):
Temperature 9°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1044 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-41 Upgradient ____ Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 933.46 Ground Elevation 931.44
Depth of Well 45.58 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/17 AM	16 48	
*After Purging	3/17 AM	35 70	
*Before Sampling	3/18 10:25	16 50	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10 gallons
No.of Well Volumes (based on current water level) 2.1 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°
Field Measurments (after stabilization):
Temperature 12°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.8
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 670 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-42 Upgradient _____
Downgradient ✓

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? ~~No~~ Yes
If no, explain _____ If yes, explain some garbage

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 940.64 Ground Elevation 938.58
Depth of Well 48.37. Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/21 PM	19.01	
*After Purging	3/21 PM	36.35	
*Before Sampling	3/22 10:25	18.83	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 14.3 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type _____ 'Dedicated Bailer _____
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°
Field Measurments (after stabilization):
Temperature 12°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 6.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 745 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-43 Upgradient _____
Downgradient _____

Name of person sampling Mitch Brown

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain _____ If yes, explain _____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 940.83 Ground Elevation 938.62
Depth of Well 28.13 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	3/21 PM	16.32	
*After Purging	3/21 PM	25.47	
*Before Sampling	3/22 10:35	16.51	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6 gallons
No.of Well Volumes (based on current water level) 3 volumes
Was well pumped/bailed dry? No

Equipment used:
Bailer type disposable bailer 'Dedicated Bailer No
Pump type — 'Dedicated Bailer —
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°
Field Measurments (after stabilization):
Temperature 11°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 6.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 947 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-1 Date/Time 3/21 12:55

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream	✓	Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream	✓	Downstream	
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point stream approximately 4' wide

Was monitoring point dry? No Too little water to sample? No
Was water flowing? Yes If yes, estimate quantity good flow
If yes, estimate depth 3-6"

Was water discolored? No If yes, descibe below.
Does water have odor? No If yes, descibe below.
Was ground discolored? No If yes, descibe below.
Litter present? No If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions Sunny, breezy, 35°

Field Measurments (after stabilization):
Temperature 10°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 966 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-2 Date/Time 3/21 1:20

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream	✓	Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point stream approximately 5' wide

Was monitoring point dry? No Too little water to sample? No

Was water flowing? yes If yes, estimate quantity good flow

If yes, estimate depth 6" deep

Was water discolored? No If yes, descibe below.

Does water have odor? No If yes, descibe below.

Was ground discolored? No If yes, descibe below.

Litter present? No If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions Sunny breezy 35°

Field Measurments (after stabilization):

Temperature 11°C Units

Equipment Used HACH COMPANY POCKET PAL

pH 7.8

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 923 us/cm Units

Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-3 Date/Time 3/21

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream _____ Open Tile ✓
Road Ditch _____ Tile with Riser _____
Drainage Ditch _____ Other _____

B.) PURPOSE OF MONITORING POINT

Upstream _____ Downstream ✓
Within Landfill _____ Other _____

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point _____

Was monitoring point dry? Yes Too little water to sample? Yes
Was water flowing? No If yes, estimate quantity _____
If yes, estimate depth _____

Was water discolored? _____ If yes, descibe below.
Does water have odor? _____ If yes, descibe below.
Was ground discolored? _____ If yes, descibe below.
Litter present? _____ If yes, descibe below.

Comments _____

D.) FIELD MEASUREMENT

Weather Conditions _____

Field Measurments (after stabilization):
Temperature _____ Units _____
Equipment Used HACH COMPANY POCKET PAL
pH _____
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions _____ Units _____
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-4 Date/Time 3/18

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch	✓	Other	

B.) PURPOSE OF MONITORING POINT

Upstream	✓	Downstream	
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point pool of standing water in ditch, not flowing at all - no sample taken

Was monitoring point dry? No Too little water to sample? Yes
Was water flowing? No If yes, estimate quantity
If yes, estimate depth

Was water discolored? No If yes, descibe below.
Does water have odor? No If yes, descibe below.
Was ground discolored? No If yes, descibe below.
Litter present? ~~No~~ Yes If yes, descibe below.

Comments lots of garbage blown in from working part of landfill

D.) FIELD MEASUREMENT

Weather Conditions

Field Measurments (after stabilization):
Temperature Units
Equipment Used HACH COMPANY POCKET PAL
pH
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-5 Date/Time 3/8

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch	✓	Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point ditch was completely dry at this point - no sample

Was monitoring point dry? Yes Too little water to sample? Yes
Was water flowing? No If yes, estimate quantity
If yes, estimate depth

Was water discolored? If yes, descibe below.
Does water have odor? If yes, descibe below.
Was ground discolored? If yes, descibe below.
Litter present? If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions

Field Measurments (after stabilization):
Temperature Units
Equipment Used HACH COMPANY POCKET PAL
pH
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-6 Date/Time 3/18 9:45

Name of person sampling Mitch Brown

A.) TYPE OF MONITORING POINT

Stream		Open Tile	✓
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point good flow from 4" pvc pipe

Was monitoring point dry? No Too little water to sample? No

Was water flowing? Yes If yes, estimate quantity a few inches wide

If yes, estimate depth inch deep

Was water discolored? yes If yes, descibe below.

Does water have odor? slight odor If yes, descibe below.

Was ground discolored? yes If yes, descibe below.

Litter present? No If yes, descibe below.

Comments Water had a slight rust color rusty colored foam floating on water in ditch. Ground also had rust color on it

D.) FIELD MEASUREMENT

Weather Conditions Windy, cloudy, 35°

Field Measurments (after stabilization):

Temperature 14°C Units

Equipment Used HACH COMPANY POCKET PAL

pH 7.2

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 1378 µs/cm Units

Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

NORTH TRENCHES

SAMPLING DATE: Sept. 22, 2005

PARAMETER	ACTION LEVEL	U.G.W MW 22	U.G.W MW 28	U.A.W MW 27	U.A.W MW 29	D.G.W MW 23	D.G.W MW 24	D.G.W MW 26	D.G.W MW 31	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	SURFACE MONITORING PTS. SW 1	SW 2	SW 3
ug/L																	
Benzene *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Carbon tetrachloride *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,4-Dichlorobenzene *	75	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,2-Dichloroethane *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,1-Dichloroethene *	7	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
1,1,1-Trichloroethane *	200	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Trichloroethene *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
mg/L																	
Arsenic, dissolved	0.05	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Barium, dissolved	2.0	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Cadmium, dissolved	0.005	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Chromium, dissolved	0.1	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Lead, dissolved	0.015	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Mercury, dissolved	0.002	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Magnesium, dissolved	--	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Zinc, dissolved	2	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Iron, dissolved	--	Plugged	<0.030	Plugged	0.032	<0.030	DRY	Plugged	1.63	0.086	<0.030	0.068	5.11	0.666	<0.030	<0.030	dry
Copper, dissolved	1.3	Plugged	NT	Plugged	NT	NT	DRY	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	dry
Chloride	--	Plugged	75	Plugged	14	19	DRY	Plugged	29	<10	22	133	45	21	131	130	dry
Nitrogen, Ammonia	--	Plugged	<1.0	Plugged	<1.0	<1.0	DRY	Plugged	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	dry
Chemical Oxygen Demand	--	Plugged	23	Plugged	10	<10	DRY	Plugged	24	<10	<10	10	21	10	24	14	dry
Total Organic Halogens	--	Plugged	0.014	Plugged	<0.010	0.052	DRY	Plugged	0.114	0.03	0.032	0.035	0.0115	0.053	0.044	0.042	dry
Phenols	--	Plugged	<0.100	Plugged	<0.100	<0.100	DRY	Plugged	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	dry
pH	--	Plugged	7.4	Plugged	7.7	7.3	DRY	Plugged	7.5	7.7	8	7.5	7.6	7.4	8.1	8	dry
Temperature, celsius	--	Plugged	27	Plugged	22	17	DRY	Plugged	17	17	17	17	17	20	19	19	dry
Conductivity, mv	--	Plugged	948	Plugged	611	1431	DRY	Plugged	1805	852	1246	1598	1160	929	893	NT	dry

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

SOUTH TRENCHES

SAMPLING DATE: Sept. 27, 2005

PARAMETER	ACTION LEVEL	FIELD	TRIP	BOTH MW 35	U.A.W MW 36	U.G.W MW37	D.G.W MW 6	D.A.W MW 7	D.A.W MW 8	D.A.W MW 38	D.G.W MW 39	D.G.W MW 40	D.A.W MW 41	D.A.W MW 42	D.G.W MW 43	SURFACE MONITORING PTS. SW 4	SW 5	SW 6
ug/L																		
Benzene *	5	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Carbon tetrachloride *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
1,4-Dichlorobenzene *	75	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
1,2-Dichloroethane *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
1,1-Dichloroethene *	7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
1,1,1-Trichloroethane *	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Trichloroethene *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
mg/L																		
Arsenic, dissolved	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Barium, dissolved	2.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Cadmium, dissolved	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Chromium, dissolved	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Lead, dissolved	0.015	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Mercury, dissolved	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Magnesium, dissolved	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Zinc, dissolved	2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Iron, dissolved	--	NT	NT	0.042	<0.030	0.416	<0.030	1.04	4.42	0.198	0.033	<0.030	1.19	1.72	0.07	dry	dry	5.08
Copper, dissolved	1.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	dry	dry	NT
Chloride	--	NT	NT	119	<10	16	62	16	<10	34	27	53	12	21	43	dry	dry	85
Nitrogen, Ammonia	--	NT	NT	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	dry	dry	<1.0
Chemical Oxygen Demand	--	NT	NT	10	<10	<10	19	19	<10	<10	<10	<10	<10	<10	<10	dry	dry	15
Total Organic Halogens	--	NT	NT	0.029	0.025	0.015	0.05	<0.010	<0.010	<0.010	<0.010	0.079	0.03	0.022	0.093	dry	dry	0.088
Phenols	--	NT	NT	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	dry	dry	<0.100
pH	--	NT	NT	7.3	7.6	7.3	7.2	8	8.3	8	7.5	7.3	7.6	7.7	7.3	dry	dry	7
Temperature, celsius	--	NT	NT	20	20	21	25	23	25	19	22	22	20	18	23	dry	dry	21
Conductivity, mv	--	NT	NT	852	638	1029	919	592	579	812	949	1049	636	872	1078	dry	dry	1021

Keystone LABORATORIES, INC.

RECEIVED OCT 14 2005

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

October 13, 2005

Work Order: 15I1161

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 09/26/2005 10:15AM Collector: Brown, Mitch Phone: 515-233-0000 PO Number:

Project: Ames/Story C&D SLF
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1161-01 MW-38			Matrix:Water		Collected: 09/23/05 12:20	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**34 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.198 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:08	
15I1161-02 MW-39			Matrix:Water		Collected: 09/23/05 12:40	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**27 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.033 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:12	
15I1161-03 MW-41			Matrix:Water		Collected: 09/23/05 12:55	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**12 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.030 mg/l**	**0.010**	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**1.19 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:17	
15I1161-04 MW-40			Matrix:Water		Collected: 09/23/05 13:10	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

Work Order: 15I1161

October 13, 2005

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1161-04 MW-40			Matrix:Water		Collected: 09/23/05 13:10	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**53 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	**1.0 mg/l**	**1.0**	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.079 mg/l**	**0.010**	EPA 9020	RSW	10/12/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	09/26/05 16:29	
15I1161-05 MW-36			Matrix:Water		Collected: 09/23/05 13:25	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	<10 mg/l	10	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.025 mg/l**	**0.010**	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	09/26/05 16:34	
15I1161-06 MW-37			Matrix:Water		Collected: 09/23/05 13:40	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**16 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.015 mg/l**	**0.010**	EPA 9020	RSW	10/12/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.416 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:38	
15I1161-07 MW-35			Matrix:Water		Collected: 09/23/05 13:55	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**10 mg/l**	**10**	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**119 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.029 mg/l**	**0.010**	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.042 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:42	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone
LABORATORIES, INC.

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

October 13, 2005

Work Order: 15I1161

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1161-08 MW-34			Matrix:Water		Collected: 09/23/05 14:15	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**10 mg/l**	**10**	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**21 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/29/05 11:39	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.053 mg/l**	**0.010**	EPA 9020	RSW	10/11/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.666 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:46	
15I1161-09 SW-6			Matrix:Water		Collected: 09/23/05 10:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**15 mg/l**	**10**	EPA 410.4	RVV	09/28/05 12:46	
Chloride	**85 mg/l**	**10**	EPA 9252	RVV	09/30/05 12:24	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/29/05 15:30	
Total Organic Halogens (TOX)	**0.088 mg/l**	**0.010**	EPA 9020	RSW	10/12/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**5.08 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 16:51	

End of Report

Keystone Laboratories, Inc.
Jim Eggers For Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Phone 641-792-8451 | 600 East 17th Street South, Newton, IA 50208 | Fax 641-792-7989

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames-Story C+D
ADDRESS: 6004-99A
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames, IA 50010
PHONE: (515) 290-9004
FAX:

BILL TO:
NAME: Mr. William Fedeler
COMPANY NAME:
ADDRESS: PO Box 2483
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: e	f							LAB USE ONLY — LABORATORY WORK ORDER NO. 15I1161 — SAMPLE TEMPERATURE UPON RECEIPT: °C — SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW 38	9/23	1220	Monitor Well 38	5	W	G	X	X								01
MW 39	9/23	1240	Monitor Well 39	5	W	G	X	X								02
MW 41	9/23	1255	Monitor Well 41	5	W	G	X	X								03
MW 40	9/23	110	Monitor Well 40	5	W	G	X	X								04
MW 36	9/23	125	Monitor Well 36	5	W	G	X	X								05
MW 37	9/23	140	Monitor Well 37	5	W	G	X	X								06
MW 35	9/23	155	Monitor Well 35	5	W	G	X	X								07
MW 34	9/23	215	Monitor Well 34	5	W	G	X	X								08
SW 6	9/23	1035	~~Monitor Well~~ Surface Water 6	5	W	G	X	X								09

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
Mitch Brown	Date 9/26/05 Time 900 AM		Date Time	☐ Standard ☐ Rush Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature) Bill	Date 9/26/05 Time 10:15 AM	Remarks: Metals samples have been field filtered

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

Keystone LABORATORIES, INC.

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

October 11, 2005

Work Order: 15I1068

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 09/22/2005 10:15AM Collector: Phone: 515-233-0000 PO Number:

Project: City of Ames Landfill
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1068-01 MW 8			Matrix:Water		Collected: 09/21/05 12:50	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/23/05 16:30	
Chloride	<10 mg/l	10	EPA 9252	RVV	09/23/05 16:32	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/26/05 14:06	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/27/05 11:57	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	EPA 9020	RSW	10/10/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**4.42 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 12:36	
15I1068-02 MW 7			Matrix:Water		Collected: 09/21/05 13:05	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**19 mg/l**	**10**	EPA 410.4	MAQ	09/23/05 16:30	
Chloride	**16 mg/l**	**10**	EPA 9252	RVV	09/23/05 16:32	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/26/05 14:06	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/27/05 11:57	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	EPA 9020	RSW	10/10/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**1.04 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 12:40	
15I1068-03 MW 6			Matrix:Water		Collected: 09/21/05 13:15	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**19 mg/l**	**10**	EPA 410.4	MAQ	09/23/05 16:30	
Chloride	**62 mg/l**	**10**	EPA 9252	RVV	09/23/05 16:32	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/26/05 14:06	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/27/05 11:57	
Total Organic Halogens (TOX)	**0.050 mg/l**	**0.010**	EPA 9020	RSW	10/10/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	09/26/05 12:44	
15I1068-04 MW 29			Matrix:Water		Collected: 09/21/05 13:45	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone
LABORATORIES, INC.

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

October 11, 2005

Work Order: 15I1068

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1068-04 MW 29			Matrix:Water		Collected: 09/21/05 13:45	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**10 mg/l**	**10**	EPA 410.4	MAQ	09/23/05 16:30	
Chloride	**14 mg/l**	**10**	EPA 9252	RVV	09/23/05 16:32	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/26/05 14:06	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/28/05 8:21	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	EPA 9020	RSW	10/10/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.032 mg/l**	**0.030**	EPA 6010B	LAR	09/26/05 12:48	
15I1068-05 MW 28			Matrix:Water		Collected: 09/21/05 13:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**23 mg/l**	**10**	EPA 410.4	MAQ	09/23/05 16:30	
Chloride	**75 mg/l**	**10**	EPA 9252	RVV	09/23/05 16:32	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	09/26/05 14:06	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	09/28/05 8:21	
Total Organic Halogens (TOX)	**0.014 mg/l**	**0.010**	EPA 9020	RSW	10/10/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	09/26/05 12:57	

End of Report

Jeffrey King

Keystone Laboratories, Inc.
Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Phone 641-792-8451 | 600 East 17th Street South, Newton, IA 50208 | Fax 641-792-7989

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW
SAMPLER: Mitch Brown
SITE NAME: Ames SLF
ADDRESS: 6001-05A
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames, IA 50010
PHONE: (515) 290-9004 (Mitch)
FAX:

BILL TO:
NAME: John Joiner Public Works Director
COMPANY NAME: Public Works Dept., City of Ames
ADDRESS: 515 Clark
CITY/ST/ZIP: Ames, IA 50010
PHONE:
Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: e	ANALYSES REQUIRED: f							LAB USE ONLY: SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW 8	9/21	12:50	Monitor Well 8	5	W	G	X	X								01
MW 7	9/21	105	Monitor Well 7	5	W	G	X	X								02
MW 6	9/21	115	Monitor Well 6	5	W	G	X	X								03
MW 5/29	9/21	145	Monitor Well 5/29	5	W	G	X	X								04
MW 4/28	9/21	135	Monitor Well 4/28	5	W	G	X	X								05

LABORATORY WORK ORDER NO.: 15 I1068
SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
Mitch Brown	Date 9/21/05 Time 2:55		Date Time	☐ Standard ☐ Rush Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature) Bill	Date 9/22/05 Time 10:15 AM	Remarks: Metals samples have been field filtered

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

Keystone LABORATORIES, INC.

RECEIVED OCT 1 9 2005

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

October 17, 2005

Work Order: 15I1379

Report To

Todd Whipple
Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

Work Order Information

Date Received: 09/29/2005 10:40AM
Collector: Mitch Brown
Phone: 515-233-0000
PO Number:

Project: Ames/Story C&D SLF
Project Number: [none]

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1379-01 MW 25			Matrix:Water		Collected: 09/27/05 09:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**10 mg/l**	**10**	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**133 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.035 mg/l**	**0.010**	EPA 9020	RSW	10/13/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.068 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:26	
15I1379-02 MW 33			Matrix:Water		Collected: 09/27/05 10:00	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**21 mg/l**	**10**	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**45 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	**1.9 mg/l**	**1.0**	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.115 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**5.11 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:30	
15I1379-03 MW 32			Matrix:Water		Collected: 09/27/05 12:30	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**22 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.032 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	10/03/05 13:34	
15I1379-04 MW 31			Matrix:Water		Collected: 09/27/05 12:50	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone LABORATORIES, INC.

MEMBER ACIL

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

October 17, 2005

Work Order: 15I1379

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1379-04 MW 31			Matrix:Water		Collected: 09/27/05 12:50	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**24 mg/l**	**10**	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**29 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.114 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**1.63 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:39	
15I1379-05 MW 30			Matrix:Water		Collected: 09/27/05 13:05	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	<10 mg/l	10	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.030 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.086 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:43	
15I1379-06 MW 23			Matrix:Water		Collected: 09/27/05 13:20	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**19 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.052 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	10/03/05 13:47	
15I1379-07 MW 42			Matrix:Water		Collected: 09/27/05 13:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**21 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.022 mg/l**	**0.010**	EPA 9020	RSW	10/14/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**1.72 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:51	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

October 17, 2005

Work Order: 15I1379

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
15I1379-08 MW 43			Matrix:Water		Collected: 09/27/05 13:45	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**43 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.093 mg/l**	**0.010**	EPA 9020	RSW	10/13/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	**0.070 mg/l**	**0.030**	EPA 6010B	LAR	10/03/05 13:56	
15I1379-09 SW 2			Matrix:Water		Collected: 09/27/05 10:15	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**14 mg/l**	**10**	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**130 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.042 mg/l**	**0.010**	EPA 9020	RSW	10/13/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	10/03/05 14:08	
15I1379-10 SW 1			Matrix:Water		Collected: 09/27/05 10:30	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	**24 mg/l**	**10**	EPA 410.4	MAQ	09/30/05 13:31	
Chloride	**131 mg/l**	**10**	EPA 9252	RVV	10/04/05 15:00	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	SAA	10/04/05 13:36	
Phenols, total	<0.100 mg/l	0.100	EPA 9065	KRV	10/04/05 16:40	
Total Organic Halogens (TOX)	**0.044 mg/l**	**0.010**	EPA 9020	RSW	10/13/05 0:00	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	10/03/05 14:12	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Fox Engineering Associates, Inc.
1601 Golden Aspen Drive, Suite 103
Ames, IA 50010

Work Order: 15I1379

October 17, 2005
Page 4 of 4

End of Report

Keystone Laboratories, Inc.
Jim Eggers For Jeffrey King, Ph.D.
Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

www.keystonelabs.com

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Mitch Brown
SITE NAME: Ames - Story Co
ADDRESS: 6004-99A
CITY/ST/ZIP:
PHONE:

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: Fox Engineering
ADDRESS:
CITY/ST/ZIP: Ames, IA 50010
PHONE: (515) 290-9004 (Mobile)
FAX:

BILL TO:
NAME: Mr. William Fedeler
COMPANY NAME:
ADDRESS: PO Box 2483
CITY/ST/ZIP: Ames, IA 50010
PHONE:

Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: C	ANALYSES REQUIRED: F							LAB USE ONLY: SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW 25	9/27	935	Monitor Well 25	5	W	G	X	X								01
MW 33	9/27	1000	Monitor Well 33	5	W	G	X	X								02
MW 32	9/27	1230	Monitor Well 32	5	W	G	X	X								03
MW 31	9/27	1250	Monitor Well 31	5	W	G	X	X								04
MW 30	9/27	105	Monitor Well 30	5	W	G	X	X								05
MW 23	9/27	120	Monitor Well 23	5	W	G	X	X								06
MW 42	9/27	135	Monitor Well 42	5	W	G	X	X								07
MW 43	9/27	145	Monitor Well 43	5	W	G	X	X								08
SW 2	9/27	1015	Surface Water 2	5	W	G	X	X								09
SW 1	9/27	1030	Surface Water 1	5	W	G	X	X								10

LABORATORY WORK ORDER NO.: 151379

SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date	Received by: (Signature)	Date	Turn-Around
Mitch Brown	9/29/05			☐ Standard ☐ Rush _____ Contact Lab Prior to Submission
	Time 3:40		Time	
Relinquished by: (Signature)	**Date**	**Received for Lab by: (Signature)**	**Date**	**Remarks:**
		Bill	9/29/05	Metals samples have been field filtered
	Time		Time 10:40 AM	

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-6 Upgradient ✓
Downgradient

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 942.88 Ground Elevation 940.65
Depth of Well 21.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/21/05 1020	8.78	
*After Purging		10.44	
*Before Sampling	9/21/05 1115	8.35	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6.1
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, 89°
Field Measurments (after stabilization):
Temperature 25°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 919 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name Ames-Story Environmental Landfill Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-7 Upgradient ✓
Downgradient

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 943.21 Ground Elevation 940.65
Depth of Well 53' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/21/05 1000	22.55	
*After Purging		52.46	
*Before Sampling	9/21/05 105	40.85	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6.3
No.of Well Volumes (based on current water level) 1.3
Was well pumped/bailed dry? Yes

Equipment used:
Bailer type Disposable 'Dedicated Bailer
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, 89°
Field Measurments (after stabilization):
Temperature 23°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 8.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 592 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-8 Upgradient ✓
Downgradient

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain If yes, explain

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 942.76 Ground Elevation 940.65
Depth of Well 71.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/21/05 945	35.33	
*After Purging	9/21/05 945	46.43	
*Before Sampling	9/21/05 1250	35.63	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Sunny, 89°
Field Measurments (after stabilization):
Temperature 25°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 8.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 577 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-23 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.98 Ground Elevation 943.62
Depth of Well 27.86 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 110	18.42	
*After Purging	/	25.0	
*Before Sampling	9/27/05 120	20.33	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 42
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable *Dedicated Bailer ____
Pump type ____ *Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, rainy, breezy, 65-70°
Field Measurments (after stabilization):
Temperature 17°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 143 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-24 Upgradient _____
Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain _____ If yes, explain _____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 939.44 Ground Elevation 936.94
Depth of Well 20.60 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	8/26/05	Dry	
*After Purging			
*Before Sampling			

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) _____
No.of Well Volumes (based on current water level) Dry
Was well pumped/bailed dry? _____

Equipment used:
Bailer type _____ 'Dedicated Bailer _____
Pump type _____ 'Dedicated Bailer _____
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions _____
Field Measurments (after stabilization):
Temperature _____ Units _____
Equipment Used HACH COMPANY POCKET PAL
pH _____
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions _____ Units _____
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-25 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 906.34 Ground Elevation 903.94
Depth of Well 19.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 1010	957	
*After Purging		957	
*Before Sampling	9/27/05 935	956	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 5
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, breezy, rain 65-70°
Field Measurments (after stabilization):
Temperature 17°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1598 MS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-28 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 946.02 Ground Elevation 942.55
Depth of Well 22.7 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/21/05 1040	7.29	
*After Purging	9/21/05 1040	11.63	
*Before Sampling	9/21/05 135	7.24	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 72
No.of Well Volumes (based on current water level) 3.1
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, 89°
Field Measurments (after stabilization):
Temperature 27°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 948 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-29 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.61 Ground Elevation 942.55
Depth of Well 53.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/21/05 1055	12.14	
*After Purging	" "	47.43	
*Before Sampling	9/21/05 1:45	17.16	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.5
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Sunny, 89°
Field Measurments (after stabilization):
Temperature 22°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.1
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 611 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-30 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 945.54 Ground Elevation 943.62
Depth of Well 58 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 1250	37.87	
*After Purging	/	53.19	
*Before Sampling	9/27/05 1105	39.14	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? NO

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, breezy, rain 65-70°
Field Measurments (after stabilization):
Temperature 12°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.1
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 852 mS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name Ames-Story Environmental Landfill Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-31 Upgradient ____
Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 941.43 Ground Elevation 938.21
Depth of Well 36' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 1225	22.18	
*After Purging		34.32	
*Before Sampling	9/27/05 1250	27.55	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, rain, breezy, 65-70°
Field Measurments (after stabilization):
Temperature 17 °C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1805 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-32 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 939.86 Ground Elevation 937.39
Depth of Well 50.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 1210	34.63	
*After Purging		46.12	
*Before Sampling	9/27/05 1230	34.28	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 8
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy breezy, rain, 65-70°
Field Measurments (after stabilization):
Temperature 17 Units
Equipment Used HACH COMPANY POCKET PAL
pH 8.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1246 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-33 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 906.32 Ground Elevation 904.06
Depth of Well 28.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 10:30	9.80	
*After Purging	/	12.12	
*Before Sampling	9/27/05 1000	9.78	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 8
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, breezy, rain 65-70°
Field Measurments (after stabilization):
Temperature 17°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1160 mS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-34 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain ____ If yes, explain Some garbage

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 909.5 Ground Elevation 906.85
Depth of Well 17.3 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 1:45	7.72	
*After Purging		13.25	
*Before Sampling	9/23/05 2:15	7.65	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 43
No.of Well Volumes (based on current water level) 3.1
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Partly Cloudy windy 78°
Field Measurments (after stabilization):
Temperature 20 °C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 929 µS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-35 Upgradient ____
Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain ____ If yes, explain Some garbage

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 916.19 Ground Elevation 914.04
Depth of Well 20.6 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 1240	1309	
*After Purging		1307	
*Before Sampling	9/23/05 1555	1308	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 23
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy windy 78°
Field Measurments (after stabilization)
Temperature 20°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 852 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-36 Upgradient ✓
Downgradient

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain If yes, explain some garbage

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 948.97 Ground Elevation 947.30
Depth of Well 53.5 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 1045	16 35	
*After Purging	9/22/05 1045	44 42	
*Before Sampling	9/23/05 125	21 05	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.6
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, Windy, 78°
Field Measurments (after stabilization):
Temperature 20°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.6
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 638 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-37 Upgradient ✓
Downgradient

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain If yes, explain Some garbage

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 949.49 Ground Elevation 947.43
Depth of Well 30.6 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 1210	8.33	
*After Purging	/	23.23	
*Before Sampling	9/23/05 1410	8.59	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 11
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer
Pump type 'Dedicated Bailer
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Partly Cloudy, Windy, 78°
Field Measurments (after stabilization):
Temperature 21°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1029 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-38 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 936.59 Ground Elevation 934.05
Depth of Well 55.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 930	19.72	
*After Purging	"	53.30	
*Before Sampling	9/23/05 1220	23.34	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 9
No.of Well Volumes (based on current water level) 1.5
Was well pumped/bailed dry? Yes

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, windy, 78°
Field Measurments (after stabilization):
Temperature 19°C Units ____
Equipment Used HACH COMPANY POCKET PAL
pH 8.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 812 uS/cm Units ____
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-39 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? No
If no, explain ____ If yes, explain ____

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 935.93 Ground Elevation 933.96
Depth of Well 30.2 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 945	17.78	
*After Purging	/	22.71	
*Before Sampling	9/23/05 12:40	18.32	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 6
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, wind, 78°
Field Measurments (after stabilization)
Temperature 22 °C Units ____
Equipment Used HACH COMPANY POCKET PAL
pH 7.5
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 949 uS/cm Units ____
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-40 Upgradient _____
Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain _____ If yes, explain SOME LITTER

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 933.07 Ground Elevation 931.11
Depth of Well 20' Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 1020	9.20	
*After Purging		16.84	
*Before Sampling	9/22/05 110	9.56	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 57
No.of Well Volumes (based on current water level) 3.1
Was well pumped/bailed dry? NO

Equipment used:
Bailer type Disposable 'Dedicated Bailer _____
Pump type _____ 'Dedicated Bailer _____
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, windy 78°
Field Measurments (after stabilization):
Temperature 22°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1049 us/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-41 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain ____ If yes, explain Some Litter

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 933.46 Ground Elevation 931.44
Depth of Well 45.58 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/22/05 100	17 04	
*After Purging	/	33 45	
*Before Sampling	9/23/05 1255	17 21	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, windy, 78°
Field Measurments (after stabilization):
Temperature 20°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.6
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 636 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-42 Upgradient ____ Downgradient ✓

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain ____ If yes, explain Some litter

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 940.64 Ground Elevation 938.58
Depth of Well 48.37. Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 1:45	20.40	
*After Purging		36.98	
*Before Sampling	9/27/05 1:35	20.33	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2.3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer ____
Pump type ____ 'Dedicated Bailer ____
If not dedicated, method of cleaning ____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, breezy, rain 65-70°
Field Measurments (after stabilization):
Temperature 18°C Units ____
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 872 µS/cm Units ____
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASUREMENT

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. MW-43 Upgradient _____
Downgradient _____

Name of person sampling JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? YES Standing Water or Litter? Yes
If no, explain _____ If yes, explain Some litter

B.) GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation: Top of inner well casing 940.83 Ground Elevation 938.62
Depth of Well 28.13 Inside Casing Diameter (in inches) 2.0"
Equipment Used SOLINST

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/26/05 200	18 25	
*After Purging	/	26 22	
*Before Sampling	9/27/05 1145	18 25	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 5
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable 'Dedicated Bailer _____
Pump type _____ 'Dedicated Bailer _____
If not dedicated, method of cleaning _____

D.) FIELD MEASUREMENT

Weather Conditions Cloudy, breezy, rain, 65-70°
Field Measurments (after stabilization):
Temperature 23°C Units _____
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1078 uS/cm Units _____
Equipment Used HACH COMPANY POCKET PAL

Comments _____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

542-1322

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-1 Date/Time 9/27/05 10:30

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream	✓	Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream	✓	Downstream	
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point Clear Water

Was monitoring point dry? No Too little water to sample? No

Was water flowing? Yes If yes, estimate quantity Good flow

If yes, estimate depth 5'W x 6-8" d.

Was water discolored? No If yes, descibe below.

Does water have odor? No If yes, descibe below.

Was ground discolored? No If yes, descibe below.

Litter present? No If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, 70°

Field Measurments (after stabilization):

Temperature 19°C Units

Equipment Used HACH COMPANY POCKET PAL

pH 8

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 893 uS/cm Units

Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-2 Date/Time 9/27/05 1015

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream	✓	Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point

Was monitoring point dry? No Too little water to sample? No

Was water flowing? Yes If yes, estimate quantity good flow

If yes, estimate depth 4' W x 6" d

Was water discolored? No If yes, descibe below.

Does water have odor? No If yes, descibe below.

Was ground discolored? No If yes, descibe below.

Litter present? No If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy 70°

Field Measurments (after stabilization):

Temperature 19°C Units

Equipment Used HACH COMPANY POCKET PAL

pH 8.0

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions NA Units

Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-3 Date/Time 9/23/05

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream ____ Open Tile ✓
Road Ditch ____ Tile with Riser ____
Drainage Ditch ____ Other ____

B.) PURPOSE OF MONITORING POINT

Upstream ____ Downstream ✓
Within Landfill ____ Other ____

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point Dry - no water flowing from pipe

Was monitoring point dry? Yes Too little water to sample? Yes
Was water flowing? No If yes, estimate quantity ____
If yes, estimate depth ____

Was water discolored? ____ If yes, descibe below.
Does water have odor? ____ If yes, descibe below.
Was ground discolored? ____ If yes, descibe below.
Litter present? ____ If yes, descibe below.

Comments ____

D.) FIELD MEASUREMENT

Weather Conditions ____

Field Measurments (after stabilization):
Temperature ____ Units ____
Equipment Used HACH COMPANY POCKET PAL
pH ____
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions ____ Units ____
Equipment Used HACH COMPANY POCKET PAL

Comments ____

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-4 Date/Time 9/23/05

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch	✓	Other	

B.) PURPOSE OF MONITORING POINT

Upstream	✓	Downstream	
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point stagnant pool of water - no flow

Was monitoring point dry? No Too little water to sample? Yes

Was water flowing? No If yes, estimate quantity

If yes, estimate depth

Was water discolored? If yes, descibe below.

Does water have odor? If yes, descibe below.

Was ground discolored? If yes, descibe below.

Litter present? If yes, descibe below.

Comments No Sample

D.) FIELD MEASUREMENT

Weather Conditions

Field Measurments (after stabilization):

Temperature Units

Equipment Used HACH COMPANY POCKET PAL

pH

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions Units

Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-5 Date/Time 9/27/05

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch	✓	Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point - no water in ditch

Was monitoring point dry? Yes Too little water to sample? Yes
Was water flowing? No If yes, estimate quantity
If yes, estimate depth

Was water discolored? If yes, descibe below.
Does water have odor? If yes, descibe below.
Was ground discolored? If yes, descibe below.
Litter present? If yes, descibe below.

Comments
No sample

D.) FIELD MEASUREMENT

Weather Conditions

Field Measurments (after stabilization):
Temperature Units
Equipment Used HACH COMPANY POCKET PAL
pH
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

FORM FOR
SURFACE WATER SAMPLING

Site Name AMES-STORY ENVIRONMENTAL LANDFILL Permit No. 85-SDP-13-91P

Monitoring Well/Piezometer No. SW-6 Date/Time 9/23/05 10:35

Name of person sampling JMB

A.) TYPE OF MONITORING POINT

Stream		Open Tile	✓
Road Ditch		Tile with Riser	
Drainage Ditch		Other	

B.) PURPOSE OF MONITORING POINT

Upstream		Downstream	✓
Within Landfill		Other	

C.) MONITORING POINT CONDITIONS

General description/condition of monitoring point - 4" PVC pipe

Was monitoring point dry? No Too little water to sample? No
Was water flowing? Yes If yes, estimate quantity
If yes, estimate depth

Was water discolored? No If yes, descibe below.
Does water have odor? No If yes, descibe below.
Was ground discolored? Yes If yes, descibe below.
Litter present? No If yes, descibe below.

Comments rust colored matter in stream and sides of stream

D.) FIELD MEASUREMENT

Weather Conditions Partly cloudy, 70°

Field Measurments (after stabilization):
Temperature 21°C Units
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1021 uS/cm Units
Equipment Used HACH COMPANY POCKET PAL

Comments

NOTE: Attach Laboratory Report and 8-12" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

542-1324

APPENDIX D

Concentration Versus Time Tables & Graphs

APPENDIX D.1

Concentration Versus Time Tables & Graphs
Water Table System

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	1,1-Dichloroethene *	7	1			<1	<1	<1	<1	<1	---	<1				
10/15/91	1,1-Dichloroethene *	7	1			<1	<1	---	<1	<1	---	<1				
01/23/92	1,1-Dichloroethene *	7	1			<1	<1	---	<1	<1	<1	<1				
03/23/92	1,1-Dichloroethene *	7	1			<1	<1	<1	<1	<1	<1	<1				
09/30/92	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
03/05/93	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
03/23/94	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
03/16/95	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
09/13/95	1,1-Dichloroethene *	7	1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	1,1-Dichloroethene *	7	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,1-Dichloroethene *	7	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,1-Dichloroethene *	7	1	<1		NT	NT	Dry	NT	NT	NT	NT	<1			
03/19/97	1,1-Dichloroethene *	7	1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,1-Dichloroethene *	7	1	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/19/99	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	1,1-Dichloroethene *	7	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	1,1-Dichloroethene *	7	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,1-Dichloroethene *	7	1	NT	NT	<1	NT	DRY	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,1-Dichloroethene *	7	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,1-Dichloroethene *	7	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,1-Dichloroethene *	7	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,1-Dichloroethene *	7	1	NT	NT	<1	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD	WATER TABLE WELLS												
			WT	U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	1,1,1-Trichloroethane *	200	1			<1	<1	<1	<1	<1	---	<1				
10/15/91	1,1,1-Trichloroethane *	200	1			<1	<1	---	<1	<1	---	<1				
01/23/92	1,1,1-Trichloroethane *	200	1			<1	<1	---	<1	<1	<1	<1				
03/23/92	1,1,1-Trichloroethane *	200	1			<1	<1	<1	<1	<1	<1	<1				
09/30/92	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
03/05/93	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
03/23/94	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
03/16/95	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
09/13/95	1,1,1-Trichloroethane *	200	1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	1,1,1-Trichloroethane *	200	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,1,1-Trichloroethane *	200	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,1,1-Trichloroethane *	200	1	<1		NT	NT	Dry	NT	NT	NT	NT	<1			
03/19/97	1,1,1-Trichloroethane *	200	1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,1,1-Trichloroethane *	200	1	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	1,1,1-Trichloroethane *	200	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	1,1,1-Trichloroethane *	200	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,1,1-Trichloroethane *	200	1	NT	NT	<1	NT	DRY	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,1,1-Trichloroethane *	200	1	NT	<1	NT	NT	Dry	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,1,1-Trichloroethane *	200	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,1,1-Trichloroethane *	200	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	<1	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

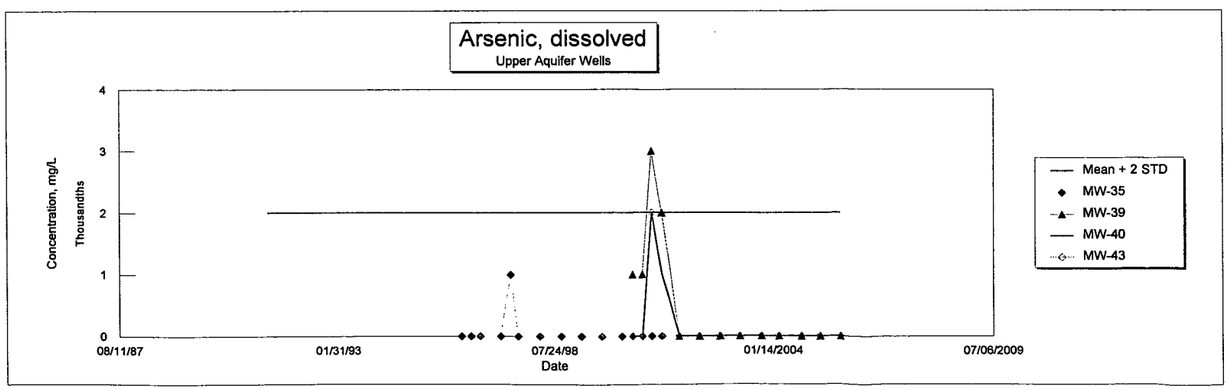
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS												
				U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	1,2-Dichloroethane *	5	0.4			<1	<1	<1	<1	<1	---	<1				
10/15/91	1,2-Dichloroethane *	5	0.4			<1	<1	---	<1	<1	---	<1				
01/23/92	1,2-Dichloroethane *	5	0.4			<1	<1	---	<1	<1	<1	<1				
03/23/92	1,2-Dichloroethane *	5	0.4			<1	<1	<1	<1	<1	<1	<1				
09/30/92	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
03/05/93	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
09/21/93	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
03/23/94	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
09/16/94	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
03/16/95	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
09/13/95	1,2-Dichloroethane *	5	0.4			NT	NT	NT	NT	NT	NT	NT				
03/28/96	1,2-Dichloroethane *	5	0.4	<0.4		NT	NT	NT	NT	NT	NT	NT	<0.4			
06/20/96	1,2-Dichloroethane *	5	0.4	<0.4		NT	NT	NT	NT	NT	NT	NT	<0.4			
09/13/96	1,2-Dichloroethane *	5	0.4	<0.4		NT	NT	Dry	NT	NT	NT	NT	<0.4			
03/19/97	1,2-Dichloroethane *	5	0.4	<0.4		NT	NT	DRY	NT	NT	NT	NT	<0.4			
06/18/97	1,2-Dichloroethane *	5	0.4	<0.4		<0.4	NT	NT	NT	NT	NT	NT	<0.4			
08/30/97	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/99	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	1,2-Dichloroethane *	5	0.4	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	1,2-Dichloroethane *	5	0.4	NT	<0.4	NT	NT	DRY	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
09/28/2000	1,2-Dichloroethane *	5	0.4	NT	NT	<0.4	NT	DRY	NT	NT	NT	NT	DRY	<0.4	<0.4	<0.4
12/27/2000	1,2-Dichloroethane *	5	0.4	NT	<0.4	NT	NT	Dry	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
03/28/2001	1,2-Dichloroethane *	5	0.4	NT	<0.4	<0.4	NT	NT	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
09/02/2001	1,2-Dichloroethane *	5	0.4	NT	NT	<0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,2-Dichloroethane *	5	0.4	NT	NT	<0.4	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	1,4-Dichlorobenzene *	75	1			<1	<1	<1	<1	<1	---	<1				
10/15/91	1,4-Dichlorobenzene *	75	1			<1	<1	---	<1	<1	---	<1				
01/23/92	1,4-Dichlorobenzene *	75	1			<1	<1	---	<1	<1	<1	<1				
03/23/92	1,4-Dichlorobenzene *	75	1			<1	<1	<1	<1	<1	<1	<1				
09/30/92	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
03/05/93	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
03/23/94	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
03/16/95	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
09/13/95	1,4-Dichlorobenzene *	75	1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	1,4-Dichlorobenzene *	75	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,4-Dichlorobenzene *	75	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,4-Dichlorobenzene *	75	1	<1		NT	NT	Dry	NT	NT	NT	NT	<1			
03/19/97	1,4-Dichlorobenzene *	75	1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,4-Dichlorobenzene *	75	1	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	1,4-Dichlorobenzene *	75	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	1,4-Dichlorobenzene *	75	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,4-Dichlorobenzene *	75	1	NT	NT	<1	NT	DRY	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,4-Dichlorobenzene *	75	1	NT	<1	NT	NT	Dry	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,4-Dichlorobenzene *	75	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,4-Dichlorobenzene *	75	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

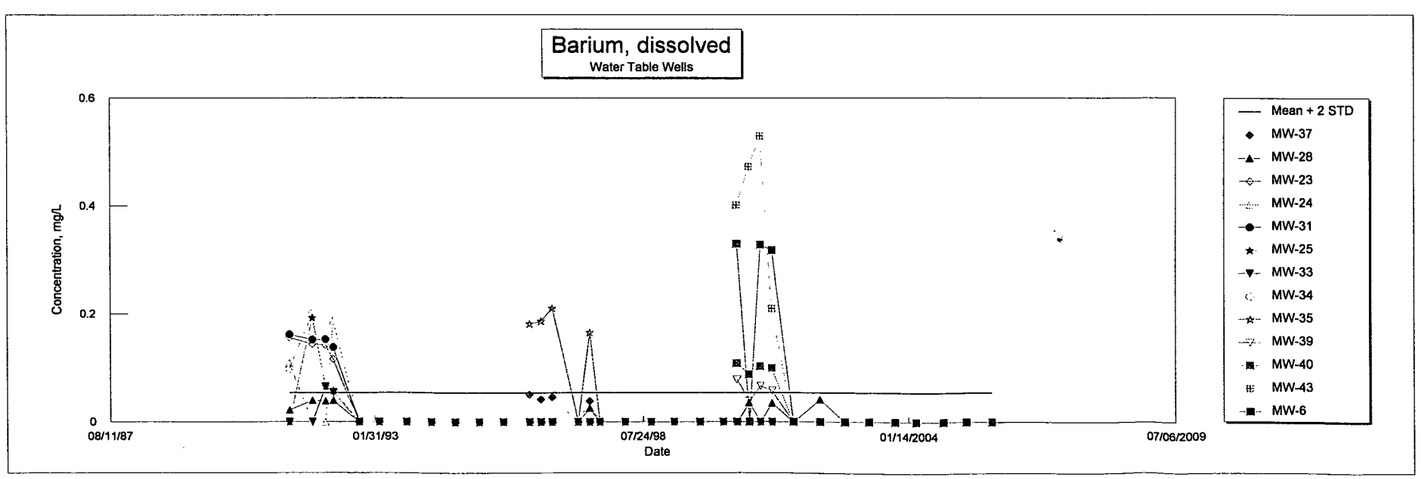
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Arsenic, dissolved	0.05	0.002			<0.005	<0.005	<0.005	<0.005	<0.005	---	<0.005				
10/15/91	Arsenic, dissolved	0.05	0.002			<0.005	<0.005	---	<0.005	<0.005	---	<0.005				
01/23/92	Arsenic, dissolved	0.05	0.002			<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.005				
03/23/92	Arsenic, dissolved	0.05	0.002			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				
09/30/92	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Arsenic, dissolved	0.05	0.002			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Arsenic, dissolved	0.05	0.002	<0.005		NT	NT	NT	NT	NT	NT	NT	<0.005			
06/20/96	Arsenic, dissolved	0.05	0.002	<0.005		NT	NT	NT	NT	NT	NT	NT	<0.005			
09/13/96	Arsenic, dissolved	0.05	0.002	<0.005		NT	NT	Dry	NT	NT	NT	NT	<0.005			
03/19/97	Arsenic, dissolved	0.05	0.002	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Arsenic, dissolved	0.05	0.002	0.002		<0.001	NT	NT	NT	NT	NT	NT	0.001			
08/30/97	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Arsenic, dissolved	0.05	0.002	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Arsenic, dissolved	0.05	0.002	NT	<0.001	NT	NT	DRY	NT	NT	NT	NT	NT	0.001	<0.001	<0.001
09/28/2000	Arsenic, dissolved	0.05	0.002	NT	NT	<0.001	NT	DRY	NT	NT	NT	NT	DRY	0.001	<0.001	<0.001
12/27/2000	Arsenic, dissolved	0.05	0.002	NT	0.002	NT	NT	Dry	NT	NT	NT	NT	NT	0.003	0.002	0.002
03/28/2001	Arsenic, dissolved	0.05	0.002	NT	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	0.002	0.001	0.002
09/02/2001	Arsenic, dissolved	0.05	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Arsenic, dissolved	0.01	0.002	NT	NT	<0.001	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
Mean			0.002	0.002	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.001	0.00175	0.0015	0.002	
Standard Deviation (STD)			0	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0	0.000829	0.0005	0	
Mean + 2 STD			0.002	0.002	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.001	0.003408	0.0025	0.002	



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Barium, dissolved	2.000	0.054			0.022	0.156	0.109	0.162	0.14	---	0.098				
10/15/91	Barium, dissolved	2.000	0.054			0.040	0.144	---	0.152	0.193	---	0.200				
01/23/92	Barium, dissolved	2.000	0.054			0.039	0.142	---	0.153	0.066	0.065	0.063				
03/23/92	Barium, dissolved	2.000	0.054			0.040	0.116	0.188	0.138	0.058	0.055	0.055				
09/30/92	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Barium, dissolved	2.000	0.054			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Barium, dissolved	2.000	0.054	0.051		NT	NT	NT	NT	NT	NT	NT	0.182			
06/20/96	Barium, dissolved	2.000	0.054	0.042		NT	NT	NT	NT	NT	NT	NT	0.187			
09/13/96	Barium, dissolved	2.000	0.054	0.046		NT	NT	Dry	NT	NT	NT	NT	0.211			
03/19/97	Barium, dissolved	2.000	0.054	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Barium, dissolved	2.000	0.054	0.039		0.026	NT	NT	NT	NT	NT	NT	0.166			
08/30/97	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Barium, dissolved	2.000	0.054	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Barium, dissolved	2.000	0.054	NT	0.330	NT	NT	DRY	NT	NT	NT	NT	NT	0.079	0.109	0.402
09/28/2000	Barium, dissolved	2.000	0.054	NT	NT	0.036	NT	DRY	NT	NT	NT	NT	DRY	0.039	0.088	0.473
12/27/2000	Barium, dissolved	2.000	0.054	NT	0.328	NT	NT	dry	NT	NT	NT	NT	NT	0.067	0.103	0.530
03/28/2001	Barium, dissolved	2.000	0.054	NT	0.318	0.035	NT	NT	NT	NT	NT	NT	NT	0.058	0.100	0.210
09/02/2001	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Barium, dissolved	2.000	0.054	NT	NT	0.042	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			0.0445	0.325333	0.035	0.1395	0.1485	0.15125	0.105667	0.06	0.104	0.1865	0.06075	0.1	0.40375
	Standard Deviation (STD)			0.0045	0.005249	0.006764	0.014586	0.0395	0.008584	0.06184	0.005	0.057736	0.016132	0.014601	0.007649	0.120703
	Mean + 2 STD			0.0535	0.335832	0.048528	0.168672	0.2275	0.168418	0.229347	0.07	0.219473	0.218765	0.089952	0.115297	0.645156



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS												
				U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	Benzene *	5	1			<1	<1	<1	<1	<1	---	<1				
10/15/91	Benzene *	5	1			<1	<1	---	<1	<1	---	<1				
01/23/92	Benzene *	5	1			<1	<1	---	<1	<1	<1	<1				
03/23/92	Benzene *	5	1			<1	<1	<1	<1	<1	<1	<1				
09/30/92	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Benzene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Benzene *	5	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
06/20/96	Benzene *	5	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	Benzene *	5	1	<1		NT	NT	Dry	NT	NT	NT	NT	<1			
03/19/97	Benzene *	5	1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Benzene *	5	1	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Benzene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Benzene *	5	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	Benzene *	5	1	NT	<1	<1	NT	DRY	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	Benzene *	5	1	NT	<1	NT	NT	Dry	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Benzene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	Benzene *	5	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Benzene *	5	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2005	Benzene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

				WATER TABLE WELLS												
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Cadmium, dissolved	0.005	0.001			<0.001	<0.001	<0.001	<0.001	<0.001	---	<0.001				
10/15/91	Cadmium, dissolved	0.005	0.001			<0.001	<0.001	---	<0.001	<0.001	---	<0.001				
01/23/92	Cadmium, dissolved	0.005	0.001			<0.001	<0.001	---	<0.001	<0.001	<0.001	<0.001				
03/23/92	Cadmium, dissolved	0.005	0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				
09/30/92	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Cadmium, dissolved	0.005	0.001			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Cadmium, dissolved	0.005	0.001	<0.001		NT	NT	NT	NT	NT	NT	NT	<0.001			
06/20/96	Cadmium, dissolved	0.005	0.001	<0.001		NT	NT	NT	NT	NT	NT	NT	<0.001			
09/13/96	Cadmium, dissolved	0.005	0.001	<0.001		NT	NT	Dry	NT	NT	NT	NT	<0.001			
03/19/97	Cadmium, dissolved	0.005	0.001	<0.001		NT	NT	DRY	NT	NT	NT	NT	<0.001			
06/18/97	Cadmium, dissolved	0.005	0.001	<0.001		<0.001	NT	NT	NT	NT	NT	NT	<0.001			
08/30/97	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Cadmium, dissolved	0.005	0.001	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	NT	NT	DRY	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
09/28/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	NT	DRY	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
12/27/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	NT	NT	Dry	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
03/28/2001	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
09/02/2001	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

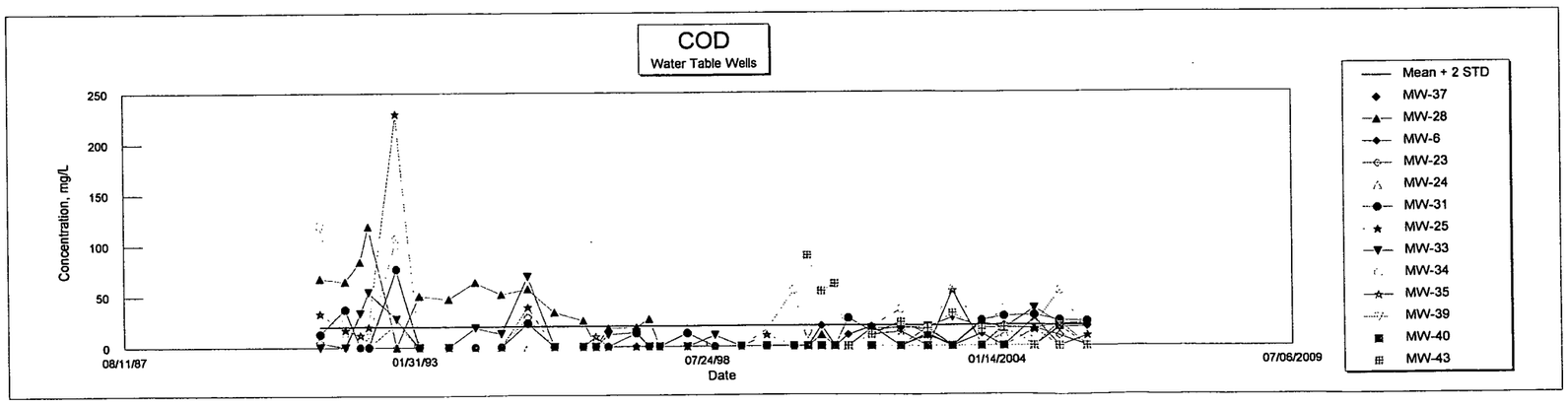
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS												
				U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	Carbon tetrachloride *	5	0.3			<1	<1	<1	<1	<1	---	<1				
10/15/91	Carbon tetrachloride *	5	0.3			<1	<1	---	<1	<1	---	<1				
01/23/92	Carbon tetrachloride *	5	0.3			<1	<1	---	<1	<1	<1	<1				
03/23/92	Carbon tetrachloride *	5	0.3			<1	<1	<1	<1	<1	<1	<1				
09/30/92	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Carbon tetrachloride *	5	0.3			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Carbon tetrachloride *	5	0.3	<0.3		NT	NT	NT	NT	NT	NT	NT	<0.3			
06/20/96	Carbon tetrachloride *	5	0.3	<0.3		NT	NT	NT	NT	NT	NT	NT	<0.3			
09/13/96	Carbon tetrachloride *	5	0.3	<0.3		NT	NT	Dry	NT	NT	NT	NT	<0.3			
03/19/97	Carbon tetrachloride *	5	0.3	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Carbon tetrachloride *	5	0.3	<0.3		<0.3	NT	NT	NT	NT	NT	NT	<0.3			
08/30/97	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Carbon tetrachloride *	5	0.3	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	NT	NT	DRY	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
09/28/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	NT	DRY	NT	NT	NT	NT	DRY	<0.3	<0.3	<0.3
12/27/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	NT	NT	Dry	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
03/28/2001	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	NT	NT	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
09/02/2001	Carbon tetrachloride *	5	0.3	NT	NT	<0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Carbon tetrachloride *	5	0.3	NT	NT	<0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

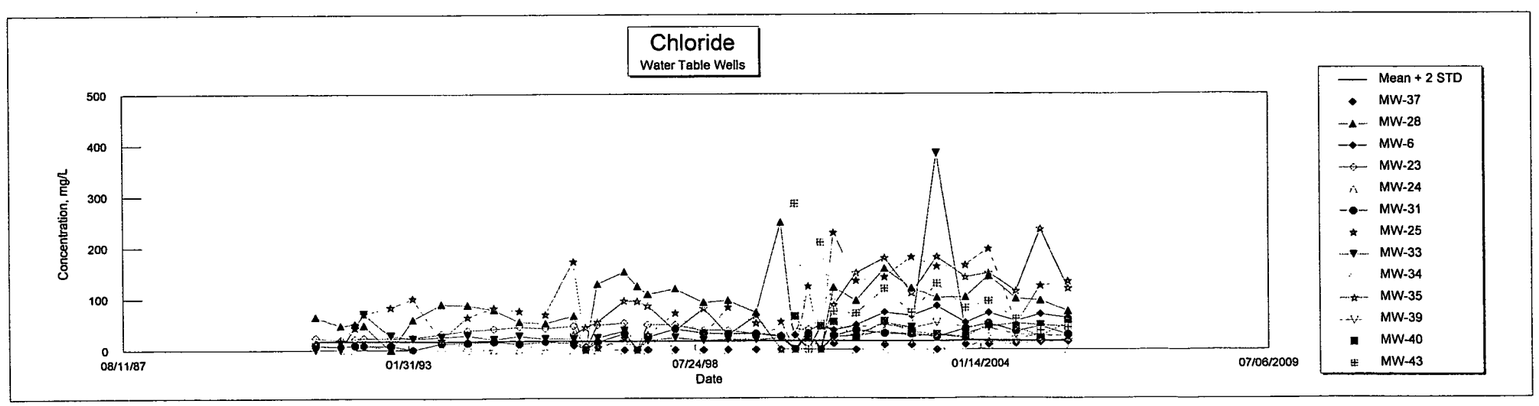
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Chemical Oxygen Demand	--	20			67.8	5.2	7.5	12.8	33.4	---	120.1				
10/15/91	Chemical Oxygen Demand	--	20			64.8	<10	---	37.2	17.2	---	14.3				
01/23/92	Chemical Oxygen Demand	--	20			84.1	<10	---	<10	12	33.4	<10				
03/23/92	Chemical Oxygen Demand	--	20			119	<10	<10	<10	20	54	10				
09/30/92	Chemical Oxygen Demand	--	20			---	<10	24	77	230	28	107				
03/05/93	Chemical Oxygen Demand	--	20			50.8	<10	---	<10	<10	<10	<10				
09/21/93	Chemical Oxygen Demand	--	20			47.3	<10	<10	<10	<10	<10	<10				
03/23/94	Chemical Oxygen Demand	--	20			64	<10	<10	<10	<10	19	<10				
09/16/94	Chemical Oxygen Demand	--	20			52	<10	NT	<10	<10	13	<10				
03/16/95	Chemical Oxygen Demand	--	20			57	29	NT	23	39	69	29				
09/13/95	Chemical Oxygen Demand	--	20			34	<10	NT	<10	<10	<10	<10				
03/28/96	Chemical Oxygen Demand	--	20	<10		26	<10	NT	<10	<10	<10	<10	<10			
06/20/96	Chemical Oxygen Demand	--	20	<10		NT	NT	NT	NT	NT	NT	NT	10			
09/13/96	Chemical Oxygen Demand	--	20	<10		18	<10	Dry	<10	<10	12	<10	<10			
03/19/97	Chemical Oxygen Demand	--	20	<10		19	<10	<10	13	<10	14	<10	<10			
06/18/97	Chemical Oxygen Demand	--	20	<10		27	NT	NT	NT	NT	NT	NT	<10			
08/30/97	Chemical Oxygen Demand	--	20	<10		<10	<10	DRY	<10	<10	<10	<10	<10			
03/10/98	Chemical Oxygen Demand	--	20	<10		<10	<10	DRY	13	<10	<10	<10	<10			
09/21/98	Chemical Oxygen Demand	--	20	<10		<10	<10	DRY	<10	<10	11	<10	<10			
03/18/99	Chemical Oxygen Demand	--	20	<10		<10	<10	DRY	<10	<10	<10	<10	<10			
09/21/99	Chemical Oxygen Demand	--	20	<10		<10	<10	DRY	<10	11	<10	16	<10			
03/21/2000	Chemical Oxygen Demand	--	20	NT		<10	<10	DRY	<10	<10	<10	55	NT			
06/28/2000	Chemical Oxygen Demand	--	20	NT	<10	NT	NT	DRY	NT	NT	NT	NT	NT	11	<10	89
09/28/2000	Chemical Oxygen Demand	--	20	<10	20	11	<10	DRY	<10	<10	<10	<10	DRY	<10	<10	54
12/27/2000	Chemical Oxygen Demand	--	20	NT	<10	NT	NT	Dry	NT	NT	NT	NT	NT	<10	<10	61
03/28/2001	Chemical Oxygen Demand	--	20	<10	11	<10	<10	<10	27	<10	<10	28	<10	<10	<10	<10
09/02/2001	Chemical Oxygen Demand	--	20	<10	19	11	<10	NT	14	<10	17	19	11	<10	<10	11
03/19/2002	Chemical Oxygen Demand	--	20	<10	<10	24	<10	Dry	19	<10	17	36	14	<10	<10	23
09/19/2002	Chemical Oxygen Demand	--	20	<10	12	11	10	Dry	16	<10	19	15	<10	18	<10	17
03/14/2003	Chemical Oxygen Demand	--	20	<10	<10	28	<10	Dry	20	<10	28	55	54	<10	<10	32
09/29/2003	Chemical Oxygen Demand	--	20	<10	12	23	<10	Dry	25	<10	18	17	<10	<10	<10	16
03/08/2004	Chemical Oxygen Demand	--	20	20	<10	17	18	12	29	<10	17	36	<10	<10	<10	18
09/27/2004	Chemical Oxygen Demand	--	20	<10	<10	17	17	12	30	16	37	21	27	<10	<10	<10
03/17/2005	Chemical Oxygen Demand	--	20	<10	18	21	10	12	25	<10	22	54	<10	23	19	<10
09/22/2005	Chemical Oxygen Demand	--	20	<10	19	23	<10	DRY	24	10	21	10	10	<10	<10	<10

Mean	20	15.85714	38.64348	14.86667	13.5	25.66667	43.17778	24.96667	37.78824	21	17.33333	19	35.66667
Standard Deviation (STD)	0	3.681171	27.03645	7.691265	5.531727	15.42944	66.72873	14.86521	31.39627	15.89549	4.921608	0	25.05993
Mean + 2 STD	20	23.21948	92.71637	30.2492	24.56345	56.52554	176.6352	54.69709	100.5808	52.79098	27.17655	19	85.78652



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	Secondary MCL LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Chloride	250	16.61278			65	23.5	2.5	9	13.5	---	6				
10/15/91	Chloride	250	16.61278			47.6	19.33	---	6.6	17.4	---	6.6				
01/23/92	Chloride	250	16.61278			50.9	21.5	---	8.9	43.5	44.6	10				
03/23/92	Chloride	250	16.61278			48.1	23.2	8.5	8.5	70.8	70.8	9				
09/30/92	Chloride	250	16.61278			---	23	5	8	83	28	3				
03/05/93	Chloride	250	16.61278			59.2	23.5	---	<10	101	22.5	<10				
09/21/93	Chloride	250	16.61278			90	31.8	13.7	13.7	20	26	<10				
03/23/94	Chloride	250	16.61278			88.6	38.7	10.4	14.1	65.1	29.2	<10				
09/16/94	Chloride	250	16.61278			79	41	NT	16	82	21	<10				
03/16/95	Chloride	250	16.61278			55	45	NT	12	76	27	<10				
09/13/95	Chloride	250	16.61278			52	42	NT	15	69	22	15				
03/28/96	Chloride	250	16.61278	9		67	47	NT	13	173	22	8.9	30			
06/20/96	Chloride	250	16.61278	6.7		NT	NT	NT	NT	NT	NT	NT	44			
09/13/96	Chloride	250	16.61278	5.1		129	48.6	Dry	14.9	5.3	23.6	7.1	54.2			
03/19/97	Chloride	250	16.61278	<10		153	53	<10	32	23	38	17	96			
06/18/97	Chloride	250	16.61278	<10		125	NT	NT	NT	NT	NT	NT	95			
08/30/97	Chloride	250	16.61278	<10		109	49	DRY	25	30	19	<10	86			
03/10/98	Chloride	250	16.61278	<10		120	49	DRY	41	72	24	10	37			
09/21/98	Chloride	250	16.61278	<10		93	38	DRY	33	31	19	10	81			
03/18/99	Chloride	250	16.61278	<10		97	38	DRY	31	83	21	15	29			
09/21/99	Chloride	250	16.61278	<10		73	31	DRY	31	52	20	26	67			
03/21/2000	Chloride	250	16.61278	NT		249	28	DRY	25	55	23	45	NT			
06/28/2000	Chloride	250	16.61278	NT	28	NT	NT	DRY	NT	NT	NT	NT	NT	42	65	~~285~~
09/28/2000	Chloride	250	16.61278	<10	59	78	39	DRY	31	124	24	13	DRY	36	22	226
12/27/2000	Chloride	250	16.61278	NT	46	NT	NT	Dry	NT	NT	NT	NT	NT	49	46	210
03/28/2001	Chloride	250	16.61278	12	38	122	26	12	27	229	24	105	87	40	54	74
09/02/2001	Chloride	250	16.61278	<10	48	96	26	NT	38	135	29	56	150	45	23	71
03/19/2002	Chloride	250	16.61278	10	73	159	37	Dry	32	142	53	52	179	49	56	119
09/19/2002	Chloride	250	16.61278	10	67	120	26	Dry	31	181	44	25	111	43	35	72
03/14/2003	Chloride	250	16.61278	<10	85	102	30	Dry	25	163	~~383~~	34	181	53	30	129
09/29/2003	Chloride	250	16.61278	10	52	103	22	Dry	41	165	30	23	141	45	25	81
03/08/2004	Chloride	250	16.61278	10	71	143	14	25	50	197	45	43	149	42	47	94
09/27/2004	Chloride	250	16.61278	12	56	100	15	25	35	49	51	21	114	30	43	60
03/17/2005	Chloride	250	16.61278	15	69	96	16	25	46	125	48	30	235	29	27	37
09/22/2005	Chloride	~~250~~	16.61278	16	62	75	19	DRY	29	133	45	21	119	27	53	43
Mean				10.52727	57.91667	98.88	31.74613	14.12222	24.75667	90.6	44.02414	24.464	104.26	40.76923	40.46154	106.25
Standard Deviation (STD)				3.042753	15.61227	41.40014	11.21521	8.322764	12.15011	59.39312	65.31199	21.95632	54.27877	7.826521	13.7819	69.8655
Mean + 2 STD				16.61278	89.14121	181.6803	54.17655	30.76775	49.05688	209.3862	174.6481	68.37664	212.8175	56.42227	68.02534	245.981

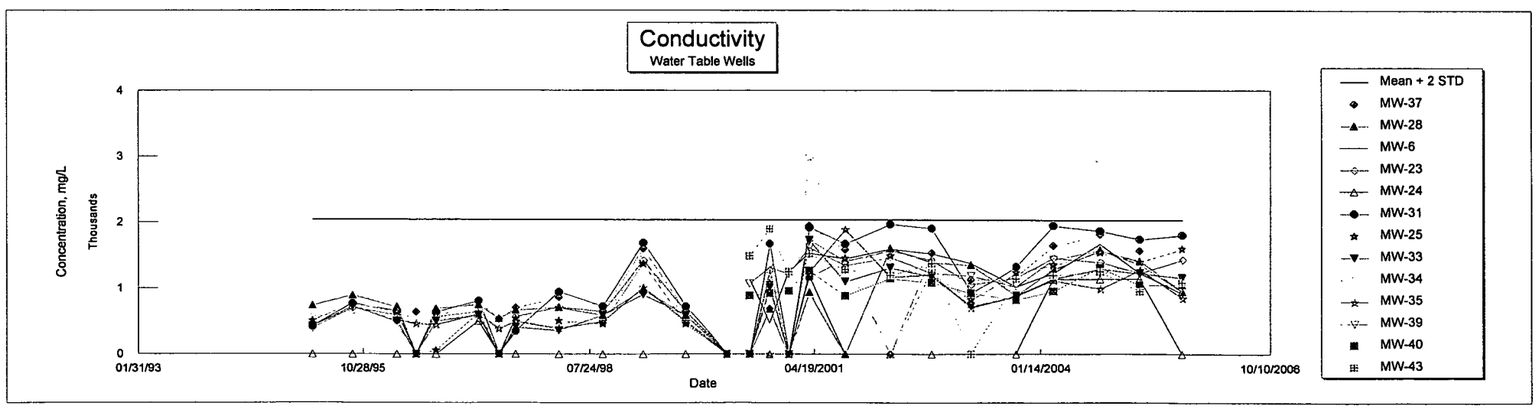


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

			MEAN +	WATER TABLE WELLS												
DATE	PARAMETER	ACTION LEVEL	2 STD WT	U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Chromium, dissolved	0.1	0.03			<0.03	<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Chromium, dissolved	0.1	0.03			<0.03	<0.03	---	<0.03	<0.03	---	<0.03				
01/23/92	Chromium, dissolved	0.1	0.03			<0.03	<0.03	---	<0.03	<0.03	<0.03	<0.03				
03/23/92	Chromium, dissolved	0.1	0.03			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Chromium, dissolved	0.1	0.03			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Chromium, dissolved	0.1	0.03	<0.03		NT	NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Chromium, dissolved	0.1	0.03	<0.03		NT	NT	NT	NT	NT	NT	NT	<0.03			
09/13/96	Chromium, dissolved	0.1	0.03	<0.03		NT	NT	Dry	NT	NT	NT	NT	<0.03			
03/19/97	Chromium, dissolved	0.1	0.03	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Chromium, dissolved	0.1	0.03	<0.03		<0.03	NT	NT	NT	NT	NT	NT	<0.03			
08/30/97	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Chromium, dissolved	0.1	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Chromium, dissolved	0.1	0.03	NT	<0.03	NT	NT	DRY	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/28/2000	Chromium, dissolved	0.1	0.03	NT	NT	<0.03	NT	DRY	NT	NT	NT	NT	DRY	<0.03	<0.03	<0.03
12/27/2000	Chromium, dissolved	0.1	0.03	NT	<0.03	NT	NT	Dry	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
03/28/2001	Chromium, dissolved	0.1	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/02/2001	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
03/16/95	Conductivity, us/cm	--	2028.966			740	390	DRY	420	510	420	550				
09/13/95	Conductivity, us/cm	--	2028.966			890	690	DRY	760	770	720	660				
03/28/96	Conductivity, us/cm	--	2028.966	500		720	590	DRY	650	640	500	460	520			
06/20/96	Conductivity, us/cm	--	2028.966	640		NT	NT	NT	NT	NT	NT	NT	460			
09/13/96	Conductivity, us/cm	--	2028.966	560		690	560	Dry	630	60	500	570	440			
03/19/97	Conductivity, us/cm	--	2028.966	800		750	640	500	800	620	590	580	600			
06/18/97	Conductivity, us/cm	--	2028.966	530		540	NT	NT	NT	NT	NT	NT	380			
08/30/97	Conductivity, us/cm	--	2028.966	700		670	560	DRY	350	540	410	490	490			
03/10/98	Conductivity, us/cm	--	2028.966	860		710	710	DRY	940	510	360	470	390			
09/21/98	Conductivity, us/cm	--	2028.966	650		590	640	DRY	720	460	590	540	490			
03/18/99	Conductivity, us/cm	--	2028.966	1600		976	1414	DRY	1683	1370	902	1438	1005			
09/21/99	Conductivity, us/cm	--	2028.966	650		590	640	DRY	720	460	590	540	490			
03/21/2000	Conductivity, us/cm	--	2028.966	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Conductivity, us/cm	--	2028.966	NT	1138	NT	NT	DRY	NT	NT	NT	NT	NT	1074	884	1487
09/28/2000	Conductivity, us/cm	--	2028.966	688	466	686	1268	DRY	1673	1083	1009	1209	DRY	1324	923	1895
12/27/2000	Conductivity, us/cm	--	2028.966	NT	1252	NT	NT	Dry	NT	NT	NT	NT	NT	1224	960	1246
03/28/2001	Conductivity, us/cm	--	2028.966	1949	1532	938	1730	1190	1919	1161	1730	3000	1246	1622	1266	1520
09/02/2001	Conductivity, us/cm	--	2028.966	1583	1446	NT	1404	NT	1670	1455	1098	1455	1889	1354	885	1277
03/19/2002	Conductivity, us/cm	--	2028.966	NT	1590	1607	1570	Dry	1966	1490	1313	NT	1167	1470	1146	1190
09/19/2002	Conductivity, us/cm	--	2028.966	1530	1521	1395	1420	Dry	1903	1225	1182	1287	1209	1235	1081	1368
03/14/2003	Conductivity, us/cm	--	2028.966	1129	1379	1358	1060	Dry	928	833	732	1020	709	1201	926	
09/29/2003	Conductivity, us/cm	--	2028.966	1185	1018	890	1159	Dry	1328	1241	890	1055	886	1035	819	1142
03/08/2004	Conductivity, us/cm	--	2028.966	1647	1225	1294	1460	1138	1947	1360	1154	1237	1124	1446	955	1192
09/27/2004	Conductivity, us/cm	--	2028.966	1819	1673	1580	1398	1138	1870	1546	1300	1218	995	1588	1310	1254
03/17/2005	Conductivity, us/cm	--	2028.966	1564	1225	1413	1229	1138	1739	1407	1228	1432	1275	1364	1044	947
09/22/2005	Conductivity, us/cm	--	2028.966	1029	919	948	1431	DRY	1805	1598	1160	929	852	949	1049	1078
Mean				1080.65	1260.308	951.1905	1045.857	1020.8	1258.143	968.5238	875.1429	1007	830.85	1298.923	1019.077	1299.667
Standard Deviation (STD)				474.1581	315.3763	336.0367	409.992	261.1776	568.9997	445.5651	365.6651	581.2883	393.2686	197.8191	143.7976	236.3258
Mean + 2 STD				2028.966	1891.06	1623.264	1865.841	1543.155	2396.142	1859.654	1606.473	2169.577	1617.387	1694.561	1306.672	1772.318

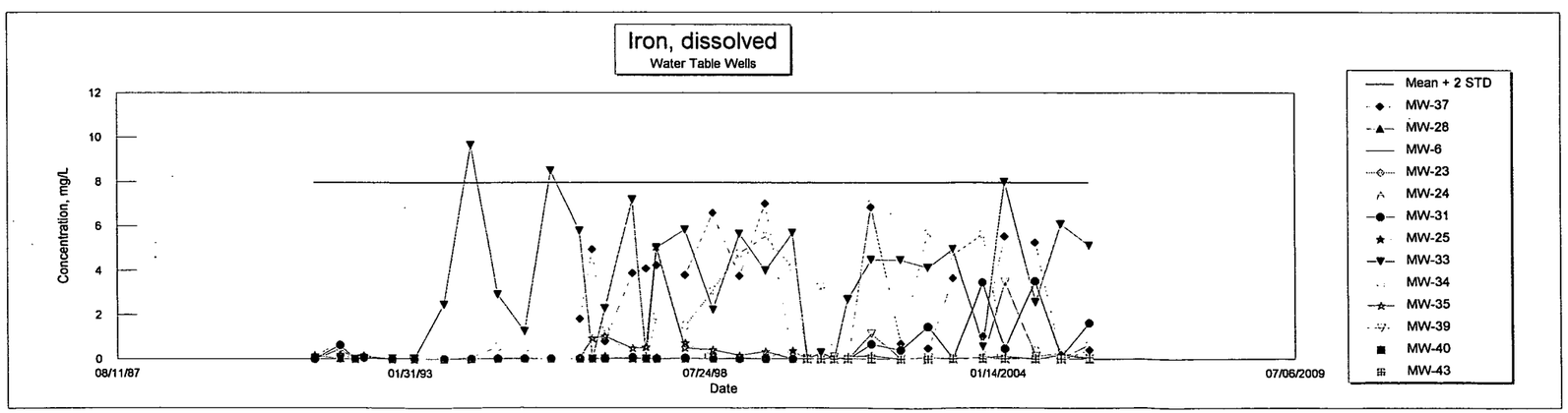


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Copper, dissolved	1.3	0.03			<0.03	<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Copper, dissolved	1.3	0.03			<0.03	<0.03	---	<0.03	<0.03	---	<0.03				
01/23/92	Copper, dissolved	1.3	0.03			<0.03	<0.03	---	<0.03	<0.03	<0.03	<0.03				
03/23/92	Copper, dissolved	1.3	0.03			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Copper, dissolved	1.3	0.03			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Copper, dissolved	1.3	0.03	<0.03		NT	NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Copper, dissolved	1.3	0.03	<0.03		NT	NT	NT	NT	NT	NT	NT	<0.03			
09/13/96	Copper, dissolved	1.3	0.03	<0.03		NT	NT	Dry	NT	NT	NT	NT	<0.03			
03/19/97	Copper, dissolved	1.3	0.03	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Copper, dissolved	1.3	0.03	<0.03		<0.03	NT	NT	NT	NT	NT	NT	<0.03			
08/30/97	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Copper, dissolved	1.3	0.03	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Copper, dissolved	1.3	0.03	NT	<0.03	NT	NT	DRY	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/28/2000	Copper, dissolved	1.3	0.03	NT	NT	<0.03	NT	DRY	NT	NT	NT	NT	DRY	<0.03	<0.03	<0.03
12/27/2000	Copper, dissolved	1.3	0.03	NT	<0.03	NT	NT	Dry	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
03/28/2001	Copper, dissolved	1.3	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/02/2001	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Copper, dissolved	1.3	0.03	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

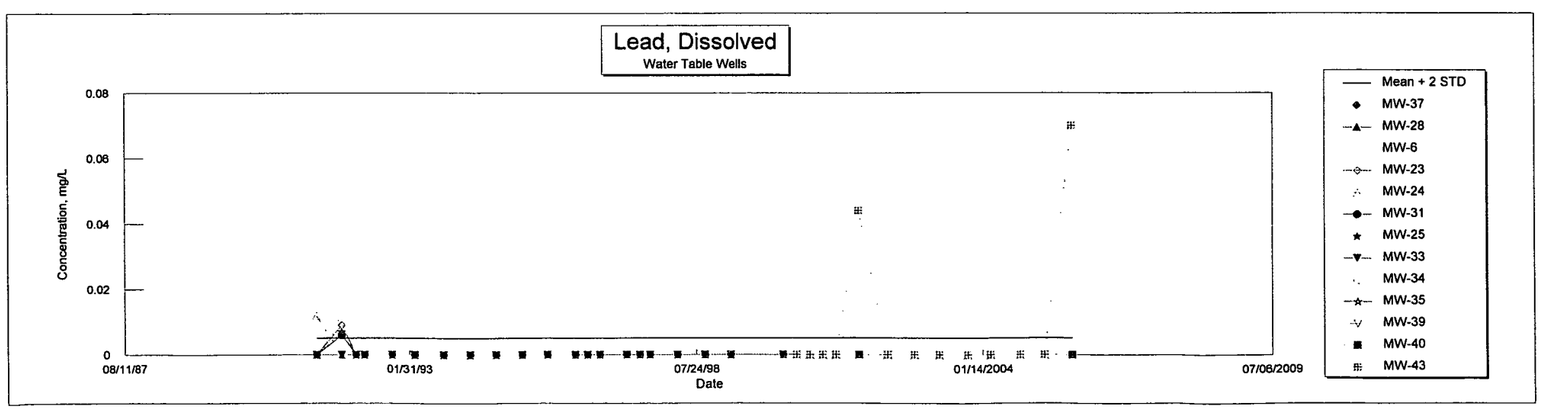
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Iron, dissolved	--	7.945331			0.159	<0.03	<0.03	<0.03	0.177	---	0.133				
10/15/91	Iron, dissolved	--	7.945331			0.035	0.452	---	0.636	0.205	---	0.767				
01/23/92	Iron, dissolved	--	7.945331			<0.03	<0.03	---	<0.03	<0.03	<0.03	<0.03				
03/23/92	Iron, dissolved	--	7.945331			0.164	<0.03	0.076	0.068	0.121	0.052	<0.03				
09/30/92	Iron, dissolved	--	7.945331			---	<0.03	<0.03	<0.03	<0.03	0.033	0.043				
03/05/93	Iron, dissolved	--	7.945331			<0.03	<0.03	---	<0.03	<0.03	0.035	<0.03				
09/21/93	Iron, dissolved	--	7.945331			<0.03	<0.03	<0.03	<0.03	<0.03	2.46	0.05				
03/23/94	Iron, dissolved	--	7.945331			<0.03	<.03	0.058	<0.03	<0.03	9.65	0.084				
09/16/94	Iron, dissolved	--	7.945331			<0.03	<.03	NT	<0.03	0.05	2.9	0.55				
03/16/95	Iron, dissolved	--	7.945331			<0.03	<.03	NT	<0.03	0.038	1.24	0.47				
09/13/95	Iron, dissolved	--	7.945331			<0.03	<.03	NT	<0.03	<0.03	8.5	0.317				
03/28/96	Iron, dissolved	--	7.945331	1.8		<0.03	<0.03	NT	<0.03	<0.03	5.77	0.386	0.067			
06/20/96	Iron, dissolved	--	7.945331	4.94		NT	NT	NT	NT	NT	NT	NT	0.927			
09/13/96	Iron, dissolved	--	7.945331	0.793		<0.03	<0.03	Dry	<0.03	0.134	2.27	1.3	1.02			
03/19/97	Iron, dissolved	--	7.945331	3.87		0.032	<0.03	<0.03	0.072	<0.03	7.18	<0.03	0.484			
06/18/97	Iron, dissolved	--	7.945331	4.07		<0.03	NT	NT	NT	NT	NT	NT	0.523			
08/30/97	Iron, dissolved	--	7.945331	4.22		<0.03	<0.03	DRY	<0.03	0.076	5.02	1.93	5.05			
03/10/98	Iron, dissolved	--	7.945331	3.78		<0.03	<0.03	DRY	0.033	0.717	5.83	1.52	0.5			
09/21/98	Iron, dissolved	--	7.945331	6.59		<0.03	<0.03	DRY	<0.03	0.166	2.2	3.09	0.415			
03/18/99	Iron, dissolved	--	7.945331	3.73		0.044	<0.03	DRY	<0.03	0.131	5.64	4.78	0.162			
09/21/99	Iron, dissolved	--	7.945331	7.01		<0.03	<0.03	DRY	<0.03	0.076	3.99	5.53	0.337			
03/21/2000	Iron, dissolved	--	7.945331	NT		<0.03	<0.03	DRY	<0.03	0.371	5.69	4.15	NT			
06/28/2000	Iron, dissolved	--	7.945331	NT	<0.03	NT	NT	DRY	NT	NT	NT	NT	NT	0.033	<0.03	<0.03
09/28/2000	Iron, dissolved	--	7.945331	0.067	<0.03	<0.03	<0.03	DRY	<0.03	<0.03	0.303	3.3	DRY	<0.03	<0.03	<0.03
12/27/2000	Iron, dissolved	--	7.945331	NT	<0.03	NT	NT	Dry	NT	NT	NT	NT	NT	0.109	<0.03	<0.03
03/28/2001	Iron, dissolved	--	7.945331	<0.03	<0.03	0.039	<0.03	<0.03	<0.03	<0.03	2.7	<0.03	0.108	<0.03	<0.03	<0.03
09/02/2001	Iron, dissolved	--	7.945331	6.85	<0.03	<0.03	<0.03	NT	0.672	<0.03	4.47	6.97	0.168	1.15	<0.03	0.044
03/19/2002	Iron, dissolved	--	7.945331	0.713	<0.03	<0.03	<0.03	Dry	0.41	<0.03	4.46	0.654	<0.03	0.04	<0.03	<0.03
09/19/2002	Iron, dissolved	--	7.945331	0.496	<0.03	<0.03	<0.03	Dry	1.46	<0.03	4.12	5.65	<0.03	0.087	<0.03	<0.03
03/14/2003	Iron, dissolved	--	7.945331	3.64	0.035	<0.03	<0.03	Dry	<0.03	<0.03	4.95	4.67	<0.03	0.041	<0.03	<0.03
09/29/2003	Iron, dissolved	--	7.945331	1.02	<0.030	<0.03	<0.030	Dry	3.44	<0.030	0.556	5.63	0.078	0.041	<0.030	<0.030
03/08/2004	Iron, dissolved	--	7.945331	5.52	<0.030	<0.03	0.033	<0.03	0.463	0.121	7.99	0.231	0.109	3.46	<0.030	<0.030
09/27/2004	Iron, dissolved	--	7.945331	5.25	<0.030	<0.03	<0.030	<0.03	3.51	0.034	2.56	0.39	<0.030	0.136	<0.030	<0.030
03/17/2005	Iron, dissolved	--	7.945331	<0.030	<0.030	0.222	<0.030	<0.03	0.121	0.073	6.07	0.046	<0.030	0.288	<0.030	<0.030
09/22/2005	Iron, dissolved	--	7.945331	0.416	<0.030	<0.030	<0.030	DRY	1.63	0.068	5.11	0.666	0.042	0.033	<0.030	0.07
Mean				3.409211	0.035	0.099286	0.2425	0.067	1.042917	0.159875	3.991036	2.050269	0.666	0.492545	ERR	0.057
Standard Deviation (STD)				2.26806	0	0.073837	0.2095	0.009	1.195623	0.164826	2.617979	2.201397	1.207831	0.988733	ERR	0.013
Mean + 2 STD				7.945331	0.035	0.24696	0.6615	0.085	3.434164	0.489528	9.226994	6.453062	3.081661	2.470011	ERR	0.083



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

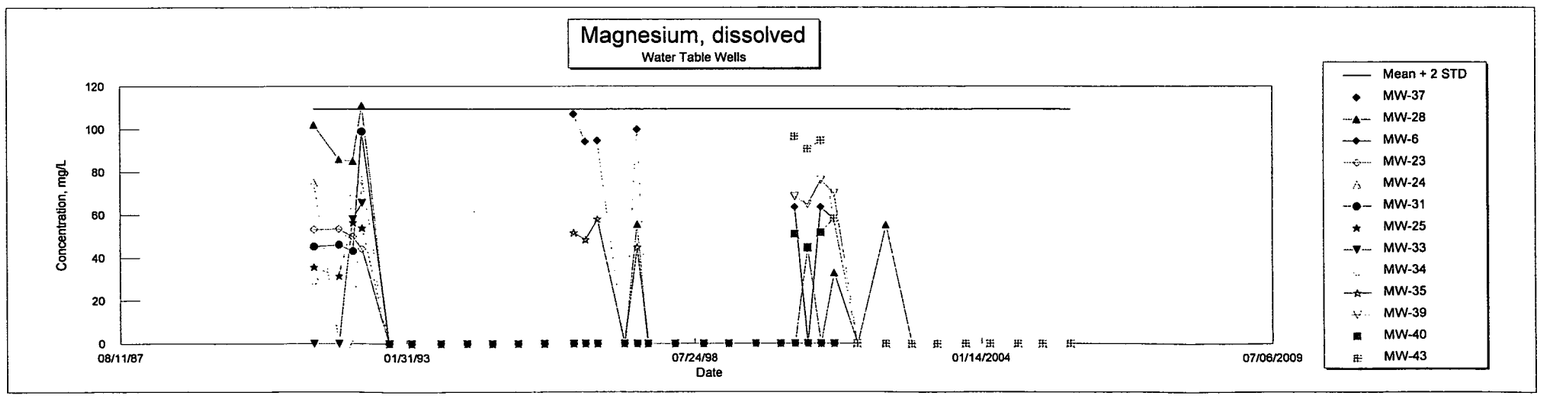
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD	WATER TABLE WELLS												
				U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Lead, dissolved	0.015	0.005			<0.005	<0.005	0.012	<0.005	<0.005	---	<0.005				
10/15/91	Lead, dissolved	0.015	0.005			<0.005	0.009	---	0.006	0.007	---	0.01				
01/23/92	Lead, dissolved	0.015	0.005			<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.005				
03/23/92	Lead, dissolved	0.015	0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				
09/30/92	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Lead, dissolved	0.015	0.005			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Lead, dissolved	0.015	0.005	<0.005		NT	NT	NT	NT	NT	NT	NT	<0.005			
06/20/96	Lead, dissolved	0.015	0.005	<0.005		NT	NT	NT	NT	NT	NT	NT	<0.005			
09/13/96	Lead, dissolved	0.015	0.005	<0.005		NT	NT	Dry	NT	NT	NT	NT	<0.005			
03/19/97	Lead, dissolved	0.015	0.005	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Lead, dissolved	0.015	0.005	<0.005		<0.005	NT	NT	NT	NT	NT	NT	<0.005			
08/30/97	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/99	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Lead, dissolved	0.015	0.005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Lead, dissolved	0.015	0.005	NT	<0.005	NT	NT	DRY	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005
09/28/2000	Lead, dissolved	0.015	0.005	NT	NT	<0.005	NT	DRY	NT	NT	NT	NT	DRY	<0.005	<0.005	<0.005
12/27/2000	Lead, dissolved	0.015	0.005	NT	<0.005	NT	NT	Dry	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005
03/28/2001	Lead, dissolved	0.015	0.005	NT	<0.005	<0.005	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005
09/02/2001	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Lead, dissolved	0.015	0.005	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
Mean				ERR	ERR	ERR	0.009	0.012	0.006	0.007	ERR	0.01	ERR	ERR	ERR	ERR
Standard Deviation (STD)				ERR	ERR	ERR	0	0	0	0	ERR	0	ERR	ERR	ERR	ERR
Mean + 2 STD				ERR	ERR	ERR	0.009	0.012	0.006	0.007	ERR	0.01	ERR	ERR	ERR	ERR



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Magnesium, dissolved	--	109.2752			102	53.2	75.1	45.2	35.6	---	29.5				
10/15/91	Magnesium, dissolved	--	109.2752			85.9	53.4	---	46.1	31.4	---	31.7				
01/23/92	Magnesium, dissolved	--	109.2752			85.2	49.8	---	43.1	56.4	58	68				
03/23/92	Magnesium, dissolved	--	109.2752			111	44.1	76.6	98.9	53.9	65.7	65.7				
09/30/92	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Magnesium, dissolved	--	109.2752			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Magnesium, dissolved	--	109.2752	107		NT	NT	NT	NT	NT	NT	NT	51.8			
06/20/96	Magnesium, dissolved	--	109.2752	94.3		NT	NT	NT	NT	NT	NT	NT	48.6			
09/13/96	Magnesium, dissolved	--	109.2752	94.7		NT	NT	Dry	NT	NT	NT	NT	58.1			
03/19/97	Magnesium, dissolved	--	109.2752	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Magnesium, dissolved	--	109.2752	100		55.7	NT	NT	NT	NT	NT	NT	45			
08/30/97	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Magnesium, dissolved	--	109.2752	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Magnesium, dissolved	--	109.2752	NT	63.7	NT	NT	DRY	NT	NT	NT	NT	NT	68.7	51.1	96.7
09/28/2000	Magnesium, dissolved	--	109.2752	NT	NT	44.6	NT	DRY	NT	NT	NT	NT	DRY	64.9	44.9	90.9
12/27/2000	Magnesium, dissolved	--	109.2752	NT	63.7	NT	NT	Dry	NT	NT	NT	NT	NT	76.4	51.9	94.7
03/28/2001	Magnesium, dissolved	--	109.2752	NT	58.1	32.9	NT	NT	NT	NT	NT	NT	NT	70.2	58.4	58.4
09/02/2001	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Magnesium, dissolved	--	109.2752	NT	NT	55.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Magnesium, dissolved	--	109.2752	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT

Mean	99	61.83333	71.5875	50.125	75.85	58.325	44.325	61.85	48.725	50.875	70.05	51.575	85.175
Standard Deviation (STD)	5.137606	2.639865	26.47619	3.761233	0.75	23.45127	10.96207	3.85	18.1599	4.815275	4.143972	4.781932	15.5983
Mean + 2 STD	109.2752	67.11306	124.5399	57.64747	77.35	105.2275	66.24913	69.55	85.04479	60.50555	78.33794	61.13886	116.3716

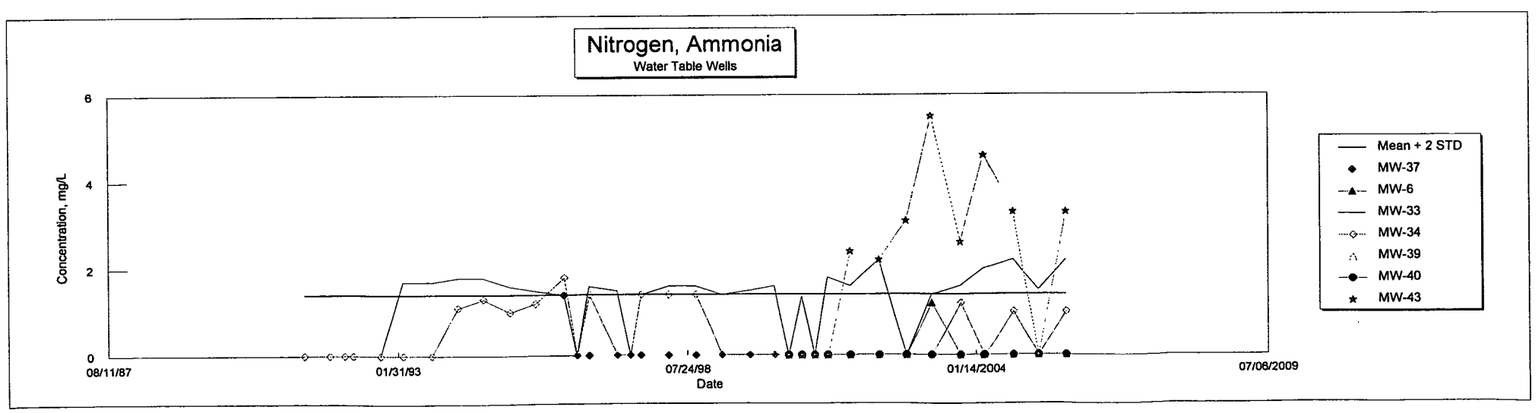


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Mercury, dissolved	0.002	0.0005			<0.001	<0.001	<0.001	<0.001	<0.001	---	<0.001				
10/15/91	Mercury, dissolved	0.002	0.0005			<0.0005	<0.0005	---	<0.0005	<0.0005	---	<0.0005				
01/23/92	Mercury, dissolved	0.002	0.0005			<0.0005	<0.0005	---	<0.0005	<0.0005	<0.0005	<0.0005				
03/23/92	Mercury, dissolved	0.002	0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
09/30/92	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Mercury, dissolved	0.002	0.0005			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Mercury, dissolved	0.002	0.0005	<0.0005		NT	NT	NT	NT	NT	NT	NT	<0.0005			
06/20/96	Mercury, dissolved	0.002	0.0005	<0.0005		NT	NT	NT	NT	NT	NT	NT	<0.0005			
09/13/96	Mercury, dissolved	0.002	0.0005	<0.0005		NT	NT	Dry	NT	NT	NT	NT	<0.0005			
03/19/97	Mercury, dissolved	0.002	0.0005	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Mercury, dissolved	0.002	0.0005	<0.0005		<0.0005	NT	NT	NT	NT	NT	NT	<0.0005			
08/30/97	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/28/2000	Mercury, dissolved	0.002	0.0005	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Mercury, dissolved	0.002	0.0005	NT	<0.0005	NT	NT	DRY	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
09/28/2000	Mercury, dissolved	0.002	0.0005	NT	NT	<0.0005	NT	DRY	NT	NT	NT	NT	DRY	<0.0005	<0.0005	<0.0005
12/27/2000	Mercury, dissolved	0.002	0.0005	NT	<0.0005	NT	NT	Dry	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
03/28/2001	Mercury, dissolved	0.002	0.0005	NT	<0.0005	<0.0005	NT	NT	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
09/02/2001	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Mercury, dissolved	0.002	0.0005	NT	NT	<0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

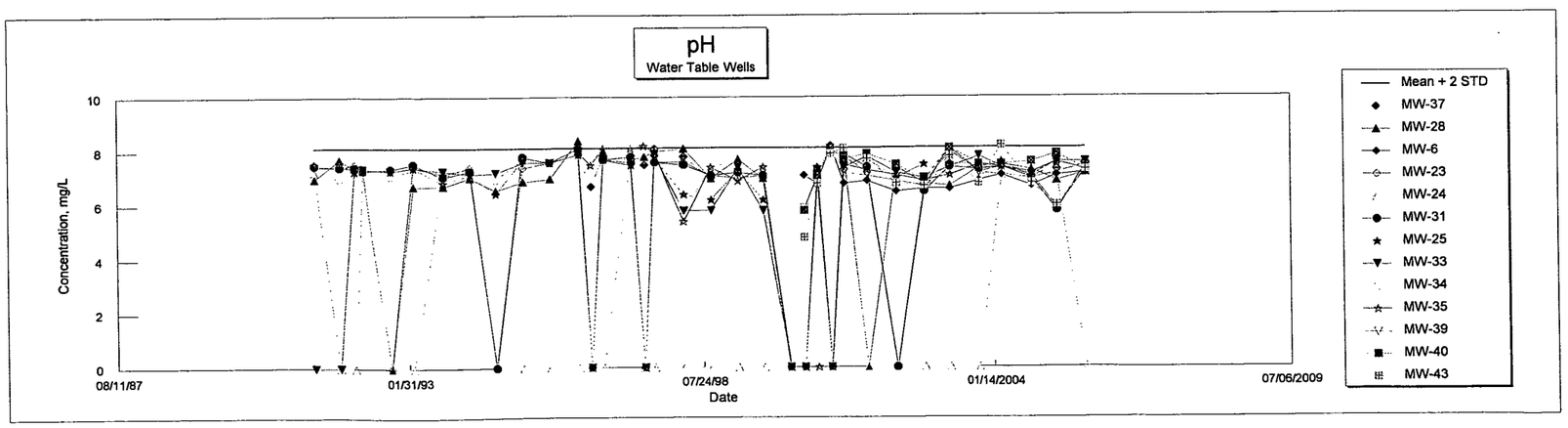
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Nitrogen, Ammonia	--	1.4			<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5				
10/15/91	Nitrogen, Ammonia	--	1.4			<0.5	<0.5	---	<0.5	<0.5	---	<0.5				
01/23/92	Nitrogen, Ammonia	--	1.4			<1.0	<1.0	---	<1.0	<1.0	<1.0	<1.0				
03/23/92	Nitrogen, Ammonia	--	1.4			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
09/30/92	Nitrogen, Ammonia	--	1.4			---	<1	<1	<1	<1	<1	<1				
03/05/93	Nitrogen, Ammonia	--	1.4			<1	<1	---	<1	<1	1.7	<1				
09/21/93	Nitrogen, Ammonia	--	1.4			<1	<1	<1	<1	<1	1.7	<1				
03/23/94	Nitrogen, Ammonia	--	1.4			<1	<1	<1	<1	<1	1.8	1.1				
09/16/94	Nitrogen, Ammonia	--	1.4			<1	<1	NT	<1	<1	1.8	1.3				
03/16/95	Nitrogen, Ammonia	--	1.4			<1	<1	NT	<1	<1	1.6	1				
09/13/95	Nitrogen, Ammonia	--	1.4			<1	<1	NT	<1	<1	1.5	1.2				
03/28/96	Nitrogen, Ammonia	--	1.4	1.4		<1	<1	NT	<1	<1	1.4	1.8	<1			
06/20/96	Nitrogen, Ammonia	--	1.4	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	Nitrogen, Ammonia	--	1.4	<1		<1	<1	Dry	<1	<1	1.6	1.4	<1			
03/19/97	Nitrogen, Ammonia	--	1.4	<1		<1	<1	<1	<1	<1	1.5	<1	<1			
06/18/97	Nitrogen, Ammonia	--	1.4	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	Nitrogen, Ammonia	--	1.4	<1		<1	<1	DRY	<1	<1	1.4	1.4	<1			
03/10/98	Nitrogen, Ammonia	--	1.4	<1		<1	<1	DRY	<1	<1	1.6	1.4	<1			
09/21/98	Nitrogen, Ammonia	--	1.4	<1		<1	<1	DRY	<1	<1	1.6	1.4	<1			
03/18/99	Nitrogen, Ammonia	--	1.4	<1		<1	<1	DRY	<1	<1	1.4	<1	<1			
09/21/99	Nitrogen, Ammonia	--	1.4	<1		<1	<1	DRY	<1	<1	1.5	<1	<1			
03/21/2000	Nitrogen, Ammonia	--	1.4	NT		<1	<1	DRY	<1	<1	1.6	<1	NT			
06/28/2000	Nitrogen, Ammonia	--	1.4	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	Nitrogen, Ammonia	--	1.4	<1	<1	<1	<1	DRY	<1	<1	1.35	<1	DRY	<1	<1	<1
12/27/2000	Nitrogen, Ammonia	--	1.4	NT	<1	NT	NT	Dry	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Nitrogen, Ammonia	--	1.4	<1	<1	<1	<1	<1	<1	<1	1.8	<1	<1	<1	<1	<1
09/02/2001	Nitrogen, Ammonia	--	1.4	<1	<1	<1	<1	NT	<1	<1	1.6	<1	<1	<1	<1	2.4
03/19/2002	Nitrogen, Ammonia	--	1.4	<1	<1	<1	<1	Dry	<1	<1	2.2	<1	<1	<1	<1	2.2
09/19/2002	Nitrogen, Ammonia	--	1.4	<1	<1	<1	<1	Dry	<1	<1	<1	<1	<1	<1	<1	3.1
03/14/2003	Nitrogen, Ammonia	--	1.4	<1	1.2	<1	<1	Dry	<1	<1	1.4	<1	<1	<1	<1	5.5
09/29/2003	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	Dry	<1.0	<1.0	1.6	1.2	<1.0	<1	<1.0	2.6
03/08/2004	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1	<1.0	<1.0	<1.0	<1.0	2	<1.0	<1.0	<1	<1.0	4.6
09/27/2004	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1	<1.0	<1.0	<1.0	<1.0	2.2	1	<1.0	<1.0	<1.0	3.3
03/17/2005	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
09/22/2005	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1	<1.0	<1.0	<1.0	<1.0	2.2	1	<1.0	<1.0	<1.0	3.3
	Mean			1.4	1.2	ERR	ERR	ERR	ERR	ERR	1.662	1.266667	ERR	ERR	ERR	3.375
	Standard Deviation (STD)			0	0	ERR	ERR	ERR	ERR	ERR	0.248709	0.224846	ERR	ERR	ERR	1.062721
	Mean + 2 STD			1.4	1.2	ERR	ERR	ERR	ERR	ERR	2.159417	1.716358	ERR	ERR	ERR	5.500441



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
04/23/91	pH	--	8.122409			6.99	7.45	7.25	7.48	7.55	---	7.01				
10/15/91	pH	--	8.122409			7.71	7.42	---	7.42	7.60	---	7.03				
01/23/92	pH	--	8.122409			7.41	7.52	---	7.41	7.27	7.26	7.31				
03/23/92	pH	--	8.122409			7.32	7.33	7.30	7.30	7.39	7.37	7.32				
09/30/92	pH	--	8.122409			---	7.28	---	7.37	7.31	7.3	7.13				
03/05/93	pH	--	8.122409			6.72	7.43	---	7.54	7.41	7.42	7.34				
09/21/93	pH	--	8.122409			6.73	7.19	7.09	7.08	6.85	7.29	7.12				
03/23/94	pH	--	8.122409			7.05	7.4	7.45	7.29	7.16	7.18	7.4				
09/16/94	pH	--	8.122409			6.57				6.46	7.22	6.99				
03/16/95	pH	--	8.122409			6.9	7.4	DRY	7.8	7.7	7.6	7.7				
09/13/95	pH	--	8.122409			7	7.6	DRY	7.6	7.6	7.6	7.6				
03/28/96	pH	--	8.122409	7.9		8.4	8.1	DRY	8.1	7.9	7.9	8	8			
06/20/96	pH	--	8.122409	6.7		NT	NT	NT	NT	NT	NT	NT	7.5			
09/13/96	pH	--	8.122409	7.8		8	7.7	Dry	7.7	7.7	7.7	8	8.1			
03/19/97	pH	--	8.122409	7.7		7.7	7.6	7.7	7.8	7.5	7.5	7.7	8.1			
06/18/97	pH	--	8.122409	7.5		7.8	NT	NT	NT	NT	NT	NT	8.2			
08/30/97	pH	--	8.122409	8.1		8	7.6	DRY	7.6	7.8	7.9	8	8			
03/10/98	pH	--	8.122409	7.8		8.1	7.6	DRY	7.5	6.4	5.8	5.8	5.4			
09/21/98	pH	--	8.122409	7		7	7.1	DRY	7.1	6.2	5.8	7.4	7.4			
03/18/99	pH	--	8.122409	7.3		7.7	7	DRY	7.2	7.3	7.4	7.7	6.9			
09/21/99	pH	--	8.122409	7		7	7.1	DRY	7.1	6.2	5.8	7.4	7.4			
03/21/2000	pH	--	8.122409	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	pH	--	8.122409	NT	7.1	NT	NT	DRY	NT	NT	NT	NT	NT	5.9	5.8	4.8
09/28/2000	pH	--	8.122409	7	6.8	7.4	7	DRY	6.9	7.2	7.3	7.2	NT	7.1	7.1	6.8
12/27/2000	pH	--	8.122409	NT	8.2	NT	NT	Dry	NT	NT	NT	NT	NT	8	8.1	7.9
03/28/2001	pH	--	8.122409	7.3	6.8	7.8	7.8	7.7	7.9	7.5	7.4	7.5	7.5	7.2	7.7	8.1
09/02/2001	pH	--	8.122409	7.7	6.9	NT	7.2	NT	7.4	7.7	7.8	7.3	7.3	7.1	7.9	7.7
03/19/2002	pH	--	8.122409	6.8	6.5	7.4	NT	Dry	NT	7	7.2	7	7.1	6.9	7.5	6.8
09/19/2002	pH	--	8.122409	6.7	6.6	6.8	6.7	Dry	6.5	7.5	7	6.7	6.9	6.7	6.9	6.7
03/14/2003	pH	--	8.122409	7.5	6.6	6.7	8.1	Dry	7.4	7.1	7.4	7.3	7.1	8	8.1	7.8
09/29/2003	pH	--	8.122409	7.5	6.9	7.4	7.2	Dry	7.3	7.4	7.8	7.4	7.5	7.2	7.5	6.8
03/08/2004	pH	--	8.122409	7.1	7.1	7.5	7.4	7.1	7.4	7.6	7.4	7.4	7.4	7.1	7.5	8.2
09/27/2004	pH	--	8.122409	7.1	6.7	7.3	7.1	7.1	7	7	7.1	7.2	7.2	7	7.6	6.8
03/17/2005	pH	--	8.122409	7.3	7.1	6.9	5.9	7.1	5.8	7.5	7.6	7.5	7.6	7.2	7.9	6
09/22/2005	pH	--	8.122409	7.3	7.2	7.2	7.3	DRY	7.5	7.5	7.6	7.4	7.3	7.5	7.3	7.3
Mean				7.338095	6.961538	7.327586	7.342222	7.31	7.338929	7.276667	7.272857	7.328333	7.395	7.146154	7.453846	7.053846
Standard Deviation (STD)				0.392157	0.416096	0.471291	0.421069	0.237627	0.435376	0.448147	0.558415	0.41603	0.597892	0.513832	0.589152	0.908604
Mean + 2 STD				8.122409	7.793731	8.270167	8.184359	7.785254	8.209681	8.17296	8.389688	8.160392	8.590784	8.173819	8.632151	8.871055
Mean - 2 STD				6.553782												

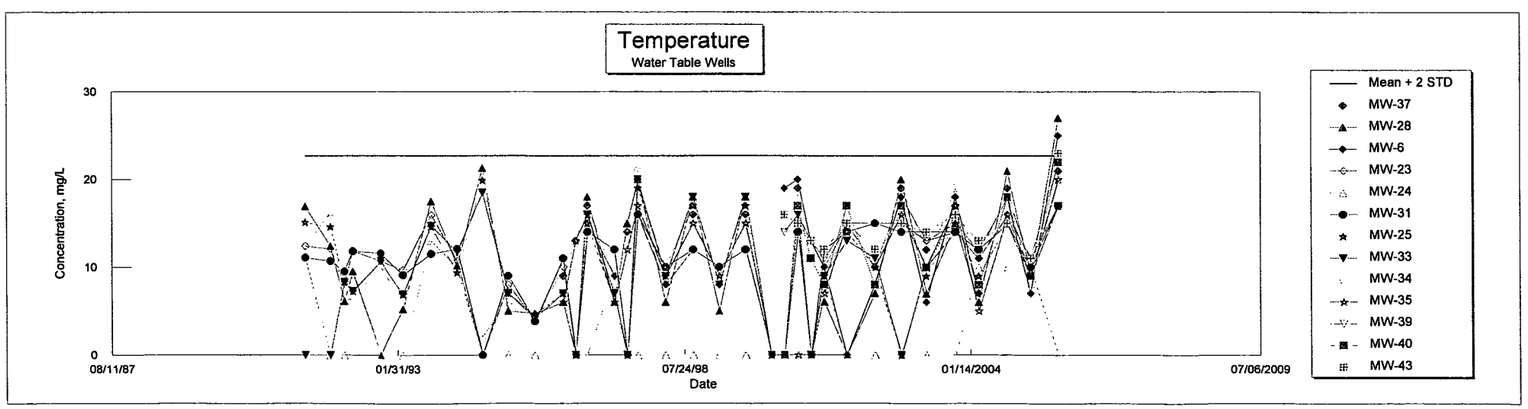


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS												
				U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Phenols	--	0.1			<0.1	<0.1	<0.1	<0.1	<0.1	---	<0.1				
10/15/91	Phenols	--	0.1			<0.1	<0.1	---	<0.1	<0.1	---	<0.1				
01/23/92	Phenols	--	0.1			<0.1	<0.1	---	<0.1	<0.1	<0.1	<0.1				
03/23/92	Phenols	--	0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
09/30/92	Phenols	--	0.1			---	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
03/05/93	Phenols	--	0.1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Phenols	--	0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
03/23/94	Phenols	--	0.1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Phenols	--	0.1			<0.1	<0.1	NT	<0.1	<0.1	<0.1	<0.1				
03/16/95	Phenols	--	0.1			<0.1	<0.1	NT	<0.1	<0.1	<0.1	<0.1				
09/13/95	Phenols	--	0.1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Phenols	--	0.1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/20/96	Phenols	--	0.1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/13/96	Phenols	--	0.1	<0.1		<0.1	<0.1	Dry	<0.1	<0.1	<0.1	<0.1	<0.1			
03/19/97	Phenols	--	0.1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Phenols	--	0.1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
08/30/97	Phenols	--	0.1	<0.1		<0.1	<0.1	DRY	<0.1	<0.1	<0.1	<0.1	<0.1			
03/10/98	Phenols	--	0.1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/21/98	Phenols	--	0.1	<0.1		<0.1	<0.1	DRY	<0.1	<0.1	<0.1	<0.1	<0.1			
03/18/99	Phenols	--	0.1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Phenols	--	0.1	<0.1		<0.1	<0.1	DRY	<0.1	<0.1	<0.1	<0.1	<0.1			
03/21/2000	Phenols	--	0.1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Phenols	--	0.1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	DRY	<0.1	<0.1	<0.1	<0.1	DRY	<0.1	<0.1	<0.1
12/27/2000	Phenols	--	0.1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
03/19/2002	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	Dry	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
03/14/2003	Phenols	--	0.1	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	Dry	<0.100	<0.100	<0.100	<0.100	<0.100	NT	<0.100	<0.100
03/08/2004	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	NT	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
03/17/2005	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	DRY	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

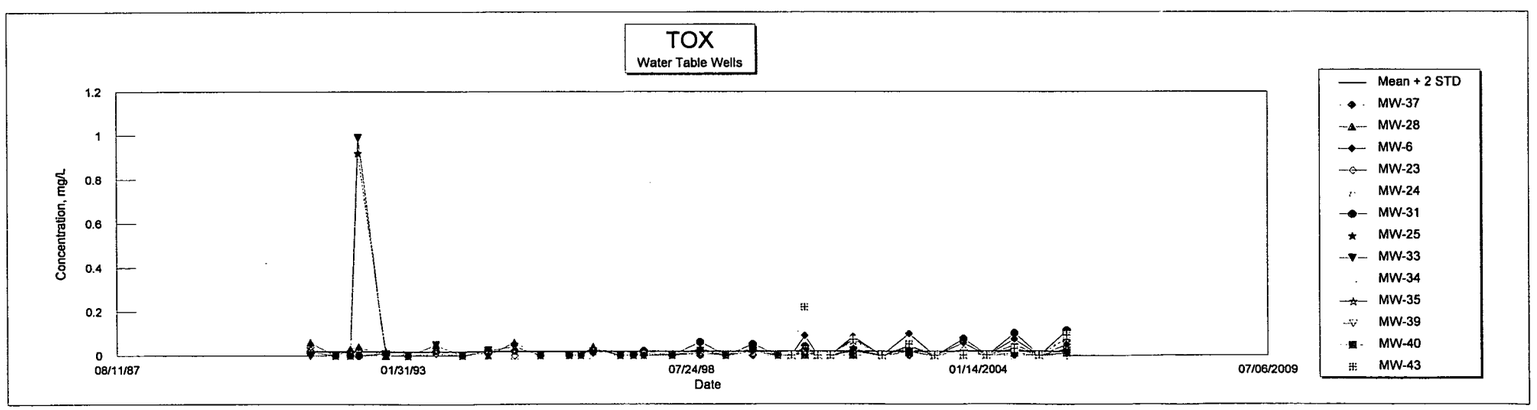
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

				WATER TABLE WELLS												
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
04/23/91	Temperature, celsius	--	22.66966			16.9	12.4	11.2	11.1	15.1	---	12.4				
10/15/91	Temperature, celsius	--	22.66966			12.4	12.1	---	10.7	14.6	---	16.2				
01/23/92	Temperature, celsius	--	22.66966			6.1	8.1	---	9.5	8.3	8.3	6.2				
03/23/92	Temperature, celsius	--	22.66966			9.5	11.8	9.2	11.8	7.2	7.3	6.5				
09/30/92	Temperature, celsius	--	22.66966			---	10.7	---	11.6	10.7	10.7	10.1				
03/05/93	Temperature, celsius	--	22.66966			5.2	9.7	---	9.1	6.9	6.9	6.1				
09/21/93	Temperature, celsius	--	22.66966			17.5	15.9	13	11.5	14.6	14.7	14.8				
03/23/94	Temperature, celsius	--	22.66966			10.2	10.7	10	12.1	9.4	11.7	12				
09/16/94	Temperature, celsius	--	22.66966			21.3				19.9	18.5	2.11				
03/16/95	Temperature, celsius	--	22.66966			5	8	DRY	9	7	7	6				
09/13/95	Temperature, celsius	--	22.66966			4.72	3.89	DRY	3.8	4.63	4.24	4.66				
03/28/96	Temperature, celsius	--	22.66966	9		6	10	DRY	11	7	7	7	6			
06/20/96	Temperature, celsius	--	22.66966	13		NT	NT	NT	NT	NT	NT	NT	13			
09/13/96	Temperature, celsius	--	22.66966	17		18	15	Dry	14	15	16	16	16			
03/19/97	Temperature, celsius	--	22.66966	9		6	9	9	12	6	7	6	6			
06/18/97	Temperature, celsius	--	22.66966	14		15	NT	NT	NT	NT	NT	NT	12			
08/30/97	Temperature, celsius	--	22.66966	20		20	16	DRY	16	19	20	21	17			
03/10/98	Temperature, celsius	--	22.66966	8		6	8	DRY	10	10	9	9	9			
09/21/98	Temperature, celsius	--	22.66966	16		18	12	DRY	12	17	18	17	15			
03/18/99	Temperature, celsius	--	22.66966	8		5	10	DRY	10	9	8	9	9			
09/21/99	Temperature, celsius	--	22.66966	16		18	12	DRY	12	17	18	17	15			
03/21/2000	Temperature, celsius	--	22.66966	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Temperature, celsius	--	22.66966	NT	19	NT	NT	DRY	NT	NT	NT	NT	NT	14	NT	16
09/28/2000	Temperature, celsius	--	22.66966	19	20	17	14	DRY	14	17	16	17	NT	16	17	15
12/27/2000	Temperature, celsius	--	22.66966	NT	13	NT	NT	Dry	NT	NT	NT	NT	NT	13	11	13
03/28/2001	Temperature, celsius	--	22.66966	8	10	6	10	9	12	9	9	6	7	11	8	12
09/02/2001	Temperature, celsius	--	22.66966	17	NT	NT	15	NT	14	14	13	17	15	15	17	15
03/19/2002	Temperature, celsius	--	22.66966	10	8	7	15	Dry	15	10	11	10	10	10	8	12
09/19/2002	Temperature, celsius	--	22.66966	19	18	20	15	Dry	14	NT	NT	19	16	18	17	15
03/14/2003	Temperature, celsius	--	22.66966	12	6	7	13	Dry	14	9	10	10	10	13	10	14
09/29/2003	Temperature, celsius	--	22.66966	17	18	15	14	Dry	14	15	14	19	17	15	16	16
03/08/2004	Temperature, celsius	--	22.66966	11	7	6	11	10	12	9	12	7	5	12	8	13
09/27/2004	Temperature, celsius	--	22.66966	19	18	21	16	10	15	15	15	18	16	18	18	15
03/17/2005	Temperature, celsius	--	22.66966	10	7	9	11	10	10	9	9	8	9	11	9	11
09/22/2005	Temperature, celsius	--	22.66966	21	25	27	17	DRY	17	17	17	20	20	22	22	23
	Mean			13.95238	14.08333	12.26966	11.94103	10.15556	12.0069	11.80448	11.79037	11.669	12.15	14.46154	13.41667	14.61538
	Standard Deviation (STD)			4.358639	6.089038	6.444296	3.005577	1.195465	2.558681	4.270744	4.312519	5.389344	4.304358	3.272623	4.698552	2.869963
	Mean + 2 STD			22.66966	26.26141	25.15825	17.95219	12.54648	17.12426	20.34597	20.41541	22.44769	20.75872	21.00678	22.81377	20.35531



AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Total Organic Halogens	--	0.0175			0.06	<0.01	<0.01	0.016	0.033	---	0.05				
10/15/91	Total Organic Halogens	--	0.0175			<0.01	<0.01	---	<0.01	<0.01	---	<0.01				
01/23/92	Total Organic Halogens	--	0.0175			0.03	0.02	---	<0.01	<0.01	<0.01	<0.01				
03/23/92	Total Organic Halogens	--	0.0175			0.04	<0.01	<0.01	<0.01	0.92	0.99	0.01				
09/30/92	Total Organic Halogens	--	0.0175			---	<0.01	0.01	0.01	0.02	<0.01	0.01				
03/05/93	Total Organic Halogens	--	0.0175			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Total Organic Halogens	--	0.0175			0.05	0.01	0.02	0.02	0.02	0.05	0.02				
03/23/94	Total Organic Halogens	--	0.0175			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Total Organic Halogens	--	0.0175			<0.05	<0.01	NT	0.015	0.024	0.024	<0.01				
03/16/95	Total Organic Halogens	--	0.0175			0.06	<0.01	NT	0.02	0.02	0.04	0.02				
09/13/95	Total Organic Halogens	--	0.0175			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Total Organic Halogens	--	0.0175	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/20/96	Total Organic Halogens	--	0.0175	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/13/96	Total Organic Halogens	--	0.0175	0.01		0.04	0.01	Dry	0.02	0.02	0.01	0.01	0.03			
03/19/97	Total Organic Halogens	--	0.0175	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Total Organic Halogens	--	0.0175	NT		NT	NT	NT	NT	NT	NT	NT	NT			
08/30/97	Total Organic Halogens	--	0.0175	<0.01		0.02	0.01	DRY	0.02	<0.01	<0.01	<0.01	<0.01			
03/10/98	Total Organic Halogens	--	0.0175	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/21/98	Total Organic Halogens	--	0.0175	<0.01		0.03	0.01	DRY	0.06	0.02	0.02	<0.01	0.03			
03/18/99	Total Organic Halogens	--	0.0175	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Total Organic Halogens	--	0.0175	<0.01		0.03	0.03	DRY	0.05	0.02	0.02	0.01	0.02			
03/21/2000	Total Organic Halogens	--	0.0175	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Total Organic Halogens	--	0.0175	<0.01	0.09	0.03	0.01	DRY	0.04	0.02	0.02	0.02	DRY	0.02	<0.01	0.22
12/27/2000	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Total Organic Halogens	--	0.0175	<0.01	0.085	0.022	0.03	NT	0.074	0.065	0.021	0.03	0.028	0.017	<0.01	0.072
03/19/2002	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Total Organic Halogens	--	0.0175	<0.01	0.099	0.033	0.04	Dry	0.043	0.019	0.02	0.021	0.034	<0.01	0.015	0.052
03/14/2003	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Total Organic Halogens	--	0.0175	<0.010	0.057	<0.010	0.025	Dry	0.075	<0.010	<0.010	0.012	<0.010	NT	<0.010	<0.010
03/08/2004	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Total Organic Halogens	--	0.0175	<0.010	0.074	0.03	0.047	NT	0.101	0.034	0.034	0.012	0.029	<0.010	0.01	0.03
03/17/2005	Total Organic Halogens	--	0.0175	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Total Organic Halogens	--	0.0175	0.015	0.05	0.014	0.052	DRY	0.114	0.035	0.0115	0.053	0.029	<0.010	0.079	0.093
				OK												
	Mean			0.0125	0.075833	0.034929	0.0245	0.015	0.0452	0.090714	0.105042	0.021385	0.028571	0.0185	0.034667	0.0934
	Standard Deviation (STD)			0.0025	0.017544	0.013333	0.014818	0.005	0.032023	0.230314	0.267052	0.014123	0.003923	0.0015	0.031415	0.066662
	Mean + 2 STD			0.0175	0.110922	0.061595	0.054137	0.025	0.109247	0.551343	0.639145	0.049631	0.036417	0.0215	0.097496	0.226724

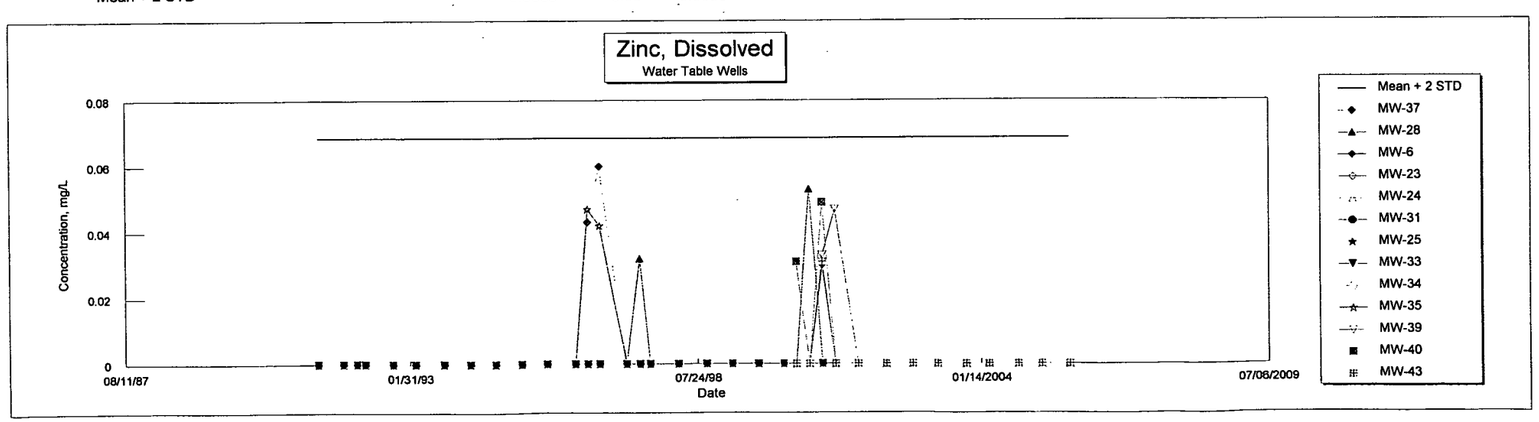


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

			MEAN +	WATER TABLE WELLS												
DATE	PARAMETER	ACTION LEVEL	2 STD WT	U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	Trichloroethene *	5	1			<1	<1	<1	<1	<1	---	<1				
10/15/91	Trichloroethene *	5	1			<1	<1	---	<1	<1	---	<1				
01/23/92	Trichloroethene *	5	1			<1	<1	---	<1	<1	<1	<1				
03/23/92	Trichloroethene *	5	1			<1	<1	<1	<1	<1	<1	<1				
09/30/92	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Trichloroethene *	5	1			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Trichloroethene *	5	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
06/20/96	Trichloroethene *	5	1	<1		NT	NT	NT	NT	NT	NT	NT	<1			
09/13/96	Trichloroethene *	5	1	<1		NT	NT	Dry	NT	NT	NT	NT	<1			
03/19/97	Trichloroethene *	5	1	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Trichloroethene *	5	1	<1		<1	NT	NT	NT	NT	NT	NT	<1			
08/30/97	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Trichloroethene *	5	1	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Trichloroethene *	5	1	NT	<1	NT	NT	DRY	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	Trichloroethene *	5	1	NT	NT	<1	NT	DRY	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	Trichloroethene *	5	1	NT	<1	NT	NT	Dry	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Trichloroethene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	Trichloroethene *	5	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Trichloroethene *	5	1	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	mg/L															
04/23/91	Zinc, dissolved	2	0.0685			<0.03	<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Zinc, dissolved	2	0.0685			<0.03	<0.03	---	<0.03	<0.03	---	<0.03				
01/23/92	Zinc, dissolved	2	0.0685			<0.03	<0.03	---	<0.03	<0.03	<0.03	<0.03				
03/23/92	Zinc, dissolved	2	0.0685			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
03/05/93	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
03/23/94	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
03/16/95	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
09/13/95	Zinc, dissolved	2	0.0685			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Zinc, dissolved	2	0.0685	<0.03		NT	NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Zinc, dissolved	2	0.0685	0.043		NT	NT	NT	NT	NT	NT	NT	0.047			
09/13/96	Zinc, dissolved	2	0.0685	0.06		NT	NT	Dry	NT	NT	NT	NT	0.042			
03/19/97	Zinc, dissolved	2	0.0685	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Zinc, dissolved	2	0.0685	<0.03		0.032	NT	NT	NT	NT	NT	NT	<0.03			
08/30/97	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/10/98	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/98	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/18/99	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
03/21/2000	Zinc, dissolved	2	0.0685	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Zinc, dissolved	2	0.0685	NT	<0.03	NT	NT	DRY	NT	NT	NT	NT	NT	<0.03	0.031	<0.03
09/28/2000	Zinc, dissolved	2	0.0685	NT	NT	0.053	NT	DRY	NT	NT	NT	NT	DRY	<0.03	<0.03	<0.03
12/27/2000	Zinc, dissolved	2	0.0685	NT	0.03	NT	NT	Dry	NT	NT	NT	NT	NT	0.033	0.049	0.031
03/28/2001	Zinc, dissolved	2	0.0685	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	0.047	<0.03	<0.03
09/02/2001	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Zinc, dissolved	2	0.0685	NT	NT	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
Mean				0.0515	0.03	0.0425	ERR	ERR	ERR	ERR	ERR	ERR	0.0445	0.04	0.04	0.031
Standard Deviation (STD)				0.0085	0	0.0105	ERR	ERR	ERR	ERR	ERR	ERR	0.0025	0.007	0.009	0
Mean + 2 STD				0.0685	0.03	0.0635	ERR	ERR	ERR	ERR	ERR	ERR	0.0495	0.054	0.058	0.031



APPENDIX D.2

Concentration Versus Time Tables & Graphs
Upper Aquifer System

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	1,1-Dichloroethene *	7	1				<1	<1	<1	<1	---	<1				
10/15/91	1,1-Dichloroethene *	7	1				<1	<1	<1	<1	---	<1				
01/23/92	1,1-Dichloroethene *	7	1				---	<1	<1	<1	<1	<1				
03/23/92	1,1-Dichloroethene *	7	1				<1	<1	<1	<1	<1	<1				
09/30/92	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
03/05/93	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
09/21/93	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
03/23/94	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
09/16/94	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
03/16/95	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
09/13/95	1,1-Dichloroethene *	7	1				NT	NT	NT	NT	NT	NT				
03/28/96	1,1-Dichloroethene *	7	1	<1			NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,1-Dichloroethene *	7	1	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,1-Dichloroethene *	7	1	<1			NT	NT	NT	NT	NT	NT	<1			
03/19/97	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,1-Dichloroethene *	7	1	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/19/99	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	1,1-Dichloroethene *	7	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	1,1-Dichloroethene *	7	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,1-Dichloroethene *	7	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,1-Dichloroethene *	7	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,1-Dichloroethene *	7	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,1-Dichloroethene *	7	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,1-Dichloroethene *	7	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	1,1,1-Trichloroethane *	200	1				<1	<1	<1	<1	---	<1				
10/15/91	1,1,1-Trichloroethane *	200	1				<1	<1	<1	<1	---	<1				
01/23/92	1,1,1-Trichloroethane *	200	1				---	<1	<1	<1	<1	<1				
03/23/92	1,1,1-Trichloroethane *	200	1				<1	<1	<1	<1	<1	<1				
09/30/92	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
03/05/93	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
09/21/93	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
03/23/94	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
09/16/94	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
03/16/95	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
09/13/95	1,1,1-Trichloroethane *	200	1				NT	NT	NT	NT	NT	NT				
03/28/96	1,1,1-Trichloroethane *	200	1	<1			NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,1,1-Trichloroethane *	200	1	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,1,1-Trichloroethane *	200	1	<1			NT	NT	NT	NT	NT	NT	<1			
03/19/97	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,1,1-Trichloroethane *	200	1	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	1,1,1-Trichloroethane *	200	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	1,1,1-Trichloroethane *	200	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,1,1-Trichloroethane *	200	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,1,1-Trichloroethane *	200	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,1,1-Trichloroethane *	200	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,1,1-Trichloroethane *	200	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

				AQUIFER WELLS												
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	1,2-Dichloroethane *	5	0.4				<1	<1	<1	<1	---	<1				
10/15/91	1,2-Dichloroethane *	5	0.4				<1	<1	<1	<1	---	<1				
01/23/92	1,2-Dichloroethane *	5	0.4				---	<1	<1	<1	<1	<1				
03/23/92	1,2-Dichloroethane *	5	0.4				<1	<1	<1	<1	<1	<1				
09/30/92	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
03/05/93	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
09/21/93	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
03/23/94	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
09/16/94	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
03/16/95	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
09/13/95	1,2-Dichloroethane *	5	0.4				NT	NT	NT	NT	NT	NT				
03/28/96	1,2-Dichloroethane *	5	0.4	<0.4			NT	NT	NT	NT	NT	NT	<0.4			
06/20/96	1,2-Dichloroethane *	5	0.4	<0.4			NT	NT	NT	NT	NT	NT	<0.4			
09/13/96	1,2-Dichloroethane *	5	0.4	<0.4			NT	NT	NT	NT	NT	NT	<0.4			
03/19/97	1,2-Dichloroethane *	5	0.4	<0.4			NT	NT	NT	NT	NT	NT	<0.4			
06/18/97	1,2-Dichloroethane *	5	0.4	<0.4			<0.4	NT	NT	NT	NT	NT	<0.4			
08/30/97	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/99	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	1,2-Dichloroethane *	5	0.4	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	1,2-Dichloroethane *	5	0.4	NT	<0.4	<0.4	NT	NT	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
09/28/2000	1,2-Dichloroethane *	5	0.4	NT	<0.4	<0.4	<0.4	NT	NT	NT	NT	NT	DRY	<0.4	<0.4	<0.4
12/27/2000	1,2-Dichloroethane *	5	0.4	NT	<0.4	<0.4	NT	NT	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
03/28/2001	1,2-Dichloroethane *	5	0.4	NT	<0.4	<0.4	<0.4	NT	NT	NT	NT	NT	NT	<0.4	<0.4	<0.4
09/02/2001	1,2-Dichloroethane *	5	0.4	NT	NT	NT	<0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,2-Dichloroethane *	5	0.4	NT	NT	NT	<0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

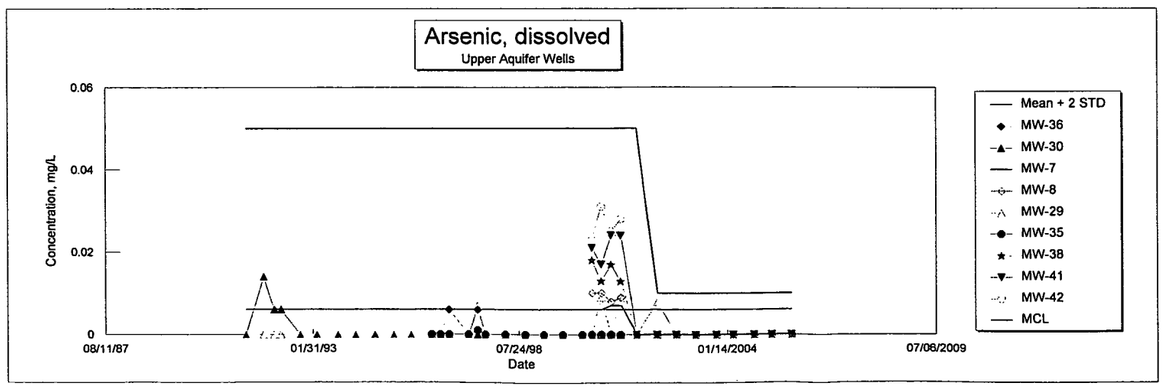
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	1,4-Dichlorobenzene *	75	1				<1	<1	<1	<1	---	<1				
10/15/91	1,4-Dichlorobenzene *	75	1				<1	<1	<1	<1	---	<1				
01/23/92	1,4-Dichlorobenzene *	75	1				---	<1	<1	<1	<1	<1				
03/23/92	1,4-Dichlorobenzene *	75	1				<1	<1	<1	<1	<1	<1				
09/30/92	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
03/05/93	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
09/21/93	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
03/23/94	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
09/16/94	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
03/16/95	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
09/13/95	1,4-Dichlorobenzene *	75	1				NT	NT	NT	NT	NT	NT				
03/28/96	1,4-Dichlorobenzene *	75	1	<1			NT	NT	NT	NT	NT	NT	<1			
06/20/96	1,4-Dichlorobenzene *	75	1	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	1,4-Dichlorobenzene *	75	1	<1			NT	NT	NT	NT	NT	NT	<1			
03/19/97	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	1,4-Dichlorobenzene *	75	1	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	1,4-Dichlorobenzene *	75	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	1,4-Dichlorobenzene *	75	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	1,4-Dichlorobenzene *	75	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	1,4-Dichlorobenzene *	75	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	1,4-Dichlorobenzene *	75	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	1,4-Dichlorobenzene *	75	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Arsenic, dissolved	0.05	0.006				<0.005	<0.023	<0.005	<0.005	---	<0.005				
10/15/91	Arsenic, dissolved	0.05	0.006				<0.005	~~0.014~~	<0.005	<0.005	---	<0.005				
01/23/92	Arsenic, dissolved	0.05	0.006				---	0.006	<0.005	<0.005	<0.005	<0.005				
03/23/92	Arsenic, dissolved	0.05	0.006				<0.005	0.006	<0.005	<0.005	<0.005	<0.005				
09/30/92	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
03/05/93	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
09/21/93	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
03/23/94	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
09/16/94	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
03/16/95	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
09/13/95	Arsenic, dissolved	0.05	0.006				NT	NT	NT	NT	NT	NT				
03/28/96	Arsenic, dissolved	0.05	0.006	<0.005			NT	NT	NT	NT	NT	NT	<0.005			
06/20/96	Arsenic, dissolved	0.05	0.006	<0.005			NT	NT	NT	NT	NT	NT	<0.005			
09/13/96	Arsenic, dissolved	0.05	0.006	0.006			NT	NT	NT	NT	NT	NT	<0.005			
03/19/97	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Arsenic, dissolved	0.05	0.006	0.006			0.007	NT	NT	NT	NT	NT	0.001			
08/30/97	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Arsenic, dissolved	0.05	0.006	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Arsenic, dissolved	0.05	0.006	NT	0.006	0.01	NT	NT	NT	NT	NT	NT	NT	~~0.018~~	~~0.021~~	~~0.023~~
09/28/2000	Arsenic, dissolved	0.05	0.006	NT	0.006	0.01	0.009	NT	NT	NT	NT	NT	DRY	~~0.016~~	~~0.017~~	~~0.031~~
12/27/2000	Arsenic, dissolved	0.05	0.006	NT	0.007	0.008	NT	NT	NT	NT	NT	NT	NT	~~0.017~~	~~0.024~~	~~0.025~~
03/28/2001	Arsenic, dissolved	0.05	0.006	NT	0.007	0.009	0.009	NT	NT	NT	NT	NT	NT	~~0.013~~	~~0.024~~	~~0.028~~
09/02/2001	Arsenic, dissolved	0.05	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Arsenic, dissolved	0.01	0.006	NT	NT	NT	0.008	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Arsenic, dissolved	~~0.01~~	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

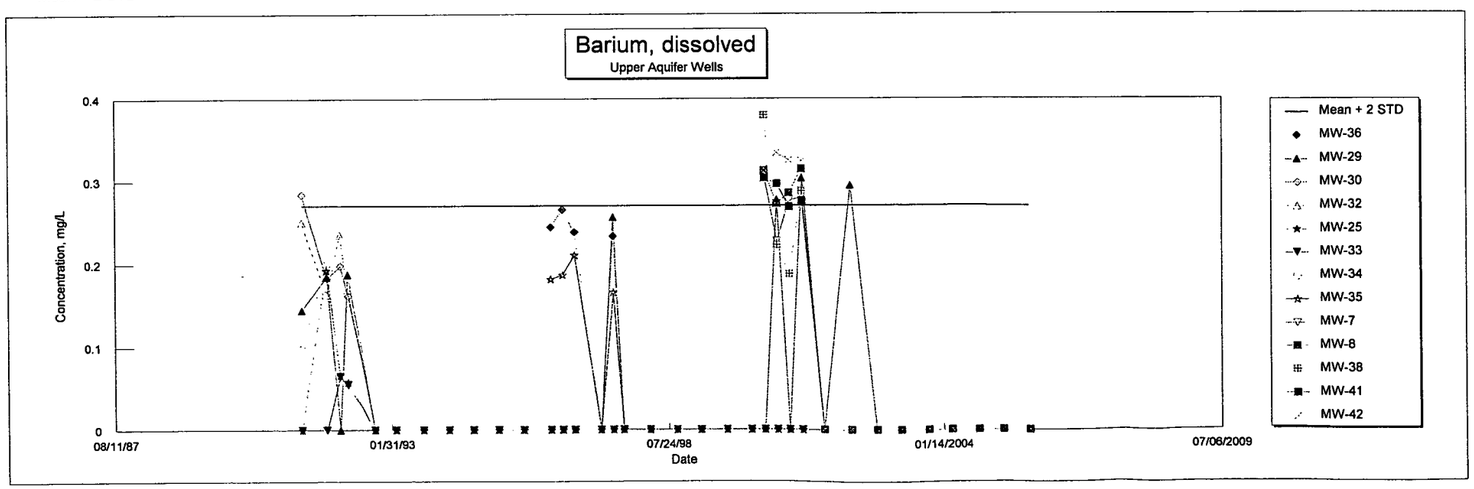
Mean	0.006	0.0065	0.00925	0.00825	0.008667	ERR	ERR	ERR	ERR	0.001	0.01525	0.0215	0.02675
Standard Deviation (STD)	0	0.0005	0.000829	0.000829	0.003771	ERR	ERR	ERR	ERR	0	0.002278	0.002872	0.003031
Mean + 2 STD	0.006	0.0075	0.010908	0.009908	0.016209	ERR	ERR	ERR	ERR	0.001	0.019805	0.027245	0.032812



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Barium, dissolved	2.000	0.270				0.145	0.284	0.251	0.140	---	0.098				
10/15/91	Barium, dissolved	2.000	0.270				0.185	0.183	0.164	0.193	---	0.200				
01/23/92	Barium, dissolved	2.000	0.270				---	0.198	0.236	0.066	0.065	0.063				
03/23/92	Barium, dissolved	2.000	0.270				0.188	0.162	0.170	0.058	0.055	0.055				
09/30/92	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
03/05/93	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
09/21/93	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
03/23/94	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
09/16/94	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
03/16/95	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
09/13/95	Barium, dissolved	2.000	0.270				NT	NT	NT	NT	NT	NT				
03/28/96	Barium, dissolved	2.000	0.270	0.245			NT	NT	NT	NT	NT	NT	0.182			
06/20/96	Barium, dissolved	2.000	0.270	0.266			NT	NT	NT	NT	NT	NT	0.187			
09/13/96	Barium, dissolved	2.000	0.270	0.239			NT	NT	NT	NT	NT	NT	0.211			
03/19/97	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Barium, dissolved	2.000	0.270	0.234			0.257	NT	NT	NT	NT	NT	0.166			
08/30/97	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Barium, dissolved	2.000	0.270	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Barium, dissolved	2.000	0.270	NT	0.307	0.313	NT	NT	NT	NT	NT	NT	NT	0.380	0.304	0.315
09/28/2000	Barium, dissolved	2.000	0.270	NT	0.228	0.273	0.278	NT	NT	NT	NT	NT	DRY	0.223	0.297	0.335
12/27/2000	Barium, dissolved	2.000	0.270	NT	0.277	0.286	NT	NT	NT	NT	NT	NT	NT	0.188	0.269	0.326
03/28/2001	Barium, dissolved	2.000	0.270	NT	0.282	0.315	0.304	NT	NT	NT	NT	NT	NT	0.288	0.276	0.325
09/02/2001	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Barium, dissolved	2.000	0.270	NT	NT	NT	0.295	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mean				0.246	0.2735	0.29675	0.236	0.20675	0.20525	0.11425	0.06	0.104	0.1865	0.26975	0.2865	0.32525
Standard Deviation (STD)				0.012186	0.028623	0.017866	0.057936	0.046397	0.038674	0.05558	0.005	0.057736	0.016132	0.07307	0.014431	0.007084
Mean + 2 STD				0.270372	0.330745	0.332482	0.351872	0.299544	0.282598	0.225411	0.07	0.219473	0.218765	0.415889	0.315362	0.339419



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	Benzene *	5	1				<1	<1	<1	<1	---	<1				
10/15/91	Benzene *	5	1				<1	<1	<1	<1	---	<1				
01/23/92	Benzene *	5	1				---	<1	<1	<1	<1	<1				
03/23/92	Benzene *	5	1				<1	<1	<1	<1	<1	<1				
09/30/92	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
03/05/93	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
09/21/93	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
03/23/94	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
09/16/94	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
03/16/95	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
09/13/95	Benzene *	5	1				NT	NT	NT	NT	NT	NT				
03/28/96	Benzene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
06/20/96	Benzene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	Benzene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
03/19/97	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Benzene *	5	1	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Benzene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Benzene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	Benzene *	5	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	Benzene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Benzene *	5	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	Benzene *	5	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Benzene *	5	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

				AQUIFER WELLS												
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Cadmium, dissolved	0.005	0.001				<0.001	<0.001	<0.001	<0.001	---	<0.001				
10/15/91	Cadmium, dissolved	0.005	0.001				<0.001	<0.001	<0.001	<0.001	---	<0.001				
01/23/92	Cadmium, dissolved	0.005	0.001				---	<0.001	<0.001	<0.001	<0.001	<0.001				
03/23/92	Cadmium, dissolved	0.005	0.001				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				
09/30/92	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
03/05/93	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
09/21/93	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
03/23/94	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
09/16/94	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
03/16/95	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
09/13/95	Cadmium, dissolved	0.005	0.001				NT	NT	NT	NT	NT	NT				
03/28/96	Cadmium, dissolved	0.005	0.001	<0.001			NT	NT	NT	NT	NT	NT	<0.001			
06/20/96	Cadmium, dissolved	0.005	0.001	<0.001			NT	NT	NT	NT	NT	NT	<0.001			
09/13/96	Cadmium, dissolved	0.005	0.001	<0.001			NT	NT	NT	NT	NT	NT	<0.001			
03/19/97	Cadmium, dissolved	0.005	0.001	<0.001			NT	NT	NT	NT	NT	NT	<0.001			
06/18/97	Cadmium, dissolved	0.005	0.001	<0.001			<0.001	NT	NT	NT	NT	NT	<0.001			
08/30/97	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Cadmium, dissolved	0.005	0.001	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
09/28/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
12/27/2000	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
03/28/2001	Cadmium, dissolved	0.005	0.001	NT	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	<0.001	<0.001	<0.001
09/02/2001	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	NT	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

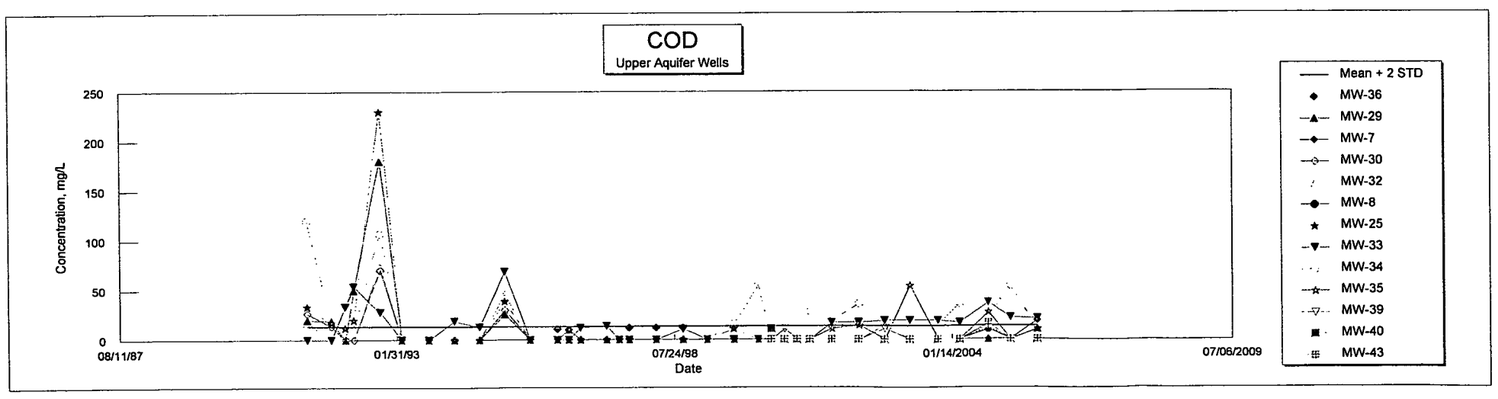
MONITORING WELL SAMPLING RESULTS

				AQUIFER WELLS											
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	Carbon tetrachloride *	5	0.3				<1	<1	<1	<1	---	<1				
10/15/91	Carbon tetrachloride *	5	0.3				<1	<1	<1	<1	---	<1				
01/23/92	Carbon tetrachloride *	5	0.3				---	<1	<1	<1	<1	<1				
03/23/92	Carbon tetrachloride *	5	0.3				<1	<1	<1	<1	<1	<1				
09/30/92	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
03/05/93	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
09/21/93	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
03/23/94	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
09/16/94	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
03/16/95	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
09/13/95	Carbon tetrachloride *	5	0.3				NT	NT	NT	NT	NT	NT				
03/28/96	Carbon tetrachloride *	5	0.3	<0.3			NT	NT	NT	NT	NT	NT	<0.3			
06/20/96	Carbon tetrachloride *	5	0.3	<0.3			NT	NT	NT	NT	NT	NT	<0.3			
09/13/96	Carbon tetrachloride *	5	0.3	<0.3			NT	NT	NT	NT	NT	NT	<0.3			
03/19/97	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Carbon tetrachloride *	5	0.3	<0.3			<0.3	NT	NT	NT	NT	NT	<0.3			
08/30/97	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Carbon tetrachloride *	5	0.3	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	NT	NT	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
09/28/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	<0.3	NT	NT	NT	NT	NT	DRY	<0.3	<0.3	<0.3
12/27/2000	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	NT	NT	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
03/28/2001	Carbon tetrachloride *	5	0.3	NT	<0.3	<0.3	<0.3	NT	NT	NT	NT	NT	NT	<0.3	<0.3	<0.3
09/02/2001	Carbon tetrachloride *	5	0.3	NT	NT	NT	<0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Carbon tetrachloride *	5	0.3	NT	NT	NT	<0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Chemical Oxygen Demand	--	13				20.1	26.3	18	33.4	---	120.1				
10/15/91	Chemical Oxygen Demand	--	13				19.4	13.5	<10	17.2	---	14.3				
01/23/92	Chemical Oxygen Demand	--	13				---	<10	<10	12	33.4	<10				
03/23/92	Chemical Oxygen Demand	--	13				50	<10	<10	20	54	10				
09/30/92	Chemical Oxygen Demand	--	13				180	70	74	230	28	107				
03/05/93	Chemical Oxygen Demand	--	13				---	<10	<10	<10	<10	<10				
09/21/93	Chemical Oxygen Demand	--	13				<10	<10	<10	<10	<10	<10				
03/23/94	Chemical Oxygen Demand	--	13				<10	<10	<10	<10	19	<10				
09/16/94	Chemical Oxygen Demand	--	13				<10	<10	<10	<10	13	<10				
03/16/95	Chemical Oxygen Demand	--	13				26	30	46	39	69	29				
09/13/95	Chemical Oxygen Demand	--	13				<10	<10	<10	<10	<10	<10				
03/28/96	Chemical Oxygen Demand	--	13	11			<10	<10	<10	<10	<10	<10	<10			
06/20/96	Chemical Oxygen Demand	--	13	10			NT	NT	NT	NT	NT	NT	10			
09/13/96	Chemical Oxygen Demand	--	13	<10			<10	<10	<10	<10	12	<10	<10			
03/19/97	Chemical Oxygen Demand	--	13	<10			<10	<10	<10	<10	14	<10	<10			
06/18/97	Chemical Oxygen Demand	--	13	<10			<10	NT	NT	NT	NT	NT	<10			
08/30/97	Chemical Oxygen Demand	--	13	12			<10	<10	<10	<10	<10	<10	<10			
03/10/98	Chemical Oxygen Demand	--	13	12			<10	<10	<10	<10	<10	<10	<10			
09/21/98	Chemical Oxygen Demand	--	13	12			<10	<10	<10	<10	<10	<10	<10			
03/18/99	Chemical Oxygen Demand	--	13	<10			<10	<10	<10	<10	<10	<10	<10			
09/21/99	Chemical Oxygen Demand	--	13	<10			<10	<10	<10	<10	<10	<10	<10			
03/21/2000	Chemical Oxygen Demand	--	13	NT			<10	<10	<10	<10	<10	55	NT			
06/28/2000	Chemical Oxygen Demand	--	13	NT	<10	11	NT	NT	NT	NT	NT	NT	NT	<10	11	<10
09/28/2000	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	<10	<10	DRY	11	<10	<10
12/27/2000	Chemical Oxygen Demand	--	13	NT	<10	<10	NT	NT	NT	NT	NT	NT	NT	<10	<10	<10
03/28/2001	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	<10	28	<10	<10	<10	<10
09/02/2001	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	17	19	11	<10	<10	<10
03/19/2002	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	17	36	14	<10	<10	<10
09/19/2002	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	14	<10	19	15	<10	11	<10	<10
03/14/2003	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	28	55	54	<10	<10	<10
09/29/2003	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	18	17	<10	<10	<10	<10
03/08/2004	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	17	36	<10	<10	<10	<10
09/27/2004	Chemical Oxygen Demand	--	13	<10	<10	10	<10	<10	16	16	37	21	27	16	12	14
03/17/2005	Chemical Oxygen Demand	--	13	<10	<10	<10	<10	<10	<10	<10	22	54	<10	<10	<10	<10
09/22/2005	Chemical Oxygen Demand	--	13	<10	19	<10	10	<10	<10	10	21	10	10	<10	<10	<10
Mean			11.4		19	10.5	50.91667	34.95	33.6	47.2	25.65	40.1	21	12.66667	11.5	14
Standard Deviation (STD)			0.8		0	0.5	59.02165	21.14196	23.33752	69.7403	15.34153	32.88439	15.89549	2.357023	0.5	0
Mean + 2 STD			13		19	11.5	168.96	77.23392	80.27505	186.6806	56.33306	105.8688	52.79098	17.38071	12.5	14

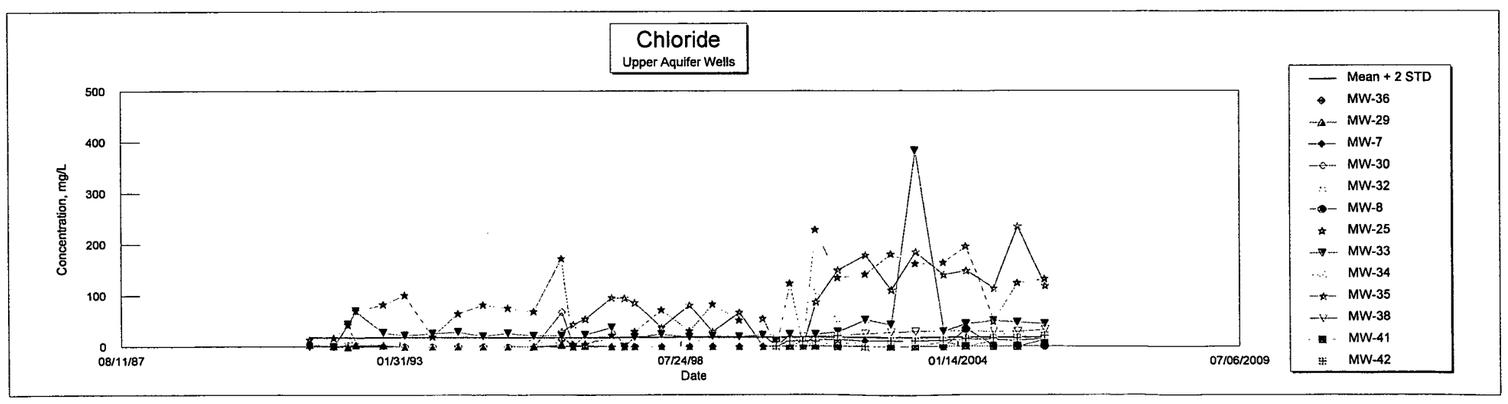


AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	Secondary MCL LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Chloride	250	17.2443				4	2	6.5	13.5	---	6				
10/15/91	Chloride	250	17.2443				1.89	1.41	4.24	17.4	---	6.6				
01/23/92	Chloride	250	17.2443				---	2.6	42.4	43.5	44.6	10				
03/23/92	Chloride	250	17.2443				3.7	2.6	8.5	70.8	70.8	9				
09/30/92	Chloride	250	17.2443				3	2	4	83	28	3				
03/05/93	Chloride	250	17.2443				---	<10	<10	101	22.5	<10				
09/21/93	Chloride	250	17.2443				<10	<10	<10	20	26	<10				
03/23/94	Chloride	250	17.2443				<10	<10	<10	65.1	29.2	<10				
09/16/94	Chloride	250	17.2443				<10	<10	<10	82	21	<10				
03/16/95	Chloride	250	17.2443				<10	<10	<10	76	27	<10				
09/13/95	Chloride	250	17.2443				<10	<10	10	69	22	15				
03/28/96	Chloride	250	17.2443	14			4.2	68	8.2	173	22	8.9	30			
06/20/96	Chloride	250	17.2443	3.8			NT	NT	NT	NT	NT	NT	44			
09/13/96	Chloride	250	17.2443	1.7			2.2	2.6	7.3	5.3	23.6	7.1	54.2			
03/19/97	Chloride	250	17.2443	<10			<10	<10	<10	23	38	17	96			
06/18/97	Chloride	250	17.2443	<10			<10	NT	NT	NT	NT	NT	95			
08/30/97	Chloride	250	17.2443	<10			<10	<10	<10	30	19	<10	86			
03/10/98	Chloride	250	17.2443	<10			<10	<10	<10	72	24	10	37			
09/21/98	Chloride	250	17.2443	<10			<10	<10	<10	31	19	10	81			
03/18/99	Chloride	250	17.2443	<10			<10	<10	<10	83	21	15	29			
09/21/99	Chloride	250	17.2443	<10			<10	<10	<10	52	20	26	67			
03/21/2000	Chloride	250	17.2443	NT			<10	<10	<10	55	23	45	NT			
06/28/2000	Chloride	250	17.2443	NT	<10	<10	NT	NT	NT	NT	NT	NT	NT	15	11	<10
09/28/2000	Chloride	250	17.2443	<10	11	<10	<10	<10	<10	124	24	13	DRY	18	<10	10
12/27/2000	Chloride	250	17.2443	NT	10	<10	NT	NT	NT	NT	NT	NT	NT	19	10	10
03/28/2001	Chloride	250	17.2443	<10	13	<10	<10	<10	<10	229	24	105	87	21	<10	10
09/02/2001	Chloride	250	17.2443	<10	14	<10	<10	<10	10	135	29	56	150	23	10	21
03/19/2002	Chloride	250	17.2443	<10	11	<10	<10	<10	<10	142	53	52	179	26	<10	<10
09/19/2002	Chloride	250	17.2443	<10	11	<10	<10	<10	<10	181	44	25	111	29	<10	11
03/14/2003	Chloride	250	17.2443	<10	12	<10	<10	<10	<10	163	388	34	185	31	<10	11
09/29/2003	Chloride	250	17.2443	<10	13	<10	<10	<10	<10	165	30	23	141	31	10	11
03/08/2004	Chloride	250	17.2443	<10	14	34	<10	<10	19	197	45	43	149	31	<10	15
09/27/2004	Chloride	250	17.2443	<10	14	<10	<10	<10	15	49	51	21	114	30	11	16
03/17/2005	Chloride	250	17.2443	<10	12	<10	<10	<10	12	125	48	30	235	30	10	16
09/22/2005	Chloride	250	17.2443	<10	16	<10	14	<10	22	49	45	21	119	34	12	21

Mean	6.5	12.58333	34	4.712857	11.60143	13.01077	87.89032	44.02414	24.464	104.46	26	10.57143	13.81818
Standard Deviation (STD)	5.37215	1.656217	0	3.877867	23.02829	9.923267	59.31301	65.31199	21.95632	54.56776	5.870395	0.728431	4.063545
Mean + 2 STD	17.2443	15.89577	34	12.46859	57.65802	32.8573	206.5163	174.6481	68.37664	213.5955	37.74079	12.02829	21.94527



AMES-STORY ENVIRONMENTAL LANDFILL

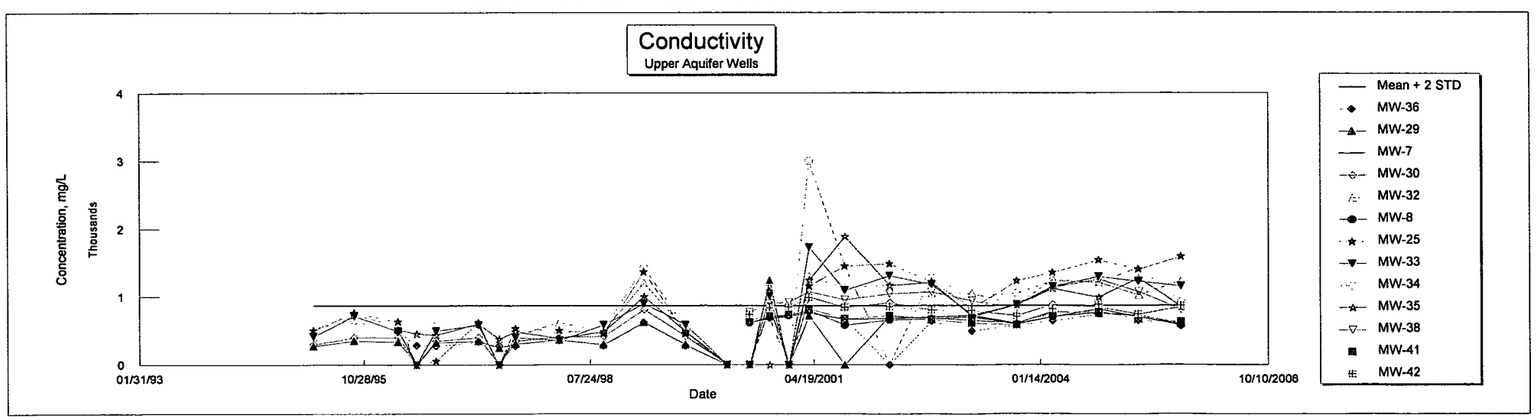
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Chromium, dissolved	0.1	0.03				<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Chromium, dissolved	0.1	0.03				<0.03	<0.03	<0.03	<0.03	---	<0.03				
01/23/92	Chromium, dissolved	0.1	0.03				---	<0.03	<0.03	<0.03	<0.03	<0.03				
03/23/92	Chromium, dissolved	0.1	0.03				<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
03/05/93	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
09/21/93	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
03/23/94	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
09/16/94	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
03/16/95	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
09/13/95	Chromium, dissolved	0.1	0.03				NT	NT	NT	NT	NT	NT				
03/28/96	Chromium, dissolved	0.1	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Chromium, dissolved	0.1	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
09/13/96	Chromium, dissolved	0.1	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
03/19/97	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Chromium, dissolved	0.1	0.03	<0.03			<0.03	NT	NT	NT	NT	NT	<0.03			
08/30/97	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Chromium, dissolved	0.1	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Chromium, dissolved	0.1	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/28/2000	Chromium, dissolved	0.1	0.03	NT	<0.03	<0.03	<0.03	NT	NT	NT	NT	NT	DRY	<0.03	<0.03	<0.03
12/27/2000	Chromium, dissolved	0.1	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
03/28/2001	Chromium, dissolved	0.1	0.03	NT	<0.03	<0.03	<0.03	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/02/2001	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
03/16/95	Conductivity, us/cm	--	869.1374				280	300	390	510	420	550				
09/13/95	Conductivity, us/cm	--	869.1374				360	400	740	770	720	660				
03/28/96	Conductivity, us/cm	--	869.1374	490			340	400	580	640	500	460	520			
06/20/96	Conductivity, us/cm	--	869.1374	290			NT	NT	NT	NT	NT	NT	460			
09/13/96	Conductivity, us/cm	--	869.1374	280			330	350	510	60	500	570	440			
03/19/97	Conductivity, us/cm	--	869.1374	340			350	400	570	620	590	580	600			
06/18/97	Conductivity, us/cm	--	869.1374	280			250	NT	NT	NT	NT	NT	380			
08/30/97	Conductivity, us/cm	--	869.1374	280			310	350	430	540	410	490	490			
03/10/98	Conductivity, us/cm	--	869.1374	410			370	410	630	510	360	470	390			
09/21/98	Conductivity, us/cm	--	869.1374	280			300	420	500	460	590	540	490			
03/18/99	Conductivity, us/cm	--	869.1374	625			628	812	1208	1370	902	1438	1005			
09/21/99	Conductivity, us/cm	--	869.1374	280			300	420	500	460	590	540	490			
03/21/2000	Conductivity, us/cm	--	869.1374	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Conductivity, us/cm	--	869.1374	NT	621	617	NT	NT	NT	NT	NT	NT	NT	782	656	737
09/28/2000	Conductivity, us/cm	--	869.1374	688	680	700	1245	857	1218	1083	1009	1209	DRY	909	716	837
12/27/2000	Conductivity, us/cm	--	869.1374	NT	717	728	NT	NT	NT	NT	NT	NT	NT	923	744	848
03/28/2001	Conductivity, us/cm	--	869.1374	812	764	794	725	1000	1304	1161	1730	3000	1246	1080	826	986
09/02/2001	Conductivity, us/cm	--	869.1374	687	674	586	NT	845	1137	1455	1098	1455	1889	960	681	844
03/19/2002	Conductivity, us/cm	--	869.1374	NT	684	663	724	914	1180	1490	1313	NT	1167	1048	722	854
09/19/2002	Conductivity, us/cm	--	869.1374	640	703	673	686	805	1050	1225	1182	1287	1209	1074	665	800
03/14/2003	Conductivity, us/cm	--	869.1374	499	731	710	658	795	1056	833	732	1020	709	944	614	798
09/29/2003	Conductivity, us/cm	--	869.1374	584	606	593	615	724	886	1241	890	1055	886	844	588	708
03/08/2004	Conductivity, us/cm	--	869.1374	646	704	709	787	886	1256	1360	1154	1237	1124	1142	764	820
09/27/2004	Conductivity, us/cm	--	869.1374	750	822	774	760	848	1216	1546	1300	1218	995	1264	790	890
03/17/2005	Conductivity, us/cm	--	869.1374	650	704	709	733	742	1028	1407	1228	1432	1275	1079	670	745
09/22/2005	Conductivity, us/cm	--	869.1374	638	592	579	611	852	1246	1598	1160	929	852	812	636	872
	Mean			507.45	692.4615	679.6154	541.0476	644.2857	887.381	968.5238	875.1429	1007	830.85	989.3077	697.8462	826.0769
	Standard Deviation (STD)			180.8437	60.51397	66.81149	245.5985	233.6789	320.9401	445.5651	365.6651	581.2883	393.2686	134.4346	67.45123	69.8498
	Mean + 2 STD			869.1374	813.4895	813.2384	1032.245	1111.643	1529.261	1859.654	1606.473	2169.577	1617.387	1258.177	832.7486	965.7765



AMES-STORY ENVIRONMENTAL LANDFILL

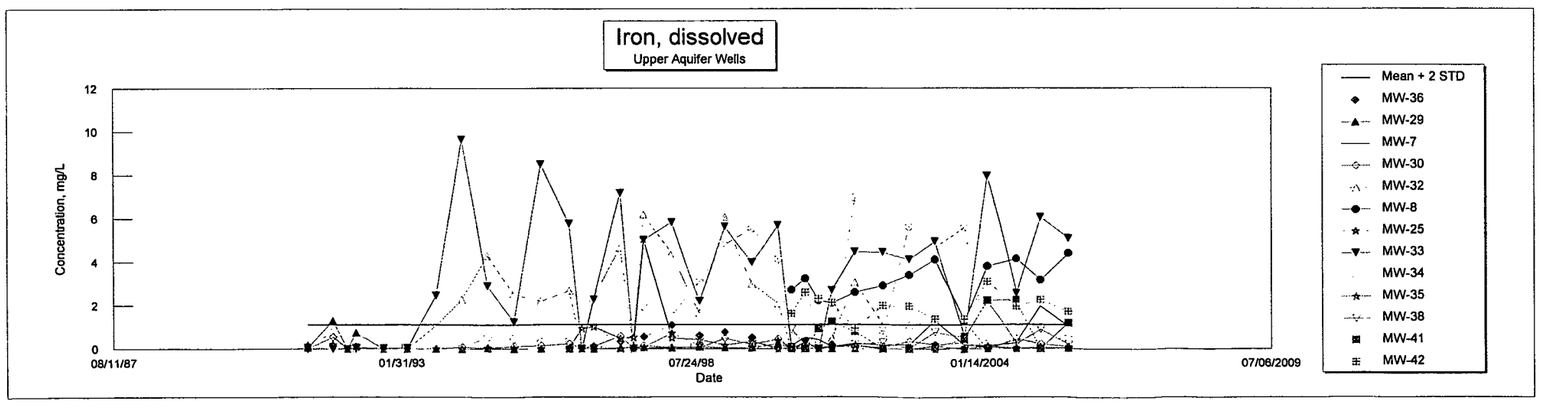
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Copper, dissolved	1.3	0.03				<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Copper, dissolved	1.3	0.03				<0.03	<0.03	<0.03	<0.03	---	<0.03				
01/23/92	Copper, dissolved	1.3	0.03				---	<0.03	<0.03	<0.03	<0.03	<0.03				
03/23/92	Copper, dissolved	1.3	0.03				<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
03/05/93	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
09/21/93	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
03/23/94	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
09/16/94	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
03/16/95	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
09/13/95	Copper, dissolved	1.3	0.03				NT	NT	NT	NT	NT	NT				
03/28/96	Copper, dissolved	1.3	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Copper, dissolved	1.3	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
09/13/96	Copper, dissolved	1.3	0.03	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
03/19/97	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Copper, dissolved	1.3	0.03	<0.03			<0.03	NT	NT	NT	NT	NT	<0.03			
08/30/97	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Copper, dissolved	1.3	0.03	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Copper, dissolved	1.3	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/28/2000	Copper, dissolved	1.3	0.03	NT	<0.03	<0.03	<0.03	NT	NT	NT	NT	NT	DRY	<0.03	<0.03	<0.03
12/27/2000	Copper, dissolved	1.3	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	0.03	0.03
03/28/2001	Copper, dissolved	1.3	0.03	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/02/2001	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Copper, dissolved	1.3	0.03	NT	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

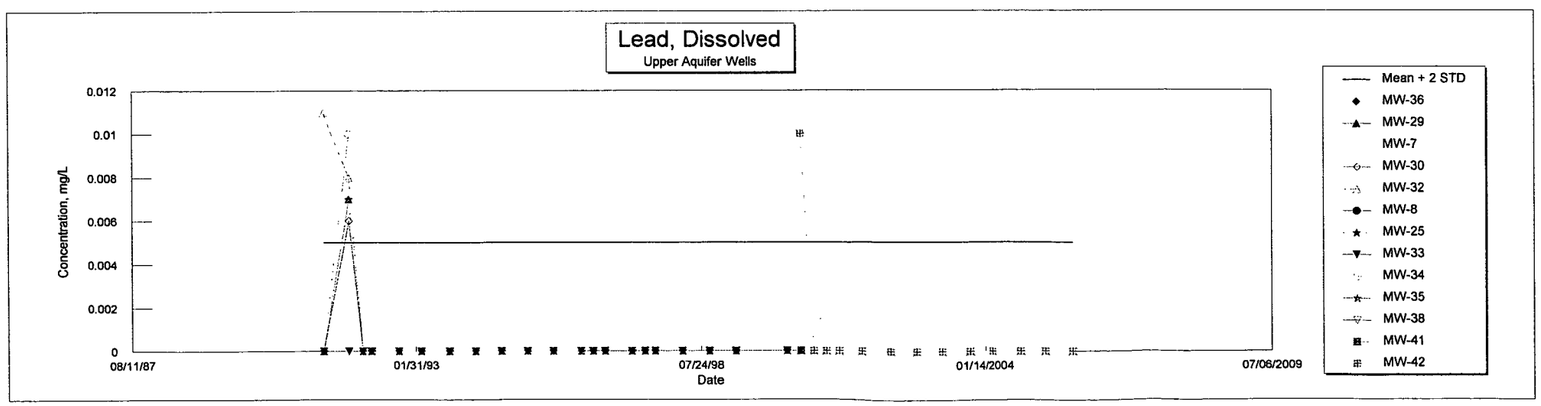
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Iron, dissolved	--	1.100624				0.05	<0.03	<0.09	0.177	---	0.133				
10/15/91	Iron, dissolved	--	1.100624				1.3	0.546	0.116	0.205	---	0.767				
01/23/92	Iron, dissolved	--	1.100624				---	<0.03	<0.03	<0.03	<0.03	<0.03				
03/23/92	Iron, dissolved	--	1.100624				0.743	<0.03	0.048	0.121	0.052	<0.03				
09/30/92	Iron, dissolved	--	1.100624				<0.03	<0.03	<0.03	<0.03	0.033	0.043				
03/05/93	Iron, dissolved	--	1.100624				---	<0.03	<0.03	<0.03	0.035	<0.03				
09/21/93	Iron, dissolved	--	1.100624				<0.03	<0.03	1.07	<0.03	2.46	0.05				
03/23/94	Iron, dissolved	--	1.100624				<0.03	0.072	2.29	<0.03	9.65	0.084				
09/16/94	Iron, dissolved	--	1.100624				0.037	0.059	4.3	0.05	2.9	0.55				
03/16/95	Iron, dissolved	--	1.100624				<0.03	0.111	2.55	0.038	1.24	0.47				
09/13/95	Iron, dissolved	--	1.100624				<0.03	0.131	2.2	<0.03	8.5	0.317				
03/28/96	Iron, dissolved	--	1.100624	<0.03			<0.03	0.228	2.68	<0.03	5.77	0.386	0.067			
06/20/96	Iron, dissolved	--	1.100624	<0.03			NT	NT	NT	NT	NT	NT	0.927			
09/13/96	Iron, dissolved	--	1.100624	<0.03			<0.03	0.112	2.37	0.134	2.27	1.3	1.02			
03/19/97	Iron, dissolved	--	1.100624	0.329			0.032	0.573	4.65	<0.03	7.18	<0.03	0.484			
06/18/97	Iron, dissolved	--	1.100624	<0.03			0.086	NT	NT	NT	NT	NT	0.523			
08/30/97	Iron, dissolved	--	1.100624	0.559			0.064	0.144	6.19	0.076	5.02	1.93	5.05			
03/10/98	Iron, dissolved	--	1.100624	1.09			0.041	0.057	4.41	0.717	5.83	1.52	0.5			
09/21/98	Iron, dissolved	--	1.100624	0.61			0.085	0.059	1.63	0.166	2.2	3.09	0.415			
03/18/99	Iron, dissolved	--	1.100624	0.767			0.052	0.48	6.08	0.131	5.64	4.78	0.162			
09/21/99	Iron, dissolved	--	1.100624	0.519			0.043	0.197	2.99	0.076	3.99	5.53	0.337			
03/21/2000	Iron, dissolved	--	1.100624	NT			0.252	0.447	2.1	0.371	5.69	4.15	NT			
06/28/2000	Iron, dissolved	--	1.100624	NT	0.146	2.71	NT	NT	NT	NT	NT	NT	NT	0.904	0.073	1.61
09/28/2000	Iron, dissolved	--	1.100624	<0.03	0.533	3.23	0.031	0.175	0.035	<0.03	0.303	3.3	DRY	0.198	<0.03	2.58
12/27/2000	Iron, dissolved	--	1.100624	NT	0.412	2.22	NT	NT	NT	NT	NT	NT	NT	0.138	0.909	2.3
03/28/2001	Iron, dissolved	--	1.100624	0.196	0.094	2.1	<0.03	0.08	0.493	<0.03	2.7	<0.03	0.108	0.049	1.24	2.12
09/02/2001	Iron, dissolved	--	1.100624	0.103	0.244	2.6	<0.03	0.088	3.07	<0.03	4.47	6.97	0.168	0.197	0.783	0.923
03/19/2002	Iron, dissolved	--	1.100624	<0.03	0.178	2.91	<0.03	0.074	1.14	<0.03	4.46	0.654	<0.03	0.292	<0.03	1.99
09/19/2002	Iron, dissolved	--	1.100624	<0.03	0.184	3.4	<0.03	0.351	1.11	<0.03	4.12	5.65	<0.03	0.041	<0.03	1.96
03/14/2003	Iron, dissolved	--	1.100624	<0.03	1.31	4.11	0.153	0.192	1.26	<0.03	4.95	4.67	<0.03	0.795	0.103	1.37
09/29/2003	Iron, dissolved	--	1.100624	<0.030	0.178	1.28	<0.030	0.296	1.29	<0.030	0.556	5.63	0.078	0.536	0.45	1.37
03/08/2004	Iron, dissolved	--	1.100624	0.073	0.128	3.82	<0.03	<0.03	<0.03	0.121	7.99	0.231	0.109	2.19	2.23	3.1
09/27/2004	Iron, dissolved	--	1.100624	<0.030	0.267	4.16	0.034	0.454	<0.030	0.034	2.56	0.39	<0.030	0.229	2.23	1.94
03/17/2005	Iron, dissolved	--	1.100624	<0.030	1.96	3.17	0.039	0.218	<0.030	0.073	6.07	0.046	<0.030	0.905	<0.030	2.26
09/22/2005	Iron, dissolved	--	1.100624	<0.030	1.04	4.42	0.032	0.086	<0.030	0.034	5.11	0.666	0.042	0.198	1.19	1.72
	Mean			0.471778	0.513385	3.086923	0.180824	0.217917	2.350957	0.15775	3.991036	2.050269	0.666	0.513231	1.023111	1.941769
	Standard Deviation (STD)			0.314423	0.550621	0.87877	0.326083	0.163918	1.741168	0.166211	2.617979	2.201397	1.207831	0.568766	0.755462	0.545178
	Mean + 2 STD			1.100624	1.614627	4.844463	0.83299	0.545753	5.833292	0.490171	9.226994	6.453062	3.081661	1.650763	2.534034	3.032125



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

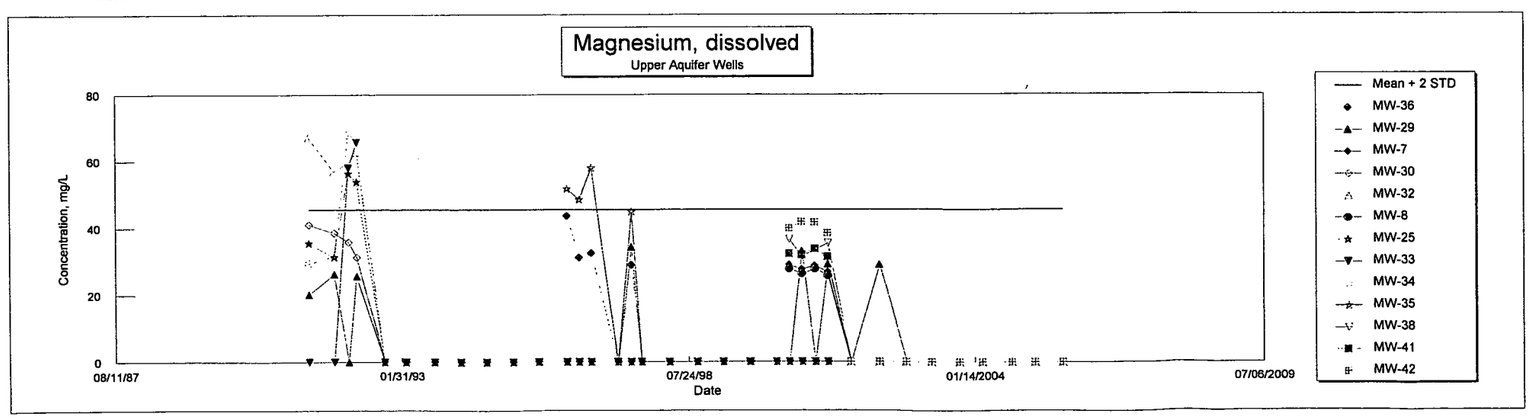
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Lead, dissolved	0.015	0.005				<0.005	<0.005	0.011	<0.005	---	<0.005				
10/15/91	Lead, dissolved	0.015	0.005				0.007	0.006	0.008	0.007	---	0.01				
01/23/92	Lead, dissolved	0.015	0.005				---	<0.005	<0.005	<0.005	<0.005	<0.005				
03/23/92	Lead, dissolved	0.015	0.005				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				
09/30/92	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
03/05/93	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
09/21/93	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
03/23/94	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
09/16/94	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
03/16/95	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
09/13/95	Lead, dissolved	0.015	0.005				NT	NT	NT	NT	NT	NT				
03/28/96	Lead, dissolved	0.015	0.005	<0.005			NT	NT	NT	NT	NT	NT	<0.005			
06/20/96	Lead, dissolved	0.015	0.005	<0.005			NT	NT	NT	NT	NT	NT	<0.005			
09/13/96	Lead, dissolved	0.015	0.005	<0.005			NT	NT	NT	NT	NT	NT	<0.005			
03/19/97	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Lead, dissolved	0.015	0.005	<0.005			<0.005	NT	NT	NT	NT	NT	<0.005			
08/30/97	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/99	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Lead, dissolved	0.015	0.005	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Lead, dissolved	0.015	0.005	NT	<0.005	<0.005	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	0.01
09/28/2000	Lead, dissolved	0.015	0.005	NT	<0.005	<0.005	<0.005	NT	NT	NT	NT	NT	DRY	<0.005	<0.005	<0.005
12/27/2000	Lead, dissolved	0.015	0.005	NT	<0.005	<0.005	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005
03/28/2001	Lead, dissolved	0.015	0.005	NT	<0.005	<0.005	<0.005	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005
09/02/2001	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Lead, dissolved	0.015	0.005	NT	NT	NT	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mean				ERR	ERR	ERR	0.007	0.006	0.0095	0.007	ERR	0.01	ERR	ERR	ERR	0.01
Standard Deviation (STD)				ERR	ERR	ERR	0	0	0.0015	0	ERR	0	ERR	ERR	ERR	0
Mean + 2 STD				ERR	ERR	ERR	0.007	0.006	0.0125	0.007	ERR	0.01	ERR	ERR	ERR	0.01



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Magnesium, dissolved	--	45.47475				20.2	41.1	67.2	35.6	---	29.5				
10/15/91	Magnesium, dissolved	--	45.47475				26.3	38.6	57	31.4	---	31.7				
01/23/92	Magnesium, dissolved	--	45.47475				---	35.8	59.6	56.4	58	68				
03/23/92	Magnesium, dissolved	--	45.47475				25.7	31.3	62.8	53.9	65.7	65.7				
09/30/92	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
03/05/93	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
09/21/93	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
03/23/94	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
09/16/94	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
03/16/95	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
09/13/95	Magnesium, dissolved	--	45.47475				NT	NT	NT	NT	NT	NT				
03/28/96	Magnesium, dissolved	--	45.47475	43.7			NT	NT	NT	NT	NT	NT	51.8			
06/20/96	Magnesium, dissolved	--	45.47475	31.3			NT	NT	NT	NT	NT	NT	48.6			
09/13/96	Magnesium, dissolved	--	45.47475	32.6			NT	NT	NT	NT	NT	NT	58.1			
03/19/97	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Magnesium, dissolved	--	45.47475	29			34.4	NT	NT	NT	NT	NT	45			
08/30/97	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Magnesium, dissolved	--	45.47475	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Magnesium, dissolved	--	45.47475	NT	29.1	27.8	NT	NT	NT	NT	NT	NT	NT	36.7	32.4	40
09/28/2000	Magnesium, dissolved	--	45.47475	NT	27.7	26.4	33.2	NT	NT	NT	NT	NT	DRY	31.6	32	41.9
12/27/2000	Magnesium, dissolved	--	45.47475	NT	28.8	27.8	NT	NT	NT	NT	NT	NT	NT	33.6	33.8	41.8
03/28/2001	Magnesium, dissolved	--	45.47475	NT	26.9	25.7	29.2	NT	NT	NT	NT	NT	NT	35.6	31.4	38.5
09/02/2001	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Magnesium, dissolved	--	45.47475	NT	NT	NT	29.1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mean				34.15	28.125	26.925	28.3	36.7	61.65	44.325	61.85	48.725	50.875	34.375	32.4	40.55
Standard Deviation (STD)				5.662376	0.878564	0.909327	4.456777	3.637994	3.806245	10.96207	3.85	18.1599	4.815275	1.94984	0.883176	1.404457
Mean + 2 STD				45.47475	29.88213	28.74365	37.21355	43.97599	69.26249	66.24913	69.55	85.04479	60.50555	38.27468	34.16635	43.35891



AMES-STORY ENVIRONMENTAL LANDFILL

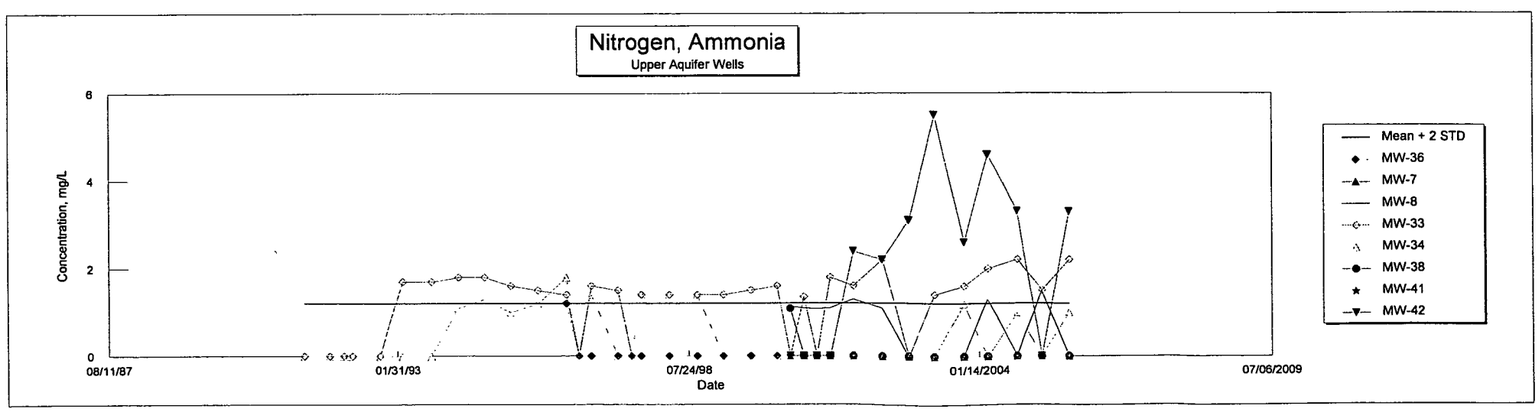
MONITORING WELL SAMPLING RESULTS

			MEAN +	AQUIFER WELLS												
DATE	PARAMETER	ACTION LEVEL	2 STD AW	U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Mercury, dissolved	0.002	0.0005				<0.001	<0.001	<0.001	<0.001	---	<0.001				
10/15/91	Mercury, dissolved	0.002	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	---	<0.0005				
01/23/92	Mercury, dissolved	0.002	0.0005				---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
03/23/92	Mercury, dissolved	0.002	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
09/30/92	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
03/05/93	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
09/21/93	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
03/23/94	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
09/16/94	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
03/16/95	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
09/13/95	Mercury, dissolved	0.002	0.0005				NT	NT	NT	NT	NT	NT				
03/28/96	Mercury, dissolved	0.002	0.0005	<0.0005			NT	NT	NT	NT	NT	NT	<0.0005			
06/20/96	Mercury, dissolved	0.002	0.0005	<0.0005			NT	NT	NT	NT	NT	NT	<0.0005			
09/13/96	Mercury, dissolved	0.002	0.0005	<0.005			NT	NT	NT	NT	NT	NT	<0.0005			
03/19/97	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Mercury, dissolved	0.002	0.0005	<0.0005			<0.0005	NT	NT	NT	NT	NT	<0.0005			
08/30/97	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
03/28/2000	Mercury, dissolved	0.002	0.0005	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Mercury, dissolved	0.002	0.0005	NT	<0.0005	<0.0005	NT	NT	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
09/28/2000	Mercury, dissolved	0.002	0.0005	NT	<0.0005	<0.0005	<0.0005	NT	NT	NT	NT	NT	DRY	<0.0005	<0.0005	<0.0005
12/27/2000	Mercury, dissolved	0.002	0.0005	NT	<0.0005	<0.0005	NT	NT	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
03/28/2001	Mercury, dissolved	0.002	0.0005	NT	<0.0005	<0.0005	<0.0005	NT	NT	NT	NT	NT	NT	<0.0005	<0.0005	<0.0005
09/02/2001	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Mercury, dissolved	0.002	0.0005	NT	NT	NT	<0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

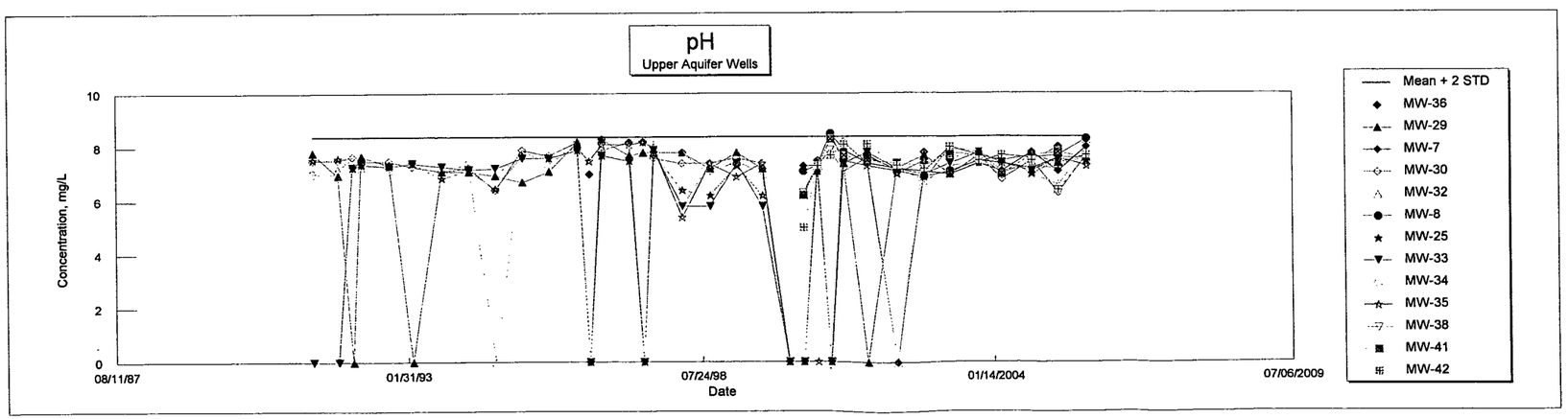
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Nitrogen, Ammonia	--	1.2				<0.5	<0.5	<0.5	<0.5	---	<0.5				
10/15/91	Nitrogen, Ammonia	--	1.2				<0.5	<0.5	<0.5	<0.5	---	<0.5				
01/23/92	Nitrogen, Ammonia	--	1.2				---	<1.0	<1.0	<1.0	<1.0	<1.0				
03/23/92	Nitrogen, Ammonia	--	1.2				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
09/30/92	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	<1	<1				
03/05/93	Nitrogen, Ammonia	--	1.2				---	<1	<1	<1	1.7	<1				
09/21/93	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	1.7	<1				
03/23/94	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	1.8	1.1				
09/16/94	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	1.8	1.3				
03/16/95	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	1.6	1				
09/13/95	Nitrogen, Ammonia	--	1.2				<1	<1	<1	<1	1.5	1.2				
03/28/96	Nitrogen, Ammonia	--	1.2	1.2			<1	<1	<1	<1	1.4	1.8	<1			
06/20/96	Nitrogen, Ammonia	--	1.2	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.6	1.4	<1			
03/19/97	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.5	<1	<1			
06/18/97	Nitrogen, Ammonia	--	1.2	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.4	1.4	<1			
03/10/98	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.4	1.4	<1			
09/21/98	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.4	1.4	<1			
03/18/99	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.4	<1	<1			
09/21/99	Nitrogen, Ammonia	--	1.2	<1			<1	<1	<1	<1	1.5	<1	<1			
03/21/2000	Nitrogen, Ammonia	--	1.2	NT			<1	<1	<1	<1	1.6	<1	NT			
06/28/2000	Nitrogen, Ammonia	--	1.2	NT	<1	1.13	NT	NT	NT	NT	NT	NT	NT	1.08	<1	<1
09/28/2000	Nitrogen, Ammonia	--	1.2	<1	<1	1.1	<1	<1	<1	<1	1.35	<1	DRY	<1	<1	<1
12/27/2000	Nitrogen, Ammonia	--	1.2	NT	<1	1.08	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Nitrogen, Ammonia	--	1.2	<1	<1	1.1	<1	<1	<1	<1	1.8	<1	<1	<1	<1	<1
09/02/2001	Nitrogen, Ammonia	--	1.2	<1	<1	1.3	<1	<1	<1	<1	1.6	<1	<1	<1	<1	<1
03/19/2002	Nitrogen, Ammonia	--	1.2	<1	<1	1.1	<1	<1	<1	<1	2.2	<1	<1	<1	<1	<1
09/19/2002	Nitrogen, Ammonia	--	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<	<1
03/14/2003	Nitrogen, Ammonia	--	1.2	<1	<1	<1	<1	<1	1.1	<1	1.4	<1	<1	<1	<	<1
09/29/2003	Nitrogen, Ammonia	--	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	1.2	<1.0	<1.0	<1.0	<1
03/08/2004	Nitrogen, Ammonia	--	1.2	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1
09/27/2004	Nitrogen, Ammonia	--	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	1	<1.0	<1.0	<1.0	<1.0
03/17/2005	Nitrogen, Ammonia	--	1.2	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
09/22/2005	Nitrogen, Ammonia	--	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	1	<1.0	<1.0	<1.0	<1.0
Mean			1.2	ERR	1.20125	ERR	ERR	1.1	ERR	1.646	1.266667	ERR	1.08	ERR	ERR	
Standard Deviation (STD)			0	ERR	0.141106	ERR	ERR	0	ERR	0.258426	0.224846	ERR	0	ERR	ERR	
Mean + 2 STD			1.2	ERR	1.483462	ERR	ERR	1.1	ERR	2.162852	1.716358	ERR	1.08	ERR	ERR	



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	pH	--	8.38135				7.80	7.51	7.18	7.55	---	7.01				
10/15/91	pH	--	8.38135				6.96	7.54	7.21	7.60	---	7.03				
01/23/92	pH	--	8.38135				---	7.65	7.58	7.27	7.26	7.31				
03/23/92	pH	--	8.38135				7.68	7.50	7.27	7.39	7.37	7.32				
09/30/92	pH	--	8.38135				7.36	7.49	7.44	7.31	7.3	7.13				
03/05/93	pH	--	8.38135				---	7.28	7.41	7.41	7.42	7.34				
09/21/93	pH	--	8.38135				7.1	7.11	7.3	6.85	7.29	7.12				
03/23/94	pH	--	8.38135				7.1	7.24	7.33	7.16	7.18	7.4				
09/16/94	pH	--	8.38135				6.95	6.42		6.46	7.22	6.99				
03/16/95	pH	--	8.38135				6.7	7.9	7.9	7.7	7.6	7.7				
09/13/95	pH	--	8.38135				7.1	7.7	7.4	7.6	7.6	7.6				
03/28/96	pH	--	8.38135	8			8.2	8.2	8.1	7.9	7.9	8	8			
06/20/96	pH	--	8.38135	7			NT	NT	NT	NT	NT	NT	7.5			
09/13/96	pH	--	8.38135	8.3			8.3	7.9	7.7	7.7	7.7	8	8.1			
03/19/97	pH	--	8.38135	8.2			7.7	8.2	7.6	7.5	7.5	7.7	8.1			
06/18/97	pH	--	8.38135	8.2			7.8	NT	NT	NT	NT	NT	8.2			
08/30/97	pH	--	8.38135	7.7			7.8	7.6	8.1	7.8	7.9	8	8			
03/10/98	pH	--	8.38135	7.8			7.8	7.4	7.8	6.4	5.8	5.8	5.4			
09/21/98	pH	--	8.38135	7.2			7.2	7.4	7	6.2	5.8	7.4	7.4			
03/18/99	pH	--	8.38135	7.4			7.8	7.6	7.5	7.3	7.4	7.7	6.9			
09/21/99	pH	--	8.38135	7.2			7.2	7.4	7	6.2	5.8	7.4	7.4			
03/21/2000	pH	--	8.38135	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	pH	--	8.38135	NT	7.3	7.1	NT	NT	NT	NT	NT	NT	NT	6.3	6.2	5
09/28/2000	pH	--	8.38135	7.5	7.3	7.3	7.1	7.3	7.1	7.2	7.3	7.2	NT	7.3	7.3	7.3
12/27/2000	pH	--	8.38135	NT	8.5	8.5	NT	NT	NT	NT	NT	NT	NT	7.9	8.3	7.7
03/28/2001	pH	--	8.38135	7.5	7.9	7.5	7.4	8.2	7.7	7.5	7.4	7.5	7.5	7.1	7.7	8.1
09/02/2001	pH	--	8.38135	7.5	7.4	7.7	NT	7.4	7.5	7.7	7.8	7.3	7.3	7.6	7.5	8.1
03/19/2002	pH	--	8.38135	NT	7.2	7.1	7.2	NT	NT	7	7.2	7	7.1	7.2	7.4	7.3
09/19/2002	pH	--	8.38135	7.8	7.1	6.9	7.7	7.1	7.2	7.5	7	6.7	6.9	6.8	7.3	7.2
03/14/2003	pH	--	8.38135	7.6	7	7.1	7	8	7.3	7.1	7.4	7.3	7.1	8	7.8	8
09/29/2003	pH	--	8.38135	7.8	7.4	7.4	7.7	7.7	7.5	7.4	7.8	7.4	7.5	7.8	7.7	7.5
03/08/2004	pH	--	8.38135	7	7.1	7.7	7.5	6.8	7	7.6	7.4	7.4	7.4	7.1	7	7.7
09/27/2004	pH	--	8.38135	7.5	7.8	7.6	7.7	7.5	7	7	7.1	7.2	7.2	7.3	7.7	7.5
03/17/2005	pH	--	8.38135	8	7.1	7.7	7.4	6.3	6.6	7.5	7.6	7.5	7.6	7.2	7.8	6.4
09/22/2005	pH	--	8.38135	7.6	8	8.3	7.7	7.7	8	7	7.6	7.4	7.3	8	7.6	7.7
Mean				7.64	7.469231	7.530769	7.4625	7.484138	7.418571	7.26	7.272857	7.328333	7.395	7.353846	7.484615	7.346154
Standard Deviation (STD)				0.370675	0.430357	0.451297	0.387608	0.447272	0.356608	0.448828	0.558415	0.41603	0.597892	0.479768	0.478533	0.804426
Mean + 2 STD				8.38135	8.329945	8.433362	8.237717	8.378681	8.131788	8.157656	8.389688	8.160392	8.590784	8.313383	8.441682	8.955005
Mean - 2 STD				6.89865												



AMES-STORY ENVIRONMENTAL LANDFILL

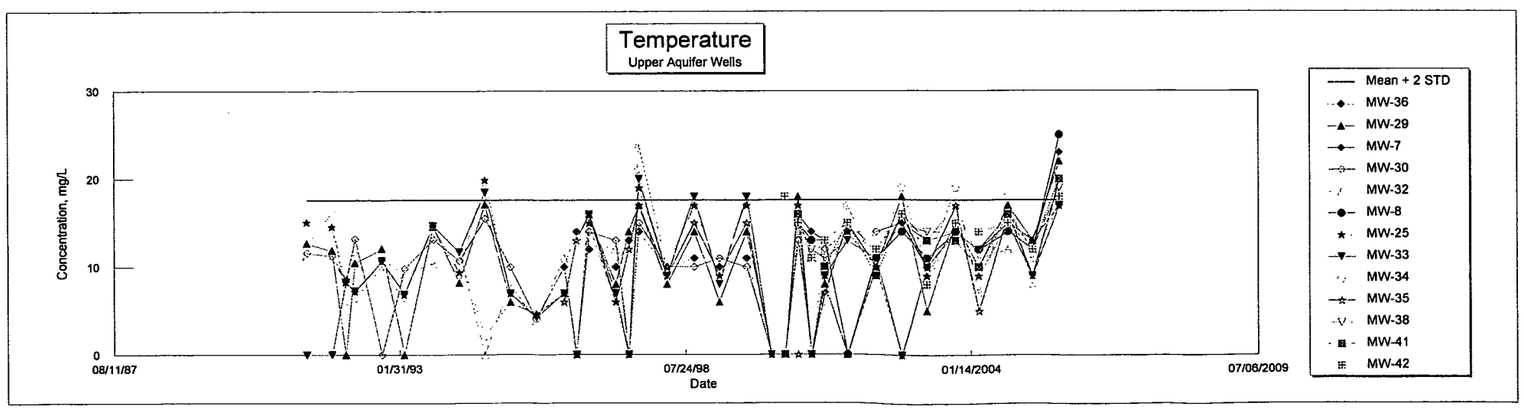
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	---	<0.1				
10/15/91	Phenols	--	0.1				<0.1	0.1	<0.1	<0.1	---	<0.1				
01/23/92	Phenols	--	0.1				---	<0.1	<0.1	<0.1	<0.1	<0.1				
03/23/92	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
09/30/92	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
03/05/93	Phenols	--	0.1				NT	NT	NT	NT	NT	NT				
09/21/93	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
03/23/94	Phenols	--	0.1				NT	NT	NT	NT	NT	NT				
09/16/94	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
03/16/95	Phenols	--	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
09/13/95	Phenols	--	0.1				NT	NT	NT	NT	NT	NT				
03/28/96	Phenols	--	0.1	NT			<0.1	NT	NT	NT	NT	NT	NT			
06/20/96	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
09/13/96	Phenols	--	0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			
03/19/97	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
08/30/97	Phenols	--	0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			
03/10/98	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Phenols	--	0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			
03/18/99	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Phenols	--	0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			
03/21/2000	Phenols	--	0.1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	DRY	<0.1	<0.1	<0.1
12/27/2000	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
03/19/2002	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Phenols	--	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
03/14/2003	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NT
03/08/2004	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
03/17/2005	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Phenols	--	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	Mean			ERR	ERR	ERR	ERR	0.1	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	0	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	0.1	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

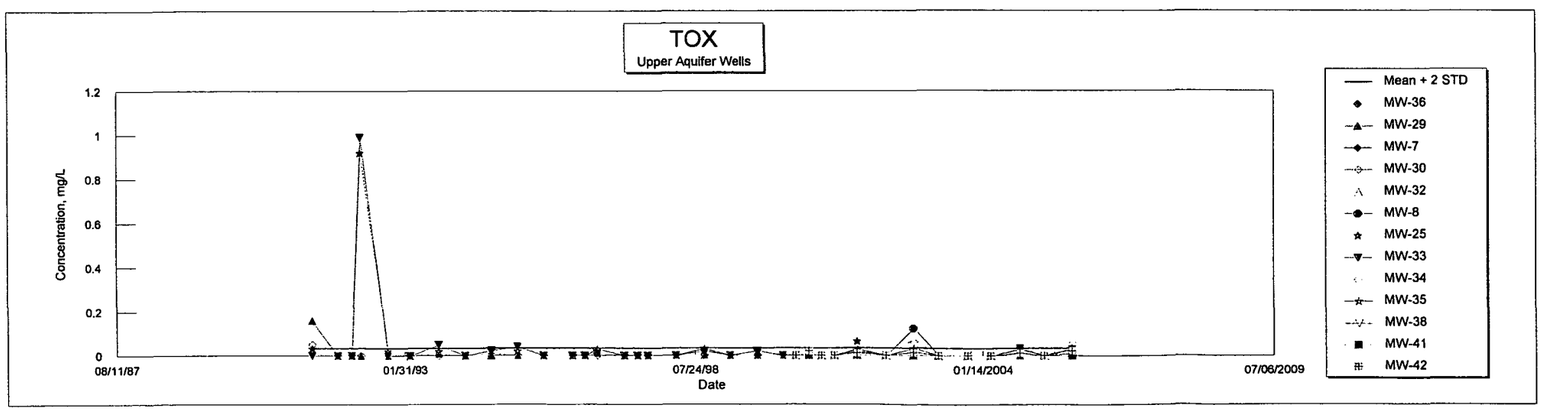
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Temperature, celsius	--	17.57873				12.7	11.6	11.3	15.1	---	12.4				
10/15/91	Temperature, celsius	--	17.57873				11.9	11.3	11.0	14.6	---	16.2				
01/23/92	Temperature, celsius	--	17.57873				---	8.5	8.4	8.3	8.3	6.2				
03/23/92	Temperature, celsius	--	17.57873				10.5	13.2	11.8	7.2	7.3	6.5				
09/30/92	Temperature, celsius	--	17.57873				12.1	11.3	11	10.7	10.7	10.1				
03/05/93	Temperature, celsius	--	17.57873				---	9.8	9.2	6.9	6.9	6.1				
09/21/93	Temperature, celsius	--	17.57873				14.6	13.1	10.4	14.6	14.7	14.8				
03/23/94	Temperature, celsius	--	17.57873				8.2	10.7	12.1	9.4	11.7	12				
09/16/94	Temperature, celsius	--	17.57873				17.1	15.5		19.9	18.5	2.11				
03/16/95	Temperature, celsius	--	17.57873				6	10	8	7	7	6				
09/13/95	Temperature, celsius	--	17.57873				4.62	4.05	3.88	4.63	4.24	4.66				
03/28/96	Temperature, celsius	--	17.57873	10			7	10	11	7	7	7	6			
06/20/96	Temperature, celsius	--	17.57873	14			NT	NT	NT	NT	NT	NT	13			
09/13/96	Temperature, celsius	--	17.57873	12			16	14	13	15	16	16	16			
03/19/97	Temperature, celsius	--	17.57873	10			8	13	12	6	7	6	6			
06/18/97	Temperature, celsius	--	17.57873	13			14	NT	NT	NT	NT	NT	12			
08/30/97	Temperature, celsius	--	17.57873	14			17	15	24	19	20	21	17			
03/10/98	Temperature, celsius	--	17.57873	10			8	10	10	10	9	9	9			
09/21/98	Temperature, celsius	--	17.57873	11			14	10	11	17	18	17	15			
03/18/99	Temperature, celsius	--	17.57873	10			6	11	11	9	8	9	9			
09/21/99	Temperature, celsius	--	17.57873	11			14	10	11	17	18	17	15			
03/21/2000	Temperature, celsius	--	17.57873	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Temperature, celsius	--	17.57873	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	18
09/28/2000	Temperature, celsius	--	17.57873	15	16	15	18	13	14	17	16	17	NT	15	16	15
12/27/2000	Temperature, celsius	--	17.57873	NT	14	13	NT	NT	NT	NT	NT	NT	NT	12	11	11
03/28/2001	Temperature, celsius	--	17.57873	10	13	13	8	12	12	9	9	6	7	11	10	13
09/02/2001	Temperature, celsius	--	17.57873	14	NT	NT	NT	14	14	14	13	17	15	13	15	15
03/19/2002	Temperature, celsius	--	17.57873	12	11	11	10	14	14	10	11	10	10	11	9	12
09/19/2002	Temperature, celsius	--	17.57873	14	15	14	18	15	14	NT	NT	19	16	15	16	16
03/14/2003	Temperature, celsius	--	17.57873	13	10	11	5	13	13	9	10	10	10	14	13	8
09/29/2003	Temperature, celsius	--	17.57873	14	14	14	15	14	17	15	14	19	17	14	13	15
03/08/2004	Temperature, celsius	--	17.57873	12	12	12	10	12	11	9	12	7	5	12	10	14
09/27/2004	Temperature, celsius	--	17.57873	16	15	14	17	15	12	15	15	18	16	16	16	15
03/17/2005	Temperature, celsius	--	17.57873	13	12	12	13	13	11	9	9	8	9	12	12	12
09/22/2005	Temperature, celsius	--	17.57873	20	23	25	22	17	17	17	17	18	20	19	20	18
Mean				12.7619	14.09091	14	12.06143	12.16379	12.03724	11.80448	11.79037	11.60233	12.15	13.66667	13.41667	14
Standard Deviation (STD)				2.408413	3.315379	3.692745	4.497335	2.557979	3.372271	4.270744	4.312519	5.297463	4.304358	2.248456	3.121387	2.689009
Mean + 2 STD				17.57873	20.72167	21.38549	21.0561	17.27975	18.78178	20.34597	20.41541	22.19726	20.75872	18.16358	19.65944	19.37802



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Total Organic Halogens	--	0.0325				0.16	0.05	0.01	0.033	---	0.05				
10/15/91	Total Organic Halogens	--	0.0325				<0.01	<0.01	<0.01	<0.01	---	<0.01				
01/23/92	Total Organic Halogens	--	0.0325				---	<0.01	<0.01	<0.01	<0.01	<0.01				
03/23/92	Total Organic Halogens	--	0.0325				<0.01	<0.01	<0.01	0.92	0.99	0.01				
09/30/92	Total Organic Halogens	--	0.0325				<0.01	<0.01	<0.01	0.02	<0.01	0.01				
03/05/93	Total Organic Halogens	--	0.0325				NT	NT	NT	NT	NT	NT				
09/21/93	Total Organic Halogens	--	0.0325				0.01	0.01	0.01	0.02	0.05	0.02				
03/23/94	Total Organic Halogens	--	0.0325				NT	NT	NT	NT	NT	NT				
09/16/94	Total Organic Halogens	--	0.0325				<0.01	<0.01	0.014	0.024	0.024	<0.01				
03/16/95	Total Organic Halogens	--	0.0325				<0.01	<0.01	<0.01	0.02	0.04	0.02				
09/13/95	Total Organic Halogens	--	0.0325				NT	NT	NT	NT	NT	NT				
03/28/96	Total Organic Halogens	--	0.0325	NT			<0.01	NT	NT	NT	NT	NT	NT			
06/20/96	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
09/13/96	Total Organic Halogens	--	0.0325	0.01			0.01	<0.01	0.01	0.02	0.01	0.01	0.03			
03/19/97	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
08/30/97	Total Organic Halogens	--	0.0325	<0.01			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
03/10/98	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Total Organic Halogens	--	0.0325	<0.01			<0.01	<0.01	<0.01	0.02	0.02	<0.01	0.03			
03/18/99	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Total Organic Halogens	--	0.0325	<0.01			<0.01	<0.01	<0.01	0.02	0.02	0.01	0.02			
03/21/2000	Total Organic Halogens	--	0.0325	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Total Organic Halogens	--	0.0325	<0.01	0.02	0.02	0.02	<0.01	0.01	0.02	0.02	0.02	DRY	<0.01	<0.01	0.02
12/27/2000	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Total Organic Halogens	--	0.0325	<0.01	<0.01	<0.01	<0.01	0.013	0.02	0.065	0.021	0.03	0.028	<0.01	<0.01	0.011
03/19/2002	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Total Organic Halogens	--	0.0325	<0.01	<0.01	0.124	<0.01	0.015	0.077	0.019	0.02	0.021	0.034	<0.01	<0.01	0.014
03/14/2003	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Total Organic Halogens	--	0.0325	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	NT
03/08/2004	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Total Organic Halogens	--	0.0325	<0.010	0.013	<0.010	0.014	<0.010	0.01	0.034	0.034	0.012	0.029	0.015	<0.010	.0.012
03/17/2005	Total Organic Halogens	--	0.0325	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Total Organic Halogens	--	0.0325	0.025	<0.010	<0.010	<0.010	0.03	0.032	0.035	0.0115	0.053	0.029	<0.010	0.03	0.022
Mean				0.0175	0.0165	0.072	0.0428	0.027	0.021444	0.090714	0.105042	0.021385	0.028571	0.015	0.03	0.0158
Standard Deviation (STD)				0.0075	0.0035	0.052	0.058714	0.014816	0.020844	0.230314	0.267052	0.014123	0.003923	0	0	0.0044
Mean + 2 STD				0.0325	0.0235	0.176	0.160228	0.056631	0.063132	0.551343	0.639145	0.049631	0.036417	0.015	0.03	0.0246



AMES-STORY ENVIRONMENTAL LANDFILL

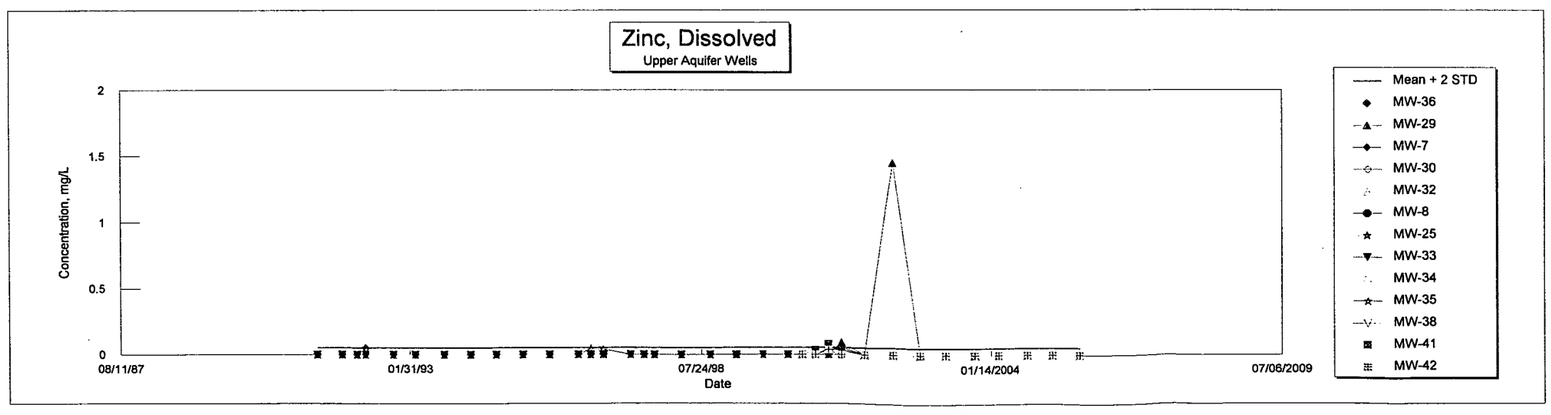
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	ug/L															
04/23/91	Trichloroethene *	5	1				<1	<1	<1	<1	---	<1				
10/15/91	Trichloroethene *	5	1				<1	<1	<1	<1	---	<1				
01/23/92	Trichloroethene *	5	1				---	<1	<1	<1	<1	<1				
03/23/92	Trichloroethene *	5	1				<1	<1	<1	<1	<1	<1				
09/30/92	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
03/05/93	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
09/21/93	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
03/23/94	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
09/16/94	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
03/16/95	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
09/13/95	Trichloroethene *	5	1				NT	NT	NT	NT	NT	NT				
03/28/96	Trichloroethene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
06/20/96	Trichloroethene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
09/13/96	Trichloroethene *	5	1	<1			NT	NT	NT	NT	NT	NT	<1			
03/19/97	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Trichloroethene *	5	1	<1			<1	NT	NT	NT	NT	NT	<1			
08/30/97	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Trichloroethene *	5	1	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Trichloroethene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/28/2000	Trichloroethene *	5	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	DRY	<1	<1	<1
12/27/2000	Trichloroethene *	5	1	NT	<1	<1	NT	NT	NT	NT	NT	NT	NT	<1	<1	<1
03/28/2001	Trichloroethene *	5	1	NT	<1	<1	<1	NT	NT	NT	NT	NT	NT	<1	<1	<1
09/02/2001	Trichloroethene *	5	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Trichloroethene *	5	1	NT	NT	NT	<1	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2003	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD	AQUIFER WELLS												
				U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
	mg/L															
04/23/91	Zinc, dissolved	2	0.05				<0.03	<0.03	<0.03	<0.03	---	<0.03				
10/15/91	Zinc, dissolved	2	0.05				<0.03	<0.03	<0.03	<0.03	---	<0.03				
01/23/92	Zinc, dissolved	2	0.05				---	<0.03	<0.03	<0.03	<0.03	<0.03				
03/23/92	Zinc, dissolved	2	0.05				<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				
09/30/92	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
03/05/93	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
09/21/93	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
03/23/94	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
09/16/94	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
03/16/95	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
09/13/95	Zinc, dissolved	2	0.05				NT	NT	NT	NT	NT	NT				
03/28/96	Zinc, dissolved	2	0.05	<0.03			NT	NT	NT	NT	NT	NT	<0.03			
06/20/96	Zinc, dissolved	2	0.05	<0.03			NT	NT	NT	NT	NT	NT	0.047			
09/13/96	Zinc, dissolved	2	0.05	0.05			NT	NT	NT	NT	NT	NT	0.042			
03/19/97	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Zinc, dissolved	2	0.05	<0.03			<0.03	NT	NT	NT	NT	NT	<0.03			
08/30/97	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
03/10/98	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
03/18/99	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
03/21/2000	Zinc, dissolved	2	0.05	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Zinc, dissolved	2	0.05	NT	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	<0.03	<0.03	<0.03
09/28/2000	Zinc, dissolved	2	0.05	NT	<0.03	<0.03	<0.03	NT	NT	NT	NT	NT	DRY	<0.03	0.035	<0.03
12/27/2000	Zinc, dissolved	2	0.05	NT	0.043	0.035	NT	NT	NT	NT	NT	NT	NT	0.032	0.081	0.036
03/28/2001	Zinc, dissolved	2	0.05	NT	0.038	0.052	0.095	NT	NT	NT	NT	NT	NT	<0.03	0.03	<0.03
09/02/2001	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/19/2002	Zinc, dissolved	2	0.05	NT	NT	NT	1.45	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2004	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/08/2004	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2005	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mean				0.05	0.0405	0.0435	0.7725	ERR	ERR	ERR	ERR	ERR	0.0445	0.032	0.048667	0.036
Standard Deviation (STD)				0	0.0025	0.0085	0.6775	ERR	ERR	ERR	ERR	ERR	0.0025	0	0.022954	0
Mean + 2 STD				0.05	0.0455	0.0605	2.1275	ERR	ERR	ERR	ERR	ERR	0.0495	0.032	0.094575	0.036



APPENDIX D.3

Concentration Versus Time Tables & Graphs
Surface Water System

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	1,1-Dichloroethene *	7	1	<1	<1	<1			
10/15/91	1,1-Dichloroethene *	7	1	<1	<1	<1			
01/23/92	1,1-Dichloroethene *	7	1	<1	<1	<1			
03/23/92	1,1-Dichloroethene *	7	1	<1	<1	<1			
09/30/92	1,1-Dichloroethene *	7	1	NT	NT	NT			
03/05/93	1,1-Dichloroethene *	7	1	NT	NT	NT			
09/21/93	1,1-Dichloroethene *	7	1	NT	NT	NT			
03/23/94	1,1-Dichloroethene *	7	1	NT	NT	NT			
09/16/94	1,1-Dichloroethene *	7	1	NT	NT	NT			
03/16/95	1,1-Dichloroethene *	7	1	NT	NT	NT			
09/13/95	1,1-Dichloroethene *	7	1	NT	NT	NT			
03/28/96	1,1-Dichloroethene *	7	1	NT	NT	NT			
06/20/96	1,1-Dichloroethene *	7	1	NT	NT	NT			
09/13/96	1,1-Dichloroethene *	7	1	NT	NT	DRY			
03/19/97	1,1-Dichloroethene *	7	1	NT	NT	DRY			
06/18/97	1,1-Dichloroethene *	7	1	NT	NT	NT			
08/30/97	1,1-Dichloroethene *	7	1	NT	NT	DRY			
03/10/98	1,1-Dichloroethene *	7	1	NT	NT	DRY			
09/21/98	1,1-Dichloroethene *	7	1	NT	NT	DRY			
03/19/99	1,1-Dichloroethene *	7	1	NT	NT	DRY			
09/21/99	1,1-Dichloroethene *	7	1	NT	NT	DRY			
03/21/2000	1,1-Dichloroethene *	7	1	NT	NT	DRY			
06/28/2000	1,1-Dichloroethene *	7	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	1,1-Dichloroethene *	7	1	NT	NT	DRY	DRY	DRY	<1
12/27/2000	1,1-Dichloroethene *	7	1	NT	NT	NT	DRY	DRY	<1
03/28/2001	1,1-Dichloroethene *	7	1	NT	NT	DRY	<1	DRY	DRY
09/02/2001	1,1-Dichloroethene *	7	1	NT	NT	DRY	NT	DRY	DRY
03/19/2002	1,1-Dichloroethene *	7	1	NT	NT	DRY	<1	DRY	<1
09/19/2002	1,1-Dichloroethene *	7	1	NT	NT	DRY	<1	<1	NT
03/14/2003	1,1-Dichloroethene *	7	1	NT	NT	DRY	NT	<1	NT
09/29/2003	1,1-Dichloroethene *	7	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	1,1-Dichloroethene *	7		NT	NT	DRY	NT	<1	NT
09/27/2004	1,1-Dichloroethene *	7	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	1,1-Dichloroethene *	7		NT	NT	DRY	NT	<1	NT
09/22/2005	1,1-Dichloroethene *	7	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW4	SW 5	SW 6
	ug/L								
04/23/91	1,1,1-Trichloroethane *	200	1	<1	<1	<1			
10/15/91	1,1,1-Trichloroethane *	200	1	<1	<1	<1			
01/23/92	1,1,1-Trichloroethane *	200	1	<1	<1	<1			
03/23/92	1,1,1-Trichloroethane *	200	1	<1	<1	<1			
09/30/92	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
03/05/93	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
09/21/93	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
03/23/94	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
09/16/94	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
03/16/95	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
09/13/95	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
03/28/96	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
06/20/96	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
09/13/96	1,1,1-Trichloroethane *	200	1	NT	NT	Dry			
03/19/97	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
06/18/97	1,1,1-Trichloroethane *	200	1	NT	NT	NT			
08/30/97	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
03/10/98	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
09/21/98	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
03/18/99	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
09/21/99	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
03/21/2000	1,1,1-Trichloroethane *	200	1	NT	NT	DRY			
06/28/2000	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	<1
12/27/2000	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	<1
03/28/2001	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	<1	DRY	DRY
09/02/2001	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	NT	DRY	DRY
03/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	<1	DRY	<1
09/19/2002	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	<1	<1	NT
03/14/2003	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	NT	<1	NT
09/29/2003	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	NT	<1	NT
09/27/2004	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	NT	<1	NT
09/22/2005	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	1,2-Dichloroethane *	5	1	<1	<1	<1			
10/15/91	1,2-Dichloroethane *	5	1	<1	<1	<1			
01/23/92	1,2-Dichloroethane *	5	1	<1	<1	<1			
03/23/92	1,2-Dichloroethane *	5	1	<1	<1	<1			
09/30/92	1,2-Dichloroethane *	5	1	NT	NT	NT			
03/05/93	1,2-Dichloroethane *	5	1	NT	NT	NT			
09/21/93	1,2-Dichloroethane *	5	1	NT	NT	NT			
03/23/94	1,2-Dichloroethane *	5	1	NT	NT	NT			
09/16/94	1,2-Dichloroethane *	5	1	NT	NT	NT			
03/16/95	1,2-Dichloroethane *	5	1	NT	NT	NT			
09/13/95	1,2-Dichloroethane *	5	1	NT	NT	NT			
03/28/96	1,2-Dichloroethane *	5	1	NT	NT	NT			
06/20/96	1,2-Dichloroethane *	5	1	NT	NT	NT			
09/13/96	1,2-Dichloroethane *	5	1	NT	NT	DRY			
03/19/97	1,2-Dichloroethane *	5	1	NT	NT	DRY			
06/18/97	1,2-Dichloroethane *	5	1	NT	NT	NT			
08/30/97	1,2-Dichloroethane *	5	1	NT	NT	DRY			
03/10/98	1,2-Dichloroethane *	5	1	NT	NT	DRY			
09/21/98	1,2-Dichloroethane *	5	1	NT	NT	DRY			
03/18/99	1,2-Dichloroethane *	5	1	NT	NT	DRY			
03/21/99	1,2-Dichloroethane *	5	1	NT	NT	DRY			
03/21/2000	1,2-Dichloroethane *	5	1	NT	NT	DRY			
06/28/2000	1,2-Dichloroethane *	5	1	NT	NT	DRY	<0.4	DRY	<0.4
09/28/2000	1,2-Dichloroethane *	5	1	NT	NT	DRY	DRY	DRY	<0.4
12/27/2000	1,2-Dichloroethane *	5	1	NT	NT	NT	DRY	DRY	<0.4
03/28/2001	1,2-Dichloroethane *	5	1	NT	NT	DRY	<0.4	DRY	DRY
09/02/2001	1,2-Dichloroethane *	5	1	NT	NT	NT	NT	DRY	DRY
03/19/2002	1,2-Dichloroethane *	5	1	NT	NT	DRY	<0.4	DRY	<0.4
09/19/2002	1,2-Dichloroethane *	5	1	NT	NT	DRY	<0.4	<0.4	NT
03/14/2003	1,2-Dichloroethane *	5	1	NT	NT	DRY	NT	<0.4	NT
09/29/2003	1,2-Dichloroethane *	5	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	1,2-Dichloroethane *	5	1	NT	NT	DRY	NT	<0.4	NT
09/27/2004	1,2-Dichloroethane *	5	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	1,2-Dichloroethane *	5	1	NT	NT	DRY	NT	<0.4	NT
09/22/2005	1,2-Dichloroethane *	5	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

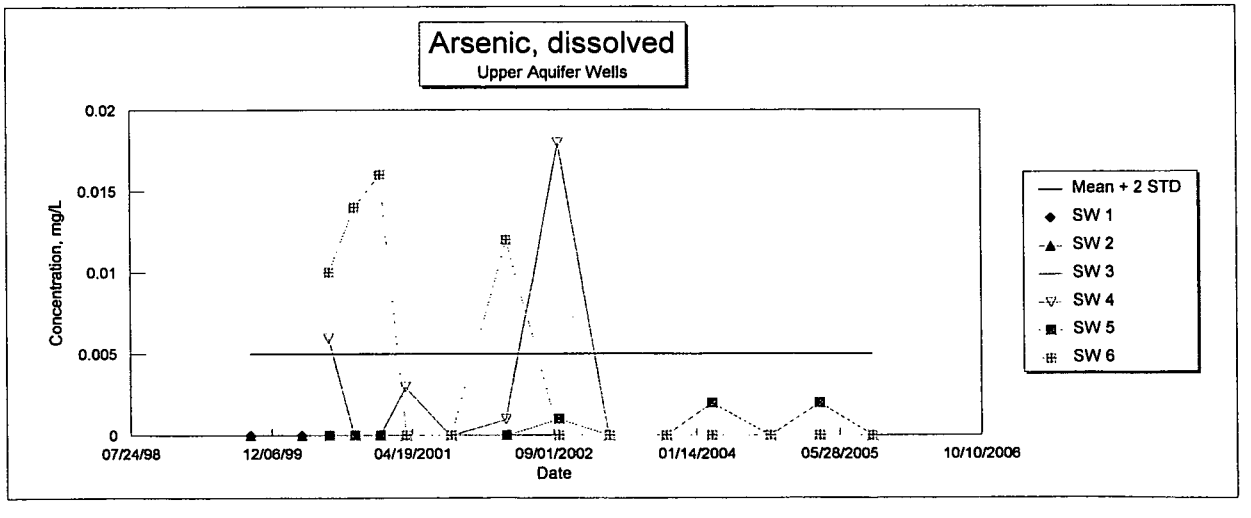
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	1,4-Dichlorobenzene *	75	1	<1	<1	<1			
10/15/91	1,4-Dichlorobenzene *	75	1	<1	<1	<1			
01/23/92	1,4-Dichlorobenzene *	75	1	<1	<1	<1			
03/23/92	1,4-Dichlorobenzene *	75	1	<1	<1	<1			
09/30/92	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
03/05/93	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
09/21/93	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
03/23/94	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
09/16/94	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
03/16/95	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
09/13/95	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
03/28/96	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
06/20/96	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
09/13/96	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
03/19/97	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
06/18/97	1,4-Dichlorobenzene *	75	1	NT	NT	NT			
08/30/97	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
03/10/98	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
09/21/98	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
03/18/99	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
09/21/99	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
03/21/2000	1,4-Dichlorobenzene *	75	1	NT	NT	DRY			
06/28/2000	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	DRY	DRY	<1
12/27/2000	1,4-Dichlorobenzene *	75	1	NT	NT	NT	DRY	DRY	<1
03/28/2001	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	<1	DRY	DRY
09/02/2001	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	NT	DRY	DRY
03/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	<1	DRY	<1
09/19/2002	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	<1	<1	NT
03/14/2003	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	NT	<1	NT
09/29/2003	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	NT	<1	NT
09/27/2004	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	NT	<1	NT
09/22/2005	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

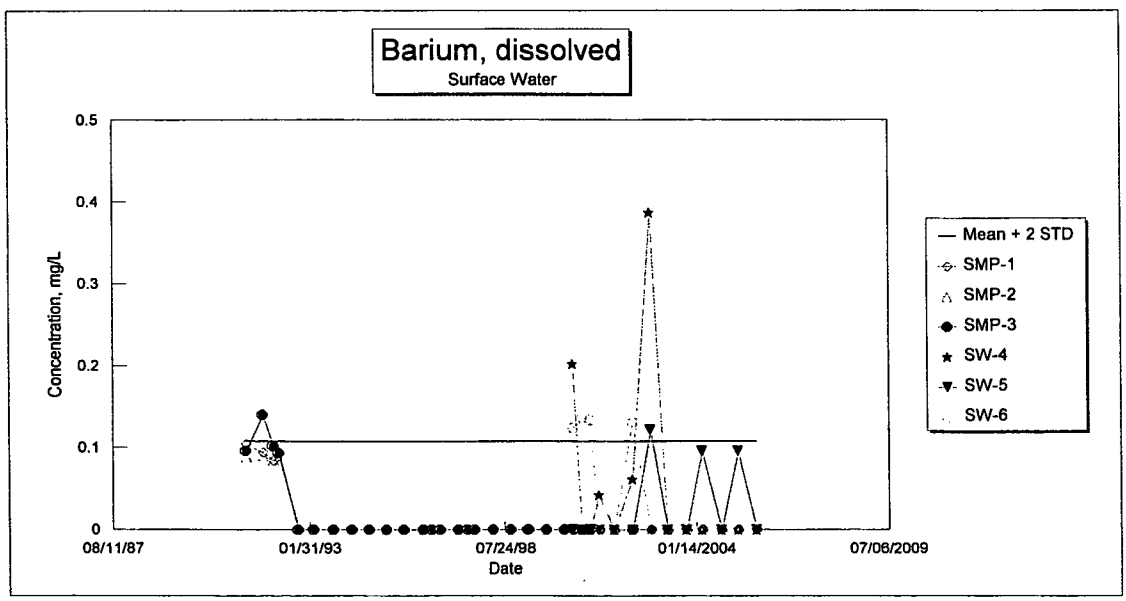
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
10/15/91	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
01/23/92	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
03/23/92	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
09/30/92	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
03/05/93	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
09/21/93	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
03/23/94	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
09/16/94	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
03/16/95	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
09/13/95	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
03/28/96	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
06/20/96	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
09/13/96	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
03/19/97	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
06/18/97	Arsenic, dissolved	0.05	0.005	NT	NT	NT			
08/30/97	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
03/10/98	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
09/21/98	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
03/18/99	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
09/21/99	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
03/21/2000	Arsenic, dissolved	0.05	0.005	NT	NT	DRY			
06/28/2000	Arsenic, dissolved	0.05	0.005	NT	NT	DRY	0.006	DRY	0.01
09/28/2000	Arsenic, dissolved	0.05	0.005	NT	NT	DRY	DRY	DRY	~~0.014~~
12/27/2000	Arsenic, dissolved	0.05	0.005	NT	NT	NT	DRY	DRY	~~0.016~~
03/28/2001	Arsenic, dissolved	0.05	0.005	NT	NT	DRY	0.003	DRY	DRY
09/02/2001	Arsenic, dissolved	~~0.05~~	~~0.005~~	~~NT~~	~~NT~~	~~NT~~	~~NT~~	~~DRY~~	~~DRY~~
03/19/2002	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	0.001	DRY	~~0.012~~
09/19/2002	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	~~0.018~~	0.001	NT
03/14/2003	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	NT	0.004	NT
09/29/2003	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	NT	0.002	NT
09/27/2004	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	NT	0.002	NT
09/22/2005	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.007	0.001667	0.013
	Standard Deviation (STD)			ERR	ERR	ERR	0.006595	0.000471	0.002236
	Mean + 2 STD			ERR	ERR	ERR	0.020191	0.002609	0.017472



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Barium, dissolved	2.000	0.108	0.104	0.089	0.096			
10/15/91	Barium, dissolved	2.000	0.108	0.094	0.090	0.140			
01/23/92	Barium, dissolved	2.000	0.108	0.084	0.085	0.102			
03/23/92	Barium, dissolved	2.000	0.108	0.090	0.091	0.093			
09/30/92	Barium, dissolved	2.000	0.108	NT	NT	NT			
03/05/93	Barium, dissolved	2.000	0.108	NT	NT	NT			
09/21/93	Barium, dissolved	2.000	0.108	NT	NT	NT			
03/23/94	Barium, dissolved	2.000	0.108	NT	NT	NT			
09/16/94	Barium, dissolved	2.000	0.108	NT	NT	NT			
03/16/95	Barium, dissolved	2.000	0.108	NT	NT	NT			
09/13/95	Barium, dissolved	2.000	0.108	NT	NT	NT			
03/28/96	Barium, dissolved	2.000	0.108	NT	NT	NT			
06/20/96	Barium, dissolved	2.000	0.108	NT	NT	NT			
09/13/96	Barium, dissolved	2.000	0.108	NT	NT	DRY			
03/19/97	Barium, dissolved	2.000	0.108	NT	NT	DRY			
06/18/97	Barium, dissolved	2.000	0.108	NT	NT	NT			
08/30/97	Barium, dissolved	2.000	0.108	NT	NT	DRY			
03/10/98	Barium, dissolved	2.000	0.108	NT	NT	DRY			
09/21/98	Barium, dissolved	2.000	0.108	NT	NT	DRY			
03/18/99	Barium, dissolved	2.000	0.108	NT	NT	DRY			
09/21/99	Barium, dissolved	2.000	0.108	NT	NT	DRY			
03/21/2000	Barium, dissolved	2.000	0.108	NT	NT	DRY			
06/28/2000	Barium, dissolved	2.000	0.108	NT	NT	DRY	0.202	DRY	0.124
09/28/2000	Barium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	0.136
12/27/2000	Barium, dissolved	2.000	0.108	NT	NT	NT	DRY	DRY	0.134
03/28/2001	Barium, dissolved	2.000	0.108	NT	NT	Dry	0.042	DRY	DRY
09/02/2001	Barium, dissolved	2.000	0.108	NT	NT	NT	NT	DRY	DRY
03/19/2002	Barium, dissolved	2.000	0.108	NT	NT	DRY	0.061	DRY	0.131
09/19/2002	Barium, dissolved	2.000	0.108	NT	NT	DRY	0.387	0.122	NT
03/14/2003	Barium, dissolved	2.000	0.108	NT	NT	DRY	NT	0.065	NT
09/29/2003	Barium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Barium, dissolved	2.000	0.108	NT	NT	DRY	NT	0.096	NT
09/27/2004	Barium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Barium, dissolved	2.000	0.108	NT	NT	DRY	NT	0.096	NT
09/22/2005	Barium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	NT
	Mean			0.093	0.08875	0.10775	0.173	0.104667	0.13125
	Standard Deviation (STD)			0.00728	0.002278	0.018899	0.13815	0.012257	0.004548
	Mean + 2 STD			0.10756	0.093305	0.145549	0.449301	0.12918	0.140347



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	Benzene *	5	1	<1	<1	<1			
10/15/91	Benzene *	5	1	<1	<1	<1			
01/23/92	Benzene *	5	1	<1	<1	<1			
03/23/92	Benzene *	5	1	<1	<1	<1			
09/30/92	Benzene *	5	1	NT	NT	NT			
03/05/93	Benzene *	5	1	NT	NT	NT			
09/21/93	Benzene *	5	1	NT	NT	NT			
03/23/94	Benzene *	5	1	NT	NT	NT			
09/16/94	Benzene *	5	1	NT	NT	NT			
03/16/95	Benzene *	5	1	NT	NT	NT			
09/13/95	Benzene *	5	1	NT	NT	NT			
03/28/96	Benzene *	5	1	NT	NT	NT			
06/20/96	Benzene *	5	1	NT	NT	NT			
09/13/96	Benzene *	5	1	NT	NT	Dry			
03/19/97	Benzene *	5	1	NT	NT	DRY			
06/18/97	Benzene *	5	1	NT	NT	NT			
08/30/97	Benzene *	5	1	NT	NT	DRY			
03/10/98	Benzene *	5	1	NT	NT	DRY			
09/21/98	Benzene *	5	1	NT	NT	DRY			
03/18/99	Benzene *	5	1	NT	NT	DRY			
09/21/99	Benzene *	5	1	NT	NT	DRY			
03/21/2000	Benzene *	5	1	NT	NT	DRY			
06/28/2000	Benzene *	5	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	Benzene *	5	1	NT	NT	DRY	DRY	NT	<1
12/27/2000	Benzene *	5	1	NT	NT	NT	DRY	DRY	<1
03/28/2001	Benzene *	5	1	NT	NT	Dry	<1	DRY	DRY
09/02/2001	Benzene *	5	1	NT	NT	NT	NT	DRY	DRY
03/19/2002	Benzene *	5	1	NT	NT	DRY	<1	NT	<1
09/19/2002	Benzene *	5	1	NT	NT	NT	<1	<1	NT
03/14/2003	Benzene *	5	1	NT	NT	NT	NT	<1	NT
09/29/2003	Benzene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Benzene *	5	1	NT	NT	DRY	NT	<1	NT
09/27/2004	Benzene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Benzene *	5	1	NT	NT	DRY	NT	<1	NT
09/22/2005	Benzene *	5	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Cadmium, dissolved	0.005	0.001	<0.001	<0.001	<0.001			
10/15/91	Cadmium, dissolved	0.005	0.001	<0.001	0.001	<0.001			
01/23/92	Cadmium, dissolved	0.005	0.001	<0.001	<0.001	<0.001			
03/23/92	Cadmium, dissolved	0.005	0.001	<0.001	<0.001	<0.001			
09/30/92	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
03/05/93	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
09/21/93	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
03/23/94	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
09/16/94	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
03/16/95	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
09/13/95	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
03/28/96	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
06/20/96	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
09/13/96	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
03/19/97	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
06/18/97	Cadmium, dissolved	0.005	0.001	NT	NT	NT			
08/30/97	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
03/10/98	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
09/21/98	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
03/18/99	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
09/21/99	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
03/21/2000	Cadmium, dissolved	0.005	0.001	NT	NT	DRY			
06/28/2000	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	<0.001	DRY	<0.001
09/28/2000	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	NT	NT	<0.001
12/27/2000	Cadmium, dissolved	0.005	0.001	NT	NT	NT	DRY	DRY	<0.001
03/28/2001	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	<0.001	DRY	DRY
09/02/2001	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	DRY	DRY
03/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	NT	<0.001	NT	<0.001
09/19/2002	Cadmium, dissolved	0.005	0.001	NT	NT	NT	<0.001	<0.001	NT
03/14/2003	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	<0.001	NT
09/29/2003	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	NT	<0.001	NT
09/27/2004	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	NT	<0.001	NT
09/22/2005	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

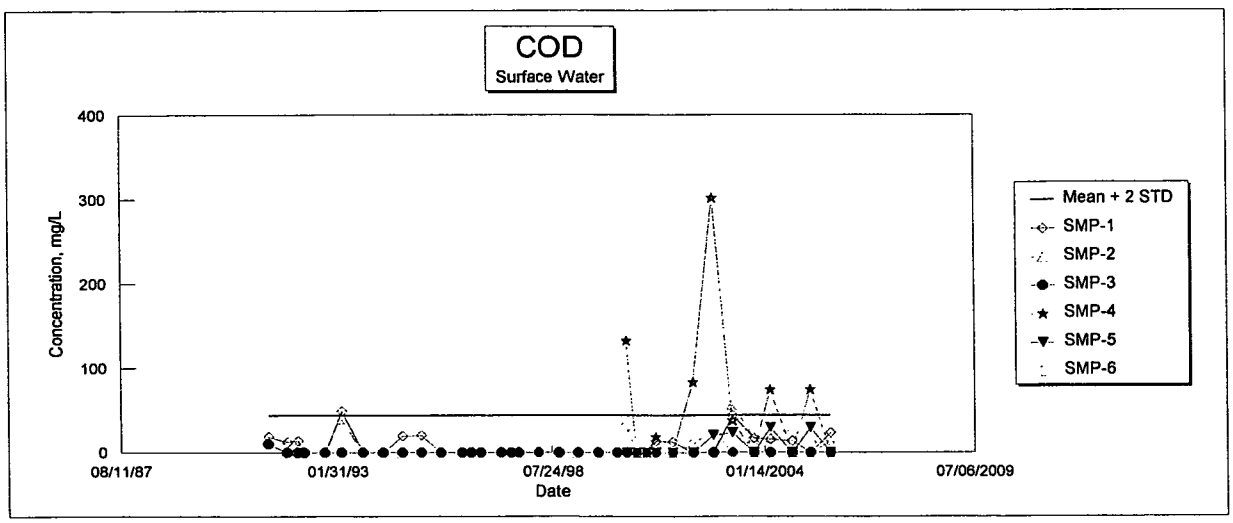
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	Carbon tetrachloride *	5	1	<1	<1	<1			
10/15/91	Carbon tetrachloride *	5	1	<1	<1	<1			
01/23/92	Carbon tetrachloride *	5	1	<1	<1	<1			
03/23/92	Carbon tetrachloride *	5	1	<1	<1	<1			
09/30/92	Carbon tetrachloride *	5	1	NT	NT	NT			
03/05/93	Carbon tetrachloride *	5	1	NT	NT	NT			
09/21/93	Carbon tetrachloride *	5	1	NT	NT	NT			
03/23/94	Carbon tetrachloride *	5	1	NT	NT	NT			
09/16/94	Carbon tetrachloride *	5	1	NT	NT	NT			
03/16/95	Carbon tetrachloride *	5	1	NT	NT	NT			
09/13/95	Carbon tetrachloride *	5	1	NT	NT	NT			
03/28/96	Carbon tetrachloride *	5	1	NT	NT	NT			
06/20/96	Carbon tetrachloride *	5	1	NT	NT	NT			
09/13/96	Carbon tetrachloride *	5	1	NT	NT	DRY			
03/19/97	Carbon tetrachloride *	5	1	NT	NT	DRY			
06/18/97	Carbon tetrachloride *	5	1	NT	NT	NT			
08/30/97	Carbon tetrachloride *	5	1	NT	NT	DRY			
03/10/98	Carbon tetrachloride *	5	1	NT	NT	DRY			
09/21/98	Carbon tetrachloride *	5	1	NT	NT	DRY			
03/18/99	Carbon tetrachloride *	5	1	NT	NT	DRY			
09/21/99	Carbon tetrachloride *	5	1	NT	NT	DRY			
03/21/2000	Carbon tetrachloride *	5	1	NT	NT	DRY			
06/28/2000	Carbon tetrachloride *	5	1	NT	NT	DRY	<0.3	DRY	<0.3
09/28/2000	Carbon tetrachloride *	5	1	NT	NT	DRY	DRY	DRY	<0.3
12/27/2000	Carbon tetrachloride *	5	1	NT	NT	NT	DRY	DRY	<0.3
03/28/2001	Carbon tetrachloride *	5	1	NT	NT	DRY	<0.3	DRY	DRY
09/02/2001	Carbon tetrachloride *	5	1	NT	NT	NT	NT	DRY	DRY
03/19/2002	Carbon tetrachloride *	5	1	NT	NT	NT	<0.3	NT	<0.3
09/19/2002	Carbon tetrachloride *	5	1	NT	NT	NT	<0.3	<0.3	NT
03/14/2003	Carbon tetrachloride *	5	1	NT	NT	NT	NT	<0.3	NT
09/29/2003	Carbon tetrachloride *	5	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Carbon tetrachloride *	5	1	NT	NT	DRY	NT	<0.3	NT
09/27/2004	Carbon tetrachloride *	5	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Carbon tetrachloride *	5	1	NT	NT	DRY	NT	<0.3	NT
09/22/2005	Carbon tetrachloride *	5	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Chemical Oxygen Demand	--	44.14954	19.4	14.3	10.5			
10/15/91	Chemical Oxygen Demand	--	44.14954	12.8	11.3	<10			
01/23/92	Chemical Oxygen Demand	--	44.14954	14.3	<10	<10			
03/23/92	Chemical Oxygen Demand	--	44.14954	<10	<10	<10			
09/30/92	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
03/05/93	Chemical Oxygen Demand	--	44.14954	49.6	40.8	DRY			
09/21/93	Chemical Oxygen Demand	--	44.14954	<10	<10	<10			
03/23/94	Chemical Oxygen Demand	--	44.14954	<10	<10	<10			
09/16/94	Chemical Oxygen Demand	--	44.14954	20	<10	NT			
03/16/95	Chemical Oxygen Demand	--	44.14954	21	<10	NT			
09/13/95	Chemical Oxygen Demand	--	44.14954	<10	NT	NT			
03/28/96	Chemical Oxygen Demand	--	44.14954	<10	<10	NT			
06/20/96	Chemical Oxygen Demand	--	44.14954	NT	NT	NT			
09/13/96	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
03/19/97	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
06/18/97	Chemical Oxygen Demand	--	44.14954	NT	NT	NT			
08/30/97	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
03/10/98	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
09/21/98	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
03/18/99	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
09/21/99	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
03/21/2000	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY			
06/28/2000	Chemical Oxygen Demand	--	44.14954	NT	NT	DRY	133	DRY	32
09/28/2000	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY	DRY	DRY	<10
12/27/2000	Chemical Oxygen Demand	--	44.14954	NT	NT	NT	DRY	DRY	<10
03/28/2001	Chemical Oxygen Demand	--	44.14954	14	13	DRY	19	DRY	DRY
09/02/2001	Chemical Oxygen Demand	--	44.14954	13	14	DRY	NT	DRY	DRY
03/19/2002	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY	84	DRY	10
09/19/2002	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY	302	21	28
03/14/2003	Chemical Oxygen Demand	--	44.14954	44	57	DRY	38	24	<10
09/29/2003	Chemical Oxygen Demand	--	44.14954	17	18	DRY	DRY	DRY	14
03/08/2004	Chemical Oxygen Demand	--	44.14954	16	18	DRY	75	30	30
09/27/2004	Chemical Oxygen Demand	--	44.14954	14	<10	DRY	DRY	DRY	23
03/17/2005	Chemical Oxygen Demand	--	44.14954	<10	<10	DRY	75	30	11
09/22/2005	Chemical Oxygen Demand	--	44.14954	24	14	DRY	DRY	DRY	15

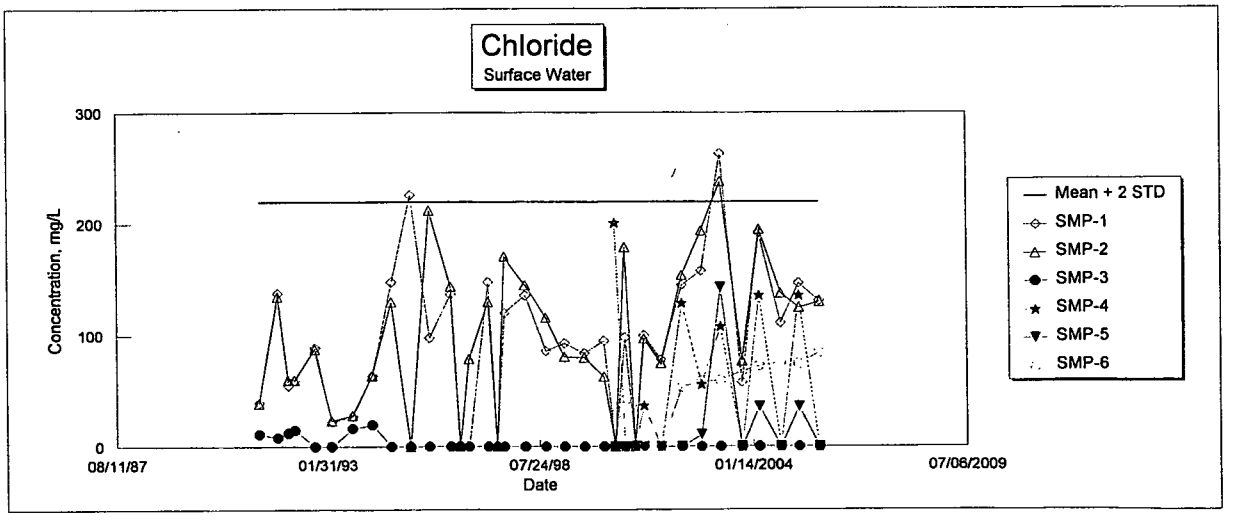
Mean	21.46923	22.26667	10.5	103.7143	26.25	20.375
Standard Deviation (STD)	11.34015	14.87944	0	87.59275	3.897114	8.350711
Mean + 2 STD	44.14954	52.02555	10.5	278.8998	34.04423	37.07642



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	Secondary MCL LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Chloride	250	219.561	39.5	39	11.5			
10/15/91	Chloride	250	219.561	138	135	8.02			
01/23/92	Chloride	250	219.561	55.1	60.3	12.1			
03/23/92	Chloride	250	219.561	59.7	60.2	14.8			
09/30/92	Chloride	250	219.561	89	88	DRY			
03/05/93	Chloride	250	219.561	22.5	23.5	DRY			
09/21/93	Chloride	250	219.561	27.4	28.4	16.6			
03/23/94	Chloride	250	219.561	64.1	64.1	19.8			
09/16/94	Chloride	250	219.561	148	130	NT			
03/16/95	Chloride	250	219.561	226	NT	NT			
09/13/95	Chloride	250	219.561	98	212	NT			
03/28/96	Chloride	250	219.561	137	144	NT			
06/20/96	Chloride	250	219.561	NT	NT	NT			
09/13/96	Chloride	250	219.561	<1	78.9	Dry			
03/19/97	Chloride	250	219.561	148	130	DRY			
06/18/97	Chloride	250	219.561	NT	NT	NT			
08/30/97	Chloride	250	219.561	120	171	DRY			
03/10/98	Chloride	250	219.561	136	145	DRY			
09/21/98	Chloride	250	219.561	86	116	DRY			
03/18/99	Chloride	250	219.561	93	81	DRY			
09/21/99	Chloride	250	219.561	84	80	DRY			
03/21/2000	Chloride	250	219.561	95	63	DRY			
06/28/2000	Chloride	250	219.561	NT	NT	DRY	201	DRY	29
09/28/2000	Chloride	250	219.561	98	179	DRY	DRY	DRY	42
12/27/2000	Chloride	250	219.561	NT	NT	NT	DRY	DRY	41
03/28/2001	Chloride	250	219.561	100	97	DRY	37	DRY	DRY
09/02/2001	Chloride	250	219.561	78	75	DRY	NT	DRY	DRY
03/19/2002	Chloride	250	219.561	145	154	DRY	129	DRY	54
09/19/2002	Chloride	250	219.561	158	194	DRY	56	11	59
03/14/2003	Chloride	250	219.561	~~263~~	238	DRY	108	143	60
09/29/2003	Chloride	250	219.561	58	77	DRY	DRY	DRY	68
03/08/2004	Chloride	250	219.561	192	195	DRY	136	36	73
09/27/2004	Chloride	250	219.561	111	138	DRY	DRY	DRY	76
03/17/2005	Chloride	250	219.561	147	125	DRY	136	36	75
09/22/2005	Chloride	250	219.561	131	130	DRY	DRY	DRY	85
Mean				111.5767	115.0467	13.80333	114.7143	56.5	60.18182
Standard Deviation (STD)				53.99216	54.80173	3.795355	50.83226	50.97303	16.5739
Mean + 2 STD				219.561	224.6501	21.39404	216.3788	158.4461	93.32962



AMES-STORY ENVIRONMENTAL LANDFILL

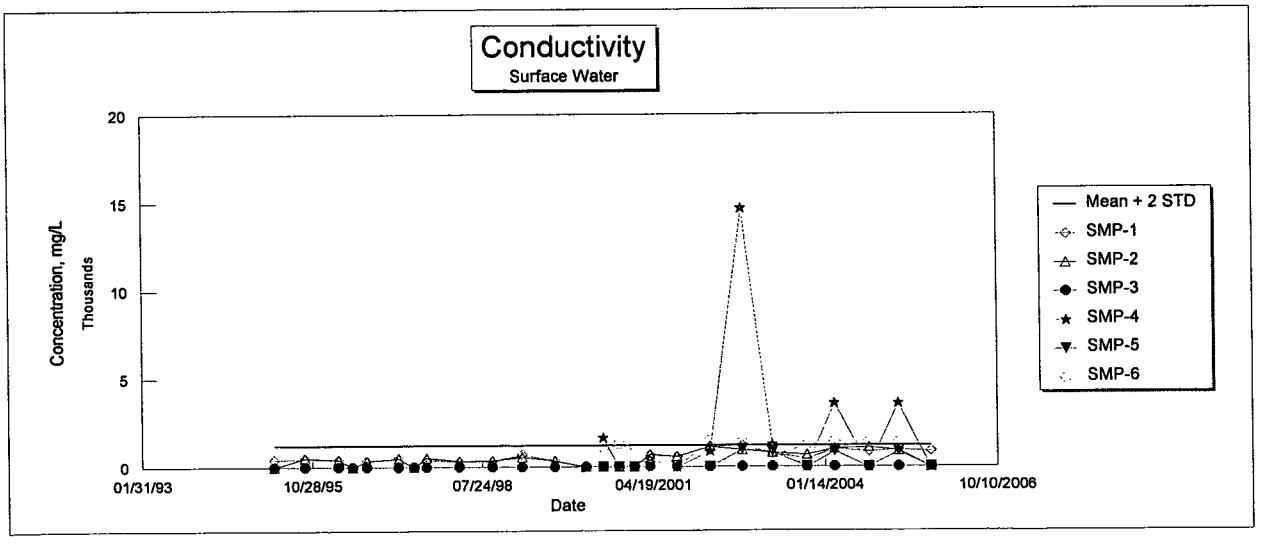
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Chromium, dissolved	0.1	0.03	<0.03	<0.03	<0.03			
10/15/91	Chromium, dissolved	0.1	0.03	<0.03	<0.03	<0.03			
01/23/92	Chromium, dissolved	0.1	0.03	<0.03	<0.03	<0.03			
03/23/92	Chromium, dissolved	0.1	0.03	<0.03	<0.03	<0.03			
09/30/92	Chromium, dissolved	0.1	0.03	NT	NT	NT			
03/05/93	Chromium, dissolved	0.1	0.03	NT	NT	NT			
09/21/93	Chromium, dissolved	0.1	0.03	NT	NT	NT			
03/23/94	Chromium, dissolved	0.1	0.03	NT	NT	NT			
09/16/94	Chromium, dissolved	0.1	0.03	NT	NT	NT			
03/16/95	Chromium, dissolved	0.1	0.03	NT	NT	NT			
09/13/95	Chromium, dissolved	0.1	0.03	NT	NT	NT			
03/28/96	Chromium, dissolved	0.1	0.03	NT	NT	NT			
06/20/96	Chromium, dissolved	0.1	0.03	NT	NT	NT			
09/13/96	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
03/19/97	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
06/18/97	Chromium, dissolved	0.1	0.03	NT	NT	NT			
08/30/97	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
03/10/98	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
09/21/98	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
03/18/99	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
09/21/99	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
03/21/2000	Chromium, dissolved	0.1	0.03	NT	NT	DRY			
06/28/2000	Chromium, dissolved	0.1	0.03	NT	NT	DRY	<0.03	DRY	<0.03
09/28/2000	Chromium, dissolved	0.1	0.03	NT	NT	DRY	DRY	DRY	<0.03
12/27/2000	Chromium, dissolved	0.1	0.03	NT	NT	NT	DRY	DRY	<0.03
03/28/2001	Chromium, dissolved	0.1	0.03	NT	NT	DRY	<0.03	DRY	DRY
09/02/2001	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	DRY
03/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	NT	<0.005	Dry	<0.005
09/19/2002	Chromium, dissolved	0.1	0.03	NT	NT	NT	<0.005	<0.005	NT
03/14/2003	Chromium, dissolved	0.1	0.03	NT	NT	DRY	NT	<0.005	NT
09/29/2003	Chromium, dissolved	0.1	0.03	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Chromium, dissolved	0.1	0.03	NT	NT	DRY	NT	<0.005	NT
09/27/2004	Chromium, dissolved	0.1	0.03	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Chromium, dissolved	0.1	0.03	NT	NT	DRY	NT	<0.005	NT
09/22/2005	Chromium, dissolved	0.1	0.03	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

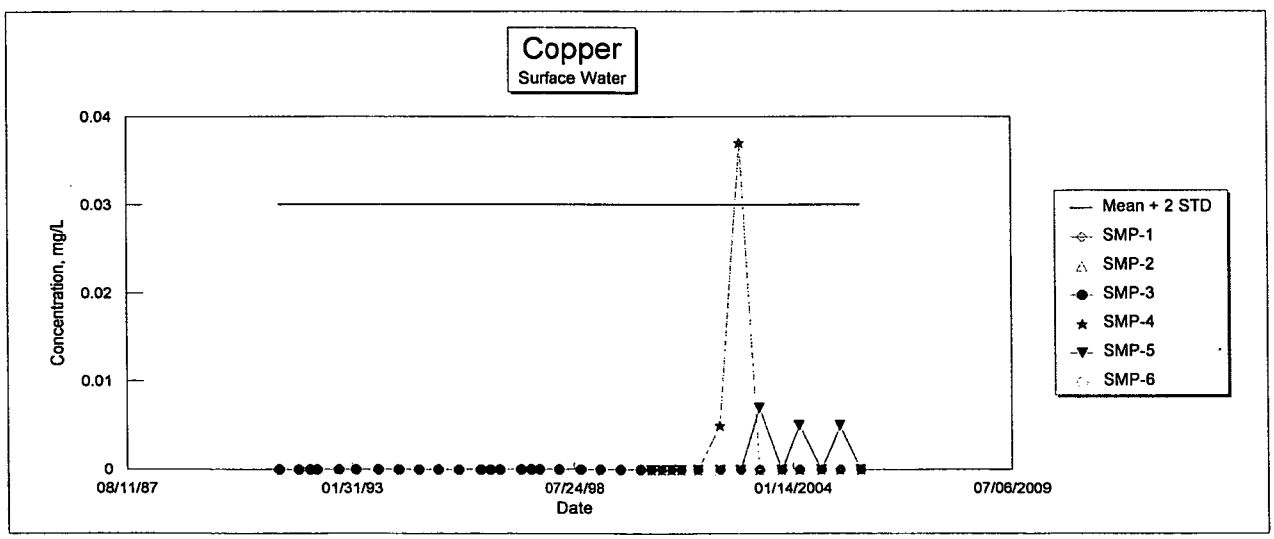
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
03/16/95	Conductivity, us/cm	--	1195.822	420	DRY	DRY			
09/13/95	Conductivity, us/cm	--	1195.822	500	540	DRY			
03/28/96	Conductivity, us/cm	--	1195.822	420	450	DRY			
06/20/96	Conductivity, us/cm	--	1195.822	NT	NT	DRY			
09/13/96	Conductivity, us/cm	--	1195.822	360	370	DRY			
03/19/97	Conductivity, us/cm	--	1195.822	520	490	DRY			
06/18/97	Conductivity, us/cm	--	1195.822	NT	NT	NT			
08/30/97	Conductivity, us/cm	--	1195.822	430	540	DRY			
03/10/98	Conductivity, us/cm	--	1195.822	300	350	DRY			
09/21/98	Conductivity, us/cm	--	1195.822	350	360	DRY			
03/18/99	Conductivity, us/cm	--	1195.822	702	560	DRY			
09/21/99	Conductivity, us/cm	--	1195.822	360	350	DRY			
03/21/2000	Conductivity, us/cm	--	1195.822	NT	NT	DRY			
06/28/2000	Conductivity, us/cm	--	1195.822	NT	NT	DRY	1670	DRY	1123
09/28/2000	Conductivity, us/cm	--	1195.822	NT	NT	DRY	DRY	DRY	1332
12/27/2000	Conductivity, us/cm	--	1195.822	NT	NT	NT	DRY	DRY	1183
03/28/2001	Conductivity, us/cm	--	1195.822	685	702	DRY	442	DRY	DRY
09/02/2001	Conductivity, us/cm	--	1195.822	586	583	DRY	NT	DRY	DRY
03/19/2002	Conductivity, us/cm	--	1195.822	1127	1127	DRY	880	DRY	1505
10/07/2002	Conductivity, us/cm	--	1195.822	1209	960	DRY	14680	990	1444
03/14/2003	Conductivity, us/cm	--	1195.822	750	780	DRY	1260	860	625
09/29/2003	Conductivity, us/cm	--	1195.822	468	675	DRY	DRY	DRY	1262
03/08/2004	Conductivity, us/cm	--	1195.822	1017	1025	DRY	3622	886	1475
09/27/2004	Conductivity, us/cm	--	1195.822	871	1096	DRY	DRY	DRY	1400
03/17/2005	Conductivity, us/cm	--	1195.822	966	923	DRY	3622	886	1378
09/22/2005	Conductivity, us/cm	--	1195.822	893	NT	DRY	DRY	DRY	1021
	Mean			646.7	660.0556	ERR	3739.429	905.5	1249.818
	Standard Deviation (STD)			274.5611	258.3061	ERR	4616.788	49.92745	245.4535
	Mean + 2 STD			1195.822	1176.668	ERR	12973.01	1005.355	1740.725



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
10/15/91	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
01/23/92	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
03/23/92	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
09/30/92	Copper, dissolved	1.3	0.03	NT	NT	NT			
03/05/93	Copper, dissolved	1.3	0.03	NT	NT	NT			
09/21/93	Copper, dissolved	1.3	0.03	NT	NT	NT			
03/23/94	Copper, dissolved	1.3	0.03	NT	NT	NT			
09/16/94	Copper, dissolved	1.3	0.03	NT	NT	NT			
03/16/95	Copper, dissolved	1.3	0.03	NT	NT	NT			
09/13/95	Copper, dissolved	1.3	0.03	NT	NT	NT			
03/28/96	Copper, dissolved	1.3	0.03	NT	NT	NT			
06/20/96	Copper, dissolved	1.3	0.03	NT	NT	NT			
09/13/96	Copper, dissolved	1.3	0.03	NT	NT	DRY			
03/19/97	Copper, dissolved	1.3	0.03	NT	NT	DRY			
06/18/97	Copper, dissolved	1.3	0.03	NT	NT	NT			
08/30/97	Copper, dissolved	1.3	0.03	NT	NT	DRY			
03/10/98	Copper, dissolved	1.3	0.03	NT	NT	DRY			
09/21/98	Copper, dissolved	1.3	0.03	NT	NT	DRY			
03/18/99	Copper, dissolved	1.3	0.03	NT	NT	DRY			
09/21/99	Copper, dissolved	1.3	0.03	NT	NT	DRY			
03/21/2000	Copper, dissolved	1.3	0.03	NT	NT	DRY			
06/28/2000	Copper, dissolved	1.3	0.03	NT	NT	DRY	<0.03	DRY	<0.03
09/28/2000	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	<0.03
12/27/2000	Copper, dissolved	1.3	0.03	NT	NT	NT	Dry	DRY	<0.03
03/28/2001	Copper, dissolved	1.3	0.03	NT	NT	DRY	<0.03	DRY	DRY
09/02/2001	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	DRY
03/19/2002	Copper, dissolved	1.3	0.03	NT	NT	NT	0.005	NT	<0.005
10/07/2002	Copper, dissolved	1.3	0.03	NT	NT	NT	0.037	<0.005	NT
03/14/2003	Copper, dissolved	1.3	0.03	NT	NT	DRY	NT	0.007	NT
09/29/2003	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Copper, dissolved	1.3	0.03	NT	NT	DRY	NT	0.005	NT
09/27/2004	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Copper, dissolved	1.3	0.03	NT	NT	DRY	NT	0.005	NT
09/22/2005	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.021	0.005667	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	0.016	0.000943	ERR
	Mean + 2 STD			ERR	ERR	ERR	0.053	0.007552	ERR

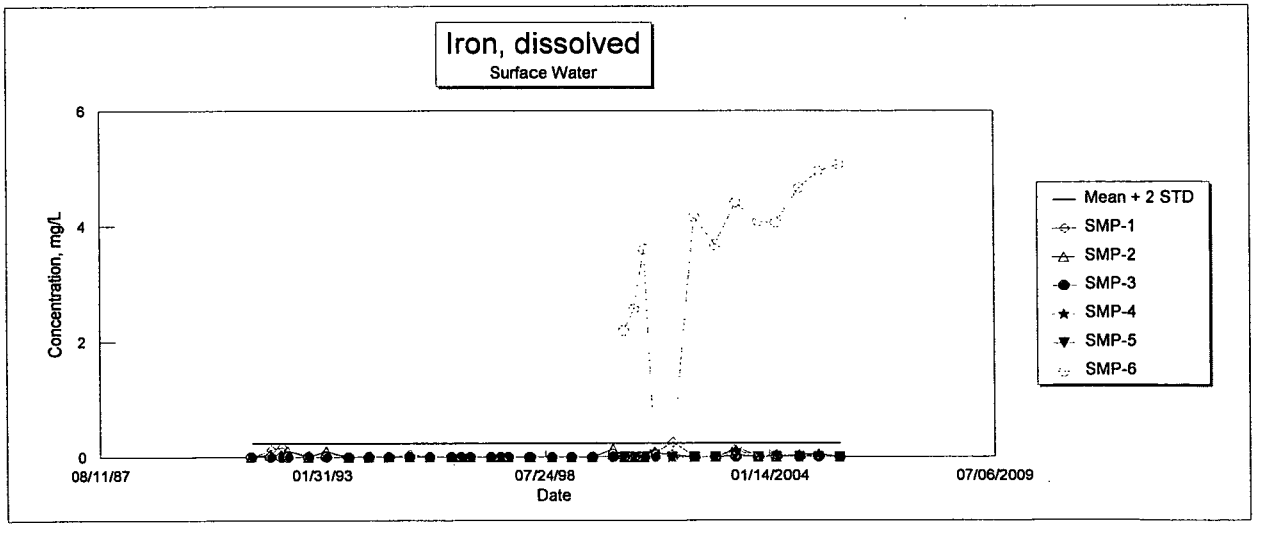


AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Iron, dissolved	--	0.231811	<0.114	<0.111	<0.03			
10/15/91	Iron, dissolved	--	0.231811	0.125	0.045	<0.03			
01/23/92	Iron, dissolved	--	0.231811	0.172	0.036	<0.03			
03/23/92	Iron, dissolved	--	0.231811	0.109	0.109	<0.03			
09/30/92	Iron, dissolved	--	0.231811	0.034	<0.03	DRY			
03/05/93	Iron, dissolved	--	0.231811	0.078	0.102	DRY			
09/21/93	Iron, dissolved	--	0.231811	<0.03	<0.03	<0.03			
03/23/94	Iron, dissolved	--	0.231811	0.035	<0.03	<0.03			
09/16/94	Iron, dissolved	--	0.231811	<0.03	<0.03	NT			
03/16/95	Iron, dissolved	--	0.231811	0.05	<0.03	NT			
09/13/95	Iron, dissolved	--	0.231811	<0.03	NT	NT			
03/28/96	Iron, dissolved	--	0.231811	<0.03	<0.03	NT			
06/20/96	Iron, dissolved	--	0.231811	NT	NT	NT			
09/13/96	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
03/19/97	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
06/18/97	Iron, dissolved	--	0.231811	NT	NT	NT			
08/30/97	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
03/10/98	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
09/21/98	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
03/18/99	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
09/21/99	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY			
03/21/2000	Iron, dissolved	--	0.231811	<0.03	0.137	DRY			
06/28/2000	Iron, dissolved	--	0.231811	NT	NT	DRY	<0.03	DRY	2.2
09/28/2000	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY	DRY	DRY	2.57
12/27/2000	Iron, dissolved	--	0.231811	NT	NT	NT	DRY	DRY	3.61
03/28/2001	Iron, dissolved	--	0.231811	0.085	0.073	DRY	0.094	DRY	DRY
09/02/2001	Iron, dissolved	--	0.231811	0.257	0.042	DRY	NT	DRY	DRY
03/19/2002	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY	<0.03	DRY	4.17
10/07/2002	Iron, dissolved	--	0.231811	<0.03	<0.03	DRY	<0.03	<0.03	3.69
03/14/2003	Iron, dissolved	--	0.231811	0.162	0.117	DRY	0.108	0.051	4.42
09/29/2003	Iron, dissolved	--	0.231811	<0.030	<0.030	DRY	DRY	DRY	4.09
03/08/2004	Iron, dissolved	--	0.231811	0.038	<0.030	DRY	0.032	<0.03	4.07
09/27/2004	Iron, dissolved	--	0.231811	<0.030	0.036	DRY	DRY	DRY	4.67
03/17/2005	Iron, dissolved	--	0.231811	0.052	0.048	DRY	0.032	<0.03	4.96
09/22/2005	Iron, dissolved	--	0.231811	<0.030	<0.030	DRY	DRY	DRY	5.08

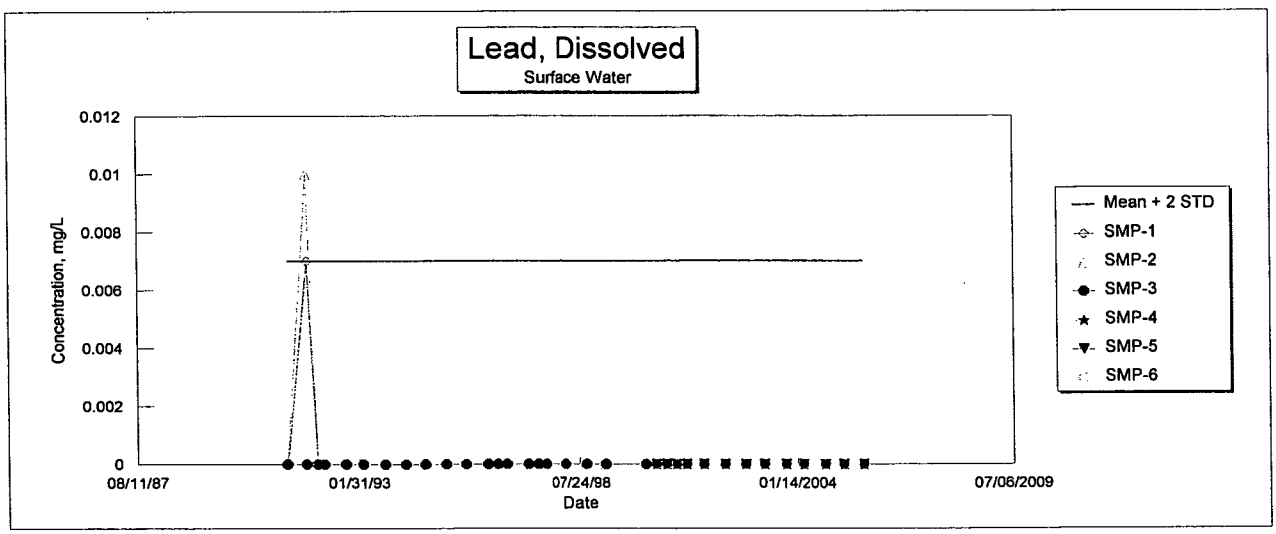
Mean	0.09975	0.0745	ERR	0.0665	0.051	3.957273
Standard Deviation (STD)	0.06603	0.032749	ERR	0.034853	0	0.866981
Mean + 2 STD	0.231811	0.139998	ERR	0.136207	0.051	5.691235



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

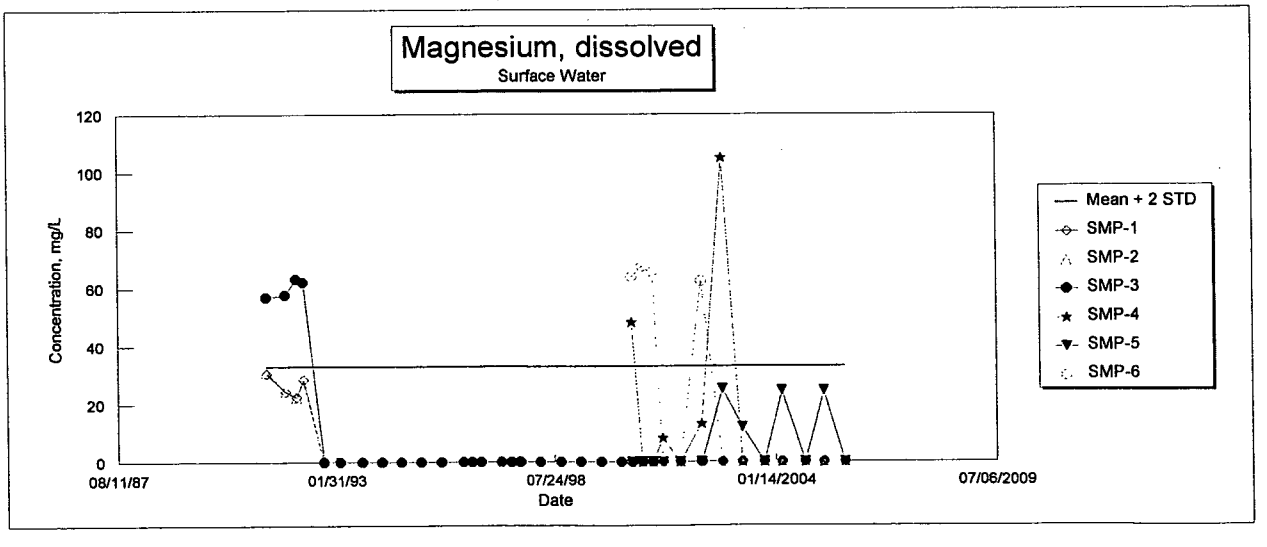
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Lead, dissolved	0.015	0.007	<0.005	<0.005	<0.005			
10/15/91	Lead, dissolved	0.015	0.007	0.007	0.01	<0.005			
01/23/92	Lead, dissolved	0.015	0.007	<0.005	<0.005	<0.005			
03/23/92	Lead, dissolved	0.015	0.007	<0.005	<0.005	<0.005			
09/30/92	Lead, dissolved	0.015	0.007	NT	NT	NT			
03/05/93	Lead, dissolved	0.015	0.007	NT	NT	NT			
09/21/93	Lead, dissolved	0.015	0.007	NT	NT	NT			
03/23/94	Lead, dissolved	0.015	0.007	NT	NT	NT			
09/16/94	Lead, dissolved	0.015	0.007	NT	NT	NT			
03/16/95	Lead, dissolved	0.015	0.007	NT	NT	NT			
09/13/95	Lead, dissolved	0.015	0.007	NT	NT	NT			
03/28/96	Lead, dissolved	0.015	0.007	NT	NT	NT			
06/20/96	Lead, dissolved	0.015	0.007	NT	NT	NT			
09/13/96	Lead, dissolved	0.015	0.007	NT	NT	DRY			
03/19/97	Lead, dissolved	0.015	0.007	NT	NT	DRY			
06/18/97	Lead, dissolved	0.015	0.007	NT	NT	NT			
08/30/97	Lead, dissolved	0.015	0.007	NT	NT	DRY			
03/10/98	Lead, dissolved	0.015	0.007	NT	NT	DRY			
09/21/98	Lead, dissolved	0.015	0.007	NT	NT	DRY			
03/18/99	Lead, dissolved	0.015	0.007	NT	NT	DRY			
03/21/99	Lead, dissolved	0.015	0.007	NT	NT	DRY			
03/21/2000	Lead, dissolved	0.015	0.007	NT	NT	DRY			
06/28/2000	Lead, dissolved	0.015	0.007	NT	NT	DRY	<0.005	DRY	<0.005
09/28/2000	Lead, dissolved	0.015	0.007	NT	NT	DRY	DRY	DRY	<0.005
12/27/2000	Lead, dissolved	0.015	0.007	NT	NT	NT	DRY	DRY	<0.005
03/28/2001	Lead, dissolved	0.015	0.007	NT	NT	DRY	<0.005	DRY	DRY
09/02/2001	Lead, dissolved	0.015	0.007	NT	NT	NT	NT	DRY	DRY
03/19/2002	Lead, dissolved	0.015	0.007	NT	NT	NT	<0.005	NT	<0.005
10/07/2002	Lead, dissolved	0.015	0.007	NT	NT	NT	<0.005	<0.005	NT
03/14/2003	Lead, dissolved	0.015	0.007	NT	NT	DRY	NT	<0.005	NT
09/29/2003	Lead, dissolved	0.015	0.007	NT	NT	DRY	DRY	Dry	NT
03/08/2004	Lead, dissolved	0.015	0.007	NT	NT	DRY	NT	<0.005	NT
09/27/2004	Lead, dissolved	0.015	0.007	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Lead, dissolved	0.015	0.007	NT	NT	DRY	NT	<0.005	NT
09/22/2005	Lead, dissolved	0.015	0.007	NT	NT	DRY	DRY	DRY	NT
	Mean			0.007	0.01	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			0	0	ERR	ERR	ERR	ERR
	Mean + 2 STD			0.007	0.01	ERR	ERR	ERR	ERR



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW6
	mg/L								
04/23/91	Magnesium, dissolved	--	32.97694	30.6	31.3	57			
10/15/91	Magnesium, dissolved	--	32.97694	24.4	24.7	57.8			
01/23/92	Magnesium, dissolved	--	32.97694	22.5	22.5	63.3			
03/23/92	Magnesium, dissolved	--	32.97694	28.6	28.1	62.2			
09/30/92	Magnesium, dissolved	--	32.97694	NT	NT	NT			
03/05/93	Magnesium, dissolved	--	32.97694	NT	NT	NT			
09/21/93	Magnesium, dissolved	--	32.97694	NT	NT	NT			
03/23/94	Magnesium, dissolved	--	32.97694	NT	NT	NT			
09/16/94	Magnesium, dissolved	--	32.97694	NT	NT	NT			
03/16/95	Magnesium, dissolved	--	32.97694	NT	NT	NT			
09/13/95	Magnesium, dissolved	--	32.97694	NT	NT	NT			
03/28/96	Magnesium, dissolved	--	32.97694	NT	NT	NT			
06/20/96	Magnesium, dissolved	--	32.97694	NT	NT	NT			
09/13/96	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
03/19/97	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
06/18/97	Magnesium, dissolved	--	32.97694	NT	NT	NT			
08/30/97	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
03/10/98	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
09/21/98	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
03/18/99	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
09/21/99	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
03/21/2000	Magnesium, dissolved	--	32.97694	NT	NT	DRY			
06/28/2000	Magnesium, dissolved	--	32.97694	NT	NT	DRY	48.3	DRY	64
09/28/2000	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	67.5
12/27/2000	Magnesium, dissolved	--	32.97694	NT	NT	NT	DRY	DRY	65.7
03/28/2001	Magnesium, dissolved	--	32.97694	NT	NT	DRY	8.2	DRY	DRY
09/02/2001	Magnesium, dissolved	--	32.97694	NT	NT	NT	NT	DRY	DRY
03/19/2002	Magnesium, dissolved	--	32.97694	NT	NT	NT	13.2	NT	62.6
10/07/2002	Magnesium, dissolved	--	32.97694	NT	NT	NT	105	25.3	NT
03/14/2003	Magnesium, dissolved	--	32.97694	NT	NT	DRY	NT	12	NT
09/29/2003	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Magnesium, dissolved	--	32.97694	NT	NT	DRY	NT	24.6	NT
09/27/2004	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Magnesium, dissolved	--	32.97694	NT	NT	DRY	NT	24.6	NT
09/22/2005	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	NT
	Mean			26.525	26.65	60.075	43.675	21.625	64.95
	Standard Deviation (STD)			3.225969	3.344772	2.717881	38.63078	5.56434	1.836437
	Mean + 2 STD			32.97694	33.33954	65.51076	120.9366	32.75368	68.62287



AMES-STORY ENVIRONMENTAL LANDFILL

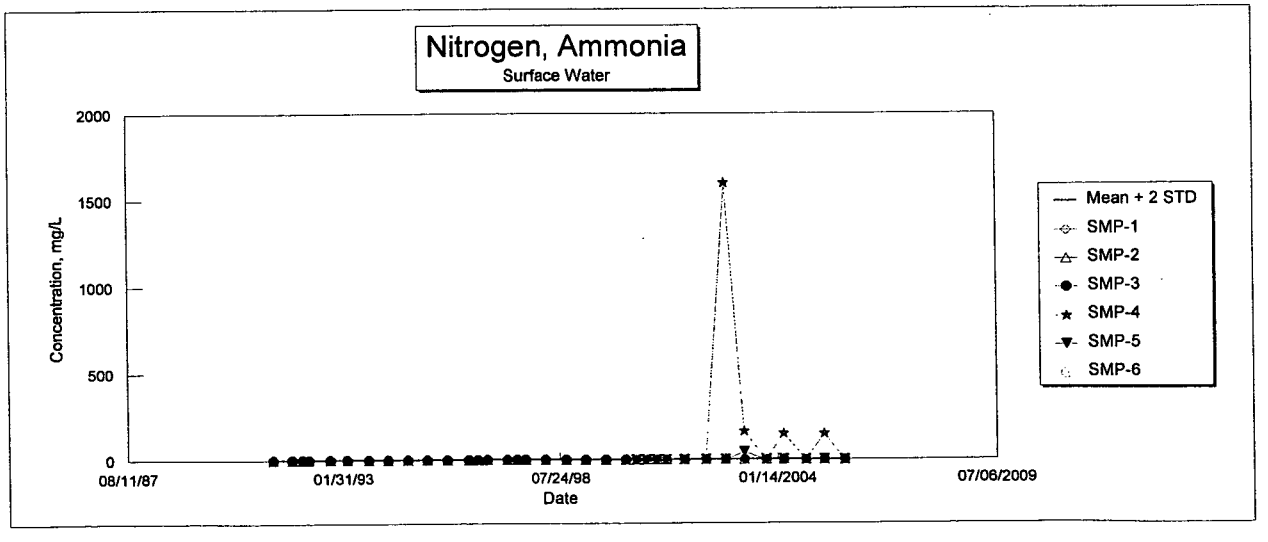
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	Sw 5	SW 6
	mg/L								
04/23/91	Mercury, dissolved	0.002	0.0005	<0.001	<0.001	<0.001			
10/15/91	Mercury, dissolved	0.002	0.0005	<0.0005	<0.0005	<0.0005			
01/23/92	Mercury, dissolved	0.002	0.0005	<0.0005	<0.0005	<0.0005			
03/23/92	Mercury, dissolved	0.002	0.0005	<0.0005	<0.0005	<0.0005			
09/30/92	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
03/05/93	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
09/21/93	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
03/23/94	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
09/16/94	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
03/16/95	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
09/13/95	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
03/28/96	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
06/20/96	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
09/13/96	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
03/19/97	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
06/18/97	Mercury, dissolved	0.002	0.0005	NT	NT	NT			
08/30/97	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
03/10/98	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
09/21/98	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
03/18/99	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
09/21/99	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
03/28/2000	Mercury, dissolved	0.002	0.0005	NT	NT	DRY			
06/28/2000	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	<0.0005	DRY	<0.0005
09/28/2000	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	DRY	DRY	<0.0005
12/27/2000	Mercury, dissolved	0.002	0.0005	NT	NT	NT	DRY	DRY	<0.0005
03/28/2001	Mercury, dissolved	0.002	0.0005	NT	NT	Dry	<0.0005	DRY	DRY
09/02/2001	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	DRY
03/19/2002	Mercury, dissolved	0.002	0.0005	NT	NT	NT	<0.0005	NT	<0.0005
10/07/2002	Mercury, dissolved	0.002	0.0005	NT	NT	NT	<0.0005	<0.0005	NT
03/14/2003	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	NT	<0.005	NT
09/29/2003	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	NT	<0.0005	NT
09/27/2004	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	NT	<0.0005	NT
09/22/2005	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

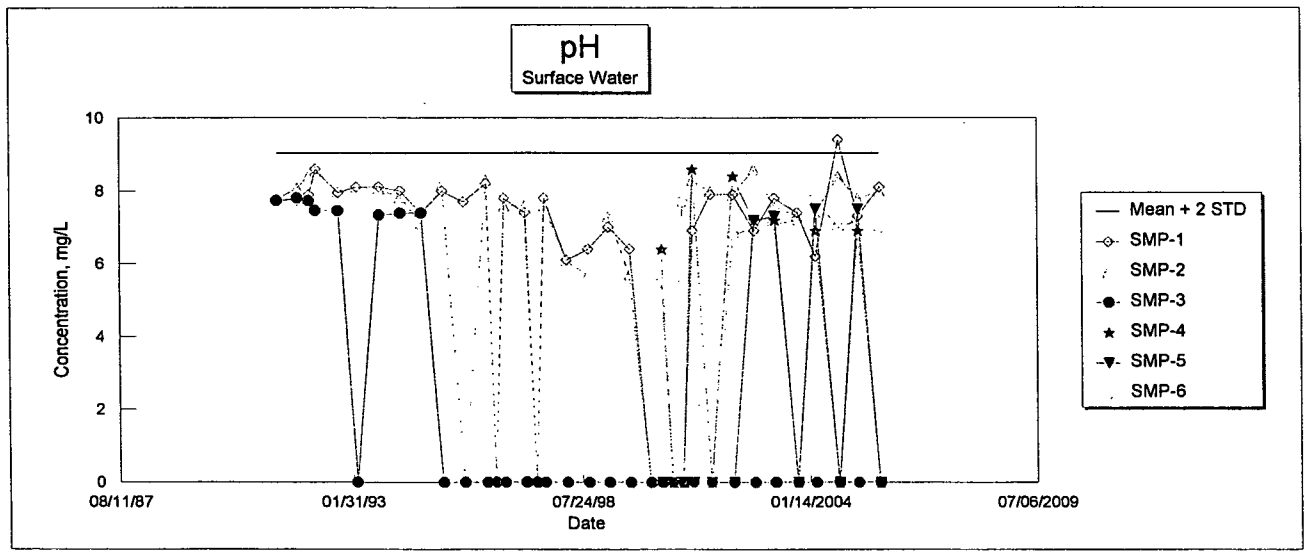
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Nitrogen, Ammonia	--	1	<0.5	<0.5	<0.5			
10/15/91	Nitrogen, Ammonia	--	1	<0.5	<0.5	<0.5			
01/23/92	Nitrogen, Ammonia	--	1	<1.0	<1.0	<1.0			
03/23/92	Nitrogen, Ammonia	--	1	<1.0	<1.0	<1.0			
09/30/92	Nitrogen, Ammonia	--	1	<1	<1	DRY			
03/05/93	Nitrogen, Ammonia	--	1	<1	<1	DRY			
09/21/93	Nitrogen, Ammonia	--	1	<1	<1	<1			
03/23/94	Nitrogen, Ammonia	--	1	<1	<1	<1			
09/16/94	Nitrogen, Ammonia	--	1	<1	<1	NT			
03/16/95	Nitrogen, Ammonia	--	1	<1	NT	NT			
09/13/95	Nitrogen, Ammonia	--	1	<1	<1	NT			
03/28/96	Nitrogen, Ammonia	--	1	<1	<1	NT			
06/20/96	Nitrogen, Ammonia	--	1	NT	NT	NT			
09/13/96	Nitrogen, Ammonia	--	1	<1	<1	DRY			
03/19/97	Nitrogen, Ammonia	--	1	<1	<1	DRY			
06/18/97	Nitrogen, Ammonia	--	1	NT	NT	NT			
08/30/97	Nitrogen, Ammonia	--	1	<1	<1	DRY			
03/10/98	Nitrogen, Ammonia	--	1	<1	<1	DRY			
09/21/98	Nitrogen, Ammonia	--	1	<1	<1	DRY			
03/18/99	Nitrogen, Ammonia	--	1	<1	<1	DRY			
09/21/99	Nitrogen, Ammonia	--	1	<1	<1	DRY			
03/21/2000	Nitrogen, Ammonia	--	1	<1	<1	DRY			
06/28/2000	Nitrogen, Ammonia	--	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	Nitrogen, Ammonia	--	1	<1	<1	DRY	DRY	DRY	<1
12/27/2000	Nitrogen, Ammonia	--	1	NT	NT	NT	DRY	DRY	<1
03/28/2001	Nitrogen, Ammonia	--	1	<1	<1	DRY	<1	DRY	DRY
09/02/2001	Nitrogen, Ammonia	--	1	<1	<1	DRY	NT	DRY	DRY
03/19/2002	Nitrogen, Ammonia	--	1	<1	<1	DRY	<1	DRY	<1
10/07/2002	Nitrogen, Ammonia	--	1	<1	<1	DRY	1600	<1	1.3
03/14/2003	Nitrogen, Ammonia	--	1	<1	<1	DRY	164	44.8	<1
09/29/2003	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	DRY	DRY	<1.0
03/08/2004	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	151	1.7	1.1
09/27/2004	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	DRY	DRY	1
03/17/2005	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	151	1.7	<1.0
09/22/2005	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	DRY	DRY	1
	Mean			ERR	ERR	ERR	516.5	16.06667	1.1
	Standard Deviation (STD)			ERR	ERR	ERR	625.5815	20.31753	0.122474
	Mean + 2 STD			ERR	ERR	ERR	1767.663	56.70174	1.344949



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	Sw 4	SW 5	Sw 6
04/23/91	pH	--	9.026266	7.76	7.77	7.73			
10/15/91	pH	--	9.026266	7.74	8.08	7.80			
01/23/92	pH	--	9.026266	7.89	8.41	7.72			
03/23/92	pH	--	9.026266	8.60	8.54	7.45			
09/30/92	pH	--	9.026266	7.95	8	7.45			
03/05/93	pH	--	9.026266	8.11	8.11	DRY			
09/21/93	pH	--	9.026266	8.12	8.07	7.34			
03/23/94	pH	--	9.026266	8.01	7.83	7.39			
09/16/94	pH	--	9.026266	7.39	7.11	7.39			
03/16/95	pH	--	9.026266	8	8.2	DRY			
09/13/95	pH	--	9.026266	7.7	DRY	DRY			
03/28/96	pH	--	9.026266	8.2	8.3	Dry			
06/20/96	pH	--	9.026266	NT	NT	NT			
09/13/96	pH	--	9.026266	7.8	7.6	DRY			
03/19/97	pH	--	9.026266	7.4	7.6	DRY			
06/18/97	pH	--	9.026266	NT	NT	NT			
08/30/97	pH	--	9.026266	7.8	7.6	DRY			
03/10/98	pH	--	9.026266	6.1	6.1	DRY			
09/21/98	pH	--	9.026266	6.4	5.7	DRY			
03/18/99	pH	--	9.026266	7	7.3	DRY			
09/21/99	pH	--	9.026266	6.4	5.7	DRY			
03/21/2000	pH	--	9.026266	NT	NT	DRY			
06/28/2000	pH	--	9.026266	NT	NT	DRY	6.4	DRY	5.5
09/28/2000	pH	--	9.026266	NT	NT	DRY	NT	NT	NT
12/27/2000	pH	--	9.026266	NT	NT	NT	DRY	DRY	7.7
03/28/2001	pH	--	9.026266	6.9	8.3	DRY	8.6	DRY	DRY
09/02/2001	pH	--	9.026266	7.9	8	DRY	NT	DRY	DRY
03/19/2002	pH	--	9.026266	7.9	7.9	DRY	8.4	DRY	6.8
10/07/2002	pH	--	9.026266	6.9	8.6	DRY	7.2	7.2	7
03/14/2003	pH	--	9.026266	7.8	7.6	DRY	7.2	7.3	7.1
09/29/2003	pH	--	9.026266	7.4	7.3	DRY	DRY	DRY	7.2
03/08/2004	pH	--	9.026266	6.2	7.4	DRY	6.9	7.5	7.8
09/27/2004	pH	--	9.026266	9.4	8.4	DRY	DRY	DRY	7
03/17/2005	pH	--	9.026266	7.3	7.8	DRY	6.9	7.5	7.2
09/22/2005	pH	--	9.026266	8.1	8	DRY	DRY	DRY	7
	Mean			7.592069	7.69	7.53375	7.371429	7.375	7.03
	Standard Deviation (STD)			0.717098	0.747047	0.172115	0.757278	0.129904	0.591692
	Mean + 2 STD			9.026266	9.184093	7.877979	8.885984	7.634808	8.213385
	Mean - 2 STD			6.157872					



AMES-STORY ENVIRONMENTAL LANDFILL

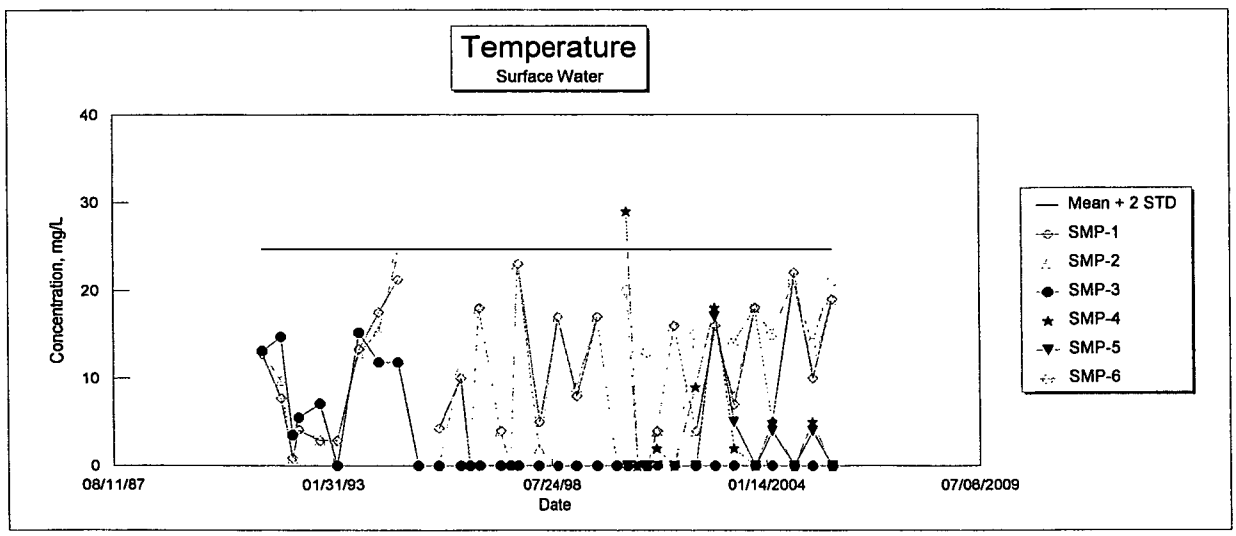
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Phenols	--	0.1	<0.100	<0.100	<0.100			
10/15/91	Phenols	--	0.1	<0.100	<0.100	<0.100			
01/23/92	Phenols	--	0.1	<0.100	<0.100	<0.100			
03/23/92	Phenols	--	0.1	<0.100	<0.100	<0.100			
09/30/92	Phenols	--	0.1	<0.100	<0.100	DRY			
03/05/93	Phenols	--	0.1	NT	NT	NT			
09/21/93	Phenols	--	0.1	<0.100	<0.100	<0.100			
03/23/94	Phenols	--	0.1	NT	NT	NT			
09/16/94	Phenols	--	0.1	<0.100	<0.100	NT			
03/16/95	Phenols	--	0.1	<0.100	NT	NT			
09/13/95	Phenols	--	0.1	NT	NT	NT			
03/28/96	Phenols	--	0.1	NT	NT	NT			
06/20/96	Phenols	--	0.1	NT	NT	NT			
09/13/96	Phenols	--	0.1	<0.100	<0.100	DRY			
03/19/97	Phenols	--	0.1	NT	NT	NT			
06/18/97	Phenols	--	0.1	NT	NT	NT			
08/30/97	Phenols	--	0.1	<0.100	<0.100	DRY			
03/10/98	Phenols	--	0.1	NT	NT	NT			
09/21/98	Phenols	--	0.1	<0.100	<0.100	DRY			
03/18/99	Phenols	--	0.1	NT	NT	DRY			
09/21/99	Phenols	--	0.1	<0.100	<0.100	DRY			
03/21/2000	Phenols	--	0.1	NT	NT	DRY			
06/28/2000	Phenols	--	0.1	NT	NT	DRY	NT	NT	NT
09/28/2000	Phenols	--	0.1	<0.100	<0.100	DRY	DRY	DRY	<0.100
12/27/2000	Phenols	--	0.1	NT	NT	NT	DRY	DRY	NT
03/28/2001	Phenols	--	0.1	NT	NT	NT	NT	DRY	Dry
09/02/2001	Phenols	--	0.1	<0.100	<0.100	DRY	NT	DRY	Dry
03/19/2002	Phenols	--	0.1	NT	NT	NT	NT	NT	NT
10/07/2002	Phenols	--	0.1	<0.100	<0.100	DRY	<0.100	<0.100	<0.100
03/14/2003	Phenols	--	0.1	NT	NT	DRY	NT	NT	NT
09/29/2003	Phenols	--	0.1	<0.100	<0.100	DRY	DRY	DRY	<0.100
03/08/2004	Phenols	--	NT	NT	NT	DRY	NT	NT	NT
09/27/2004	Phenols	--	0.1	<0.100	<0.100	DRY	DRY	DRY	<0.100
03/17/2005	Phenols	--	NT	NT	NT	DRY	NT	NT	NT
09/22/2005	Phenols	--	0.1	<0.100	<0.100	DRY	DRY	DRY	<0.100
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

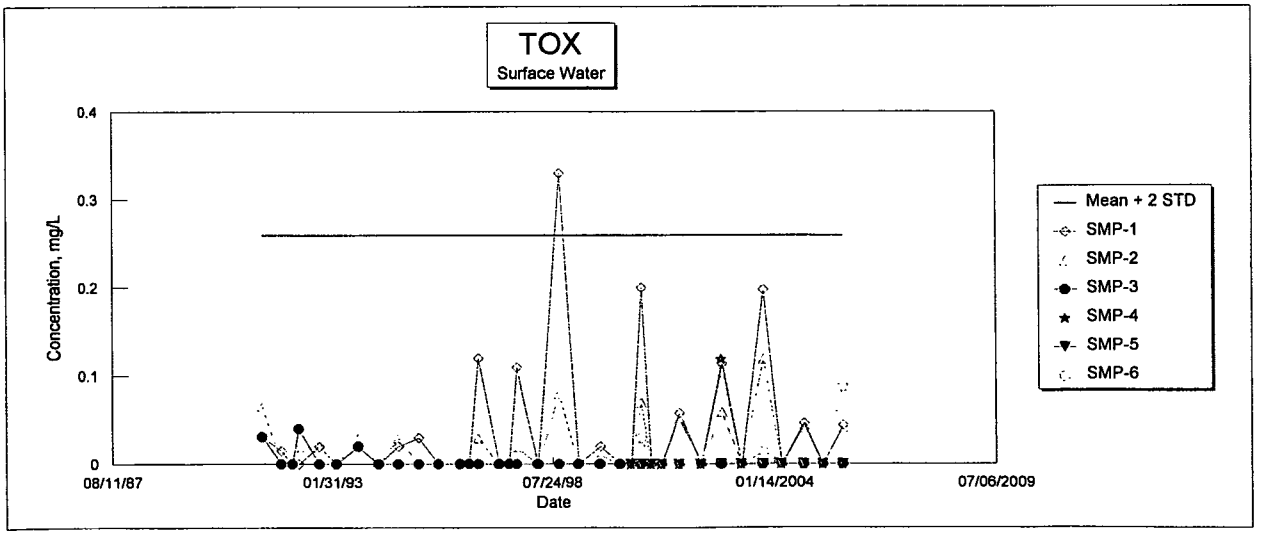
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
04/23/91	Temperature, celsius	--	24.64875	12.8	12.9	13.1			
10/15/91	Temperature, celsius	--	24.64875	7.7	9.8	14.7			
01/23/92	Temperature, celsius	--	24.64875	0.9	0.9	3.5			
03/23/92	Temperature, celsius	--	24.64875	4.1	4.6	5.5			
09/30/92	Temperature, celsius	--	24.64875	2.9	3	7.1			
03/05/93	Temperature, celsius	--	24.64875	2.9	2.9	DRY			
09/21/93	Temperature, celsius	--	24.64875	13.3	12.9	15.2			
03/23/94	Temperature, celsius	--	24.64875	17.5	15.4	11.8			
09/16/94	Temperature, celsius	--	24.64875	21.2	23.8	11.8			
03/16/95	Temperature, celsius	--	24.64875			DRY			
09/13/95	Temperature, celsius	--	24.64875	4.28	DRY	DRY			
03/28/96	Temperature, celsius	--	24.64875	10	11	DRY			
06/20/96	Temperature, celsius	--	24.64875	NT	NT	NT			
09/13/96	Temperature, celsius	--	24.64875	18	18	Dry			
03/19/97	Temperature, celsius	--	24.64875	4	4	DRY			
06/18/97	Temperature, celsius	--	24.64875	NT	NT	NT			
08/30/97	Temperature, celsius	--	24.64875	23	23	DRY			
03/10/98	Temperature, celsius	--	24.64875	5	2	DRY			
09/21/98	Temperature, celsius	--	24.64875	17	17	DRY			
03/18/99	Temperature, celsius	--	24.64875	8	9	DRY			
09/21/99	Temperature, celsius	--	24.64875	17	17	DRY			
03/21/2000	Temperature, celsius	--	24.64875	NT	NT	DRY			
06/28/2000	Temperature, celsius	--	24.64875	NT	NT	DRY	29	DRY	20
09/28/2000	Temperature, celsius	--	24.64875	NT	NT	DRY	NT	NT	NT
12/27/2000	Temperature, celsius	--	24.64875	NT	NT	NT	DRY	DRY	13
03/28/2001	Temperature, celsius	--	24.64875	4	4	DRY	2	DRY	Dry
09/02/2001	Temperature, celsius	--	24.64875	16	16	DRY	NT	DRY	Dry
03/19/2002	Temperature, celsius	--	24.64875	4	4	DRY	9	DRY	15
10/07/2002	Temperature, celsius	--	24.64875	16	15	DRY	18	17	18
03/14/2003	Temperature, celsius	--	24.64875	7	8	DRY	2	5	14
09/29/2003	Temperature, celsius	--	24.64875	18	18	DRY	DRY	DRY	18
03/08/2004	Temperature, celsius	--	24.64875	5	5	DRY	5	4	15
09/27/2004	Temperature, celsius	--	24.64875	22	21	DRY	DRY	DRY	21
03/17/2005	Temperature, celsius	--	24.64875	10	11	DRY	5	4	14
09/22/2005	Temperature, celsius	--	24.64875	19	19	DRY	DRY	DRY	21
	Mean			11.09214	11.41481	10.3375	10	7.5	16.9
	Standard Deviation (STD)			6.778302	6.819889	4.111246	9.28901	5.5	2.91376
	Mean + 2 STD			24.64875	25.05459	18.55999	28.57802	18.5	22.72752



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Total Organic Halogens	--	0.259469	0.031	0.066	0.031			
10/15/91	Total Organic Halogens	--	0.259469	0.015	<0.01	<0.01			
01/23/92	Total Organic Halogens	--	0.259469	<0.01	<0.01	<0.01			
03/23/92	Total Organic Halogens	--	0.259469	<0.01	0.02	0.04			
09/30/92	Total Organic Halogens	--	0.259469	0.02	0.02	DRY			
03/05/93	Total Organic Halogens	--	0.259469	NT	NT	NT			
09/21/93	Total Organic Halogens	--	0.259469	0.02	0.03	0.02			
03/23/94	Total Organic Halogens	--	0.259469	NT	NT	NT			
09/16/94	Total Organic Halogens	--	0.259469	0.02	0.03	NT			
03/16/95	Total Organic Halogens	--	0.259469	0.03	NT	NT			
09/13/95	Total Organic Halogens	--	0.259469	NT	NT	NT			
03/28/96	Total Organic Halogens	--	0.259469	NT	NT	NT			
06/20/96	Total Organic Halogens	--	0.259469	NT	NT	NT			
09/13/96	Total Organic Halogens	--	0.259469	0.12	0.03	DRY			
03/19/97	Total Organic Halogens	--	0.259469	NT	NT	NT			
06/18/97	Total Organic Halogens	--	0.259469	NT	NT	NT			
08/30/97	Total Organic Halogens	--	0.259469	0.11	0.02	DRY			
03/10/98	Total Organic Halogens	--	0.259469	NT	NT	NT			
09/21/98	Total Organic Halogens	--	0.259469	0.33	0.08	DRY			
03/18/99	Total Organic Halogens	--	0.259469	NT	NT	DRY			
09/21/99	Total Organic Halogens	--	0.259469	0.02	0.01	DRY			
03/21/2000	Total Organic Halogens	--	0.259469	NT	NT	DRY			
06/28/2000	Total Organic Halogens	--	0.259469	NT	NT	DRY	NT	DRY	NT
09/28/2000	Total Organic Halogens	--	0.259469	0.2	0.07	DRY	DRY	DRY	0.03
12/27/2000	Total Organic Halogens	--	0.259469	NT	NT	NT	DRY	DRY	NT
03/28/2001	Total Organic Halogens	--	0.259469	NT	NT	NT	NT	DRY	Dry
09/02/2001	Total Organic Halogens	--	0.259469	0.058	0.052	DRY	NT	DRY	Dry
03/19/2002	Total Organic Halogens	--	0.259469	NT	NT	NT	NT	NT	NT
10/07/2002	Total Organic Halogens	--	0.259469	0.114	0.059	DRY	0.119	<0.01	0.104
03/14/2003	Total Organic Halogens	--	0.259469	NT	NT	DRY	NT	NT	NT
09/29/2003	Total Organic Halogens	--	0.259469	0.198	0.119	DRY	Dry	Dry	0.014
03/08/2004	Total Organic Halogens	--	0.259469	NT	NT	DRY	NT	NT	NT
09/27/2004	Total Organic Halogens	--	0.259469	0.046	0.044	DRY	DRY	DRY	0.04
03/17/2005	Total Organic Halogens	--	0.259469	NT	NT	DRY	NT	NT	NT
09/22/2005	Total Organic Halogens	--	0.259469	0.044	0.042	DRY	DRY	DRY	0.088
	Mean			0.086	0.046133	0.030333	0.119	ERR	0.0552
	Standard Deviation (STD)			0.086735	0.028021	0.008179	0	ERR	0.034701
	Mean + 2 STD			0.259469	0.102176	0.04669	0.119	ERR	0.124602



AMES-STORY ENVIRONMENTAL LANDFILL

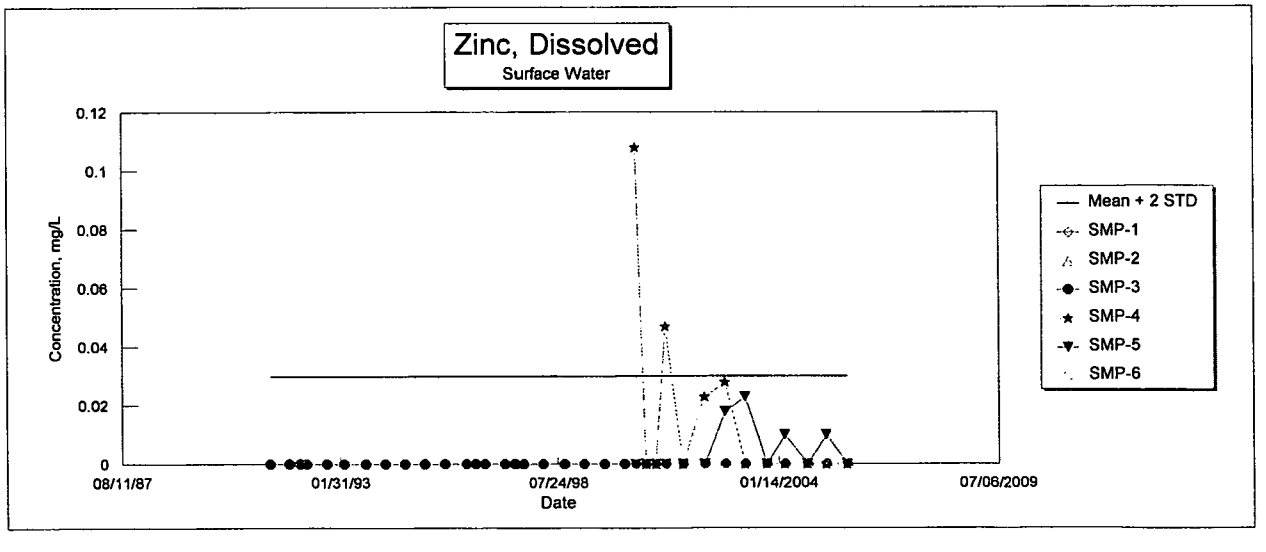
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	ug/L								
04/23/91	Trichloroethene *	5	1	<1	<1	<1			
10/15/91	Trichloroethene *	5	1	<1	<1	<1			
01/23/92	Trichloroethene *	5	1	<1	<1	<1			
03/23/92	Trichloroethene *	5	1	<1	<1	<1			
09/30/92	Trichloroethene *	5	1	NT	NT	NT			
03/05/93	Trichloroethene *	5	1	NT	NT	NT			
09/21/93	Trichloroethene *	5	1	NT	NT	NT			
03/23/94	Trichloroethene *	5	1	NT	NT	NT			
09/16/94	Trichloroethene *	5	1	NT	NT	NT			
03/16/95	Trichloroethene *	5	1	NT	NT	NT			
09/13/95	Trichloroethene *	5	1	NT	NT	NT			
03/28/96	Trichloroethene *	5	1	NT	NT	NT			
06/20/96	Trichloroethene *	5	1	NT	NT	NT			
09/13/96	Trichloroethene *	5	1	NT	NT	DRY			
03/19/97	Trichloroethene *	5	1	NT	NT	NT			
06/18/97	Trichloroethene *	5	1	NT	NT	NT			
08/30/97	Trichloroethene *	5	1	NT	NT	DRY			
03/10/98	Trichloroethene *	5	1	NT	NT	DRY			
09/21/98	Trichloroethene *	5	1	NT	NT	DRY			
03/18/99	Trichloroethene *	5	1	NT	NT	DRY			
09/21/99	Trichloroethene *	5	1	NT	NT	DRY			
03/21/2000	Trichloroethene *	5	1	NT	NT	DRY			
06/28/2000	Trichloroethene *	5	1	NT	NT	DRY	<1	DRY	<1
09/28/2000	Trichloroethene *	5	1	NT	NT	DRY	DRY	DRY	<1
12/27/2000	Trichloroethene *	5	1	NT	NT	NT	DRY	DRY	<1
03/28/2001	Trichloroethene *	5	1	NT	NT	DRY	<1	DRY	Dry
09/02/2001	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	Dry
03/19/2002	Trichloroethene *	5	1	NT	NT	NT	<1	NT	<1
10/07/2002	Trichloroethene *	5	1	NT	NT	NT	<1	<1	NT
03/14/2003	Trichloroethene *	5	1	NT	NT	DRY	NT	<1	NT
09/29/2003	Trichloroethene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Trichloroethene *	5	1	NT	NT	DRY	NT	<1	NT
09/27/2004	Trichloroethene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Trichloroethene *	5	1	NT	NT	DRY	NT	<1	NT
09/22/2005	Trichloroethene *	5	1	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	ERR	ERR	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	ERR	ERR	ERR
	Mean + 2 STD			ERR	ERR	ERR	ERR	ERR	ERR

AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Zinc, dissolved	2	0.03	<0.03	<0.03	<0.03			
10/15/91	Zinc, dissolved	2	0.03	<0.03	<0.03	<0.03			
01/23/92	Zinc, dissolved	2	0.03	<0.03	<0.03	<0.03			
03/23/92	Zinc, dissolved	2	0.03	<0.03	<0.03	<0.03			
09/30/92	Zinc, dissolved	2	0.03	NT	NT	NT			
03/05/93	Zinc, dissolved	2	0.03	NT	NT	NT			
09/21/93	Zinc, dissolved	2	0.03	NT	NT	NT			
03/23/94	Zinc, dissolved	2	0.03	NT	NT	NT			
09/16/94	Zinc, dissolved	2	0.03	NT	NT	NT			
03/16/95	Zinc, dissolved	2	0.03	NT	NT	NT			
09/13/95	Zinc, dissolved	2	0.03	NT	NT	NT			
03/28/96	Zinc, dissolved	2	0.03	NT	NT	NT			
06/20/96	Zinc, dissolved	2	0.03	NT	NT	NT			
09/13/96	Zinc, dissolved	2	0.03	NT	NT	DRY			
03/19/97	Zinc, dissolved	2	0.03	NT	NT	DRY			
06/18/97	Zinc, dissolved	2	0.03	NT	NT	NT			
08/30/97	Zinc, dissolved	2	0.03	NT	NT	DRY			
03/10/98	Zinc, dissolved	2	0.03	NT	NT	DRY			
09/21/98	Zinc, dissolved	2	0.03	NT	NT	DRY			
03/18/99	Zinc, dissolved	2	0.03	NT	NT	DRY			
09/21/99	Zinc, dissolved	2	0.03	NT	NT	DRY			
03/21/2000	Zinc, dissolved	2	0.03	NT	NT	DRY			
06/28/2000	Zinc, dissolved	2	0.03	NT	NT	DRY	0.108	DRY	<0.03
09/28/2000	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	<0.03
12/27/2000	Zinc, dissolved	2	0.03	NT	NT	NT	DRY	Dry	<0.03
03/28/2001	Zinc, dissolved	2	0.03	NT	NT	DRY	0.047	Dry	Dry
09/02/2001	Zinc, dissolved	2	0.03	NT	NT	NT	NT	Dry	Dry
03/19/2002	Zinc, dissolved	2	0.03	NT	NT	NT	0.023	NT	<0.01
10/07/2002	Zinc, dissolved	2	0.03	NT	NT	NT	0.028	0.018	NT
03/14/2003	Zinc, dissolved	2	0.03	NT	NT	DRY	NT	0.023	NT
09/29/2003	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	NT
03/08/2004	Zinc, dissolved	2	0.03	NT	NT	DRY	NT	0.01	NT
09/27/2004	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	NT
03/17/2005	Zinc, dissolved	2	0.03	NT	NT	DRY	NT	0.01	NT
09/22/2005	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.0515	0.01525	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	0.033827	0.00554	ERR
	Mean + 2 STD			ERR	ERR	ERR	0.119154	0.026329	ERR



APPENDIX E
May 5, 1992 Semi-Annual Inspection Report

May 5, 1992

Nina Koger
Solid Waste Section - IDNR
Wallace State Office Building
900 E. Grand Ave.
Des Moines, Iowa 50319

RE: SEMI-ANNUAL INSPECTION
AMES/STORY ENVIRONMENTAL LANDFILL
IDNR PERMIT NO. 85-SDP-13-91P

Dear Mrs. Koger:

In accordance with the Special Provisions of the Permit, a semi-annual inspection of the Ames/Story Environmental Landfill was conducted by Scott Renaud, P.E., on April 29, 1992.

At the time of the inspection, a certified landfill operator was on duty along with an equipment operator. A tracked loader is being used to spread, compact, and cover C&D waste as per the Development Plan. All wastes have been covered expect those received on this day. The site was well graded with no evidence of standing water. However, cover on the north slope is in need of repair due to erosion, and the siltation basin at the north end adjacent to the drainageway should be cleaned and reconstructed when weather conditions permit.

In addition to C&D wastes, the site is receiving a large quantity of bottom/fly ash from the City of Ames Electric Department which has been excavated from storage lagoons at the Municipal power plant. The working area was well managed and controlled; no windblown debris extended beyond the confines of the landfill. The access road is in good condition, however, the hard surface street extension and entrance have not yet been constructed as per the Development Plan and City requirements.

Top of landfill elevations in Trench No. 1 have now reached original ground surface elevation, and plans are being made for construction of Trench No. 2. All monitoring wells, monuments, and manholes for leachate collection are in good condition and operational. Landfill personnel are obtaining monthly measurements of leachate flow while CGA is obtaining monthly water level measurements in monitoring wells and quarterly water samples for testing.

Attached are copies of the test results for the fourth quarter sampling of the groundwater monitoring wells, aquifer monitoring wells, and surface water monitoring points. Test results for each quarter have been tabulated with respect to sampling point and parameter, and monthly water levels for groundwater and aquifer monitoring wells have been plotted on the attached graphs.

Also enclosed are two (2), 5.25" floppy diskettes containing tabular and graphical presentation of monitoring data. The mean and standard deviation have been determined for each upgradient monitoring well and compared to corresponding downgradient monitoring wells.

You will find that in a number of instances, test results in the downgradient well do not fall within two standard deviations above the mean value. Most of these findings can be categorized as follows:

1. Initial background concentrations of certain parameters were higher in downgradient monitoring wells than in the corresponding upgradient monitoring well.

2. Changes in detection limits. Where test results were below detection levels, a value of 0.5 x (detection level) was utilized in the computations. However, in some cases detection levels were increased (i.e., lead) which causes problems in the statistical analysis. In most of these cases, the concentrations were below detection levels for all four samples.

3. More recent tests results are less than previous levels. In most cases, an intermediate point is outside the statistical limit, but more recent results are within limits.

4. Increased levels in upgradient wells.

Test results which cannot be discounted for the reasons listed above are confined to MW's 25, 33 & 34 and SMP 3. All of these wells are located in the shallow alluvial sand a gravel formation along the drainageway at the north end of the site. A major interceptor sanitary sewer follows this drainageway which meanders through a heavily industrialized area of Ames. Since levels of various parameters in these downgradient wells exceeded levels in the corresponding upgradient well before waste was landfilled and have continued to increase, there is reason to suspect migration of these constituents from off-site and/or exfiltration from the sanitary sewer. The fact that levels of certain parameters in upgradient wells are increasing is also an indication of migration from off-site.

In accordance with IAC 567-103.2(6), this letter shall constitute notice to the IDNR that the analytical results for certain parameters in all downgradient monitoring wells do not fall within the control limits of two standard deviations above the mean parameter level in the corresponding up gradient well, and that the analytical results for certain parameters in all upgradient monitoring wells do not fall within two standard deviations of the mean parameter level for that monitoring well.

In accordance with IAC 567-103.2(7) the IDNR is to determine if additional sampling and testing is necessary. No major violations of operating rules and regulations or deviations from the approved Development Plan were noted at this time.

If you have any questions or if additional information is needed, contact Scott Renaud or myself at the CGA-Ames office.

Respectfully submitted,
CLAPSADDLE-GARBER ASSOCIATES, INC.

Leslie S. Wolfe, P.E.

cc: Bill Fedeler, Ames/Story Environmental Landfill
Jack Clemons, Field Office 5

APPENDIX F

Water Elevation Data & Maps

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONTHLY WATER ELEVATIONS

DATE	MW 22	MW 23	MW 24	MW 25	MW 26	MW 27	MW 28	MW 29	MW 30	MW 31	MW 32	MW 33	MW 34	MW 35	MW 36	MW 37	MW38	MW 39	MW 40	MW 41	MW 42	MW 43	MW 8	MW 7	MW 8
GND.ELEV, FT.	950.59	945.98	939.44	906.34	950.51	950.51	946.02	945.61	945.54	941.43	939.86	906.32	909.50	916.19	948.97	949.49	936.59	935.93	933.07	933.46	940.64	940.83	942.88	943.21	942.78
4/22/91	945.74	937.19	926.29	898.63	942.06	922.90	NT	NT	911.70	921.48	908.97	898.46	899.86	Installed 2/96	Installed 2/96	Installed 2/96									
5/21/91	945.69	937.11	926.23	898.55	942.04	922.84	NT	NT	911.71	921.39	908.91	898.42	899.82	Installed 2/96	Installed 2/96	Installed 2/96									
6/25/91	945.29	935.49	923.24	898.24	940.34	922.79	NT	NT	911.54	921.02	908.64	898.09	899.56	Installed 2/96	Installed 2/96	Installed 2/96									
7/05/91	943.89	932.56	919.36	897.92	937.48	922.32	NT	NT	911.39	920.40	908.40	897.80	899.42	Installed 2/96	Installed 2/96	Installed 2/96									
8/31/91	943.57	932.42	918.84	897.71	937.38	922.16	NT	NT	911.24	919.71	908.27	897.60	899.20	Installed 2/96	Installed 2/96	Installed 2/96									
10/14/91	941.37	925.81	916.88	896.97	930.24	919.15	NT	NT	908.69	918.13	906.67	896.82	898.77	Installed 2/96	Installed 2/96	Installed 2/96									
11/29/91	943.09	926.35	916.88	897.39	934.18	919.51	NT	NT	909.01	917.70	906.60	897.27	900.13	Installed 2/96	Installed 2/96	Installed 2/96									
12/31/91	942.76	927.84	916.88	897.03	935.01	919.78	NT	NT	909.29	917.17	906.56	896.90	900.88	Installed 2/96	Installed 2/96	Installed 2/96									
1/21/92	942.76	928.65	916.88	897.28	935.92	920.00	NT	NT	909.55	917.27	906.74	897.12	901.12	Installed 2/96	Installed 2/96	Installed 2/96									
2/17/92	941.97	929.13	916.88	897.29	935.72	920.07	NT	NT	909.69	917.11	906.76	897.16	901.00	Installed 2/96	Installed 2/96	Installed 2/96									
3/18/92	943.59	931.71	924.15	897.82	938.73	921.02	NT	NT	910.30	917.45	907.81	897.69	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
4/22/92	943.89	932.55	926.15	898.47	939.22	921.60	NT	NT	910.65	919.94	908.48	898.35	903.04	Installed 2/96	Installed 2/96	Installed 2/96									
5/30/92	942.17	932.85	922.98	897.80	938.00	921.75	NT	NT	910.83	918.81	908.67	897.67	901.84	Installed 2/96	Installed 2/96	Installed 2/96									
6/30/92	941.55	930.26	919.03	897.63	937.00	921.19	NT	NT	910.08	918.59	908.11	897.50	900.85	Installed 2/96	Installed 2/96	Installed 2/96									
7/28/92	943.89	929.93	917.76	898.33	939.38	920.81	NT	NT	910.03	918.67	907.61	898.12	901.79	Installed 2/96	Installed 2/96	Installed 2/96									
8/22/92	943.21	930.42	919.53	897.84	938.92	920.65	NT	NT	910.24	918.34	907.63	897.71	901.25	Installed 2/96	Installed 2/96	Installed 2/96									
9/30/92	941.15	928.20	919.44	897.61	937.26	919.53	NT	NT	909.39	917.89	907.03	897.50	900.31	Installed 2/96	Installed 2/96	Installed 2/96									
10/29/92	940.26	927.12	916.88	897.54	936.15	919.48	NT	NT	908.88	917.65	906.74	897.42	899.50	Installed 2/96	Installed 2/96	Installed 2/96									
11/25/92	940.94	928.01	916.88	897.67	937.25	919.67	NT	NT	909.19	917.47	906.83	897.52	901.23	Installed 2/96	Installed 2/96	Installed 2/96									
12/10/92	941.21	928.23	916.88	897.41	936.84	919.77	NT	NT	909.31	917.60	906.74	897.33	900.94	Installed 2/96	Installed 2/96	Installed 2/96									
1/30/93	941.33	928.29	916.88	897.39	936.78	919.88	NT	NT	909.37	917.64	906.85	897.31	900.89	Installed 2/96	Installed 2/96	Installed 2/96									
2/22/93	939.55	929.28	916.88	897.22	935.16	919.23	NT	NT	909.64	917.46	906.70	897.06	901.13	Installed 2/96	Installed 2/96	Installed 2/96									
3/4/93	939.45	929.24	916.88	897.58	934.93	919.15	939.32	934.81	909.50	917.47	906.66	897.42	901.98	Installed 2/96	Installed 2/96	Installed 2/96									
4/27/93	941.79	936.40	927.68	897.84	939.11	920.27	940.68	937.01	911.30	921.03	908.68	897.68	902.76	Installed 2/96	Installed 2/96	Installed 2/96									
5/27/93	942.32	935.88	928.16	898.20	938.67	920.71	941.12	936.61	911.64	924.19	909.76	898.06	903.30	Installed 2/96	Installed 2/96	Installed 2/96									
6/30/93	942.37	935.34	927.10	898.40	938.11	920.94	941.12	936.51	911.84	924.63	909.96	898.28	902.90	Installed 2/96	Installed 2/96	Installed 2/96									
7/27/93	942.65	936.74	928.60	897.80	938.25	921.13	940.98	937.41	912.34	925.57	911.08	897.72	903.00	Installed 2/96	Installed 2/96	Installed 2/96									
8/3/93	942.57	936.50	928.04	897.66	937.71	920.81	941.22	937.71	912.44	927.59	910.06	897.52	902.66	Installed 2/96	Installed 2/96	Installed 2/96									
9/21/93	941.84	934.38	925.01	897.32	936.79	920.87	940.82	937.41	912.40	923.05	909.56	897.40	901.78	Installed 2/96	Installed 2/96	Installed 2/96									
10/25/93	941.45	934.13	924.40	897.29	936.16	920.21	940.07	936.26	912.24	923.88	909.36	897.16	901.45	Installed 2/96	Installed 2/96	Installed 2/96									
11/22/93	940.39	933.26	923.10	897.08	935.15	919.61	938.82	935.05	911.40	921.83	908.86	896.98	901.38	Installed 2/96	Installed 2/96	Installed 2/96									
12/14/93	939.69	932.68	921.90	897.00	934.55	919.47	938.54	934.45	911.12	921.09	908.62	896.84	901.26	Installed 2/96	Installed 2/96	Installed 2/96									
1/31/94	938.63	931.80	920.26	896.79	933.53	918.51	937.12	933.07	910.32	919.87	907.86	896.72	900.97	Installed 2/96	Installed 2/96	Installed 2/96									
2/28/94	938.16	933.81	922.39	896.91	NT	918.21	937.68	933.56	910.27	923.10	907.90	896.79	901.68	Installed 2/96	Installed 2/96	Installed 2/96									
3/16/94	938.79	934.94	923.90	897.04	932.73	918.39	938.46	934.13	910.84	926.53	908.50	896.92	902.05	Installed 2/96	Installed 2/96	Installed 2/96									
4/30/94	938.79	933.28	922.40	897.04	932.59	916.56	938.37	933.73	910.34	923.26	908.80	896.90	901.02	Installed 2/96	Installed 2/96	Installed 2/96									
5/17/94	939.09	933.74	922.68	896.98	931.65	915.45	938.52	933.75	910.54	924.47	908.54	896.82	NT	Installed 2/96	Installed 2/96	Installed 2/96									
7/31/94	NT	931.38	918.76	897.23	931.62	916.31	939.13	933.41	909.82	919.63	907.45	897.11	901.98	Installed 2/96	Installed 2/96	Installed 2/96									
8/23/94	938.79	932.73	918.24	897.10	931.87	916.53	938.16	934.01	909.94	919.23	907.24	896.92	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
9/16/94	938.85	933.12	918.94	897.14	931.95	916.56	938.50	934.13	910.04	919.03	907.12	896.98	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
10/21/94	938.79	932.48	917.76	896.84	931.81	916.51	938.76	934.31	908.98	918.81	906.90	896.68	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
11/21/94	937.84	931.40	917.44	896.46	931.01	915.99	938.62	933.41	909.86	918.55	906.88	896.34	901.70	Installed 2/96	Installed 2/96	Installed 2/96									
12/22/94	937.69	933.43	NT	896.64	930.81	916.01	938.52	933.11	909.74	918.13	906.51	896.48	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
1/10/95	938.01	933.54	917.44	896.79	931.21	916.11	937.74	933.41	910.14	918.57	906.76	896.57	901.84	Installed 2/96	Installed 2/96	Installed 2/96									
2/6/95	936.71	932.68	917.44	896.85	930.11	915.71	937.56	932.88	910.12	918.43	906.58	896.72	901.70	Installed 2/96	Installed 2/96	Installed 2/96									
3/9/95	935.79	932.90	NT	896.74	929.21	915.33	936.92	932.44	909.89	918.33	906.56	896.60	901.70	Installed 2/96	Installed 2/96	Installed 2/96									
4/14/95	936.79	939.40	925.24	897.34	930.58	915.86	939.72	934.71	910.99	925.73	906.88	897.17	902.60	Installed 2/96	Installed 2/96	Installed 2/96									
5/2/95	937.39	939.56	927.34	897.31	932.01	916.11	939.81	935.26	911.79	926.53	907.88	897.13	902.90	Installed 2/96	Installed 2/96	Installed 2/96									
6/2/95	937.64	934.38	925.44	897.14	932.51	916.23	938.42	933.86	910.95	923.18	908.68	897.02	902.20	Installed 2/96	Installed 2/96	Installed 2/96									
8/23/95	937.39	930.38	919.14	897.14	930.74	915.91	938.17	933.66	909.94	919.83	907.21	896.97	901.70	Installed 2/96	Installed 2/96	Installed 2/96									
9/12/95	936.72	929.36	918.54	896.67	929.67	915.51	937.11	932.76	909.39	919.53	906.94	896.78	901.64	Installed 2/96	Installed 2/96	Installed 2/96									
10/31/95	935.74	928.16	Dry	896.84	927.01	914.71	937.12	932.21	908.79	918.43	906.26	896.72	901.45	Installed 2/96	Installed 2/96	Installed 2/96									
11/20/95	935.57	928.01	Dry	896.68	927.11	914.53	936.87	932.51	908.79	918.23	906.26	896.52	901.75	Installed 2/96	Installed 2/96	Installed 2/96									
12/7/95	935.24	927.88	Dry	896.64	927.11	913.91	936.85	932.26	908.62	917.98	906.01	896.45	901.60	Installed 2/96	Installed 2/96	Installed 2/96									
1/3/96	934.19	927.78	Dry	896.56	NT	914.11	936.17	931.71	908.59	918.03	906.16	896.42	901.60	Installed 2/96	Installed 2/96	Installed 2/96									
2/24/96	Plugged	930.68	Dry	896.94	Plugged	Plugged	936.02	932.61	909.24	917.98	908.06	896.77	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
3/22/96	Plugged	930.63	Dry	896.89	Plugged	Plugged	936.72	932.01	909.17	918.25	905.91	896.72	901.80	903.29	930.77	938.09									
4/1/96	Plugged	NT	Dry	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	903.64	930.47	938.14									
6/20/96	Plugged	937.78	Dry	897.84	Plugged	Plugged	940.37	934.61	910.34	927.03	907.63	897.47	902.25	903.99	932.01	940.84									
9/12/96	Plugged	931.96	Dry	897.29	Plugged	Plugged	938.62	933.71	909.76	919.46	906.76	897.17	901.78	903.24	932.37	941.59									
10/24/96	Plugged	930.58	Dry	897.29	Plugged	Plugged	938.22	933.41	909.76	920.03	906.46	897.12	901.70	903.34	932.49	941.19									
11/18/96	Plugged	938.23	Dry	897.69	Plugged	Plugged	939.27	933.91	909.68	928.03	906.76	897.52	902.00	903.91	932.37	941.14									
12/11/96	Plugged	936.03	Dry	897.39	Plugged	Plugged	938.94	934.21	911.04	926.83	907.81	897.22	901.80	903.64	932.42	941.14									
01/29/97	Plugged	933.88	Dry	897.24	Plugged	Plugged	937.42	932.86	910.64	924.93	907.41	897.07	901.55	903.09	932.39	940.79									
02/25/97	Plugged	936.23	Dry	897.39	Plugged	Plugged	937.57	932.86	910.54	923.08	907.26	897.22	901.88	903.67	931.62	940.14									
03/17/97	Plugged	937.98	Dry	896.54	Plugged	Plugged			910.97	929.58	907.26	897.32	902.40	903.99	931.77	940.59									
04/28/97	Plugged	934.78	Dry	897.54	Plugged	Plugged	938.62	933.91	912.04	928.13	908.56	897.37	902.10	903.79	932.47	941.49									
05/22/97	Plugged	934.53	Dry	897.49	Plugged	Plugged	938.42	933.71	910.84	927.98	908.66	897.32	902.00	903.84	932.57	941.39									
06/18/97	Plugged	933.08	Dry	897.29	Plugged	Plugged	938.37	933.61	910.39	924.13	908.26	897.12	901.80	903.59	932.55	941.59									
07/18/97	Plugged	931.53	Dry	897.29	Plugged	Plugged	938.32	933.41	909.84	921.23	907.56	897.12	901.60	903.49	932.47	941.74									
08/26/97	Plugged	929.43	Dry	897.10	Plugged	Plugged	937.82	933.01	909.19	919.63	906.86	896.92	901.50	903.04	932.42	941.64									
09/01/97	Plugged	929.38	Dry	897.04	Plugged	Plugged	937.72	932.91	909.14	919.53	906.76	896.82	901.40	902.99	932.37	941.64									
10/27/97	Plugged	928.28	Dry	897.14	Plugged	Plugged	938.12	933.11	908.74	918.53	906.06	896.97	901.50	903.99	932.22	940.99									
11/20/97	Plugged	928.08	Dry	897.04	Plugged	Plugged	937.67	932.98	908.64	918.53	906.16	896.87	901.55	902.74	932.42	940.99									
12/08/97	Plugged	928.68	Dry	897.04	Plugged	Plugged	937.87	933.06	908.74	918.43	906.06	896.92	901.90	902.79	932.42	940.99									
01/13/98	Plugged	930.48	Dry	896.99	Plugged	Plugged	937.72	932.89	908.84	918.43	905.76	896.82	901.95	902.69	932.27	940.69									
02/18/98	Plugged	934.13	Dry	897.44	Plugged	Plugged	938.62	933.11	909.44	919.57	906.16	897.32	902.50	904.19	932.07	940.49									
03/05/98	Plugged	934.78	Dry	897.34	Plugged	Plugged	938.87	933.71	910.09	923.43	906.06	897.12	902.50	903.38	932.32	941.01									
04/24/98	Plugged	937.03	925.94	897.74	Plugged	Plugged	939.52	934.71	911.24	927.83	907.86	897.62	902.50	903.74	933.09	942.69									
05/18/98	Plugged	934.08	924.29	897.49	Plugged	Plugged	938.62	934.01	910.52	925.73	907.86	897.32	902.00	903.21	932.92	941.99									
06/09/98	Plugged	934.38	922.34	897.89	Plugged	Plugged	938.82	934.11	910.14	930.93	907.66	897.72	901.90	904.29	933.12	942.19									
07/23/98	Plugged	934.08	924.64	897.79	Plugged	Plugged	938.82	934.11	910.99	925.23	908.71	897.62	901.80	903.29	934.17	942.99									
08/09/98	Plugged	932.78	922.24	897.69	Plugged	Plugged	938.62	934.11	910.54	922.53	908.26	897.52	901.75	903.19	933.77	942.59									
09/23/98	Plugged		Dry		Plugged	Plugged	938.02	933.51	945.54																
10/23/98	Plugged	928.98	917.14	897.34	Plugged	Plugged	938.02	933.61	909.14	919.03	906.46	897.22	901.50	902.59	932.52	941.29									
12/28/98	Plugged	928.80	Dry	897.09	Plugged	Plugged	937.42	933.11	907.84	919.43	907.36	896.92	901.40	902.59	932.47	940.79									
01/08/99	Plugged	928.58	Dry	896.94	Plugged	Plugged	937.02	932.63	907.84	919.03	906.96	896.77	901.30	902.39	932.52	940.39									
03/21/99	Plugged	931.03	Dry	897.24	Plugged	Plugged	938.62	933.61	908.29	922.43	906.31	897.10	902.20	902.74	932.57	940.74									
09/19/99	Plugged	930.53	Dry	897.19	Plugged	Plugged	939.02	933.71	909.14	919.13	906.46	897.02	901.20	902.69	933.17	942.09									
03/10/2000	Plugged	927.63	Dry	896.82	Plugged	Plugged	936.97	931.66	907.09	917.33	905.46	896.67	902.10	902.89	932.02	939.79									
06/20/2000	Plugged	NT	NT	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	907.59	915.23	922.27	915.86	918.84	921.43	931.78	917.81	905.08
09/25/2000	Plugged	923.68	916.94	896.47	Plugged	Plugged	938.02	931.61	905.84	916.68	904.06	896.62	901.00	901.79	931.97	940.41	913.64	916.28	919.47	914.56	918.32	919.98	931.73	917.76	905.31
12/26/2000	Plugged	NT	NT	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	910.24	914.51	920.29	914.96	918.94	920.73	931.33	917.61	905.11
03/05/2001	Plugged	933.79	922.31	896.84	Plugged	Plugged	938.77	932.06	907.17	919.00	904.18	897.12	903.30	903.69	931.72	940.89	915.49	918.53	924.77	916.51	921.15	924.28	932.08	917.01	905.21
09/02/2001	Plugged	930.78	Dry	897.09	Plugged	Plugged	940.02	932.81	908.14	918.63	905.18	896.92	901.45	903.19	933.22	941.69	915.79	917.53	921.52	915.68	920.04	922.68	933.08	919.27	906.71
03/15/2002	Plugged	927.15	Dry	896.59	Plugged	Plugged	937.67	931.62	907.17	917.49	904.88	896.72	902.81	902.78	931.85	939.75	915.23	916.17	925.07	916.72	922.89	920.44	932.73	919.12	906.32
09/19/2002	Plugged	929.10	Dry	896.67	Plugged	Plugged	939.76	932.56	907.88	918.22	904.51	896.51	901.69	902.68	933.04	941.43	922.74	924.85	923.32	918.05	920.29	922.51	934.38	920.29	907.38
03/12/2003	Plugged	924.90	Dry	896.57	Plugged	Plugged	936.29	930.82	906.34	916.92	904.68	896.41	901.37	902.91	930.79	938.89	918.24	919.46	922.37	914.98	919.14	921.59	932.46	919.09	906.23
05/16/2003	Plugged	939.18	Dry	897.44	Plugged	Plugged	939.12	932.61	908.04	927.18	904.66	897.22	903.60	903.39	931.47	940.09	920.59	921.63	926.67	917.36	922.04	925.18	934.43	919.81	906.66
09/25/2003	Plugged	927.87	Dry	896.45	Plugged	Plugged	938.62	932.39	907.48	918.18	904.31	896.28	901.86	902.79	932.61	940.89	916.70	917.61	922.18	915.77	919.05	921.15	933.60	920.05	908.91
03/08/2004	Plugged	938.89	928.29	897.26	Plugged	Plugged	939.03	932.08	908.11	929.89	905.97	897.11	903.92	903.53	931.74	941.49	919.35	920.84	927.31	917.33	922.84	926.45	934.61	920.16	906.80
09/23/2004	Plugged	928.28	Dry	896.74	Plugged	Plugged	938.27	932.41	908.04	919.03	905.88	896.72	901.70	903.19	932.47	941.09	917.91	919.48	923.42	916.21	919.84	922.03	934.28	920.51	907.56
03/17/2005	Plugged	930.63	Dry	896.36	Plugged	Plugged	938.29	932.36	908.09	921.42	905.05	896.16	902.80	903.21	931.62	940.68	918.88	920.36	926.60	916.98	921.63	924.51	933.82	920.11	906.96
09/22/2005	Plugged	927.51	Dry	896.77	Plugged	Plugged	938.73	933.47	907.67	919.25	905.23	896.52	901.78	903.10	932.62	941.16	916.87	918.15	923.87	916.42	920.24	922.58	934.50	920.66	907.43

	MW 22	MW 23	MW 24	MW 25	MW 26	MW 27	MW28	MW29	MW 30	MW 31	MW 32	MW 33	MW 34	MW 35	MW 36	MW 37	MW38	MW 39	MW 40	MW 41	MW 42	MW 43	MW 6	MW 7	MW 8
TOP PVC ELEV.	950.59	945.98	939.44	906.34	950.51	950.51	948.02	945.61	945.54	941.43	939.86	906.32	909.50	916.19	948.97	949.49	936.59	935.93	933.07	933.46	940.84	940.83	942.88	943.21	942.76
DATE																									
4/22/91	4.85	8.79	13.15	7.71	8.45	27.81	NT	NT	33.75	19.95	30.89	7.86	9.84	NT	NT	NT									
5/21/91	4.90	8.87	13.21	7.79	8.47	27.87	NT	NT	33.83	20.04	30.95	7.90	9.88	NT	NT	NT									
8/25/91	5.30	10.49	16.20	8.10	10.17	27.72	NT	NT	34.00	20.41	31.22	8.23	9.94	NT	NT	NT									
7/05/91	6.60	13.42	20.08	8.42	13.03	28.19	NT	NT	34.15	21.03	31.48	8.52	10.08	NT	NT	NT									
8/31/91	7.02	13.56	20.80	8.63	13.15	28.35	NT	NT	34.30	21.72	31.59	8.72	10.30	NT	NT	NT									
9/10/91	7.91	16.01	22.56	8.80	15.92	29.60	NT	NT	35.50	22.10	32.21	8.95	10.52	NT	NT	NT									
10/14/91	9.22	20.17	22.56	9.37	20.27	31.38	NT	NT	36.85	23.30	33.19	9.50	10.73	NT	NT	NT									
11/29/91	7.50	19.83	22.56	8.95	16.33	31.00	NT	NT	36.53	23.73	33.26	9.05	9.37	NT	NT	NT									
12/31/91	7.83	18.34	22.56	9.31	15.5	30.73	NT	NT	36.25	24.26	33.3	9.42	8.84	NT	NT	NT									
1/21/92	7.83	17.33	22.56	9.06	14.59	30.51	NT	NT	35.99	24.16	33.12	9.2	8.38	NT	NT	NT									
2/17/92	8.62	16.85	22.56	9.05	14.79	30.44	NT	NT	35.85	24.32	33.1	9.16	8.5	NT	NT	NT									
3/19/92	7	14.27	15.29	8.52	11.78	29.49	NT	NT	35.24	23.98	32.05	8.63	7.8	NT	NT	NT									
4/22/92	6.7	13.43	13.29	7.87	11.29	28.91	NT	NT	34.89	21.49	31.4	7.97	8.46	NT	NT	NT									
5/30/92	8.42	13.13	16.46	8.54	12.51	28.76	NT	NT	34.71	22.82	31.19	8.65	7.66	NT	NT	NT									
6/30/92	9.04	15.72	20.41	8.71	13.51	29.32	NT	NT	35.46	22.84	31.75	8.82	8.65	NT	NT	NT									
7/28/92	6.6	16.05	21.68	8.01	11.15	29.7	NT	NT	35.51	22.76	32.25	8.2	7.71	NT	NT	NT									
8/22/92	7.38	15.56	19.91	8.5	11.59	29.88	NT	NT	35.3	23.09	32.23	8.61	8.25	NT	NT	NT									
9/30/92	9.44	17.78	20	8.73	13.25	30.98	NT	NT	36.15	23.54	32.83	8.82	9.19	NT	NT	NT									
10/29/92	10.33	18.88	22.56	8.80	14.38	31.03	NT	NT	36.88	23.78	33.12	8.90	10.00	NT	NT	NT									
11/25/92	9.85	17.97	22.56	8.87	13.26	30.84	NT	NT	36.35	23.98	33.23	8.80	8.27	NT	NT	NT									
12/10/92	9.38	17.75	22.56	8.93	13.67	30.74	NT	NT	36.23	23.83	33.12	8.99	8.56	NT	NT	NT									
1/30/93	9.28	17.69	22.56	8.95	13.75	30.63	NT	NT	36.17	23.79	33.01	9.01	8.61	NT	NT	NT									
2/22/93	11.04	16.70	22.56	9.12	15.35	31.28	NT	NT	35.90	23.97	33.16	9.26	8.37	NT	NT	NT									
3/4/93	11.14	16.74	22.56	8.76	15.58	31.38	6.70	10.80	36.04	23.98	33.20	8.90	7.54	NT	NT	NT									
4/27/93	8.80	9.58	11.78	8.50	11.40	30.24	5.34	8.60	34.24	20.40	31.20	8.84	6.74	NT	NT	NT									
5/27/93	8.27	10.10	11.28	8.14	11.84	29.80	4.90	9.00	33.90	17.24	30.10	8.28	6.20	NT	NT	NT									
6/30/93	6.22	10.84	12.34	7.94	12.40	29.57	4.90	9.10	33.70	16.80	29.90	8.04	6.60	NT	NT	NT									
7/27/93	7.94	9.24	10.84	8.54	12.26	29.38	5.04	8.20	33.20	15.86	28.78	8.60	6.50	NT	NT	NT									
8/3/93	8.02	9.46	11.40	8.68	12.80	29.60	4.80	7.90	33.10	13.84	29.80	8.80	6.84	NT	NT	NT									
9/21/93	8.75	11.60	14.43	9.02	13.72	29.84	5.20	8.20	33.14	18.38	30.30	8.92	7.72	NT	NT	NT									
10/25/93	9.14	11.85	15.04	9.05	14.35	30.30	5.95	9.35	33.30	17.55	30.50	9.16	8.05	NT	NT	NT									
11/22/93	10.20	12.72	16.34	9.26	15.38	30.90	7.20	10.56	34.14	19.60	31.00	9.36	8.12	NT	NT	NT									
12/14/93	10.9	13.30	17.54	9.34	15.96	31.04	7.48	11.16	34.42	20.34	31.24	9.46	8.22	NT	NT	NT									
1/31/94	11.96	14.18	19.18	9.55	16.98	32.00	8.90	12.54	35.22	21.56	32.00	9.6	8.53	NT	NT	NT									
2/28/94	12.43	12.37	17.05	9.43	NT	32.30	8.34	12.05	35.27	18.33	31.86	9.53	7.84	NT	NT	NT									
3/16/94	11.8	11.04	15.54	9.30	17.78	32.12	7.56	11.48	34.60	14.90	31.38	9.40	7.45	NT	NT	NT									
4/30/94	11.80	12.70	17.04	9.30	17.92	33.95	7.65	11.88	35.20	18.17	31.08	9.42	8.48	NT	NT	NT									
5/17/94	11.5	12.24	16.76	9.36	18.86	35.08	7.5	11.86	35	16.96	31.32	9.5	NT	NT	NT	NT									
7/31/94	NT	14.6	20.68	9.11	18.89	34.2	6.89	12.2	35.72	21.8	32.41	9.21	7.52	NT	NT	NT									
8/23/94	11.8	13.25	21.2	9.24	18.64	33.98	7.86	11.6	35.6	22.2	32.62	9.4	7.8	NT	NT	NT									
9/16/94	11.74	12.88	20.5	9.2	18.56	33.95	7.52	11.48	35.5	22.4	32.74	9.34	7.8	NT	NT	NT									
10/21/94	11.8	13.5	21.86	9.5	18.7	34	7.24	11.3	36.56	22.82	32.96	9.84	7.8	NT	NT	NT									
11/21/94	12.75	14.58	22	9.88	19.5	34.52	7.4	12.2	35.68	22.88	33	9.88	7.8	NT	NT	NT									
12/22/94	12.9	12.55	NT	9.7	19.7	34.5	7.5	12.5	35.8	23.3	33.35	9.84	7.6	NT	NT	NT									
1/10/95	12.58	12.44	22	9.55	19.3	34.4	8.28	12.2	35.4	22.88	33.1	9.75	7.66	NT	NT	NT									
2/6/95	13.88	13.3	22	9.49	20.4	34.8	8.46	12.73	35.42	23	33.28	9.6	7.8	NT	NT	NT									
3/9/95	14.8	13.08	NT	9.6	21.3	35.18	9.1	13.17	35.65	23.1	33.3	9.72	7.8	NT	NT	NT									
4/14/95	13.8	8.58	14.2	9	19.95	34.85	6.3	10.9	34.55	15.7	32.98	9.15	8.9	NT	NT	NT									
5/2/95	13.2	6.4	12.1	9.03	18.5	34.4	6.21	10.35	33.75	14.9	32	9.19	6.6	NT	NT	NT									
6/2/95	12.95	11.6	14	9.2	18	34.28	7.6	11.75	34.59	16.25	31.2	9.3	7.3	NT	NT	NT									
6/23/95	13.2	15.6	20.3	9.2	19.77	34.6	7.85	11.95	35.6	21.9	32.65	9.35	7.8	NT	NT	NT									
9/12/95	13.87	16.62	20.9	9.67	20.84	35	8.91	12.85	36.15	21.9	32.92	9.54	7.88	NT	NT	NT									
10/31/95	14.85	17.8	Dry	9.5	23.5	35.8	8.9	13.4	36.75	23	33.6	9.6	8.05	NT	NT	NT									
11/20/95	15.02	17.97	Dry	9.66	23.4	35.98	9.15	13.1	36.75	23.2	33.8	9.8	7.75	NT	NT	NT									
12/7/95	15.35	18.1	Dry	9.7	23.4	36.6	9.17	13.35	36.92	23.45	33.85	9.87	7.7	NT	NT	NT									
1/3/96	16.4	18.2	Dry	9.78	NT	36.4	9.85	13.9	36.85	23.4	33.7	9.9	7.9	NT	NT	NT									
2/24/96	Plugged	15.3	Dry	9.4	Plugged	Plugged	8	13	36.3	23.45	33.8	9.55	7.8	NT	NT	NT									
3/22/96	Plugged	15.35	Dry	9.45	Plugged	Plugged	9.3	13.8	36.37	23.18	33.95	9.6	7.7	12.9	18.2	11.4									
4/1/96	Plugged	NT	Dry	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	12.55	18.5	11.35									
6/20/96	Plugged	8.2	Dry	8.7	Plugged	Plugged	5.65	10.8	35.2	14.4	32.23	8.85	7.25	12.2	16.96	8.55									
9/12/96	Plugged	14.02	Dry	9.05	Plugged	Plugged	7.4	11.9	35.76	21.95	33.1	9.15	7.72	12.95	16.6	7.9									
10/24/96	Plugged	15.4	22.1	9.05	Plugged	Plugged	7.8	12.2	35.76	21.4	33.4	9.2	7.8	12.85	16.48	8.3									
11/18/96	Plugged	7.75	21.82	8.65	Plugged	Plugged	6.75	11.7	35.86	13.4	33.1	8.8	7.5	12.28	16.6	8.35									
12/11/96	Plugged	9.95	17.48	8.95	Plugged	Plugged	7.08	11.4	34.5	14.6	32.05	9.1	7.7	12.55	16.55	8.35									
01/29/97	Plugged	12.1	18.6	9.1	Plugged	Plugged	8.6	12.65	34.9	16.5	32.45	9.25	7.95	13.1	16.58	8.7									
02/25/97	Plugged	9.75	19.65	8.95	Plugged	Plugged	8.45	12.75	35	16.35	32.6	9.1	7.62	12.52	17.35	9.35									
03/17/97	Plugged	8	15.35	9.8	Plugged	Plugged			34.57	11.85	32.6	9	7.1	12.2	17.2	8.9									
04/28/97	Plugged	11.2	13.8	8.8	Plugged	Plugged	7.4	11.7	33.5	13.3	31.3	8.95	7.4	12.4	16.5	8									
05/22/97	Plugged	11.45	13.1	8.85	Plugged	Plugged	7.6	11.9	34.7	13.45	31.2	9	7.5	12.35	16.4	8.1									
06/18/97	Plugged	12.9	15.9	9.05	Plugged	Plugged	7.65	12	35.15	17.3	31.6	9.2	7.7	12.8	16.42	7.9									
07/18/97	Plugged	14.45	19.2	9.05	Plugged	Plugged	7.7	12.2	35.7	20.2	32.3	9.2	7.9	12.7	16.5	7.75									
08/29/97	Plugged	16.55	21.1	9.24	Plugged	Plugged	8.2	12.6	36.35	21.8	33	9.4	8	13.15	16.55	7.85									
09/01/97	Plugged	16.6	21.1	9.3	Plugged	Plugged	8.3	12.7	36.4	21.9	33.1	9.5	8.1	13.2	16.6	7.85									
10/27/97	Plugged	17.7	dry	9.2	Plugged	Plugged	7.9	12.5	36.8	22.9	33.6	9.35	8	12.2	16.75	8.5									
11/20/97	Plugged	17.9	dry	9.3	Plugged	Plugged	8.35	12.65	36.9	22.9	33.7	9.45	7.95	13.45	16.55	8.5									
12/06/97	Plugged	17.3	dry	9.3	Plugged	Plugged	8.15	12.55	36.8	23	33.8	9.4	7.6	13.4	16.55	8.5									
01/13/98	Plugged	15.5	dry	9.35	Plugged	Plugged	8.3	12.72	36.7	23	34.1	9.5	7.55	13.5	16.7	8.8									
02/18/98	Plugged	11.85	dry	8.9	Plugged	Plugged	7.2	12.5	36.1	21.86	33.7	9	7	12	16.9	9									
03/05/98	Plugged	11.2	dry	9	Plugged	Plugged	7.15	11.9	35.45	18	33.8	9.2	7	12.83	16.65	8.48									
04/24/98	Plugged	8.95	13.5	8.6	Plugged	Plugged	6.5	10.9	34.3	13.6	32	8.7	7	12.45	15.88	8.6									
05/18/98	Plugged	11.9	15.15	8.85	Plugged	Plugged	7.4	11.6	35.02	15.7	32	9	7.5	12.98	16.05	7.5									
06/09/98	Plugged	11.6	17.1	8.45	Plugged	Plugged	7.2	11.5	35.4	10.5	32.2	8.6	7.6	11.9	15.85	7.3									
07/23/98	Plugged	11.9	14.8	8.55	Plugged	Plugged	7.2	11.5	34.55	16.2	31.15	8.7	7.7	12.9	14.8	6.5									
08/06/98	Plugged	13.2	17.2	8.65	Plugged	Plugged	7.4	11.5	35	18.9	31.6	8.8	7.75	13	15.2	6.9									
09/23/98	Plugged		dry		Plugged	Plugged	8	12.1																	
10/23/98	Plugged	17	22.3	9	Plugged	Plugged	8	12	36.4	22.4	33.4	9.1	8	13.8	16.45	8.2									
12/26/98	Plugged	17.18	Dry	9.25	Plugged	Plugged	8.6	12.5	37.7	22	32.5	9.4	8.1	13.8	16.5	8.7									
01/08/99	Plugged	17.4	Dry	9.4	Plugged	Plugged	9	12.98	37.7	22.4	32.9	9.55	8.2	13.8	16.45	9.1									
03/21/99	Plugged	14.95	Dry	9.1	Plugged	Plugged	7.2	12	37.25	19	33.55	9.22	7.3	13.45	16.4	8.75									
09/19/99	Plugged	15.45	22.1	9.15	Plugged	Plugged	7	11.9	36.4	22.3	33.4	9.3	6.3	13.5	15.8	7.4									
03/10/2000	Plugged	18.35	Dry	9.52	Plugged	Plugged	9.05	13.95	38.45	24.1	34.4	9.65	7.4	13.3	16.95	9.7									
06/20/2000	Plugged	NT	NT	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	29	20.7	10.8	17.6	21.8	19.4	11.1	25.4	37.7
09/25/2000	Plugged	22.3	22.5	9.87	Plugged	Plugged	8	14	39.7	24.75	35.8	9.7	8.5	14.4	17	9.08	22.95	19.65	13.8	18.9	22.32	20.85	11.15	25.45	37.45
12/26/2000	Plugged	NT	NT	NT	Plugged	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	26.35	21.42	12.78	18.5	21.7	20.1	11.55	25.6	37.65
03/05/2001	Plugged	12.19	17.13	9.5	Plugged	Plugged	7.25	13.55	38.37	22.43	35.68	9.2	6.2	12.5	17.25	8.6	21.1	17.4	8.3	16.95	19.49	16.55	10.8	26.2	37.55
09/02/2001	Plugged	15.2	DRY	9.25	Plugged	Plugged	6	12.8	37.4	22.8	34.7	9.4	8.05	13	15.75	7.8	20.8	18.4	11.55	17.8	20.6	18.15	9.8	23.94	38.05
03/15/2002	Plugged	16.83	Dry	8.75	Plugged	Plugged	8.35	13.99	38.37	23.94	34.98	9.8	6.69	13.41	17.32	9.74	21.38	19.76	8	16.74	17.75	20.39	10.15	24.09	38.44
09/19/2002	Plugged	16.88	DRY	9.87	Plugged	Plugged	8.26	13.05	37.68	23.21	35.35	9.81	7.81	13.51	15.93	8.06	13.85	11.08	9.75	17.41	20.35	16.32	8.5	22.92	35.38
03/12/2003	Plugged	21.08	Dry	9.77	Plugged	Plugged	9.73	14.79	39.2	24.51	35.18	9.91	8.13	13.28	18.18	10.6	18.35	16.47	10.7	18.48	21.5	19.24	10.42	24.12	38.53
05/16/2003	Plugged	6.8	DRY	8.9	Plugged	Plugged	6.9	13	37.5	14.25	35.2	9.1	5.9	12.8	17.5	9.4	16	14.3	6.4	16.1	18.6	15.65	8.45	23.4	36.1
09/25/2003	Plugged	18.11	DRY	9.89	Plugged	Plugged	7.4	13.22	38.06	23.25	35.55	10.04	7.64	13.4	16.38	8.6	19.89	18.32	10.89	17.69	21.59	19.68	9.28	23.16	35.85
03/08/2004	Plugged	7.09	11.15	9.08	Plugged	Plugged	6.99	13.53	37.43	11.54	33.89	9.21	5.58	12.68	17.23	8	17.24	15.09	5.76	16.13	17.8	14.38	8.27	23.05	35.96
09/23/2004	Plugged	17.7	DRY	9.6	Plugged	Plugged	7.75	13.2	37.5	22.4	34	9.6	7.8	13	16.5	8.4	18.68	16.45	9.65	17.25	20.8	18.8	8.6	22.7	35.2
03/17/2005	Plugged	15.35	DRY	9.98	Plugged	Plugged	7.73	13.25	37.45	20.01	34.81	10.16	6.7	12.98	17.35	8.81	17.71	15.57	6.47	16.48	19.01	16.32	9.06	23.1	35.8
09/22/2005	Plugged	18.47	DRY	9.57	Plugged	Plugged	7.29	12.14	37.87	22.18	34.63	9.8	7.72	13.09	16.35	8.33	19.72	17.76	9.2	17.04	20.4	18.25	8.38	22.55	35.33

APPENDIX G

Leachate Elevation & Thickness Assessment Data

Leachate Surface Elevation

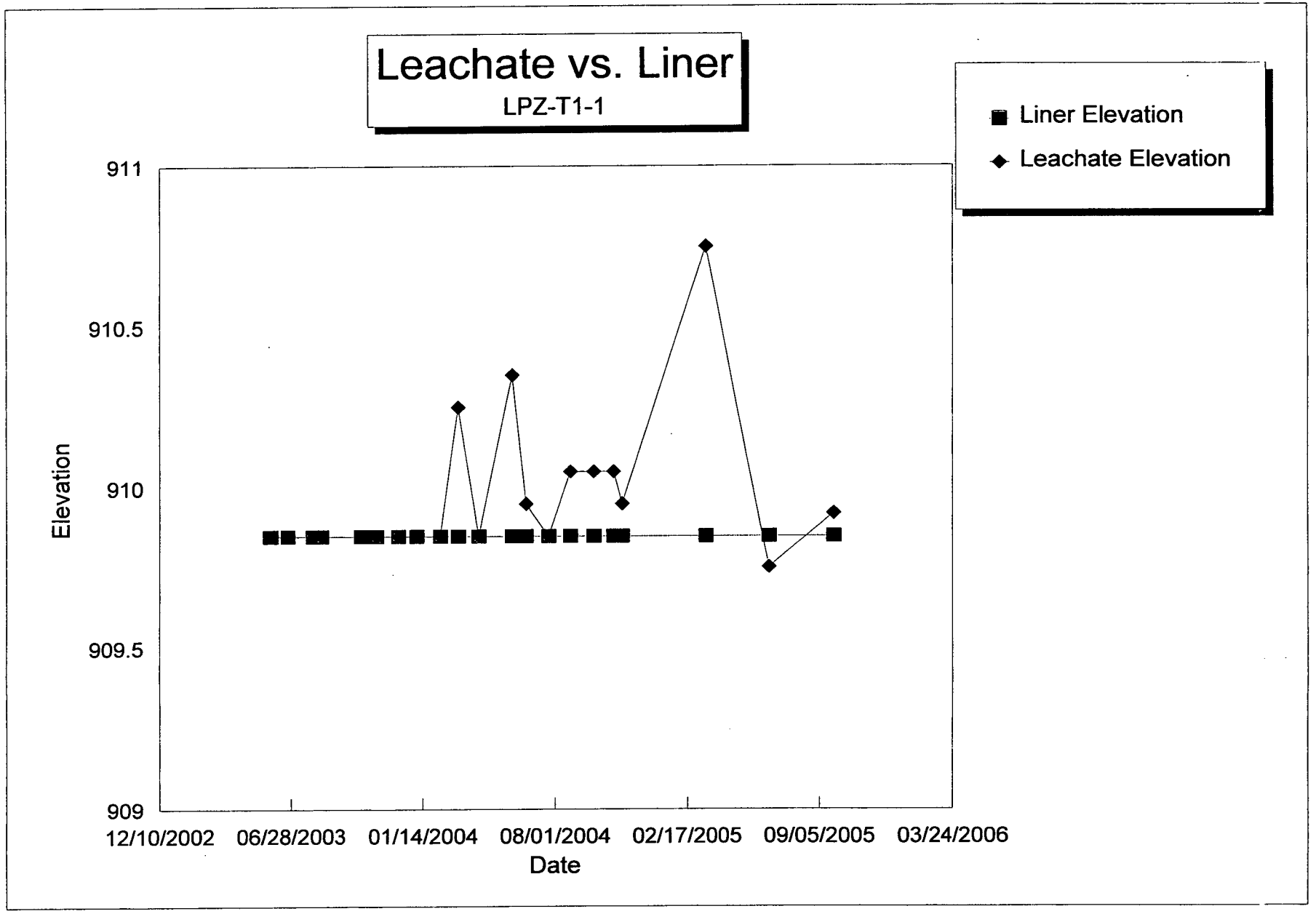
	LPZ-T1-1	LPZ-T2-1	LPZ-T3-1	LPZ-T4-1
PVC ELEV, FT.	925.85	932.62	922.72	922.31
DATE				
05/27/2003	909.85	911.62	913.22	914.91
05/28/2003	909.85	911.62	912.32	913.91
06/23/2003	909.85	911.62	912.33	914.41
07/31/2003	909.85	911.62	912.32	913.91
08/13/2003	909.85	911.62	912.32	913.51
10/13/2003	909.85	911.62	912.22	913.11
11/05/2003	909.85	911.62	912.02	913.61
12/08/2003	909.85	911.62	912.22	913.21
01/05/2004	909.85	911.62	911.72	911.31
02/10/2004	909.85	911.62	912.12	913.21
03/08/2004	910.25	911.62	912.12	913.77
04/08/2004	909.85	911.62	912.22	914.01
05/28/2004	910.35	911.62	912.32	913.91
06/18/2004	909.95	911.62	912.52	913.81
07/22/2004	909.85	911.62	912.12	913.21
08/24/2004	910.05	911.62	912.32	913.11
09/28/2004	910.05	911.62	912.02	912.31
10/28/2004	910.05	911.62	912.02	912.91
11/10/2004	909.95	911.62	912.22	913.01
03/17/2005	910.75	911.62	912.02	913.76
06/22/2005	909.75	911.62	912.12	913.51
09/27/2005	909.92	911.62	912.18	914.34

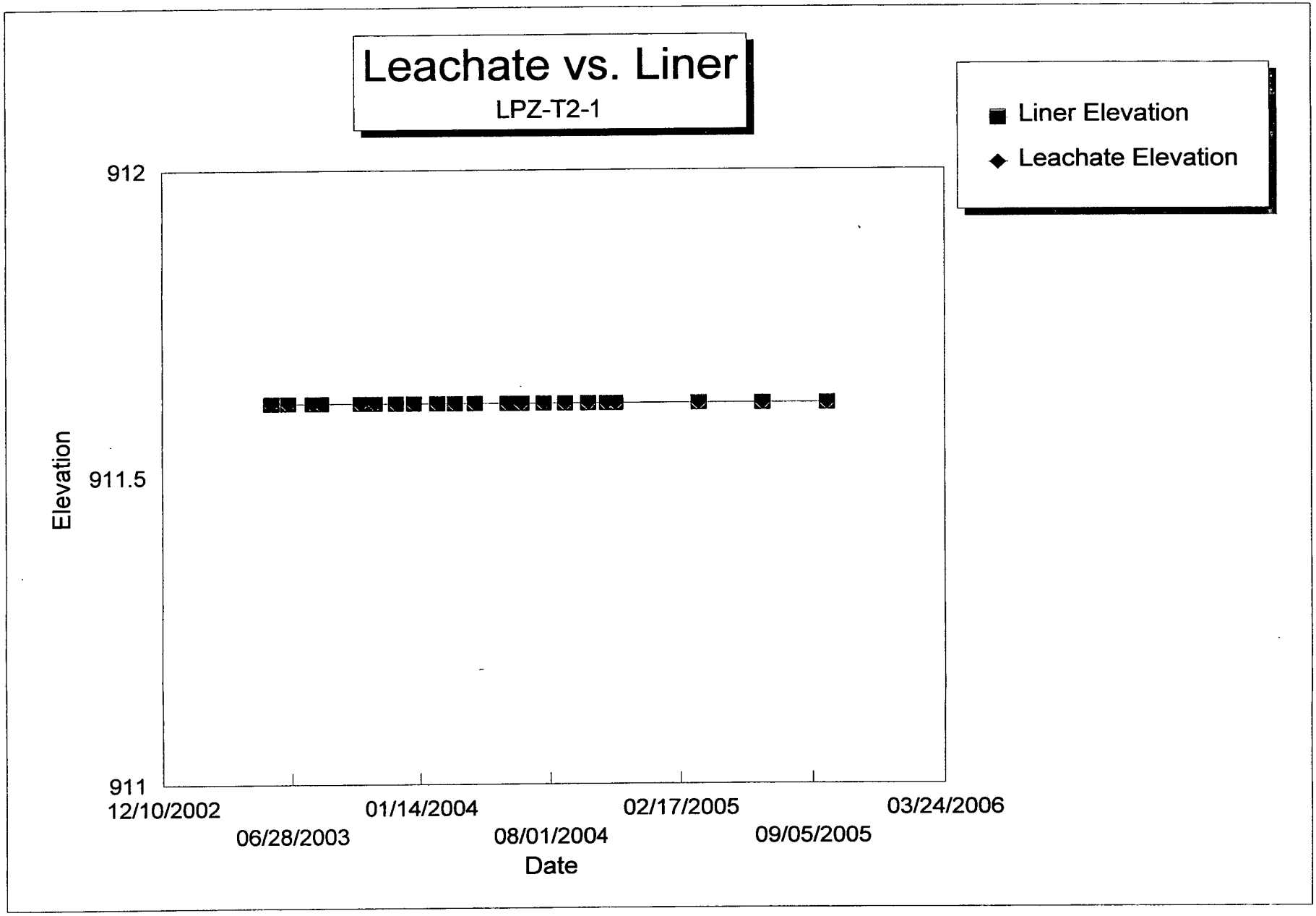
Top of Liner Elevation Data

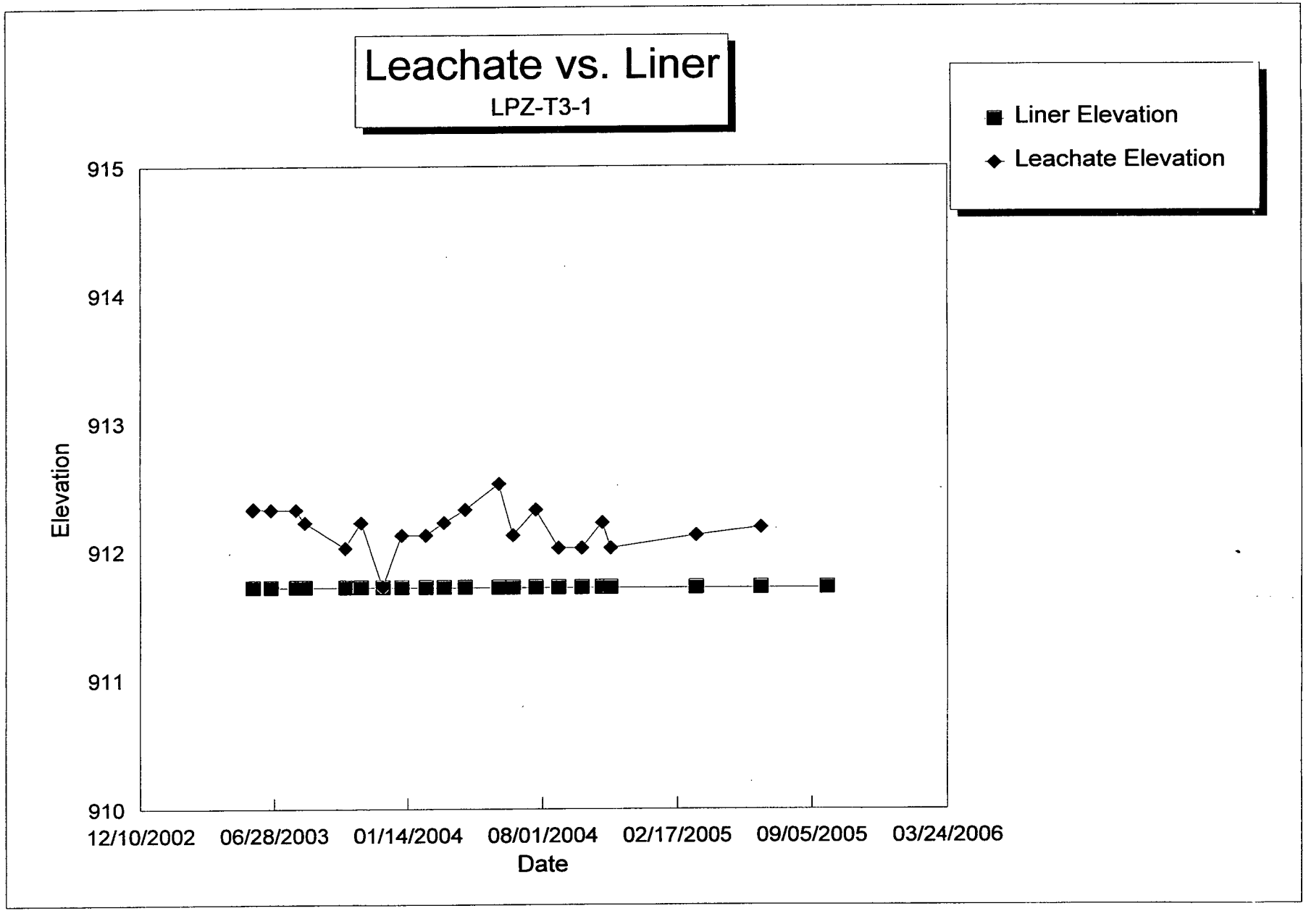
	LPZ-T1-1	LPZ-T2-1	LPZ-T3-1	LPZ-T4-1
PVC ELEV, FT.	925.85	932.62	922.72	922.31
Liner Depth	16	21	11	11
Liner Elev	909.85	911.62	911.72	911.31
05/27/2003	909.85	911.62	911.72	911.31
05/28/2003	909.85	911.62	911.72	911.31
06/23/2003	909.85	911.62	911.72	911.31
07/31/2003	909.85	911.62	911.72	911.31
08/13/2003	909.85	911.62	911.72	911.31
10/13/2003	909.85	911.62	911.72	911.31
11/05/2003	909.85	911.62	911.72	911.31
12/08/2003	909.85	911.62	911.72	911.31
01/05/2004	909.85	911.62	911.72	911.31
02/10/2004	909.85	911.62	911.72	911.31
03/08/2004	909.85	911.62	911.72	911.31
04/08/2004	909.85	911.62	911.72	911.31
05/28/2004	909.85	911.62	911.72	911.31
06/18/2004	909.85	911.62	911.72	911.31
07/22/2004	909.85	911.62	911.72	911.31
08/24/2004	909.85	911.62	911.72	911.31
09/28/2004	909.85	911.62	911.72	911.31
10/28/2004	909.85	911.62	911.72	911.31
11/10/2004	909.85	911.62	911.72	911.31
03/17/2005	909.85	911.62	911.72	911.31
06/22/2005	909.85	911.62	911.72	911.31
09/27/2005	909.85	911.62	911.72	911.31

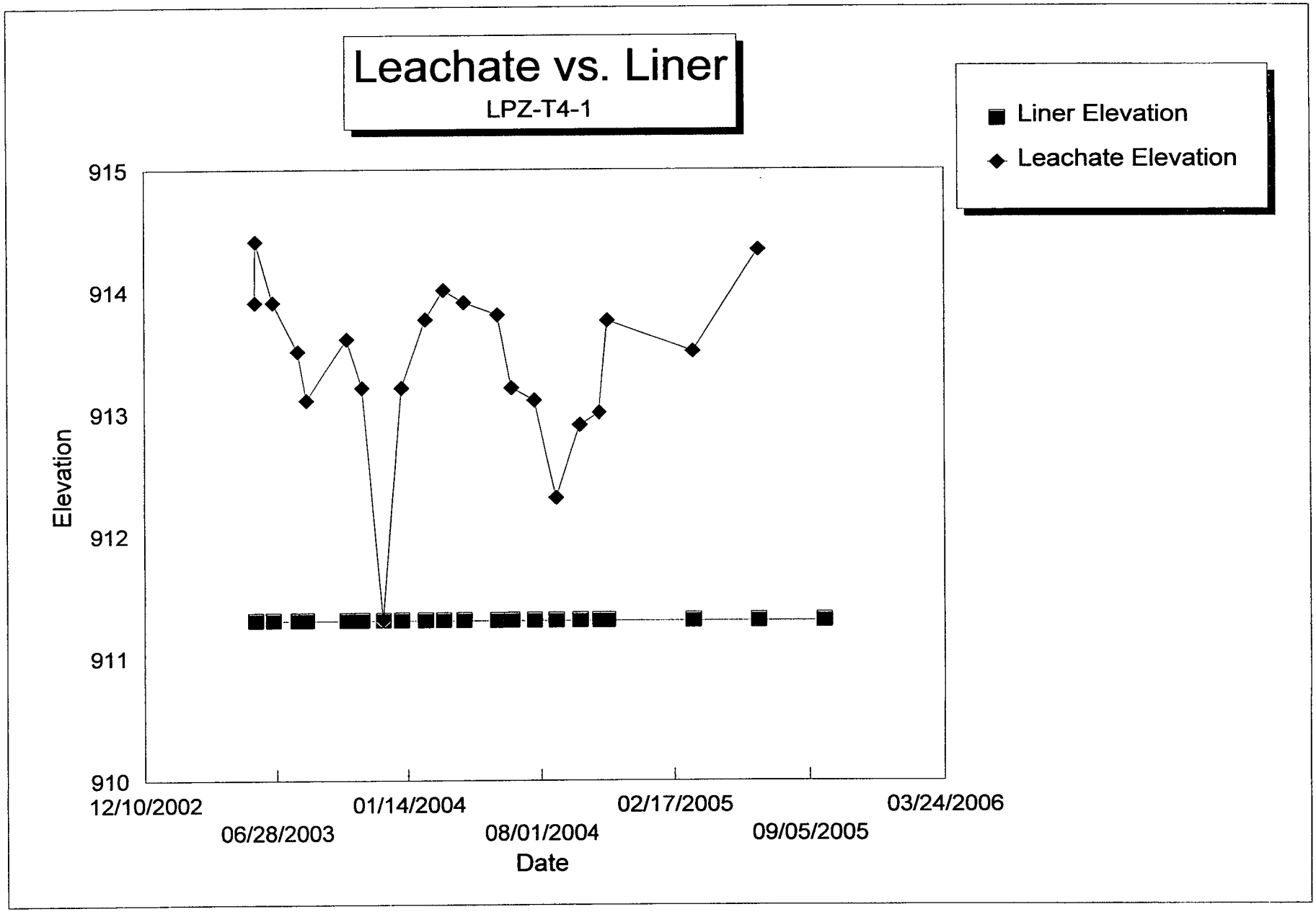
Leachate Thickness (feet)

	LPZ-T1-1	LPZ-T2-1	LPZ-T3-1	LPZ-T4-1
05/27/2003	0	0	1.5	3.6
05/28/2003	0	0	0.6	2.6
06/23/2003	0	0	0.61	3.1
07/31/2003	0	0	0.6	2.6
08/13/2003	0	0	0.6	2.2
10/13/2003	0	0	0.5	1.8
11/05/2003	0	0	0.3	2.3
12/08/2003	0	0	0.5	1.9
01/05/2004	0	0	0	0
02/10/2004	0	0	0.4	1.9
03/08/2004	0.4	0	0.4	2.46
04/08/2004	0	0	0.5	2.7
05/28/2004	0.5	0	0.6	2.6
06/18/2004	0.1	0	0.8	2.5
07/22/2004	0	0	0.4	1.9
08/24/2004	0.2	0	0.6	1.8
09/28/2004	0.2	0	0.3	1
10/28/2004	0.2	0	0.3	1.6
11/10/2004	0.1	0	0.5	1.7
03/17/2005	0.9	0	0.3	2.45
06/22/2005	-0.1	0	0.4	2.2
09/27/2005	0.07	0	0.46	3.03


Leachate vs. Liner
LPZ-T1-1
Liner Elevation
Leachate Elevation
911
910.5
910
909.5
909
Elevation
12/10/2002
06/28/2003
01/14/2004
08/01/2004
02/17/2005
09/05/2005
03/24/2006
Date


Leachate vs. Liner
LPZ-T2-1
Liner Elevation
Leachate Elevation
912
911.5
911
Elevation
12/10/2002
06/28/2003
01/14/2004
08/01/2004
02/17/2005
09/05/2005
03/24/2006
Date


Leachate vs. Liner
LPZ-T3-1
Liner Elevation
Leachate Elevation
915
914
913
912
911
910
Elevation
12/10/2002
06/28/2003
01/14/2004
08/01/2004
02/17/2005
09/05/2005
03/24/2006
Date


Leachate vs. Liner
LPZ-T4-1
Liner Elevation
Leachate Elevation
915
914
913
912
911
910
Elevation
12/10/2002
06/28/2003
01/14/2004
08/01/2004
02/17/2005
09/05/2005
03/24/2006
Date

APPENDIX H

City of Ames Leachate Testing Results

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251

TO: Bill Fedeler, Ames-Story Environmental Landfill - Site 2
FROM: Karla Tebben/Winnie Gleason, Pretreatment Coordinators
DATE: June 6, 2005
SUBJECT: Pretreatment Reporting: Spring 2005 (Permit No. 7093-5)

Karla K. Tebben

Listed below are analytical results of the wastewater sampled at your facility's Site 2 on May 2, 2005. The laboratory did not collect a sample at Site 1 because there was no flow through the manhole. All tested parameters for Site 2 are within permit limits. Thank you for your cooperation with the pretreatment program.

Parameter	Permit Limits/ Surcharge (mg/L)	Recommended Maximum Discharge Concentrations (mg/L)	40CFR Part 445 Maximum Daily Limit (mg/L)	40CFR Part 445 Monthly Average Limit (mg/L)	Results (mg/L)
pH, units	6.0 - 10.0		6.0-9.0	6.0-9.0	7.68
TSS	1,500/300		88	27	40
Ammonia-N	200/40		10	4.9	36
TKN	/40	250			46
COD	2,500/250		140	37	370
BTEX	0.75				< 0.100
Phenol			0.026	0.015	< 0.05
Zinc			0.20	0.11	< 0.05

Complete the bottom portion of this page and return one copy to us by June 20, 2005. By doing so, the reporting requirements for this period will be fulfilled.

PROCESS CHANGES SINCE December 3, 2004: _____

_____

_____

COMPLIANCE STATEMENT: Based on my inquiry of the person(s) directly responsible for managing compliance with the pretreatment program, I certify that, to the best of my knowledge, there has been no unreported discharge in violation of the pretreatment program since December 3, 2004.

NAME_____ DATE_____

c: Todd Whipple, Fox Engineering
Jim McElvogue

RECEIVED OCT 17 2005

TDW

CITY OF AMES IOWA

Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251

TO: Bill Fedeler, Ames-Story Environmental Landfill - Site 2
FROM: Karla Tebben/Winnie Gleason, Pretreatment Coordinators
DATE: October 13, 2005
SUBJECT: Pretreatment Reporting: Fall 2005 (Permit No. 7093-5)

Karla K. Tebben

Listed below are analytical results of the wastewater sampled at your facility's Site 2 on September 26, 2005. The laboratory did not collect a sample at Site 1 because there was no flow through the manhole. All tested parameters for Site 2 are within permit limits. However, COD and ammonia results exceed surcharge limits. Surcharge calculations and billing will be addressed in separate correspondence. Thank you for your cooperation with the pretreatment program.

Parameter	Permit Limits/ Surcharge (mg/L)	Recommended Maximum Discharge Concentrations (mg/L)	40CFR Part 445 Maximum Daily Limit (mg/L)	40CFR Part 445 Monthly Average Limit (mg/L)	Results (mg/L)
pH, units	6.0 - 10.0		6.0-9.0	6.0-9.0	6.94
TSS	1,500/300		88	27	62
Ammonia-N	200/40		10	4.9	42
COD	2,500/250		140	37	730
TPH (gasoline)	10.0				< 0.100
BTEX	0.75				< 0.020

Complete the bottom portion of this page and return one copy to us by October 27, 2005. By doing so, the reporting requirements for this period will be fulfilled.

PROCESS CHANGES SINCE June 14, 2005: _____

_____

_____

COMPLIANCE STATEMENT: Based on my inquiry of the person(s) directly responsible for managing compliance with the pretreatment program, I certify that, to the best of my knowledge, there has been no unreported discharge in violation of the pretreatment program since June 14, 2005.

NAME_____ DATE_____

c: Todd Whipple, Fox Engineering
Jim McElvogue

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251

July 25, 2005

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: Pretreatment Sampling Expenses

Dear Mr. Fedeler:

During the period January 1, 2005 through June 30, 2005, the City performed pretreatment sampling at the Ames-Story Environmental Landfill. The cost associated with the sampling is $319.47.

This amount will be billed to you from the City Finance Department. A detailed summary of the costs is enclosed.

Please give me a call at 515-239-5150 if you have any questions concerning this matter.

Yours very truly,

Winifred G. Gleason, P.E.
Pretreatment Program Co-Coordinator
Water and Pollution Control Department

/bas

Enclosure

pc: Linda Stole
Todd Whipple
Jim McElvogue

Pretreatment Sampling

22-Jul-05

Environmental Landfill South

Travel Time (min): 26 Trip (miles): 6

Date	Personnel		Maintenance Prep		Lab Prep/Processing		Site Time (min)		Sampling			Analysis		Total Charges
	Employee	Rate	Time (min)	Cost	Time (min)	Cost		Cost*	Equipment	# used	Cost	Lab No.	Lab Charge	
5/2/2005	TW	$30.17		$0.00	30	$15.09	20	$23.13	Truck/Van	1	$3.30	50971	$122.00	$163.52
	JK	$19.82	10	$3.30		$0.00	20	$15.20	Sampler/Ice		$0.00	UHL	$80.00	$98.50
				$0.00		$0.00		$0.00	S&H (UHL)	1	$5.00			$5.00
Subtotal				$3.30		$15.09		$38.33			$8.30		$202.00	$267.01
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	$0.00
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	$0.00
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	$0.00
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	$0.00
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	$0.00
Notes:														
Total				$3.30		$15.09		$38.33			$8.30		$202.00	$267.01

Pretreatment Sampling

22-Jul-05

Environmental Landfill North

Travel Time (min): 22 Trip (miles): 5.9

Date	Personnel		Maintenance Prep		Lab Prep/Processing		Site Time (min)	Sampling				Analysis		Total Charges
	Employee	Rate	Time (min)	Cost	Time (min)	Cost		Cost*	Equipment	# used	Cost	Lab No.	Lab Charge	
5/2/2005	TW	$30.17		$0.00	30	$15.09	15	$18.60	Truck/Van	1	$3.25	50973	$0.00	$36.93
	JK	$19.82	10	$3.30		$0.00	15	$12.22	Sampler/Ice		$0.00			$15.53
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$3.30		$15.09		$30.83			$3.25		$0.00	**$52.46**
Notes:	No flow in manhole													
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				$0.00		$0.00		$0.00			$0.00		$0.00	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
Total				**$3.30**		**$15.09**		**$30.83**			**$3.25**		**$0.00**	**$52.46**

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251
http://www.city.ames.ia.us/waterweb

July 22, 2005

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: Surcharge Billing

Dear Mr. Fedeler:

Enclosed is the calculation of the Ames-Story Environmental Landfill surcharge rate based on the samples taken over the last six months. Also included is an estimate of the monthly surcharge based on the average flow of the previous six months. The surcharge rate will be **$0.22/100 cubic feet** beginning with the next billing cycle. The surcharge rate will be recalculated in January 2006 using the most recent sampling data.

If you have questions, please contact Karla Tebben or me at 239-5150. We appreciate your cooperation with the surcharge and pretreatment programs.

Yours very truly,

Winifred G. Gleason, P.E.
Environmental Engineer
Water and Pollution Control Department

/bas

Enclosures

pc: Todd Whipple
Mike Wheelock
Jim McElvogue

07/13/05

Ames-Story Environmental Landfill
SURCHARGE CALCULATION

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3
5/3/2004	460	13	35
9/20/2004	450	6.2	39
5/2/2005	370	40	36
AVERAGE	427	20	37
NORMAL	250	300	40
EXTRA STRENGTH	177	(280)	(3)

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	177	0.00125	$0.22
TSS	(280)	0.00219	$0.00
NH3/TKN	(3)	0.00437	$0.00
TOTAL SURCHARGE RATE			**$0.22**

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimate	3
SURCHARGE RATE($/100 CF):	$0.22
ESTIMATED SURCHARGE ($ per month):	**$0.66**

RECEIVED JUN 2 9 2005

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251
http://www.cityofames.org/waterweb

June 28, 2005

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Dear Bill:

Your facility is permitted under the City's Non-Domestic Waste Pretreatment Program. By federal law, the pretreatment permits are required to be re-issued at least every five years. In order to maintain up-to-date records on the activities and waste disposal methods for each of the pretreatment facilities in the program and issue appropriate permits, we use an Industrial Waste Information Questionnaire.

The most recent questionnaire completed by the Ames-Story Environmental Landfill was dated September 13, 2000. The existing permit expires on December 31, 2006. We plan to issue a new five-year permit to your facility that will be dated January 1, 2006. Please complete the enclosed questionnaire and return it to us by August 8, 2005 so that we will have current information to develop appropriate permit and monitoring parameters.

We will be happy to meet with you to go over the questionnaire and try to answer any questions. Please contact me or Karla Tebben at 515-239-5150 or ktebben@city.ames.ia.us or wgleason@city.ames.ia.us regarding the questionnaire or the pretreatment program in general.

Thank you for your continued cooperation with the City of Ames Non-Domestic Waste Pretreatment Program.

Yours very truly,

Winifred Gleason

Winifred G. Gleason, P.E.
Environmental Engineer
Water and Pollution Control Department

/bas

Enclosure

pc: Todd Whipple

RECEIVED JAN 2 8 2005
TDW

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251
http://www.city.ames.ia.us/waterweb

January 26, 2005

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: Surcharge Billing

Dear Mr. Fedeler:

Enclosed is the calculation of the Ames-Story Environmental Landfill surcharge rate based on the samples taken over the last six months. Also included is an estimate of the monthly surcharge based on the average flow of the previous six months. The surcharge rate will be **$0.27/100 cubic feet** beginning with the next billing cycle. The surcharge rate will be recalculated in July 2005 using the most recent sampling data.

If you have questions, please contact Karla Tebben or me at 239-5150. We appreciate your cooperation with the surcharge and pretreatment programs.

Yours very truly,

Winnie Gleason

Winifred G. Gleason, P.E.
Environmental Engineer
Water and Pollution Control Department

/bas

Enclosures

pc: Todd Whipple
Mike Wheelock
Jim McElvogue

01/19/05

Ames-Story Environmental Landfill
SURCHARGE CALCULATION

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3
9/15/2003	490	2.5	39
5/3/2004	460	13	35
9/20/2004	450	6.2	39
AVERAGE	467	7	38
NORMAL	250	300	40
EXTRA STRENGTH	217	(293)	(2)

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	217	0.00125	$0.27
TSS	(293)	0.00219	$0.00
NH3/TKN	(2)	0.00437	$0.00
TOTAL SURCHARGE RATE			**$0.27**

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimate	3
SURCHARGE RATE($/100 CF):	$0.27
ESTIMATED SURCHARGE ($ per month):	**$0.81**

CITY OF AMES IOWA
Caring People
Quality Programs
Exceptional Service

Water and Pollution Control Department

300 East Fifth Street, Building 1
Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251

January 7, 2005

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: Pretreatment Sampling Expenses

Dear Mr. Fedeler:

During the period July 1, 2004 through December 31, 2004, the City performed pretreatment sampling at the Ames-Story Environmental Landfill. The cost associated with the sampling is $241.10.

This amount will be billed to you from the City Finance Department. A detailed summary of the costs is enclosed.

Please give me a call at 515-239-5150 if you have any questions concerning this matter.

Yours very truly,

Winifred G. Gleason, P.E.
Pretreatment Program Co-Coordinator
Water and Pollution Control Department

/bas

Enclosure

pc: Linda Stole
Todd Whipple
Jim McElvogue

Pretreatment Sampling

2-Dec-04

Environmental Landfill South

Travel Time (min): 26 Trip (miles): 6

Date	Personnel		Maintenance Prep		Lab Prep/Processing		Site		Sampling			Analysis		Total Charges
	Employee	Rate	Time (min)	Cost	Time (min)	Cost	Time (min)	Cost*	Equipment	# used	Cost	Lab No.	Lab Charge	
9/20/2004	TC	$30.17		$0.00	30	$15.09	20	$23.13	Truck/Van	1	$3.30	42228	$57.00	$98.52
	JK	$19.82	10	$3.30		$0.00	20	$15.20	Sampler/Ice		$0.00	contract	$70.00	$88.50
				$0.00		$0.00		$0.00	S&H (UHL)	1	$5.00			$5.00
Subtotal				**$3.30**		**$15.09**		**$38.33**			**$8.30**		**$127.00**	**$192.01**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
Total				**$3.30**		**$15.09**		**$38.33**			**$8.30**		**$127.00**	**$192.01**

Pretreatment Sampling

2-Dec-04

Environmental Landfill North

Travel Time (min): 22 Trip (miles): 5.9

Date	Personnel		Maintenance Prep		Lab Prep/Processing		Site		Sampling			Analysis		Total Charges
	Employee	Rate	Time (min)	Cost	Time (min)	Cost	Time (min)	Cost*	Equipment	# used	Cost	Lab No.	Lab Charge	
9/20/2004	TC	$30.17		$0.00	15	$7.54	20	$21.12	Truck/Van	1	$3.25			$31.91
	JK	$19.82	10	$3.30		$0.00	20	$13.87	Sampler/Ice		$0.00			$17.18
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$3.30**		**$7.54**		**$34.99**			**$3.25**		**$0.00**	**$49.08**
Notes:	No flow in manhole													
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
				$0.00		$0.00		$0.00	Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/Ice		$0.00			$0.00
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$0.00**		**$0.00**			**$0.00**		**$0.00**	**$0.00**
Notes:														
Total				**$3.30**		**$7.54**		**$34.99**			**$3.25**		**$0.00**	**$49.08**

APPENDIX I

Explosive Gas Monitoring Results

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: December 15, 2004

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.8	0	0
MW36/MW37	0	20.8	0	0
MW35	0	20.8	0	0
MW33/MW25	0	20.8	0	0
MW32/MW24	0	20.8	0	0
MW30/MW23	0	20.8	0	0
MW34	0	20.8	0	0
MW31	0	20.8	0	0
Trailer	0	20.8	0	0
MW6/MW7/MW8	0	20.8	0	0
MW38/39	0	20.8	0	0
MW40/MW41	0	20.8	0	0
MW42/MW43	0	20.8	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: March 21, 2005

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.7	0	0
MW36/MW37	0	20.7	0	0
MW35	0	20.7	0	0
MW33/MW25	0	20.7	0	0
MW32/MW24	0	20.7	0	0
MW30/MW23	0	20.7	0	0
MW34	0	20.7	0	0
MW31	0	20.7	0	0
Trailer	0	20.7	0	0
MW6/MW7/MW8	0	20.7	0	0
MW38/39	0	20.7	0	0
MW40/MW41	0	20.7	0	0
MW42/MW43	0	20.7	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: June 22, 2005

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.8	0	0
MW36/MW37	0	20.8	0	0
MW35	0	20.8	0	0
MW33/MW25	0	20.8	0	0
MW32/MW24	0	20.8	0	0
MW30/MW23	0	20.8	0	0
MW34	0	20.8	0	0
MW31	0	20.8	0	0
Trailer	0	20.8	0	0
MW6/MW7/MW8	0	20.8	0	0
MW38/39	0	20.8	0	0
MW40/MW41	0	20.8	0	0
MW42/MW43	0	20.8	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: September 27, 2005

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.5	0	0
MW36/MW37	0	20.5	0	0
MW35	0	20.5	0	0
MW33/MW25	0	20.5	0	0
MW32/MW24	0	20.5	0	0
MW30/MW23	0	20.5	0	0
MW34	0	20.5	0	0
MW31	0	20.5	0	0
Trailer	2	20.5	0	0
MW6/MW7/MW8	0	20.5	0	0
MW38/39	0	20.5	0	0
MW40/MW41	0	20.5	0	0
MW42/MW43	0	20.5	0	0