AWARD

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FOX engineering

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

November 30, 2007

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

RE: 2007 Annual Groundwater Quality Report
Ames-Story Environmental Landfill
85-SDP-13-91P
P.N. 6004.320

Ms. Koger:

Find attached 1 copy of the 2007 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, CPG
Project Manager

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2007 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, 2007

FOX engineering

6004-99A.325

Annual Groundwater Quality Report

November 28, 2007

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 6004-99A.325

Dear Ms. Koger:

This Annual Report has been prepared in accordance with IAC 567-114.26(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 piezometers that exist in the north portion of the site do not exhibit excessive leachate head. The two (2) leachate piezometers that exist in the south 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

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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 fill areas. 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 data 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 Hydrologic 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 January 2, 2007 (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 filling occurred between 1991 and 1999, with additional fill yet to be placed. It follows that all first year quarterly sampling episodes have been completed for the Trenches 1 through 4.

Annual Groundwater Quality Report

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. 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 2007 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. Chloride concentrations exceeds the secondary MCL at MW-25 (9/06), MW-33 (3/03), MW-35 (3/06), and MW-43 (6/00). The compounds that exceed statistical limits are summarized by monitoring well below:

MW-6	Barium, chloride, temperature (9/05), and TOX
MW-28	COD, chloride, pH (3/96, 9/94), temperature (9/05, 9/06), and TOX
MW-23	Barium, COD (3/95 and 3/07), chloride, lead (10/91), pH (3/05), and TOX
MW-24	Barium, COD (9/92), chloride, lead (4/91), and TOX (9/93)
MW-31	Barium, COD, chloride, lead (10/91), conductivity (3/06), pH (9/02, 3/05), and TOX
MW-25	Barium, COD (prior to 3/95), chloride, lead (10/91), pH, and TOX
MW-33	Barium, COD, chloride, iron (3/94, 9/95, and 3/04), lead (9/07), ammonia, pH, and TOX
MW-34	Barium, COD, chloride, conductivity (3/01), lead (10/91), nitrogen ammonia (3/96), pH (3/98), and TOX
MW-35	Barium, COD (3/03, 9/04), chloride, pH (6/97, 3/98), and TOX
MW-39	Arsenic (12/00), barium, COD (3/05), chloride, pH (6/00, 3/06), and TOX (9/00, 9/06)
MW-40	Barium, chloride pH (6/00, 3/06), and TOX (9/05)
MW-43	Barium, COD, chloride, ammonia, lead (9/07), pH (6/00, 3/05), and TOX

Indicator compounds such as chlorides, COD, and TOX have been found to exceed statistical control limits in the majority of downgradient MW's. This is documented during the initial sampling episodes performed in 1991 and 1992 and is not attributed to leachate migration. In addition, barium, iron, magnesium, and nitrogen ammonia have also been detected in several downgradient wells. However, due to the general presence of these compounds in both the upgradient and downgradent wells, these results have not been interpreted as a release of leachate into the groundwater.

The May 16, 2007 IDNR Letter (Appendix A) required supplemental analyses on water collected from MW-31, MW-33, MW-34, and MW-43. The supplemental parameters are listed in 567 IAC 114.26(4)d.

Results of the supplemental analyses are included in Appendices C and D.

Review of the results indicate that all volatile organic compounds are undetected and reported as below laboratory method detection limits. This supports the interpretation that leachate migration is not occurring in the vicinity of MW-31, MW-33, MW-34, and MW-43.

The remaining compounds listed in 567 IAC 114.26(4)d (dissolved metals), when detected, are detected in concentrations very similar to the concentrations originally reported during the first year sampling and testing. Lead was detected at MW-33 (0.006 mg/L) and at MW-43 (0.005 mg/L) at, or slightly above, the method detection limit of 0.005 mg/L. Although the detection of lead was the first incidence of such detection at MW-33 and MW-43, lead was historically detected at MW-23, MW-24, MW-31, MW-25, at MW-34 in greater concentrations during the first year baseline sampling episodes. It follows that the low levels of lead detection are not interpreted to be the result of leachate migration, rather as a condition that exists in the subsurface soils at this site.

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 equal or 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; at MW-35 in March, 2006; and at MW25 in September, 2006. The compounds that exceed statistical limits are summarized by monitoring well below:

MW-7	arsenic (prior to 3/01), barium, COD (9/05), iron, pH (12/00), and temperature (9/05)
MW-8	arsenic, barium, chloride (3/04), iron, ammonia, pH (12/00, 9/02),

	temperature (9/05, 9/06), TOX (9/02, 9/06), and zinc (3/01)
MW-29	arsenic, barium, COD (prior to 3/95), conductivity (9/00), lead (10/91), iron (10/91), pH (3/95), temperature (9/05, 9/06, 9/07), TOX (4/91, 9/06), and zinc (3/01 & 3/02).
MW-30	arsenic, barium (4/91), COD (prior to 3/95), chloride (3/96), conductivity, iron (9/07), lead (10/91), pH, TOX (4/91, 9/06)
MW-32	COD, chloride, conductivity, iron, magnesium, lead (4/91 & 10/91), and TOX
MW-25	COD, chloride, conductivity, lead (10/91), magnesium, pH, and TOX
MW-33	barium (9/07), COD, chloride, conductivity, iron, lead (9/07), magnesium, nitrogen ammonia, pH, and TOX
MW-34	COD, chloride, conductivity, iron, lead (10/91), magnesium, nitrogen ammonia (prior to 9/98), pH, temperature, TOX, and zinc
MW-35	COD (3/03, 9/04), chloride, conductivity, iron (9/97), magnesium, pH, temperature (9/05), and TOX (9/02)
MW-38	arsenic, barium (6/00), COD (9/04), chloride, conductivity, iron (3/04), pH (6/00, 9/02)
MW-41	arsenic, barium, iron, pH (6/00), temperature (9/05, 9/06), TOX (9/06), and zinc (12/00)
MW-42	arsenic, barium, COD (9/04, 9/07), chloride, conductivity, iron, pH (3/05), lead (6/00), TOX (9/06)

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. This is documented during the initial sampling episodes performed in 2000 and is not attributed to leachate migration. In addition, arsenic, barium, iron, magnesium, and nitrogen ammonia have also been detected in excess of statistical control limits in many 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.

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 secondary MCL for chloride was exceeded at SMP-1 and SMP-2 in March, 2006. The compounds that exceed statistical limits are summarized by monitoring point below:

SMP-2	COD (3/03), chloride (3/06), conductivity (3/06), pH, and lead (10/91)
SMP-3	barium (10/91), magnesium
SMP-4	arsenic (6/00, 9/02), barium (6/00, 9/02), COD, conductivity (10/02, 3/04), copper (9/02), magnesium, ammonia, temperature (6/00), and

	zinc (6/00 , 3/01)
SMP-5	arsenic, barium (9/02), and ammonia
SMP-6	arsenic, barium (prior to 3/02), COD (3/07), conductivity (3/07), iron, magnesium, pH (6/00), and ammonia

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 567-114.21. 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 2007 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, 2007 Water Table Contour Map and the September, 2007 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 of a portion of 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 in the north trenches (Trenches 1-4) were installed in May, 2003. The two (2) leachate piezometers in the south trenches (Trenches 5 & 6) were installed between November 16, 2007 and November 27, 2007. Boring Logs and Monitoring Well/Piezometer Construction Documentation forms will be forwarded under separate cover upon completion of the field survey.

Leachate head elevations at the four (4) piezometers to the north has been recorded routinely since installation and are summarized in the Table and graphs included in Appendix G. The initial leachate head observations in Trenches 5 and 6 (during drilling) did not indicate excessive head on the liner.

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 0.0 feet to 1.5 feet. The leachate thickness in Trench 4 has been recorded as ranging from 1.0 feet to 3.74 feet. Field and survey data is not currently available to record leachate head in Trench 5 or Trench 6.

Based on information provided by the City of Ames (Appendix H), pretreatment testing results for May 11, 2007 and September 24, 2007 are summarized in the Table below.

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 by Clouser Plumbing, Ames, in September, 2005 as per IAC 567-114.26(11)a.8. Line cleaning is tentatively scheduled again for the fall/winter of 2008, depending on accessibility.

Parameter	Permit Limit (mg/L)	Allowance Discharge (mg/L)	05/11/07 Results (mg/L)	9/24/07 Results (mg/L)
PH	6.0-10.0		6.9	7.3
TSS	1,500/300		12	NR
Chloride	900		250	NR
Ammonia-N	200/40		52	NR
COD	2,500/250	1,500	540	490
CBOD5	/250		NR	26
TKN	/40	250	61	56
F.O.G.	0.11		NR	<4.9

6. EXPLOSIVE GAS MONITORING

Explosive gas monitoring was performed quarterly through September, 2007, per IAC 567-114.26(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. RESPONSE TO MAY 16, 2007 IDNR LETTER

The May 16, 2007 IDNR Letter was issued as part of on-going correspondence related to water results for COD, chloride, total organic halides/halogens (TOX) in several downgradient wells at the site. The requested supplemental sampling at MW-31, MW-33, MW-34, and MW-43 in September 2007 are not interpreted to indicate leachate impact.

As summarized in Section 2, above, the reported concentration of COD, chloride, and TOX in most downgradient monitoring wells exceeds the statistically calculated limit in the upgradient well data. This condition has been recognized and reported since at least 1992 (see Appendix E) and is not attributed to leachate impact. The presence of organic halide compounds may attributable to the presence of the chloride (a halide) as an endemic water quality component in groundwater in both upgradient and downgradient positions across the site.

Chlorinated hydrocarbons (man-made sources) are not detected at MW-31, MW-33, MW-34, and MW-43. Volatile organic compounds are not interpreted to be the source of the detectible TOX concentrations. Submittal of a Groundwater Quality Assessment Plan is considered unwarranted at this time.

8. 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 567-114.26(11)a.8 during the fall/winter of 2008.

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.

DOUGLAS J. LUZBETAK
LICENSED
12654
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.

11/28/07

DOUGLAS J. LUZBETAK, P.E. DATE
License number 12654

My license renewal date is December 31, 2008.

Pages or sheets covered by this seal: All

APPENDIX A

Permit, Permit Amendment, and Correspondence

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Fields of Opportunities

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
RICHARD A. LEOPOLD, DIRECTOR

July 30, 2007

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 January 2, 2007, 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 authorizes the permit holder to salvage scrap metal as requested in the letter dated February 7, 2007 as submitted on your behalf by Fox Engineering Associates.

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, please contact me at (515) 281-8974.

Sincerely,

Matthew R. Phoenix, P.E.
Environmental Engineer
Energy and Waste Management Bureau

MP\mrp

cc: 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

IOWA DEPARTMENT OF NATURAL RESOURCES
AMENDMENT #1

Issued by: _____
Matthew R. Phoenix, P.E.
Environmental Services Division

For: the Director

Date Issued: July 30, 2007

Permit number 85-SDP-13-91P, issued on January 2, 2007, for the Ames-Story Environmental C&D Landfill, Inc. is hereby amended by the following:

1. The permit holder is authorized to temporarily store scrap metal in an area designated by the operator. No scrap metal may be stored for more than a total of twelve (12) months prior to being recycled/salvaged. The operator and salvaging contractor shall comply with applicable provisions of 567 IAC Chapter 118 and the General Provisions of this permit. No scavenging shall be allowed.

Fields of Opportunities

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
RICHARD A. LEOPOLD, DIRECTOR

May 16, 2007

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

RE: Ames-Story Environmental C&D Landfill, Inc.
2006 Annual Water Quality Report
Permit No. 85-SDP-13-91P

Dear Mr. Fedeler:

We have reviewed the 2006 Annual Water Quality Report (AWQR), dated November 28, 2006, 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.

2. The Department believes that elevated levels of chloride, COD and TOX may be indicative of leachate impacts at wells MW-31, MW-33, MW-34 and MW-43. As such, submit a schedule for conducting analysis of all parameters listed in 567 IAC 114.26(4)"d" at MW-31, MW-33, MW-34 and MW-43. Prior Department requests for submission of a Groundwater Quality Assessment Workplan to address contamination at MW-31 and MW-33 shall be deferred until after review of supplemental data from these wells.

If you have any questions, please contact me at (515) 281-8974.

Sincerely,

Matthew R. Phoenix, P.E.
Environmental Engineer
Energy and Waste Management Bureau

MP\mrp

cc: 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

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Fields of Opportunities

STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

January 2, 2007

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

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

Dear Mr. Fedeler:

Enclosed is the renewed permit for the Ames-Story Environmental C&D Landfill. 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 the permit requires the installation of leachate piezometers in Trenches 5 and 6 within 90 days of the date of issuance. Construction documentation forms shall be submitted to the Department upon completion of the piezometers.

Please submit two additional copies of the of the permit renewal application document, and three copies of a revised Form 50 with the correct service area, by February 2, 2007 in order for distribution of approved copies to be sent to you and to the Department's Field Office #5.

If you have any questions, you may contact me at (515) 281-8974.

Sincerely,

Matthew R. Phoenix, P.E.
Environmental Engineer
Energy and Waste Management Bureau

MP:mrp

cc: DNR Field Office #5

Nina Koger, DNR

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

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 Ames-Story Environmental Landfill
	Address:	2101 Watt Street P.O. Box 2483 Ames, IA 50010
	Phone:	515-232-5864
V.	**Licensed Design Engineer**	
	Name:	Douglas J. Luzbetak, P.E. FOX Engineering Associates, Inc.
	Address:	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:**	January 2, 2007
VII.	**Permit Expiration Date:**	January 2, 2010
VIII.	**Issued by:**	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, any Special Wastes and General Special Wastes 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 for Story 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 November 28, 2006; 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 in Boone County; all cities, excluding Jefferson, and the unincorporated area in Greene County; all cities, Ames, Cambridge, Colo, Gilbert, Huxley, Kelley, Maxwell, McCallsberg, Nevada, Roland, Slater, Story City, Zearing and the unincorporated area in Story County; the Cities of Bouton, Granger, and Woodward and Woodward State Hospital in Dallas County; and the Cities of Farnhamville, Lohrville, and Somers in Calhoun County.

In accordance with 567 IAC 101.13(2), the permit holder shall submit the Comprehensive Solid Waste Management Plan, Part I update to the Department approved plan at the time of permit renewal, due 90 days prior to expiration of this permit.

2. The permit holder shall develop and operate the site in accordance with the hereby approved Development and Operational Plans and Specifications (DOPS), dated August 25, 2006, as submitted by Fox Engineering Associates, Inc, and the following:

   a. The approved site vertical expansion shall not exceed a maximum elevation of 1000 feet in the north waste area and 985 feet in the south waste area as shown on Plan Sheet 4 in Appendix 2 of the Development and Operational Plans and Specifications.

   b. The approved site development is limited to Trenches #1, #2, #3 and #4 in the north waste area and Trenches #5 and #6 in the south waste area.

   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. In accordance with the variance approval of February 19, 1999, the permit holder was authorized to increase 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 3 in Appendix 2 of the Development and Operational Plans and Specifications.

   e. The review comments, dated November 13, 1995 from the Department's Conservation and Recreation Division relative to the comprehensive listing of plant and animal species, in accordance with 567 IAC 101.13(1)"j"(4)1 for all development and soil borrow areas, are incorporated as part of the permit documents.

   f. The review comments, dated December 18, 1995 from the State Historical Society relative to the determination of the presence of and assessment of the impact on any archaeological, historical, or architecturally significant properties for all development and soil borrow areas on the proposed site, in accordance with 567 IAC 101.13(1)"j"(4)2, are 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 hereby approved Hydrologic Monitoring System Plan (HMSP) as contained in Appendix 3 of the Development and Operational Plans and Specifications, and the following:

   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 may 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.

   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. 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.

   g. 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.

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

i. 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.

j. 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.

k. 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.

l. 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. The permit holder is authorized to construct and operate the leachate control system in accordance with the hereby approved Leachate Control System Plan as contained in Appendix 5 of the Development and Operational Plans and Specifications, dated August 25, 2006, as prepared by Fox Engineering Associates, Inc., and the following:

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 Planning, Permitting and Engineering Services Section 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 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.

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.

g. Landfill personnel shall have uninterupted access to equipment such as sewer balls and plugs owned by the permit holder's excavating business for the purpose of stopping leachate flow from the leachate control system. Landfill personnel shall also receive training in the proper use of such sewer plugging equipment. If at any time landfill personnel lose access to such equipment for any reason, including but not limited to the bankrupcy, sale or closure of either the landfill or the excavating business; the permit holder shall comply with 567 IAC 114.26(11)"a"(7) by installing valves on the leachate control system pipes.

h. The permit holder is required to install leachate piezometers in Trenches 5 and 6 no later than 90 days after the issuance date of this permit. Piezometers shall be installed such that they measure the leachate level on the liner at the lowest point of each trench. Upon completion of the piezometer installations, construction documentation forms shall be submitted to the Department's Main and local Field offices.

9. 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.

10. The permit holder is exempt from having a scale on-site and shall instead follow the waste tonnage calculation methodology included in Appendix 12 of the Development and Operational Plans and Specifications. 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.

11. The hereby approved Emergency Response and Remedial Action Plan (ERRAP) as contained in Appendix 6 of the Development and Operational Plans and Specifications, dated August 25, 2006, as submitted by Fox Engineering Associates, Inc. in compliance with 567 IAC 114.30(455B), shall be updated 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.

12. The permit holder shall close the landfill site in accordance with the hereby approved Closure/Post-Closure Plan (C/PCP) as contained in Appendix 9 of the Development and Operational Plans and Specifications, dated August 25, 2006, as submitted by Fox Engineering Associates, Inc., and the following:

    a. The review comments dated October 2, 2006 from the Natural Rescources 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, are 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
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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

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FOX P.N. 256295A.310

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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	WISCONSINA N 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 14,2007

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	NT
Carbon tetrachloride *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene *	75	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene *	7	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane *	200	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene *	5	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
mg/L																	
Arsenic, dissolved	0.05	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Barium, dissolved	2.0	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Cadmium, dissolved	0.005	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Chromium, dissolved	0.1	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Lead, dissolved	0.015	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mercury, dissolved	0.002	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Magnesium, dissolved	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Zinc, dissolved	2	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron, dissolved	--	Plugged	<0.030	Plugged	0.068	<0.030	<0.030	Plugged	<0.030	0.189	<0.030	0.066	6.06	<0.030	<0.030	<0.030	<0.030
Copper, dissolved	1.3	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Chloride	--	Plugged	100	Plugged	<10	24	30	Plugged	<10	<10	11	52	58	<10	147	144	66
Nitrogen, Ammonia	--	Plugged	<1.0	Plugged	<1.0	<1.0	<1.0	Plugged	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0
Chemical Oxygen Demand	--	Plugged	<10	Plugged	<10	21	<10	Plugged	10	<10	10	<10	15	32	<10	<10	<10
Total Organic Halogens	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
Phenols	--	Plugged	NT	Plugged	NT	NT	NT	Plugged	NT	NT	NT	NT	NT	NT	NT	NT	NT
pH	--	Plugged	7.2	Plugged	7.3	6.7	7	Plugged	6.8	7.2	7	6.8	7	7.4	8	8	7.4
Temperature, celsius	--	Plugged	6	Plugged	9	7	9	Plugged	6	12	11	8	9	4	5	5	6
Conductivity, mv	--	Plugged	1334	Plugged	667	742	1561	Plugged	1206	910	1300	1815	1560	1118	1092	1104	1540

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, 2006

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	<1.0	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	<1.0	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	<1.0	NT
1,1,1-Trichloroethane *	200	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	NT
Trichloroethene *	5	NT	<1.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	NT
mg/L																		
Arsenic, dissolved	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.003	NT
Barium, dissolved	2.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.074	NT
Cadmium, dissolved	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010	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	<0.00050	NT
Magnesium, dissolved	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	31.9	NT
Zinc, dissolved	2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.013	NT
Iron, dissolved	--	NT	NT	<0.030	0.18	3.06	0.044	1.49	4.61	0.777	0.45	<0.030	1.89	2.01	0.079	0.057	<0.030	4.4
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	51	<10	20	96	15	<10	32	22	26	11	20	58	66	79	97
Nitrogen, Ammonia	--	NT	NT	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	4.5	5
Chemical Oxygen Demand	--	NT	NT	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	192	32	54
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	6.9	7.4	6.9	6.7	7.2	7.3	7	6.8	7	7.2	7.1	6.9	7.8	7.6	6.7
Temperature, celsius	--	NT	NT	6	11	8	7	12	12	10	9	6	9	9	8	4	3	13
Conductivity, mv	--	NT	NT	1084	763	1889	1336	701	644	1305	1550	1336	831	1013	1388	1414	1249	3930

Keystone LABORATORIES, INC.

RECEIVED MAR 2 8 2007

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

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

ANALYTICAL REPORT

March 27, 2007

Work Order: 17C0720

Report To

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

Work Order Information

Date Received: 03/16/2007 10:10AM
Collector: Mitch Brown
Phone: 515-233-0000
PO Number:

Project : Ames-Story Environmental Landfill - Spring
Project Number: 6004-99A

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0720-01 MW-37				Matrix:Water		Collected: 03/15/07 10:45	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	**20 mg/l**	**10**	1C71923	EPA 9252	RVV	03/19/07 16:45	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**3.06 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 11:54	
17C0720-02 MW-39				Matrix:Water		Collected: 03/15/07 09:20	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	**22 mg/l**	**10**	1C71923	EPA 9252	RVV	03/19/07 16:45	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**0.450 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:07	
17C0720-03 MW-40				Matrix:Water		Collected: 03/15/07 09:50	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	**26 mg/l**	**10**	1C71923	EPA 9252	RVV	03/19/07 16:45	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 12:11	
17C0720-04 MW-43				Matrix:Water		Collected: 03/15/07 08:10	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	**58 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**0.079 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:15	
17C0720-05 MW-36				Matrix:Water		Collected: 03/15/07 10:30	

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Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

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

Work Order: 17C0720

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0720-05 MW-36				Matrix: Water		Collected: 03/15/07 10:30	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	<10 mg/l	10	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**0.180 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:20	
17C0720-06 MW-38				Matrix: Water		Collected: 03/15/07 09:10	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C71906	EPA 410.4	SAA	03/19/07 14:59	
Chloride	**32 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**0.777 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:32	
17C0720-07 MW-41				Matrix: Water		Collected: 03/15/07 09:45	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**11 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**1.89 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:37	
17C0720-08 MW-42				Matrix: Water		Collected: 03/15/07 07:55	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**20 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C71905	SM 4500-NH3 F	SAA	03/19/07 14:16	
Determination of Dissolved Metals							
Iron, dissolved	**2.01 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:41	
17C0720-09 SW-4				Matrix: Water		Collected: 03/15/07 10:10	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**192 mg/l**	**40**	1C72604	EPA 410.4	SAA	03/26/07 14:06	
Chloride	**66 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	**1.2 mg/l**	**1.0**	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	**0.057 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:45	
17C0720-10 SW-5				Matrix: Water		Collected: 03/15/07 09:00	
Determination of Volatile Organic Compounds							

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

March 27, 2007

Work Order: 17C0720

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0720-10 SW-5				Matrix:Water		Collected: 03/15/07 09:00	
Determination of Volatile Organic Compounds							
1,1-Dichloroethylene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 2:40	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 2:40	
Carbon Tetrachloride	<0.3 ug/l	0.3	1C71918	EPA 8260B	TVK	03/20/07 2:40	
Benzene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 2:40	
1,2-Dichloroethane	<0.4 ug/l	0.4	1C71918	EPA 8260B	TVK	03/20/07 2:40	
Trichloroethylene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 2:40	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 2:40	
Surrogate: Dibromofluoromethane	*100 %*			*60-140*	TVK	03/20/07 2:40	
Surrogate: 1,2-Dichloroethane-d4	*91.0 %*			*69-133*	TVK	03/20/07 2:40	
Surrogate: Toluene-d8	*103 %*			*76-122*	TVK	03/20/07 2:40	
Surrogate: 4-Bromofluorobenzene	*105 %*			*74-126*	TVK	03/20/07 2:40	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**32 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**79 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	**4.5 mg/l**	**1.0**	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Arsenic, dissolved	**0.003 mg/l**	**0.001**	1C71544	EPA 7060A	LKM	03/19/07 18:18	
Barium, dissolved	**0.074 mg/l**	**0.010**	1C71910	EPA 6010B	RVV	03/19/07 14:16	
Cadmium, dissolved	<0.0010 mg/l	0.0010	1C72001	EPA 7131A	LKM	03/20/07 13:41	
Chromium, dissolved	<0.005 mg/l	0.005	1C71910	EPA 6010B	RVV	03/19/07 14:16	
Copper, dissolved	**0.005 mg/l**	**0.005**	1C71910	EPA 6010B	RVV	03/19/07 14:16	
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 12:49	
Lead, dissolved	<0.005 mg/l	0.005	1C71910	EPA 6010B	RVV	03/19/07 14:16	
Magnesium, dissolved	**31.9 mg/l**	**0.100**	1C71910	EPA 6010B	RVV	03/19/07 14:16	
Mercury, dissolved	<0.00050 mg/l	0.00050	1C72307	EPA 7470A	MAQ	03/23/07 16:45	
Zinc, dissolved	**0.013 mg/l**	**0.010**	1C71910	EPA 6010B	RVV	03/19/07 14:16	
17C0720-11 SW-6				Matrix:Water		Collected: 03/15/07 08:30	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**54 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**97 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	**5.0 mg/l**	**1.0**	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	**4.40 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 12:53	
17C0720-12 Trip Blank				Matrix:Water		Collected: 03/15/07 00:00	
Determination of Volatile Organic Compounds							
1,1-Dichloroethylene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 3:18	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 3:18	
Carbon Tetrachloride	<0.3 ug/l	0.3	1C71918	EPA 8260B	TVK	03/20/07 3:18	
Benzene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 3:18	

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Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

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

March 27, 2007

Work Order: 17C0720

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0720-12 Trip Blank				Matrix:Water		Collected: 03/15/07 00:00	
Determination of Volatile Organic Compounds							
1,2-Dichloroethane	<0.4 ug/l	0.4	1C71918	EPA 8260B	TVK	03/20/07 3:18	
Trichloroethylene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 3:18	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1C71918	EPA 8260B	TVK	03/20/07 3:18	
Surrogate: Dibromofluoromethane	*102 %*			*60-140*	TVK	03/20/07 3:18	
Surrogate: 1,2-Dichloroethane-d4	*93.4 %*			*69-133*	TVK	03/20/07 3:18	
Surrogate: Toluene-d8	*104 %*			*76-122*	TVK	03/20/07 3:18	
Surrogate: 4-Bromofluorobenzene	*105 %*			*74-126*	TVK	03/20/07 3:18	

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

Work Order: 17C0720

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1910 - 1C71918										
Calibration Check (17C1910-CCV1)				Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*48.5*		*ug/l*	*50.00*		*97.0*	*80-120*			
Surrogate: Dibromofluoromethane	*48.5*		*"*	*50.00*		*97.0*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*48.0*		*"*	*50.00*		*96.0*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*48.0*		*"*	*50.00*		*96.0*	*80-120*			
Surrogate: Toluene-d8	*49.8*		*"*	*50.00*		*99.6*	*80-120*			
Surrogate: Toluene-d8	*49.8*		*"*	*50.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*48.9*		*"*	*50.00*		*97.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*48.9*		*"*	*50.00*		*97.8*	*80-120*			
Chloroethane	84.55		"	100.4		84.2	80-120			
1,1-Dichloroethylene	42.84		"	50.00		85.7	80-120			
1,1,1-Trichloroethane	44.58		"	50.00		89.2	80-120			
Carbon Tetrachloride	45.19		"	50.00		90.4	80-120			
Benzene	43.92		"	50.00		87.8	80-120			
Benzene	43.92		"	50.00		87.8	80-120			
1,2-Dichloroethane	44.36		"	50.00		88.7	80-120			
Trichloroethylene	45.51		"	50.00		91.0	80-120			
Chlorobenzene	44.74		"	50.00		89.5	80-120			
1,4-Dichlorobenzene	48.09		"	50.00		96.2	80-120			
Calibration Check (17C1910-CCV2)				Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*49.9*		*ug/l*	*50.00*		*99.8*	*80-120*			
Surrogate: Dibromofluoromethane	*49.9*		*"*	*50.00*		*99.8*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*48.0*		*"*	*50.00*		*96.0*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*48.0*		*"*	*50.00*		*96.0*	*80-120*			
Surrogate: Toluene-d8	*50.0*		*"*	*50.00*		*100*	*80-120*			
Surrogate: Toluene-d8	*50.0*		*"*	*50.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*49.5*		*"*	*50.00*		*99.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*49.5*		*"*	*50.00*		*99.0*	*80-120*			
Chloroethane	95.08		"	100.4		94.7	80-120			
1,1-Dichloroethylene	45.47		"	50.00		90.9	80-120			
1,1,1-Trichloroethane	47.23		"	50.00		94.5	80-120			
Carbon Tetrachloride	48.55		"	50.00		97.1	80-120			
Benzene	46.69		"	50.00		93.4	80-120			
Benzene	46.69		"	50.00		93.4	80-120			
1,2-Dichloroethane	45.48		"	50.00		91.0	80-120			

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

Work Order: 17C0720

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1910 - 1C71918										
Calibration Check (17C1910-CCV2)				Prepared & Analyzed: 03/19/07						
Trichloroethylene	46.99		ug/l	50.00		94.0	80-120			
Chlorobenzene	45.68		"	50.00		91.4	80-120			
1,4-Dichlorobenzene	44.66		"	50.00		89.3	80-120			
Batch 1C71918 - EPA 5030B										
Blank (1C71918-BLK1)				Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*50.0*		*ug/l*	*50.00*		*100*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*45.2*		*"*	*50.00*		*90.4*	*69-133*			
Surrogate: Toluene-d8	*52.0*		*"*	*50.00*		*104*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*52.6*		*"*	*50.00*		*105*	*74-126*			
1,1-Dichloroethylene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	0.3	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	0.4	"							
Trichloroethylene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
LCS (1C71918-BS1)				Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*48.0*		*ug/l*	*50.00*		*96.0*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*45.9*		*"*	*50.00*		*91.8*	*69-133*			
Surrogate: Toluene-d8	*49.7*		*"*	*50.00*		*99.4*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*51.6*		*"*	*50.00*		*103*	*74-126*			
1,1-Dichloroethylene	49.00	1.0	"	50.00		98.0	84-140			
1,1,1-Trichloroethane	47.69	1.0	"	50.00		95.4	83-131			
Carbon Tetrachloride	49.58	0.3	"	50.00		99.2	87-132			
Benzene	47.23	1.0	"	50.00		94.5	78-139			
1,2-Dichloroethane	46.27	0.4	"	50.00		92.5	74-138			
Trichloroethylene	49.31	1.0	"	50.00		98.6	82-125			
1,4-Dichlorobenzene	39.78	1.0	"	50.00		79.6	72-131			

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

Work Order: 17C0720

March 27, 2007

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C71918 - EPA 5030B										
Matrix Spike (1C71918-MS1)		**Source: 17C0549-03**		Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*49.6*		*ug/l*	*50.00*		*99.2*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*47.2*		*"*	*50.00*		*94.4*	*69-133*			
Surrogate: Toluene-d8	*49.9*		*"*	*50.00*		*99.8*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*50.2*		*"*	*50.00*		*100*	*74-126*			
1,1-Dichloroethylene	51.10	1.0	"	50.00	ND	102	77-151			
1,1,1-Trichloroethane	49.41	1.0	"	50.00	ND	98.8	78-138			
Carbon Tetrachloride	51.11	0.3	"	50.00	ND	102	85-134			
Benzene	49.58	1.0	"	50.00	1.5	96.2	60-140			
1,2-Dichloroethane	46.97	0.4	"	50.00	ND	93.9	74-139			
Trichloroethylene	50.80	1.0	"	50.00	2.4	96.8	82-125			
1,4-Dichlorobenzene	44.75	1.0	"	50.00	ND	89.5	68-136			
Matrix Spike Dup (1C71918-MSD1)		**Source: 17C0549-03**		Prepared & Analyzed: 03/19/07						
Surrogate: Dibromofluoromethane	*49.8*		*ug/l*	*50.00*		*99.6*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*47.8*		*"*	*50.00*		*95.6*	*69-133*			
Surrogate: Toluene-d8	*49.6*		*"*	*50.00*		*99.2*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*47.1*		*"*	*50.00*		*94.2*	*74-126*			
1,1-Dichloroethylene	48.74	1.0	"	50.00	ND	97.5	77-151	4.73	14	
1,1,1-Trichloroethane	46.95	1.0	"	50.00	ND	93.9	78-138	5.11	14	
Carbon Tetrachloride	48.20	0.3	"	50.00	ND	96.4	85-134	5.86	14	
Benzene	47.06	1.0	"	50.00	1.5	91.1	60-140	5.22	22	
1,2-Dichloroethane	45.54	0.4	"	50.00	ND	91.1	74-139	3.09	27	
Trichloroethylene	47.88	1.0	"	50.00	2.4	91.0	82-125	5.92	17	
1,4-Dichlorobenzene	51.84	1.0	"	50.00	ND	104	68-136	14.7	30	

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL1)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	-2.35		mg/l	0.000						
Cal Standard (17A1613-CAL2)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	12.3		mg/l	10.00		123				
Cal Standard (17A1613-CAL3)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	21.9		mg/l	20.00		110				
Cal Standard (17A1613-CAL4)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	74.0		mg/l	75.00		98.7				
Cal Standard (17A1613-CAL5)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	97.6		mg/l	100.0		97.6				
Cal Standard (17A1613-CAL6)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	152		mg/l	150.0		101				
Batch 17C1901 - 1C71905										
Calibration Check (17C1901-CCV1)				Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	4.85		mg/l	5.00		97.0	80-120			
Calibration Check (17C1901-CCV2)				Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	4.70		mg/l	5.00		94.0	80-120			
Initial Cal Check (17C1901-ICV1)				Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	5.40		mg/l	5.00		108	80-120			

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

Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1902 - 1C71906										
Calibration Check (17C1902-CCV1)				Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	79.1		mg/l	75.00		105	90-110			
Calibration Check (17C1902-CCV2)				Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	79.7		mg/l	75.00		106	90-110			
Batch 17C2015 - 1C72032										
Calibration Check (17C2015-CCV1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	4.75		mg/l	5.00		95.0	80-120			
Calibration Check (17C2015-CCV2)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	4.80		mg/l	5.00		96.0	80-120			
Initial Cal Check (17C2015-ICV1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	5.30		mg/l	5.00		106	80-120			
Batch 17C2112 - 1C72135										
Calibration Check (17C2112-CCV1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	69.5		mg/l	75.00		92.7	90-110			
Initial Cal Check (17C2112-ICV1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	71.1		mg/l	75.00		94.8	90-110			
Batch 17C2606 - 1C72604										
Calibration Check (17C2606-CCV1)				Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	80.7		mg/l	75.00		108	90-110			

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2606 - 1C72604										
Calibration Check (17C2606-CCV2)				Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	81.0		mg/l	75.00		108	90-110			
Batch 1C71905 - Wet Chem Preparation										
Blank (1C71905-BLK1)				Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	ND	1.0	mg/l							
Matrix Spike (1C71905-MS1)		Source: 17C0720-08		Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	5.21	1.0	mg/l	5.00	ND	104	75-128			
Matrix Spike Dup (1C71905-MSD1)		Source: 17C0720-08		Prepared & Analyzed: 03/19/07						
Nitrogen, Ammonia	5.21	1.0	mg/l	5.00	ND	104	75-128	0.00	18	
Batch 1C71906 - Wet Chem Preparation										
Blank (1C71906-BLK1)				Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1C71906-BS1)				Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	73.3	10	mg/l	75.00		97.7	80-112			
Matrix Spike (1C71906-MS1)		Source: 17C0720-01		Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	38.2	10	mg/l	42.86	3	82.1	60-140			
Matrix Spike Dup (1C71906-MSD1)		Source: 17C0720-01		Prepared & Analyzed: 03/19/07						
Chemical Oxygen Demand	46.2	10	mg/l	42.86	3	101	60-140	19.0	27	

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Fox Engineering Associates, Inc.
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Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C71923 - Wet Chem Preparation										
Blank (1C71923-BLK1)				Prepared & Analyzed: 03/19/07						
Chloride	ND	10	mg/l							
Matrix Spike (1C71923-MS1)		Source: 17C0655-08		Prepared & Analyzed: 03/19/07						
Chloride	63.5	10	mg/l	50.00	16	95.0	79-115			
Matrix Spike Dup (1C71923-MSD1)		Source: 17C0655-08		Prepared & Analyzed: 03/19/07						
Chloride	64.5	10	mg/l	50.00	16	97.0	79-115	1.56	10	
Reference (1C71923-SRM1)				Prepared & Analyzed: 03/19/07						
Chloride	47.6	10	mg/l	47.90		99.4	90-110			
Batch 1C72032 - Wet Chem Preparation										
Blank (1C72032-BLK1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	ND	1.0	mg/l							
Matrix Spike (1C72032-MS1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	2.09	1.0	mg/l	2.00	ND	104	75-128			
Matrix Spike Dup (1C72032-MSD1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	1.99	1.0	mg/l	2.00	ND	99.5	75-128	4.90	18	
Batch 1C72120 - Wet Chem Preparation										
Blank (1C72120-BLK1)				Prepared & Analyzed: 03/21/07						
Chloride	ND	10	mg/l							

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C72120 - Wet Chem Preparation										
Matrix Spike (1C72120-MS1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Chloride	116	10	mg/l	50.00	66	100	79-115			
Matrix Spike Dup (1C72120-MSD1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Chloride	116	10	mg/l	50.00	66	100	79-115	0.00	10	
Reference (1C72120-SRM1)				Prepared & Analyzed: 03/21/07						
Chloride	45.7	10	mg/l	47.90		95.4	90-110			
Batch 1C72135 - Wet Chem Preparation										
Blank (1C72135-BLK1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1C72135-BS1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	68.2	10	mg/l	75.00		90.9	80-112			
Matrix Spike (1C72135-MS1)		Source: 17C0720-07		Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	37.9	10	mg/l	37.50	ND	101	60-140			
Matrix Spike Dup (1C72135-MSD1)		Source: 17C0720-07		Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	38.8	10	mg/l	37.50	ND	103	60-140	2.35	27	
Batch 1C72604 - Wet Chem Preparation										
Blank (1C72604-BLK1)				Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	ND	10	mg/l							

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Ames, IA 50010

Work Order: 17C0720

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C72604 - Wet Chem Preparation										
LCS (1C72604-BS1)				Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	74.6	10	mg/l	75.00		99.5	80-112			
Matrix Spike (1C72604-MS1)		Source: 17C0971-01		Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	43.7	10	mg/l	42.86	ND	102	60-140			
Matrix Spike Dup (1C72604-MSD1)		Source: 17C0971-01		Prepared & Analyzed: 03/26/07						
Chemical Oxygen Demand	43.3	10	mg/l	42.86	ND	101	60-140	0.920	27	

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Fox Engineering Associates, Inc.
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Work Order: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1907 - 1C71910										
Calibration Blank (17C1907-CCB1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.000300		mg/l	0.000						
Chromium, dissolved	0.00730		"	0.000						
Copper, dissolved	0.00710		"	0.000						
Lead, dissolved	-0.0003		"	0.000						
Magnesium, dissolved	0.009		"	0.000						
Nickel, dissolved	0.0111		"	0.000						
Zinc, dissolved	0.00		"	0.000						
Calibration Blank (17C1907-CCB2)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.000400		mg/l	0.000						
Chromium, dissolved	-0.000500		"	0.000						
Copper, dissolved	0.00170		"	0.000						
Lead, dissolved	0.0007		"	0.000						
Magnesium, dissolved	0.015		"	0.000						
Nickel, dissolved	0.00240		"	0.000						
Zinc, dissolved	0.000500		"	0.000						
Calibration Blank (17C1907-CCB4)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.000600		mg/l	0.000						
Chromium, dissolved	-0.000300		"	0.000						
Copper, dissolved	0.00380		"	0.000						
Lead, dissolved	0.001		"	0.000						
Magnesium, dissolved	0.034		"	0.000						
Nickel, dissolved	0.00210		"	0.000						
Zinc, dissolved	0.000300		"	0.000						
Calibration Check (17C1907-CCV1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.961		mg/l	1.000		96.1	90-110			
Chromium, dissolved	1.00		"	1.000		100	90-110			
Copper, dissolved	0.994		"	1.000		99.4	90-110			
Lead, dissolved	1.02		"	1.000		102	90-110			
Magnesium, dissolved	1.00		"	1.000		100	90-110			
Nickel, dissolved	1.02		"	1.000		102	90-110			
Zinc, dissolved	1.04		"	1.000		104	90-110			

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1907 - 1C71910										
Calibration Check (17C1907-CCV2)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.951		mg/l	1.000		95.1	90-110			
Chromium, dissolved	1.02		"	1.000		102	90-110			
Copper, dissolved	1.00		"	1.000		100	90-110			
Lead, dissolved	1.05		"	1.000		105	90-110			
Magnesium, dissolved	1.01		"	1.000		101	90-110			
Nickel, dissolved	1.04		"	1.000		104	90-110			
Zinc, dissolved	1.06		"	1.000		106	90-110			
Calibration Check (17C1907-CCV3)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.967		mg/l	1.000		96.7	90-110			
Chromium, dissolved	1.02		"	1.000		102	90-110			
Copper, dissolved	1.01		"	1.000		101	90-110			
Lead, dissolved	1.03		"	1.000		103	90-110			
Magnesium, dissolved	1.02		"	1.000		102	90-110			
Nickel, dissolved	1.04		"	1.000		104	90-110			
Zinc, dissolved	1.07		"	1.000		107	90-110			
High Cal Check (17C1907-HCV2)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	18.8		mg/l	20.00		94.0	90-110			
Chromium, dissolved	20.2		"	20.00		101	90-110			
Copper, dissolved	21.0		"	20.00		105	90-110			
Lead, dissolved	20.7		"	20.00		104	90-110			
Magnesium, dissolved	20.8		"	20.00		104	90-110			
Nickel, dissolved	19.8		"	20.00		99.0	90-110			
Zinc, dissolved	20.2		"	20.00		101	90-110			
High Cal Check (17C1907-HCV3)				Prepared & Analyzed: 03/19/07						
Chromium, dissolved	102		mg/l	100.0		102	90-110			
Copper, dissolved	104		"	100.0		104	90-110			
Nickel, dissolved	101		"	100.0		101	90-110			

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C1907 - 1C71910										
Initial Cal Blank (17C1907-ICB1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.000400		mg/l	0.000						
Chromium, dissolved	-0.000600		"	0.000						
Copper, dissolved	0.000900		"	0.000						
Lead, dissolved	-0.001		"	0.000						
Magnesium, dissolved	0.010		"	0.000						
Nickel, dissolved	0.000900		"	0.000						
Zinc, dissolved	0.000500		"	0.000						
Initial Cal Check (17C1907-ICV1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.968		mg/l	1.000		96.8	90-110			
Chromium, dissolved	0.991		"	1.000		99.1	90-110			
Copper, dissolved	0.990		"	1.000		99.0	90-110			
Lead, dissolved	0.998		"	1.000		99.8	90-110			
Magnesium, dissolved	0.988		"	1.000		98.8	90-110			
Nickel, dissolved	1.00		"	1.000		100	90-110			
Zinc, dissolved	1.02		"	1.000		102	90-110			
Secondary Cal Check (17C1907-SCV1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	0.478		mg/l	0.5000		95.6	90-110			
Chromium, dissolved	0.499		"	0.5000		99.8	90-110			
Copper, dissolved	0.487		"	0.5000		97.4	90-110			
Lead, dissolved	0.508		"	0.500		102	90-110			
Magnesium, dissolved	0.509		"	0.500		102	90-110			
Nickel, dissolved	0.500		"	0.5000		100	90-110			
Zinc, dissolved	0.507		"	0.5000		101	90-110			
Batch 17C2017 - 1C72036										
Calibration Blank (17C2017-CCB1)				Prepared: 03/20/07 Analyzed: 03/21/07						
Iron, dissolved	0.00460		mg/l	0.000						

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: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2017 - 1C72036										
Calibration Blank (17C2017-CCB2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.000800		mg/l	0.000						
Calibration Blank (17C2017-CCB3)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.00200		mg/l	0.000						
Calibration Blank (17C2017-CCB5)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	-0.000200		mg/l	0.000						
Calibration Check (17C2017-CCV1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.86		mg/l	6.000		97.7	90-110			
Calibration Check (17C2017-CCV2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.75		mg/l	6.000		95.8	90-110			
Calibration Check (17C2017-CCV3)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.71		mg/l	6.000		95.2	90-110			
Low Cal Check (17C2017-LCV1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.0283		mg/l	0.03000		94.3	70-130			
Secondary Cal Check (17C2017-SCV2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.969		mg/l	1.000		96.9	90-110			
Batch 17C2309 - 1C72309										
Calibration Blank (17C2309-CCB1)				Prepared & Analyzed: 03/23/07						
Mercury, dissolved	0.00		mg/l	0.000						

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

Work Order: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2309 - 1C72309										
Calibration Check (17C2309-CCV6)				Prepared & Analyzed: 03/23/07						
Mercury, dissolved	0.00216		mg/l	0.002000		108	80-120			
Calibration Check (17C2309-CCV7)				Prepared: 03/23/07 Analyzed: 03/26/07						
Mercury, dissolved	0.00213		mg/l	0.002000		106	80-120			
Batch 1C71544 - DW Metals Prep										
Blank (1C71544-BLK1)				Prepared: 03/15/07 Analyzed: 03/19/07						
Arsenic, dissolved	ND	0.001	mg/l							
Matrix Spike (1C71544-MS1)		Source: 17C0510-01		Prepared: 03/15/07 Analyzed: 03/19/07						
Arsenic, dissolved	0.0129	0.001	mg/l	0.0125	0.002	87.2	70-131			
Matrix Spike Dup (1C71544-MSD1)		Source: 17C0510-01		Prepared: 03/15/07 Analyzed: 03/19/07						
Arsenic, dissolved	0.0128	0.001	mg/l	0.0125	0.002	86.4	70-131	0.778	10	
Post Spike (1C71544-PS1)		Source: 17C0510-01		Prepared: 03/15/07 Analyzed: 03/19/07						
Arsenic, dissolved	0.0112		mg/l	0.0100	0.00161	95.9	70-135			
Reference (1C71544-SRM1)				Prepared: 03/15/07 Analyzed: 03/19/07						
Arsenic, dissolved	0.0055	0.001	mg/l	0.00500		110	80-120			
Batch 1C71910 - Dissolved Metal Prep										
Blank (1C71910-BLK1)				Prepared & Analyzed: 03/19/07						
Barium, dissolved	ND	0.010	mg/l							
Chromium, dissolved	ND	0.005	"							
Copper, dissolved	ND	0.005	"							
Lead, dissolved	ND	0.005	"							
Magnesium, dissolved	ND	0.100	"							
Zinc, dissolved	ND	0.010	"							

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

Work Order: 17C0720

March 27, 2007

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C71910 - Dissolved Metal Prep										
Matrix Spike (1C71910-MS1)		**Source: 17C0655-05**		Prepared & Analyzed: 03/19/07						
Barium, dissolved	1.02	0.010	mg/l	0.2000	0.837	91.5	76-112			
Chromium, dissolved	0.194	0.005	"	0.2000	ND	97.0	80-111			
Copper, dissolved	0.204	0.005	"	0.2000	ND	102	71-126			
Lead, dissolved	0.197	0.005	"	0.200	ND	98.5	80-112			
Magnesium, dissolved	108	0.100	"	0.200	109	NR	84-113			QM-4X
Zinc, dissolved	0.194	0.010	"	0.2000	0.004	95.0	65-131			
Matrix Spike Dup (1C71910-MSD1)		**Source: 17C0655-05**		Prepared & Analyzed: 03/19/07						
Barium, dissolved	1.02	0.010	mg/l	0.2000	0.837	91.5	76-112	0.00	10	
Chromium, dissolved	0.198	0.005	"	0.2000	ND	99.0	80-111	2.04	11	
Copper, dissolved	0.206	0.005	"	0.2000	ND	103	71-126	0.976	10	
Lead, dissolved	0.199	0.005	"	0.200	ND	99.5	80-112	1.01	10	
Magnesium, dissolved	108	0.100	"	0.200	109	NR	84-113	0.00	10	QM-4X
Zinc, dissolved	0.195	0.010	"	0.2000	0.004	95.5	65-131	0.514	21	
Batch 1C72001 - Dissolved Metal Prep										
Blank (1C72001-BLK1)				Prepared & Analyzed: 03/20/07						
Cadmium, dissolved	ND	0.0010	mg/l							
Matrix Spike (1C72001-MS1)		**Source: 17C0549-08**		Prepared & Analyzed: 03/20/07						
Cadmium, dissolved	0.00034	0.0010	mg/l	0.000500	ND	68.0	60-121			
Matrix Spike Dup (1C72001-MSD1)		**Source: 17C0549-08**		Prepared & Analyzed: 03/20/07						
Cadmium, dissolved	0.00034	0.0010	mg/l	0.000500	ND	68.0	60-121	0.00	10	
Reference (1C72001-SRM1)				Prepared & Analyzed: 03/20/07						
Cadmium, dissolved	0.00056	0.0010	mg/l	0.000500		112	80-120			

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

Work Order: 17C0720

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C72035 - Dissolved Metal Prep										
Blank (1C72035-BLK1)				Prepared: 03/20/07	Analyzed: 03/21/07					
Iron, dissolved	ND	0.030	mg/l							
Matrix Spike (1C72035-MS1)		Source: 17C0720-01		Prepared: 03/20/07	Analyzed: 03/21/07					
Iron, dissolved	7.01	0.030	mg/l	4.000	3.06	98.8	80-137			
Matrix Spike Dup (1C72035-MSD1)		Source: 17C0720-01		Prepared: 03/20/07	Analyzed: 03/21/07					
Iron, dissolved	6.65	0.030	mg/l	4.000	3.06	89.8	80-137	5.27	14	
Batch 1C72307 - EPA 245.1 Hg Dig										
Blank (1C72307-BLK1)				Prepared & Analyzed: 03/23/07						
Mercury, dissolved	ND	0.00050	mg/l							
LCS (1C72307-BS1)				Prepared & Analyzed: 03/23/07						
Mercury, dissolved	0.00206	0.00050	mg/l	0.002000		103	60-127			
Matrix Spike (1C72307-MS1)		Source: 17C0789-04		Prepared & Analyzed: 03/23/07						
Mercury, dissolved	0.00193	0.00050	mg/l	0.002000	ND	96.5	60-130			
Matrix Spike Dup (1C72307-MSD1)		Source: 17C0789-04		Prepared & Analyzed: 03/23/07						
Mercury, dissolved	0.00186	0.00050	mg/l	0.002000	ND	93.0	60-130	3.69	14	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

Notes and Definitions

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.

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

Work Order: 17C0720

March 27, 2007
Page 21 of 21

End of Report

Sue Thompson

Keystone Laboratories, Inc.
Sue Thompson 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 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PI

SITE INFORMATION

Sampler: Mitch Brown

Project: **Ames-Story Environmental Landfill - S**
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17C0720
Temperature 8.8
Turn-Cooler: **No**

☐ Custody Seal
☑ Containers Intact
☑ COC/Labels Agree
☑ Preservation Confirmed
☑ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	MW-37	Water	G	3/15	10:45Am	3	Indfll-para-e	01
02-001	~~MW-6~~	Water					Indfll-para-e	
03-001	~~MW-23~~	Water					Indfll-para-e	

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bob	3/16/07 10:10 Am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Printed: 2/26/2007 4:08:25P

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____

Temperature _____

Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sampl Number
04-001	~~MW-24~~	Water					lndfll-para-e	
05-001	~~MW-25~~	Water					lndfll-para-e	
06-001	~~MW-28(4)~~	Water					lndfll-para-e	

Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

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SITE INFORMATION

Sampler:

Project: **Ames-Story Environmental Landfill - S**
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
07-001	~~MW-31~~	Water					Indfll-para-e	
08-001	~~MW-34~~	Water					Indfll-para-e	
09-001	~~MW-35~~	Water					Indfll-para-e	

Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Printed: 2/26/2007 4:08:25PI

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
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SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
10-001	MW-39	Water	G	3/15	9:20	3	Indfll-para-e	02
11-001	MW-40	Water	G	3/15	9:50	3	Indfll-para-e	03
12-001	MW-43	Water	G	3/15	8:10	3	Indfll-para-e	04

Relinquished By Date/Time

Received By Date/Time

Relinquished By Date/Time
Bell 3/16/07 10:10 Am

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

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

Printed: 2/26/2007 4:08:25P

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sampl Number
13-001	MW-36	Water	G	3/15	10:30	3	Indfll-para-e	05
14-001	~~MW-29(5)~~	Water					Indfll-para-e	
15-001	~~MW-7~~	Water					Indfll-para-e	

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/16/07 10:10Am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PI

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____

Temperature _____

Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
16-001	~~MW-8~~	Water					Indfll-para-e	
17-001	~~MW-30~~	Water					Indfll-para-e	
18-001	~~MW-32~~	Water					Indfll-para-e	

Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone
LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
19-001	~~MW-33~~	Water	~~G~~	~~3/15~~	~~9:10~~	~~3~~	Indfil-para-e	
20-001	MW-38	Water	G	3/15	9:10	3	Indfil-para-e	06
21-001	MW-41	Water	G	3/15	9:45	3	Indfil-para-e	07

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bell	3/16/07 10:10 AM
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Printed: 2/26/2007 4:08:25P

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____

Temperature _____

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sampl Number
22-001	MW-42	Water	G	3/15	7:55	3	Indfll-para-e	08
23-001	~~SW-1~~	Water					Indfll-para-e	
24-001	~~SW-2~~	Water					Indfll-para-e	

Relinquished By Date/Time

Received By Date/Time

Relinquished By Date/Time
Bill 3/16/07 10:10 am

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PI

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
25-001	~~SW-3~~	Water					Indfll-para-e	
26-001	SW-4	Water	G	3/15	10:10	3	Indfll-para-e	09
27-001	SW-5	Water	G	3/15	9:00	6	Indfll-para-d Indfll-para-e	10

Relinquished By Date/Time

Received By Date/Time

Relinquished By Date/Time
Bill 3/14/07 10:10 Am

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PI

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
28-001	**SW-6**	Water	G	3/15	8:30	3	lndfll-para-e	11
29-001	**Trip Blank**	Water				2	lndfll-para-d	12

Mitch Bros 3/15/07 3:20
Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Bill 3/14/07 10:10 AM
Received for Lab By Date/Time

Remarks:

RECEIVED APR 0 2 2007

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 23, 2007

Work Order: 17C0822

Report To:

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

Work Order Information

Date Received: 03/20/2007 10:15AM
Collector: Mitch Brown
Phone: 515-233-0000
PO Number:

Project : Ames-Story Environmental Landfill - Spring
Project Number: 6004-99A

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0822-01 MW-23				Matrix:Water		Collected: 03/16/07 13:35	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**21 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**24 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 12:58	
17C0822-02 MW-24				Matrix:Water		Collected: 03/16/07 12:55	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**30 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 13:02	
17C0822-03 MW-25				Matrix:Water		Collected: 03/16/07 12:35	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**52 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	**0.066 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 13:06	
17C0822-04 MW-31				Matrix:Water		Collected: 03/16/07 13:15	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**10 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	<10 mg/l	10	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 13:10	
17C0822-05 MW-34				Matrix:Water		Collected: 03/16/07 10:05	

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

March 23, 2007

Work Order: 17C0822

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0822-05 MW-34				Matrix:Water		Collected: 03/16/07 10:05	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**32 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	<10 mg/l	10	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 13:23	
17C0822-06 MW-35				Matrix:Water		Collected: 03/16/07 08:35	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**11 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**51 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 13:27	
17C0822-07 MW-30				Matrix:Water		Collected: 03/16/07 13:30	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	<10 mg/l	10	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	**0.189 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 13:32	
17C0822-08 MW-32				Matrix:Water		Collected: 03/16/07 13:00	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**10 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**11 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72035	EPA 6010B	RVV	03/21/07 13:36	
17C0822-09 MW-33				Matrix:Water		Collected: 03/16/07 12:30	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	**15 mg/l**	**10**	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**58 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	**1.9 mg/l**	**1.0**	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	**6.06 mg/l**	**0.030**	1C72035	EPA 6010B	RVV	03/21/07 13:40	
17C0822-10 SW-1				Matrix:Water		Collected: 03/16/07 09:55	
Determination of Conventional Chemistry Parameters							

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Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

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

March 23, 2007

Work Order: 17C0822

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17C0822-10 SW-1				Matrix:Water		Collected: 03/16/07 09:55	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**147 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72036	EPA 6010B	RVV	03/21/07 13:49	
17C0822-11 SW-2				Matrix:Water		Collected: 03/16/07 10:35	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**144 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72036	EPA 6010B	RVV	03/21/07 14:01	
17C0822-12 SW-3				Matrix:Water		Collected: 03/16/07 10:15	
Determination of Conventional Chemistry Parameters							
Chemical Oxygen Demand	<10 mg/l	10	1C72135	EPA 410.4	LKM	03/22/07 14:53	
Chloride	**66 mg/l**	**10**	1C72120	EPA 9252	LKM	03/21/07 14:02	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1C72032	SM 4500-NH3 F	LKM	03/21/07 10:57	
Determination of Dissolved Metals							
Iron, dissolved	<0.030 mg/l	0.030	1C72036	EPA 6010B	RVV	03/21/07 14:05	

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

Work Order: 17C0822

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL1)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	-2.35		mg/l	0.000						
Cal Standard (17A1613-CAL2)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	12.3		mg/l	10.00		123				
Cal Standard (17A1613-CAL3)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	21.9		mg/l	20.00		110				
Cal Standard (17A1613-CAL4)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	74.0		mg/l	75.00		98.7				
Cal Standard (17A1613-CAL5)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	97.6		mg/l	100.0		97.6				
Cal Standard (17A1613-CAL6)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	152		mg/l	150.0		101				
Batch 17C2015 - 1C72032										
Calibration Check (17C2015-CCV1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	4.75		mg/l	5.00		95.0	80-120			
Calibration Check (17C2015-CCV2)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	4.80		mg/l	5.00		96.0	80-120			
Initial Cal Check (17C2015-ICV1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	5.30		mg/l	5.00		106	80-120			

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

March 23, 2007

Work Order: 17C0822

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2112 - 1C72135										
Calibration Check (17C2112-CCV1)				Prepared: 03/21/07		Analyzed: 03/22/07				
Chemical Oxygen Demand	69.5		mg/l	75.00		92.7	90-110			
Initial Cal Check (17C2112-ICV1)				Prepared: 03/21/07		Analyzed: 03/22/07				
Chemical Oxygen Demand	71.1		mg/l	75.00		94.8	90-110			
Batch 1C72032 - Wet Chem Preparation										
Blank (1C72032-BLK1)				Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	ND	1.0	mg/l							
Matrix Spike (1C72032-MS1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	2.09	1.0	mg/l	2.00	ND	104	75-128			
Matrix Spike Dup (1C72032-MSD1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Nitrogen, Ammonia	1.99	1.0	mg/l	2.00	ND	99.5	75-128	4.90	18	
Batch 1C72120 - Wet Chem Preparation										
Blank (1C72120-BLK1)				Prepared & Analyzed: 03/21/07						
Chloride	ND	10	mg/l							
Matrix Spike (1C72120-MS1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Chloride	116	10	mg/l	50.00	66	100	79-115			
Matrix Spike Dup (1C72120-MSD1)		Source: 17C0822-12		Prepared & Analyzed: 03/21/07						
Chloride	116	10	mg/l	50.00	66	100	79-115	0.00	10	

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

Work Order: 17C0822

March 23, 2007

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C72120 - Wet Chem Preparation										
Reference (1C72120-SRM1)				Prepared & Analyzed: 03/21/07						
Chloride	45.7	10	mg/l	47.90		95.4	90-110			
Batch 1C72135 - Wet Chem Preparation										
Blank (1C72135-BLK1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1C72135-BS1)				Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	68.2	10	mg/l	75.00		90.9	80-112			
Matrix Spike (1C72135-MS1)		Source: 17C0720-07		Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	37.9	10	mg/l	37.50	ND	101	60-140			
Matrix Spike Dup (1C72135-MSD1)		Source: 17C0720-07		Prepared: 03/21/07 Analyzed: 03/22/07						
Chemical Oxygen Demand	38.8	10	mg/l	37.50	ND	103	60-140	2.35	27	

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

Work Order: 17C0822

March 23, 2007

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2017 - 1C72036										
Calibration Blank (17C2017-CCB1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.00460		mg/l	0.000						
Calibration Blank (17C2017-CCB2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.000800		mg/l	0.000						
Calibration Blank (17C2017-CCB3)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.00200		mg/l	0.000						
Calibration Blank (17C2017-CCB4)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.000400		mg/l	0.000						
Calibration Blank (17C2017-CCB5)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	-0.000200		mg/l	0.000						
Calibration Check (17C2017-CCV1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.86		mg/l	6.000		97.7	90-110			
Calibration Check (17C2017-CCV2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.75		mg/l	6.000		95.8	90-110			
Calibration Check (17C2017-CCV3)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.71		mg/l	6.000		95.2	90-110			
Calibration Check (17C2017-CCV4)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	5.80		mg/l	6.000		96.7	90-110			
Low Cal Check (17C2017-LCV1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.0283		mg/l	0.03000		94.3	70-130			

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

Work Order: 17C0822

March 23, 2007

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17C2017 - 1C72036										
Secondary Cal Check (17C2017-SCV2)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	0.969		mg/l	1.000		96.9	90-110			
Batch 1C72035 - Dissolved Metal Prep										
Blank (1C72035-BLK1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	ND	0.030	mg/l							
Matrix Spike (1C72035-MS1)		Source: 17C0720-01		Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	7.01	0.030	mg/l	4.000	3.06	98.8	80-137			
Matrix Spike Dup (1C72035-MSD1)		Source: 17C0720-01		Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	6.65	0.030	mg/l	4.000	3.06	89.8	80-137	5.27	14	
Batch 1C72036 - Dissolved Metal Prep										
Blank (1C72036-BLK1)				Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	ND	0.030	mg/l							
Matrix Spike (1C72036-MS1)		Source: 17C0822-10		Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	4.33	0.030	mg/l	4.000	0.018	108	80-137			
Matrix Spike Dup (1C72036-MSD1)		Source: 17C0822-10		Prepared: 03/20/07		Analyzed: 03/21/07				
Iron, dissolved	4.27	0.030	mg/l	4.000	0.018	106	80-137	1.40	14	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

End of Report

Sue Thompson

Keystone Laboratories, Inc.
Sue Thompson 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 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler: Mitch Brown
(515) 280-8004

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17C0822
Temperature
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	~~MW-37~~	Water					Indfll-para-e	
02-001	~~MW-6~~	Water					Indfll-para-e	
03-001	MW-23	Water	G	3/16	1:35	3	Indfll-para-e	01

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 10:15 am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
04-001	**MW-24**	Water	G	3/16	12:55	3	lndfll-para-e	02
05-001	**MW-25**	Water	G	3/16	12:35	3	lndfll-para-e	03
06-001	~~**MW-28(4)**~~	Water					lndfll-para-e	

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 10:15 Am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
07-001	**MW-31**	Water	G	3/16	1:15	3	lndfll-para-e	04
08-001	**MW-34**	Water	G	3/16	10:05	3	lndfll-para-e	05
09-001	**MW-35**	Water	G	3/16	8:35	3	lndfll-para-e	06

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 10:15Am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____

Temperature _____

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
10-001	~~MW-39~~	Water					lndfll-para-e	
11-001	~~MW-40~~	Water					lndfll-para-e	
12-001	~~MW-43~~	Water					lndfll-para-e	

Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
13-001	~~MW-36~~	Water					Indfll-para-e	
14-001	~~MW-29(5)~~	Water					Indfll-para-e	
15-001	~~MW-7~~	Water					Indfll-para-e	

Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
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Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: **Ames-Story Environmental Landfill - S**
6004-99A

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Fox Engineering Associates, Inc.
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Ames, IA 50010

INVOICE TO

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Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
16-001	~~MW-8~~	Water					Indfll-para-e	
17-001	MW-30	Water	G	3/16	1:30	3	Indfll-para-e	07
18-001	MW-32	Water	G	3/16	1:00	3	Indfll-para-e	08

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 10:15 AM
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

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Fox Engineering Associates, Inc.
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INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
19-001	MW-33	Water	G	3/16	12:30		lndfll-para-e	09
20-001	~~MW-38~~	Water					lndfll-para-e	
21-001	~~MW-41~~	Water					lndfll-para-e	

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 11:15 AM
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

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Fox Engineering Associates, Inc.
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Ames, IA 50010

INVOICE TO

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Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
22-001	~~MW-42~~	Water	G	3/16	9:55		Indfll-para-e	
23-001	SW-1	Water	G	3/16	9:55	3	Indfll-para-e	10
24-001	SW-2	Water	G	3/16	10:35	3	Indfll-para-e	11

Relinquished By — Date/Time

Received By — Date/Time

Relinquished By — Date/Time
Bell 3/20/07 10:15AM

Received for Lab By — Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

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Fox Engineering Associates, Inc.
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INVOICE TO

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Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order

Temperature

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
25-001	SW-3	Water	G	3/16	10:15	3	Indfll-para-e	12
26-001	~~SW-4~~	Water					Indfll-para-e	
27-001	~~SW-5~~	Water					Indfll-para-d Indfll-para-e	

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	3/20/07 10:15 am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 2/26/2007 4:08:25PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - S
6004-99A

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

Project Information:

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order _____
Temperature _____
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
28-001	SW-6	Water					Indfil-para-e	
29-001	Trip Blank	Water					Indfil-para-d	

Relinquished By _____ Date/Time 3/14/07

Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

Received for Lab By _____ Date/Time _____

Remarks:

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

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

ANALYTICAL REPORT

May 22, 2007

Work Order: 17C0619

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 03/14/2007 10:05AM Collector: Mitch Brown Phone: (515) 233-0000 PO Number:

Project: City of Ames Sanitary Landfill - Spring
Project Number: 6001-06A

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
17C0619-14 MW-8			Matrix:Water		Collected: 03/08/07 14:50	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	LKM	03/16/07 15:38	
Chloride	<10 mg/l	10	EPA 9252	WAS	03/16/07 15:03	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/16/07 15:33	
Determination of Dissolved Metals						
Iron, dissolved	**4.61 mg/l**	**0.030**	EPA 6010B	LAR	03/15/07 21:42	
17C0619-15 MW-7			Matrix:Water		Collected: 03/08/07 15:00	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	LKM	03/16/07 15:38	
Chloride	**15 mg/l**	**10**	EPA 9252	WAS	03/16/07 15:03	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/16/07 15:33	
Determination of Dissolved Metals						
Iron, dissolved	**1.49 mg/l**	**0.030**	EPA 6010B	LAR	03/15/07 21:47	
17C0619-16 MW-6			Matrix:Water		Collected: 03/08/07 15:10	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	LKM	03/16/07 15:38	
Chloride	**96 mg/l**	**10**	EPA 9252	WAS	03/16/07 15:03	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/16/07 15:33	
Determination of Dissolved Metals						
Iron, dissolved	**0.044 mg/l**	**0.030**	EPA 6010B	LAR	03/15/07 21:51	
17C0619-17 MW-~~5~~29			Matrix:Water		Collected: 03/08/07 15:30	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	LKM	03/16/07 15:38	
Chloride	<10 mg/l	10	EPA 9252	WAS	03/16/07 15:03	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/16/07 15:33	
Determination of Dissolved Metals						

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

May 22, 2007

Work Order: 17C0619

Analyte	Result	MRL	Method	Analyst	Analyzed	Qualifier
17C0619-17 MW-~~5~~ 29			Matrix:Water		Collected: 03/08/07 15:30	
Determination of Dissolved Metals						
Iron, dissolved	**0.068 mg/l**	**0.030**	EPA 6010B	LAR	03/15/07 21:55	
17C0619-18 MW-~~4~~ 28			Matrix:Water		Collected: 03/08/07 15:35	
Determination of Conventional Chemistry Parameters						
Chemical Oxygen Demand	<10 mg/l	10	EPA 410.4	LKM	03/16/07 15:38	
Chloride	**100 mg/l**	**10**	EPA 9252	WAS	03/16/07 15:03	
Nitrogen, Ammonia	<1.0 mg/l	1.0	SM 4500-NH3 F	LKM	03/16/07 15:33	
Determination of Dissolved Metals						
Iron, dissolved	<0.030 mg/l	0.030	EPA 6010B	LAR	03/15/07 21:59	

End of Report

Sue Thompson

Keystone Laboratories, Inc.
Sue Thompson 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
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: 600+06B
CITY/ST/ZIP:
PHONE:

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

BILL TO:
NAME: Mr. John Joiner, Public Works Director
COMPANY NAME: 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
MW8	3/8	2:50	MW8	3	W	G	X									14
MW7	3/8	3:00	MW7	3	W	G	X									15
MW6	3/8	3:10	MW6	3	W	G	X									16
MW5	3/8	3:30	MW5	3	W	G	X									17
MW4	3/8	3:35	MW4	3	W	G	X									18

LAB USE ONLY
LABORATORY WORK ORDER NO.: 17C0619
SAMPLE TEMPERATURE UPON RECEIPT: 62 °C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
Mitch Brown	Date 3/12/07 Time 7:15 AM		Date Time	☐ Standard ☐ Rush Contact Lab Prior to Submission
Relinquished by: (Signature)	Date / Time	Received for Lab by: (Signature) Bill	Date 3/14/07 Time 10:05 AM	Remarks:

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

FORM: CCR 7-9

3/8/07 JMB	Rain, 30°F Length of Well	Depth to Water	Gal bailed / Vol bailed	Rope	Depth After Bailing	Depth Before Sampling	Standing Water Garbage	Capped	pH	Cond	°C
MW 8 920 No load	70.79 3/8 @ 250	34.83 2 18	10 Gal / 1 Vol	50	47.40	35.11	No	✓	7.3	644 µS/cm	12
MW 7 1021	53.06 3/8 @ 300	22.21 5 15	5.2 Gal / 1 Vol Dry	55	≈ 53	36.08	No	✓	7.2	701	12
MW 6 1215	21.48 3/8 @ 310	7.48 2 7 21	7.1 Gal / 3 Vol	15	10.65	7.32	No	✓	6.7	1336	7
MW 5 (29) 1230 No load	53.79 3/8 @ 330	11.01 7 21	10 Gal / 1.4 Vol	55	49.14	16.35	No	✓	7.3	667	9
MW 4 (28) 100 No load	22.35 3/8 @ 335	6.06 2 8 25	8.3 Gal / 3 Vol	15	9.72	5.97	No	✓	7.2	1334	6
3/12/07 JMB	Sunny, 42°F										
MW 210 810	50.79 3/13 @ 800	20.49 5 15	10 gal / 1.9 Vol	25	20.49	18.57	No	✓	7.2	1562	12
MW 211 835	26.10 3/13 @ 810	15.83 1 5 16	5.2 Gal / 3 Vol	30	15.87	15.29	No	✓	6.7	1249	12
MW 212 925 No load	42.19 3/13 @ 830	30.67 2 5 18	6 Gal / 3 Vol	35	30.69	30.08	No	✓	6.7	1490	16

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	3/8/07/ 12:15	7.42	
*After Purging	"	10.65	
*Before Sampling	3/8/07/ 3:10	7.22	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7.1
No.of Well Volumes (based on current water level) 3
Was well pumped/bailed dry? No

Equipment used:
Bailer type Disposable *Dedicated Bailer No
Pump type — *Dedicated Bailer —
If not dedicated, method of cleaning

D.) FIELD MEASUREMENT

Weather Conditions Rain, 36°F
Field Measurments (after stabilization):
Temperature 7 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1336 Units µS/cm
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 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	3/8/07 1020	22.21	
*After Purging		≈53	
*Before Sampling	3/8/07 3:00	32.08	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 52
No.of Well Volumes (based on current water level) 1
Was well pumped/bailed dry? Y/N

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

D.) FIELD MEASUREMENT

Weather Conditions Rain, 36°F
Field Measurments (after stabilization):
Temperature 12 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 701 Units µS/cm
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 - No lock 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	3/8/07 / 9:20	34.83	
*After Purging		47.80	
*Before Sampling	3/8/07 / 2:50	35.11	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.4
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 Rain, 36°F
Field Measurments (after stabilization):
Temperature 12 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 644 Units µS/cm
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 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 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	3/15/07 1:55	5.42	
*After Purging		22.85	
*Before Sampling	3/14/07 1:35	5.42	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2.5
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 Partly sunny, 36°F
Field Measurments (after stabilization):
Temperature 7 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 742 Units µS/cm
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 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	3/15/07 / 12:40	15.88	
*After Purging		19.21	
*Before Sampling	3/16/07 / 12:55	15.88	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 35
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 Sunny, 36°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1561 Units µS/cm
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 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	3/15/07/12:20	8.65	
*After Purging	/	8.70	
*Before Sampling	3/16/07/12:35	8.72	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 55
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 Sunny, 36°F
Field Measurments (after stabilization):
Temperature 8 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1805 Units µS/cm
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	3/8/07/1:00	6.06	
*After Purging		9.22	
*Before Sampling	3/8/07/3:35	5.92	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 83
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 Rain 36°F
Field Measurments (after stabilization):
Temperature 6 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1334 Units µS/cm
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	3/8/07 / 12:30	11.01	
*After Purging		49.14	
*Before Sampling	3/8/07 / 3:30	16.35	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.4
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 Rain, 36°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 667 Units µS/cm
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-30 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 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	3/15/07 1:30	35.26	
*After Purging	/	49.50	
*Before Sampling	3/16/07	36.23	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2.5
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 Partly sunny, 36°F
Field Measurments (after stabilization):
Temperature 12 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.3
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 910 Units µS/cm
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? No Standing Water or Litter? YES
If no, explain broken hinge on metal cover If yes, explain some garbage

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	3/15/07/1:10	5.24	
*After Purging	/	35.54	
*Before Sampling	3/16/07/1:15	5.20	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 12
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 sunny, 36°F
Field Measurments (after stabilization):
Temperature 6 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.8
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1206 Units uS/cm
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? YES
If no, explain ____ If yes, explain some garbage

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	3/15/07/12:50	35.22	____
*After Purging	"	45.07	____
*Before Sampling	3/16/07/1:00	35.35	____

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 78
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 sunny, 36°F
Field Measurments (after stabilization):
Temperature 11 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1300 Units µS/cm
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	3/15/07/12:05	8.82	
*After Purging		11.81	
*Before Sampling	3/16/07/12:30	8.73	

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 Partly sunny, 36°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1560 Units µs/cm
Equipment Used HACH COMPANY POCKET PAL

Comments - well is out of plumb

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-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 standing water

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	3/16/07 / 11:50	4.20	
*After Purging		9.82	
*Before Sampling	3/16/07 / 10:05	4.58	

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 Sunny 36°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1118 Units µS/cm
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 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 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	3/15/07/11:35	12.63	
*After Purging		12.65	
*Before Sampling	3/16/07/8:35	12.67	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 25
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 Sunny, 36°F
Field Measurments (after stabilization):
Temperature 6 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.9
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1089 Units uS/cm
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-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 standing water

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	3/14/07/2:15	15.81	
*After Purging	"	not recorded	
*Before Sampling	3/15/07/10:30	21.13	

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 mostly sunny, 39°F
Field Measurments (after stabilization):
Temperature 11 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.4
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 763 Units µs/cm
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 JMB

A.) MONITORING WELL/PIEZOMETER CONDITIONS

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

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	3/14/09/2:40	7.24	
*After Purging		18.80	
*Before Sampling	3/15/09/10:45	7.46	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2
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 mostly sunny, 39°F
Field Measurments (after stabilization)
Temperature 8 Units °C
Equipment Used HACH Company Pocket Pal
pH 6.9
Equipment Used HACH Company Pocket Pal
Specific Conditions 1889 Units uS/cm
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-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	3/14/07/9:55	17.60	
*After Purging		51.32	
*Before Sampling	3/15/07/9:10	19.35	

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 mostly sunny, 39°F
Field Measurments (after stabilization):
Temperature 10 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1305 Units µS/cm
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	3/14/07/10:30	14 61	
*After Purging	/	21	
*Before Sampling	3/15/07/9:20	15 16	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 7 7/3
No.of Well Volumes (based on current water level) _____
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 mostly sunny 39°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.8
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1550 Units µS/cm
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? 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	3/14/07/12:20	4.65	
*After Purging	/	12.18	
*Before Sampling	3/15/07/8:50	4.91	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 79
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 mostly Sunny 39°F
Field Measurments (after stabilization):
Temperature 6 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1336 Units µS/cm
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? 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	3/14/07/12:00	16.24	
*After Purging	/	33.22	
*Before Sampling	3/15/07/9:45	16.38	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 2
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 mostly sunny 39°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.2
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 831 Units µS/cm
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 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 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	3/14/07 / 8:35	16.64	
*After Purging		34.21	
*Before Sampling	3/15/07 / 7:55	16.29	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 10
No.of Well Volumes (based on current water level) 1.2
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 mostly sunny 39°F
Field Measurments (after stabilization):
Temperature 9 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.1
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1013 Units µS/cm
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 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 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	3/14/07/8:10	12.36	
*After Purging		23.02	
*Before Sampling	3/15/07/8:10	13.17	

C.) WELL PURGING

Quantity of Water Removed from Well (gallons) 81
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 Mostly Sunny 39°F
Field Measurments (after stabilization):
Temperature 8 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 6.9
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1388 Units µS/cm
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 3/16/07 / 9:55

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 150 cfm

If yes, estimate depth 1'

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 sunny 36°F

Field Measurments (after stabilization):

Temperature 5 Units °C

Equipment Used HACH COMPANY POCKET PAL

pH 8.0

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 1092 Units µS/cm

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 3/16/07 / 1035

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 150 cfs

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 If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions partly sunny, 36°F

Field Measurments (after stabilization):

Temperature 5 Units °C

Equipment Used HACH COMPANY POCKET PAL

pH 8.2

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 1104 Units µS/cm

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 3/16/07 / 10:15

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 trickle
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 If yes, descibe below.

Comments ____

D.) FIELD MEASUREMENT

Weather Conditions partly sunny, 36°F

Field Measurments (after stabilization):
Temperature 6 Units °C
Equipment Used HACH COMPANY POCKET PAL
pH 7.0
Equipment Used HACH COMPANY POCKET PAL
Specific Conditions 1540 Units µS/cm
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 3/15/07 / 10:10

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 .25 GPM

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 If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions partly sunny, 36°F

Field Measurments (after stabilization):

Temperature 4 Units °C

Equipment Used HACH COMPANY POCKET PAL

pH 7.2

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 1414 Units µS/cm

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 3/15/07 / 9:00

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 .25 GPM

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 If yes, descibe below.

Comments

D.) FIELD MEASUREMENT

Weather Conditions partly sunny, 36°F

Field Measurments (after stabilization):

Temperature 3 Units °C

Equipment Used HACH COMPANY POCKET PAL

pH 7.6

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 1249 Units uS/cm

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 3/15/07 / 8:30

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

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

Was water flowing? Yes If yes, estimate quantity 2 GPM

If yes, estimate depth

Was water discolored? Yes If yes, descibe below.

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

Was ground discolored? Yes If yes, descibe below.

Litter present? No If yes, descibe below.

Comments - rust colored deposits near outlet
- slight odor

D.) FIELD MEASUREMENT

Weather Conditions partly sunny, 36°F

Field Measurments (after stabilization):

Temperature 13 Units °C

Equipment Used HACH COMPANY POCKET PAL

pH 6.2

Equipment Used HACH COMPANY POCKET PAL

Specific Conditions 3930 Units µ/cm

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: September 28, 2007

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	<1.0	NT	NT	NT	<1.0	<1.0	NT	NT	dry
Carbon tetrachloride *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.3	NT	NT	NT	<0.3	<0.3	NT	NT	dry
1,4-Dichlorobenzene *	75	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<1.0	NT	NT	NT	<1.0	<1.0	NT	NT	dry
1,2-Dichloroethane *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.4	NT	NT	NT	<0.4	<0.4	NT	NT	dry
1,1-Dichloroethene *	7	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<1.0	NT	NT	NT	<1.0	<1.0	NT	NT	dry
1,1,1-Trichloroethane *	200	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<1.0	NT	NT	NT	<1.0	<1.0	NT	NT	dry
Trichloroethene *	5	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<1.0	NT	NT	NT	<1.0	<1.0	NT	NT	dry
mg/L																	
Arsenic, dissolved	0.05	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.001	NT	NT	NT	<0.001	<0.001	NT	NT	dry
Barium, dissolved	2.0	Plugged	NT	Plugged	NT	NT	DRY	Plugged	0.033	NT	NT	NT	0.43	0.09	NT	NT	dry
Cadmium, dissolved	0.005	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.0010	NT	NT	NT	<0.0010	<0.0010	NT	NT	dry
Chromium, dissolved	0.1	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.005	NT	NT	NT	<0.005	<0.005	NT	NT	dry
Lead, dissolved	0.015	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.005	NT	NT	NT	0.006	<0.005	NT	NT	dry
Mercury, dissolved	0.002	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.00050	NT	NT	NT	<0.00050	<0.00050	NT	NT	dry
Magnesium, dissolved	--	Plugged	NT	Plugged	NT	NT	DRY	Plugged	114	NT	NT	NT	60.5	67.2	NT	NT	dry
Zinc, dissolved	2	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.010	NT	NT	NT	<0.010	0.052	NT	NT	dry
Iron, dissolved	--	Plugged	<0.100	Plugged	<0.100	<0.100	DRY	Plugged	<0.100	1.02	<0.100	<0.100	3.24	1.85	<0.100	<0.100	dry
Copper, dissolved	1.3	Plugged	NT	Plugged	NT	NT	DRY	Plugged	<0.005	NT	NT	NT	<0.005	<0.005	NT	NT	dry
Chloride	--	Plugged	100	Plugged	<10	13	DRY	Plugged	<10	<10	20	26	53	11	85	86	dry
Nitrogen, Ammonia	--	Plugged	<1.0	Plugged	<1.0	<1.0	DRY	Plugged	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	dry
Chemical Oxygen Demand	--	Plugged	18	Plugged	<10	14	DRY	Plugged	12	<10	<10	12	17	50	<10	<10	dry
Total Organic Halogens	--	Plugged	0.012	Plugged	<0.010	0.046	DRY	Plugged	0.024	<0.010	<0.010	0.045	0.019	0.026	0.021	<0.010	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	7.2	Plugged	8.4	6.8	DRY	Plugged	6.9	7.18	6.95	7.06	7.27	7.22	8.35	8.29	dry
Temperature, celsius	--	Plugged	19	Plugged	21	14	DRY	Plugged	13.9	14	15.5	17	16.6	21.1	18.8	19.8	dry
Conductivity, mv	--	Plugged	1275	Plugged	670	1387	DRY	Plugged	1923	833	1477	1713	1497	1374	861	877	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: September 22, 2006

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	<1.0	dry	dry	NT
Carbon tetrachloride *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.3	dry	dry	NT
1,4-Dichlorobenzene *	75	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	dry	dry	NT
1,2-Dichloroethane *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.4	dry	dry	NT
1,1-Dichloroethene *	7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	dry	dry	NT
1,1,1-Trichloroethane *	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	dry	dry	NT
Trichloroethene *	5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<1.0	dry	dry	NT
mg/L																		
Arsenic, dissolved	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.001	dry	dry	NT
Barium, dissolved	2.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.182	dry	dry	NT
Cadmium, dissolved	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010	dry	dry	NT
Chromium, dissolved	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	dry	dry	NT
Lead, dissolved	0.015	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.005	dry	dry	NT
Mercury, dissolved	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.00050	dry	dry	NT
Magnesium, dissolved	--	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	68.9	dry	dry	NT
Zinc, dissolved	2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.012	dry	dry	NT
Iron, dissolved	--	NT	NT	<0.100	0.212	1.68	<0.100	0.297	5.05	<0.100	0.151	<0.100	1.7	1.37	<0.100	dry	dry	4.65
Copper, dissolved	1.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	dry	dry	NT
Chloride	--	NT	NT	52	<10	15	102	16	<10	31	14	26	13	22	56	dry	dry	90
Nitrogen, Ammonia	--	NT	NT	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	3.1	dry	dry	<1.0
Chemical Oxygen Demand	--	NT	NT	12	<10	<10	16	<10	<10	<10	<10	12	<10	20	12	dry	dry	14
Total Organic Halogens	--	NT	NT	0.02	<0.010	0.017	0.04	<0.010	<0.010	0.027	0.012	<0.010	<0.010	0.01	0.043	dry	dry	0.035
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	6.66	7.71	7.09	6.9	7.4	7.5	7.05	6.88	7.04	7.5	NT	NT	dry	dry	7.1
Temperature, celsius	--	NT	NT	16.8	15.9	19.2	19.6	14.9	14.8	14.1	15.1	16.1	14.3	15	15.2	dry	dry	17.4
Conductivity, mv	--	NT	NT	1277	658	1866	1065	532	522	1190	1346	1980	716	874	1479	dry	dry	1618

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

ANALYTICAL REPORT

DELIVERED OCT 2 4 2007

October 22, 2007

Work Order: 17J0350

Report To	Work Order Information
Todd Whipple Fox Engineering Associates, Inc. 1601 Golden Aspen Drive, Suite 103 Ames, IA 50010	Date Received: 10/05/2007 10:10AM Collector: Phone: (515) 233-0000 PO Number:

Project : Ames-Story Environmental Landfill - Fall

Project Number: 6004-99A

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-01 MW-37				Matrix:Water		Collected: 10/04/07 10:05	
Total Organic Halogens (TOX)	**0.017 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**15 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	**1.68 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 14:17	
17J0350-02 MW-23				Matrix:Water		Collected: 09/28/07 14:25	
Total Organic Halogens (TOX)	**0.046 mg/l**	**0.010**	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**13 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**14 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 14:29	
17J0350-03 MW-25				Matrix:Water		Collected: 10/04/07 12:50	
Total Organic Halogens (TOX)	**0.045 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**26 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**12 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 14:33	
17J0350-04 MW-31				Matrix:Water		Collected: 09/28/07 14:00	
1,1-Dichloroethylene	<1.0 ug/l	1.0	1J71522	EPA 8260B	TVK	10/12/07 16:57	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1J71522	EPA 8260B	TVK	10/12/07 16:57	
Carbon Tetrachloride	<0.3 ug/l	0.3	1J71522	EPA 8260B	TVK	10/12/07 16:57	
Benzene	<1.0 ug/l	1.0	1J71522	EPA 8260B	TVK	10/12/07 16:57	
1,2-Dichloroethane	<0.4 ug/l	0.4	1J71522	EPA 8260B	TVK	10/12/07 16:57	

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

Work Order: 17J0350

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-04 MW-31				Matrix:Water		Collected: 09/28/07 14:00	
Trichloroethylene	<1.0 ug/l	1.0	1J71522	EPA 8260B	TVK	10/12/07 16:57	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1J71522	EPA 8260B	TVK	10/12/07 16:57	
Surrogate: Dibromofluoromethane	*112 %*			*60-140*	TVK	10/12/07 16:57	
Surrogate: 1,2-Dichloroethane-d4	*113 %*			*69-133*	TVK	10/12/07 16:57	
Surrogate: Toluene-d8	*103 %*			*76-122*	TVK	10/12/07 16:57	
Surrogate: 4-Bromofluorobenzene	*98.6 %*			*74-126*	TVK	10/12/07 16:57	
Total Organic Halogens (TOX)	**0.024 mg/l**	**0.010**	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	<10 mg/l	10	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**12 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Arsenic, dissolved	<0.001 mg/l	0.001	1J71025	EPA 7060A	LAR	10/11/07 20:28	
Barium, dissolved	**0.033 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Cadmium, dissolved	<0.0010 mg/l	0.0010	1J70901	EPA 7131A	LAR	10/12/07 14:16	
Chromium, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Copper, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Iron, dissolved	<0.100 mg/l	0.100	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Mercury, dissolved	<0.00050 mg/l	0.00050	1J71506	EPA 7470A	SAA	10/15/07 15:00	
Magnesium, dissolved	**114 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Lead, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 13:56	
Zinc, dissolved	<0.010 mg/l	0.010	1J70913	EPA 6010B	RVV	10/09/07 13:56	
17J0350-05 MW-34				Matrix:Water		Collected: 10/04/07 12:25	
1,1-Dichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 0:56	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 0:56	
Carbon Tetrachloride	<0.3 ug/l	0.3	1J71637	EPA 8260B	TVK	10/16/07 0:56	
Benzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 0:56	
1,2-Dichloroethane	<0.4 ug/l	0.4	1J71637	EPA 8260B	TVK	10/16/07 0:56	
Trichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 0:56	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 0:56	
Surrogate: Dibromofluoromethane	*109 %*			*60-140*	TVK	10/16/07 0:56	
Surrogate: 1,2-Dichloroethane-d4	*106 %*			*69-133*	TVK	10/16/07 0:56	
Surrogate: Toluene-d8	*105 %*			*76-122*	TVK	10/16/07 0:56	
Surrogate: 4-Bromofluorobenzene	*102 %*			*74-126*	TVK	10/16/07 0:56	
Total Organic Halogens (TOX)	**0.026 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**11 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**50 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Arsenic, dissolved	<0.001 mg/l	0.001	1J71025	EPA 7060A	LAR	10/11/07 20:28	

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17J0350

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-05 MW-34				Matrix:Water		Collected: 10/04/07 12:25	
Barium, dissolved	**0.090 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Cadmium, dissolved	<0.0010 mg/l	0.0010	1J70901	EPA 7131A	LAR	10/12/07 14:16	
Chromium, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Copper, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Iron, dissolved	**1.85 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Mercury, dissolved	<0.00050 mg/l	0.00050	1J71506	EPA 7470A	SAA	10/15/07 15:02	
Magnesium, dissolved	**67.2 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Lead, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:08	
Zinc, dissolved	**0.052 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 14:08	
17J0350-06 MW-35				Matrix:Water		Collected: 10/04/07 10:20	
Total Organic Halogens (TOX)	**0.020 mg/l**	**0.010**	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**52 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**12 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 14:37	
17J0350-07 MW-39				Matrix:Water		Collected: 10/02/07 09:15	
Total Organic Halogens (TOX)	**0.012 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**14 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	**0.151 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 14:41	
17J0350-08 MW-40				Matrix:Water		Collected: 10/02/07 09:35	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**26 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**12 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 14:45	
17J0350-09 MW-43				Matrix:Water		Collected: 10/02/07 08:35	
1,1-Dichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 1:34	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 1:34	
Carbon Tetrachloride	<0.3 ug/l	0.3	1J71637	EPA 8260B	TVK	10/16/07 1:34	
Benzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 1:34	
1,2-Dichloroethane	<0.4 ug/l	0.4	1J71637	EPA 8260B	TVK	10/16/07 1:34	
Trichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 1:34	

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17J0350

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-09 MW-43				Matrix:Water	Collected: 10/02/07 08:35		
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 1:34	
Surrogate: Dibromofluoromethane	*110 %*			*60-140*	TVK	10/16/07 1:34	
Surrogate: 1,2-Dichloroethane-d4	*104 %*			*69-133*	TVK	10/16/07 1:34	
Surrogate: Toluene-d8	*106 %*			*76-122*	TVK	10/16/07 1:34	
Surrogate: 4-Bromofluorobenzene	*102 %*			*74-126*	TVK	10/16/07 1:34	
Total Organic Halogens (TOX)	**0.043 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**56 mg/l**	**10**	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	**12 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	**3.1 mg/l**	**1.0**	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Arsenic, dissolved	<0.001 mg/l	0.001	1J71025	EPA 7060A	LAR	10/11/07 20:28	
Barium, dissolved	**0.182 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Cadmium, dissolved	<0.0010 mg/l	0.0010	1J71603	EPA 7131A	LAR	10/16/07 11:53	
Chromium, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Copper, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Iron, dissolved	<0.100 mg/l	0.100	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Mercury, dissolved	<0.00050 mg/l	0.00050	1J71506	EPA 7470A	SAA	10/15/07 15:04	
Magnesium, dissolved	**68.9 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Lead, dissolved	**0.005 mg/l**	**0.005**	1J70913	EPA 6010B	RVV	10/09/07 14:12	
Zinc, dissolved	**0.012 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 14:12	
17J0350-10 MW-36				Matrix:Water	Collected: 10/04/07 09:50		
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	<10 mg/l	10	1J71014	USGS I-1184-85	DRB	10/10/07 10:47	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	**0.212 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 14:48	
17J0350-11 MW-30				Matrix:Water	Collected: 09/28/07 14:15		
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	<10 mg/l	10	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	**1.02 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 15:03	
17J0350-12 MW-32				Matrix:Water	Collected: 09/28/07 13:45		
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**20 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	

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

Work Order: 17J0350

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-12 MW-32				Matrix:Water		Collected: 09/28/07 13:45	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 15:07	
17J0350-13 MW-33				Matrix:Water		Collected: 10/04/07 12:40	
1,1-Dichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 2:13	
1,1,1-Trichloroethane	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 2:13	
Carbon Tetrachloride	<0.3 ug/l	0.3	1J71637	EPA 8260B	TVK	10/16/07 2:13	
Benzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 2:13	
1,2-Dichloroethane	<0.4 ug/l	0.4	1J71637	EPA 8260B	TVK	10/16/07 2:13	
Trichloroethylene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 2:13	
1,4-Dichlorobenzene	<1.0 ug/l	1.0	1J71637	EPA 8260B	TVK	10/16/07 2:13	
Surrogate: Dibromofluoromethane	*109 %*			*60-140*	TVK	10/16/07 2:13	
Surrogate: 1,2-Dichloroethane-d4	*103 %*			*69-133*	TVK	10/16/07 2:13	
Surrogate: Toluene-d8	*105 %*			*76-122*	TVK	10/16/07 2:13	
Surrogate: 4-Bromofluorobenzene	*105 %*			*74-126*	TVK	10/16/07 2:13	
Total Organic Halogens (TOX)	**0.019 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**53 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	**17 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	**1.7 mg/l**	**1.0**	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Arsenic, dissolved	<0.001 mg/l	0.001	1J71025	EPA 7060A	LAR	10/11/07 20:28	
Barium, dissolved	**0.430 mg/l**	**0.010**	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Cadmium, dissolved	<0.0010 mg/l	0.0010	1J70901	EPA 7131A	LAR	10/12/07 14:16	
Chromium, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Copper, dissolved	<0.005 mg/l	0.005	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Iron, dissolved	**3.24 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Mercury, dissolved	<0.00050 mg/l	0.00050	1J71506	EPA 7470A	SAA	10/15/07 15:05	
Magnesium, dissolved	**60.5 mg/l**	**0.100**	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Lead, dissolved	**0.006 mg/l**	**0.005**	1J70913	EPA 6010B	RVV	10/09/07 14:16	
Zinc, dissolved	<0.010 mg/l	0.010	1J70913	EPA 6010B	RVV	10/09/07 14:16	
17J0350-14 MW-38				Matrix:Water		Collected: 10/02/07 09:00	
Total Organic Halogens (TOX)	**0.027 mg/l**	**0.010**	1J72231	EPA 9020	TVK	10/22/07 14:48	
Chloride	**31 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71705	EPA 9065	JAC	10/18/07 11:28	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 15:11	
17J0350-15 MW-41				Matrix:Water		Collected: 10/02/07 09:25	

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Ames, IA 50010

Work Order: 17J0350

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0350-15 MW-41				Matrix:Water		Collected: 10/02/07 09:25	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**13 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71706	EPA 9065	WAS	10/18/07 13:57	
Iron, dissolved	**1.70 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 15:15	
17J0350-16 MW-42				Matrix:Water		Collected: 10/02/07 08:25	
Total Organic Halogens (TOX)	**0.010 mg/l**	**0.010**	1J72233	EPA 9020	TVK	10/22/07 14:56	
Chloride	**22 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	**20 mg/l**	**10**	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70919	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71706	EPA 9065	WAS	10/18/07 13:57	
Iron, dissolved	**1.37 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 15:19	
17J0350-17 SW-1				Matrix:Water		Collected: 10/04/07 10:40	
Total Organic Halogens (TOX)	**0.021 mg/l**	**0.010**	1J72217	EPA 9020	TVK	10/22/07 12:21	
Chloride	**85 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70855	EPA 410.4	SAA	10/10/07 9:13	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70920	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71706	EPA 9065	WAS	10/18/07 13:57	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 15:23	
17J0350-18 SW-2				Matrix:Water		Collected: 10/04/07 13:05	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1J72218	EPA 9020	TVK	10/22/07 12:32	
Chloride	**86 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	<10 mg/l	10	1J70922	EPA 410.4	SAA	10/11/07 9:27	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70920	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71706	EPA 9065	WAS	10/18/07 13:57	
Iron, dissolved	<0.100 mg/l	0.100	1J71115	EPA 6010B	RVV	10/15/07 15:27	
17J0350-19 SW-6				Matrix:Water		Collected: 10/04/07 09:25	
Total Organic Halogens (TOX)	**0.035 mg/l**	**0.010**	1J72231	EPA 9020	TVK	10/22/07 14:52	
Chloride	**90 mg/l**	**10**	1J71137	USGS I-1184-85	SAA	10/11/07 17:17	
Chemical Oxygen Demand	**14 mg/l**	**10**	1J70922	EPA 410.4	SAA	10/11/07 9:27	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1J70920	SM 4500-NH3 F	SAA	10/10/07 11:52	
Phenols, total	<0.100 mg/l	0.100	1J71706	EPA 9065	WAS	10/18/07 13:57	
Iron, dissolved	**4.65 mg/l**	**0.100**	1J71115	EPA 6010B	RVV	10/15/07 15:31	

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

Work Order: 17J0350

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1507 - 1J71522										
Calibration Check (17J1507-CCV1)				Prepared & Analyzed: 10/12/07						
Surrogate: Dibromofluoromethane	*56.6*		*ug/l*	*50.0000*		*113*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*54.1*		*"*	*50.0000*		*108*	*80-120*			
Surrogate: Toluene-d8	*52.5*		*"*	*50.0000*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*50.7*		*"*	*50.0000*		*101*	*80-120*			
1,1-Dichloroethylene	50.47		"	50.0000		101	80-120			
1,1,1-Trichloroethane	47.07		"	50.0000		94.1	80-120			
Carbon Tetrachloride	52.03		"	50.0000		104	80-120			
Benzene	50.54		"	50.0000		101	80-120			
1,2-Dichloroethane	48.95		"	50.0000		97.9	80-120			
Trichloroethylene	55.20		"	50.0000		110	80-120			
1,4-Dichlorobenzene	53.16		"	50.0000		106	80-120			
Calibration Check (17J1507-CCV2)				Prepared: 10/12/07 Analyzed: 10/13/07						
Surrogate: Dibromofluoromethane	*55.2*		*ug/l*	*50.0000*		*110*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*52.3*		*"*	*50.0000*		*105*	*80-120*			
Surrogate: Toluene-d8	*50.1*		*"*	*50.0000*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*52.2*		*"*	*50.0000*		*104*	*80-120*			
1,1-Dichloroethylene	58.42		"	50.0000		117	80-120			
1,1,1-Trichloroethane	54.80		"	50.0000		110	80-120			
Carbon Tetrachloride	53.79		"	50.0000		108	80-120			
Benzene	53.06		"	50.0000		106	80-120			
1,2-Dichloroethane	53.08		"	50.0000		106	80-120			
Trichloroethylene	58.02		"	50.0000		116	80-120			
1,4-Dichlorobenzene	53.29		"	50.0000		107	80-120			
Batch 17J1628 - 1J71637										
Calibration Check (17J1628-CCV1)				Prepared & Analyzed: 10/15/07						
Surrogate: Dibromofluoromethane	*51.1*		*ug/l*	*50.0000*		*102*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*51.7*		*"*	*50.0000*		*103*	*80-120*			
Surrogate: Toluene-d8	*50.8*		*"*	*50.0000*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*50.1*		*"*	*50.0000*		*100*	*80-120*			
1,1-Dichloroethylene	59.83		"	50.0000		120	80-120			
1,1,1-Trichloroethane	56.33		"	50.0000		113	80-120			
Carbon Tetrachloride	55.88		"	50.0000		112	80-120			
Benzene	54.68		"	50.0000		109	80-120			
1,2-Dichloroethane	52.75		"	50.0000		106	80-120			
Trichloroethylene	56.30		"	50.0000		113	80-120			
1,4-Dichlorobenzene	52.53		"	50.0000		105	80-120			

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

Work Order: 17J0350

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1628 - 1J71637										
Calibration Check (17J1628-CCV2)				Prepared & Analyzed: 10/15/07						
Surrogate: Dibromofluoromethane	*51.4*		*ug/l*	*50.0000*		*103*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*50.4*		*"*	*50.0000*		*101*	*80-120*			
Surrogate: Toluene-d8	*50.8*		*"*	*50.0000*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*76.1*		*"*	*50.0000*		*152*	*80-120*			*S-GC*
1,1-Dichloroethylene	53.68		"	50.0000		107	80-120			
1,1,1-Trichloroethane	50.35		"	50.0000		101	80-120			
Carbon Tetrachloride	49.51		"	50.0000		99.0	80-120			
Benzene	50.72		"	50.0000		101	80-120			
1,2-Dichloroethane	48.11		"	50.0000		96.2	80-120			
Trichloroethylene	50.10		"	50.0000		100	80-120			
1,4-Dichlorobenzene	47.28		"	50.0000		94.6	80-120			
Batch 1J71522 - EPA 5030B										
Blank (1J71522-BLK1)				Prepared & Analyzed: 10/12/07						
Surrogate: Dibromofluoromethane	*54.5*		*ug/l*	*50.0000*		*109*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*49.9*		*"*	*50.0000*		*99.8*	*69-133*			
Surrogate: Toluene-d8	*51.6*		*"*	*50.0000*		*103*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*49.3*		*"*	*50.0000*		*98.6*	*74-126*			
1,1-Dichloroethylene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	0.3	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	0.4	"							
Trichloroethylene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							

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

Work Order: 17J0350

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71522 - EPA 5030B										
LCS (1J71522-BS1)				Prepared: 10/12/07 Analyzed: 10/13/07						
Surrogate: Dibromofluoromethane	*61.4*		*ug/l*	*50.0000*		*123*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*53.5*		*"*	*50.0000*		*107*	*69-133*			
Surrogate: Toluene-d8	*50.9*		*"*	*50.0000*		*102*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*51.4*		*"*	*50.0000*		*103*	*74-126*			
1,1-Dichloroethylene	62.61	1.0	"	50.0000		125	84-140			
1,1,1-Trichloroethane	54.55	1.0	"	50.0000		109	83-131			
Carbon Tetrachloride	58.42	0.3	"	50.0000		117	87-132			
Benzene	50.76	1.0	"	50.0000		102	78-139			
1,2-Dichloroethane	51.35	0.4	"	50.0000		103	74-138			
Trichloroethylene	54.75	1.0	"	50.0000		110	82-125			
1,4-Dichlorobenzene	51.39	1.0	"	50.0000		103	72-131			
Matrix Spike (1J71522-MS1)		**Source: 17J0132-01**		Prepared & Analyzed: 10/12/07						
Surrogate: Dibromofluoromethane	*53.5*		*ug/l*	*50.0000*		*107*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*55.9*		*"*	*50.0000*		*112*	*69-133*			
Surrogate: Toluene-d8	*51.7*		*"*	*50.0000*		*103*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*52.1*		*"*	*50.0000*		*104*	*74-126*			
1,1-Dichloroethylene	294.8	5.0	"	250.000	ND	118	77-151			
1,1,1-Trichloroethane	271.4	5.0	"	250.000	ND	109	78-138			
Carbon Tetrachloride	271.2	1.5	"	250.000	ND	108	85-134			
Benzene	260.2	5.0	"	250.000	ND	104	60-140			
1,2-Dichloroethane	263.6	2.0	"	250.000	ND	105	74-139			
Trichloroethylene	277.5	5.0	"	250.000	ND	111	82-125			
1,4-Dichlorobenzene	237.6	5.0	"	250.000	ND	95.0	68-136			
Matrix Spike Dup (1J71522-MSD1)		**Source: 17J0132-01**		Prepared & Analyzed: 10/12/07						
Surrogate: Dibromofluoromethane	*55.6*		*ug/l*	*50.0000*		*111*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*53.6*		*"*	*50.0000*		*107*	*69-133*			
Surrogate: Toluene-d8	*50.5*		*"*	*50.0000*		*101*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*51.1*		*"*	*50.0000*		*102*	*74-126*			
1,1-Dichloroethylene	296.7	5.0	"	250.000	ND	119	77-151	0.625	14	
1,1,1-Trichloroethane	267.8	5.0	"	250.000	ND	107	78-138	1.34	14	
Carbon Tetrachloride	282.2	1.5	"	250.000	ND	113	85-134	3.98	14	
Benzene	227.4	5.0	"	250.000	ND	91.0	60-140	13.4	22	
1,2-Dichloroethane	251.2	2.0	"	250.000	ND	100	74-139	4.80	27	
Trichloroethylene	279.6	5.0	"	250.000	ND	112	82-125	0.736	17	
1,4-Dichlorobenzene	250.4	5.0	"	250.000	ND	100	68-136	5.25	30	

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

Work Order: 17J0350

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71637 - EPA 5030B										
Blank (1J71637-BLK1)				Prepared & Analyzed: 10/15/07						
Surrogate: Dibromofluoromethane	*52.7*		*ug/l*	*50.0000*		*105*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*50.4*		*"*	*50.0000*		*101*	*69-133*			
Surrogate: Toluene-d8	*53.3*		*"*	*50.0000*		*107*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*54.2*		*"*	*50.0000*		*108*	*74-126*			
1,1-Dichloroethylene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	0.3	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	0.4	"							
Trichloroethylene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
Matrix Spike (1J71637-MS1)		**Source: 17J0463-07**		Prepared: 10/15/07 Analyzed: 10/16/07						
Surrogate: Dibromofluoromethane	*52.6*		*ug/l*	*50.0000*		*105*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*54.7*		*"*	*50.0000*		*109*	*69-133*			
Surrogate: Toluene-d8	*50.5*		*"*	*50.0000*		*101*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*50.7*		*"*	*50.0000*		*101*	*74-126*			
1,1-Dichloroethylene	605.1	10.0	"	500.000	0.36	121	77-151			
1,1,1-Trichloroethane	533.0	10.0	"	500.000	ND	107	78-138			
Carbon Tetrachloride	525.8	3.0	"	500.000	ND	105	85-134			
Benzene	524.0	10.0	"	500.000	2.24	104	60-140			
1,2-Dichloroethane	511.0	4.0	"	500.000	2.43	102	74-139			
Trichloroethylene	551.7	10.0	"	500.000	16.18	107	82-125			
1,4-Dichlorobenzene	470.2	10.0	"	500.000	1.15	93.8	68-136			
Matrix Spike Dup (1J71637-MSD1)		**Source: 17J0463-07**		Prepared: 10/15/07 Analyzed: 10/16/07						
Surrogate: Dibromofluoromethane	*52.7*		*ug/l*	*50.0000*		*105*	*60-140*			
Surrogate: 1,2-Dichloroethane-d4	*55.0*		*"*	*50.0000*		*110*	*69-133*			
Surrogate: Toluene-d8	*49.8*		*"*	*50.0000*		*99.5*	*76-122*			
Surrogate: 4-Bromofluorobenzene	*50.2*		*"*	*50.0000*		*100*	*74-126*			
1,1-Dichloroethylene	619.5	10.0	"	500.000	0.36	124	77-151	2.35	14	
1,1,1-Trichloroethane	557.8	10.0	"	500.000	ND	112	78-138	4.55	14	
Carbon Tetrachloride	548.2	3.0	"	500.000	ND	110	85-134	4.17	14	
Benzene	543.3	10.0	"	500.000	2.24	108	60-140	3.62	22	
1,2-Dichloroethane	521.5	4.0	"	500.000	2.43	104	74-139	2.03	27	
Trichloroethylene	570.1	10.0	"	500.000	16.18	111	82-125	3.28	17	
1,4-Dichlorobenzene	501.2	10.0	"	500.000	1.15	100	68-136	6.38	30	

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

Work Order: 17J0350

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 16K0811 - 1K60826										
Cal Standard (16K0811-CAL1)				Prepared & Analyzed: 11/08/06						
Phenols, total	-0.0119		mg/l	0.00000						
Cal Standard (16K0811-CAL2)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.0309		mg/l	0.0250000		124				
Cal Standard (16K0811-CAL3)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.0936		mg/l	0.100000		93.6				
Cal Standard (16K0811-CAL4)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.413		mg/l	0.400000		103				
Cal Standard (16K0811-CAL5)				Prepared & Analyzed: 11/08/06						
Phenols, total	1.00		mg/l	1.00000		100				
Cal Standard (16K0811-CAL6)				Prepared & Analyzed: 11/08/06						
Phenols, total	2.00		mg/l	2.00000		99.8				
Calibration Check (16K0811-CCV1)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.110		mg/l	0.100300		110	80-120			
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL1)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	-2.35		mg/l	0.00000						
Cal Standard (17A1613-CAL2)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	12.3		mg/l	10.0000		123				

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Work Order: 17J0350

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL3)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	21.9		mg/l	20.0000		110				
Cal Standard (17A1613-CAL4)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	74.0		mg/l	75.0000		98.6				
Cal Standard (17A1613-CAL5)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	97.6		mg/l	100.000		97.6				
Cal Standard (17A1613-CAL6)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	152		mg/l	150.000		101				
Batch 17J0825 - 1J70855										
Calibration Check (17J0825-CCV1)				Prepared: 10/08/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	79.7		mg/l	75.0000		106	90-110			
Calibration Check (17J0825-CCV2)				Prepared: 10/08/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	76.5		mg/l	75.0000		102	90-110			
Batch 17J0914 - 1J70920										
Calibration Check (17J0914-CCV1)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	5.29		mg/l	5.00000		106	80-120			
Calibration Check (17J0914-CCV2)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.89		mg/l	5.00000		97.8	80-120			

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

Work Order: 17J0350

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J0914 - 1J70920										
Calibration Check (17J0914-CCV3)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.89		mg/l	5.00000		97.8	80-120			
Calibration Check (17J0914-CCV4)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.70		mg/l	5.00000		94.0	80-120			
Initial Cal Check (17J0914-ICV1)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	5.23		mg/l	5.00000		105	80-120			
Batch 17J0916 - 1J70922										
Calibration Check (17J0916-CCV1)				Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	76.2		mg/l	75.0000		102	90-110			
Calibration Check (17J0916-CCV2)				Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	73.3		mg/l	75.0000		97.8	90-110			
Batch 17J1812 - 1J71705										
Calibration Check (17J1812-CCV1)				Prepared & Analyzed: 10/18/07						
Phenols, total	0.0804		mg/l	0.100300		80.1	80-120			
Initial Cal Blank (17J1812-ICB1)				Prepared & Analyzed: 10/18/07						
Phenols, total	-0.0119		mg/l							
Initial Cal Check (17J1812-ICV1)				Prepared & Analyzed: 10/18/07						
Phenols, total	0.0804		mg/l	0.100300		80.1	80-120			

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Fox Engineering Associates, Inc.
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Work Order: 17J0350

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1816 - 1J71706										
Calibration Check (17J1816-CCV1)				Prepared & Analyzed: 10/18/07						
Phenols, total	0.110		mg/l	0.100300		110	80-120			
Initial Cal Blank (17J1816-ICB1)				Prepared & Analyzed: 10/18/07						
Phenols, total	-0.0119		mg/l							
Initial Cal Check (17J1816-ICV1)				Prepared & Analyzed: 10/18/07						
Phenols, total	0.117		mg/l	0.100300		116	80-120			
Batch 1J70855 - Wet Chem Preparation										
Blank (1J70855-BLK1)				Prepared: 10/09/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1J70855-BS1)				Prepared: 10/09/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	76.2	10	mg/l	75.0000		102	78-117			
Matrix Spike (1J70855-MS1)		Source: 17J0350-17		Prepared: 10/09/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	42.6	10	mg/l	42.8571	4.67	88.4	60-139			
Matrix Spike Dup (1J70855-MSD1)		Source: 17J0350-17		Prepared: 10/09/07 Analyzed: 10/10/07						
Chemical Oxygen Demand	49.9	10	mg/l	42.8571	4.67	105	60-139	15.8	26	
Batch 1J70919 - Wet Chem Preparation										
Blank (1J70919-BLK1)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	ND	1.0	mg/l							

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Fox Engineering Associates, Inc.
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Work Order: 17J0350

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70919 - Wet Chem Preparation										
Matrix Spike (1J70919-MS1)		**Source: 17J0350-16**		Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	5.15	1.0	mg/l	5.00000	ND	103	64-129			
Matrix Spike Dup (1J70919-MSD1)		**Source: 17J0350-16**		Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.97	1.0	mg/l	5.00000	ND	99.4	64-129	3.56	12	
Batch 1J70920 - Wet Chem Preparation										
Blank (1J70920-BLK1)				Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	ND	1.0	mg/l							
Matrix Spike (1J70920-MS1)		**Source: 17J0351-17**		Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.70	1.0	mg/l	5.00000	ND	94.0	64-129			
Matrix Spike Dup (1J70920-MSD1)		**Source: 17J0351-17**		Prepared & Analyzed: 10/10/07						
Nitrogen, Ammonia	4.62	1.0	mg/l	5.00000	ND	92.4	64-129	1.72	12	
Batch 1J70922 - Wet Chem Preparation										
Blank (1J70922-BLK1)				Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1J70922-BS1)				Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	73.0	10	mg/l	75.0000		97.3	78-117			
Matrix Spike (1J70922-MS1)		**Source: 17J0351-17**		Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	52.4	10	mg/l	42.8571	7.23	105	60-139			

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Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70922 - Wet Chem Preparation										
Matrix Spike Dup (1J70922-MSD1)		**Source: 17J0351-17**		Prepared: 10/10/07 Analyzed: 10/11/07						
Chemical Oxygen Demand	49.5	10	mg/l	42.8571	7.23	98.6	60-139	5.73	26	
Batch 1J71014 - Wet Chem Preparation										
Blank (1J71014-BLK1)				Prepared & Analyzed: 10/10/07						
Chloride	ND	10	mg/l							
Matrix Spike (1J71014-MS1)		**Source: 17J0350-03**		Prepared & Analyzed: 10/10/07						
Chloride	68.8	10	mg/l	50.0000	26.5	84.6	75-116			
Matrix Spike Dup (1J71014-MSD1)		**Source: 17J0350-03**		Prepared & Analyzed: 10/10/07						
Chloride	68.8	10	mg/l	50.0000	26.5	84.6	75-116	0.00	10	
Reference (1J71014-SRM1)				Prepared & Analyzed: 10/10/07						
Chloride	28.2	10	mg/l	31.9000		88.4	90-110			QR-
Batch 1J71137 - Wet Chem Preparation										
Blank (1J71137-BLK1)				Prepared & Analyzed: 10/11/07						
Chloride	ND	10	mg/l							
Matrix Spike (1J71137-MS1)		**Source: 17J0351-10**		Prepared & Analyzed: 10/11/07						
Chloride	63.6	10	mg/l	50.0000	6.40	114	75-116			
Matrix Spike Dup (1J71137-MSD1)		**Source: 17J0351-10**		Prepared & Analyzed: 10/11/07						
Chloride	57.7	10	mg/l	50.0000	6.40	103	75-116	9.73	10	

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Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71137 - Wet Chem Preparation										
Reference (1J71137-SRM1)				Prepared & Analyzed: 10/11/07						
Chloride	20.1	10	mg/l	20.0000		100	90-110			
Batch 1J71705 - Wet Chem Preparation										
Blank (1J71705-BLK1)				Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	ND	0.100	mg/l							
LCS (1J71705-BS1)				Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	0.103	0.100	mg/l	0.100300		103	60-125			
Duplicate (1J71705-DUP1)		Source: 17J0349-12		Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	ND	0.100	mg/l		ND				20	
Matrix Spike (1J71705-MS1)		Source: 17J0349-11		Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	0.0870	0.100	mg/l	0.100300	ND	86.7	60-140			
Batch 1J71706 - Wet Chem Preparation										
Blank (1J71706-BLK1)				Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	ND	0.100	mg/l							
LCS (1J71706-BS1)				Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	0.113	0.100	mg/l	0.100300		113	60-125			
Duplicate (1J71706-DUP1)		Source: 17J0350-16		Prepared: 10/17/07 Analyzed: 10/18/07						
Phenols, total	ND	0.100	mg/l		ND				20	

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Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71706 - Wet Chem Preparation										
Matrix Spike (1J71706-MS1)		**Source: 17J0350-16**		Prepared: 10/17/07		Analyzed: 10/18/07				
Phenols, total	0.123	0.100	mg/l	0.100300	ND	123	60-140			
Batch 1J72217 - TOX/TX/EOX										
Blank (1J72217-BLK1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1J72217-BS1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	0.1012	0.010	mg/l	0.103000		98.3	60-140			
Reference (1J72217-SRM1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	98.58		mg/l	515000		0.0191	0-200			
Reference (1J72217-SRM2)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	104.4		mg/l	515000		0.0203	0-200			
Batch 1J72218 - TOX/TX/EOX										
Blank (1J72218-BLK1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1J72218-BS1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	0.1084	0.010	mg/l	0.103000		105	60-140			
Reference (1J72218-SRM1)				Prepared: 10/19/07		Analyzed: 10/22/07				
Total Organic Halogens (TOX)	100.4		mg/l	515000		0.0195	0-200			

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Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J72218 - TOX/TX/EOX										
Reference (1J72218-SRM2)				Prepared: 10/19/07 Analyzed: 10/22/07						
Total Organic Halogens (TOX)	92.99		mg/l	515000		0.0181	0-200			
Batch 1J72231 - TOX/TX/EOX										
Blank (1J72231-BLK1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1J72231-BS1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	0.1062	0.010	mg/l	0.103000		103	60-140			
Reference (1J72231-SRM1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	103.3		mg/l	515000		0.0201	0-200			
Batch 1J72233 - TOX/TX/EOX										
Blank (1J72233-BLK1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1J72233-BS1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	0.1062	0.010	mg/l	0.103000		103	60-140			
Reference (1J72233-SRM1)				Prepared & Analyzed: 10/22/07						
Total Organic Halogens (TOX)	103.9		mg/l	515000		0.0202	0-200			

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Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J0901 - 1J70913										
Calibration Blank (17J0901-CCB1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.000200		mg/l	0.00000						
Chromium, dissolved	-0.000200		"	0.00000						
Copper, dissolved	-0.000400		"	0.00000						
Iron, dissolved	-0.00820		"	0.00000						
Lead, dissolved	0.0008		"	0.00000						
Magnesium, dissolved	-0.004		"	0.00000						
Zinc, dissolved	0.00		"	0.00000						
Calibration Blank (17J0901-CCB2)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.000200		mg/l	0.00000						
Chromium, dissolved	-0.000700		"	0.00000						
Copper, dissolved	-0.000600		"	0.00000						
Iron, dissolved	-0.00910		"	0.00000						
Lead, dissolved	0.002		"	0.00000						
Magnesium, dissolved	0.002		"	0.00000						
Zinc, dissolved	0.000200		"	0.00000						
Calibration Blank (17J0901-CCB3)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.000200		mg/l	0.00000						
Chromium, dissolved	-0.00120		"	0.00000						
Copper, dissolved	-0.000200		"	0.00000						
Iron, dissolved	0.0169		"	0.00000						
Lead, dissolved	0.002		"	0.00000						
Magnesium, dissolved	0.003		"	0.00000						
Zinc, dissolved	-0.000500		"	0.00000						
Calibration Blank (17J0901-CCB4)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.000300		mg/l	0.00000						
Chromium, dissolved	-0.000700		"	0.00000						
Copper, dissolved	-0.000200		"	0.00000						
Iron, dissolved	0.00420		"	0.00000						
Lead, dissolved	0.0009		"	0.00000						
Magnesium, dissolved	0.007		"	0.00000						
Zinc, dissolved	-0.000500		"	0.00000						

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Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J0901 - 1J70913										
Calibration Check (17J0901-CCV1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.965		mg/l	1.00000		96.5	90-110			
Chromium, dissolved	1.01		"	1.00000		101	90-110			
Copper, dissolved	0.989		"	1.00000		98.9	90-110			
Iron, dissolved	21.0		"	21.0000		100	90-110			
Lead, dissolved	0.999		"	1.00000		99.9	90-110			
Magnesium, dissolved	0.992		"	1.00000		99.2	90-110			
Zinc, dissolved	1.03		"	1.00000		103	90-110			
Calibration Check (17J0901-CCV2)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.961		mg/l	1.00000		96.1	90-110			
Chromium, dissolved	1.01		"	1.00000		101	90-110			
Copper, dissolved	0.993		"	1.00000		99.3	90-110			
Iron, dissolved	21.0		"	21.0000		99.9	90-110			
Lead, dissolved	0.999		"	1.00000		99.9	90-110			
Magnesium, dissolved	0.993		"	1.00000		99.3	90-110			
Zinc, dissolved	1.04		"	1.00000		104	90-110			
Calibration Check (17J0901-CCV3)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.960		mg/l	1.00000		96.0	90-110			
Chromium, dissolved	1.02		"	1.00000		102	90-110			
Copper, dissolved	0.993		"	1.00000		99.3	90-110			
Iron, dissolved	21.1		"	21.0000		100	90-110			
Lead, dissolved	1.01		"	1.00000		101	90-110			
Magnesium, dissolved	0.990		"	1.00000		99.0	90-110			
Zinc, dissolved	1.04		"	1.00000		104	90-110			
Calibration Check (17J0901-CCV4)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.962		mg/l	1.00000		96.2	90-110			
Chromium, dissolved	1.02		"	1.00000		102	90-110			
Copper, dissolved	0.997		"	1.00000		99.7	90-110			
Iron, dissolved	21.1		"	21.0000		101	90-110			
Lead, dissolved	1.01		"	1.00000		101	90-110			
Magnesium, dissolved	1.00		"	1.00000		100	90-110			
Zinc, dissolved	1.05		"	1.00000		105	90-110			

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Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J0901 - 1J70913										
High Cal Check (17J0901-HCV2)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	18.7		mg/l	20.0000		93.7	90-110			
Chromium, dissolved	19.5		"	20.0000		97.7	90-110			
Copper, dissolved	20.5		"	20.0000		102	90-110			
Iron, dissolved	21.4		"	20.0000		107	90-110			
Lead, dissolved	19.6		"	20.0000		98.0	90-110			
Magnesium, dissolved	19.6		"	20.0000		98.2	90-110			
Zinc, dissolved	19.2		"	20.0000		96.0	90-110			
Initial Cal Blank (17J0901-ICB1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.000400		mg/l	0.00000						
Chromium, dissolved	0.00350		"	0.00000						
Copper, dissolved	0.00100		"	0.00000						
Iron, dissolved	0.0422		"	0.00000						
Lead, dissolved	-0.001		"	0.00000						
Magnesium, dissolved	0.013		"	0.00000						
Zinc, dissolved	-0.000100		"	0.00000						
Initial Cal Check (17J0901-ICV1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.970		mg/l	1.00000		97.0	90-110			
Chromium, dissolved	1.00		"	1.00000		100	90-110			
Copper, dissolved	0.985		"	1.00000		98.5	90-110			
Iron, dissolved	20.8		"	21.0000		99.0	90-110			
Lead, dissolved	0.968		"	1.00000		96.8	90-110			
Magnesium, dissolved	0.993		"	1.00000		99.3	90-110			
Zinc, dissolved	1.01		"	1.00000		101	90-110			
Secondary Cal Check (17J0901-SCV1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.494		mg/l	0.500000		98.8	90-110			
Chromium, dissolved	0.504		"	0.500000		101	90-110			
Copper, dissolved	0.493		"	0.500000		98.5	90-110			
Iron, dissolved	2.58		"	2.50000		103	90-110			
Lead, dissolved	0.505		"	0.500000		101	90-110			
Magnesium, dissolved	0.499		"	0.500000		99.9	90-110			
Zinc, dissolved	0.523		"	0.500000		105	90-110			

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Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1501 - 1J71115										
Calibration Blank (17J1501-CCB1)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.0103		mg/l	0.00000						
Calibration Blank (17J1501-CCB2)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.00670		mg/l	0.00000						
Calibration Blank (17J1501-CCB3)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.0176		mg/l	0.00000						
Calibration Blank (17J1501-CCB4)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	-0.00520		mg/l	0.00000						
Calibration Blank (17J1501-CCB5)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.0167		mg/l	0.00000						
Calibration Blank (17J1501-CCB6)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.000300		mg/l	0.00000						
Calibration Check (17J1501-CCV1)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.6		mg/l	21.0000		103	90-110			
Calibration Check (17J1501-CCV2)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.1		mg/l	21.0000		101	90-110			
Calibration Check (17J1501-CCV3)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.2		mg/l	21.0000		101	90-110			
Calibration Check (17J1501-CCV4)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.2		mg/l	21.0000		101	90-110			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1501 - 1J71115										
Calibration Check (17J1501-CCV5)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.1		mg/l	21.0000		101	90-110			
Calibration Check (17J1501-CCV6)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.2		mg/l	21.0000		101	90-110			
High Cal Check (17J1501-HCV2)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.7		mg/l	20.0000		109	90-110			
Initial Cal Blank (17J1501-ICB1)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	0.0635		mg/l	0.00000						
Initial Cal Check (17J1501-ICV1)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	21.1		mg/l	21.0000		100	90-110			
Secondary Cal Check (17J1501-SCV1)				Prepared & Analyzed: 10/15/07						
Iron, dissolved	2.67		mg/l	2.50000		107	90-110			
Batch 17J1509 - 1J71508										
Calibration Blank (17J1509-CCB1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.000102		mg/l	0.00000						
Calibration Blank (17J1509-CCB2)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.000115		mg/l	0.00000						
Calibration Blank (17J1509-CCB3)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.0000910		mg/l	0.00000						

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

Work Order: 17J0350

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1509 - 1J71508										
Calibration Blank (17J1509-CCB4)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.0000450		mg/l	0.00000						
Calibration Blank (17J1509-CCB5)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.00000400		mg/l	0.00000						
Calibration Blank (17J1509-CCB6)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.0000770		mg/l	0.00000						
Calibration Blank (17J1509-CCB7)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.00000500		mg/l	0.00000						
Calibration Check (17J1509-CCV1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00229		mg/l	0.0020000(		114	80-120			
Calibration Check (17J1509-CCV2)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00240		mg/l	0.0020000(		120	80-120			
Calibration Check (17J1509-CCV3)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00180		mg/l	0.0020000(		90.0	80-120			
Calibration Check (17J1509-CCV4)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00202		mg/l	0.0020000(		101	80-120			
Calibration Check (17J1509-CCV5)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00194		mg/l	0.0020000(		97.0	80-120			
Calibration Check (17J1509-CCV6)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00187		mg/l	0.0020000(		93.5	80-120			

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

Work Order: 17J0350

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1509 - 1J71508										
Calibration Check (17J1509-CCV7)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00190		mg/l	0.0020000		95.0	80-120			
Initial Cal Blank (17J1509-ICB1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	-0.0000120		mg/l	0.00000						
Initial Cal Check (17J1509-ICV1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00236		mg/l	0.0020000		118	80-120			
Batch 1J70901 - Dissolved Metal Prep										
Blank (1J70901-BLK1)				Prepared: 10/09/07 Analyzed: 10/12/07						
Cadmium, dissolved	ND	0.0010	mg/l							
Matrix Spike (1J70901-MS1)		Source: 17J0350-04		Prepared: 10/09/07 Analyzed: 10/12/07						
Cadmium, dissolved	0.00076	0.0010	mg/l	0.00060000	0.00020	93.3	60-125			
Matrix Spike Dup (1J70901-MSD1)		Source: 17J0350-04		Prepared: 10/09/07 Analyzed: 10/12/07						
Cadmium, dissolved	0.00076	0.0010	mg/l	0.00060000	0.00020	93.3	60-125	0.00	11	
Post Spike (1J70901-PS1)		Source: 17J0350-04		Prepared: 10/09/07 Analyzed: 10/12/07						
Cadmium, dissolved	0.00052		mg/l	0.00050000	0.00020	64.0	60-110			
Reference (1J70901-SRM1)				Prepared: 10/09/07 Analyzed: 10/12/07						
Cadmium, dissolved	0.00044	0.0010	mg/l	0.00050000		88.0	90-110			QS-06
Batch 1J70913 - Dissolved Metal Prep										
Blank (1J70913-BLK1)				Prepared & Analyzed: 10/09/07						
Barium, dissolved	ND	0.010	mg/l							
Chromium, dissolved	ND	0.005	"							
Copper, dissolved	ND	0.005	"							
Iron, dissolved	ND	0.100	"							
Lead, dissolved	ND	0.005	"							
Magnesium, dissolved	ND	0.100	"							
Zinc, dissolved	ND	0.010	"							

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

Work Order: 17J0350

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70913 - Dissolved Metal Prep										
Matrix Spike (1J70913-MS1)		**Source: 17J0350-04**		Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.220	0.010	mg/l	0.200000	0.0327	93.6	77-115			
Chromium, dissolved	0.190	0.005	"	0.200000	0.00100	94.4	78-114			
Copper, dissolved	0.200	0.005	"	0.200000	0.00400	98.0	84-117			
Iron, dissolved	0.196	0.100	"	0.200000	ND	98.2	79-135			
Lead, dissolved	0.190	0.005	"	0.200000	0.003	93.3	79-114			
Magnesium, dissolved	111	0.100	"	0.200000	114	NR	84-113			QM-4X
Zinc, dissolved	0.195	0.010	"	0.200000	0.00690	93.8	74-125			
Matrix Spike Dup (1J70913-MSD1)		**Source: 17J0350-04**		Prepared & Analyzed: 10/09/07						
Barium, dissolved	0.225	0.010	mg/l	0.200000	0.0327	96.1	77-115	2.29	10	
Chromium, dissolved	0.193	0.005	"	0.200000	0.00100	95.9	78-114	1.57	11	
Copper, dissolved	0.205	0.005	"	0.200000	0.00400	100	84-117	2.47	10	
Iron, dissolved	0.232	0.100	"	0.200000	ND	116	79-135	16.7	11	QR-02
Lead, dissolved	0.193	0.005	"	0.200000	0.003	94.9	79-114	1.67	10	
Magnesium, dissolved	113	0.100	"	0.200000	114	NR	84-113	1.16	10	QM-4X
Zinc, dissolved	0.196	0.010	"	0.200000	0.00690	94.4	74-125	0.564	14	
Batch 1J71025 - Dissolved Metal Prep										
Blank (1J71025-BLK1)				Prepared: 10/10/07 Analyzed: 10/11/07						
Arsenic, dissolved	ND	0.001	mg/l							
Matrix Spike (1J71025-MS1)		**Source: 17J0350-04**		Prepared: 10/10/07 Analyzed: 10/11/07						
Arsenic, dissolved	0.0152	0.001	mg/l	0.0150000	ND	101	60-140			
Matrix Spike Dup (1J71025-MSD1)		**Source: 17J0350-04**		Prepared: 10/10/07 Analyzed: 10/11/07						
Arsenic, dissolved	0.0152	0.001	mg/l	0.0150000	ND	101	60-140	0.132	10	

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

Work Order: 17J0350

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71025 - Dissolved Metal Prep										
Post Spike (1J71025-PS1)			**Source: 17J0350-04**	Prepared: 10/10/07		Analyzed: 10/11/07				
Arsenic, dissolved	0.0106		mg/l	0.0100000	-0.0003	109	70-135			
Reference (1J71025-SRM1)				Prepared: 10/10/07		Analyzed: 10/11/07				
Arsenic, dissolved	0.0048	0.001	mg/l	0.0050000		95.8	90-110			
Batch 1J71115 - Dissolved Metal Prep										
Blank (1J71115-BLK1)				Prepared: 10/11/07		Analyzed: 10/15/07				
Iron, dissolved	ND	0.100	mg/l							
Matrix Spike (1J71115-MS1)			**Source: 17J0350-01**	Prepared: 10/11/07		Analyzed: 10/15/07				
Iron, dissolved	1.91	0.100	mg/l	0.200000	1.68	116	79-135			
Matrix Spike Dup (1J71115-MSD1)			**Source: 17J0350-01**	Prepared: 10/11/07		Analyzed: 10/15/07				
Iron, dissolved	1.92	0.100	mg/l	0.200000	1.68	122	79-135	0.679	11	
Batch 1J71506 - EPA 7470A Hg Water										
Blank (1J71506-BLK1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	ND	0.00050	mg/l							
LCS (1J71506-BS1)				Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00265	0.00050	mg/l	0.0025000		106	61-135			
Matrix Spike (1J71506-MS1)			**Source: 17J0350-05**	Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00263	0.00050	mg/l	0.0025000	0.0000530	103	65-135			

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

Work Order: 17J0350

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J71506 - EPA 7470A Hg Water										
Matrix Spike Dup (1J71506-MSD1)		**Source: 17J0350-05**		Prepared & Analyzed: 10/15/07						
Mercury, dissolved	0.00268	0.00050	mg/l	0.00250000	0.0000530	105	65-135	1.88	22	
Batch 1J71603 - Dissolved Metal Prep										
Blank (1J71603-BLK1)				Prepared & Analyzed: 10/16/07						
Cadmium, dissolved	ND	0.0010	mg/l							
Matrix Spike (1J71603-MS1)		**Source: 17J0738-09**		Prepared & Analyzed: 10/16/07						
Cadmium, dissolved	0.00094	0.0010	mg/l	0.00040000	0.00065	72.5	60-125			
Matrix Spike Dup (1J71603-MSD1)		**Source: 17J0738-09**		Prepared & Analyzed: 10/16/07						
Cadmium, dissolved	0.00098	0.0010	mg/l	0.00040000	0.00065	82.5	60-125	4.17	11	
Post Spike (1J71603-PS1)		**Source: 17J0738-09**		Prepared & Analyzed: 10/16/07						
Cadmium, dissolved	0.00098		mg/l	0.00050000	0.00065	66.0	60-110			
Reference (1J71603-SRM1)				Prepared & Analyzed: 10/16/07						
Cadmium, dissolved	0.00054	0.0010	mg/l	0.00050000		108	90-110			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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

Work Order: 17J0350

Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
EPA 410.4 in Water		
	Chemical Oxygen Demand	IA-NT,KS-NT,NELAC
EPA 6010B in Water		
	Barium, dissolved	IA-NT,KS-NT,NELAC
	Chromium, dissolved	IA-NT,KS-NT,NELAC
	Copper, dissolved	IA-NT,KS-NT,NELAC
	Iron, dissolved	IA-NT,KS-NT,NELAC
	Lead, dissolved	IA-NT,KS-NT,NELAC
	Magnesium, dissolved	IA-NT,KS-NT,NELAC
	Zinc, dissolved	IA-NT,KS-NT,NELAC
EPA 7060A in Water		
	Arsenic, dissolved	IA-NT,KS-NT,NELAC
EPA 7131A in Water		
	Cadmium, dissolved	IA-NT
EPA 7470A in Water		
	Mercury, dissolved	IA-NT,KS-NT,NELAC
EPA 8260B in Water		
	1,1-Dichloroethylene	IA-NT,KS-NT,NELAC
	1,1,1-Trichloroethane	IA-NT,KS-NT,NELAC
	Carbon Tetrachloride	IA-NT,KS-NT,NELAC
	Benzene	IA-NT,KS-NT,NELAC
	1,2-Dichloroethane	IA-NT,KS-NT,NELAC
	Trichloroethylene	IA-NT,KS-NT,NELAC
	1,4-Dichlorobenzene	IA-NT,KS-NT,NELAC
EPA 9020 in Water		
	Total Organic Halogens (TOX)	IA-NT,NELAC
EPA 9065 in Water		
	Phenols, total	IA-NT,KS-NT,NELAC
SM 4500-NH3 F in Water		
	Nitrogen, Ammonia	IA-NT
USGS I-1184-85 in Water		
	Chloride	IA-NT

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

Work Order: 17J0350

Code	Description	Number	Expires
IA-NT	Iowa Department of Natural Resources	095	02/01/2008
KS-NT	Kansas Department of Health and Environment	E-10287	07/31/2008
NELAC	New Jersey Department of Environmental Protection	IA001	06/30/2008

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR-06	The reference standard was outside of established control limits.
QS-06	The spike recovery for this QC sample was outside of established control limits.
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

End of Report

Keystone Laboratories, Inc.

Rick Eftink For Sue Thompson
Project Manager I

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 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 8/20/2007 1:24:26PM

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - F
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17J0350
Temperature
Turn-Cooler: **No**

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
01-001	MW-37	Water	G	10/4	10:05	5	Indfll-para-e	Indfll-para-f	01
02-001	MW-23	Water	G	9/28	2:25	5	Indfll-para-e	Indfll-para-f	02
03-001	MW-24 - Dry - No Sample	Water					Indfll-para-e	Indfll-para-f	—
04-001	MW-25	Water	G	10/4	12:50	5	Indfll-para-e	Indfll-para-f	03
05-001	MW-31	Water	G	9/28	2:00	8	Indfll-para-d Indfll-para-f	Indfll-para-e	04
06-001	MW-34	Water	G	10/4	12:25	8	Indfll-para-d Indfll-para-f	Indfll-para-e	05
07-001	MW-35	Water	G	10/4	10:20	5	Indfll-para-e	Indfll-para-f	06
08-001	MW-39	Water	G	10/2	9:15	5	Indfll-para-e	Indfll-para-f	07
09-001	MW-40	Water	G	10/2	9:35	5	Indfll-para-e	Indfll-para-f	08

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	10/5/05 10:10 Am
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

Printed: 8/20/2007 1:24:26P.

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - F
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17J0350
Temperature
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
10-001	MW-43	Water	G	10/2	8:35	8	Indfll-para-d Indfll-para-f	Indfll-para-e	09
11-001	MW-36	Water	G	10/4	9:50	5	Indfll-para-e	Indfll-para-f	10
12-001	MW-30	Water	G	9/28	2:15	5	Indfll-para-e	Indfll-para-f	11
13-001	MW-32	Water	G	9/28	1:45	5	Indfll-para-e	Indfll-para-f	12
14-001	MW-33	Water	G	10/4	12:40	8	Indfll-para-d Indfll-para-f	Indfll-para-e	13
15-001	MW-38	Water	G	10/2	9:00	5	Indfll-para-e	Indfll-para-f	14
16-001	MW-41	Water	G	10/2	9:25	5	Indfll-para-e	Indfll-para-f	15
17-001	MW-42	Water	G	10/2	8:25	5	Indfll-para-e	Indfll-para-f	16
18-001	SW-1	Water	G	10/4	10:40	5	Indfll-para-e	Indfll-para-f	17
19-001	SW-2	Water	G	10/4	1:05	5	Indfll-para-e	Indfll-para-f	18

Relinquished By	Date/Time	Relinquished By	Date/Time
		Bill	10/5/07 10:10 AM
Received By	Date/Time	Received for Lab By	Date/Time

Remarks:

CHAIN OF CUSTODY RECORD

Printed: 8/20/2007 1:24:26PM

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
FAX: 641-792-7989

SITE INFORMATION

Sampler:

Project: Ames-Story Environmental Landfill - F
6004-99A

REPORT TO

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

INVOICE TO

Mr. William Fedeler
Ames/Story Environmental Landfill
P. O. Box 2483
Ames, IA 50010

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17J0350
Temperature
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
20-001	SW-3 - Dry - No sample	Water					Indfll-para-e	Indfll-para-f	
21-001	SW-4 Not flowing - No sample	Water					Indfll-para-e	Indfll-para-f	
22-001	SW-5 - Dry - No sample	Water					Indfll-para-d Indfll-para-f	Indfll-para-e	
23-001	SW-6	Water	G	10/4	9:25	5	Indfll-para-e	Indfll-para-f	19
24-001	Trip Blank - No trip blank since sent with containers	Water					8260-201		

Relinquished By: [signature] Date/Time: 10/4/07 3:45

Relinquished By: Date/Time:

Received By: Date/Time:

Received for Lab By: Bill Date/Time: 10/5/07 10:10 AM

Remarks:

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

ANALYTICAL REPORT

October 08, 2007

Work Order: 17I0688

Report To

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

Work Order Information

Date Received: 09/17/2007 11:50AM
Collector: Brown, Mitch
Phone: (515) 233-0000
PO Number:

Project : City of Ames San Lndfll (shared) - Fall
Project Number: 6001-06A

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17I0688-01 MW-~~4~~ 28				Matrix:Water		Collected: 09/14/07 14:30	
Total Organic Halogens (TOX)	**0.012 mg/l**	**0.010**	1I72414	EPA 9020	TVK	09/24/07 9:53	
Chloride	**100 mg/l**	**10**	1I72722	USGS I-1184-85	DRB	09/27/07 11:11	
Chemical Oxygen Demand	**18 mg/l**	**10**	1I71846	EPA 410.4	SAA	09/21/07 13:44	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1I71808	SM 4500-NH3 F	SAA	10/06/07 12:44	
Phenols, total	<0.100 mg/l	0.100	1I72526	EPA 9065	WAS	09/28/07 9:05	
Iron, dissolved	<0.100 mg/l	0.100	1I71911	EPA 6010B	RVV	09/20/07 11:37	
17I0688-02 MW-6				Matrix:Water		Collected: 09/14/07 14:05	
Total Organic Halogens (TOX)	**0.040 mg/l**	**0.010**	1I72414	EPA 9020	TVK	09/24/07 9:53	
Chloride	**102 mg/l**	**10**	1I72722	USGS I-1184-85	DRB	09/27/07 11:11	
Chemical Oxygen Demand	**16 mg/l**	**10**	1I72102	EPA 410.4	MAQ	09/21/07 6:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1I71808	SM 4500-NH3 F	SAA	10/06/07 12:44	
Phenols, total	<0.100 mg/l	0.100	1I72526	EPA 9065	WAS	09/28/07 9:05	
Iron, dissolved	<0.100 mg/l	0.100	1I71911	EPA 6010B	RVV	09/20/07 11:41	
17I0688-03 MW-~~5~~ 29				Matrix:Water		Collected: 09/14/07 14:20	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1I72415	EPA 9020	TVK	09/24/07 10:00	
Chloride	<10 mg/l	10	1I72722	USGS I-1184-85	DRB	09/27/07 11:11	
Chemical Oxygen Demand	<10 mg/l	10	1I72102	EPA 410.4	MAQ	09/21/07 6:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1I71808	SM 4500-NH3 F	SAA	10/06/07 12:44	
Phenols, total	<0.100 mg/l	0.100	1I72526	EPA 9065	WAS	09/28/07 9:05	
Iron, dissolved	<0.100 mg/l	0.100	1I71911	EPA 6010B	RVV	09/20/07 11:45	
17I0688-04 MW-7				Matrix:Water		Collected: 09/14/07 13:55	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1I72415	EPA 9020	TVK	09/24/07 10:00	
Chloride	**16 mg/l**	**10**	1I72722	USGS I-1184-85	DRB	09/27/07 11:11	
Chemical Oxygen Demand	<10 mg/l	10	1I72102	EPA 410.4	MAQ	09/21/07 6:52	
Nitrogen, Ammonia	<1.0 mg/l	1.0	1I71808	SM 4500-NH3 F	SAA	10/06/07 12:44	
Phenols, total	<0.100 mg/l	0.100	1I72741	EPA 9065	WAS	10/01/07 15:44	

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Keystone LABORATORIES, INC.

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

Work Order: 17I0688

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17I0688-04 MW-7				Matrix:Water		Collected: 09/14/07 13:55	
Iron, dissolved	**0.297 mg/l**	**0.100**	1I71911	EPA 6010B	RVV	09/20/07 11:49	
17I0688-05 MW-8				Matrix:Water		Collected: 09/14/07 13:45	
Total Organic Halogens (TOX)	<0.010 mg/l	0.010	1I72414	EPA 9020	TVK	09/24/07 9:53	
Chloride	<10 mg/l	10	1I72722	USGS I-1184-85	DRB	09/27/07 11:11	
Chemical Oxygen Demand	<10 mg/l	10	1I72102	EPA 410.4	MAQ	09/21/07 6:52	
Nitrogen, Ammonia	**1.1 mg/l**	**1.0**	1I71808	SM 4500-NH3 F	SAA	10/06/07 12:44	
Phenols, total	<0.100 mg/l	0.100	1I72741	EPA 9065	WAS	10/01/07 15:44	
Iron, dissolved	**5.05 mg/l**	**0.100**	1I71911	EPA 6010B	RVV	09/20/07 11:53	

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 16K0811 - 1K60826										
Cal Standard (16K0811-CAL1)				Prepared & Analyzed: 11/08/06						
Phenols, total	-0.0119		mg/l	0.00000						
Cal Standard (16K0811-CAL2)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.0309		mg/l	0.0250000		124				
Cal Standard (16K0811-CAL3)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.0936		mg/l	0.100000		93.6				
Cal Standard (16K0811-CAL4)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.413		mg/l	0.400000		103				
Cal Standard (16K0811-CAL5)				Prepared & Analyzed: 11/08/06						
Phenols, total	1.00		mg/l	1.00000		100				
Cal Standard (16K0811-CAL6)				Prepared & Analyzed: 11/08/06						
Phenols, total	2.00		mg/l	2.00000		99.8				
Calibration Check (16K0811-CCV1)				Prepared & Analyzed: 11/08/06						
Phenols, total	0.110		mg/l	0.100300		110	80-120			
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL1)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	-2.35		mg/l	0.00000						
Cal Standard (17A1613-CAL2)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	12.3		mg/l	10.0000		123				

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17A1613 - 1A71617										
Cal Standard (17A1613-CAL3)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	21.9		mg/l	20.0000		110				
Cal Standard (17A1613-CAL4)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	74.0		mg/l	75.0000		98.6				
Cal Standard (17A1613-CAL5)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	97.6		mg/l	100.000		97.6				
Cal Standard (17A1613-CAL6)				Prepared & Analyzed: 01/16/07						
Chemical Oxygen Demand	152		mg/l	150.000		101				
Batch 17I1818 - 1I71846										
Calibration Check (17I1818-CCV1)				Prepared: 09/18/07 Analyzed: 09/21/07						
Chemical Oxygen Demand	79.7		mg/l	75.0000		106	90-110			
Calibration Check (17I1818-CCV2)				Prepared: 09/18/07 Analyzed: 09/21/07						
Chemical Oxygen Demand	80.0		mg/l	75.0000		107	90-110			
Batch 17I2102 - 1I72102										
Calibration Check (17I2102-CCV1)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	74.9		mg/l	75.0000		99.9	90-110			
Calibration Check (17I2102-CCV2)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	73.6		mg/l	75.0000		98.2	90-110			

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17I2513 - 1I72526										
Calibration Check (17I2513-CCV1)				Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	0.117		mg/l	0.100300		116	80-120			
Initial Cal Blank (17I2513-ICB1)				Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	-0.0119		mg/l							
Initial Cal Check (17I2513-ICV1)				Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	0.117		mg/l	0.100300		116	80-120			
Batch 17I2719 - 1I72741										
Calibration Check (17I2719-CCV1)				Prepared: 09/27/07		Analyzed: 10/01/07				
Phenols, total	0.100		mg/l	0.100300		99.9	80-120			
Initial Cal Blank (17I2719-ICB1)				Prepared: 09/27/07		Analyzed: 10/01/07				
Phenols, total	-0.0119		mg/l							
Initial Cal Check (17I2719-ICV1)				Prepared: 09/27/07		Analyzed: 10/01/07				
Phenols, total	0.103		mg/l	0.100300		103	80-120			
Batch 17J0120 - 1J70116										
Calibration Check (17J0120-CCV1)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.19		mg/l	5.00000		104	80-120			
Calibration Check (17J0120-CCV2)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.07		mg/l	5.00000		101	80-120			

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J0120 - 1J70116										
Calibration Check (17J0120-CCV3)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.23		mg/l	5.00000		105	80-120			
Calibration Check (17J0120-CCV4)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.07		mg/l	5.00000		101	80-120			
Calibration Check (17J0120-CCV5)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.62		mg/l	5.00000		112	80-120			
Calibration Check (17J0120-CCV6)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.42		mg/l	5.00000		108	80-120			
Calibration Check (17J0120-CCV7)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.07		mg/l	5.00000		101	80-120			
Calibration Check (17J0120-CCV8)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	4.88		mg/l	5.00000		97.6	80-120			
Initial Cal Check (17J0120-ICV1)				Prepared: 10/02/07		Analyzed: 10/06/07				
Nitrogen, Ammonia	5.60		mg/l	5.00000		112	80-120			
Batch 1I71808 - Wet Chem Preparation										
Blank (1I71808-BLK1)				Prepared & Analyzed: 10/06/07						
Nitrogen, Ammonia	ND	1.0	mg/l							
Matrix Spike (1I71808-MS1)		Source: 17I0688-05		Prepared & Analyzed: 10/06/07						
Nitrogen, Ammonia	6.32	1.0	mg/l	5.00000	1.07	105	64-129			

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1I71808 - Wet Chem Preparation										
Matrix Spike Dup (1I71808-MSD1)		**Source: 17I0688-05**		Prepared & Analyzed: 10/06/07						
Nitrogen, Ammonia	6.22	1.0	mg/l	5.00000	1.07	103	64-129	1.59	12	
Batch 1I71846 - Wet Chem Preparation										
Blank (1I71846-BLK1)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1I71846-BS1)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	70.4	10	mg/l	75.0000		93.9	78-117			
Matrix Spike (1I71846-MS1)		**Source: 17I0688-01**		Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	65.9	10	mg/l	42.8571	18.1	112	60-139			
Matrix Spike Dup (1I71846-MSD1)		**Source: 17I0688-01**		Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	58.6	10	mg/l	42.8571	18.1	94.6	60-139	11.7	-26	
Batch 1I72102 - Wet Chem Preparation										
Blank (1I72102-BLK1)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	ND	10	mg/l							
LCS (1I72102-BS1)				Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	73.0	10	mg/l	75.0000		97.3	78-117			
Matrix Spike (1I72102-MS1)		**Source: 17I0688-02**		Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	50.7	10	mg/l	37.5000	15.5	93.7	60-139			

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1I72102 - Wet Chem Preparation										
Matrix Spike Dup (1I72102-MSD1)		Source: 17I0688-02		Prepared & Analyzed: 09/21/07						
Chemical Oxygen Demand	48.1	10	mg/l	37.5000	15.5	86.9	60-139	5.17	26	
Batch 1I72414 - TOX/TX/EOX										
Blank (1I72414-BLK1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1I72414-BS1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	0.0957	0.010	mg/l	0.103000		92.9	60-140			
Reference (1I72414-SRM1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	0.0995	0.010	mg/l	0.103000		96.6	90-110			
Reference (1I72414-SRM2)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	0.1019	0.010	mg/l	0.103000		99.0	90-110			
Batch 1I72415 - TOX/TX/EOX										
Blank (1I72415-BLK1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	ND	0.010	mg/l							
LCS (1I72415-BS1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	0.0999	0.010	mg/l	0.103000		97.0	60-140			
Reference (1I72415-SRM1)				Prepared: 09/21/07 Analyzed: 09/24/07						
Total Organic Halogens (TOX)	0.0999	0.010	mg/l	0.103000		97.0	90-110			

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1I72415 - TOX/TX/EOX										
Reference (1I72415-SRM2)				Prepared: 09/21/07		Analyzed: 09/24/07				
Total Organic Halogens (TOX)	0.1043	0.010	mg/l	0.103000		101	90-110			
Batch 1I72526 - Wet Chem Preparation										
Blank (1I72526-BLK1)				Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	ND	0.100	mg/l							
LCS (1I72526-BS1)				Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	0.103	0.100	mg/l	0.100300		103	60-125			
Duplicate (1I72526-DUP1)		Source: 17I0667-08		Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	ND	0.100	mg/l		ND				20	
Matrix Spike (1I72526-MS1)		Source: 17I0667-07		Prepared: 09/25/07		Analyzed: 09/28/07				
Phenols, total	0.113	0.100	mg/l	0.100300	ND	113	60-140			
Batch 1I72722 - Wet Chem Preparation										
Blank (1I72722-BLK1)				Prepared & Analyzed: 09/27/07						
Chloride	ND	10	mg/l							
Matrix Spike (1I72722-MS1)		Source: 17I0667-05		Prepared & Analyzed: 09/27/07						
Chloride	78.2	10	mg/l	50.0000	26.4	104	75-116			
Matrix Spike Dup (1I72722-MSD1)		Source: 17I0667-05		Prepared & Analyzed: 09/27/07						
Chloride	79.2	10	mg/l	50.0000	26.4	106	75-116	1.27	10	

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Work Order: 17I0688

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1I72722 - Wet Chem Preparation										
Reference (1I72722-SRM1)				Prepared & Analyzed: 09/27/07						
Chloride	37.1	10	mg/l	31.9000		116	90-110			
Batch 1I72741 - Wet Chem Preparation										
Blank (1I72741-BLK1)				Prepared: 09/27/07 Analyzed: 10/01/07						
Phenols, total	ND	0.100	mg/l							
LCS (1I72741-BS1)				Prepared: 09/27/07 Analyzed: 10/01/07						
Phenols, total	0.103	0.100	mg/l	0.100300		103	60-125			
Duplicate (1I72741-DUP1)		Source: 17I0760-02		Prepared: 09/27/07 Analyzed: 10/01/07						
Phenols, total	ND	0.100	mg/l		ND				20	
Matrix Spike (1I72741-MS1)		Source: 17I0760-01		Prepared: 09/27/07 Analyzed: 10/01/07						
Phenols, total	0.113	0.100	mg/l	0.100300	ND	113	60-140			

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Work Order: 17I0688

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17I2001 - 1I71939										
Calibration Blank (17I2001-CCB1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	-0.00220		mg/l	0.00000						
Calibration Blank (17I2001-CCB2)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	0.0487		mg/l	0.00000						
Calibration Blank (17I2001-CCB3)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	-0.00580		mg/l	0.00000						
Calibration Blank (17I2001-CCB4)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	0.00150		mg/l	0.00000						
Calibration Blank (17I2001-CCB5)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	-0.00620		mg/l	0.00000						
Calibration Check (17I2001-CCV1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.4		mg/l	21.0000		102	90-110			
Calibration Check (17I2001-CCV2)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.5		mg/l	21.0000		103	90-110			
Calibration Check (17I2001-CCV3)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.2		mg/l	21.0000		101	90-110			
Calibration Check (17I2001-CCV4)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.3		mg/l	21.0000		101	90-110			
Calibration Check (17I2001-CCV5)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.2		mg/l	21.0000		101	90-110			

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Work Order: 17I0688

Determination of Dissolved Metals - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17I2001 - 1I71939										
High Cal Check (17I2001-HCV2)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.6		mg/l	20.0000		108	90-110			
Initial Cal Blank (17I2001-ICB1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	0.0498		mg/l	0.00000						
Initial Cal Check (17I2001-ICV1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	21.6		mg/l	21.0000		103	90-110			
Secondary Cal Check (17I2001-SCV1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	2.56		mg/l	2.50000		102	90-110			
Batch 1I71911 - Dissolved Metal Prep										
Blank (1I71911-BLK1)				Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	ND	0.100	mg/l							
Matrix Spike (1I71911-MS1)		Source: 17I0667-03		Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	0.377	0.100	mg/l	0.200000	0.164	106	79-135			
Matrix Spike Dup (1I71911-MSD1)		Source: 17I0667-03		Prepared: 09/19/07		Analyzed: 09/20/07				
Iron, dissolved	0.371	0.100	mg/l	0.200000	0.164	104	79-135	1.39	11	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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Fox Engineering Associates, Inc.
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Ames, IA 50010

Work Order: 17I0688

Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
EPA 410.4 in Water		
	Chemical Oxygen Demand	IA-NT,KS-NT,NELAC
EPA 6010B in Water		
	Iron, dissolved	IA-NT,KS-NT,NELAC
EPA 9020 in Water		
	Total Organic Halogens (TOX)	IA-NT,NELAC
EPA 9065 in Water		
	Phenols, total	IA-NT,KS-NT,NELAC
SM 4500-NH3 F in Water		
	Nitrogen, Ammonia	IA-NT
USGS I-1184-85 in Water		
	Chloride	IA-NT

Code	Description	Number	Expires
IA-NT	Iowa Department of Natural Resources	095	02/01/2008
KS-NT	Kansas Department of Health and Environment	E-10287	07/31/2008
NELAC	New Jersey Department of Environmental Protection	IA001	06/30/2008

End of Report

Sue Thompson

Keystone Laboratories, Inc.

Sue Thompson
Project Manager I

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CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
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Printed: 8/20/2007 1:01:24PM

SITE INFORMATION

Sampler: Mitch Brown (515) 290-8004
Project: City of Ames San Lndfll (shared) - Fall 6001-06A

REPORT TO

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

INVOICE TO

Mr. John Joiner
City of Ames - Finance
Finance Dept., P.O. Box 811
Ames, IA 50010

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 17E0688
Temperature
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received On Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
01-001	MW-4	Water	G	9/14	2:20	5	Indfll-para-e	Indfll-para-f	01
02-001	MW-6	Water	G	9/14	2:05	5	Indfll-para-e	Indfll-para-f	02
03-001	MW-5	Water	G	9/14	2:20	5	Indfll-para-e	Indfll-para-f	03
04-001	MW-7	Water	G	9/14	1:55	5	Indfll-para-e	Indfll-para-f	04
05-001	MW-8	Water	G	9/14	1:45	5	Indfll-para-e	Indfll-para-f	05

Relinquished By: [signature] Date/Time: 9/17/07 7:50

Relinquished By: Date/Time:

Received By: Date/Time:

Received for Lab By: [signature] Date/Time: 9/17/07 11:50 AM

Remarks:

9/14/07 JMD	Length of Well	Depth to Water	Gal Bailed / Vol Bailed	Pope	Depth After Bailing	Depth Before Sampling	Standing Water Gallons	Capped	pH	Cond. (- could not calibrate correctly 1540 → 1413 mS/cm)	°C
MW 17 1220	32.42	14.12	3.1 / 3.3 / 28 / 8.3 Gal / 3 Vol	30	30.64	18.35	No	✓	7.0	1445	18.3
	9/14 @ 105										
MW 9 1240	23.08	15.39	13 / 3.3 / 12 / 3.9 Gal / 3 Vol	20	15.52	15.35	No	✓	6.7	1522	16.1
	9/14 @ 120										
MW 8 115	70.79	34.13	12 / 18.2 / 10 Gal / 1.6 Vol	50	47.42	34.42	No	✓	7.5	522	14.8
	9/14 @ 145										
MW 7 140	53.06	21.53	5.1 / 16 / 6 Gal / 1.1 Vol	55	≈53	23.15	No	✓	7.4	532	14.9
	9/14 @ 155										
MW 6 155	21.48	7.40	2.2 / 7.3 / 21 / 7.3 Gal / 3 Vol	15	10.50	7.54	No	✓	6.9	1065	19.9
	9/14 @ 205										
MW 5 (29) 210	53.79	10.70	7.3 / 22 / 10 Gal / 1.4 Vol	50	46.74	10.71	No	✓	7.7	522	18.6
	9/14 @ 220										
MW 4 (28) 230	22.35	6.18	2.7 / 8.2 / 24 / 8.2 Gal / 3 Vol	10	10.73	6.40	No	✓	7.2	1016	19.8
	9/14 @ 230										

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
03/17/2006	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	<1.0	NT	<1.0	<1.0	NT	NT	NT	<1.0
	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	1,1,1-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
03/17/2006	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	DRY	<1.0	NT	<1.0	<1.0	NT	NT	NT	<1.0
	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

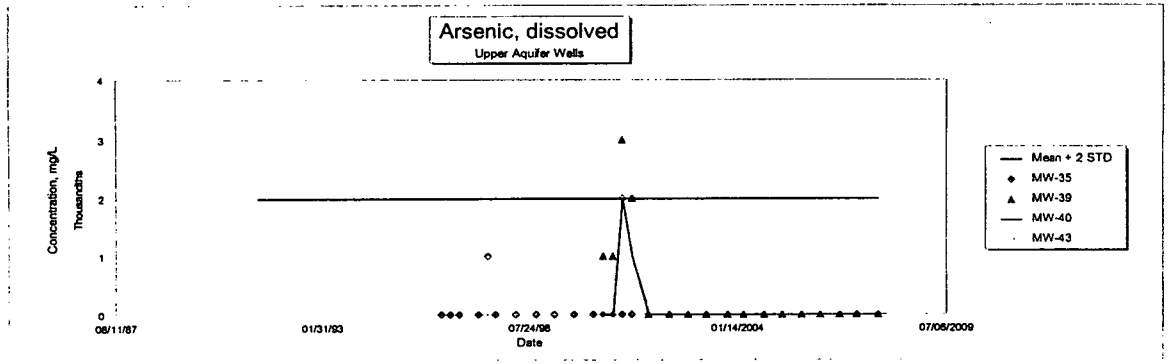
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
	ug/L															
04/23/91	1,2-Dichloroethane *	5	0.4			<1	<1	<1	<1	<1	—	<1				
10/15/91	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
03/17/2006	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	DRY	<0.4	NT	<0.4	<0.4	NT	NT	NT	<0.4
	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
03/17/2006	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	DRY	<1.0	NT	<1.0	<1.0	NT	NT	NT	<1.0
	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

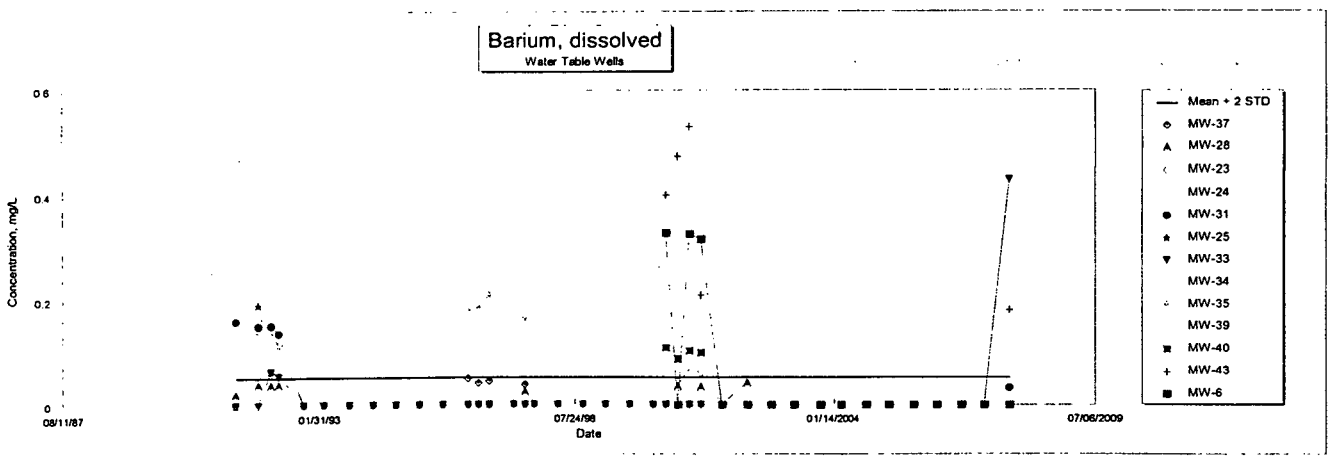
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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	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
03/17/2006	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/01/2007	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Arsenic, dissolved	0.01	0.002	NT	NT	NT	NT	DRY	<0.001	NT	<0.001	<0.001	NT	NT	NT	<0.001
	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
03/17/2006	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Barium, dissolved	2.000	0.054	NT	NT	NT	NT	DRY	0.033	NT	0.430	0.090	NT	NT	NT	0.182
	Mean			0.0445	0.325333	0.035	0.1395	0.1485	0.1276	0.105667	0.183333	0.1012	0.1865	0.06075	0.1	0.3594
	Standard Deviation (STD)			0.0045	0.005249	0.006764	0.014586	0.0395	0.047919	0.06184	0.174467	0.051944	0.016132	0.014601	0.007649	0.139725
	Mean + 2 STD			0.0535	0.335832	0.048528	0.168672	0.2275	0.223438	0.229347	0.532268	0.205088	0.218765	0.089952	0.115297	0.63885



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
03/17/2006	Benzene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Benzene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Benzene *	5	1	NT	NT	NT	NT	DRY	<1.0	NT	<1.0	<1.0	NT	NT	NT	<1.0
	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	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
03/17/2006	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Cadmium, dissolved	0.005		NT	NT	NT	NT	DRY	<0.0010	NT	<0.0010	<0.0010	NT	NT	NT	<0.0010
	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

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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
03/17/2006	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	DRY	<0.3	NT	<0.3	<0.3	NT	NT	NT	<0.3
	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

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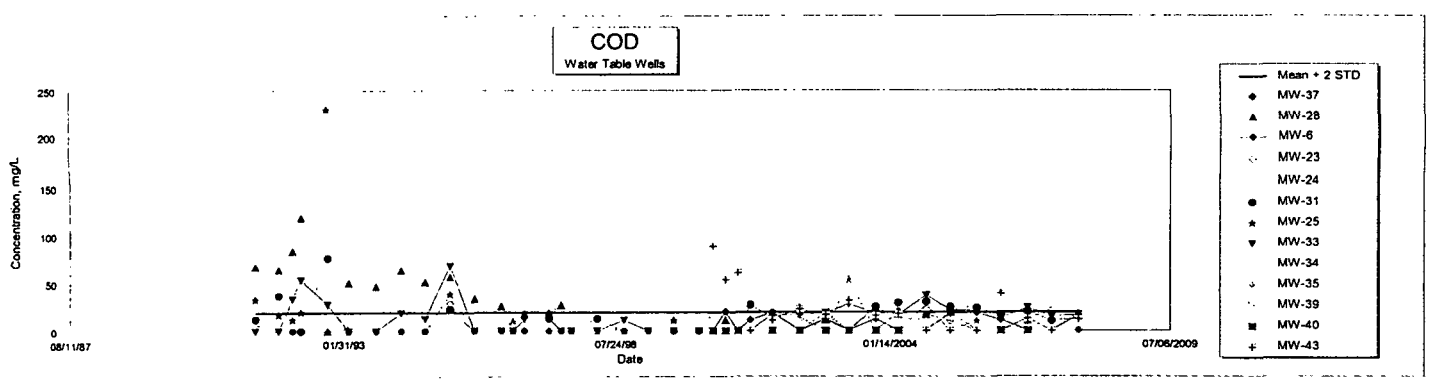
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
04/23/91	Chemical Oxygen Demand	–	20			67.8	5.2	7.5	12.8	33.4	—	120.1				
10/15/91	Chemical 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
03/17/2006	Chemical Oxygen Demand	–	20	<10	11	14	<10	DRY	17	<10	13	27	<10	<10	<10	39
09/22/2006	Chemical Oxygen Demand	–	20	<10	<10	10	13	DRY	20	12	24	53	10	<10	<10	13
03/14/2007	Chemical Oxygen Demand	–	20	<10	<10	<10	21	<10	10	<10	15	32	11	<10	<10	<10
09/22/2007	Chemical Oxygen Demand	–	20	<10	16	18	14	DRY	12	12	17	50	12	<10	12	12
	Mean			20	15.33333	35.8	15.24444	13.5	23.36842	37.50909	23.56364	38.30476	17.66667	17.33333	15.5	32.08333
	Standard Deviation (STD)			0	3.59011	26.64292	6.629079	5.531727	14.52783	61.54462	13.88454	28.68727	13.81625	4.921608	3.5	23.42171
	Mean + 2 STD			20	22.51355	89.08585	28.5026	24.56345	52.42409	160.5983	51.33272	95.6793	45.29918	27.17655	22.5	78.92675



AMES-STORY ENVIRONMENTAL LANDFILL
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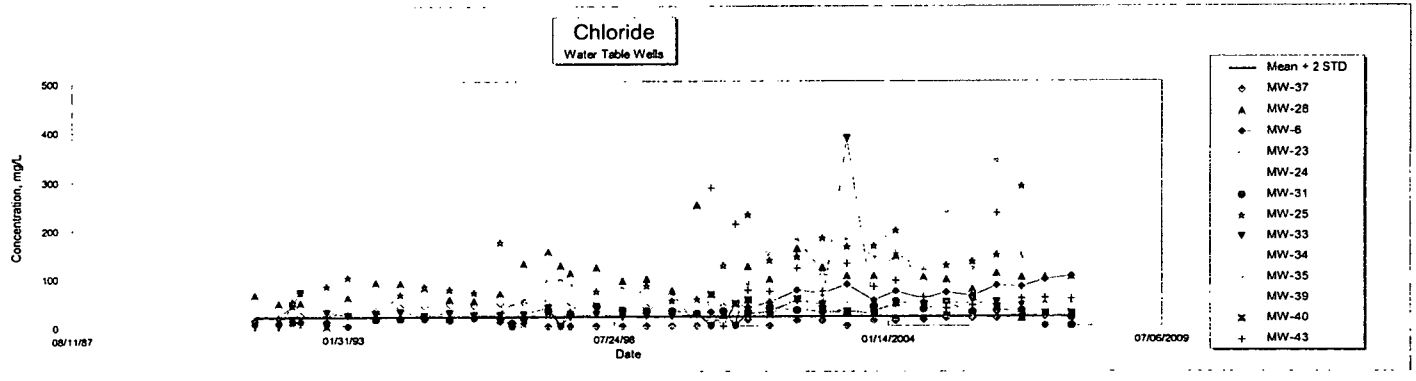
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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
04/23/91	Chloride	250	19.57081			65	23.5	2.5	9	13.5	—	6				
10/15/91	Chloride	250	19.57081			47.6	19.33	—	6.6	17.4	—	6.6				
01/23/92	Chloride	250	19.57081			50.9	21.5	—	8.9	43.5	44.6	10				
03/23/92	Chloride	250	19.57081			48.1	23.2	8.5	8.5	70.8	70.8	9				
09/30/92	Chloride	250	19.57081			—	23	5	8	83	28	3				
03/05/93	Chloride	250	19.57081			59.2	23.5	—	<10	101	22.5	<10				
09/21/93	Chloride	250	19.57081			90	31.8	13.7	13.7	20	26	<10				
03/23/94	Chloride	250	19.57081			88.6	38.7	10.4	14.1	65.1	29.2	<10				
09/16/94	Chloride	250	19.57081			79	41	NT	16	82	21	<10				
03/16/95	Chloride	250	19.57081			55	45	NT	12	76	27	<10				
09/13/95	Chloride	250	19.57081			52	42	NT	15	69	22	15				
03/28/96	Chloride	250	19.57081	9		67	47	NT	13	173	22	8.9	30			
06/20/96	Chloride	250	19.57081	6.7		NT	NT	NT	NT	NT	NT	NT	44			
09/13/96	Chloride	250	19.57081	5.1		129	48.6	Dry	14.9	5.3	23.6	7.1	54.2			
03/19/97	Chloride	250	19.57081	<10		153	53	<10	32	23	38	17	96			
06/18/97	Chloride	250	19.57081	<10		125	NT	NT	NT	NT	NT	NT	95			
08/30/97	Chloride	250	19.57081	<10		109	49	DRY	25	30	19	<10	86			
03/10/98	Chloride	250	19.57081	<10		120	49	DRY	41	72	24	10	37			
09/21/98	Chloride	250	19.57081	<10		93	38	DRY	33	31	19	10	81			
03/18/99	Chloride	250	19.57081	<10		97	38	DRY	31	83	21	15	29			
09/21/99	Chloride	250	19.57081	<10		73	31	DRY	31	52	20	26	67			
03/21/2000	Chloride	250	19.57081	NT		249	28	DRY	25	55	23	45	NT			
06/28/2000	Chloride	250	19.57081	NT	28	NT	NT	DRY	NT	NT	NT	NT	NT	42	65	285
09/28/2000	Chloride	250	19.57081	<10	59	78	39	DRY	31	124	24	13	DRY	36	22	226
12/27/2000	Chloride	250	19.57081	NT	46	NT	NT	Dry	NT	NT	NT	NT	NT	49	46	210
03/28/2001	Chloride	250	19.57081	12	38	122	26	12	27	229	24	105	87	40	54	74
09/02/2001	Chloride	250	19.57081	<10	48	96	26	NT	38	135	29	56	150	45	23	71
03/19/2002	Chloride	250	19.57081	10	73	159	37	Dry	32	142	53	52	179	49	56	119
09/19/2002	Chloride	250	19.57081	10	67	120	26	Dry	31	181	44	25	111	43	35	72
03/14/2003	Chloride	250	19.57081	<10	85	102	30	Dry	25	163	383	34	181	53	30	129
09/29/2003	Chloride	250	19.57081	10	52	103	22	Dry	41	165	30	23	141	45	25	81
03/08/2004	Chloride	250	19.57081	10	71	143	14	25	50	197	45	43	149	42	47	94
09/27/2004	Chloride	250	19.57081	12	56	100	15	25	35	49	51	21	114	30	43	60
03/17/2005	Chloride	250	19.57081	15	69	96	16	25	46	125	48	30	235	29	27	37
09/22/2005	Chloride	250	19.57081	16	62	75	19	DRY	29	133	45	21	119	27	53	43
03/17/2006	Chloride	250	19.57081	16	83	108	18	DRY	32	146	49	28	340	34	39	233
09/22/2006	Chloride	250	19.57081	13	81	100	24	DRY	31	288	44	<10	142	24	16	57
03/14/2007	Chloride	250	19.57081	20	96	100	23	30	<10	52	58	<10	51	22	26	58
09/22/2007	Chloride	250	19.57081	15	102	100	13	DRY	<10	26	53	11	52	14	26	56
	Mean			11.98667	66.0625	99.24706	30.34657	15.71	25.17813	94.87429	44.8697	24.0963	111.2583	36.70588	37.23529	104.9375
	Standard Deviation (STD)			3.792074	20.02957	38.91979	11.34841	9.22122	11.87765	66.85025	61.29439	21.29348	70.80302	10.60391	13.95594	71.54148
	Mean + 2 STD			19.57081	106.1216	177.0866	53.04339	34.15244	48.93343	228.5748	167.4585	66.68325	252.8644	57.9137	65.14717	248.0205

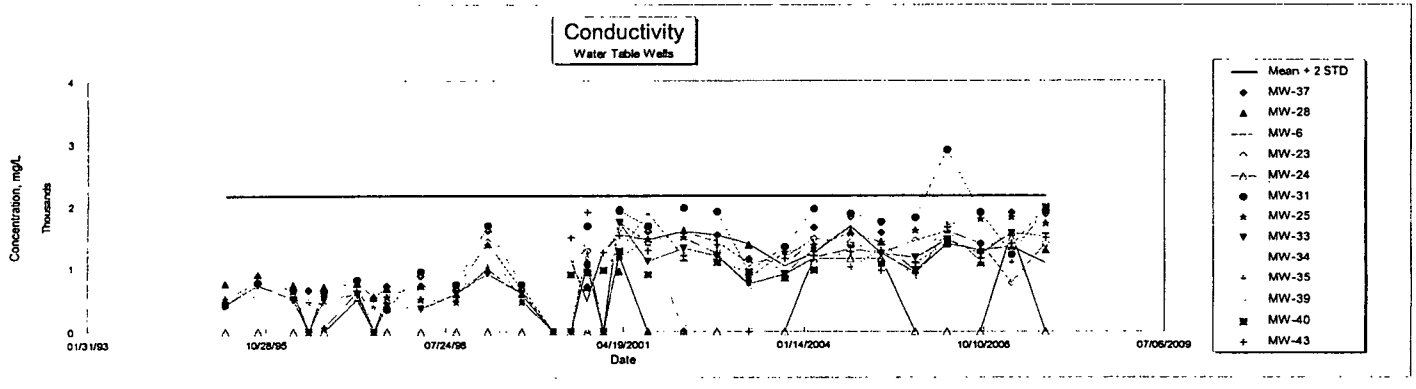


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

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	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
03/17/2006	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	DRY	<0.005	NT	<0.005	<0.005	NT	NT	NT	<0.005
	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	–	2171.758			740	390	DRY	420	510	420	550				
09/13/95	Conductivity, us/cm	–	2171.758			890	690	DRY	760	770	720	660				
03/28/96	Conductivity, us/cm	–	2171.758	500		720	590	DRY	650	640	500	460	520			
06/20/96	Conductivity, us/cm	–	2171.758	640		NT	NT	NT	NT	NT	NT	NT	460			
09/13/96	Conductivity, us/cm	–	2171.758	560		690	560	Dry	630	60	500	570	440			
03/19/97	Conductivity, us/cm	–	2171.758	800		750	640	500	800	620	590	580	600			
06/18/97	Conductivity, us/cm	–	2171.758	530		540	NT	NT	NT	NT	NT	NT	380			
08/30/97	Conductivity, us/cm	–	2171.758	700		670	560	DRY	350	540	410	490	490			
03/10/98	Conductivity, us/cm	–	2171.758	860		710	710	DRY	940	510	360	470	390			
09/21/98	Conductivity, us/cm	–	2171.758	650		590	640	DRY	720	460	590	540	490			
03/18/99	Conductivity, us/cm	–	2171.758	1600		976	1414	DRY	1683	1370	902	1438	1005			
09/21/99	Conductivity, us/cm	–	2171.758	650		590	640	DRY	720	460	590	540	490			
03/21/2000	Conductivity, us/cm	–	2171.758	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Conductivity, us/cm	–	2171.758	NT	1138	NT	NT	DRY	NT	NT	NT	NT	NT	1074	884	1487
09/28/2000	Conductivity, us/cm	–	2171.758	688	466	686	1268	DRY	1673	1083	1009	1209	DRY	1324	923	1895
12/27/2000	Conductivity, us/cm	–	2171.758	NT	1252	NT	NT	Dry	NT	NT	NT	NT	NT	1224	960	1246
03/28/2001	Conductivity, us/cm	–	2171.758	1949	1532	938	1730	1190	1919	1161	1730	3000	1246	1622	1266	1520
09/02/2001	Conductivity, us/cm	–	2171.758	1583	1446	NT	1404	NT	1670	1455	1098	1455	1889	1354	885	1277
03/19/2002	Conductivity, us/cm	–	2171.758	NT	1590	1607	1570	Dry	1966	1490	1313	NT	1167	1470	1146	1190
09/19/2002	Conductivity, us/cm	–	2171.758	1530	1521	1395	1420	Dry	1903	1225	1182	1287	1209	1235	1081	1368
03/14/2003	Conductivity, us/cm	–	2171.758	1129	1379	1358	1060	Dry	928	833	732	1020	709	1201	926	
09/29/2003	Conductivity, us/cm	–	2171.758	1185	1018	890	1159	Dry	1328	1241	890	1055	886	1035	819	1142
03/08/2004	Conductivity, us/cm	–	2171.758	1647	1225	1294	1460	1138	1947	1360	1154	1237	1124	1446	955	1192
09/27/2004	Conductivity, us/cm	–	2171.758	1819	1673	1580	1398	1138	1870	1546	1300	1218	995	1588	1310	1254
03/17/2005	Conductivity, us/cm	–	2171.758	1564	1225	1413	1229	1138	1739	1407	1228	1432	1275	1364	1044	947
09/22/2005	Conductivity, us/cm	–	2171.758	1029	919	948	1431	DRY	1805	1598	1160	929	852	949	1049	1078
03/17/2006	Conductivity, us/cm	–	2171.758	1607	1377	1378	1585	DRY	2895	1685	1451	1775	1589	1422	1413	1653
09/22/2006	Conductivity, us/cm	–	2171.758	1374	1281	1275	1385	DRY	1894	1785	1225	1495	1097	1274	1067	1151
03/14/2007	Conductivity, us/cm	–	2171.758	1889	1336	1334	742	1561	1206	1815	1560	1118	1084	1550	1336	1388
09/22/2007	Conductivity, us/cm	–	2171.758	1866	1065	1275	1387	DRY	1923	1713	1497	1374	1277	1346	1980	1479
	Mean			1181.208	1261.353	1009.48	1082.48	1110.833	1373.56	1093.48	964.44	1079.25	902.6667	1322.235	1120.235	1329.188
	Standard Deviation (STD)			495.2749	281.8959	336.1432	405.5037	312.0494	632.2758	499.1785	395.8953	563.0134	401.9838	184.7904	273.9832	229.56
	Mean + 2 STD			2171.758	1825.145	1681.766	1893.487	1734.932	2638.112	2091.837	1756.231	2205.277	1706.634	1691.816	1668.202	1788.307

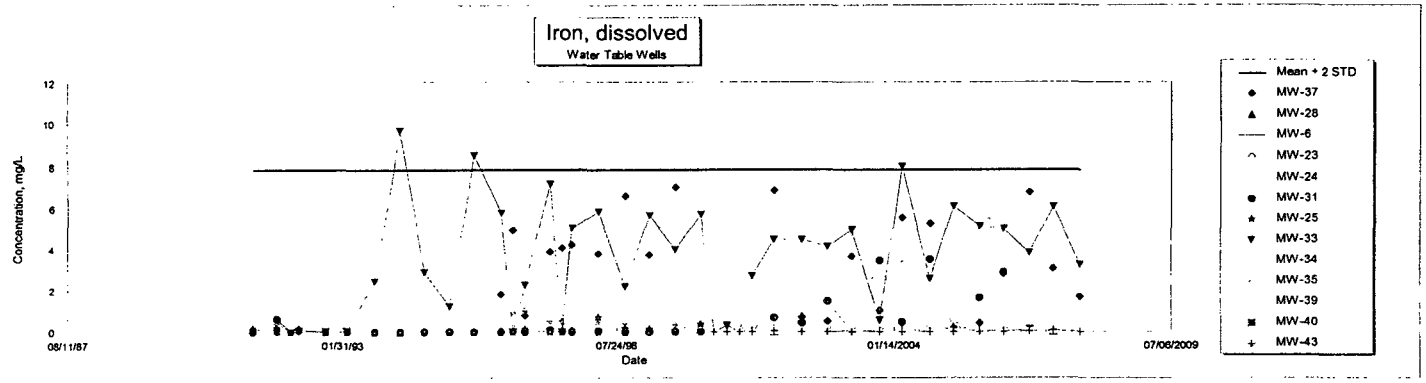


AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	DRY	<0.005	NT	<0.005	<0.005	NT	NT	NT	<0.005
	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

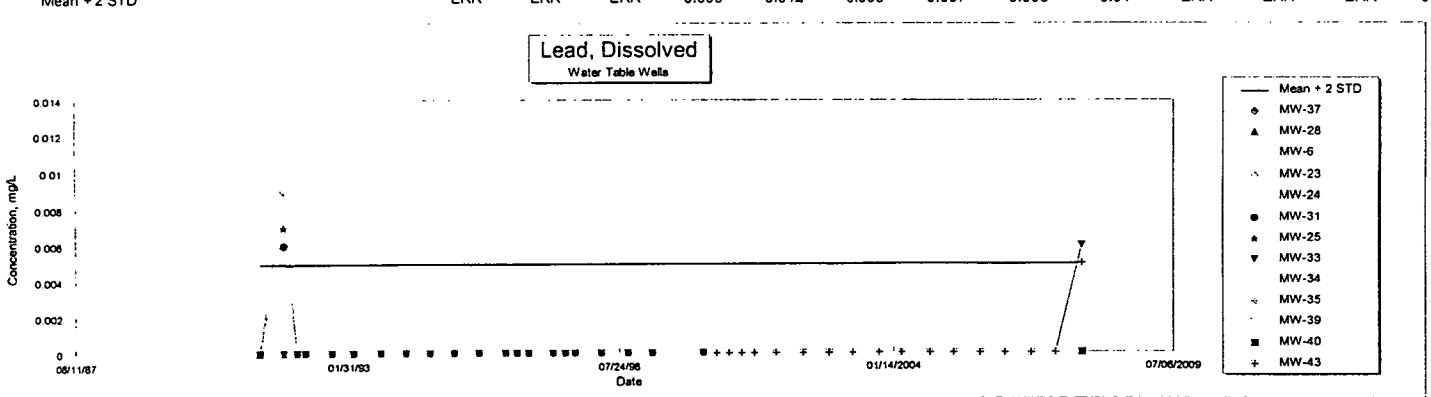
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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	Iron, dissolved	–	7.859922			0.159	<0.03	<0.03	<0.03	0.177	—	0.133				
10/15/91	Iron, dissolved	–	7.859922			0.035	0.452	—	0.636	0.205	—	0.767				
01/23/92	Iron, dissolved	–	7.859922			<0.03	<0.03	—	<0.03	<0.03	<0.03	<0.03				
03/23/92	Iron, dissolved	–	7.859922			0.164	<0.03	0.076	0.068	0.121	0.052	<0.03				
09/30/92	Iron, dissolved	–	7.859922			—	<0.03	<0.03	<0.03	<0.03	0.033	0.043				
03/05/93	Iron, dissolved	–	7.859922			<0.03	<0.03	—	<0.03	<0.03	0.035	<0.03				
09/21/93	Iron, dissolved	–	7.859922			<0.03	<0.03	<0.03	<0.03	<0.03	2.46	0.05				
03/23/94	Iron, dissolved	–	7.859922			<0.03	<.03	0.058	<0.03	<0.03	9.65	0.084				
09/16/94	Iron, dissolved	–	7.859922			<0.03	<.03	NT	<0.03	0.05	2.9	0.55				
03/16/95	Iron, dissolved	–	7.859922			<0.03	<.03	NT	<0.03	0.038	1.24	0.47				
09/13/95	Iron, dissolved	–	7.859922			<0.03	<.03	NT	<0.03	<0.03	8.5	0.317				
03/28/96	Iron, dissolved	–	7.859922	1.8		<0.03	<0.03	NT	<0.03	<0.03	5.77	0.386	0.067			
06/20/96	Iron, dissolved	–	7.859922	4.94		NT	NT	NT	NT	NT	NT	NT	0.927			
09/13/96	Iron, dissolved	–	7.859922	0.793		<0.03	<0.03	Dry	<0.03	0.134	2.27	1.3	1.02			
03/19/97	Iron, dissolved	–	7.859922	3.87		0.032	<0.03	<0.03	0.072	<0.03	7.18	<0.03	0.484			
06/18/97	Iron, dissolved	–	7.859922	4.07		<0.03	NT	NT	NT	NT	NT	NT	0.523			
08/30/97	Iron, dissolved	–	7.859922	4.22		<0.03	<0.03	DRY	<0.03	0.076	5.02	1.93	5.05			
03/10/98	Iron, dissolved	–	7.859922	3.78		<0.03	<0.03	DRY	0.033	0.717	5.83	1.52	0.5			
09/21/98	Iron, dissolved	–	7.859922	6.59		<0.03	<0.03	DRY	<0.03	0.166	2.2	3.09	0.415			
03/18/99	Iron, dissolved	–	7.859922	3.73		0.044	<0.03	DRY	<0.03	0.131	5.64	4.78	0.162			
09/21/99	Iron, dissolved	–	7.859922	7.01		<0.03	<0.03	DRY	<0.03	0.076	3.99	5.53	0.337			
03/21/2000	Iron, dissolved	–	7.859922	NT		<0.03	<0.03	DRY	<0.03	0.371	5.69	4.15	NT			
06/28/2000	Iron, dissolved	–	7.859922	NT	<0.03	NT	NT	DRY	NT	NT	NT	NT	NT	0.033	<0.03	<0.03
09/28/2000	Iron, dissolved	–	7.859922	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	–	7.859922	NT	<0.03	NT	NT	Dry	NT	NT	NT	NT	NT	0.109	<0.03	<0.03
03/28/2001	Iron, dissolved	–	7.859922	<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	–	7.859922	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	–	7.859922	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	–	7.859922	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	–	7.859922	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	–	7.859922	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	–	7.859922	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	–	7.859922	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	–	7.859922	<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	–	7.859922	0.416	<0.030	<0.030	<0.030	DRY	1.63	0.068	5.11	0.666	0.042	0.033	<0.030	<0.030
03/17/2006	Iron, dissolved	–	7.859922	2.8	<0.030	0.036	<0.030	DRY	2.89	0.03	4.99	<0.030	<0.030	0.042	<0.030	<0.030
09/22/2006	Iron, dissolved	–	7.859922	6.76	<0.030	<0.030	<0.030	DRY	0.041	0.048	3.83	0.074	<0.030	0.135	0.132	0.03
03/14/2007	Iron, dissolved	–	7.859922	3.06	0.044	<0.030	<0.030	<0.030	<0.030	0.066	6.06	<0.030	<0.030	0.45	<0.030	0.079
09/22/2007	Iron, dissolved	–	7.859922	1.68	<0.100	<0.100	<0.100	DRY	<0.100	<0.100	3.24	1.85	<0.030	0.151	<0.100	<0.100
	Mean			3.438043	0.0395	0.091375	0.2425	0.067	1.103286	0.142211	4.058406	1.972536	0.666	0.413067	0.132	0.051
	Standard Deviation (STD)			2.210939	0.0045	0.07217	0.2095	0.009	1.239779	0.156769	2.485144	2.152875	1.207831	0.860545	0	0.020607
	Mean + 2 STD			7.859922	0.0485	0.235715	0.6615	0.085	3.582843	0.455748	9.028694	6.278286	3.081661	2.134156	0.132	0.092215



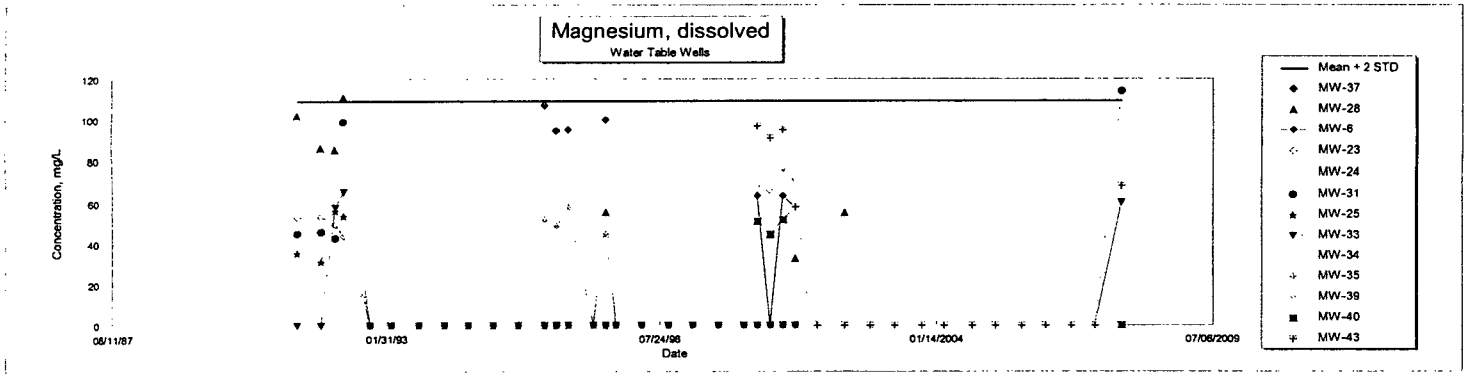
AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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	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
03/17/2006	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	DRY	<0.005	NT	0.006	<0.005	NT	NT	NT	0.005
	Mean			ERR	ERR	ERR	0.009	0.012	0.006	0.007	0.006	0.01	ERR	ERR	ERR	0.005
	Standard Deviation (STD)			ERR	ERR	ERR	0	0	0	0	0	0	ERR	ERR	ERR	0
	Mean + 2 STD			ERR	ERR	ERR	0.009	0.012	0.006	0.007	0.006	0.01	ERR	ERR	ERR	0.005



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

DATE	PARAMETER mg/L	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	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
03/17/2006	Magnesium, dissolved	–	109.2752	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Magnesium, dissolved	–	109.2752	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Magnesium, dissolved	–	109.2752	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Magnesium, dissolved	–	109.2752	NT	NT	NT	NT	DRY	114	NT	60.5	67.2	NT	NT	NT	68.9
	Mean			99	61.83333	71.5875	50.125	75.85	69.46	44.325	61.4	52.42	50.875	70.05	51.575	81.92
	Standard Deviation (STD)			5.137606	2.639865	26.47619	3.761233	0.75	30.59285	10.96207	3.207283	17.84482	4.815275	4.143972	4.781932	15.39564
	Mean + 2 STD			109.2752	67.11306	124.5399	57.64747	77.35	130.6457	66.24913	67.81457	88.10964	60.50555	78.33794	61.13886	112.7113



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
03/17/2006	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	DRY	<0.00050	NT	<0.00050	<0.00050	NT	NT	NT	<0.00050
	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

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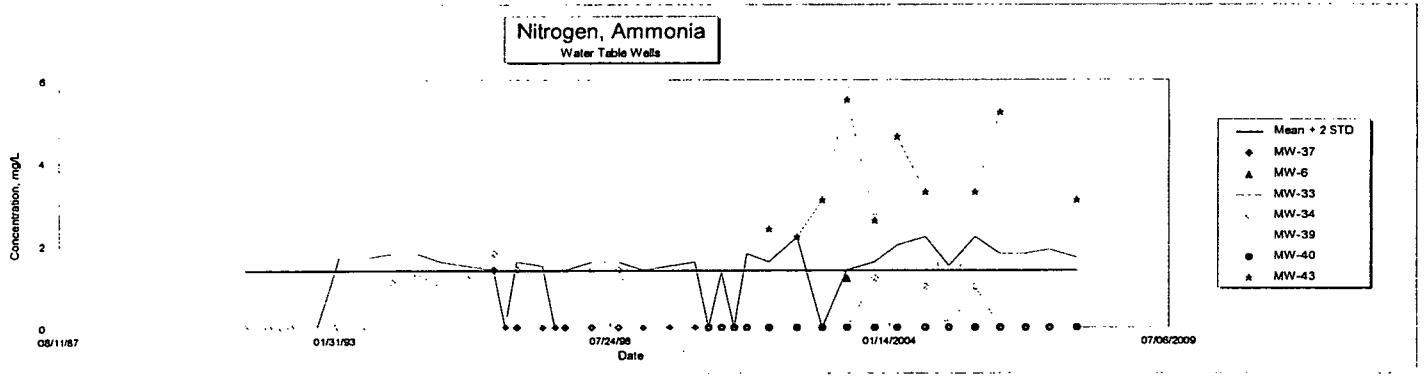
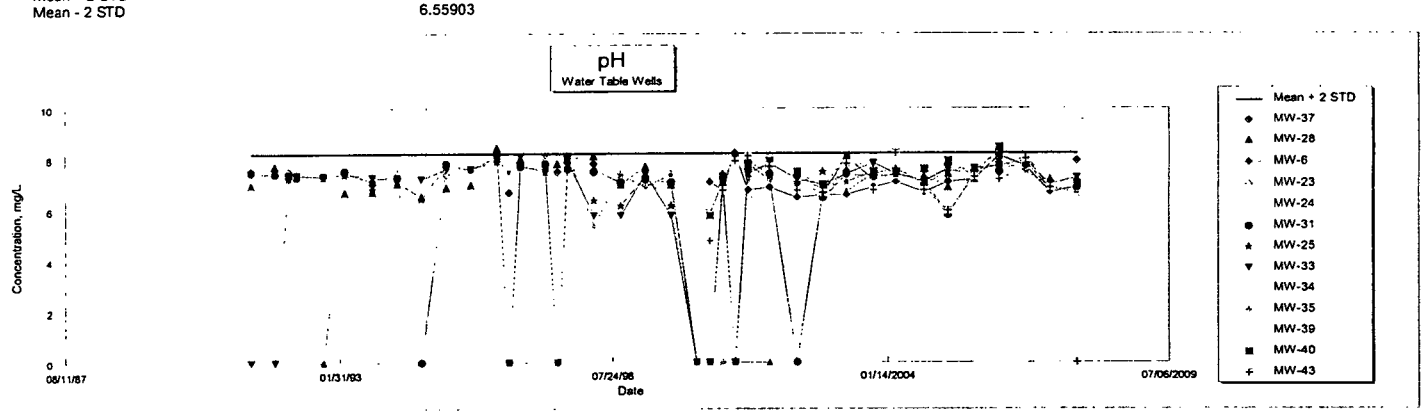
85-SDP-13-91P
MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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	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
03/17/2006	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	DRY	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	5.2
09/22/2006	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	DRY	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0
03/14/2007	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0
09/22/2007	Nitrogen, Ammonia	--	1.4	<1.0	<1.0	<1.0	<1.0	DRY	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	3.1
	Mean			1.4	1.2	ERR	ERR	ERR	ERR	ERR	1.681034	1.266667	ERR	ERR	ERR	3.53
	Standard Deviation (STD)			0	0	ERR	ERR	ERR	ERR	ERR	0.23723	0.224846	ERR	ERR	ERR	1.104581
	Mean + 2 STD			1.4	1.2	ERR	ERR	ERR	ERR	ERR	2.155495	1.716358	ERR	ERR	ERR	5.739163



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

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
						WATER TABLE WELLS										
04/23/91	pH	–	8.20897			6.99	7.45	7.25	7.48	7.55	—	7.01				
10/15/91	pH	–	8.20897			7.71	7.42	—	7.42	7.60	—	7.03				
01/23/92	pH	–	8.20897			7.41	7.52	—	7.41	7.27	7.26	7.31				
03/23/92	pH	–	8.20897			7.32	7.33	7.30	7.30	7.39	7.37	7.32				
09/30/92	pH	–	8.20897			—	7.28	—	7.37	7.31	7.3	7.13				
03/05/93	pH	–	8.20897			6.72	7.43	—	7.54	7.41	7.42	7.34				
09/21/93	pH	–	8.20897			6.73	7.19	7.09	7.08	6.85	7.29	7.12				
03/23/94	pH	–	8.20897			7.05	7.4	7.45	7.29	7.16	7.18	7.4				
09/16/94	pH	–	8.20897			6.57				6.46	7.22	6.99				
03/16/95	pH	–	8.20897			6.9	7.4	DRY	7.8	7.7	7.6	7.7				
09/13/95	pH	–	8.20897			7	7.6	DRY	7.6	7.6	7.6	7.6				
03/28/96	pH	–	8.20897	7.9		8.4	8.1	DRY	8.1	7.9	7.9	8	8			
06/20/96	pH	–	8.20897	6.7		NT	NT	NT	NT	NT	NT	NT	7.5			
09/13/96	pH	–	8.20897	7.8		8	7.7	Dry	7.7	7.7	7.7	8	8.1			
03/19/97	pH	–	8.20897	7.7		7.7	7.6	7.7	7.8	7.5	7.5	7.7	8.1			
06/18/97	pH	–	8.20897	7.5		7.8	NT	NT	NT	NT	NT	NT	8.2			
08/30/97	pH	–	8.20897	8.1		8	7.6	DRY	7.6	7.8	7.9	8	8			
03/10/98	pH	–	8.20897	7.8		8.1	7.6	DRY	7.5	6.4	5.8	5.8	5.4			
09/21/98	pH	–	8.20897	7		7	7.1	DRY	7.1	6.2	5.8	7.4	7.4			
03/18/99	pH	–	8.20897	7.3		7.7	7	DRY	7.2	7.3	7.4	7.7	6.9			
09/21/99	pH	–	8.20897	7		7	7.1	DRY	7.1	6.2	5.8	7.4	7.4			
03/21/2000	pH	–	8.20897	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	pH	–	8.20897	NT	7.1	NT	NT	DRY	NT	NT	NT	NT	NT	5.9	5.8	4.8
09/28/2000	pH	–	8.20897	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	–	8.20897	NT	8.2	NT	NT	Dry	NT	NT	NT	NT	NT	8	8.1	7.9
03/28/2001	pH	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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	–	8.20897	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
03/17/2006	pH	–	8.20897	8	8.1	7.8	7.2	DRY	7.5	7.7	7.7	8	7.9	8.2	8.4	7.2
09/22/2006	pH	–	8.20897	7.7	7.7	8	7.6	DRY	7.9	7.8	7.9	7.7	7.5	8.1	7.8	8
03/14/2007	pH	–	8.20897	6.9	6.7	7.2	6.7	7	6.8	6.8	7	7.4	6.9	6.8	7	6.9
09/22/2007	pH	–	8.20897	7.9	6.9	7.2	6.8	DRY	6.9	7.06	7.27	7.22	6.66	6.88	7.04	NT
Mean				7.384	7.052941	7.354545	7.307742	7.279	7.330938	7.284118	7.297188	7.357941	7.369167	7.228235	7.478824	7.1125
Standard Deviation (STD)				0.412485	0.486425	0.464667	0.422868	0.243863	0.437653	0.44558	0.540903	0.411909	0.58398	0.570286	0.588816	0.852111
Mean + 2 STD				8.20897	8.025791	8.28388	8.153478	7.766725	8.206243	8.175278	8.378994	8.18176	8.537127	8.368808	8.656456	8.816723
Mean - 2 STD				6.55903												



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
03/17/2006	Phenols	--	0.1	NT	NT	NT	NT	DRY	<0.100	NT	<0.100	NT	NT	NT	NT	NT
09/22/2006	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
03/14/2007	Phenols	--	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	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
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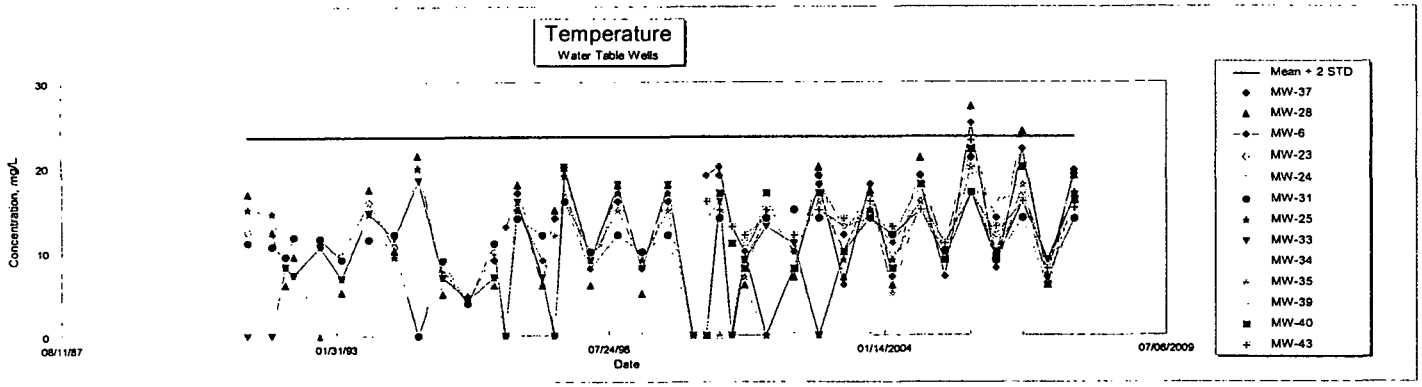
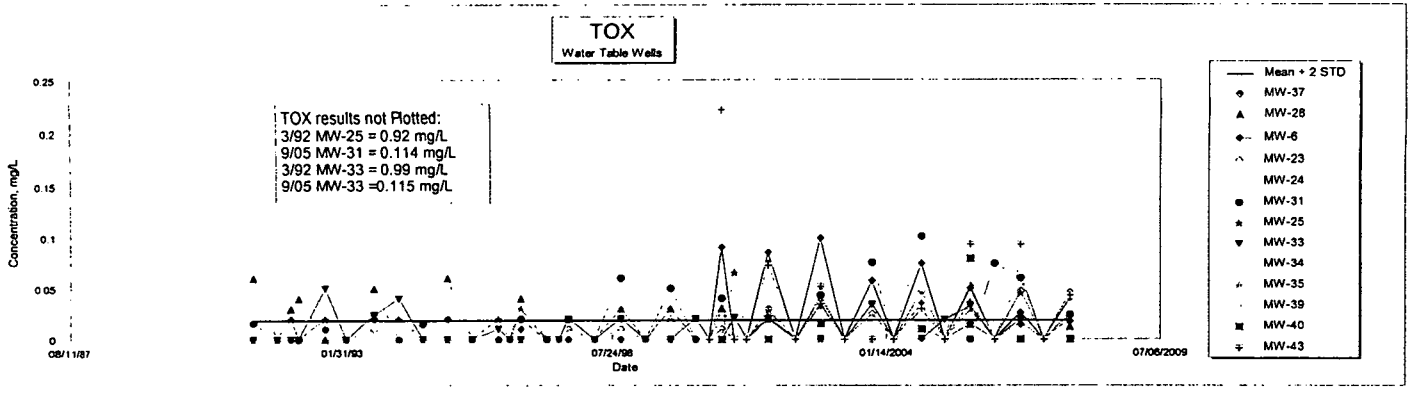
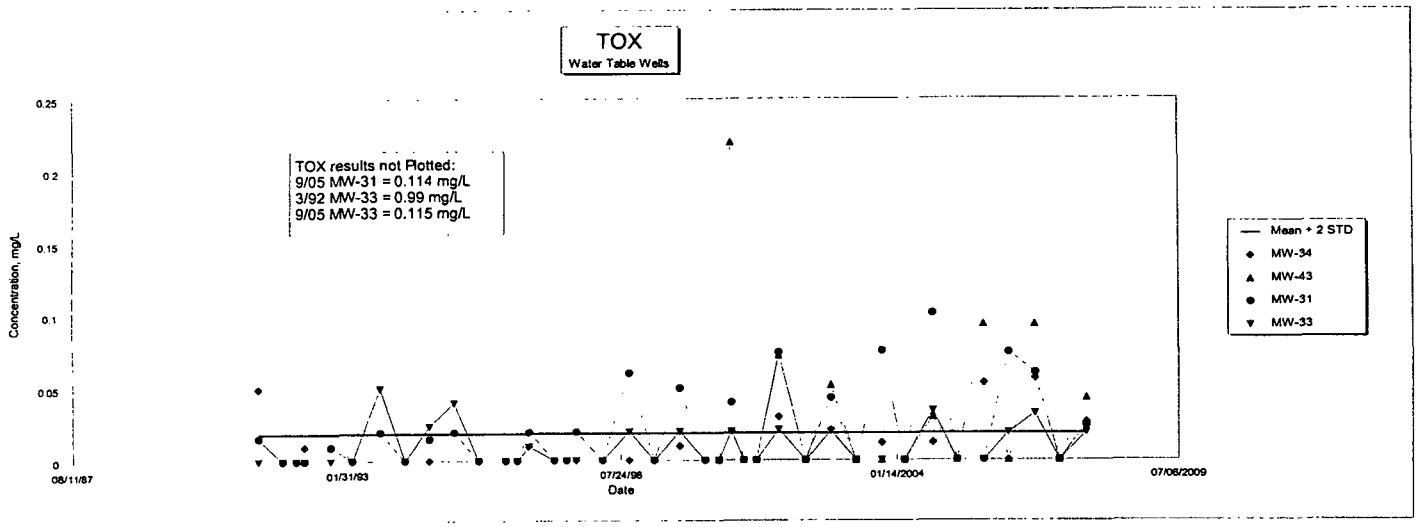
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD WT	WATER TABLE WELLS U.G.W MW-37	D.G.W MW 6	D.G.W MW 28	D.G.W MW 23	D.G.W MW 24	D.G.W MW 31	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.G.W MW 39	D.G.W MW 40	D.G.W MW 43
04/23/91	Temperature, celsius	–	23.40881			16.9	12.4	11.2	11.1	15.1	—	12.4				
10/15/91	Temperature, celsius	–	23.40881			12.4	12.1	—	10.7	14.6	—	16.2				
01/23/92	Temperature, celsius	–	23.40881			6.1	8.1	—	9.5	8.3	8.3	6.2				
03/23/92	Temperature, celsius	–	23.40881			9.5	11.8	9.2	11.8	7.2	7.3	6.5				
09/30/92	Temperature, celsius	–	23.40881			—	10.7	—	11.6	10.7	10.7	10.1				
03/05/93	Temperature, celsius	–	23.40881			5.2	9.7	—	9.1	6.9	6.9	6.1				
09/21/93	Temperature, celsius	–	23.40881			17.5	15.9	13	11.5	14.6	14.7	14.8				
03/23/94	Temperature, celsius	–	23.40881			10.2	10.7	10	12.1	9.4	11.7	12				
09/16/94	Temperature, celsius	–	23.40881			21.3				19.9	18.5	2.11				
03/16/95	Temperature, celsius	–	23.40881			5	8	DRY	9	7	7	6				
09/13/95	Temperature, celsius	–	23.40881			4.72	3.89	DRY	3.8	4.63	4.24	4.66				
03/28/96	Temperature, celsius	–	23.40881	9		6	10	DRY	11	7	7	7	6			
06/20/96	Temperature, celsius	–	23.40881	13		NT	NT	NT	NT	NT	NT	NT	13			
09/13/96	Temperature, celsius	–	23.40881	17		18	15	Dry	14	15	16	16	16			
03/19/97	Temperature, celsius	–	23.40881	9		6	9	9	12	6	7	6	6			
06/18/97	Temperature, celsius	–	23.40881	14		15	NT	NT	NT	NT	NT	NT	12			
08/30/97	Temperature, celsius	–	23.40881	20		20	16	DRY	16	19	20	21	17			
03/10/98	Temperature, celsius	–	23.40881	8		6	8	DRY	10	10	9	9	9			
09/21/98	Temperature, celsius	–	23.40881	16		18	12	DRY	12	17	18	17	15			
03/18/99	Temperature, celsius	–	23.40881	8		5	10	DRY	10	9	8	9	9			
09/21/99	Temperature, celsius	–	23.40881	16		18	12	DRY	12	17	18	17	15			
03/21/2000	Temperature, celsius	–	23.40881	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Temperature, celsius	–	23.40881	NT	19	NT	NT	DRY	NT	NT	NT	NT	NT	14	NT	16
09/28/2000	Temperature, celsius	–	23.40881	19	20	17	14	DRY	14	17	16	17	NT	16	17	15
12/27/2000	Temperature, celsius	–	23.40881	NT	13	NT	NT	Dry	NT	NT	NT	NT	NT	13	11	13
03/28/2001	Temperature, celsius	–	23.40881	8	10	6	10	9	12	9	9	6	7	11	8	12
09/02/2001	Temperature, celsius	–	23.40881	17	NT	NT	15	NT	14	14	13	17	15	15	17	15
03/19/2002	Temperature, celsius	–	23.40881	10	8	7	15	Dry	15	10	11	10	10	10	8	12
09/19/2002	Temperature, celsius	–	23.40881	19	18	20	15	Dry	14	NT	NT	19	16	18	17	15
03/14/2003	Temperature, celsius	–	23.40881	12	6	7	13	Dry	14	9	10	10	10	13	10	14
09/29/2003	Temperature, celsius	–	23.40881	17	18	15	14	Dry	14	15	14	19	17	15	16	16
03/08/2004	Temperature, celsius	–	23.40881	11	7	6	11	10	12	9	12	7	5	12	8	13
09/27/2004	Temperature, celsius	–	23.40881	19	18	21	16	10	15	15	15	18	16	18	18	15
03/17/2005	Temperature, celsius	–	23.40881	10	7	9	11	10	10	9	9	8	9	11	9	11
09/22/2005	Temperature, celsius	–	23.40881	21	25	27	17	DRY	17	17	17	20	20	22	22	23
03/17/2006	Temperature, celsius	–	23.40881	14	8	9	12	DRY	9	10	9	14	8	16	10	13
09/22/2006	Temperature, celsius	–	23.40881	22	22	24	16	DRY	14	16	16	21	18	17	20	16
03/14/2007	Temperature, celsius	–	23.40881	8	7	6	7	9	6	8	9	4	6	9	6	8
09/22/2007	Temperature, celsius	–	23.40881	19.2	19.6	19	14	DRY	13.9	17	16.6	21.1	16.8	15.1	16.1	15.2
	Mean			14.248	14.1	12.54	11.97848	10.04	11.85152	11.91909	11.90129	12.06382	12.15833	14.41765	13.31875	14.24706
	Standard Deviation (STD)			4.580403	6.251	6.593904	3.050369	1.185917	2.706571	4.231308	4.243346	5.704253	4.478831	3.238052	4.886105	3.003942
	Mean + 2 STD			23.40881	26.602	25.72781	18.07922	12.41183	17.26466	20.38171	20.38798	23.47233	21.116	20.89375	23.09096	20.25494



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

DATE	PARAMETER mg/L	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	Total Organic Halogens	–	0.019099			0.06	<0.01	<0.01	0.016	0.033	—	0.05				
10/15/91	Total Organic Halogens	–	0.019099			<0.01	<0.01	—	<0.01	<0.01	—	<0.01				
01/23/92	Total Organic Halogens	–	0.019099			0.03	0.02	—	<0.01	<0.01	<0.01	<0.01				
03/23/92	Total Organic Halogens	–	0.019099			0.04	<0.01	<0.01	<0.01	0.92	0.99	0.01				
09/30/92	Total Organic Halogens	–	0.019099			—	<0.01	0.01	0.01	0.02	<0.01	0.01				
03/05/93	Total Organic Halogens	–	0.019099			NT	NT	NT	NT	NT	NT	NT				
09/21/93	Total Organic Halogens	–	0.019099			0.05	0.01	0.02	0.02	0.02	0.05	0.02				
03/23/94	Total Organic Halogens	–	0.019099			NT	NT	NT	NT	NT	NT	NT				
09/16/94	Total Organic Halogens	–	0.019099			<0.05	<0.01	NT	0.015	0.024	0.024	<0.01				
03/16/95	Total Organic Halogens	–	0.019099			0.06	<0.01	NT	0.02	0.02	0.04	0.02				
09/13/95	Total Organic Halogens	–	0.019099			NT	NT	NT	NT	NT	NT	NT				
03/28/96	Total Organic Halogens	–	0.019099	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/20/96	Total Organic Halogens	–	0.019099	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/13/96	Total Organic Halogens	–	0.019099	0.01		0.04	0.01	Dry	0.02	0.02	0.01	0.01	0.03			
03/19/97	Total Organic Halogens	–	0.019099	NT		NT	NT	NT	NT	NT	NT	NT	NT			
06/18/97	Total Organic Halogens	–	0.019099	NT		NT	NT	NT	NT	NT	NT	NT	NT			
08/30/97	Total Organic Halogens	–	0.019099	<0.01		0.02	0.01	DRY	0.02	<0.01	<0.01	<0.01	<0.01			
03/10/98	Total Organic Halogens	–	0.019099	NT		NT	NT	NT	NT	NT	NT	NT	NT			
09/21/98	Total Organic Halogens	–	0.019099	<0.01		0.03	0.01	DRY	0.06	0.02	0.02	<0.01	0.03			
03/18/99	Total Organic Halogens	–	0.019099	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
09/21/99	Total Organic Halogens	–	0.019099	<0.01		0.03	0.03	DRY	0.05	0.02	0.02	0.01	0.02			
03/21/2000	Total Organic Halogens	–	0.019099	NT		NT	NT	DRY	NT	NT	NT	NT	NT			
06/28/2000	Total Organic Halogens	–	0.019099	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Total Organic Halogens	–	0.019099	<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	–	0.019099	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Total Organic Halogens	–	0.019099	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Total Organic Halogens	–	0.019099	<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	–	0.019099	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Total Organic Halogens	–	0.019099	<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	–	0.019099	NT	NT	NT	NT	Dry	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Total Organic Halogens	–	0.019099	<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	–	0.019099	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Total Organic Halogens	–	0.019099	<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	–	0.019099	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Total Organic Halogens	–	0.019099	0.015	0.05	0.014	0.052	DRY	0.114	0.035	0.115	0.053	0.029	<0.010	0.079	0.093
03/17/2006	Total Organic Halogens	–	0.019099	NT	NT	NT	NT	DRY	0.074	NT	0.019	NT	NT	NT	NT	NT
09/22/2006	Total Organic Halogens	–	0.019099	0.014	0.026	0.016	0.047	DRY	0.06	0.036	0.032	0.056	0.016	0.063	<0.010	0.093
03/14/2007	Total Organic Halogens	–	0.019099	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Total Organic Halogens	–	0.019099	0.017	0.04	0.012	0.046	DRY	0.024	0.045	0.019	0.026	0.02	0.012	<0.010	0.043
	Mean			0.014	0.065125	0.032313	0.027643	0.015	0.042471	0.028733	0.025308	0.024	0.026222	0.028	0.034667	0.086143
	Standard Deviation (STD)			0.00255	0.02423	0.014282	0.015733	0.005	0.026591	0.012567	0.010351	0.015727	0.005672	0.020408	0.031415	0.059029
	Mean + 2 STD			0.019099	0.113586	0.060876	0.059108	0.025	0.095652	0.053867	0.046009	0.055454	0.037566	0.068817	0.097496	0.204201



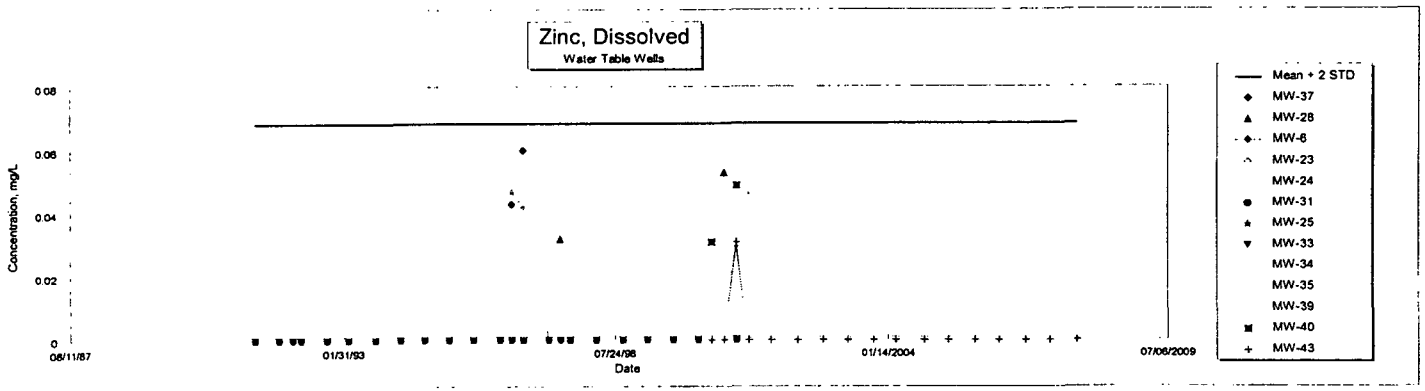

TOX
Water Table Wells
TOX results not Plotted:
9/05 MW-31 = 0.114 mg/L
3/92 MW-33 = 0.99 mg/L
9/05 MW-33 = 0.115 mg/L
Mean + 2 STD
MW-34
MW-43
MW-31
MW-33
Concentration, mg/L
0.25
0.2
0.15
0.1
0.05
0
08/11/87
01/31/93
07/24/98
01/14/2004
07/06/2009
Date

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	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
03/17/2006	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Trichloroethene *	5	1	NT	NT	NT	NT	DRY	<1.0	NT	<1.0	<1.0	NT	NT	NT	<1.0
	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 mg/L	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	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
03/17/2006	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Zinc, dissolved	2	0.0685	NT	NT	NT	NT	DRY	<0.010	NT	<0.010	0.052	NT	NT	NT	<0.010
	Mean			0.0515	0.03	0.0425	ERR	ERR	ERR	ERR	ERR	0.052	0.0445	0.04	0.04	0.031
	Standard Deviation (STD)			0.0085	0	0.0105	ERR	ERR	ERR	ERR	ERR	0	0.0025	0.007	0.009	0
	Mean + 2 STD			0.0685	0.03	0.0635	ERR	ERR	ERR	ERR	ERR	0.052	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
03/17/2006	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,1-Dichloroethene *	7	1	NT	NT	NT	NT	NT	NT	NT	<1.0	<1.0	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
03/17/2006	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	NT	NT	NT	<1	<1	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	1,2-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
03/17/2006	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,2-Dichloroethane *	5	0.4	NT	NT	NT	NT	NT	NT	NT	<0.4	<0.4	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

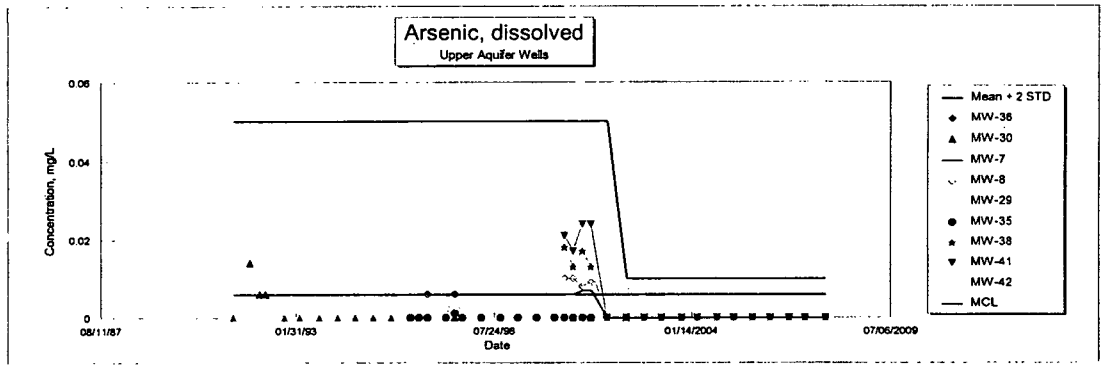
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	NT	NT	NT	<1.0	<1.0	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

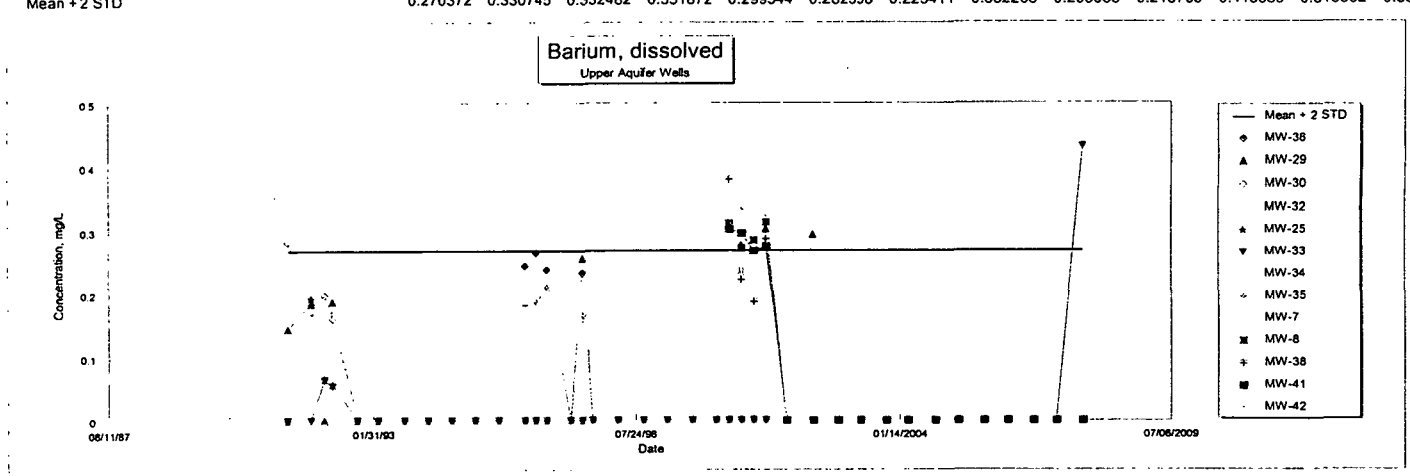
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Arsenic, dissolved	0.05	0.006				<0.005	<0.023	<0.005	<0.005	—	<0.005				
10/15/91	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	0.013	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
03/17/2006	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/01/2007	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Arsenic, dissolved	0.01	0.006	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.001	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 mg/L	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	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
03/17/2006	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Barium, dissolved	2.000	0.270	NT	NT	NT	NT	NT	NT	NT	0.430	0.090	NT	NT	NT	NT
Mean				0.246	0.2735	0.29675	0.236	0.20675	0.20525	0.11425	0.183333	0.1012	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	0.174467	0.051944	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	0.532268	0.205088	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
03/17/2006	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Benzene *	5	1	NT	NT	NT	NT	NT	NT	NT	<1	<1	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	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
03/17/2006	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.001	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

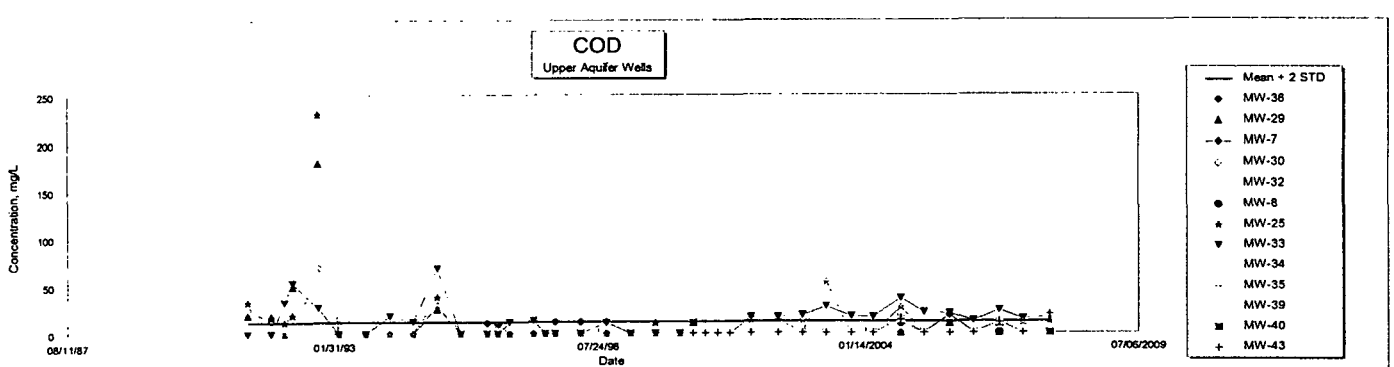
MONITORING WELL SAMPLING RESULTS

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	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
03/17/2006	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	<0.3	<0.3	NT	NT	NT	NT
09/22/2007	Carbon tetrachloride *	5	0.3	NT	NT	NT	NT	NT	NT	NT	<0.3	<0.3	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

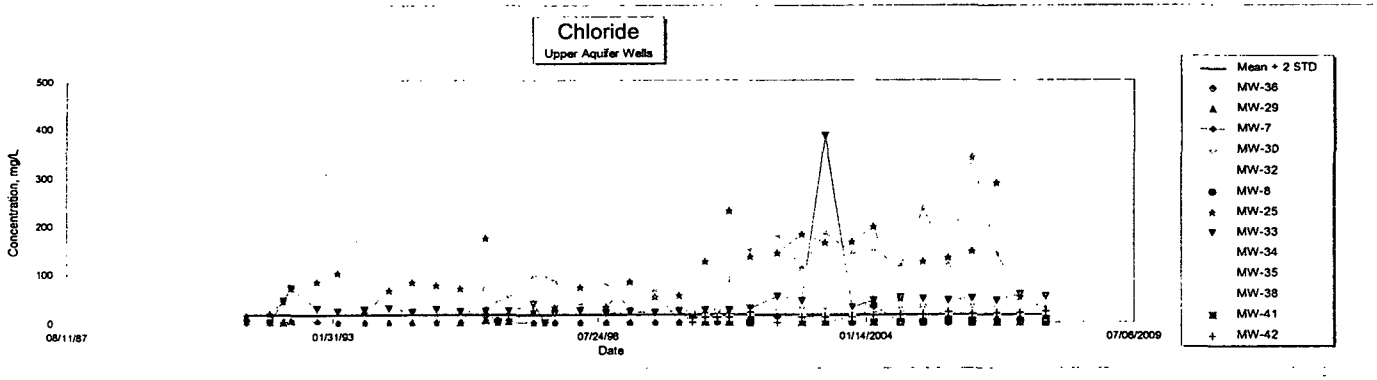
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Chemical Oxygen Demand	–	13				20.1	26.3	18	33.4	—	120.1				
10/15/91	Chemical Oxygen 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
03/17/2006	Chemical Oxygen Demand	–	13	<10	<10	<10	<10	<10	<10	<10	13	27	<10	<10	<10	<10
09/22/2006	Chemical Oxygen Demand	–	13	<10	<10	<10	<10	11	11	12	24	53	10	10	10	11
03/14/2007	Chemical Oxygen Demand	–	13	<10	<10	<10	<10	<10	10	<10	15	32	11	<10	<10	<10
09/22/2007	Chemical Oxygen Demand	–	13	<10	<10	<10	<10	<10	<10	12	17	50	12	<10	<10	20
	Mean			11.4	19	10.5	50.91667	30.16	27	40.16	23.97	40.18889	17.66667	12	11	15
	Standard Deviation (STD)			0.8	0	0.5	59.02165	21.19817	22.31591	63.94697	14.24841	29.47773	13.81625	2.345208	0.816497	3.741657
	Mean + 2 STD			13	19	11.5	168.96	72.55634	71.63183	168.0539	52.46681	99.14435	45.29918	16.69042	12.63299	22.48331



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

DATE	PARAMETER mg/L	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
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	383	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
03/17/2006	Chloride	250	17.2443	<10	15	<10	<10	<10	10	146	49	28	340	35	14	18
09/22/2006	Chloride	250	17.2443	<10	13	<10	<10	<10	17	288	44	<10	142	31	<10	19
03/14/2007	Chloride	250	17.2443	<10	15	<10	<10	<10	11	52	58	<10	51	38	11	20
09/22/2007	Chloride	250	17.2443	<10	16	<10	<10	<10	20	26	53	11	52	31	13	22
Mean				6.5	13.125	34	4.712857	11.60143	13.36118	92.47429	44.8697	24.0963	111.425	27.82353	11.2	15.4
Standard Deviation (STD)				5.37215	1.798437	0	3.877867	23.02829	8.930812	66.94619	61.29439	21.29348	70.9715	6.261322	1.32665	4.424176
Mean + 2 STD				17.2443	16.72187	34	12.46859	57.65802	31.2228	226.3667	167.4585	66.68325	253.368	40.34617	13.8533	24.24835



AMES-STORY ENVIRONMENTAL LANDFILL

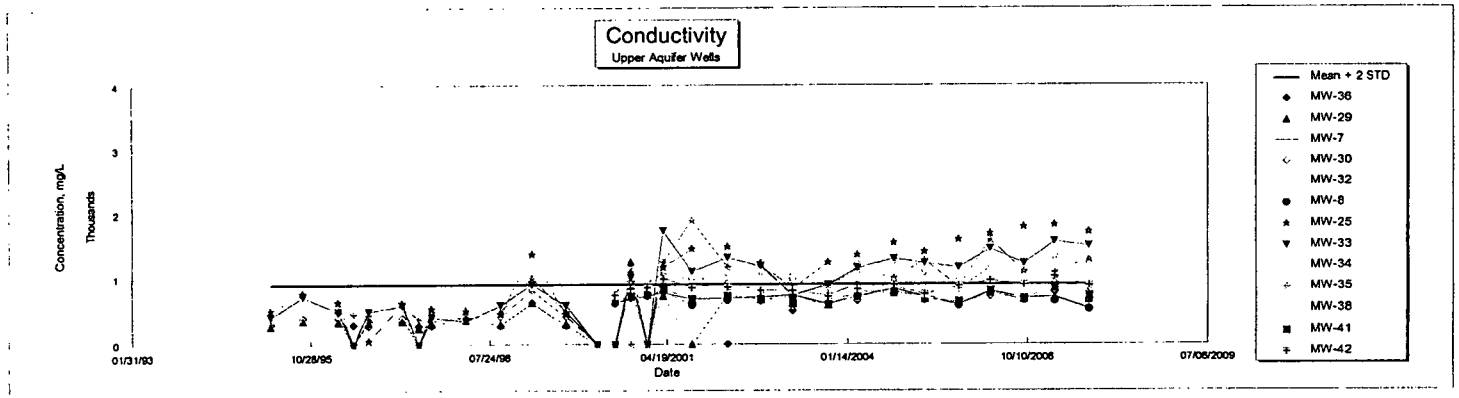
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	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	–	902.1491				280	300	390	510	420	550				
09/13/95	Conductivity, us/cm	–	902.1491				360	400	740	770	720	660				
03/28/96	Conductivity, us/cm	–	902.1491	490			340	400	580	640	500	460	520			
06/20/96	Conductivity, us/cm	–	902.1491	290			NT	NT	NT	NT	NT	NT	460			
09/13/96	Conductivity, us/cm	–	902.1491	280			330	350	510	60	500	570	440			
03/19/97	Conductivity, us/cm	–	902.1491	340			350	400	570	620	590	580	600			
06/18/97	Conductivity, us/cm	–	902.1491	280			250	NT	NT	NT	NT	NT	380			
08/30/97	Conductivity, us/cm	–	902.1491	280			310	350	430	540	410	490	490			
03/10/98	Conductivity, us/cm	–	902.1491	410			370	410	630	510	360	470	390			
09/21/98	Conductivity, us/cm	–	902.1491	280			300	420	500	460	590	540	490			
03/18/99	Conductivity, us/cm	–	902.1491	625			628	812	1208	1370	902	1438	1005			
09/21/99	Conductivity, us/cm	–	902.1491	280			300	420	500	460	590	540	490			
03/21/2000	Conductivity, us/cm	–	902.1491	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Conductivity, us/cm	–	902.1491	NT	621	617	NT	NT	NT	NT	NT	NT	NT	782	656	737
09/28/2000	Conductivity, us/cm	–	902.1491	688	680	700	1245	857	1218	1083	1009	1209	DRY	909	716	837
12/27/2000	Conductivity, us/cm	–	902.1491	NT	717	728	NT	NT	NT	NT	NT	NT	NT	923	744	848
03/28/2001	Conductivity, us/cm	–	902.1491	812	764	794	725	1000	1304	1161	1730	3000	1246	1080	826	986
09/02/2001	Conductivity, us/cm	–	902.1491	687	674	586	NT	845	1137	1455	1098	1455	1889	960	681	844
03/19/2002	Conductivity, us/cm	–	902.1491	NT	684	663	724	914	1180	1490	1313	NT	1167	1048	722	854
09/19/2002	Conductivity, us/cm	–	902.1491	640	703	673	686	805	1050	1225	1182	1287	1209	1074	665	800
03/14/2003	Conductivity, us/cm	–	902.1491	499	731	710	658	795	1056	833	732	1020	709	944	614	798
09/29/2003	Conductivity, us/cm	–	902.1491	584	606	593	615	724	886	1241	890	1055	886	844	588	708
03/08/2004	Conductivity, us/cm	–	902.1491	646	704	709	787	886	1256	1360	1154	1237	1124	1142	764	820
09/27/2004	Conductivity, us/cm	–	902.1491	750	822	774	760	848	1216	1546	1300	1218	995	1264	790	890
03/17/2005	Conductivity, us/cm	–	902.1491	650	704	709	733	742	1028	1407	1228	1432	1275	1079	670	745
09/22/2005	Conductivity, us/cm	–	902.1491	638	592	579	611	852	1246	1598	1160	929	852	812	636	872
03/17/2006	Conductivity, us/cm	–	902.1491	709	779	759	762	949	1293	1685	1451	1775	1589	1166	794	956
09/22/2006	Conductivity, us/cm	–	902.1491	680	686	656	670	873	1195	1785	1225	1495	1097	1064	679	887
03/14/2007	Conductivity, us/cm	–	902.1491	763	701	644	667	910	1300	1815	1560	1118	1084	1305	831	1013
09/22/2007	Conductivity, us/cm	–	902.1491	658	532	522	670	833	1477	1713	1497	1374	1277	1190	716	874
	Mean			539.9583	688.2353	671.5294	565.24	683.8	956	1093.48	964.44	1079.25	902.6667	1034.471	711.2941	851.1176
	Standard Deviation (STD)			181.0954	68.87886	72.7155	232.379	233.158	336	499.1785	395.8953	563.0134	401.9838	148.9193	70.18108	80.65751
	Mean + 2 STD			902.1491	825.993	816.9604	1029.998	1150.116	1628	2091.837	1756.231	2205.277	1706.634	1332.309	851.6563	1012.433



AMES-STORY ENVIRONMENTAL LANDFILL

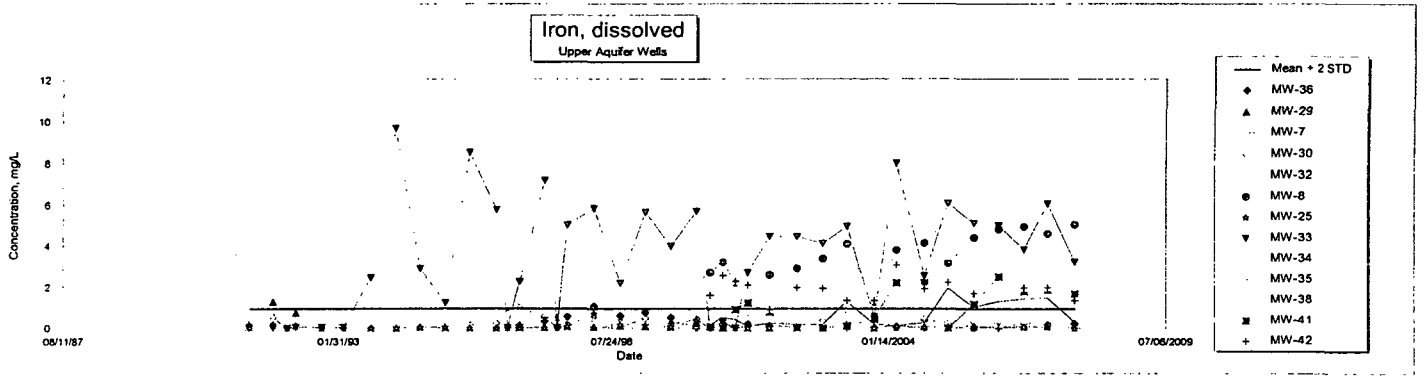
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/17/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	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

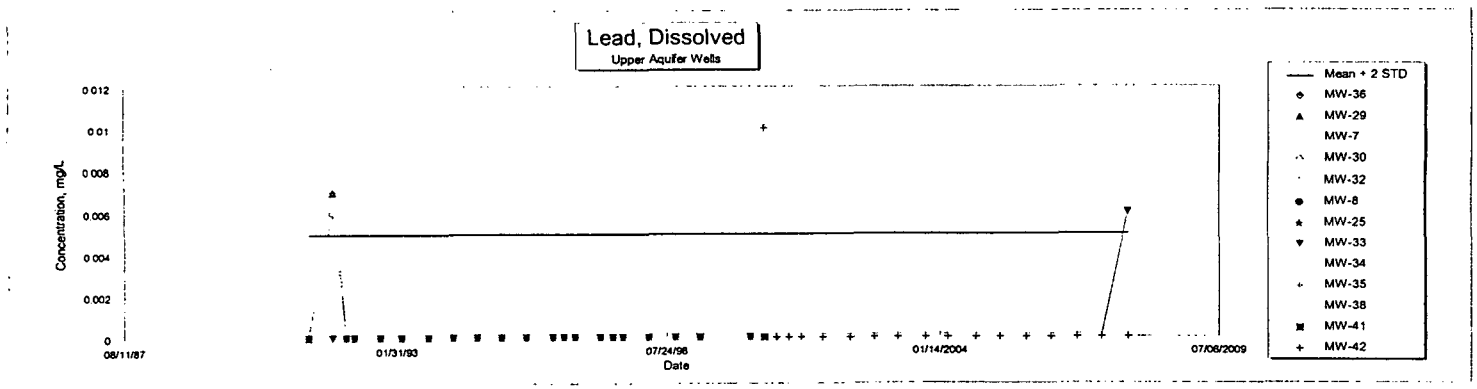
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Iron, dissolved	--	0.984609				0.05	<0.03	<0.09	0.177	—	0.133				
10/15/91	Iron, dissolved	--	0.984609				1.3	0.546	0.116	0.205	—	0.767				
01/23/92	Iron, dissolved	--	0.984609				—	<0.03	<0.03	<0.03	<0.03	<0.03				
03/23/92	Iron, dissolved	--	0.984609				0.743	<0.03	0.048	0.121	0.052	<0.03				
09/30/92	Iron, dissolved	--	0.984609				<0.03	<0.03	<0.03	<0.03	0.033	0.043				
03/05/93	Iron, dissolved	--	0.984609				—	<0.03	<0.03	<0.03	0.035	<0.03				
09/21/93	Iron, dissolved	--	0.984609				<0.03	<0.03	1.07	<0.03	2.46	0.05				
03/23/94	Iron, dissolved	--	0.984609				<0.03	0.072	2.29	<0.03	9.65	0.084				
09/16/94	Iron, dissolved	--	0.984609				0.037	0.059	4.3	0.05	2.9	0.55				
03/16/95	Iron, dissolved	--	0.984609				<0.03	0.111	2.55	0.038	1.24	0.47				
09/13/95	Iron, dissolved	--	0.984609				<0.03	0.131	2.2	<0.03	8.5	0.317				
03/28/96	Iron, dissolved	--	0.984609	<0.03			<0.03	0.228	2.68	<0.03	5.77	0.386	0.067			
06/20/96	Iron, dissolved	--	0.984609	<0.03			NT	NT	NT	NT	NT	NT	0.927			
09/13/96	Iron, dissolved	--	0.984609	<0.03			<0.03	0.112	2.37	0.134	2.27	1.3	1.02			
03/19/97	Iron, dissolved	--	0.984609	0.329			0.032	0.573	4.65	<0.03	7.18	<0.03	0.484			
06/18/97	Iron, dissolved	--	0.984609	<0.03			0.086	NT	NT	NT	NT	NT	0.523			
08/30/97	Iron, dissolved	--	0.984609	0.559			0.064	0.144	6.19	0.076	5.02	1.93	5.05			
03/10/98	Iron, dissolved	--	0.984609	1.09			0.041	0.057	4.41	0.717	5.83	1.52	0.5			
09/21/98	Iron, dissolved	--	0.984609	0.61			0.085	0.059	1.63	0.166	2.2	3.09	0.415			
03/18/99	Iron, dissolved	--	0.984609	0.767			0.052	0.48	6.08	0.131	5.64	4.78	0.162			
09/21/99	Iron, dissolved	--	0.984609	0.519			0.043	0.197	2.99	0.076	3.99	5.53	0.337			
03/21/2000	Iron, dissolved	--	0.984609	NT			0.252	0.447	2.1	0.371	5.69	4.15	NT			
06/28/2000	Iron, dissolved	--	0.984609	NT	0.146	2.71	NT	NT	NT	NT	NT	NT	NT	0.904	0.073	1.61
09/28/2000	Iron, dissolved	--	0.984609	<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	--	0.984609	NT	0.412	2.22	NT	NT	NT	NT	NT	NT	NT	0.138	0.909	2.3
03/28/2001	Iron, dissolved	--	0.984609	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	--	0.984609	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	--	0.984609	<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	--	0.984609	<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	--	0.984609	<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	--	0.984609	<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	--	0.984609	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	--	0.984609	<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	--	0.984609	<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	--	0.984609	<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
03/17/2006	Iron, dissolved	--	0.984609	0.057	1.32	4.82	0.066	0.073	<0.030	0.03	4.99	<0.030	<0.030	0.27	2.52	<0.030
09/22/2006	Iron, dissolved	--	0.984609	0.039	1.44	4.95	0.096	0.246	0.044	0.048	3.83	0.074	<0.030	0.059	1.82	2.01
03/14/2007	Iron, dissolved	--	0.984609	0.18	1.49	4.61	0.068	0.189	<0.030	0.066	6.06	<0.030	<0.030	0.777	1.89	2.01
09/22/2007	Iron, dissolved	--	0.984609	0.212	0.297	5.05	<0.100	1.02	<0.100	<0.100	3.24	1.85	<0.100	<0.100	1.7	1.37
	Mean			0.364154	0.660059	3.503529	0.1652	0.241357	2.254833	0.140421	4.058406	1.972536	0.666	0.486125	1.318308	1.914563
	Standard Deviation (STD)			0.310228	0.598307	1.077486	0.302972	0.215095	1.765746	0.157796	2.485144	2.152875	1.207831	0.532021	0.788819	0.51163
	Mean + 2 STD			0.984609	1.856672	5.658501	0.771144	0.671547	5.786325	0.456013	9.028694	6.278286	3.081661	1.550167	2.895945	2.937822



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

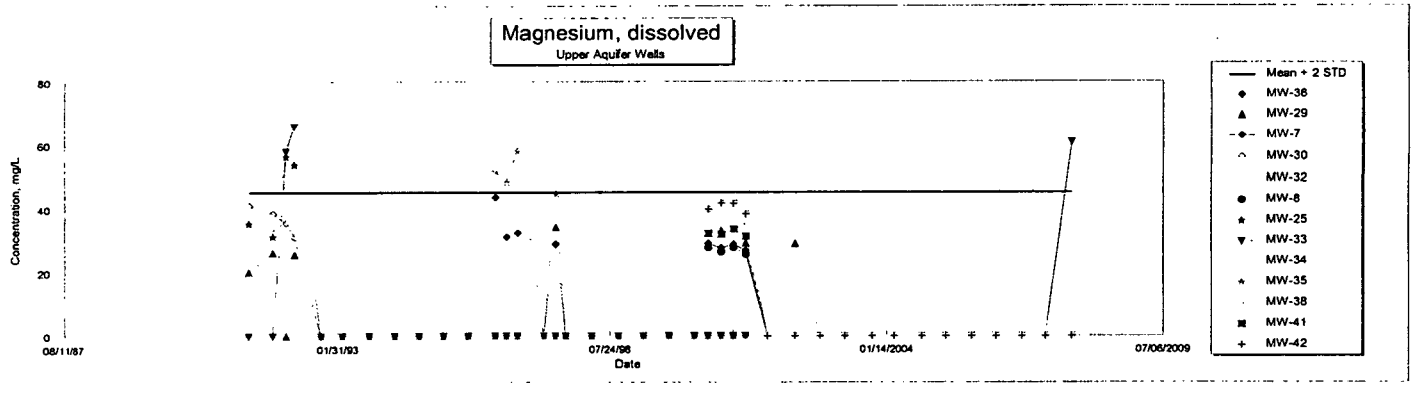
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Lead, dissolved	0.015	0.005				<0.005	<0.005	0.011	<0.005	—	<0.005				
10/15/91	Lead, 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
03/17/2006	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Lead, dissolved	0.015	0.005	NT	NT	NT	NT	NT	NT	NT	0.006	<0.005	NT	NT	NT	NT
Mean				ERR	ERR	ERR	0.007	0.006	0.0095	0.007	0.006	0.01	ERR	ERR	ERR	0.01
Standard Deviation (STD)				ERR	ERR	ERR	0	0	0.0015	0	0	0	ERR	ERR	ERR	0
Mean + 2 STD				ERR	ERR	ERR	0.007	0.006	0.0125	0.007	0.006	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
03/17/2006	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Magnesium, dissolved	--	45.47475	NT	NT	NT	NT	NT	NT	NT	60.5	67.2	NT	NT	NT	NT
	Mean			34.15	28.125	26.925	28.3	36.7	61.65	44.325	61.4	52.42	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	3.207283	17.84482	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	67.81457	88.10964	60.50555	38.27468	34.16635	43.35891



AMES-STORY ENVIRONMENTAL LANDFILL

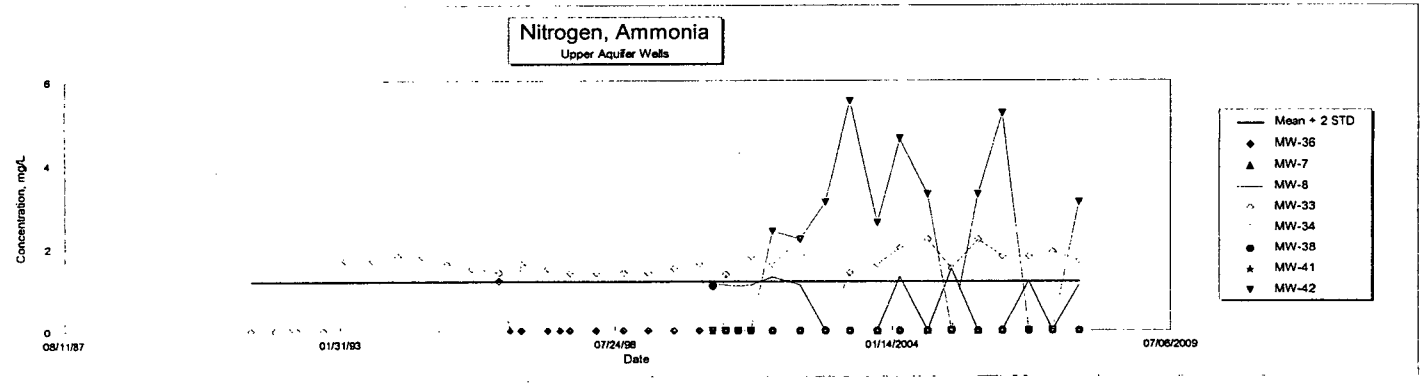
MONITORING WELL SAMPLING RESULTS

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	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
03/17/2006	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	NT	NT	NT	<0.0005	<0.0005	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

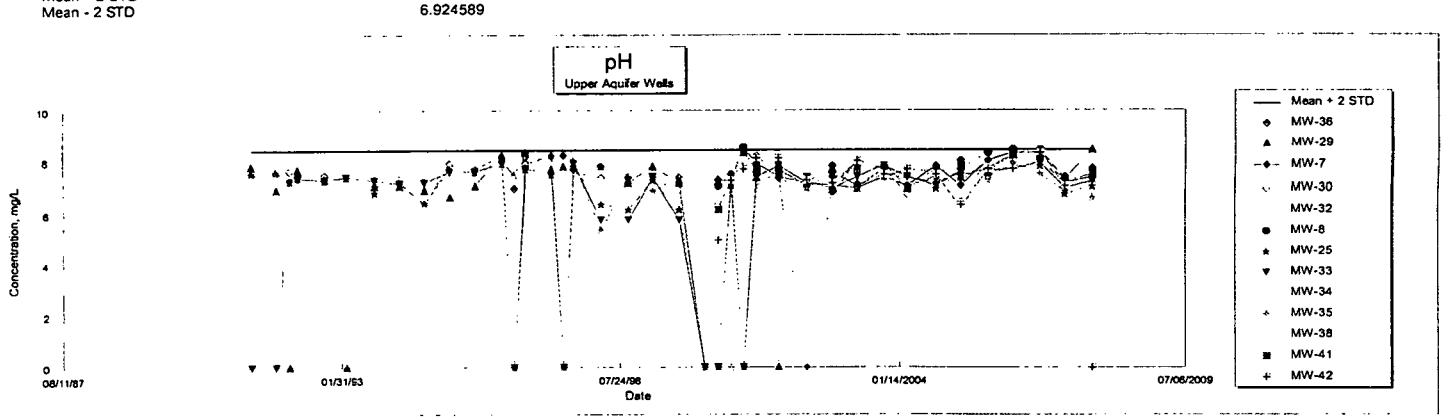
DATE	PARAMETER mg/L	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Nitrogen, Ammonia	–	1.2				<0.5	<0.5	<0.5	<0.5	—	<0.5				
10/15/91	Nitrogen, Ammonia	–	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
03/17/2006	Nitrogen, Ammonia	–	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0
09/22/2006	Nitrogen, Ammonia	–	1.2	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<10	<1.0
03/14/2007	Nitrogen, Ammonia	–	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0
09/22/2007	Nitrogen, Ammonia	–	1.2	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<10	<1.0
	Mean			1.2	ERR	1.191	ERR	ERR	1.1	ERR	1.667241	1.266667	ERR	1.08	ERR	ERR
	Standard Deviation (STD)			0	ERR	0.129804	ERR	ERR	0	ERR	0.247148	0.224846	ERR	0	ERR	ERR
	Mean + 2 STD			1.2	ERR	1.450607	ERR	ERR	1.1	ERR	2.161537	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	–	8.434577				7.80	7.51	7.18	7.55	—	7.01				
10/15/91	pH	–	8.434577				6.96	7.54	7.21	7.60	—	7.03				
01/23/92	pH	–	8.434577				—	7.65	7.58	7.27	7.26	7.31				
03/23/92	pH	–	8.434577				7.68	7.50	7.27	7.39	7.37	7.32				
09/30/92	pH	–	8.434577				7.36	7.49	7.44	7.31	7.3	7.13				
03/05/93	pH	–	8.434577				—	7.28	7.41	7.41	7.42	7.34				
09/21/93	pH	–	8.434577				7.1	7.11	7.3	6.85	7.29	7.12				
03/23/94	pH	–	8.434577				7.1	7.24	7.33	7.16	7.18	7.4				
09/16/94	pH	–	8.434577				6.95	6.42		6.46	7.22	6.99				
03/16/95	pH	–	8.434577				6.7	7.9	7.9	7.7	7.6	7.7				
09/13/95	pH	–	8.434577				7.1	7.7	7.4	7.6	7.6	7.6				
03/28/96	pH	–	8.434577	8			8.2	8.2	8.1	7.9	7.9	8	8			
06/20/96	pH	–	8.434577	7			NT	NT	NT	NT	NT	NT	7.5			
09/13/96	pH	–	8.434577	8.3			8.3	7.9	7.7	7.7	7.7	8	8.1			
03/19/97	pH	–	8.434577	8.2			7.7	8.2	7.6	7.5	7.5	7.7	8.1			
06/18/97	pH	–	8.434577	8.2			7.8	NT	NT	NT	NT	NT	8.2			
08/30/97	pH	–	8.434577	7.7			7.8	7.6	8.1	7.8	7.9	8	8			
03/10/98	pH	–	8.434577	7.8			7.8	7.4	7.8	6.4	5.8	5.8	5.4			
09/21/98	pH	–	8.434577	7.2			7.2	7.4	7	6.2	5.8	7.4	7.4			
03/18/99	pH	–	8.434577	7.4			7.8	7.6	7.5	7.3	7.4	7.7	6.9			
09/21/99	pH	–	8.434577	7.2			7.2	7.4	7	6.2	5.8	7.4	7.4			
03/21/2000	pH	–	8.434577	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	pH	–	8.434577	NT	7.3	7.1	NT	NT	NT	NT	NT	NT	NT	6.3	6.2	5
09/28/2000	pH	–	8.434577	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	–	8.434577	NT	8.5	8.5	NT	NT	NT	NT	NT	NT	NT	7.9	8.3	7.7
03/28/2001	pH	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	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	–	8.434577	7.6	8	8.3	7.7	7.7	8	7	7.6	7.4	7.3	8	7.6	7.7
03/22/2006	pH	–	8.434577	8.3	8.3	8.4	8.2	7.6	8	7.7	7.7	8	7.9	8.2	8.2	7.7
09/22/2006	pH	–	8.434577	8.1	8.3	8.4	8.4	8	8.1	7.8	7.9	7.7	7.5	8.4	8.3	8.3
03/14/2007	pH	–	8.434577	7.4	7.2	7.3	7.3	7.2	7	6.8	7	7.4	6.9	7	7.2	7.1
09/22/2007	pH	–	8.434577	7.71	7.4	7.5	8.4	7.18	6.95	7.06	7.27	7.22	6.66	7.05	7.5	NT
Mean				7.679583	7.547059	7.617647	7.539063	7.485455	7.430313	7.269412	7.297188	7.357941	7.369167	7.426471	7.558824	7.4125
Standard Deviation (STD)				0.377497	0.470441	0.49018	0.445368	0.435341	0.385418	0.446463	0.540903	0.411909	0.58398	0.538549	0.493557	0.768013
Mean + 2 STD				8.434577	8.487941	8.598008	8.429798	8.356136	8.201148	8.162337	8.378994	8.18176	8.537127	8.503568	8.545938	8.948526
Mean - 2 STD				6.924589												



AMES-STORY ENVIRONMENTAL LANDFILL

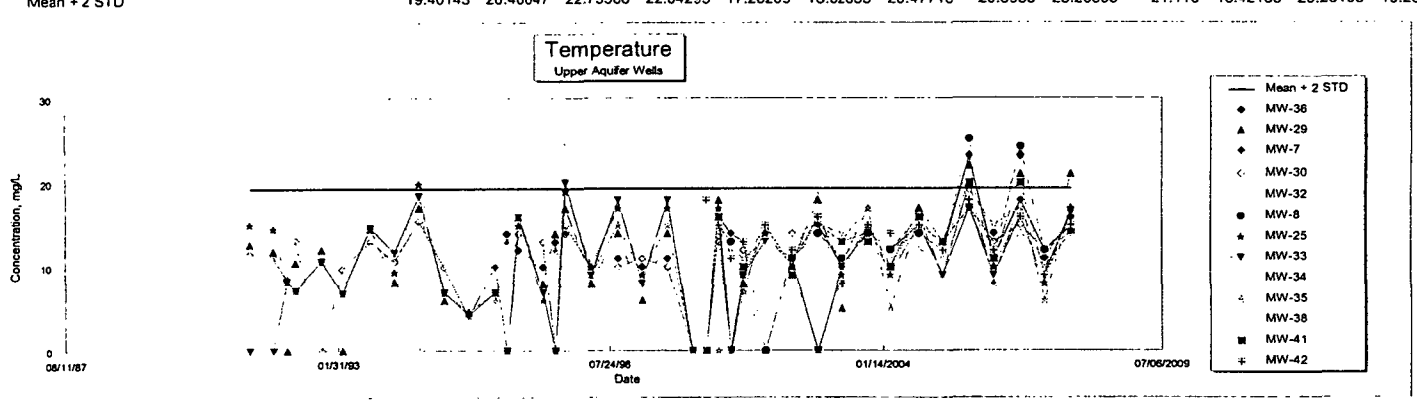
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Phenols	–	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	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
03/14/2007	Phenols	–	0.1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	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

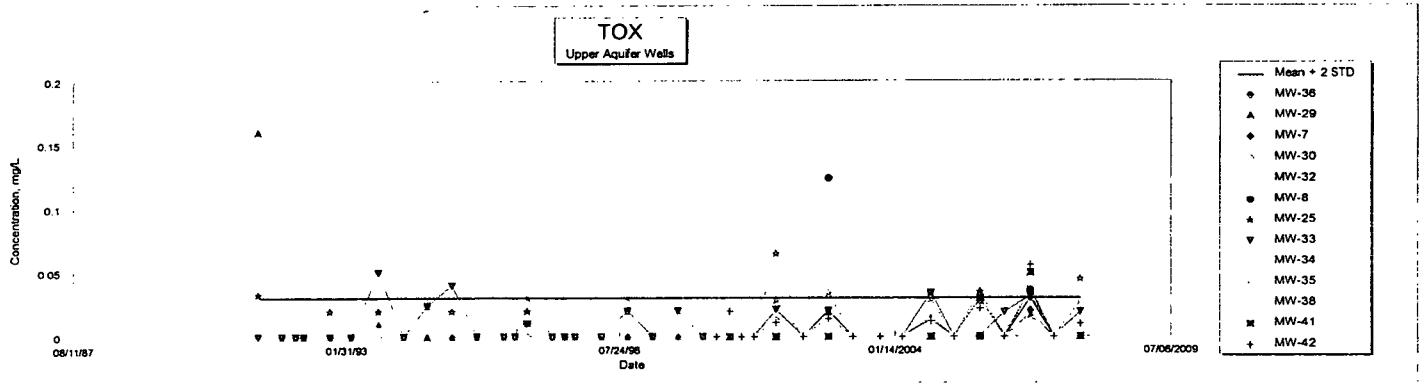
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD AW	AQUIFER WELLS U.A.W MW36	D.A.W MW 7	D.A.W MW 8	D.A.W MW 29	D.A.W MW 30	D.A.W MW 32	BOTH MW 25	BOTH MW 33	BOTH MW 34	BOTH MW35	D.A.W MW 38	D.A.W MW 41	D.A.W MW 42
04/23/91	Temperature, celsius	--	19.40143				12.7	11.6	11.3	15.1	—	12.4				
10/15/91	Temperature, celsius	--	19.40143				11.9	11.3	11.0	14.6	—	16.2				
01/23/92	Temperature, celsius	--	19.40143				—	8.5	8.4	8.3	8.3	6.2				
03/23/92	Temperature, celsius	--	19.40143				10.5	13.2	11.8	7.2	7.3	6.5				
09/30/92	Temperature, celsius	--	19.40143				12.1	11.3	11	10.7	10.7	10.1				
03/05/93	Temperature, celsius	--	19.40143				—	9.8	9.2	6.9	6.9	6.1				
09/21/93	Temperature, celsius	--	19.40143				14.6	13.1	10.4	14.6	14.7	14.8				
03/23/94	Temperature, celsius	--	19.40143				8.2	10.7	12.1	9.4	11.7	12				
09/16/94	Temperature, celsius	--	19.40143				17.1	15.5		19.9	18.5	2.11				
03/16/95	Temperature, celsius	--	19.40143				6	10	8	7	7	6				
09/13/95	Temperature, celsius	--	19.40143				4.62	4.05	3.88	4.63	4.24	4.66				
03/28/96	Temperature, celsius	--	19.40143	10			7	10	11	7	7	7	6			
06/20/96	Temperature, celsius	--	19.40143	14			NT	NT	NT	NT	NT	NT	13			
09/13/96	Temperature, celsius	--	19.40143	12			16	14	13	15	16	16	16			
03/19/97	Temperature, celsius	--	19.40143	10			8	13	12	6	7	6	6			
06/18/97	Temperature, celsius	--	19.40143	13			14	NT	NT	NT	NT	NT	12			
08/30/97	Temperature, celsius	--	19.40143	14			17	15	24	19	20	21	17			
03/10/98	Temperature, celsius	--	19.40143	10			8	10	10	10	9	9	9			
09/21/98	Temperature, celsius	--	19.40143	11			14	10	11	17	18	17	15			
03/18/99	Temperature, celsius	--	19.40143	10			6	11	11	9	8	9	9			
09/21/99	Temperature, celsius	--	19.40143	11			14	10	11	17	18	17	15			
03/21/2000	Temperature, celsius	--	19.40143	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Temperature, celsius	--	19.40143	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	18
09/28/2000	Temperature, celsius	--	19.40143	15	16	15	18	13	14	17	16	17	NT	15	16	15
12/27/2000	Temperature, celsius	--	19.40143	NT	14	13	NT	NT	NT	NT	NT	NT	NT	12	11	11
03/28/2001	Temperature, celsius	--	19.40143	10	13	13	8	12	12	9	9	6	7	11	10	13
09/02/2001	Temperature, celsius	--	19.40143	14	NT	NT	NT	14	14	14	13	17	15	13	15	15
03/19/2002	Temperature, celsius	--	19.40143	12	11	11	10	14	14	10	11	10	10	11	9	12
09/19/2002	Temperature, celsius	--	19.40143	14	15	14	18	15	14	NT	NT	19	16	15	16	16
03/14/2003	Temperature, celsius	--	19.40143	13	10	11	5	13	13	9	10	10	10	14	13	8
09/29/2003	Temperature, celsius	--	19.40143	14	14	14	15	14	17	15	14	19	17	14	13	15
03/08/2004	Temperature, celsius	--	19.40143	12	12	12	10	12	11	9	12	7	5	12	10	14
09/27/2004	Temperature, celsius	--	19.40143	16	15	14	17	15	12	15	15	18	16	16	16	15
03/17/2005	Temperature, celsius	--	19.40143	13	12	12	13	13	11	9	9	8	9	12	12	12
09/22/2005	Temperature, celsius	--	19.40143	20	23	25	22	17	17	17	17	18	20	19	20	18
03/17/2006	Temperature, celsius	--	19.40143	14	11	11	10	13	10	10	11	14	8	15	11	12
09/22/2006	Temperature, celsius	--	19.40143	23	18	24	21	15	14	17	16	21	18	17	20	16
03/14/2007	Temperature, celsius	--	19.40143	11	12	12	9	12	11	8	9	4	6	10	9	9
09/22/2007	Temperature, celsius	--	19.40143	15.9	14.9	14.8	21	14	15.5	17	16.6	21.1	16.8	14.1	14.3	15
Mean				13.276	14.06	14.38667	12.46	12.32576	12.10848	11.94939	11.96581	12.005	12.15833	13.75625	13.45625	13.76471
Standard Deviation (STD)				3.062715	3.170237	4.174505	4.791474	2.468165	3.259931	4.263881	4.213846	5.631965	4.478831	2.33264	3.412838	2.733871
Mean + 2 STD				19.40143	20.40047	22.73568	22.04295	17.26209	18.62835	20.47716	20.3935	23.26893	21.116	18.42153	20.28193	19.23245



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	--	0.030806				0.16	0.05	0.01	0.033	—	0.05				
10/15/91	Total Organic Halogens	--	0.030806				<0.01	<0.01	<0.01	<0.01	—	<0.01				
01/23/92	Total Organic Halogens	--	0.030806				—	<0.01	<0.01	<0.01	<0.01	<0.01				
03/23/92	Total Organic Halogens	--	0.030806				<0.01	<0.01	<0.01	0.92	0.99	0.01				
09/30/92	Total Organic Halogens	--	0.030806				<0.01	<0.01	<0.01	0.02	<0.01	0.01				
03/05/93	Total Organic Halogens	--	0.030806				NT	NT	NT	NT	NT	NT				
09/21/93	Total Organic Halogens	--	0.030806				0.01	0.01	0.01	0.02	0.05	0.02				
03/23/94	Total Organic Halogens	--	0.030806				NT	NT	NT	NT	NT	NT				
09/16/94	Total Organic Halogens	--	0.030806				<0.01	<0.01	0.014	0.024	0.024	<0.01				
03/16/95	Total Organic Halogens	--	0.030806				<0.01	<0.01	<0.01	0.02	0.04	0.02				
09/13/95	Total Organic Halogens	--	0.030806				NT	NT	NT	NT	NT	NT				
03/28/96	Total Organic Halogens	--	0.030806	NT			<0.01	NT	NT	NT	NT	NT	NT			
06/20/96	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
09/13/96	Total Organic Halogens	--	0.030806	0.01			0.01	<0.01	0.01	0.02	0.01	0.01	0.03			
03/19/97	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
06/18/97	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
08/30/97	Total Organic Halogens	--	0.030806	<0.01			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
03/10/98	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/98	Total Organic Halogens	--	0.030806	<0.01			<0.01	<0.01	<0.01	0.02	0.02	<0.01	0.03			
03/18/99	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
09/21/99	Total Organic Halogens	--	0.030806	<0.01			<0.01	<0.01	<0.01	0.02	0.02	0.01	0.02			
03/21/2000	Total Organic Halogens	--	0.030806	NT			NT	NT	NT	NT	NT	NT	NT			
06/28/2000	Total Organic Halogens	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/28/2000	Total Organic Halogens	--	0.030806	<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	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/28/2001	Total Organic Halogens	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/02/2001	Total Organic Halogens	--	0.030806	<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	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/19/2002	Total Organic Halogens	--	0.030806	<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	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/29/2003	Total Organic Halogens	--	0.030806	<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	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/27/2004	Total Organic Halogens	--	0.030806	<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	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2005	Total Organic Halogens	--	0.030806	0.025	<0.010	<0.010	<0.010	0.03	0.032	0.035	0.115	0.053	0.029	<0.010	0.03	0.022
03/17/2006	Total Organic Halogens	--	0.030806	NT	NT	NT	NT	NT	NT	NT	0.019	NT	NT	NT	NT	NT
09/22/2006	Total Organic Halogens	--	0.030806	0.02	0.03	0.036	0.035	0.039	0.035	0.036	0.032	0.056	0.016	0.018	0.05	0.056
03/14/2007	Total Organic Halogens	--	0.030806	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Total Organic Halogens	--	0.030806	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.045	0.019	0.026	0.02	0.027	<0.010	0.01
	Mean			0.018333	0.021	0.06	0.0415	0.0294	0.0228	0.084438	0.025308	0.024	0.026222	0.02	0.04	0.020714
	Standard Deviation (STD)			0.006236	0.006976	0.045724	0.053677	0.014094	0.020188	0.216084	0.010351	0.015727	0.005672	0.005099	0.01	0.015012
	Mean + 2 STD			0.030806	0.034952	0.151448	0.148855	0.057588	0.063176	0.516606	0.046009	0.055454	0.037566	0.030198	0.06	0.050737



AMES-STORY ENVIRONMENTAL LANDFILL

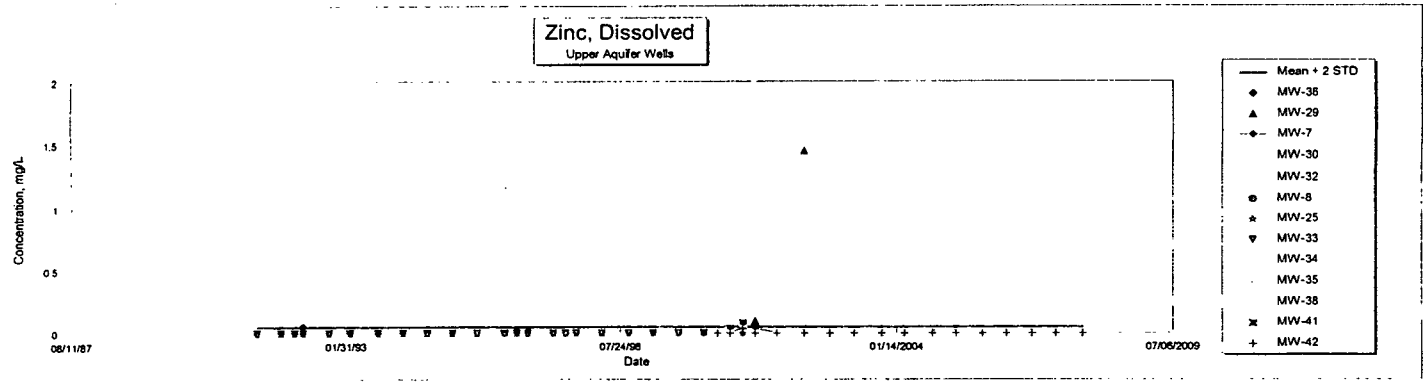
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Trichloroethene *	5	1	NT	NT	NT	NT	NT	NT	NT	<1	<1	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 mg/L	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	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
03/17/2006	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2006	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/14/2007	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
09/22/2007	Zinc, dissolved	2	0.05	NT	NT	NT	NT	NT	NT	NT	<0.01	0.052	NT	NT	NT	NT
Mean				0.05	0.0405	0.0435	0.7725	ERR	ERR	ERR	ERR	0.052	0.0445	0.032	0.048667	0.036
Standard Deviation (STD)				0	0.0025	0.0085	0.6775	ERR	ERR	ERR	ERR	0	0.0025	0	0.022954	0
Mean + 2 STD				0.05	0.0455	0.0605	2.1275	ERR	ERR	ERR	ERR	0.052	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
03/17/2006	1,1-Dichloroethene *	7		NT	NT	DRY	NT	DRY	NT
09/22/2006	1,1-Dichloroethene *	7	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	1,1-Dichloroethene *	7		NT	NT	NT	NT	<1.0	NT
09/22/2007	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
03/17/2006	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	1,1,1-Trichloroethane *	200	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	1,1,1-Trichloroethane *	200	1	NT	NT	NT	NT	<1.0	NT
09/22/2007	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
03/17/2006	1,2-Dichloroethane *	5	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	1,2-Dichloroethane *	5	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	1,2-Dichloroethane *	5	1	NT	NT	NT	NT	<0.4	NT
09/22/2007	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

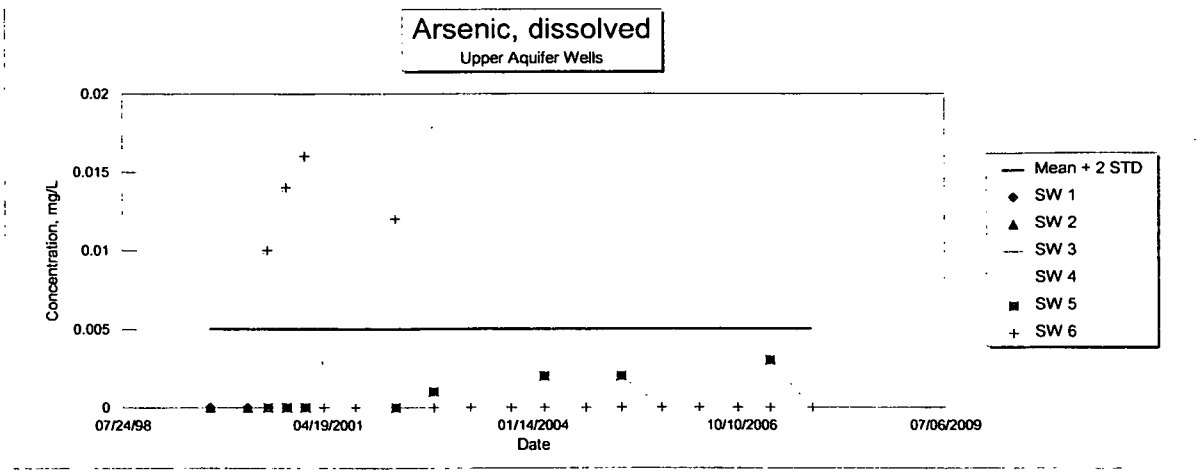
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	1,4-Dichlorobenzene *	75	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	1,4-Dichlorobenzene *	75	1	NT	NT	NT	NT	<1.0	NT
09/22/2007	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

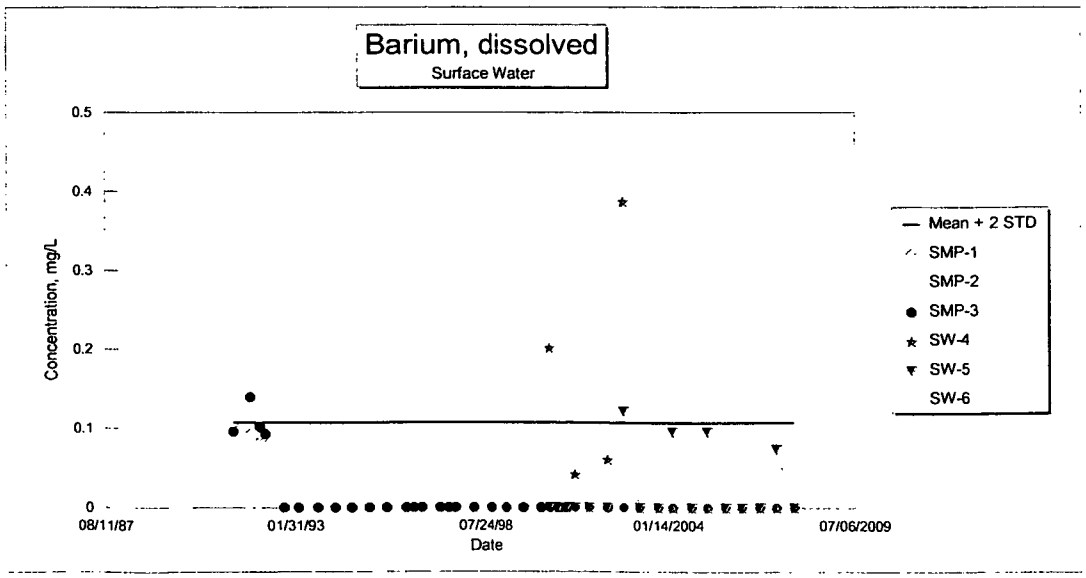
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
10/15/91	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
01/23/92	Arsenic, dissolved	0.05	0.005	<0.005	<0.005	<0.005			
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
03/17/2006	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	NT	DRY	NT
09/22/2006	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	DRY	DRY	NT
03/01/2007	Arsenic, dissolved	0.01	0.005	NT	NT	NT	NT	0.003	NT
09/22/2007	Arsenic, dissolved	0.01	0.005	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.007	0.002	0.013
	Standard Deviation (STD)			ERR	ERR	ERR	0.006595	0.000707	0.00224
	Mean + 2 STD			ERR	ERR	ERR	0.020191	0.003414	0.01747



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
03/17/2006	rium, dissolved	2.000	0.108	NT	NT	DRY	NT	DRY	NT
09/22/2006	rium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	NT
03/14/2007	rium, dissolved	2.000	0.108	NT	NT	NT	NT	0.074	NT
09/22/2007	rium, dissolved	2.000	0.108	NT	NT	DRY	DRY	DRY	NT
Mean				0.093	0.08875	0.10775	0.173	0.097	0.13125
Standard Deviation (STD)				0.00728	0.002278	0.018899	0.13815	0.017	0.00455
Mean + 2 STD				0.10756	0.093305	0.145549	0.449301	0.131	0.14035



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
03/17/2006	Benzene *	5	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	Benzene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Benzene *	5	1	NT	NT	NT	NT	<1.0	NT
09/22/2007	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
03/17/2006	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	NT	DRY	NT
09/22/2006	Cadmium, dissolved	0.005	0.001	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Cadmium, dissolved	0.005	0.001	NT	NT	NT	NT	<0.0010	NT
09/22/2007	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

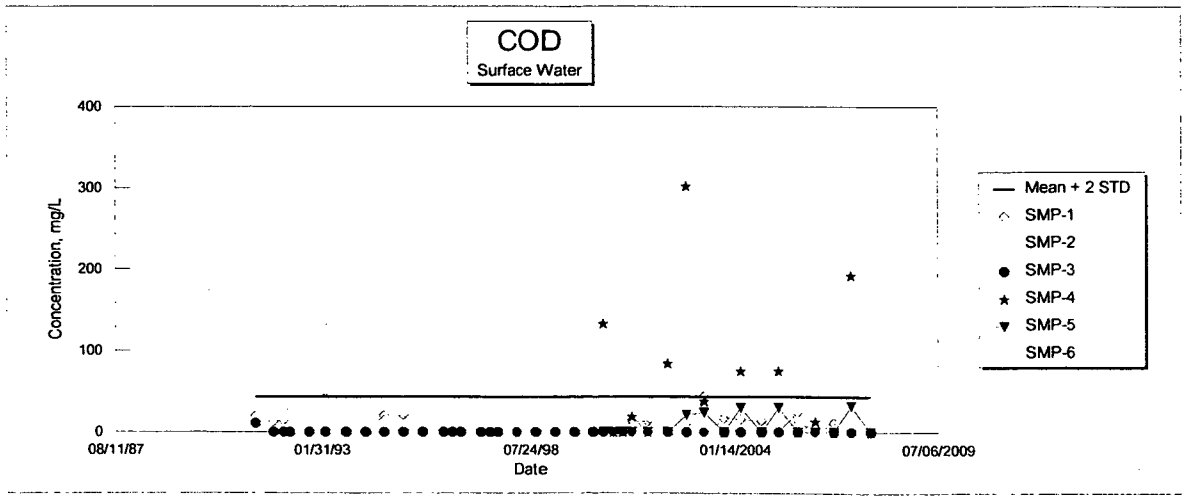
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Carbon tetrachloride *	5	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	Carbon tetrachloride *	5	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Carbon tetrachloride *	5	1	NT	NT	NT	NT	<0.3	NT
09/22/2007	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

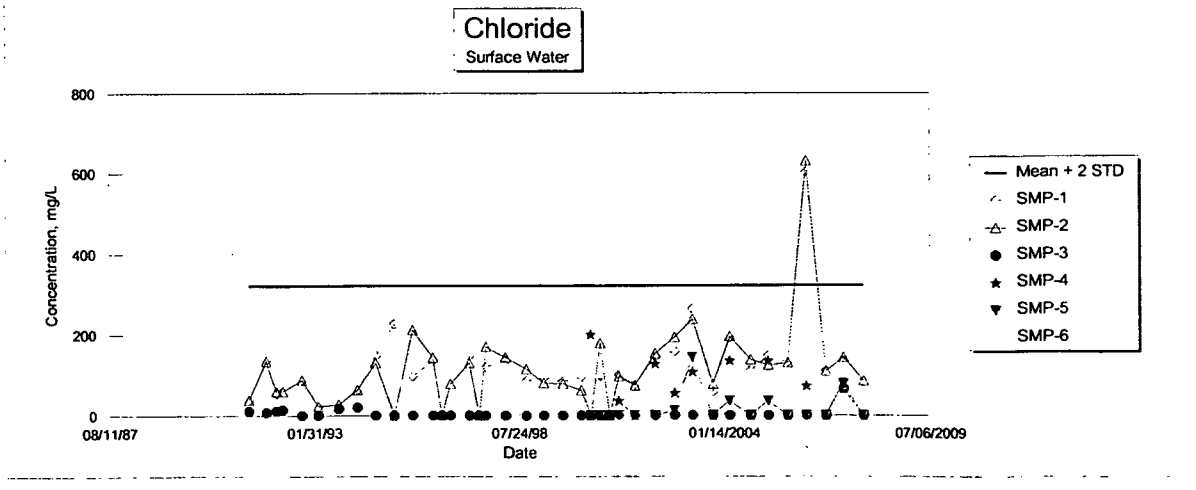
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Chemical Oxygen Demand	--	43.23215	19.4	14.3	10.5			
10/15/91	Chemical Oxygen Demand	--	43.23215	12.8	11.3	<10			
01/23/92	Chemical Oxygen Demand	--	43.23215	14.3	<10	<10			
03/23/92	Chemical Oxygen Demand	--	43.23215	<10	<10	<10			
09/30/92	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
03/05/93	Chemical Oxygen Demand	--	43.23215	49.6	40.8	DRY			
09/21/93	Chemical Oxygen Demand	--	43.23215	<10	<10	<10			
03/23/94	Chemical Oxygen Demand	--	43.23215	<10	<10	<10			
09/16/94	Chemical Oxygen Demand	--	43.23215	20	<10	NT			
03/16/95	Chemical Oxygen Demand	--	43.23215	21	<10	NT			
09/13/95	Chemical Oxygen Demand	--	43.23215	<10	NT	NT			
03/28/96	Chemical Oxygen Demand	--	43.23215	<10	<10	NT			
06/20/96	Chemical Oxygen Demand	--	43.23215	NT	NT	NT			
09/13/96	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
03/19/97	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
06/18/97	Chemical Oxygen Demand	--	43.23215	NT	NT	NT			
08/30/97	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
03/10/98	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
09/21/98	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
03/18/99	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
09/21/99	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
03/21/2000	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY			
06/28/2000	Chemical Oxygen Demand	--	43.23215	NT	NT	DRY	133	DRY	32
09/28/2000	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	DRY	DRY	<10
12/27/2000	Chemical Oxygen Demand	--	43.23215	NT	NT	NT	DRY	DRY	<10
03/28/2001	Chemical Oxygen Demand	--	43.23215	14	13	DRY	19	DRY	DRY
09/02/2001	Chemical Oxygen Demand	--	43.23215	13	14	DRY	NT	DRY	DRY
03/19/2002	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	84	DRY	10
09/19/2002	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	302	21	28
03/14/2003	Chemical Oxygen Demand	--	43.23215	44	57	DRY	38	24	<10
09/29/2003	Chemical Oxygen Demand	--	43.23215	17	18	DRY	DRY	DRY	14
03/08/2004	Chemical Oxygen Demand	--	43.23215	16	18	DRY	75	30	30
09/27/2004	Chemical Oxygen Demand	--	43.23215	14	<10	DRY	DRY	DRY	23
03/17/2005	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	75	30	11
09/22/2005	Chemical Oxygen Demand	--	43.23215	24	14	DRY	DRY	DRY	15
03/17/2006	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	13	DRY	<10
09/22/2006	Chemical Oxygen Demand	--	43.23215	11	<10	DRY	DRY	DRY	11
03/14/2007	Chemical Oxygen Demand	--	43.23215	<10	<10	<10	192	32	54
09/22/2007	Chemical Oxygen Demand	--	43.23215	<10	<10	DRY	DRY	DRY	14
	Mean			20.72143	22.26667	10.5	103.4444	27.4	22
	Standard Deviation (STD)			11.25536	14.87944	0	88.0216	4.176123	12.7493
	Mean + 2 STD			43.23215	52.02555	10.5	279.4876	35.75225	47.4987



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	321.0443	39.5	39	11.5			
10/15/91	Chloride	250	321.0443	138	135	8.02			
01/23/92	Chloride	250	321.0443	55.1	60.3	12.1			
03/23/92	Chloride	250	321.0443	59.7	60.2	14.8			
09/30/92	Chloride	250	321.0443	89	88	DRY			
03/05/93	Chloride	250	321.0443	22.5	23.5	DRY			
09/21/93	Chloride	250	321.0443	27.4	28.4	16.6			
03/23/94	Chloride	250	321.0443	64.1	64.1	19.8			
09/16/94	Chloride	250	321.0443	148	130	NT			
03/16/95	Chloride	250	321.0443	226	NT	NT			
09/13/95	Chloride	250	321.0443	98	212	NT			
03/28/96	Chloride	250	321.0443	137	144	NT			
06/20/96	Chloride	250	321.0443	NT	NT	NT			
09/13/96	Chloride	250	321.0443	<1	78.9	Dry			
03/19/97	Chloride	250	321.0443	148	130	DRY			
06/18/97	Chloride	250	321.0443	NT	NT	NT			
08/30/97	Chloride	250	321.0443	120	171	DRY			
03/10/98	Chloride	250	321.0443	136	145	DRY			
09/21/98	Chloride	250	321.0443	86	116	DRY			
03/18/99	Chloride	250	321.0443	93	81	DRY			
09/21/99	Chloride	250	321.0443	84	80	DRY			
03/21/2000	Chloride	250	321.0443	95	63	DRY			
06/28/2000	Chloride	250	321.0443	NT	NT	DRY	201	DRY	29
09/28/2000	Chloride	250	321.0443	98	179	DRY	DRY	DRY	42
12/27/2000	Chloride	250	321.0443	NT	NT	NT	DRY	DRY	41
03/28/2001	Chloride	250	321.0443	100	97	DRY	37	DRY	DRY
09/02/2001	Chloride	250	321.0443	78	75	DRY	NT	DRY	DRY
03/19/2002	Chloride	250	321.0443	145	154	DRY	129	DRY	54
09/19/2002	Chloride	250	321.0443	158	194	DRY	56	11	59
03/14/2003	Chloride	250	321.0443	263	238	DRY	108	143	60
09/29/2003	Chloride	250	321.0443	58	77	DRY	DRY	DRY	68
03/08/2004	Chloride	250	321.0443	192	195	DRY	136	36	73
09/27/2004	Chloride	250	321.0443	111	138	DRY	DRY	DRY	76
03/17/2005	Chloride	250	321.0443	147	125	DRY	136	36	75
09/22/2005	Chloride	250	321.0443	131	130	DRY	DRY	DRY	85
03/17/2006	Chloride	250	321.0443	602	631	DRY	73	DRY	94
09/22/2006	Chloride	250	321.0443	110	110	DRY	DRY	DRY	94
03/14/2007	Chloride	250	321.0443	147	144	66	66	79	97
09/22/2007	Chloride	250	321.0443	85	86	DRY	DRY	DRY	90
	Mean			126.2147	130.0706	21.26	104.6667	61	69.1333
	Standard Deviation (STD)			97.41482	101.5089	18.59995	48.63926	46.4715	20.5779
	Mean + 2 STD			321.0443	333.0883	58.4599	201.9452	153.943	110.289



AMES-STORY ENVIRONMENTAL LANDFILL

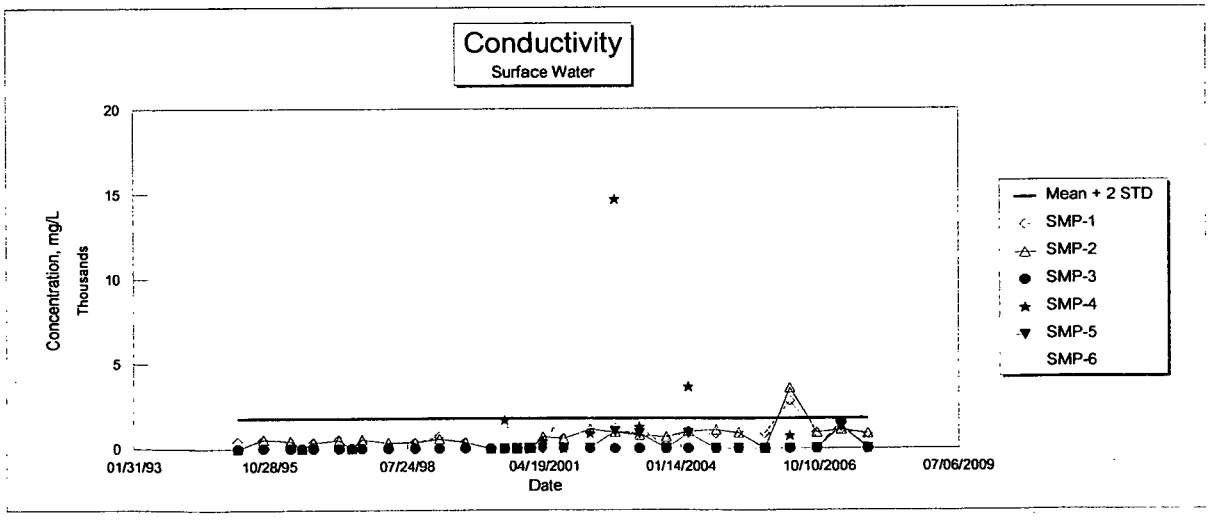
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Chromium, dissolved	0.1	0.03	NT	NT	DRY	NT	DRY	NT
09/22/2006	Chromium, dissolved	0.1	0.03	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Chromium, dissolved	0.1	0.03	NT	NT	NT	NT	<0.005	NT
09/22/2007	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

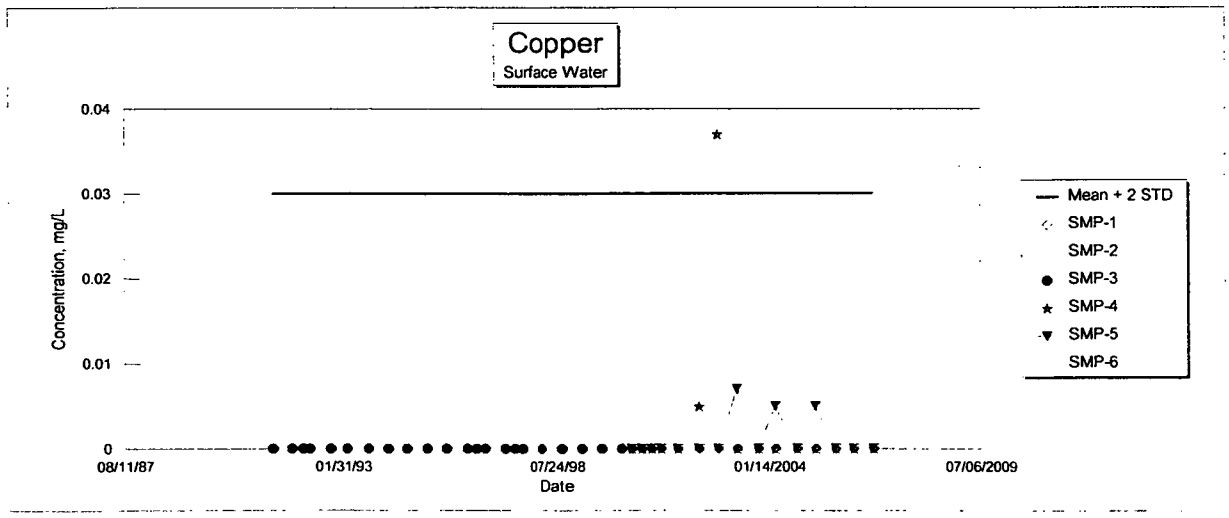
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
03/16/95	Conductivity, us/cm	--	1774.701	420	DRY	DRY			
09/13/95	Conductivity, us/cm	--	1774.701	500	540	DRY			
03/28/96	Conductivity, us/cm	--	1774.701	420	450	DRY			
06/20/96	Conductivity, us/cm	--	1774.701	NT	NT	DRY			
09/13/96	Conductivity, us/cm	--	1774.701	360	370	DRY			
03/19/97	Conductivity, us/cm	--	1774.701	520	490	DRY			
06/18/97	Conductivity, us/cm	--	1774.701	NT	NT	NT			
08/30/97	Conductivity, us/cm	--	1774.701	430	540	DRY			
03/10/98	Conductivity, us/cm	--	1774.701	300	350	DRY			
09/21/98	Conductivity, us/cm	--	1774.701	350	360	DRY			
03/18/99	Conductivity, us/cm	--	1774.701	702	560	DRY			
09/21/99	Conductivity, us/cm	--	1774.701	360	350	DRY			
03/21/2000	Conductivity, us/cm	--	1774.701	NT	NT	DRY			
06/28/2000	Conductivity, us/cm	--	1774.701	NT	NT	DRY	1670	DRY	1123
09/28/2000	Conductivity, us/cm	--	1774.701	NT	NT	DRY	DRY	DRY	1332
12/27/2000	Conductivity, us/cm	--	1774.701	NT	NT	NT	DRY	DRY	1183
03/28/2001	Conductivity, us/cm	--	1774.701	685	702	DRY	442	DRY	DRY
09/02/2001	Conductivity, us/cm	--	1774.701	586	583	DRY	NT	DRY	DRY
03/19/2002	Conductivity, us/cm	--	1774.701	1127	1127	DRY	880	DRY	1505
10/07/2002	Conductivity, us/cm	--	1774.701	1209	960	DRY	14680	990	1444
03/14/2003	Conductivity, us/cm	--	1774.701	750	780	DRY	1260	860	625
09/29/2003	Conductivity, us/cm	--	1774.701	468	675	DRY	DRY	DRY	1262
03/08/2004	Conductivity, us/cm	--	1774.701	1017	1025	DRY	3622	886	1475
09/27/2004	Conductivity, us/cm	--	1774.701	871	1096	DRY	DRY	DRY	1400
03/17/2005	Conductivity, us/cm	--	1774.701	966	923	DRY	DRY	DRY	1378
09/22/2005	Conductivity, us/cm	--	1774.701	893	NT	DRY	DRY	DRY	1021
03/17/2006	Conductivity, us/cm	--	1774.701	2785	3575	DRY	749	DRY	1572
09/22/2006	Conductivity, us/cm	--	1774.701	913	946	DRY	DRY	DRY	1415
03/14/2007	Conductivity, us/cm	--	1774.701	1092	1104	1540	1414	1249	3930
09/22/2007	Conductivity, us/cm	--	1774.701	861	877	DRY	DRY	DRY	1618
	Mean			774.375	835.5909	1540	3089.625	996.25	1485.53
	Standard Deviation (STD)			500.163	651.7785	0	4474.395	153.8187	696.626
	Mean + 2 STD			1774.701	2139.148	1540	12038.41	1303.887	2878.79



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

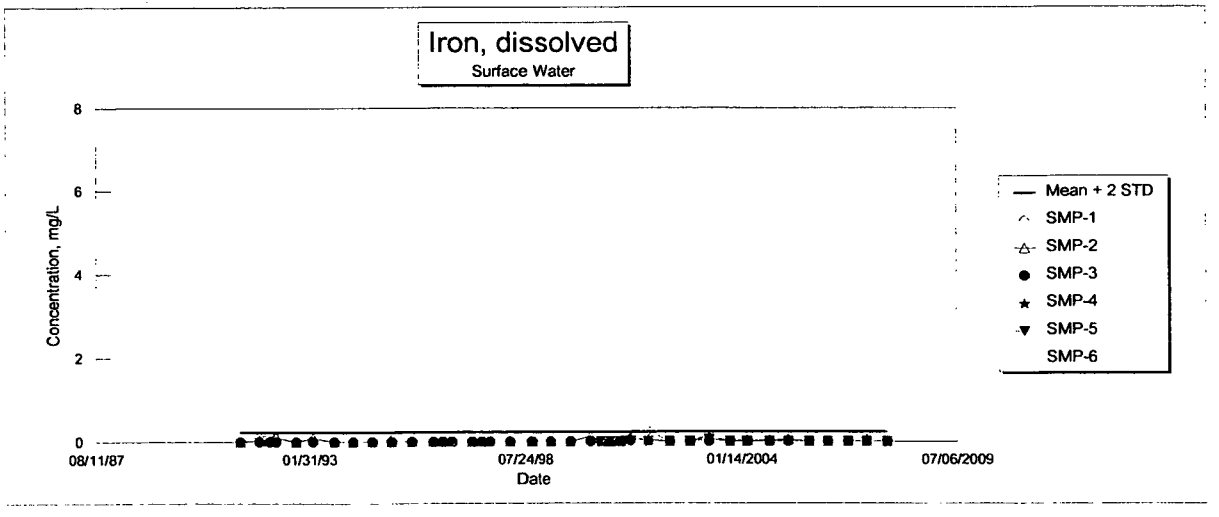
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
10/15/91	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
01/23/92	Copper, dissolved	1.3	0.03	<0.03	<0.03	<0.03			
03/23/92	Copper, dissolved	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
03/17/2006	Copper, dissolved	1.3	0.03	NT	NT	DRY	NT	DRY	NT
09/22/2006	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	NT
03/17/2006	Copper, dissolved	1.3	0.03	NT	NT	NT	NT	0.005	NT
09/22/2006	Copper, dissolved	1.3	0.03	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.021	0.0055	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	0.016	0.000866	ERR
	Mean + 2 STD			ERR	ERR	ERR	0.053	0.007232	ERR



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

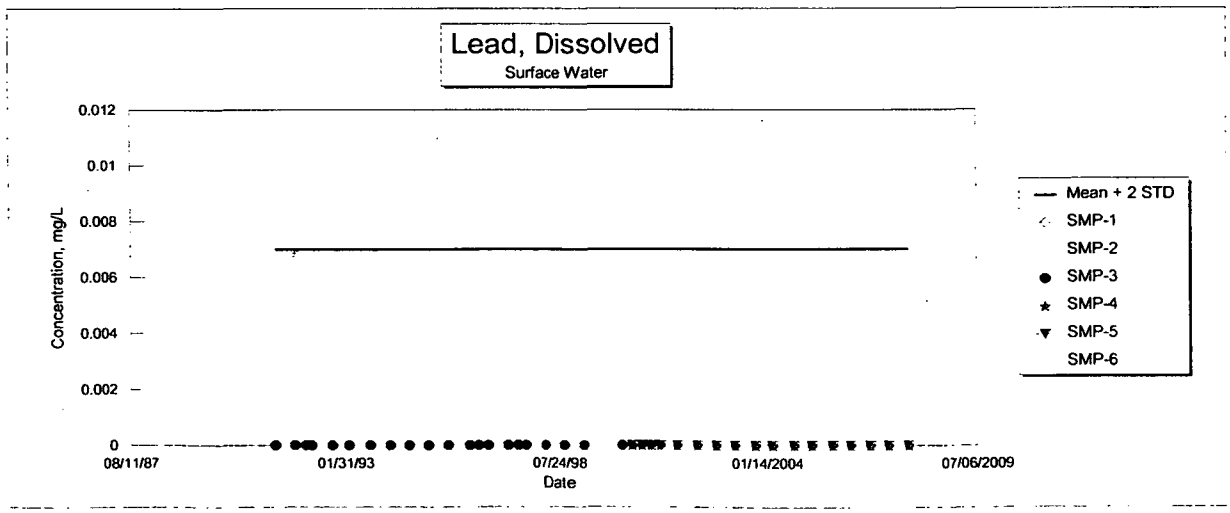
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Iron, dissolved	--	0.231811	<0.114	<0.111	<0.03			
10/15/91	Iron, dissolved	--	0.231811	0.125	0.045	<0.03			
01/23/92	Iron, dissolved	--	0.231811	0.172	0.036	<0.03			
03/23/92	Iron, 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
03/17/2006	Iron, dissolved	--	0.231811	<0.030	<0.030	DRY	<0.030	DRY	3.66
09/22/2006	Iron, dissolved	--	0.231811	<0.030	<0.030	DRY	DRY	DRY	5.77
03/14/2007	Iron, dissolved	--	0.231811	<0.030	<0.030	<0.030	0.057	<0.030	4.4
09/22/2007	Iron, dissolved	--	0.231811	<0.100	<0.100	DRY	DRY	DRY	4.65
	Mean			0.09975	0.0745	ERR	0.0646	0.051	4.134
	Standard Deviation (STD)			0.06603	0.032749	ERR	0.031404	0	0.88882
	Mean + 2 STD			0.231811	0.139998	ERR	0.127409	0.051	5.91164



AMES-STORY ENVIRONMENTAL LANDFILL

MONITORING WELL SAMPLING RESULTS

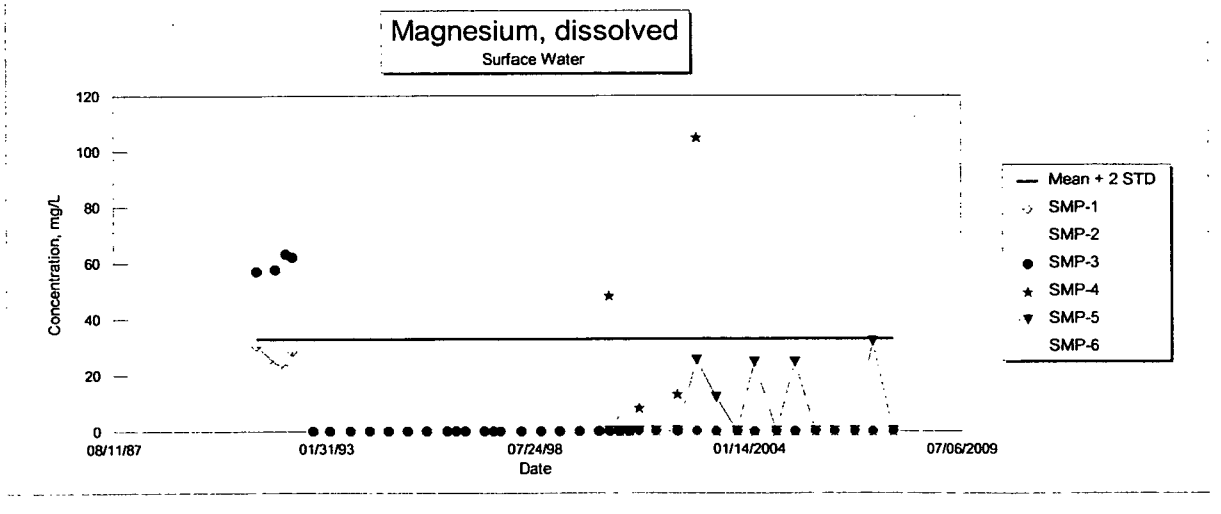
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Lead, dissolved	0.015	0.007	<0.005	<0.005	<0.005			
10/15/91	Lead, dissolved	0.015	0.007	0.007	0.01	<0.005			
01/23/92	Lead, dissolved	0.015	0.007	<0.005	<0.005	<0.005			
03/23/92	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
03/17/2006	Lead, dissolved	0.015	0.007	NT	NT	DRY	NT	DRY	NT
09/22/2006	Lead, dissolved	0.015	0.007	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Lead, dissolved	0.015	0.007	NT	NT	NT	NT	<0.005	NT
09/22/2007	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
03/17/2006	Magnesium, dissolved	--	32.97694	NT	NT	DRY	NT	DRY	NT
09/22/2006	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Magnesium, dissolved	--	32.97694	NT	NT	NT	NT	31.9	NT
09/22/2007	Magnesium, dissolved	--	32.97694	NT	NT	DRY	DRY	DRY	NT
	Mean			26.525	26.65	60.075	43.675	23.68	64.95
	Standard Deviation (STD)			3.225969	3.344772	2.717881	38.63078	6.45458	1.83644
	Mean + 2 STD			32.97694	33.33954	65.51076	120.9366	36.58916	68.6229



AMES-STORY ENVIRONMENTAL LANDFILL

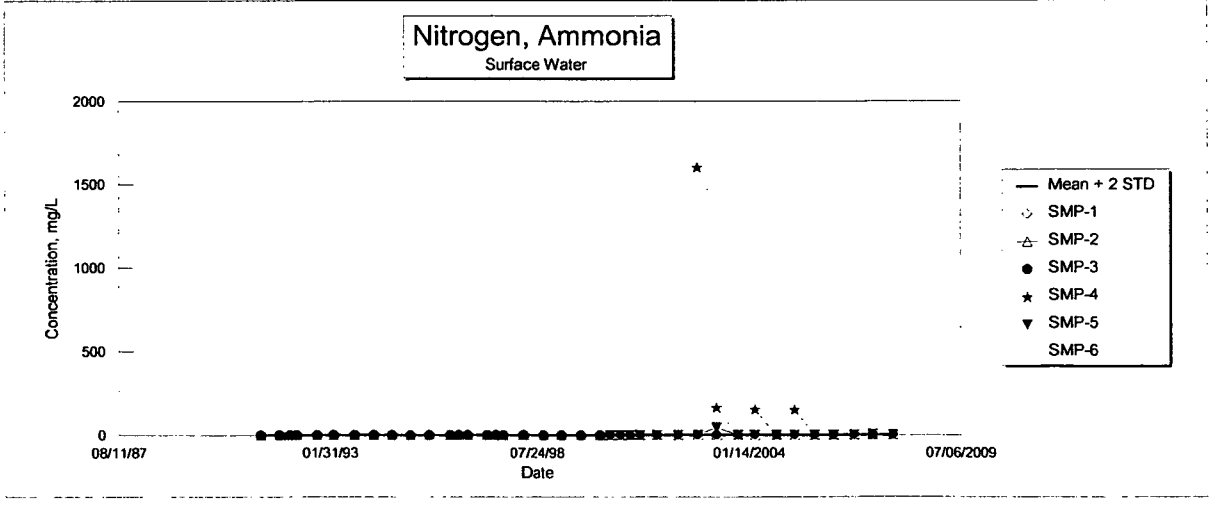
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	NT	DRY	NT
09/22/2006	Mercury, dissolved	0.002	0.0005	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Mercury, dissolved	0.002	0.0005	NT	NT	NT	NT	<0.00050	NT
09/22/2007	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

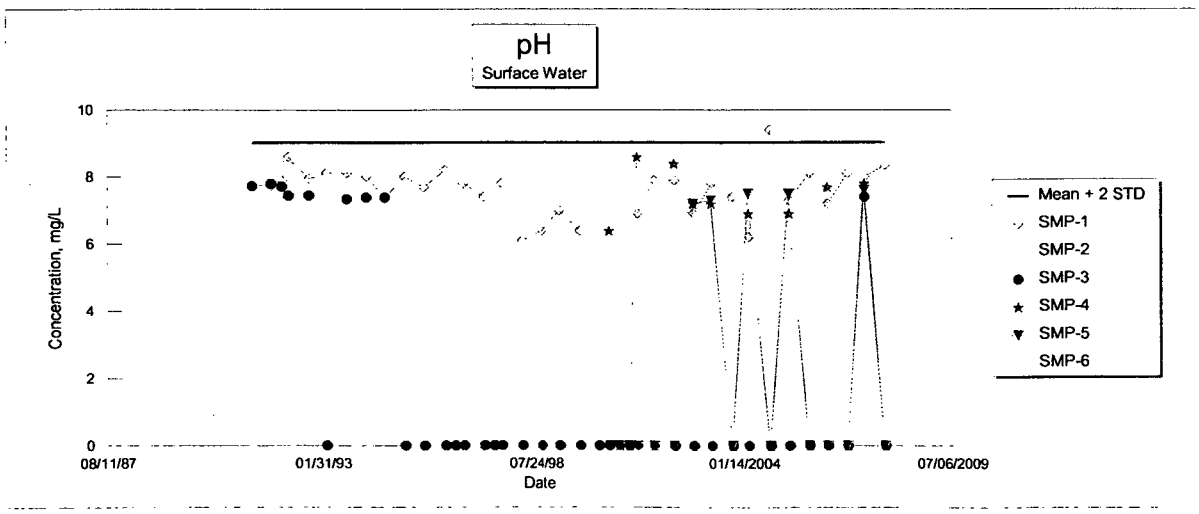
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
	mg/L								
04/23/91	Nitrogen, Ammonia	--	1	<0.5	<0.5	<0.5			
10/15/91	Nitrogen, Ammonia	--	1	<0.5	<0.5	<0.5			
01/23/92	Nitrogen, Ammonia	--	1	<1.0	<1.0	<1.0			
03/23/92	Nitrogen, Ammonia	--	1	<1.0	<1.0	<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
03/17/2006	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	<1.0	DRY	<1.0
09/22/2006	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	DRY	DRY	<1.0
03/14/2007	Nitrogen, Ammonia	--	1	<1.0	<1.0	<1.0	1.2	4.5	5
09/22/2007	Nitrogen, Ammonia	--	1	<1.0	<1.0	DRY	DRY	DRY	<1.0
	Mean			ERR	ERR	ERR	413.44	13.175	1.88
	Standard Deviation (STD)			ERR	ERR	ERR	596.2946	18.29445	1.56384
	Mean + 2 STD			ERR	ERR	ERR	1606.029	49.7639	5.00768



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	--	9.024204	7.76	7.77	7.73			
10/15/91	pH	--	9.024204	7.74	8.08	7.80			
01/23/92	pH	--	9.024204	7.89	8.41	7.72			
03/23/92	pH	--	9.024204	8.60	8.54	7.45			
09/30/92	pH	--	9.024204	7.95	8	7.45			
03/05/93	pH	--	9.024204	8.11	8.11	DRY			
09/21/93	pH	--	9.024204	8.12	8.07	7.34			
03/23/94	pH	--	9.024204	8.01	7.83	7.39			
09/16/94	pH	--	9.024204	7.39	7.11	7.39			
03/16/95	pH	--	9.024204	8	8.2	DRY			
09/13/95	pH	--	9.024204	7.7	DRY	DRY			
03/28/96	pH	--	9.024204	8.2	8.3	Dry			
06/20/96	pH	--	9.024204	NT	NT	NT			
09/13/96	pH	--	9.024204	7.8	7.6	DRY			
03/19/97	pH	--	9.024204	7.4	7.6	DRY			
06/18/97	pH	--	9.024204	NT	NT	NT			
08/30/97	pH	--	9.024204	7.8	7.6	DRY			
03/10/98	pH	--	9.024204	6.1	6.1	DRY			
09/21/98	pH	--	9.024204	6.4	5.7	DRY			
03/18/99	pH	--	9.024204	7	7.3	DRY			
09/21/99	pH	--	9.024204	6.4	5.7	DRY			
03/21/2000	pH	--	9.024204	NT	NT	DRY			
06/28/2000	pH	--	9.024204	NT	NT	DRY	6.4	DRY	5.5
09/28/2000	pH	--	9.024204	NT	NT	DRY	NT	NT	NT
12/27/2000	pH	--	9.024204	NT	NT	NT	DRY	DRY	7.7
03/28/2001	pH	--	9.024204	6.9	8.3	DRY	8.6	DRY	DRY
09/02/2001	pH	--	9.024204	7.9	8	DRY	NT	DRY	DRY
03/19/2002	pH	--	9.024204	7.9	7.9	DRY	8.4	DRY	6.8
10/07/2002	pH	--	9.024204	6.9	8.6	DRY	7.2	7.2	7
03/14/2003	pH	--	9.024204	7.8	7.6	DRY	7.2	7.3	7.1
09/29/2003	pH	--	9.024204	7.4	7.3	DRY	DRY	DRY	7.2
03/08/2004	pH	--	9.024204	6.2	7.4	DRY	6.9	7.5	7.8
09/27/2004	pH	--	9.024204	9.4	8.4	DRY	DRY	DRY	7
03/17/2005	pH	--	9.024204	7.3	7.8	DRY	6.9	7.5	7.2
09/22/2005	pH	--	9.024204	8.1	8	DRY	DRY	DRY	7
03/17/2006	pH	--	9.024204	7.2	7.1	DRY	7.7	DRY	7.7
09/22/2006	pH	--	9.024204	8.1	8.1	DRY	DRY	DRY	8.2
03/14/2007	pH	--	9.024204	8	8	7.4	7.8	7.6	6.7
09/22/2007	pH	--	9.024204	8.35	8.29	DRY	DRY	DRY	7.1
Mean				7.630909	7.712813	7.518889	7.455556	7.42	7.14286
Standard Deviation (STD)				0.696647	0.719849	0.167627	0.686555	0.146969	0.61262
Mean + 2 STD				9.024204	9.152511	7.854143	8.828666	7.713939	8.3681
Mean - 2 STD				6.237615					



AMES-STORY ENVIRONMENTAL LANDFILL

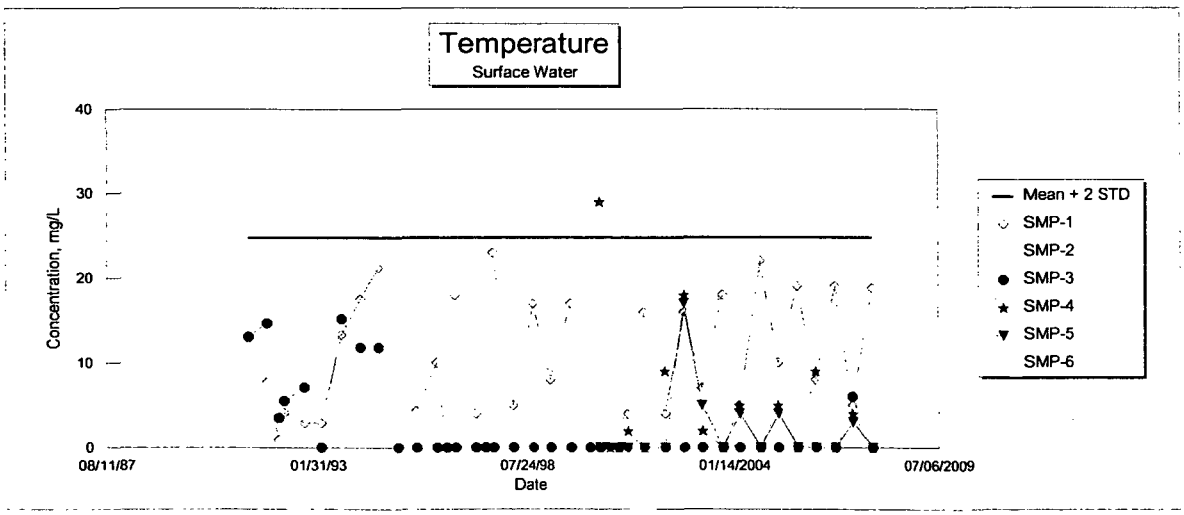
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Phenols	--	NT	NT	NT	DRY	NT	DRY	NT
09/22/2006	Phenols	--	0.1	<0.100	<0.100	DRY	DRY	DRY	<0.100
03/14/2007	Phenols	--	NT	NT	NT	NT	NT	NT	NT
09/22/2007	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

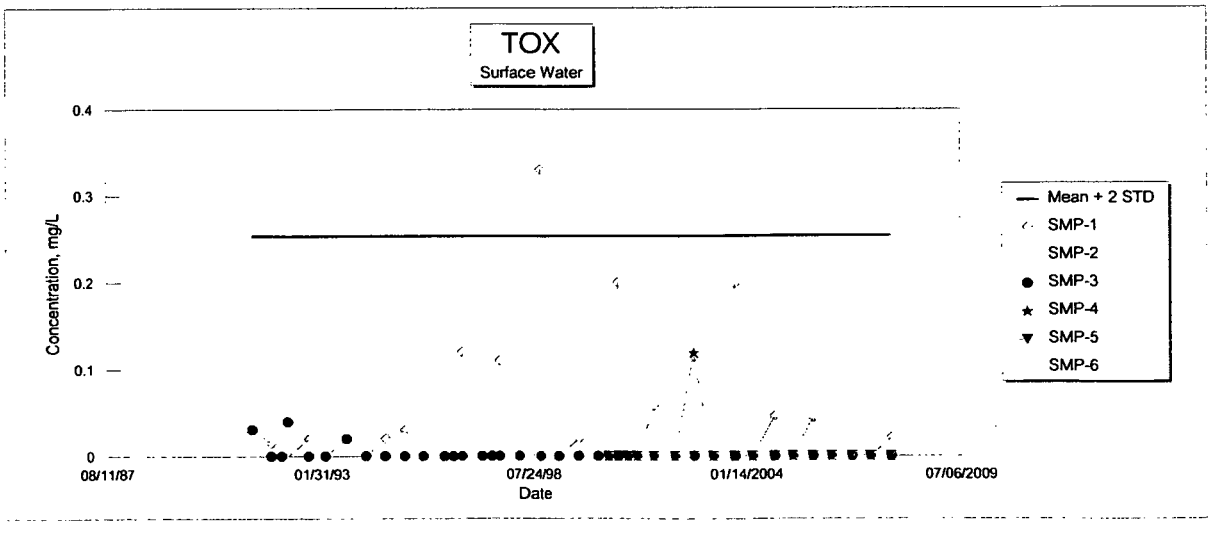
DATE	PARAMETER	ACTION LEVEL	MEAN + 2 STD SW	SURFACE MONITORING PTS. SW 1	SW 2	SW 3	SW 4	SW 5	SW 6
04/23/91	Temperature, celsius	--	24.77366	12.8	12.9	13.1			
10/15/91	Temperature, celsius	--	24.77366	7.7	9.8	14.7			
01/23/92	Temperature, celsius	--	24.77366	0.9	0.9	3.5			
03/23/92	Temperature, celsius	--	24.77366	4.1	4.6	5.5			
09/30/92	Temperature, celsius	--	24.77366	2.9	3	7.1			
03/05/93	Temperature, celsius	--	24.77366	2.9	2.9	DRY			
09/21/93	Temperature, celsius	--	24.77366	13.3	12.9	15.2			
03/23/94	Temperature, celsius	--	24.77366	17.5	15.4	11.8			
09/16/94	Temperature, celsius	--	24.77366	21.2	23.8	11.8			
03/16/95	Temperature, celsius	--	24.77366			DRY			
09/13/95	Temperature, celsius	--	24.77366	4.28	DRY	DRY			
03/28/96	Temperature, celsius	--	24.77366	10	11	DRY			
06/20/96	Temperature, celsius	--	24.77366	NT	NT	NT			
09/13/96	Temperature, celsius	--	24.77366	18	18	Dry			
03/19/97	Temperature, celsius	--	24.77366	4	4	DRY			
06/18/97	Temperature, celsius	--	24.77366	NT	NT	NT			
08/30/97	Temperature, celsius	--	24.77366	23	23	DRY			
03/10/98	Temperature, celsius	--	24.77366	5	2	DRY			
09/21/98	Temperature, celsius	--	24.77366	17	17	DRY			
03/18/99	Temperature, celsius	--	24.77366	8	9	DRY			
09/21/99	Temperature, celsius	--	24.77366	17	17	DRY			
03/21/2000	Temperature, celsius	--	24.77366	NT	NT	DRY			
06/28/2000	Temperature, celsius	--	24.77366	NT	NT	DRY	29	DRY	20
09/28/2000	Temperature, celsius	--	24.77366	NT	NT	DRY	NT	NT	NT
12/27/2000	Temperature, celsius	--	24.77366	NT	NT	NT	DRY	DRY	13
03/28/2001	Temperature, celsius	--	24.77366	4	4	DRY	2	DRY	Dry
09/02/2001	Temperature, celsius	--	24.77366	16	16	DRY	NT	DRY	Dry
03/19/2002	Temperature, celsius	--	24.77366	4	4	DRY	9	DRY	15
10/07/2002	Temperature, celsius	--	24.77366	16	15	DRY	18	17	18
03/14/2003	Temperature, celsius	--	24.77366	7	8	DRY	2	5	14
09/29/2003	Temperature, celsius	--	24.77366	18	18	DRY	DRY	DRY	18
03/08/2004	Temperature, celsius	--	24.77366	5	5	DRY	5	4	15
09/27/2004	Temperature, celsius	--	24.77366	22	21	DRY	DRY	DRY	21
03/17/2005	Temperature, celsius	--	24.77366	10	11	DRY	5	4	14
09/22/2005	Temperature, celsius	--	24.77366	19	19	DRY	DRY	DRY	21
03/17/2006	Temperature, celsius	--	24.77366	8	7	DRY	9	DRY	13
09/22/2006	Temperature, celsius	--	24.77366	19	18	DRY	DRY	DRY	17
03/14/2007	Temperature, celsius	--	24.77366	5	5	6	4	3	13
09/22/2007	Temperature, celsius	--	24.77366	18.8	19.8	DRY	DRY	DRY	17.4
	Mean			11.29313	11.54839	9.855556	9.222222	6.6	16.3857
	Standard Deviation (STD)			6.740268	6.790785	4.108828	8.403409	5.23832	2.82688
	Mean + 2 STD			24.77366	25.12996	18.07321	26.02904	17.07664	22.0395



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	--	0.253223	0.031	0.066	0.031			
10/15/91	Total Organic Halogens	--	0.253223	0.015	<0.01	<0.01			
01/23/92	Total Organic Halogens	--	0.253223	<0.01	<0.01	<0.01			
03/23/92	Total Organic Halogens	--	0.253223	<0.01	0.02	0.04			
09/30/92	Total Organic Halogens	--	0.253223	0.02	0.02	DRY			
03/05/93	Total Organic Halogens	--	0.253223	NT	NT	NT			
09/21/93	Total Organic Halogens	--	0.253223	0.02	0.03	0.02			
03/23/94	Total Organic Halogens	--	0.253223	NT	NT	NT			
09/16/94	Total Organic Halogens	--	0.253223	0.02	0.03	NT			
03/16/95	Total Organic Halogens	--	0.253223	0.03	NT	NT			
09/13/95	Total Organic Halogens	--	0.253223	NT	NT	NT			
03/28/96	Total Organic Halogens	--	0.253223	NT	NT	NT			
06/20/96	Total Organic Halogens	--	0.253223	NT	NT	NT			
09/13/96	Total Organic Halogens	--	0.253223	0.12	0.03	DRY			
03/19/97	Total Organic Halogens	--	0.253223	NT	NT	NT			
06/18/97	Total Organic Halogens	--	0.253223	NT	NT	NT			
08/30/97	Total Organic Halogens	--	0.253223	0.11	0.02	DRY			
03/10/98	Total Organic Halogens	--	0.253223	NT	NT	NT			
09/21/98	Total Organic Halogens	--	0.253223	0.33	0.08	DRY			
03/18/99	Total Organic Halogens	--	0.253223	NT	NT	DRY			
09/21/99	Total Organic Halogens	--	0.253223	0.02	0.01	DRY			
03/21/2000	Total Organic Halogens	--	0.253223	NT	NT	DRY			
06/28/2000	Total Organic Halogens	--	0.253223	NT	NT	DRY	NT	DRY	NT
09/28/2000	Total Organic Halogens	--	0.253223	0.2	0.07	DRY	DRY	DRY	0.03
12/27/2000	Total Organic Halogens	--	0.253223	NT	NT	NT	DRY	DRY	NT
03/28/2001	Total Organic Halogens	--	0.253223	NT	NT	NT	NT	DRY	Dry
09/02/2001	Total Organic Halogens	--	0.253223	0.058	0.052	DRY	NT	DRY	Dry
03/19/2002	Total Organic Halogens	--	0.253223	NT	NT	NT	NT	NT	NT
10/07/2002	Total Organic Halogens	--	0.253223	0.114	0.059	DRY	0.119	<0.01	0.104
03/14/2003	Total Organic Halogens	--	0.253223	NT	NT	DRY	NT	NT	NT
09/29/2003	Total Organic Halogens	--	0.253223	0.198	0.119	DRY	Dry	Dry	0.014
03/08/2004	Total Organic Halogens	--	0.253223	NT	NT	DRY	NT	NT	NT
09/27/2004	Total Organic Halogens	--	0.253223	0.046	0.044	DRY	DRY	DRY	0.04
03/17/2005	Total Organic Halogens	--	0.253223	NT	NT	DRY	NT	NT	NT
09/22/2005	Total Organic Halogens	--	0.253223	0.044	0.042	DRY	DRY	DRY	0.088
03/17/2006	Total Organic Halogens	--	0.253223	NT	NT	DRY	NT	DRY	NT
09/22/2006	Total Organic Halogens	--	0.253223	<0.100	0.031	DRY	DRY	DRY	0.062
03/14/2007	Total Organic Halogens	--	0.253223	NT	NT	NT	NT	NT	NT
09/22/2007	Total Organic Halogens	--	0.253223	0.021	<0.010	DRY	DRY	DRY	0.035
	Mean			0.082176	0.045188	0.030333	0.119	ERR	0.05329
	Standard Deviation (STD)			0.085523	0.027377	0.008179	0	ERR	0.03035
	Mean + 2 STD			0.253223	0.099942	0.04669	0.119	ERR	0.11399



AMES-STORY ENVIRONMENTAL LANDFILL

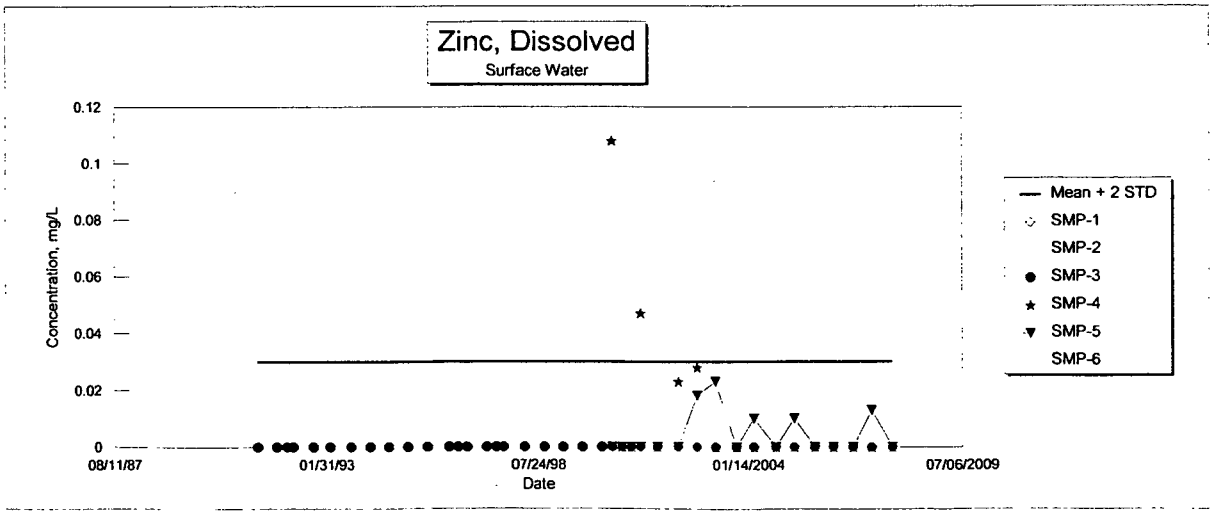
MONITORING WELL SAMPLING RESULTS

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
03/17/2006	Trichloroethene *	5	1	NT	NT	DRY	NT	DRY	NT
09/22/2006	Trichloroethene *	5	1	NT	NT	DRY	DRY	DRY	NT
03/14/2007	Trichloroethene *	5	1	NT	NT	NT	NT	<1.0	NT
09/22/2007	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
03/17/2006	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	NT
09/22/2006	Zinc, dissolved	2	0.03	NT	NT	DRY	NT	DRY	NT
03/14/2007	Zinc, dissolved	2	0.03	NT	NT	NT	NT	0.013	NT
09/22/2007	Zinc, dissolved	2	0.03	NT	NT	DRY	DRY	DRY	NT
	Mean			ERR	ERR	ERR	0.0515	0.0148	ERR
	Standard Deviation (STD)			ERR	ERR	ERR	0.033827	0.005036	ERR
	Mean + 2 STD			ERR	ERR	ERR	0.119154	0.024872	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-SOP-13-91P
MONTHLY WATER ELEVATIONS

	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 6	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	940.63	942.88	943.21	942.76
DATE																									
4/22/91	945.74	937.19	926.29	896.63	942.06	922.60	NT	NT	911.79	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	921.38	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	943.99	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	918.64	897.71	937.36	922.16	NT	NT	911.24	918.71	908.27	897.60	899.20	Installed 2/96	Installed 2/96	Installed 2/96									
10/14/91	941.37	925.81	918.88	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	927.64	916.88	897.03	935.01	919.78	NT	NT	909.29	917.17	906.56	896.90	900.86	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									
3/19/92	943.59	931.71	924.15	897.82	936.73	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	908.46	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	918.61	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	943.99	926.93	917.76	898.33	939.36	920.81	NT	NT	910.03	918.67	907.81	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	918.88	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	918.88	897.67	937.25	919.67	NT	NT	909.19	917.47	906.63	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	926.29	916.88	897.39	936.76	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	901.96	Installed 2/96	Installed 2/96	Installed 2/96									
4/27/93	941.79	936.40	927.66	897.84	939.11	920.27	940.68	937.01	911.30	921.03	908.66	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	936.81	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									
9/3/93	942.57	936.50	928.04	897.66	937.71	920.91	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	920.67	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	921.63	908.86	896.96	901.36	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	901.28	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	931.61	922.39	896.91	NT	918.21	937.68	933.56	910.27	923.10	907.90	896.79	901.66	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	910.94	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	918.56	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	938.09	933.74	922.68	896.98	931.65	918.45	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	918.31	938.13	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	896.96	901.90	Installed 2/96	Installed 2/96	Installed 2/96									
10/21/94	938.79	932.48	917.78	896.84	931.81	916.51	938.78	934.31	908.96	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	896.45	931.01	915.99	938.62	933.41	909.86	918.55	906.86	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	932.50	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	930.56	915.86	939.72	934.71	910.99	925.73	908.88	897.17	902.60	Installed 2/96	Installed 2/96	Installed 2/96									
5/2/95	937.39	939.58	927.34	897.31	932.01	916.11	939.81	935.26	911.79	926.53	907.86	897.13	902.60	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	908.66	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	918.83	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	928.18	Dry	896.84	927.01	914.71	937.12	932.21	908.79	918.43	906.28	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	901.80	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	938.02	932.61	909.24	917.98	906.06	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	897.64	Plugged	Plugged	940.37	934.81	910.34	927.03	907.63	897.47	902.25	903.99	932.01	940.94									
9/12/96	Plugged	931.96	Dry	897.29	Plugged	Plugged	938.62	933.71	909.76	919.48	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	933.68	Dry	897.24	Plugged	Plugged	937.42	932.96	910.84	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	901.68	903.67	931.82	940.14									
03/17/97	Plugged	937.98	Dry	898.54	Plugged	Plugged			910.97	929.58	907.26	897.32	902.40	903.99	931.77	940.59									
04/29/97	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									
08/29/97	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	932.96	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	938.82	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	903.36	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	907.66	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	930.53	907.66	897.72	901.90	904.29	933.12	942.19									
07/23/98	Plugged	934.08	924.64	897.79	Plugged	Plugged	938.52	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	938.82	933.61	908.29	922.43	906.31	897.16	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	917.61	905.06
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	906.14	918.63	905.16	896.92	901.45	903.19	933.22	941.69	915.79	917.53	921.52	915.66	920.04	922.68	933.08	919.27	906.71
03/15/2002	Plugged	927.15	Dry	896.59	Plugged	Plugged	937.67	931.82	907.17	917.49	904.88	896.72	902.81	902.78	931.65	939.75	915.23	916.17	925.07	918.72	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	907.86	918.22	904.51	896.51	901.69	902.68	933.04	941.43	922.74	924.85	923.32	916.05	920.29	922.51	934.38	920.29	907.38
03/12/2003	Plugged	924.50	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	906.91
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	906.60
09/23/2004	Plugged	928.28	Dry	896.74	Plugged	Plugged	938.27	932.41	908.04	919.03	905.86	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
03/20/2006	Plugged	924.11	Dry	896.42	Plugged	Plugged	939.42	933.31	906.51	917.37	904.56	896.25	902.68	903.13	931.57	939.74	914.54	915.76	925.01	916.15	919.32	921.71	934.50	920.02	906.98
09/21/2006	Plugged	928.25	Dry	896.69	Plugged	Plugged	939.76	934.74	907.40	920.38	903.91	896.52	904.00	903.35	933.72	943.02	916.82	919.12	926.89	917.14	921.49	924.83	935.00	920.70	905.19
03/14/2007	Plugged	940.56	923.56	897.69	Plugged	Plugged	939.96	934.60	910.28	936.19	904.64	897.50	905.30	903.56	933.16	942.25	918.99	921.32	928.42	917.22	924.00	928.47	935.40	921.00	907.93
09/28/2007	Plugged	930.16	Dry	896.97	Plugged	Plugged	939.84	934.91	908.95	919.99	905.89	896.81	901.78	903.36	933.77	942.37	915.79	917.99	923.94	916.39	920.35	924.83	935.48	921.68	908.63

	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	936.34	950.51	950.51	946.02	945.61	945.54	941.43	939.86	936.32	939.50	916.19	948.97	949.49	936.59	935.93	933.07	933.46	940.64	940.83	942.88	943.21	942.78
DATE																									
4/22/91	4.85	8.79	13.15	7.71	8.45	27.61	NT	NT	33.75	19.95	30.89	7.86	9.64	NT	NT	NT									
5/21/91	4.90	8.87	13.21	7.79	8.47	27.67	NT	NT	33.63	20.04	30.95	7.90	9.68	NT	NT	NT									
6/25/91	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	31.46	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	31.36	NT	NT	36.85	23.30	33.19	9.50	10.73	NT	NT	NT									
11/29/91	7.50	19.63	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	8.64	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	23.08	32.05	8.63	7.6	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	6.46	NT	NT	NT									
5/30/92	8.42	13.13	16.46	8.54	12.51	28.76	NT	NT	34.71	22.62	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	29.86	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	18.86	22.56	8.80	14.38	31.03	NT	NT	36.66	23.78	33.12	8.90	10.00	NT	NT	NT									
11/25/92	9.65	17.97	22.56	8.67	13.26	30.84	NT	NT	36.35	23.96	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	9.26	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	31.36	6.70	10.80	36.04	23.96	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	8.64	6.74	NT	NT	NT									
5/27/93	8.27	10.10	11.28	8.14	11.64	29.80	4.90	9.00	33.90	17.24	30.10	8.26	6.20	NT	NT	NT									
6/30/93	8.22	10.64	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									
9/3/93	8.02	9.48	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	6.75	11.60	14.43	9.02	13.72	29.94	5.20	8.20	33.14	16.38	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	9.18	8.05	NT	NT	NT									
11/22/93	10.20	12.72	16.34	9.28	15.38	30.90	7.20	10.56	34.14	19.80	31.00	9.36	8.12	NT	NT	NT									
12/14/93	10.9	13.30	17.54	9.34	15.98	31.04	7.48	11.16	34.42	20.34	31.24	9.48	8.22	NT	NT	NT									
1/31/94	11.98	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	31.96	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	31.36	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	31.06	9.42	8.48	NT	NT	NT									
5/17/94	11.5	12.24	16.76	9.36	18.86	35.06	7.5	11.86	35	16.96	31.32	9.5	NT	NT	NT	NT									
7/31/94	NT	14.8	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	7.6	NT	NT	NT									
9/16/94	11.74	12.88	20.5	9.2	18.58	33.95	7.52	11.48	35.5	22.4	32.74	9.34	7.6	NT	NT	NT									
10/21/94	11.8	13.5	21.66	9.5	18.7	34	7.24	11.3	35.58	22.62	32.98	9.64	7.6	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	9.98	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	22.86	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	6.58	14.2	9	19.95	34.65	6.3	10.9	34.55	15.7	32.98	9.15	6.9	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	18.25	31.2	9.3	7.3	NT	NT	NT									
8/23/95	13.2	15.6	20.3	9.2	19.77	34.6	7.85	11.95	35.6	21.6	32.65	9.35	7.8	NT	NT	NT									
9/12/95	13.87	16.62	20.9	9.87	20.84	35	8.91	12.85	36.15	21.9	32.92	9.54	7.86	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	33.6	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	36.95	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	33.6	9.55	7.6	NT	NT	NT									
3/22/96	Plugged	15.35	Dry	9.45	Plugged	Plugged	9.3	13.6	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	35.78	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	35.78	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	14.8	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	19.85	8.95	Plugged	Plugged	8.45	12.75	35	18.35	32.6	9.1	7.82	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									
04/29/97	Plugged	11.2	13.6	8.6	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	12.6	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	33.8	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									
12/08/97	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	6.8									
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	7.8	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	14.6	6.5									
08/09/98	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	13.6	16.5	8.7									
01/08/99	Plugged	17.4	Dry	9.4	Plugged	Plugged	9	12.98	37.3	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	8.3	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	13.6	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	18.55	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	36.05
03/15/2002	Plugged	18.83	Dry	9.75	Plugged	Plugged	8.35	13.99	38.37	23.94	34.98	9.6	6.69	13.41	17.32	9.74	21.36	18.76	8	16.74	17.75	20.39	10.15	24.09	36.44
09/19/2002	Plugged	16.88	DRY	9.67	Plugged	Plugged	6.26	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	18.32	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	36.53
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	16.36	8.6	19.69	16.32	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	12.66	17.23	8	17.24	15.09	5.76	16.13	17.8	14.38	8.27	23.05	35.66
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	17.78	9.2	17.04	20.4	18.25	8.38	22.55	35.33
03/20/2006	Plugged	21.87	DRY	9.92	Plugged	Plugged	6.6	12.3	39.03	24.06	35.3	10.07	6.82	13.06	17.4	9.75	22.05	20.17	8.06	17.31	21.32	19.12	8.38	23.19	35.78
09/21/2006	Plugged	17.73	DRY	9.65	Plugged	Plugged	6.26	10.87	38.14	21.05	35.95	9.8	5.5	12.84	15.25	6.47	19.77	16.81	6.18	16.32	19.15	16	7.88	22.51	37.57
03/14/2007	Plugged	5.42	15.88	8.65	Plugged	Plugged	6.06	11.01	35.26	5.24	35.22	8.82	4.2	12.63	15.81	7.24	17.6	14.61	4.65	16.24	16.84	12.36	7.48	22.21	34.83
09/28/2007	Plugged	15.82	DRY	9.37	Plugged	Plugged	6.18	10.7	36.59	21.44	33.97	9.51	7.72	12.83	13.2	7.12	20.8	17.94	9.13	17.07	20.29	16	7.4	21.53	34.13

APPENDIX G

Leachate Elevation & Thickness Assessment Data

Leachate Surface Elevation

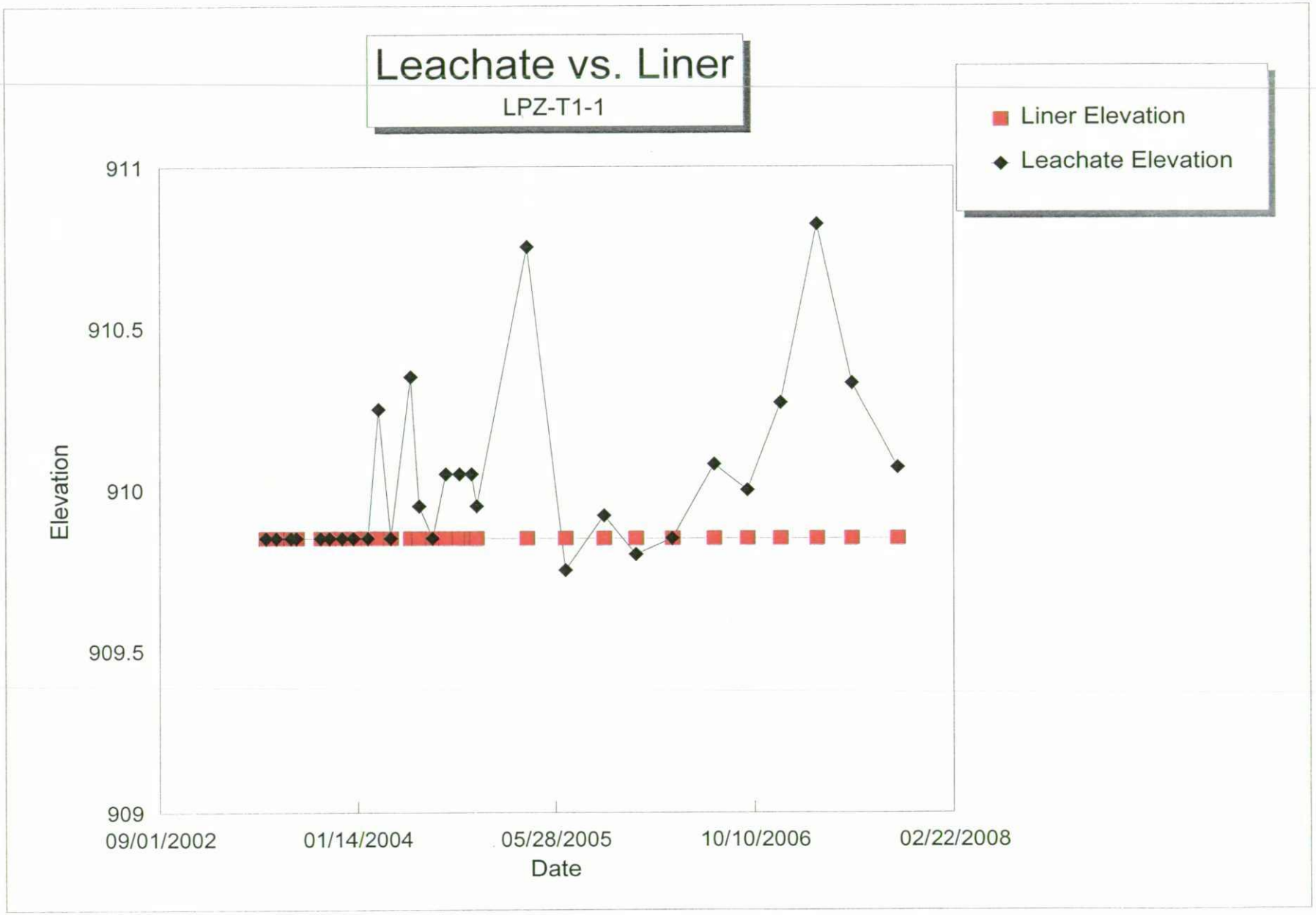
	LPZ-T1-1	LPZ-T2-1	LPZ-T3-1	LPZ-T4-1
PVC ELEV, FT.	925.85	932.62	922.72	922.31
DATE				
05/27/2003	909.85	911.62	913.22	914.91
05/28/2003	909.85	911.62	912.32	913.91
06/23/2003	909.85	911.62	912.33	914.41
07/31/2003	909.85	911.62	912.32	913.91
08/13/2003	909.85	911.62	912.32	913.51
10/13/2003	909.85	911.62	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
12/16/2005	909.8	911.62	NT	913.47
03/17/2006	909.85	911.62	911.72	913.31
06/30/2006	910.08	911.62	912.18	914.05
09/22/2006	910.00	911.62	912.17	915.05
12/14/2006	910.27	911.62	912.51	914.98
03/15/2007	910.82	911.62	912.73	914.95
06/11/2007	910.33	911.62	912.89	915.09
10/04/2007	910.07	911.62	912.64	914.33

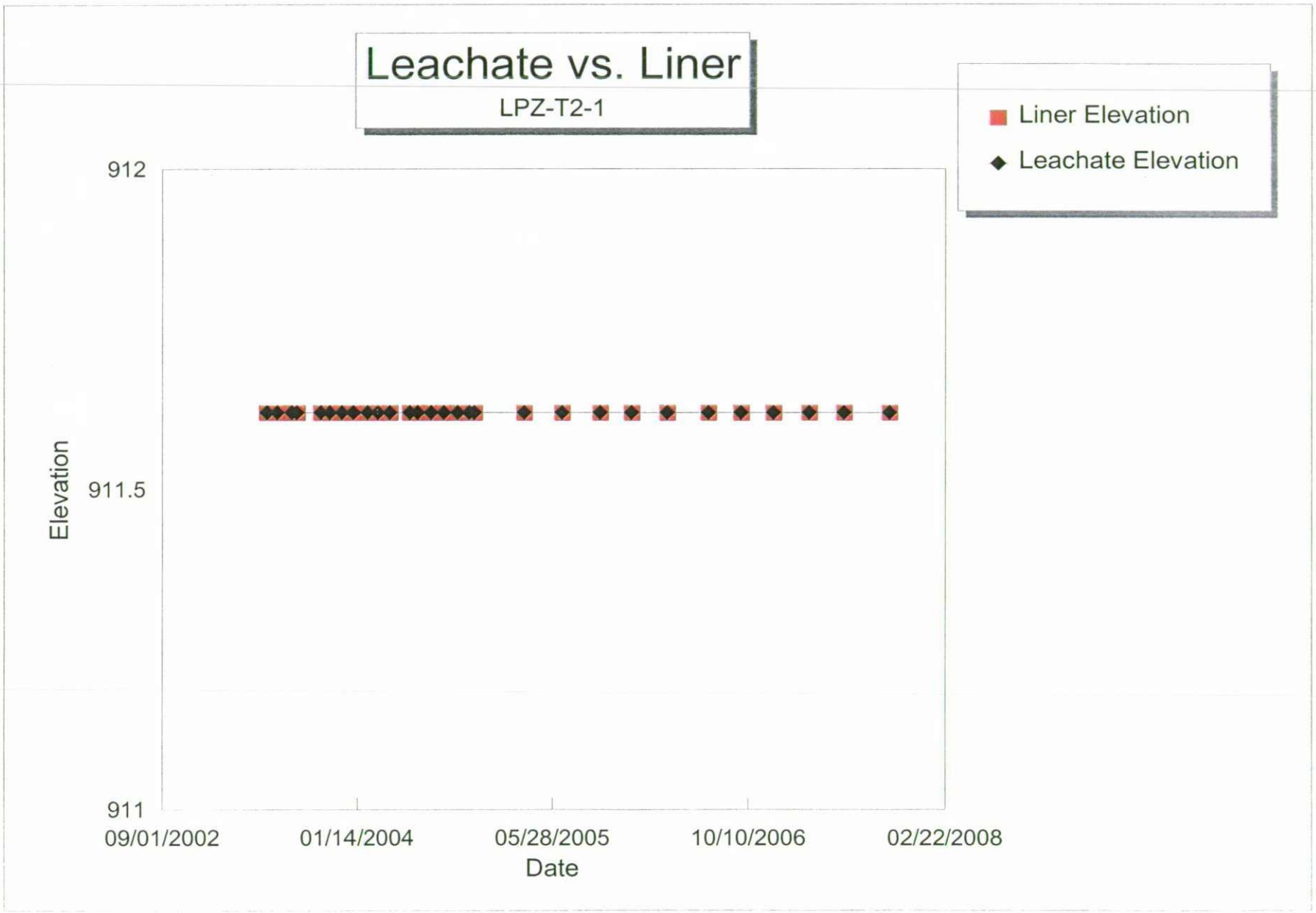
Top of Liner Elevation Data

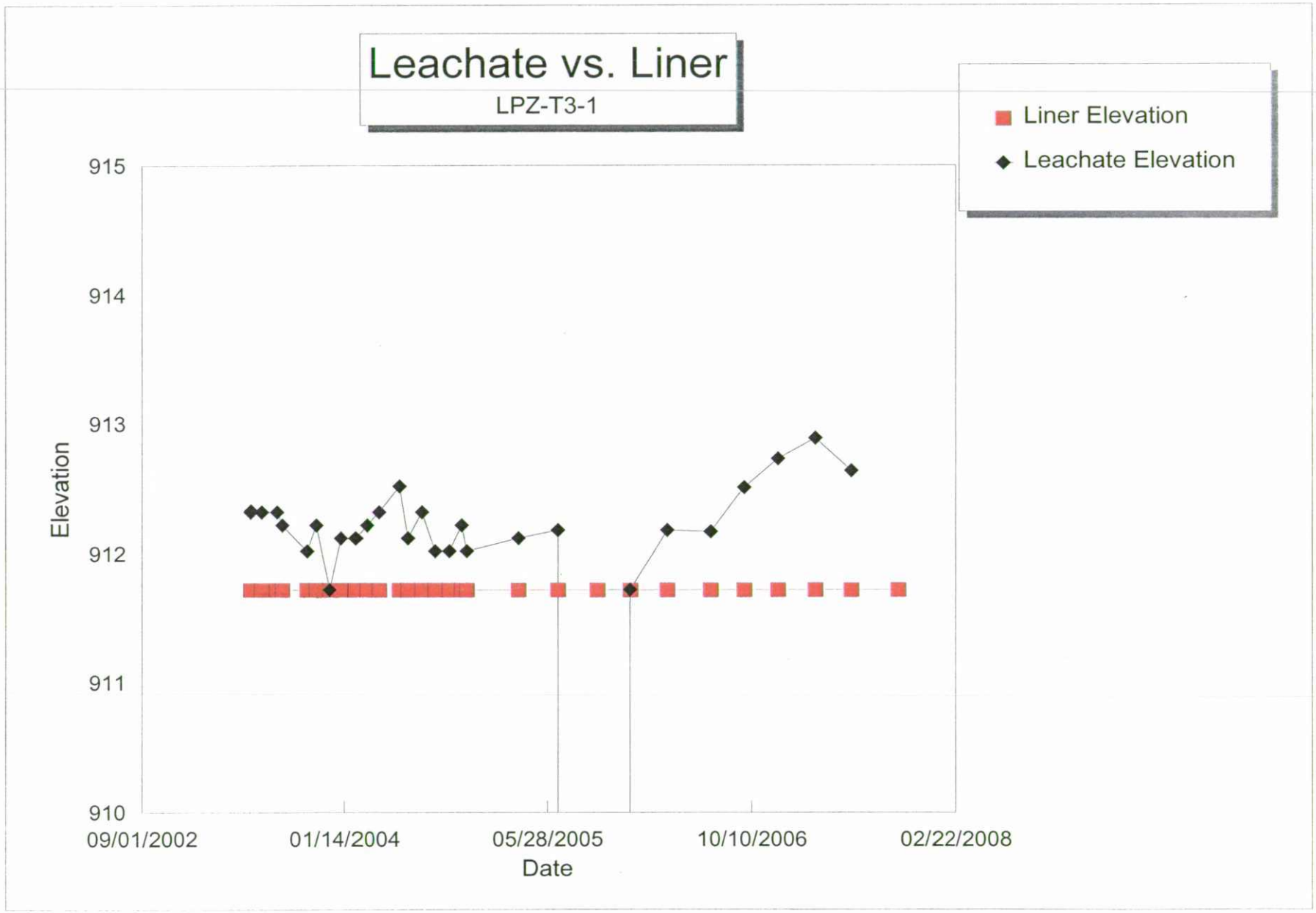
	LPZ-T1-1	LPZ-T2-1	LPZ-T3-1	LPZ-T4-1
PVC ELEV, FT.	925.85	932.62	922.72	922.31
Liner Depth	16	21	11	11
Liner Elev	909.85	911.62	911.72	911.31
05/27/2003	909.85	911.62	911.72	911.31
05/28/2003	909.85	911.62	911.72	911.31
06/23/2003	909.85	911.62	911.72	911.31
07/31/2003	909.85	911.62	911.72	911.31
08/13/2003	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
12/16/2005	909.85	911.62	911.72	911.31
03/17/2006	909.85	911.62	911.72	911.31
06/30/2006	909.85	911.62	911.72	911.31
09/22/2006	909.85	911.62	911.72	911.31
12/14/2006	909.85	911.62	911.72	911.31
03/15/2007	909.85	911.62	911.72	911.31
06/11/2007	909.85	911.62	911.72	911.31
10/04/2007	909.85	911.62	911.72	911.31

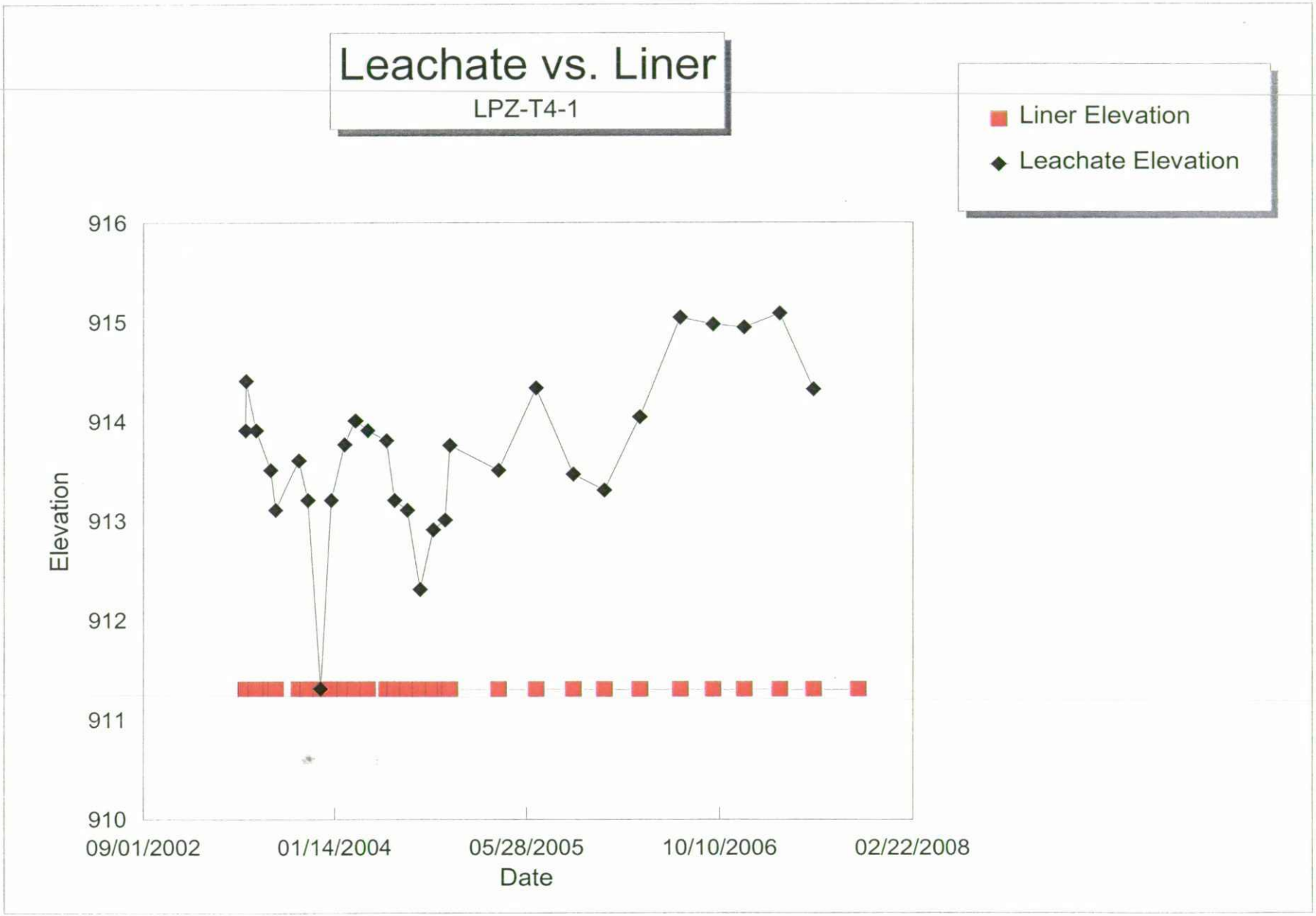
Leachate Thickness (feet)

	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
12/16/2005	-0.05	0	NT	2.16
03/17/2006	0	0	0	2
06/30/2006	0.23	0	0.46	2.74
09/22/2006	0.15	0	0.45	3.74
12/14/2006	0.42	0	0.79	3.67
03/15/2007	0.97	0	1.01	3.64
06/11/2007	0.48	0	1.17	3.78
10/04/2007	0.22	0	0.92	3.02


Leachate vs. Liner
LPZ-T1-1
Liner Elevation
Leachate Elevation
911
910.5
910
909.5
909
Elevation
09/01/2002
01/14/2004
05/28/2005
10/10/2006
02/22/2008
Date


Leachate vs. Liner
LPZ-T2-1
Liner Elevation
Leachate Elevation
912
911.5
911
Elevation
09/01/2002
01/14/2004
05/28/2005
10/10/2006
02/22/2008
Date


Leachate vs. Liner
LPZ-T3-1
Liner Elevation
Leachate Elevation
915
914
913
912
911
910
Elevation
09/01/2002
01/14/2004
05/28/2005
10/10/2006
02/22/2008
Date


Leachate vs. Liner
LPZ-T4-1
Liner Elevation
Leachate Elevation
916
915
914
913
912
911
910
Elevation
09/01/2002
01/14/2004
05/28/2005
10/10/2006
02/22/2008
Date

APPENDIX H

City of Ames Leachate Testing Results

RECEIVED JUN 8 2007

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, Pretreatment Coordinator
DATE: June 6, 2007
SUBJECT: Pretreatment Reporting: Spring 2007 (Permit No. 7093-6)

Karla K. Tebben

Listed below are analytical results of the wastewater sampled at your facility's Site 2 on May 11, 2007. All tested parameters are within permit limits. However, ammonia and TKN results exceed surcharge limits. Please note that this letter reflects the changes to surcharge limits that will take effect July 1, 2007. If necessary, 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	6.9
TSS	1,500/300		88	27	12
Chloride		900			250
Ammonia-N	200/30		10	4.9	52
TKN	250/45				61
COD	2,500/550		140	37	540
BTEX	0.75				< 0.020

Complete the bottom portion of this page and return one copy to me by June 19, 2007.

PROCESS CHANGES SINCE October 26, 2006: _____

_____

_____

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 October 26, 2006.

NAME_____ DATE_____

c: Todd Whipple, Fox Engineering
Jim McElvogue

RECEIVED NOV 1 6 2007

CITY OF AMES IOWA
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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: Christina Murphy, Assistant Director, Water & Pollution Control Department
DATE: November 13, 2007
SUBJECT: Pretreatment Reporting: Fall 2007 (Permit No. 7093-6)

Listed below are analytical results of the wastewater sampled at your facility's Site 2 on September 24, 2007. All tested parameters are within permit limits. However, TKN exceeded the 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	7.3
TKN	250/45				56
Oil & Grease		300			< 4.9
$CBOD_5$	/250	1,500			26
COD	2,500/550		140	37	490

Complete the bottom portion of this page and return one copy to me by November 26, 2007.

PROCESS CHANGES SINCE June 14, 2006: _____

_____

_____

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, 2006.

NAME_____ DATE_____

c: Todd Whipple, Fox Engineering
Jim McElvogue

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RECEIVED JAN 1 0 2007

January 9, 2007

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 **$0.42/100 cubic feet** beginning with the next billing cycle. The surcharge rate will be recalculated in July 2007 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

01/09/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3
26-Sep-05	730	62	42
22-May-06	450	14	42
20-Sep-06	560		
AVERAGE	580	38	42
NORMAL	250	300	40
EXTRA STRENGTH	330	(262)	2

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	330	0.00125	$0.41
TSS	(262)	0.00219	$0.00
NH3/TKN	2	0.00437	$0.01
TOTAL SURCHARGE RATE			**$0.42**

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF): (Estimate)	3
SURCHARGE RATE($/100 CF):	$0.42
ESTIMATED SURCHARGE ($ per month):	**$1.26**

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Phone 515-239-5150 ✦ Fax 515-239-5251

April 4, 2007

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 through December 31, 2006, the City performed pretreatment sampling at the Ames-Story Environmental Landfill. The cost associated with the sampling is $150.97.

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,

Winnie Gleason

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

30-Mar-07

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	
9/20/2006	TW	$36.19		$0.00	30	$18.10	15	$24.73	Truck/Van	1	$3.30	62207	$88.00	$134.12
	CM	$24.65		$0.00		$0.00	15	$16.84	Sampler/F.M.		$0.00			$16.84
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$0.00**		**$18.10**		**$41.57**			**$3.30**		**$88.00**	**$150.97**
Notes:														
				$0.00		$0.00		$0.00	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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				**$0.00**		**$18.10**		**$41.57**			**$3.30**		**$88.00**	**$150.97**

*Cost includes: sampling time + travel time to site

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http://www.cityofames.org/waterweb

April 12, 2007

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: High-Strength Wastewater Surcharge

Dear Mr. Fedeler:

Since 1987, the City of Ames has assessed a sewer surcharge for dischargers of high-strength wastewater to the city's wastewater treatment facility. The program to implement the surcharge program has been updated and revised several times in this 20-year period. The next revision is scheduled to be presented to the City Council on May 8, 2007.

The proposed changes are a combination of updating the actual costs of treatment as well as revising the method to calculate what constitutes high-strength wastewater. The details of the changes and the anticipated impact on your facility are shown in the enclosed documentation. We have scheduled a meeting to present the proposed changes to the facilities that are impacted by the surcharge program and address any questions or concerns. The meeting will be held at 11:00 a.m. on Thursday, April 19, 2007, at the Water & Pollution Control Department office located at 300 E. 5th Street.

After you have had a chance to review the enclosed information, please let us know if you plan to attend the presentation. If you would prefer to set up a separate meeting to discuss any questions or concerns regarding the changes, please call either Karla Tebben or me at 515-239-5150 to schedule a time.

It is important that we have your input on the proposed revisions before we present the final recommendations to the City Council. We look forward to discussing this issue with you; please ensure that we receive your comments no later than April 25, 2007.

Yours very truly,

Winifred G. Gleason, P.E.
Environmental Engineer
Water and Pollution Control Department

/bas

Enclosures

pc: Todd Whipple

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
as billed Jan-Jun 2006

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
20-Sep-04	450	6.2	39	
2-May-05	370	40	36	46
26-Sep-05	730	62	42	
AVERAGE	517	36	39	
NORMAL	250	300	40	
EXTRA STRENGTH	267	(264)	(1)	

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/	SURCHARGE RATE PER 100 CF
COD	267	0.00125	$0.33
TSS	(264)	0.00219	$0.00
NH3/TKN	(1)	0.00437	$0.00
TOTAL SURCHARGE RATE			$0.33

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Es 3

SURCHARGE RATE($/100 CF): $0.33

ESTIMATED SURCHARGE ($ per month): **$1.00**

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
as billed Jul-Dec 2006

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
2-May-05	370	40	36	
26-Sep-05	730	62	42	46
22-May-06	450	14	42	51
AVERAGE	517	39	40	49
NORMAL	250	300	40	40
EXTRA STRENGTH	267	(261)	0	9

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	267	0.00125	$0.33
TSS	(261)	0.00219	$0.00
NH3/TKN	0	0.00437	$0.00
TOTAL SURCHARGE RATE			$0.33

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimat 3

SURCHARGE RATE($/100 CF): $0.33

ESTIMATED SURCHARGE ($ per month): **$1.00**

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
as billed Jan-Jun 2007

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
26-Sep-05	730	62	42	46
22-May-06	450	14	42	51
20-Sep-06	560			50
AVERAGE	580	38	42	
NORMAL	250	300	40	
EXTRA STRENGTH	330	(262)	2	

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	330	0.00125	$0.41
TSS	(262)	0.00219	$0.00
NH3/TKN	2	0.00437	$0.01
TOTAL SURCHARGE RATE			$0.42

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimate 3

SURCHARGE RATE($/100 CF): $0.42

ESTIMATED SURCHARGE ($ per month): **$1.26**

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
if changed Jan-Jun 2006

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
20-Sep-04	450	6.2	39	
2-May-05	370	40	36	46
26-Sep-05	730	62	42	
AVERAGE	517	36	39	46
NORMAL	550	300	30	45
EXTRA STRENGTH	(33)	(264)	9	1

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/	SURCHARGE RATE PER 100 CF
COD	(33)	0.00062	$0.00
TSS	(264)	0.00250	$0.00
TKN	1	0.00375	$0.00
TOTAL SURCHARGE RATE			$0.00

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Es 3

SURCHARGE RATE($/100 CF): $0.00

ESTIMATED SURCHARGE ($ per month): $0.01

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
if changed Jul-Dec 2006

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
2-May-05	370	40	36	
26-Sep-05	730	62	42	46
22-May-06	450	14	42	51
AVERAGE	517	39	40	49
NORMAL	550	300	30	45
EXTRA STRENGTH	(33)	(261)	10	4

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	(33)	0.00062	$0.00
TSS	(261)	0.00250	$0.00
TKN	4	0.00375	$0.01
TOTAL SURCHARGE RATE			$0.01

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimat 3

SURCHARGE RATE($/100 CF): $0.01

ESTIMATED SURCHARGE ($ per month): $0.04

02/26/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION
if changed Jan-Jun 2007

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	NH3	TKN
26-Sep-05	730	62	42	46
22-May-06	450	14	42	51
20-Sep-06	560			50
AVERAGE	580	38	42	49
NORMAL	550	300	30	45
EXTRA STRENGTH	30	(262)	12	4

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	30	0.00062	$0.02
TSS	(262)	0.00250	$0.00
TKN	4	0.00375	$0.02
TOTAL SURCHARGE RATE			$0.03

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimate 3

SURCHARGE RATE($/100 CF): $0.03

ESTIMATED SURCHARGE ($ per month): $0.10

City of Ames
Surcharge Revisions 2007
Fact Sheet

Questions: Winnie Gleason/Karla Tebben 239-5150

Purpose of Surcharge:

Provide an equitable means of assessing the extra cost of treatment of high strength wastewater to the individual contributor

Cost of Treatment ($/#):

	Average FY 00-06	Average FY 06-10 (est.)
$CBOD_5$	$0.24	$0.27
COD	$0.10	$0.11
TSS	$0.38	$0.43
NH^3	$0.86	$1.02
TKN	$0.56	$0.66

Surcharge Rates

	Existing surcharge	Proposed surcharge	Existing surcharge	Proposed surcharge	
	$ per pound	$ per pound	$ per mg/L per 100 cf	$ per mg/L per 100 cf	% increase
$CBOD_5$	$0.20	$0.25	$0.00125	$0.00156	24.87%
COD	$0.20	$0.10	$0.00125	$0.00062	-50.05%
TSS	$0.35	$0.40	$0.00219	$0.00250	14.03%
NH^3	$0.70	$1.00	$0.00437	$0.00624	42.87%
TKN	$0.70	$0.61	$0.00437	$0.00381	-14.28%

Note: Practice has been to use COD when more than 3 times $CBOD_5$ for oxygen demand, existing rate was calculated for $CBOD_5$ only
Practice has been to use TKN when determined to be more representative than NH^3 for nitrogen demand, existing rate was calculated for NH^3 only

$CBOD_5$ is part of COD, normal ratio of $CBOD_5$:COD in domestic wastewater is 4:10
NH^3 is part of TKN, normal ratio of NH^3:TKN in domestic wastewater is 7:10

Threshold Concentrations for "Normal Domestic Wastewater"

	Existing mg/L	Proposed mg/L
$CBOD_5$	250	250
COD	250	**550**
TSS	300	300
NH^3	40	**30**
TKN	40	**45**

Definitions:

$CBOD_5$: 5-day Carbonaceous Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TSS: Total Suspended Solids
NH^3: Ammonia
TKN: Total Kjeldahl Nitrogen

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Ames, IA 50010
Phone 515-239-5150 ✦ Fax 515-239-5251

April 30, 2007

Mr. Bill Fedeler
Ames-Story Environmental Landfill
P.O. Box 2483
Ames, IA 50010

Re: Pretreatment Sampling Expenses

Dear Mr. Fedeler:

Earlier this month, you received the semi-annual billing for the expenses associated with the pretreatment sampling at your facility from July 2006 through December 2006. Shortly thereafter, we realized that the billing for the previous billing cycle (expenses incurred between January and June 2006) had not been calculated or invoiced last year.

We have now completed the process, and you will be receiving an invoice from the City Finance Department for the pretreatment sampling at the Ames-Story Environmental Landfill during this period. The cost associated with the sampling is $177.16. A detailed summary of the costs is enclosed.

We apologize for the delayed billing of these expenses. If you would like to make arrangements for an extension in paying this invoice, please contact Mike Wheelock in Utility Customer Service at 515-239-5281.

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

20-Apr-07

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	
5/22/2006	TW	$34.97		$0.00	30	$17.49	20	$26.81	Truck/Van	1	$3.30	61180	$111.00	$158.60
	SH	$19.89	10	$3.32		$0.00	20	$15.25	Sampler/F.M.		$0.00			$18.56
				$0.00		$0.00		$0.00	S&H (UHL)		$0.00			$0.00
Subtotal				**$3.32**		**$17.49**		**$42.06**			**$3.30**		**$111.00**	**$177.16**
Notes:														
				$0.00		$0.00		$0.00	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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	Truck/Van		$0.00			$0.00
				$0.00		$0.00		$0.00	Sampler/F.M.		$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				**$3.32**		**$17.49**		**$42.06**			**$3.30**		**$111.00**	**$177.16**

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July 6, 2007

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, 2007 through June 30, 2007, the City performed pretreatment sampling at the Ames-Story Environmental Landfill. The cost associated with the sampling is $218.76.

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,

Karla K. Tebben, P.E.
Pretreatment Program Co-Coordinator
Water and Pollution Control Department

/bas

Enclosure

pc: Linda Stole
Todd Whipple
Jim McElvogue

Pretreatment Sampling

3-Jul-07

Environmental Landfill South

Travel Time (min): 26 Trip (miles): 6

Date	Personnel		Maintenance Prep		Laboratory Prep		Site Time (min)	Sampling				Analysis		Total Charges
	Employee	Rate	Time (min)	Cost	Time (min)	Cost		Cost*	Equipment	# used	Cost	Lab No.	Lab Charge	
5/11/2007	TW	$36.19		$0.00	30	$18.10	20	$27.75	Truck/Van	1	$3.30	71110	$93.00	$142.14
	AD	$20.59	17	$5.83		$0.00	20	$15.79	Sampler/Ice		$0.00	UHL	$50.00	$71.62
				$0.00		$0.00		$0.00	S&H (UHL)	1	$5.00			$5.00
Subtotal				$5.83		$18.10		$43.53			$8.30		$143.00	$218.76
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				**$5.83**		**$18.10**		**$43.53**			**$8.30**		**$143.00**	**$218.76**

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

RECEIVED JUL 2 6 2007

July 24, 2007

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 **$0.04/100 cubic feet** beginning with the next billing cycle. The surcharge rate will be recalculated in January 2008 using the most recent sampling data.

If you have questions, please contact me at 239-5150. We appreciate your cooperation with the surcharge and pretreatment programs.

Yours very truly,

Karla K. Tebben

Karla K. Tebben, P.E.
Environmental Engineer
Water and Pollution Control Department

/bas

Enclosures

pc: Todd Whipple
Mike Wheelock
Jim McElvogue

07/20/07

Ames-Story Environmental Landfill
SURCHARGE CALCULATION

SAMPLE SET RESULTS (mg/l)

DATE	COD	TSS	TKN
22-May-06	450	14	51
20-Sep-06	560		50
11-May-07	540	12	61
AVERAGE	517	13	54
NORMAL	550	300	45
EXTRA STRENGTH	(33)	(287)	9

CALCULATION OF SURCHARGE RATE:

	EXTRA STRENGTH mg/L	STRENGTH SURCHARGE RATE PER mg/l	SURCHARGE RATE PER 100 CF
COD	(33)	0.00062	$0.00
TSS	(287)	0.00250	$0.00
TKN	9	0.00400	$0.04
TOTAL SURCHARGE RATE			**$0.04**

CALCULATION OF SURCHARGE:

AVERAGE MONTHLY VOLUME (IOO CF):(Estimate)	3
SURCHARGE RATE($/100 CF):	$0.04
ESTIMATED SURCHARGE ($ per month):	**$0.11**

APPENDIX I

Explosive Gas Monitoring Results

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: December 6, 2006

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.9	0	0
MW36/MW37	0	20.9	0	0
MW35	0	20.9	0	0
MW33/MW25	0	20.9	0	0
MW32/MW24	0	20.9	0	0
MW30/MW23	0	20.9	0	0
MW34	0	20.9	0	0
MW31	0	20.9	0	0
Trailer	0	20.9	0	0
MW6/MW7/MW8	0	20.9	0	0
MW38/39	0	20.9	0	0
MW40/MW41	0	20.9	0	0
MW42/MW43	0	20.9	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: March 30, 2007

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	21.1	0	0
MW36/MW37	0	21.1	0	0
MW35	0	21.1	0	0
MW33/MW25	0	21.1	0	0
MW32/MW24	0	21.1	0	0
MW30/MW23	0	21.1	0	0
MW34	0	21.1	0	0
MW31	0	21.1	0	0
Trailer	0	21.1	0	0
MW6/MW7/MW8	0	21.1	0	0
MW38/39	0	21.1	0	0
MW40/MW41	0	21.1	0	0
MW42/MW43	0	21.1	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: June 30, 2007

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.9	0	0
MW36/MW37	0	20.9	0	0
MW35	0	20.9	0	0
MW33/MW25	0	20.9	0	0
MW32/MW24	0	20.9	0	0
MW30/MW23	0	20.9	0	0
MW34	0	20.9	0	0
MW31	0	20.9	0	0
Trailer	0	20.9	0	0
MW6/MW7/MW8	0	20.9	0	0
MW38/39	0	20.9	0	0
MW40/MW41	0	20.9	0	0
MW42/MW43	0	20.9	0	0

AMES-STORY ENVIRONMENTAL LANDFILL
85-SDP-13-91P
EXPLOSIVE GAS MONITORING RESULTS

SAMPLING DATE: September 22, 2007

Reference* Location	Combustible	%Oxygen	CO ppm	H2S ppm
MW28/MW29	0	20.9	0	0
MW36/MW37	0	20.9	0	0
MW35	0	20.9	0	0
MW33/MW25	0	20.9	0	0
MW32/MW24	0	20.9	0	0
MW30/MW23	0	20.9	0	0
MW34	0	20.9	0	0
MW31	0	20.9	0	0
Trailer	0	20.9	0	0
MW6/MW7/MW8	0	20.9	0	0
MW38/39	0	20.9	0	0
MW40/MW41	0	20.9	0	0
MW42/MW43	0	20.9	0	0