

# Brownfields Proposal

for  
No Action Necessary

Tract 1 and 3 of the Former Broken Arrow Landfill  
W/2 of NE/4 of Section 8, Township 18 North,  
Range 15 East Broken Arrow, Wagoner County, Oklahoma

To Obtain  
**A Certificate of No Action Necessary**

Pursuant to 27A § 2-15-01 et seq.  
and OAC 252:221-1-1 et seq.

**October 13, 2014**

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<b>Table of Contents</b>		Page
<b>1.0</b>	<b>Introduction .....</b>	<b>4</b>
<b>2.0</b>	<b>Eligibility .....</b>	<b>4</b>
<b>3.0</b>	<b>Current and Proposed Use of Site .....</b>	<b>4</b>
3.1	Current Use of Site .....	4
3.2	Current Use of Adjacent Properties .....	4
3.3	Current Use of Groundwater in Vicinity .....	5
3.4	Current Use of Surface Water in Vicinity .....	5
3.5	Proposed Future Use of the Site .....	5
<b>4.0</b>	<b>Site Characterization .....</b>	<b>5</b>
4.1	Site Description and Historical Information .....	5
4.1.1	Latitude/Longitude .....	5
4.1.2	Legal Description .....	5
4.1.3	Current Conditions/Historical Conditions .....	7
4.2	Environmental Setting .....	7
4.2.1	General .....	7
4.2.2	Topography .....	8
4.2.3	Geology .....	8
4.2.4	Hydrology .....	8
4.2.5	Utilities .....	9
4.2.6	Area Resources .....	9
4.2.7	Nearby Sensitive Environments .....	9
4.3	Results of Environmental Investigation .....	9
4.3.1	Soil .....	11
4.3.2	Groundwater .....	13
4.3.3	Surface Water .....	14
4.3.4	Impacts to Indoor Air .....	14
<b>5.0</b>	<b>Risk Evaluation .....</b>	<b>14</b>
5.1	Residents .....	15
5.2	Indoor Industrial Workers .....	15
5.3	Outdoor Industrial Workers .....	16
5.4	Construction/Remediation/Utility Workers .....	17
5.5	Ecological Receptors .....	17
5.6	Recreational Receptors .....	17
5.7	Trespassers .....	17
<b>6.0</b>	<b>Proposal for No Action Necessary.....</b>	<b>18</b>
<b>7.0</b>	<b>Proposed Engineering or Institutional Controls .....</b>	<b>18</b>
7.1	Description of Engineering and Institutional Controls .....	18
7.2	Potential for Redevelopment to Impact Controls .....	18
7.3	Proposed Plan for Financial Assurance of Engineering and Institutional Controls .....	18
<b>8.0</b>	<b>Proposed After Action Monitoring .....</b>	<b>19</b>
<b>9.0</b>	<b>Public Review and Comment .....</b>	<b>19</b>
9.1	Time Period for Comment .....	19
9.2	DEQ Contact for Comment .....	19
9.3	Participant Contact for Questions .....	20
9.4	Repository .....	20
<b>10.0</b>	<b>References .....</b>	<b>21</b>

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 PLAN DEVELOPMENT

## Appendices

### Appendix A - Maps

- Site Location Maps
- Identified Historical Uses Map
- Topographic Map
- Boring/Well/Sample Locations Map
- Property and Tract Survey

### Appendix B – Summarized Data Tables

- Table 1 Sediment Sample Analytical Results For The Unnamed Tributary Of Adams
- Table 2 Surface Water from Adams Creek Sample Analytical Results for Detected Parameters
- Table 3 Soil Sample Analytical Results For Detected Parameters (Updated June 2011)
- Table 4 Groundwater Sample Analytical Results for Detected Parameters

### Appendix C – Collected Data

- Previous Investigation Reports
- Boring Logs
- Lab reports
- Field notes





## 1.0 Introduction

The following Brownfield Proposal for a Certificate of No Action Necessary, submitted by JM Assets, is for property, hereafter referred to in this proposal as Tracts 1 and 3 of the former Broken Arrow Landfill ("Site") located in Broken Arrow, Wagoner County, Oklahoma (Figure Brownfield Plat, Appendix A). The Site is owned by JM Assets (the Participant) and this Proposal was prepared with the assistance of the Oklahoma Department of Environmental Quality (DEQ) Brownfields Program.

On March 24, 2009, JM Assets voluntarily entered into a Memorandum of Agreement and Consent Order for Site Characterization ("MACO") pursuant to the DEQ's Brownfields Program. See DEQ Case No. 09-057. Under the terms of the MACO, JM Assets was required to: (1) complete certain investigation and characterization activities at the Site under the supervision of the DEQ, and (2) enter into a new consent order for remediation prior to beginning any remedial work at the Site.

Site Characterization Activities were conducted with approval by DEQ in 2010, 2011, and 2013. Field activities were subsequently completed in December 2013, and the results submitted to DEQ.

Based upon the analytical data resulting from those efforts, JM Assets broke the property up into 4 Tracts to address varying environmental conditions encountered across the site. These Tracts can be seen on the plat map in Appendix A. This proposal addresses the environmental conditions found in Tract 1 and 3. This proposal for No Action Necessary is based on limiting the use of the property for commercial/industrial purposes (i.e., non-residential), which is consistent with the intended redevelopment of the Site. A deed notice will be placed in the County land records in accordance with 27A O.S. § 2-7-123. JM Assets is seeking liability relief for potential environmental impacts to the Site and requests issuance of a Brownfield Certificate of No Action Necessary.

A&M Engineering submitted a Brownfields Proposal on behalf of JM Assets for the Site in October 2011 and JM Assets has been working with DEQ to produce a Proposal in response to further sampling activities onsite. To simplify review of the existing record, this Brownfields Proposal will replace the previously- submitted information presented in the 2011 Proposal.

## 2.0 Eligibility

The DEQ has determined that the site participants are eligible under 27A § 2-15-104(D) and the property is an eligible response site under 42 USC 9601 §101(41). The participants entered into a Memorandum of Agreement and Consent Order for Site Characterization (OAC 252:221-3-1) on March 24, 2009.

## 3.0 Current and Proposed Uses of the Site

### 3.1 Current Use of the Site

The site is currently unoccupied land. Below the surface is the former Broken Arrow Landfill that operated from 1973 until 1976. Sampling data indicates that the fill area of the landfill is located in Tract 2. Prior to being used for a landfill, the property was part of a large surface coal mine.

### 3.2 Current Use of Adjacent Properties

The properties around the site are a mix of residential and commercial use as well as pasture land. To the north, there are commercial buildings and residential properties. To the east, there is pasture land and residential development. To the south, there is unoccupied land with surface water and residential housing. To the west is more of the former strip mine, which is now largely unoccupied except for one residence and an oil tank to the very north of the property.

### 3.3 Current Use of Groundwater in the vicinity

Currently, groundwater is not used onsite. A deed notice will be placed on the property to prevent the use of groundwater for anything other than monitoring purposes.

The nearest water well is 0.4 miles to the north of the site and is for domestic use and is owned by J.T. Rader. It is situated at 138 ft. of depth.

### 3.4 Current Use of Surface Water

The former strip mine extends beyond the site boundaries and over several neighboring properties. The drainage feature to the northwest of the property is part of a larger feature created by the furthest west lift of the coal mine. This is not a natural water feature and sediments in the drainage feature are impacted by the former strip mine.

The closest water supply intake is Broken Arrow's water intake on the Verdigris River and is roughly 8.5 miles northeast of the site and potentially downgradient in the watershed. However, it is uncertain whether the drainage feature associated with the former strip mine is perennial, or if it connects with the watershed at all. The OWRB Map viewer indicates that it may not be connected, and it is not recognized as a natural water feature by OWRB.

### 3.5 Proposed Future Use of the site

The proposed future use of the site is Commercial/Industrial. Residential use of the site will not be allowed and a deed restriction will be filed with the Brownfield Certificate in the county land records restricting the use of the property to commercial/industrial.

## 4.0 Site Characterization

### 4.1 Site Description and Historical Information

#### 4.1.1 Latitude/Longitude

The current entrance to the site is located at (36.060798°, -95.730975°). It is anticipated that redevelopment will alter access to the site. The site will not remain accessible through the Tract 2 entrance.

#### 4.1.2 Legal Description

The full legal definition of the site as it was entered into the Brownfield Program is:

Part of W/2 of NE/4 of Section 8, Township 18 North, Range 15 East of the Indian Base and Meridian, Wagoner County, State of Oklahoma, according to the U.S. Government Survey thereof, being more particularly described as follows: Beginning at a point 50 feet South of the NE corner of said W/2 of NE/4, Thence S 01°17'51" E along the East line of said W/2 of NE/4 2595.97 feet to the SE corner of said W/2 of NE/4, Thence S 88°49'1" W along the South line of said W/2 of NE/4 1320.16 feet to the SW corner of said W/2 of NE/4, Thence N 01°19'88"E along the West line of said W/2 of NE/4 1473.60 feet, Thence N 88°40'28" a distance of 1261.08 feet to a point that is 60 feet West of the East line of said W/2 of NE/4, Thence N 01°17'51" W and parallel to said East line a distance of 1118.97 feet to a point on the South right-of-way line of East Kenosha Ave. (E. 71st St. South), Thence N 88°40'28" E along said right-of-way 60 feet to the Point of Beginning.



The site was surveyed on February 6, 2014 and broken into three separate Tracts as follows:

TRACT 1

A tract of land that is port of the W/2 NE/4 of Section 8, Township 18 North, Range 15 East of the Indian Base and Meridian, Wagoner County, State of Oklahoma, being more particularly described as follows: Commencing at the NW Corner of the NE/4, Thence S01'19'59"E along the West line of NE/4 50.00 feet; thence N88'40'18"E 73.54 feet; thence S88'27'57"E 200.25 feet; thence N88'40'18"E 100.00 feet to the Point of Beginning; thence N84'51'37"E 150.33 feet; thence N88'40'28"E 462.22 feet: thence S01'17' 51 "E 331.61 feet; thence WEST 100.00 feet; thence SOUTH 250.00 feet; thence WEST 500.00 feet; thence SOUTH 200.00 feet; thence S88'40'28"W 375.24 feet to a point on said West line of NE/4; thence N01'19'59"W along said West line 222.93 feet; thence N33'30'32"E 653.83 feet to the Point of Beginning, containing 11.73 acres, more or less.

TRACT 2

A tract of land that is part of the W/2 NE/4 of Section 8, Township 18 North, Range 15 East of the Indian Base and Meridian, Wagoner County, State of Oklahoma, being more particularly described as follows: Beginning at a point 50.00 feet South of the Northeast corner of said W/2 NE/4; thence S01'17'51"E along the East line of said W/2 NE/4 1600.13 feet; thence WEST 1011.89 feet; thence SOUTH 250.00 feet; thence S88'40'28"W 303.15 to a point on the West line of said W/2 NE/4; thence N01'19'8"E along said West line 948.59 feet; thence N88'40'28"E 375.24 feet; thence NORTH 200.00 feet; thence EAST 500.00 feet; thence NORTH 250.00 feet; thence EAST 100.00 feet: thence N01'17'51 "W 331.61 feet to a point on the south right of way line of E. Kenosha Ave. (E. 71 st St. So.); thence N88'40'28"E along said right of way 336.02 feet to the Point of Beginning, containing 32.16 acres, more or less.

TRACT 3

A tract of land that is part of the W/2 NE/4 of Section 8, Township 18 North, Range 15 East of the Indian Base and Meridian, Wagoner County, State of Oklahoma, being more particularly described as follows: Beginning at a point 1650.13 feet South of the Northeast corner of said W/2 NE/4; thence S01'17'51"E along the East line of said W/2 NE/4 1127.76 feet to the Southeast corner of said W/2 NE/4; thence S88'49'19"W along the south line of said W/2 NE/4 1320.16 feet to the Southwest corner of said W/2 NE/4; thence N01"19'58"E along the West line of said W/2 NE/4 874.39 feet; thence N88'40'28"E 303.15 feet; thence NORTH 250.00 feet; thence EAST 1011.89 feet to the Point of Beginning, containing 32.38 acres, more or less.

This Proposal addresses conditions only on Tract 1 and Tract 3.



#### 4.1.3 *Current Conditions/Historical Conditions*

The Site consists of approximately 76 acres of undeveloped land with brush, grassland, and trees located throughout a majority of the Site. Denser woodland is situated in the southeast section of the Site and along the western border. A drainage feature associated with the final lift of the strip mine borders the Site's northwestern boundary.

The Site currently does not have any improvements (buildings, tanks, parking lots, etc.), except for an earthen access road and a fence with a lockable gate restricting access to the property. The Site can be accessed from the northern adjacent road (East 71st Street/Kenosha Street) via a concrete driveway that leads into an earthen/gravel access road. The access road extends along the eastern section of the Site for approximately 1,200 feet and turns to the southwest for approximately 650 feet. The road then extends to the west/southwest through the south central section of the Site.

A sanitary sewer easement is situated along the western boundary and several manholes are situated along the easement. In addition, a natural gas pipeline easement is situated throughout the center of the Site that extends from west to east.

The Topographic Map and the Site Layout are provided in Appendix A. The property and surrounding area are zoned as commercial by the City of Broken Arrow and reflect historic and current industrial and commercial use.

According to historical resources and the site inspection, the Site was formerly a coal strip mine that was eventually used as a landfill. Prior to being used for fill operations, the Site was coal strip mined in the 1920s and 1930s, with some additional mining in the 1960s. Mining activities occurred prior to the Surface Mining Control and Reclamation Act of 1977.

The landfill was first permitted for hazardous waste by the manufacturer of acetylene on February 15, 1973 through the Oklahoma State Department of Health (OSDH). OSDH stamped this first permit "invalid" with a remark of "Sold to Broken Arrow of S.L." OSDH reissued Permit No. 3573002 on June 15, 1973 to the City of Broken Arrow for a sanitary landfill. The same permit was closed on September 25, 1976. This permitting record indicates that the Site was utilized only for a maximum of 2.5 years by the City of Broken Arrow for disposing municipal waste.

A Phase I Environmental Site Assessment (ESA) was originally conducted in February 2008 and was updated in December 2008 and January 2009. Historically, the Site had been strip mined and later permitted as a municipal landfill for the City of Broken Arrow to accept sanitary waste. During the Phase I ESA, two (2) disposal areas were determined at the Site (Appendix A).

## 4.2 Environmental Setting

### 4.2.1 *General*

Broken Arrow is surrounded by gentle hills stretching toward the Ozark foothills and lies near the Arkansas River at a latitude providing a moderate climate. Winters are generally mild with light snowfall, and the high temperatures of mid- to late-summer are often moderated by low relative humidity and southerly breezes. Tornadoes and

windstorms characterize spring and early summer, but sunny days and cool nights prevail throughout the fall. Rainfall is heaviest in the spring.

The average temperature for winter months is 36.7° F and for summer months 82.0° F. Average rainfall is 38.77 inches. Winds across Wagoner County are predominantly from the south to southeast, averaging nearly 7 miles-per-hour. Relative humidity, on average, ranges from 47% to 92% during the day. Relative humidity is slightly lower from February – April, but increases dramatically with the spring rains. The percentage of possible sunshine ranges from an average of less than 50% in winter to nearly 80% in summer.

#### 4.2.2 *Topography*

The northern portion of the site slopes to the west/northwest in the direction of a drainage feature associated with the former strip mine, and the remaining portions of the site generally slope to the southwest in the direction of a pond located on the south adjacent property. The topography of the site has changed over the last 80 years due to strip mine activities and then the mined areas being filled by the City of Broken Arrow Landfill. Currently, the Site is leveled and there is no visible effect of past mining and landfill activities. According to the Oneta Quadrangle 7.5- Minute Topographic Map, the elevation of the site ranges from 630 to 670 feet above mean sea level (MSL). The surrounding topography is best described as gently sloping to sloping. The Topographic Map is provided in Appendix A.

#### 4.2.3 *Geology*

According to the Hydrologic Atlas 2 – Reconnaissance of the Water Resources of the Tulsa Quadrangle-Northeastern Oklahoma, underlying sediment consists of the Senora Group. The Senora Group consists of shale, sandstone, and coal beds with minor limestone beds. The Geology Map is provided in Appendix A.

According to the Oklahoma Water Resources Board (OWRB), there are no drinking water wells within a quarter mile of the Site. The yield of the uppermost aquifer at this site is very low, less than 1-2 gallons a minute.

#### 4.2.4 *Hydrology*

##### 4.2.4.1 Surface Water

A drainage feature associated with the final lift of the strip mine borders the northwest Site boundary and flows northward. Part of the Site drains into this feature and part of the Site drains to the south into a large impoundment adjacent to the south boundary of the Site.

The source of domestic water for the Site and the area is from Yahola Lake, with services provided by the City of Tulsa. Yahola Lake is over fifteen miles away from the site. It is not anticipated that the site could have impacts on Yahola Lake.

##### 4.2.4.2 Flood Plains

According to the Federal Emergency Management Agency (FEMA), the site is situated outside the 100 year and 500 year flood plains (Zone X). No visual evidence of recent flooding or prolonged water retention was observed on-site



during the inspection. The Flood Map (Flood Insurance Rate Map) is provided in Appendix A.

#### 4.2.5 *Utilities*

A sanitary sewer easement is situated along the western boundary and several manholes are situated along the easement. In addition, a natural gas pipeline easement is situated through the center of the Site and extends from west to east.

It is not anticipated that development of the property and installation of utilities will be complicated by conditions on Tract 1 or Tract 3.

#### 4.2.6 *Area Resources*

The property to the east of the site is in use as pasture land. The site and the property to the west were intermittently used as strip mines from the 1920s to 1960s.

There is limited use of groundwater in the area. According to the Oklahoma Water Resources Board (OWRB) online data viewer, the closest groundwater well is domestic and is a half mile to the northeast of the site. Shallow groundwater and surface water flow appears to be to the west/northwest toward a drainage feature associated with the former strip mine. Sampling was performed in the drainage feature, and it does not appear to be impacted by conditions limited to the site. See Section 4.3 for more information on investigation activities.

#### 4.2.7 *Nearby Sensitive Environments*

The closest school or day care center is Park Lane Elementary, which is just over a mile to the southeast. There are no known sensitive ecological environments in the area of the site. Areas around the site are predominantly pasture land, residential, or commercial/industrial.

### 4.3 Results of Environmental Investigation

Sampling events occurred in 2008, 2010, 2011, 2012 and 2014 and were conducted by A&M Engineering. Media sampled during these sampling events include surface and subsurface soil, surface and ground water, soil gas, and radiation surveys.

#### *2008 Preliminary Sampling*

In February 2008, three (3) surface soil samples were collected on-site and two (2) surface water samples were collected from a ponded area and the drainage feature located in the northwest corner of the Site. The landfill areas appeared to be covered with a mix of clay and silty loam soil with gravel and grass. The landfill surface areas appeared somewhat homogeneous. In some limited areas throughout the Site, trash was observed. No ponding or standing water was observed in the landfilled areas or anywhere onsite. The Previous Sample Locations With Updated Waste Area Map is provided in Appendix A.

The analytical parameters for the January 2008 preliminary sampling event included: Chloride, Specific Conductance, Metals (Barium, Iron, Magnesium, and Manganese), Nitrate, pH, Total Dissolved Solids (water only), and Sulfate. Concentrations of Metals and Sulfate were detected in all of the soil samples. In addition, the pH in soil samples S-1 and S-2 were relatively lower than the background sample (S-3). The TDS, Metals, and Sulfate were elevated in both water samples. Additionally, the Chloride level was elevated in the Creek Sample (C-1) and the pH was lower than



the surface water sample, which indicated impact from an off-site source. The Sample Location Map (Figure Previous Sample Locations With Updated Waste Area Map) is provided in Appendix A.

### *2010 Sampling*

To characterize the site for DEQ's Brownfield Program, soil, sediment, surface water, and groundwater were sampled at the Site following the DEQ approved Brownfield Sampling & Analysis Plan. Four (4) piezometers were completed on August 3, 2010, and two gas probes were completed on August 4, 2010, both using a CME ATV drill rig.

Depths of the piezometers ranged from 15 feet to 20 feet at the Site. Groundwater was encountered in all four (4) piezometers and groundwater samples were collected from all of the piezometers on August 4, 2010. Additional water samples were collected from each piezometer on October 28, 2010.

Four (4) surface soil grab samples (0 to 6 inches deep) were collected on August 4, 2010, from the Site. In addition, two (2) sediment and two (2) water samples were collected from the drainage feature associated with the former strip mine on August 3, 2010.

All of the drilling and sampling activities were implemented according to the Sampling & Analysis Plan.

The Site is bordered along the northwest boundary by a drainage feature created by the last lift of the strip coal mine. Sediment at the bottom of the feature was sampled at its entry and exit point of the Site. The Sample Location Map (Figure Previous Sample Locations With Updated Waste Area Map) is provided in Appendix A. Two (2) sediment samples were collected from the drainage feature with CS-1 being the upgradient sample. The samples were dark gray and reddish fine to medium coarse and moist.

The water of the drainage feature was also sampled at the entry of the drainage feature to the Site (CW-1) and at the exit point of the drainage feature from the Site (CW-2). At each sampling location, a bottom sediment and surface water sample was collected.

Four (4) surface soil grab samples (0 to 6 inches deep) were collected on August 4, 2010 from the Site. The Site Characterization Sample Location Map is provided in Appendix A.

Approximately one (1) inch of grass and topsoil were encountered in each surface sample. In addition, five (5) to six (6) inches of loose (brown/grey) spoil, which is the turned over material remaining from mining activities, was encountered in each surface sample.

All surface samples and the split barrel samples from the piezometers were scanned using a photo ionization detector (PID). No elevated readings were detected in the surface samples. No elevated readings were detected in the split barrel samples; therefore, no soil samples were collected from the piezometers.

Field observations revealed that the Site is underlain by loose spoil from previous mining activities. No staining or visual impact was observed in the split barrel samples. In addition, no unusual odors were observed during sampling.





Four (4) piezometer wells were drilled at the Site. After the wells were developed and purged, groundwater samples were collected from each well. The groundwater samples were analyzed for pH, Conductivity, Arsenic, Cadmium, Chloride, Sodium, Sulphate, Phosphorus, Manganese, Iron, Lead, Chromium, Magnesium, Nitrate, Barium, Mercury, semi-volatiles (Method 8270), and volatiles (Method 8260). The Duplicate sample was collected from PZ-2.

In order to determine if the landfill was generating methane gas, two (2) gas probes were installed within the delineated waste areas to monitor the waste generated gas. The probes were sampled for methane.

The purpose of these two (2) gas probes was to determine gas generation within the waste areas to assist with the design phase for the site development.

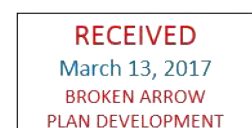
The gas probe locations were initially proposed according to the delineated landfill area from previous data; however, after attempting to drill the gas probes in the proposed locations, no trash was encountered. It took three (3) attempts to locate trash for GP-1. GP-1a was drilled to a depth of 15 feet and GP-1b was drilled to a depth of 12 feet. Only mine spoil was encountered in GP-1a and GP-1b. GP-1c was drilled to a depth of 7.5 feet and trash was encountered at 4 to 6 feet. The trash consisted of paper, plastic sheeting, and plastic bags. The gas probe was installed at the GP-1c location, approximately 500 feet south/southwest of the proposed location. The Previous Sample Locations With Updated Waste Area is provided in Appendix A and shows all the GP locations.

GP-2 took five (5) attempts to locate trash. GP-2a through GP-2d were all drilled to a depth of 15 feet and only loose gray/brown mine spoil was encountered. GP-2e was drilled to a depth of 9 feet and trash was encountered at 5 to 6.5 feet. The trash consisted of paper, plastic sheeting, and fabric. The gas probe was installed at the GP-2e location, approximately 1,000 feet north/northwest of the proposed location. The Previous Sample Locations With Updated Waste Area Map is provided in Appendix A.

During gas probe drilling, all the penetrated spoil-soil sections and waste were scanned using the PID and no PID readings were detected in the spoil and waste samples.

### *Radiation Surveys*

Preliminary radiation surveys were conducted in October 2010, June 2011, and September 2011. Based on these preliminary surveys it was determined that there was a radiation source present on the site. A more detailed survey made up of a 100ftx100ft grid was conducted in March of 2012. The survey was intended to determine whether there were impacts on the northern third of the property, but when the survey confirmed the radiation issues in the northern third of the property, the survey was extended to random nodes throughout the southern two-thirds of the property as well. Based on concerns raised by the confirmatory survey, DEQ offered assistance to JM Assets. DEQ staff pulled four soil samples from areas determined to have radiation issues and sent the samples to be analyzed. The result of the sampling indicated that thorium and uranium were present in a lens of soil approximately 6 inches below the surface. Based on concerns that more of the radioactive material might be on site, a full survey with a 50ftx50ft grid was conducted in December of 2013. A report produced in May of 2014 indicates that the impacted area is limited to the northeastern portion of the site, in what is now labeled Tract 2a. Tract 2a is not a part of this Proposal. It will be addressed separately.





#### 4.3.1 *Soil*

##### 4.3.1.1 Impacts onsite

A letter from Blackshare Environmental regarding investigations from 2007 and an A&M conducted investigation in 2010 indicate that there are metal levels onsite that are elevated above EPA industrial screening levels and published USGS background levels. Analytical results from the 2007 investigation were not available for review, but a letter from Blackshare Environmental to Western Capital Partners describing the sampling results indicates that metal levels in groundwater exceeded MCLs (See Appendix B). Sampling performed in 2010 by A&M Engineering indicates that the only metals to exceed screening levels for industrial use are arsenic and thallium. Arsenic is naturally occurring in Oklahoma soils and according to the United States Geological Survey (USGS), background levels for arsenic range from 1.007 to 8.982 mg/kg in Wagoner County. All samples collected onsite exceeded these arsenic background levels, ranging from 11.1 to 22.6 in soils, and 48.3 to 52.9 in sediment samples from the drainage feature. Thallium levels on site exceed protection of ground water levels and EPA residential screening levels, but not EPA industrial screening levels. Thallium levels in surface soils range from 0.297 mg/kg to 0.802 mg/kg. According to the United States Geological Survey, arsenic is associated with coal mines and according the Agency for Toxic Substances and Disease Registry (ATSDR), thallium is associated with mines in general, including coal mines. Since the area is part of a large coal strip mine, elevated levels may be attributed to former strip mining activities onsite. See Tables 1 and 3 in Appendix B for sample results.

Based on gas sampling results there seems to be limited methane gas generation in the area near the footprint of the old landfill. From sampling, it does not appear that the methane generation will impact Tract 1 or Tract 3. Boundaries of Tracts 1 and 3 are over 100 feet away from the suspected fill area of the landfill.

##### 4.3.1.2 Delineation of Potential Off-Site Migration

The former strip mine covers a large area that goes beyond the boundaries of the site. Sediment samples collected in the drainage feature have elevated levels of arsenic, in the range of 50 mg/kg. The similarity in value between the upgradient sample (48.3 mg/kg) and the downgradient sample (52.9 mg/kg) indicates that the impacts to the drainage feature are consistent within the area of the strip mine. No sediment samples were collected offsite.

##### 4.3.1.3 Impacts to Neighboring Properties

No sampling data has been collected offsite. There is impact from the former strip mine present in the sediment of the drainage feature to the northwest of the site. The strip mine extends beyond the site boundaries.

##### 4.3.1.4 Closest Public Water Supplies

The closest water supply intake is Broken Arrow's water intake on the Verdigris River and is roughly 8.5 miles to the northeast of the site and potentially downgradient in the watershed. However, it is uncertain whether the drainage feature associated with the former strip mine is continuous at all times, or if it

connects with the watershed at all. Map data from the DEQ ArcGIS Viewer and from the OWRB Map viewer indicates that it may not be connected.

#### 4.3.1.5 Nearest domestic wells

The nearest domestic water well is 0.4 miles to the north of the site and is owned by J.T. Rader. It is situated at 138 ft. of depth. Based on data collected by A&M engineering in 2010, metals in soils are not affecting groundwater (see 4.3.1.6). Groundwater results can be found in Appendix B, Table 4.

#### 4.3.1.6 Movement of COCs to groundwater

COCs have been detected in groundwater above MCLs according to the May 22, 2007 Blackshare letter (See Appendix C). Sampling performed by A&M Engineering in 2010 indicate detectable limits of RCRA metals in unfiltered groundwater samples (See Table 4, Appendix B), but there were no detectable limits in filtered samples indicating that there is likely no impact to groundwater from COCs onsite. When metals are detectable in unfiltered samples, but not in filtered samples this indicates that the metals that were detected in the unfiltered samples were the result of suspended particles that were dissolved during lab analysis, and not dissolved metals in the groundwater.

### 4.3.2 *Groundwater*

#### 4.3.2.1 Impacts onsite

A letter report from Blackshare in 2007 indicates that metals were detected above screening levels (MCLs) in groundwater. Analytical data from 2010 indicates that metals were only detected in unfiltered samples, so metal levels in these samples are likely not representative of an issue with dissolved metals in groundwater. Any metal levels present are likely a result of impacts from the former strip mine, which extends beyond the boundaries of the site.

#### 4.3.2.2 Delineation of Potential Off-Site Migration

No sampling occurred offsite, but any metal levels present are likely a result of impacts from the former strip mine, which extends beyond the boundaries of the site. Arsenic and thallium were found to be elevated onsite over the published USGS background levels. However, according to the USGS, arsenic is associated with coal mines and according the ATSDR, thallium is associated with mines in general, including coal mines. Since, the area is part of a large coal strip mine, elevated levels may be attributed to former strip mining activities.

#### 4.3.2.3 Impacts to Neighboring Properties

No sampling has occurred offsite. The former strip mine extended to neighboring properties in all directions.

#### 4.3.2.4 Closest Public Water Supplies

The closest water supply intake is Broken Arrow's water intake on the Verdigris River and is roughly 8.5 miles to the northeast of the site and potentially downgradient in the watershed. However, it is uncertain whether the drainage



feature associated with the former strip mine is continuous at all times, or if it connects with the watershed at all. Map data from the DEQ ArcGIS Viewer and from the OWRB Map viewer indicate that it may not be connected.

#### 4.3.2.5 Nearest domestic wells

According to the OWRB data viewer, the nearest domestic water well is 0.4 miles to the north of the site and is owned by J.T. Rader. It is situated at 138 ft. of depth. Groundwater flow onsite likely flows to the west toward the drainage feature. This well is likely upgradient from the site.

#### 4.3.3 *Surface Water*

Two (2) Surface water samples were collected during the 2010 sampling event for the property, metals did not exceed MCLs in either sample. Drainage feature sediment samples were collected and these results are discussed in Section 4.3.1.

#### 4.3.4 *Impacts to Indoor Air*

The footprint of the landfill disposal area is contained within Tract 2. Soil gas readings indicated that while some methane is being generated by the landfill it is at low levels and is unlikely to impact areas outside of Tract 2b, because Tracts 1 and 3 are located over 100 feet away from the area where methane generation could occur. Issues with methane gas generation will be addressed during the cleanup of Tract 2.

## 5.0 Risk Evaluation

To meet the requirements of the Oklahoma Brownfield Program, a risk evaluation was performed to determine whether the contamination on the property poses a threat to human health and the environment in light of the proposed future use of the property. Therefore, an evaluation of the risks the site poses was performed using DEQ's guidance document, "Risk-Based Decision Making for Site Cleanup." DEQ defines risk-based decision making as "evaluating real and potential risk to both human health and the environment posed by a contaminated Site and making responsible and practical decisions to mitigate those risks in a timely fashion."

Actual and potential exposure pathways and receptors were evaluated. The risks are evaluated on the property in its current condition and for the impact it might have on the proposed future development of the property. If the site is deemed to pose a risk, remediation will occur. If the property's planned use is anything other than "unrestricted residential use," institutional controls must be put in place to ensure that the use category (e.g., industrial) does not change over time, without DEQ input.

Currently, there are no residents on the site. The site is unoccupied and is zoned for agricultural use, but will be developed for commercial use. A commercial occupant is currently considering development onsite in Tract 1. A deed notice will be placed in the County Land Records to prevent residential use of the property and restrict groundwater use. Development at this time will be limited to Tracts 1 and 3, which are only impacted by the former strip mine that is present throughout the site and extends across all neighboring properties. Separate plans will be developed for Tracts 2A and 2.

The entire site occurs within the remnants of a surface mining coal mine. The coal mine covers a large area around the site. The coal tailings affect the surface soils and general water quality in the area. The property was operated as a municipal landfill; however, landfill impacts are limited to Tract 2,



which is being addressed separately under the DEQ Brownfield Program. Sampling data indicates that Tracts 1 and 3 are over 100 feet from the former fill area of the landfill and unlikely to be affected by the former landfilling operations, and therefore, the participant is requesting that DEQ issue a determination that no action is necessary on these tracts for the proposed commercial reuse.

## 5.1 Residents

### 5.1.1 *Surface Soil and Water*

The land is currently vacant. No residences are currently onsite and the property is being developed for commercial use. The proposed future use of the property is commercial/industrial and a restriction on property use will be placed in the County deed records to help ensure the property is not converted to residential use in the future without additional investigation and cleanup. Residents will not be directly exposed to contaminated surface soils. This pathway is considered incomplete.

Surface water from the property flows into a discontinuous drainage feature. There seem to be some impacts to drainage feature sediment from the previous strip mining activities in the area. The strip mine extends far beyond the boundary of the site, impacts to the drainage feature from the surrounding mined area will continue. This pathway is considered complete.

### 5.1.2 *Subsurface Soil and Groundwater*

There are no residences or other developments on the Site. No large scale remediation efforts that could potentially expose neighboring residents to contaminated subsurface soils are planned for the site, but digging and grading could expose subsurface soils and create fugitive dust. Fugitive dust is discussed in section 5.1.3. The participant intends for the property to only be used for commercial or industrial purposes in the future. Therefore, a restriction (i.e., institutional control) will be placed on the property stating that the property shall not be used for residential purposes; therefore, potential exposure pathways for residents are incomplete.

Groundwater at the Site is not impacted above EPA risk-based screening levels (MCLs) for groundwater. The restriction placed on the property will limit future groundwater use other than for monitoring purposes only; therefore, this exposure pathway is considered incomplete.

### 5.1.3 *Air*

Currently, in Tracts 1 and 3 there are no sources of potential impacts to the air with the exception of fugitive dust. The landfill and any methane it may generate will be addressed through Tract 2b development and remediation efforts. Sampling data indicates that Tracts 1 and 3 are over 100 feet from the former fill area of the landfill; therefore vapor intrusion of methane gas is unlikely. This pathway is considered complete.

## 5.2 Indoor Industrial Workers

### 5.2.1 *Surface Soil and Water*

Currently, there are no industrial/commercial workers and no buildings or structures on the Site. If indoor industrial/commercial workers are present in the future, it would be unlikely that they would be exposed to contaminated surface soil, because redevelopment of the site, similar to other commercial development in the area (i.e. installation of roads, parking lots, foundations of buildings), would prevent exposure to surface soils. Indoor workers adjacent to the property could potentially come into contact with contaminated soils that are less than six inches below ground surface during construction onsite.

Surface water from the property flows into a discontinuous drainage feature associated with the former strip mine. There are elevated levels of arsenic that exceed EPA RSLs for industrial soil and exceed published USGS background levels in the sediment in the drainage feature from the previous use of the property as a strip mine. However, as the strip mine extends beyond the boundary of the site, impacts to the sediment from the surrounding area will continue. While it is not impossible for indoor industrial workers to access the surface water in the drainage feature, it is very unlikely that they would seek to do so. This pathway is considered complete.

#### 5.2.2 *Subsurface Soil and Groundwater*

There are currently no indoor industrial/commercial workers present or immediately adjacent to the site. It is not anticipated that indoor industrial/commercial workers will come in contact with subsurface soils. Use of groundwater onsite will be restricted through a deed notice. Based on the non-volatile nature of the impacts present on these portions of the Site and the absence of contamination in the groundwater above MCLs, it is not anticipated that indoor industrial/commercial workers will be exposed to contamination onsite or offsite. This pathway is considered incomplete.

#### 5.2.3 *Air*

Currently, there are no industrial/commercial workers and no buildings or structures present on or immediately adjacent to the Site. Fugitive dust may expose neighboring properties to contamination. This pathway is considered complete.

### 5.3 Outdoor Industrial Workers

#### 5.3.1 *Surface Soil and Water*

Currently, there are no industrial workers on the site; however, the intended reuse of the site is commercial/industrial. Outdoor industrial/commercial workers could be exposed to contaminated surface soil. This pathway is considered complete for future outside industrial workers.

Surface water from the property flows into a discontinuous drainage feature. Arsenic in sediment in the drainage feature from the former strip mine exceeds EPA RSLs for industrial soil and exceeds published USGS background levels. However, as the strip mine extends beyond the boundary of the site, impacts to the drainage feature from the surrounding area will continue. This pathway is considered complete.

#### 5.3.2 *Subsurface Soil and Groundwater*

Currently, there are no industrial workers on the site; however, the intended reuse of the site is commercial/industrial. Outdoor industrial/commercial workers could be exposed to contaminated subsurface soil if digging occurs onsite. This pathway is considered complete.

A restriction will be placed on the property disallowing the use of groundwater for any purpose beyond monitoring. Outdoor industrial/commercial workers may be exposed to groundwater if digging occurs onsite. However, based on the absence of groundwater contaminated above conservative cleanup levels, it is not anticipated that they will be exposed to contamination via the groundwater. This pathway is considered incomplete.

#### 5.3.3 *Air*

Currently, there are no industrial workers on the site; however the intended reuse of the site is commercial/industrial. Due to the nature impacted soils onsite, it is not anticipated that there could be exposure to volatile vapors from Tracts 1 or 3. Fugitive dust from contaminated soil may be a source of exposure on and adjacent to the site. This pathway is considered complete.

#### 5.4 Construction/Remediation/Utility Workers

##### 5.4.1 *Surface Soil and Water*

There are currently no construction, remediation, or utility worker activities occurring at the Site. Future construction, remediation, and/or utility workers may potentially come in contact with metal contaminated surface soil during construction/remedial activities. This exposure pathway is considered complete.

Surface water from the property flows into a discontinuous drainage feature. Arsenic in sediment in the drainage feature from the former strip mine exceeds EPA RSLs for industrial soil and exceeds published USGS background levels. However, as the strip mine extends beyond the boundary of the site, impacts to the drainage feature from the surrounding area will continue. This pathway is considered complete.

##### 5.4.2 *Subsurface Soil and Groundwater*

There are currently no construction, remediation, or utility worker activities occurring at the Site. Future construction, remediation, and/or utility workers may potentially come in periodic contact with metal contaminated subsurface soil during construction/remedial activities. This exposure pathway is complete.

A restriction will be placed on the property disallowing the use of groundwater for any purpose beyond monitoring. Construction, remediation, or utility workers may be exposed to groundwater if digging occurs onsite. However, based on the absence of groundwater contaminated above MCLs, it is not anticipated that they will be exposed to contamination via the groundwater. This pathway is considered incomplete.

##### 5.4.3 *Air*

There are currently no construction, remediation, or utility worker activities occurring at the Site; however, there will be in the future. Due to the nature of the impacts to soils on these portions of the site, it is not anticipated that there could be exposure to volatile vapors from Tract 1 or 3. Fugitive dust may be a source of exposure on and offsite. This pathway is considered complete.

#### 5.5 Ecological Receptors

During site characterization, no sensitive habitats, aquatic ecosystems, or endangered species were identified at the Site. The area will be zoned for commercial use and is developed residential to the north and east. The Site has been used for industrial purposes in the past and will be developed for industrial/commercial use in the future. The properties around the Site are developed commercial properties with major highways that serve the area industries. There is no evidence that migration from contamination onsite is impacting sensitive ecological environments. The ecological receptor pathway is considered incomplete.

#### 5.6 Recreational Receptors



Currently, there are no recreational-type activities or recreational receptors at the Site; therefore, the exposure pathways for all media are incomplete. Future land use/redevelopment of the site shall remain commercial/industrial.

## 5.7 Trespassers

### 5.7.1 *Surface Soil and Water*

Trespassers could be exposed to arsenic contaminated surface soil or water. The site is currently fenced with a locked gate. This pathway is considered complete.

### 5.7.2 *Subsurface Soil and Groundwater*

It is currently not anticipated that trespassers will come in contact with subsurface soils or groundwater. This pathway is considered incomplete.

### 5.7.3 *Air*

There are currently no structures onsite and due to the lack of volatile chemicals impacting the soil, it is not anticipated that trespassers will be affected by fumes or vapor intrusion. Fugitive dust may be a source of exposure on and offsite. This pathway is considered complete.

## 6.0 Proposal for No Action Necessary

Based on the limited impacts to soils in Tract 1 and Tract 3 and the proposed future use of the site, JM Assets is seeking a Certificate of No Action Necessary for Tract 1 and Tract 3 of the Former Broken Arrow Landfill. The impacts from the footprint of the former landfill and the area of elevated radiation will be addressed in Brownfield Proposals for Tract 2b and 2a respectively.

Levels of arsenic in surface soils are above levels for industrial property use, and exceed USGS background levels. Background levels of arsenic provided by USGS are in the range of 3 mg/kg to 4 mg/kg, but all representative samples reported by USGS were collected outside the footprint of the former strip mine. USGS does not provide background levels of thallium for Oklahoma. Levels of arsenic onsite range from 11.1 to 22.6 in soils, and 48.3 to 52.9 in sediment samples from the drainage feature. Thallium levels on site range from 0.297 mg/kg to 0.802 mg/kg, which exceed EPA residential screening levels of 0.78mg/kg, but not the industrial levels of 10mg/kg. According to USGS arsenic can be associated with coal and coal mines, and according to ATSDR thallium is associated with mining generally, including coal mines. The strip mine associated with the site extends beyond the boundaries of the site and there is no way for the current operators of the site to control contamination sources beyond the boundary of the property. The future use of the site will be commercial/industrial. Tenants of the property will likely develop retail stores with concrete slabs and solid surface parking. This will limit any exposure to surface or subsurface soils to any future occupants of the property. Potential construction workers may be exposed to soils with arsenic levels that exceed RSLs for industrial use.

Site characterization has been completed for this site and the site is appropriate for industrial/commercial redevelopment.

## 7.0 Proposed Engineering or Institutional Controls

### 7.1 Description of Institutional Controls

A deed notice will be placed in county land records. The deed notice will:

- Restrict use of groundwater onsite for any purpose other than monitoring.
- Restrict use of the site to commercial or industrial use only.

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## 7.2 Potential for Redevelopment to Impact Controls

Redevelopment will not impact the institutional controls. A notice will be placed on the deed. The current use of the site is agricultural. When the Brownfield Certificate is in place on the site, JM Assets will seek to have the zoning changed from agricultural use to commercial use.

## 7.3 Proposed Plan for Financial Assurance for long term stewardship

No long term stewardship is necessary for Tracts 1 and 3, since no long term engineering controls will be utilized.

## 8.0 Proposed After Action Monitoring

No After Action monitoring will be necessary for Tracts 1 and 3.

## 9.0 Public Review and Comment

The purpose of this document is to inform the public that the participant has performed site characterization, risk evaluation, has filed a Brownfield Proposal for a No Action Necessary Determination with the DEQ, and is ready for redevelopment. The DEQ reviewed the brownfield proposal for compliance with the Brownfield Voluntary Redevelopment Act [27A O.S. Section 2-15-101 et seq.] and the rules of the DEQ OAC 252:221. The participants have performed these actions to receive liability relief from the federal Comprehensive Environmental Response, Compensation, and Liability Act as provided by 27A O.S. Section 2-15-101 et seq.

Issuance of the Certificate will resolve JM Assets' civil and administrative liability to the DEQ for historical contamination on the surface of the Site (27A O.S. §2-15-108(A)), and this protection extends to future lenders, lessees, successors, or assigns (27A. O.S. §2-15-18(B)). The protection remains in effect as long as the property is in compliance with the Certificate of No Action Necessary and any post-certification conditions or requirements specified in the consent order, this Brownfield Proposal, and/or the Brownfield Certificate. The release of liability from administrative penalties and any civil actions authorized by the Oklahoma Brownfields Voluntary Redevelopment Act does not apply to pollution that occurs outside the scope of the consent order or the certificate, pollution caused or resulting from any subsequent redevelopment of the property, or existing pollution not addressed during the project.

The Site is an Eligible Response Site as defined by the 2002 Brownfield Amendments to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as documented in a March 24, 2009, Consent Order. Therefore, the issuance of the Certificate also bars the U.S. Environmental Protection Agency from pursuing actions at the Site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9628 (b)(10)).

Comments on this proposal will be accepted from the public for twenty working days after the issuance of the Proposal (OAC 252:221-3-5). DEQ will consider comments and concerns from the public in its final determination, and will prepare a response to comments in the final approval or denial of the plan. DEQ, at the request of concerned citizens, may hold a public forum to address relevant environmental concerns before final determination.

## 9.1 Time period for Comment

The time period for public Comment will be 20 working days from publication of a notice in a local newspaper.

Public notice was issued on \_\_\_\_\_.

Comments will be accepted in writing until \_\_\_\_\_.

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**9.2 All comments on this proposal and any request for a public forum to discuss the project should be in writing and sent to:**

Rachel Francks  
Oklahoma Department of Environmental Quality  
Land Protection - Brownfields Program  
707 North Robinson  
P.O Box 1677  
Oklahoma City, OK 73101  
[rachel.francks@deq.ok.gov](mailto:rachel.francks@deq.ok.gov)

**9.3 Questions about the proposed cleanup or the technical aspects of this proposal should be directed to:**

Rachel Francks  
Oklahoma Department of Environmental Quality  
Land Protection - Brownfields Program  
707 North Robinson  
P.O Box 1677  
Oklahoma City, OK 73101  
[rachel.francks@deq.ok.gov](mailto:rachel.francks@deq.ok.gov)

**9.4 Repository**

Broken Arrow Library/South  
Available at the front desk  
3600 S. Chestnut  
Broken Arrow, OK

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## 10.0 References

- 1.0 Kolker, A., Palmer, C., Bragg, L., & Bunnell, J. (2006, February 1). Arsenic in Coal. Retrieved October 13, 2014, from <http://pubs.usgs.gov/fs/2005/3152/fs2005-3152.pdf>
- 2.0 Thallium, CAS # 7440-28-0. (2013, June 1). Retrieved October 13, 2014, from <http://www.atsdr.cdc.gov/toxfaqs/tfacts54.pdf>
- 3.0 Oklahoma Water Resources Board. OWRB Custom Map Viewer-Data Driven Map Viewers. Last accessed September 30, 2014. <http://www.owrb.ok.gov/maps/server/wims.php>.
- 4.0 Oklahoma Department of Environmental Quality. ODEQ Online Data Viewer. Last accessed September 30, 2014. [http://maps.scigis.com/deq\\_wq/](http://maps.scigis.com/deq_wq/)
- 5.0 B.J. Allaway and John Wiley & Sons, Inc, Heavy Metals in Soils: Edited by New York. 1990.
- 6.0 ASTM - OS 64 - Table 11 (Background Concentrations of Elements in Soils) in the Cleanup Criteria for Contaminated Soil and Groundwater.
- 7.0 FEMA Flood Insurance Rate Map. Panel40143 C 0561 H. Dated September 22, 1999.
- 8.0 Oklahoma Geological Survey. Reconnaissance of the Water Resources of the Tulsa Quadrangle-Northeastern Oklahoma. Map HA-2, Sheet 2 of 4. Dated 1971, Second printing 1988.
- 9.0 Teklab, Inc. Analytical Reports dated August 17, 2010, November 3, 2010, and November 18, 2010.
- 10.0 Tulsa Geological Survey. Tulsa's Physical Environment. Tulsa Geological Society Digest, Vol. 31, Map 1. Dated 1972.
- 11.0 USGS Topographic Map. On eta Quadrangle- Wagoner County, Oklahoma. 1982.

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## Appendix A

Site Location Maps

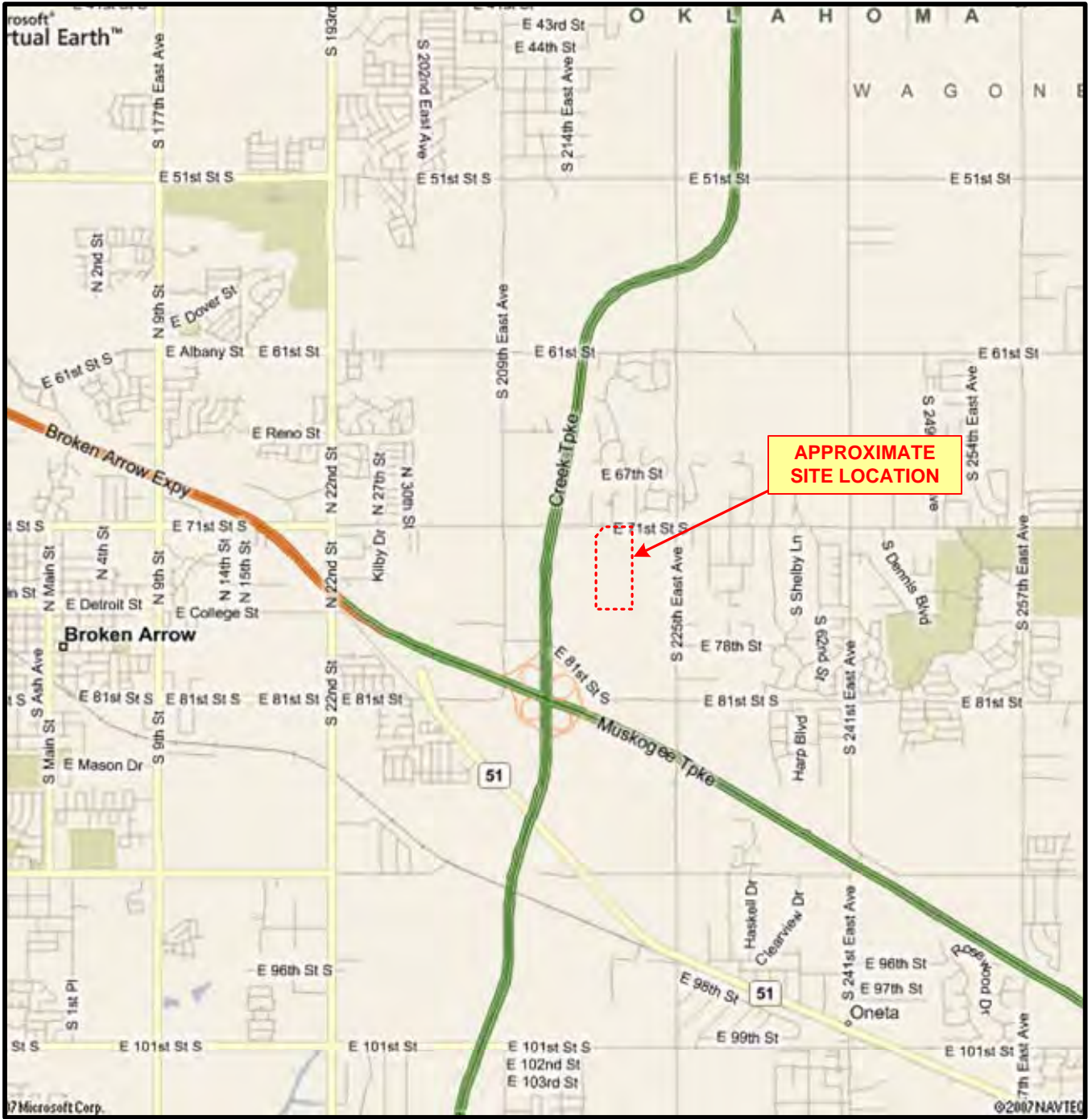
Identified Historical Uses Map

Topographic Map

Boring/Well/Sample Locations Map

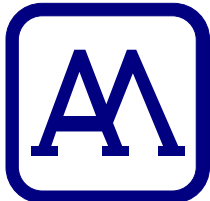
Property and Tract Survey

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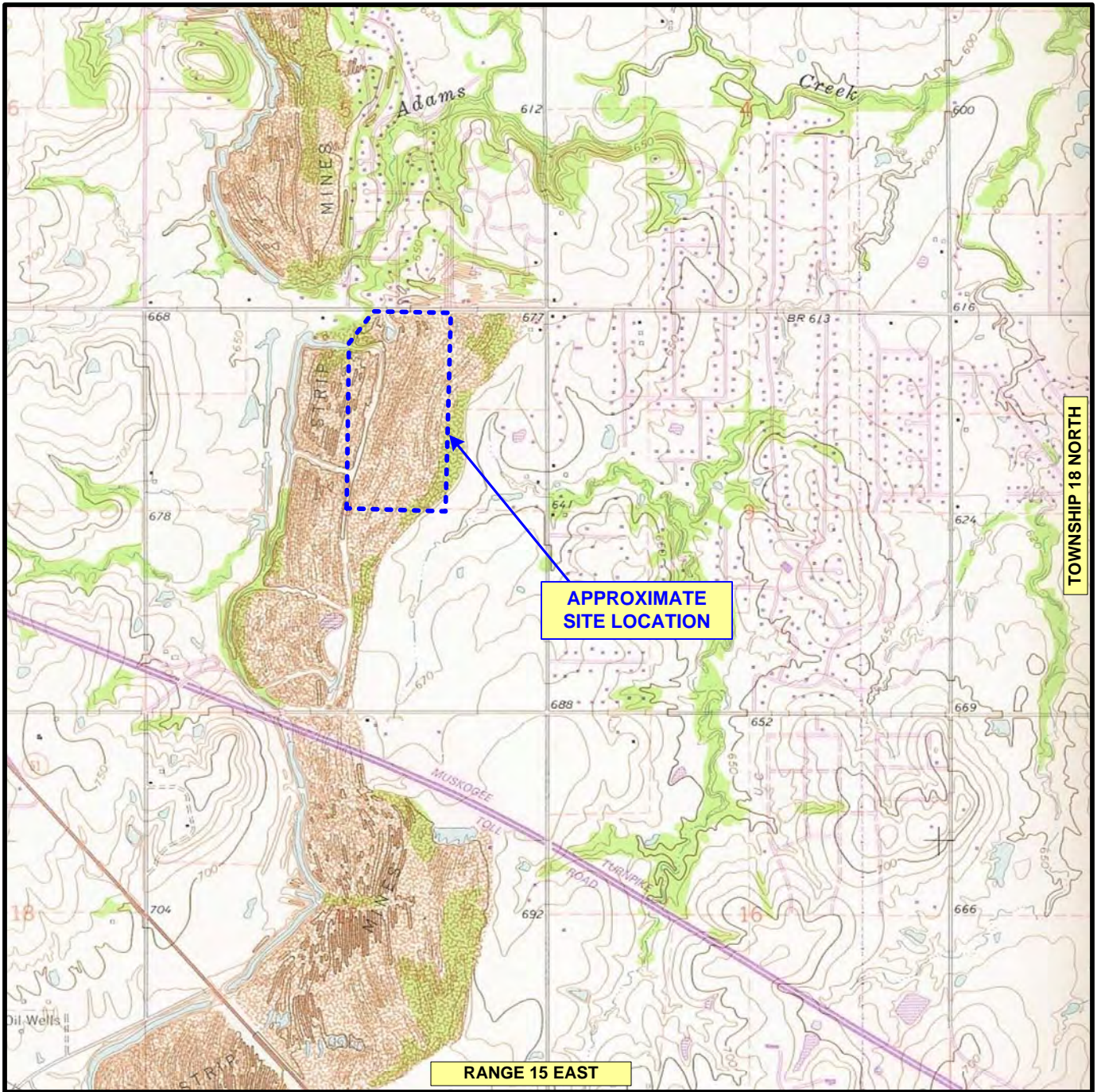


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SITE LOCATION MAP

<b>76-ACRE DEATHERAGE SITE</b> W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK		
SCALE: NOT TO SCALE	DATE: 02/14/2008	FIGURE NO. FIGURE 1
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001



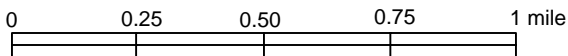


**7.5-MINUTE TOPOGRAPHIC MAP**  
**ONETA QUADRANGLE – WAGONER COUNTY, OKLAHOMA**  
 LATITUDE: 36° 03' 28.8" LONGITUDE: 95° 43' 58.8"

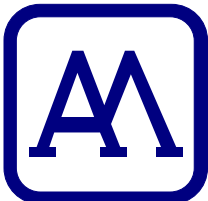
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SCALE



\*\*\*\*CONTOUR INTERVALS ARE AT 10' INTERVALS\*\*\*\*



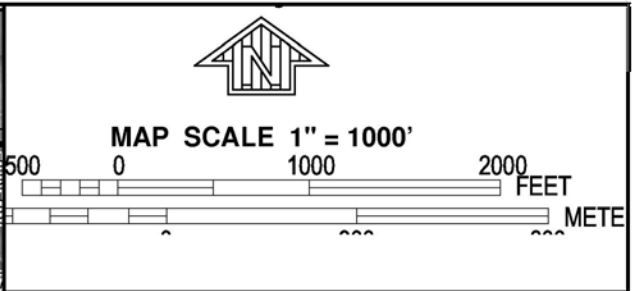
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**TOPOGRAPHIC MAP**

**76-ACRE DEATHERAGE SITE**  
 W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK

SCALE: AS SHOWN	DATE: 02/14/2008	FIGURE NO. FIGURE 2
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001





**CITY OF BROKEN ARROW**  
400236

**WAGONER COUNTY**  
**UNINCORPORATED AREAS**  
400215

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0115H

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**WAGONER COUNTY,**  
**OKLAHOMA**  
**AND INCORPORATED AREAS**

**PANEL 115 OF 525**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WAGONER COUNTY	400215	0115	H
BROKEN ARROW, CITY OF	400236	0115	H
COWETA, CITY OF	400216	0115	H

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Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

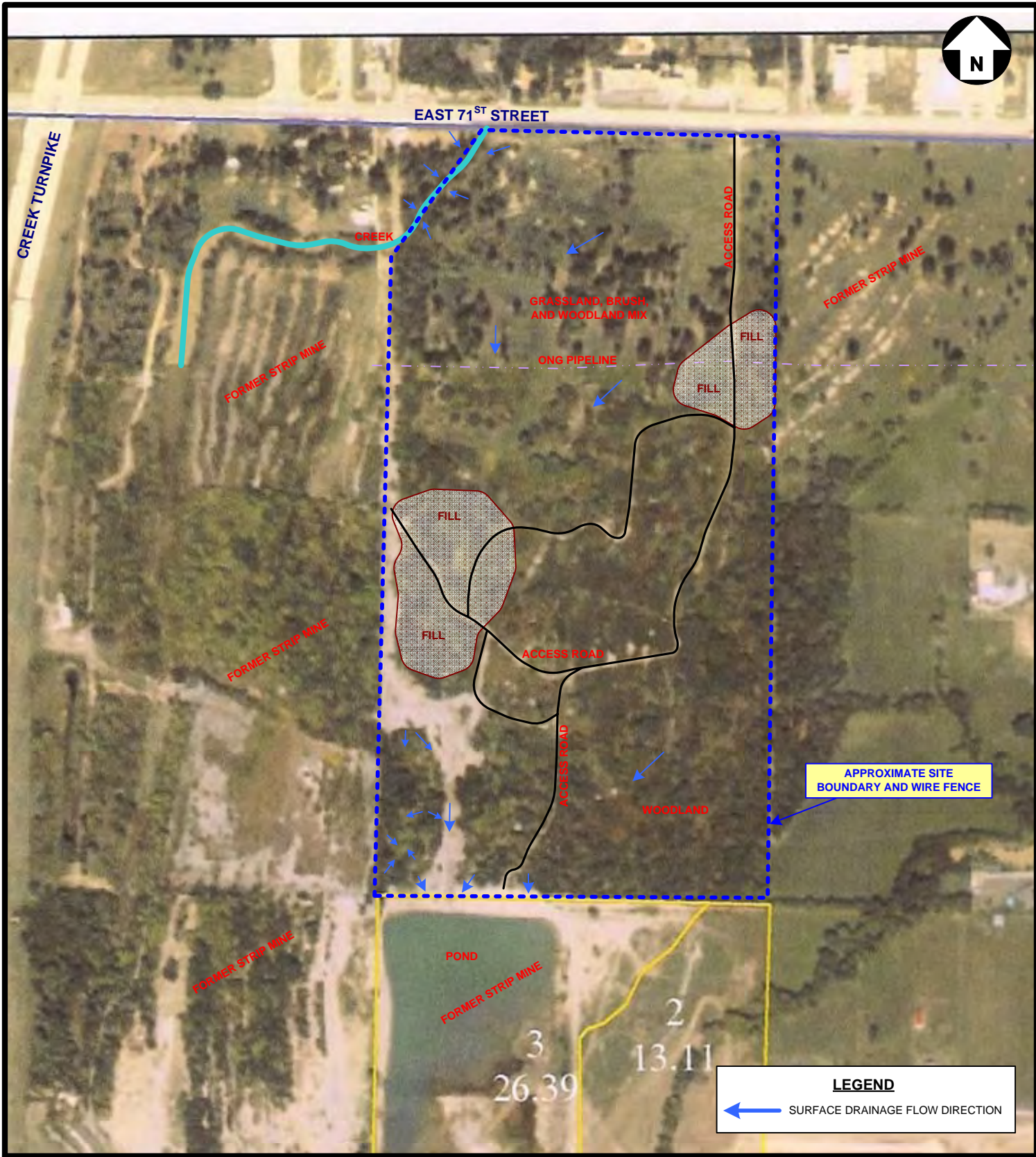


**MAP NUMBER**  
40145C0115H  
**EFFECTIVE DATE**  
APRIL 17, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)





APPROXIMATE SITE BOUNDARY AND WIRE FENCE

**LEGEND**

← SURFACE DRAINAGE FLOW DIRECTION



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**SITE LAYOUT**

**76-ACRE DEATHERAGE SITE**  
W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK

SCALE: AS SHOWN	DATE: 02/14/2008	FIGURE NO. FIGURE 3
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001



APPROXIMATE  
SITE LOCATION

SOURCE: NATURAL RESOURCE CONSERVATION SERVICE  
 WEB SOIL SURVEY URL: <http://websoilsurvey.nrcs.usda.gov>

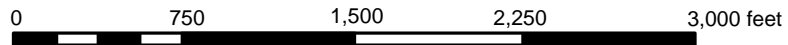
**LEGEND**

- DnB Dennis silt loam (1-3% slopes)
- DxE Dennis-Radley complex (0-15% slopes)
- KnF Kanima gravelly silty clay loam (3-50% slopes)
- OkA Okemah silt loam (0-1% slopes)
- Os Osage silty clay loam (0-1% slopes, occasionally flooded)

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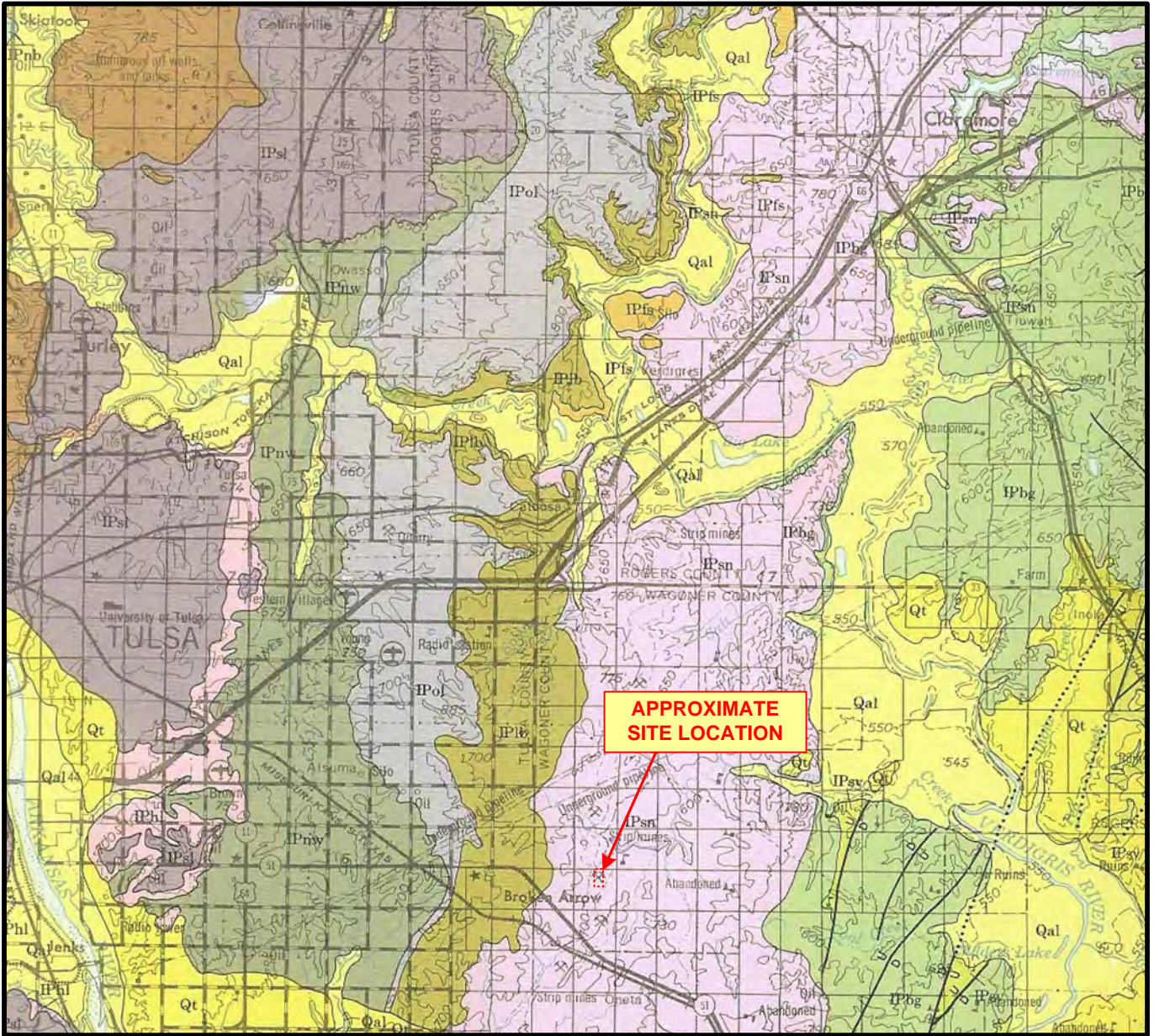
**SCALE**



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<b>SOIL MAP</b>		
<b>76-ACRE DEATHERAGE SITE</b> W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK		
SCALE: AS SHOWN	DATE: 02/14/2008	FIGURE NO. FIGURE 4
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001





SOURCE: OKLAHOMA GEOLOGICAL SURVEY  
 HYDROLOGIC ATLAS 2 – RECONNAISSANCE OF THE WATER RESOURCES  
 OF THE TULSA QUADRANGLE, NORTHEASTERN OKLAHOMA  
 DATED 1971

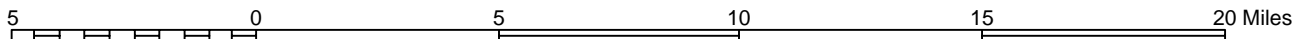
**LEGEND**

- |      |                                                  |      |                      |
|------|--------------------------------------------------|------|----------------------|
| IPcc | Coffeyville Formation and Checkerboard Limestone | IPa  | Ada Group            |
| IPva | Vamoosa Formation                                | IPnw | Nowata Formation     |
| IPv  | Vanoss Group                                     | IPw  | Wellington Formation |
| IPnh | Nellie Bly Formation and Hogshooter Limestone    | IPh  | Holdenville Shale    |
| IPht | Senora Formation                                 | IPsl | Seminole Formation   |
| IPd  | Duncan Sandstone                                 | IPbd | Barnsdall Formation  |
| IPb  | Labette Formation                                | IPch | Chanute Formation    |
|      |                                                  | Qal  | Alluvium             |
|      |                                                  | Qt   | Terrace Deposits     |

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Scale 1: 250 000



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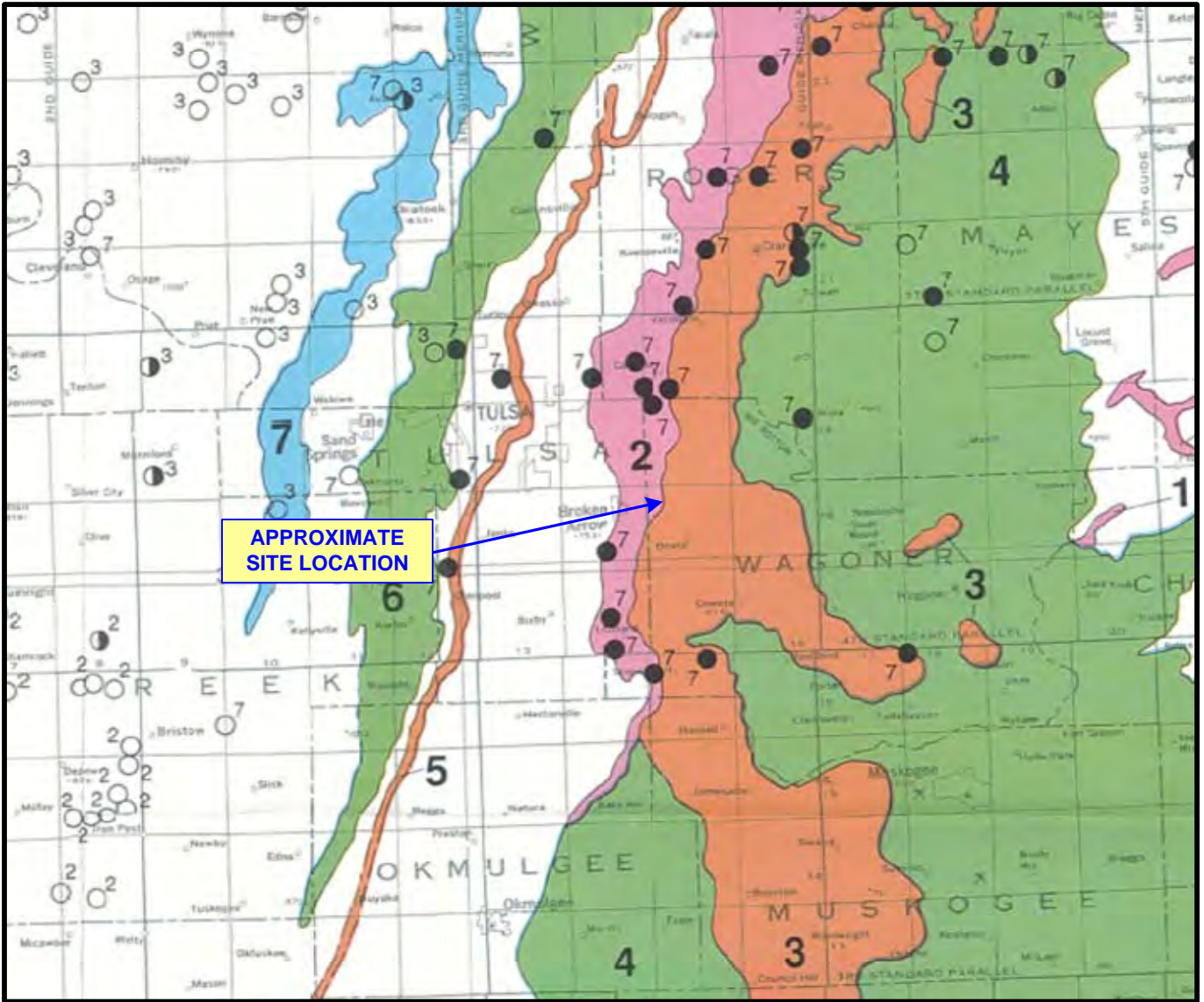
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**GEOLOGY MAP**

**61<sup>ST</sup> & LYNN LANE #222567**  
 14337b EAST 31<sup>ST</sup> STREET – TULSA,, OKLAHOMA

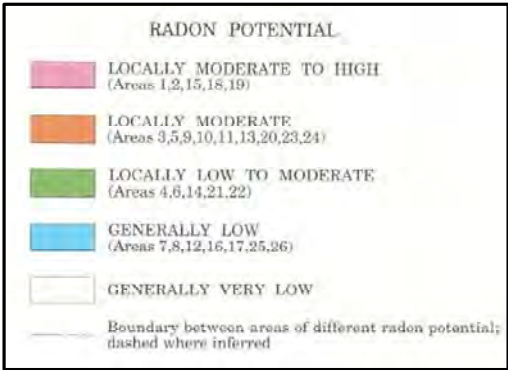
SCALE: AS SHOWN	DATE: 02/01/2008	FIGURE NO. FIGURE 5
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 1407-230





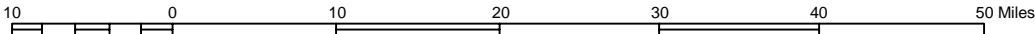
**APPROXIMATE  
SITE LOCATION**

Radon Potential Map of Oklahoma (GM-32).  
Oklahoma Geologic Survey. Dated 1972.



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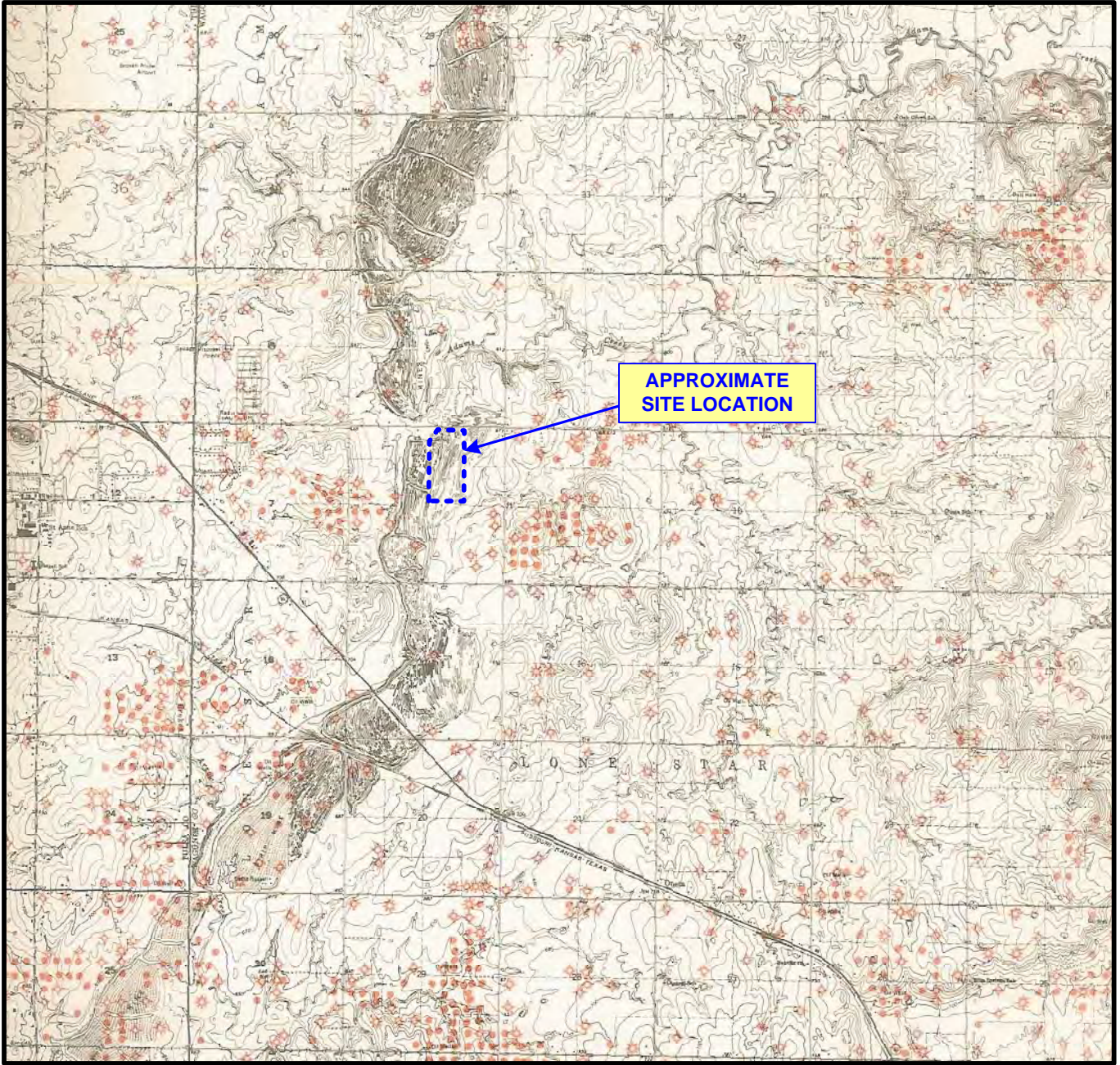
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**RADON MAP**

**76-ACRE DEATHERAGE SITE**  
W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK

SCALE: AS SHOWN	DATE: 02/14/2008	FIGURE NO. FIGURE 6
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001

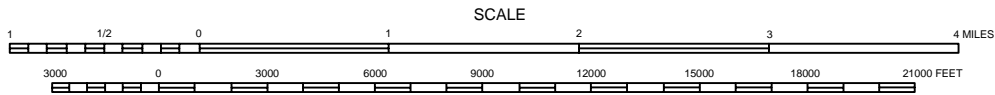




OIL WELLS, GAS WELLS, AND DRY HOLES  
 DRILLED IN TULSA COUNTY  
 PRIOR TO JANUARY 1, 1971  
 OKLAHOMA GEOLOGICAL SURVEY

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LEGEND		
● OIL WELL	⊛ GAS WELL	⊛ DRY HOLE





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<b>OIL AND GAS MAP</b>		
<b>76-ACRE DEATHERAGE SITE</b> W/2 NE/4 SEC. 8, T-18-N, R-15-E – WAGONER COUNTY, OK		
SCALE: AS SHOWN	DATE: 02/14/2008	FIGURE NO. FIGURE 7
APPROVED BY: IT	DRAWN BY: ALG	PROJECT NO. 2028-001



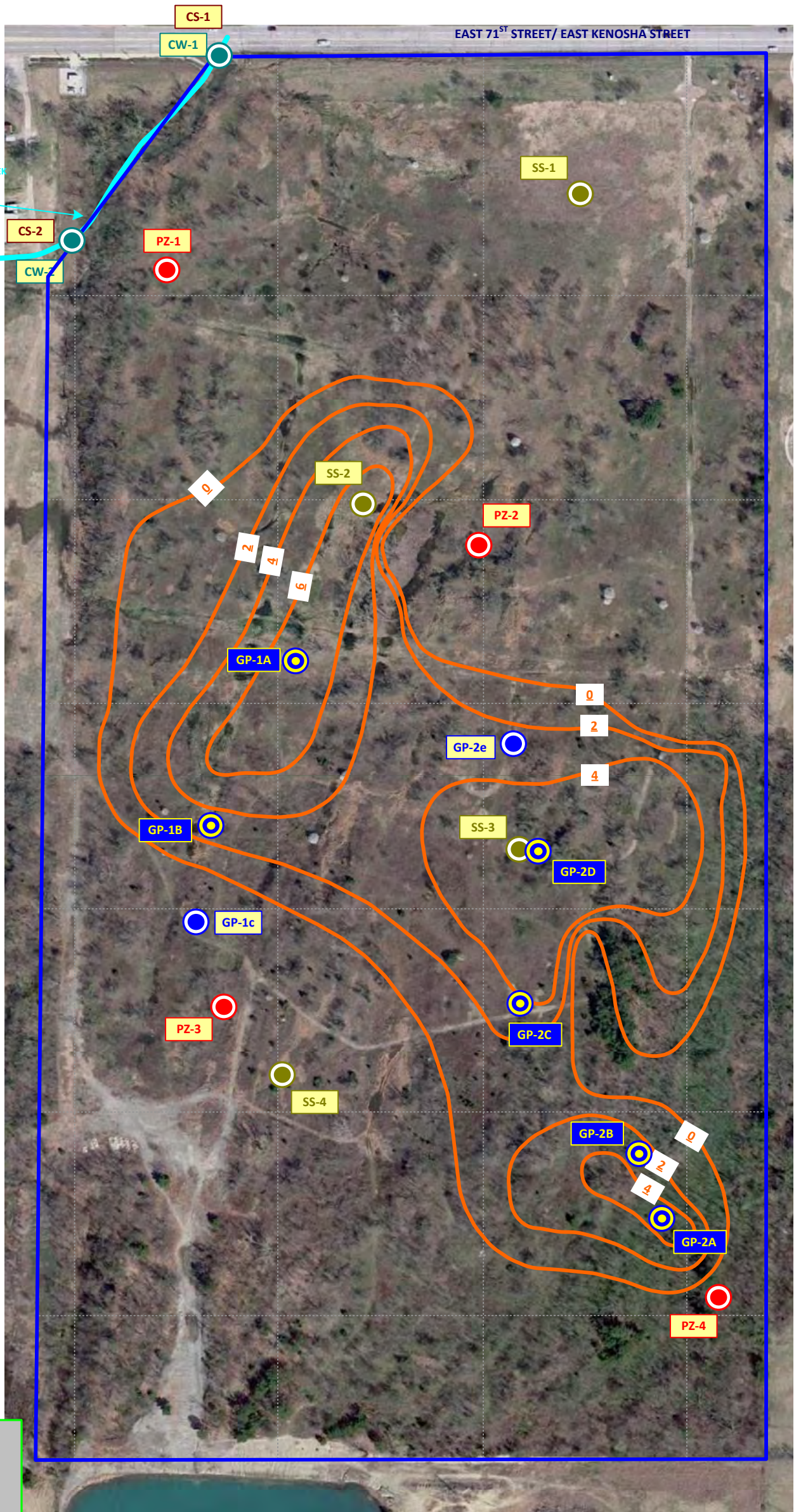
**Partial Historical Extent of the Strip Mine in the area of the former Broken Arrow Landfill**









-  Former Broken Arrow Landfill
-  Footprint of the former Strip Mine

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**BORING LEGEND**

-  PIEZOMETER
-  CREEK SURFACE WATER & SEDIMENT SAMPLE LOCATION
-  SURFACE SOIL SAMPLE LOCATION
-  GAS PROBE LOCATION
-  GAS PROBE (ATTEMPTED PROBE – NO TRASH)
-  DELINEATED SURFACE REFUSE THICKNESS MAP (HEMPHILL DRILLING REPORT – SEPTEMBER 13, 1972)

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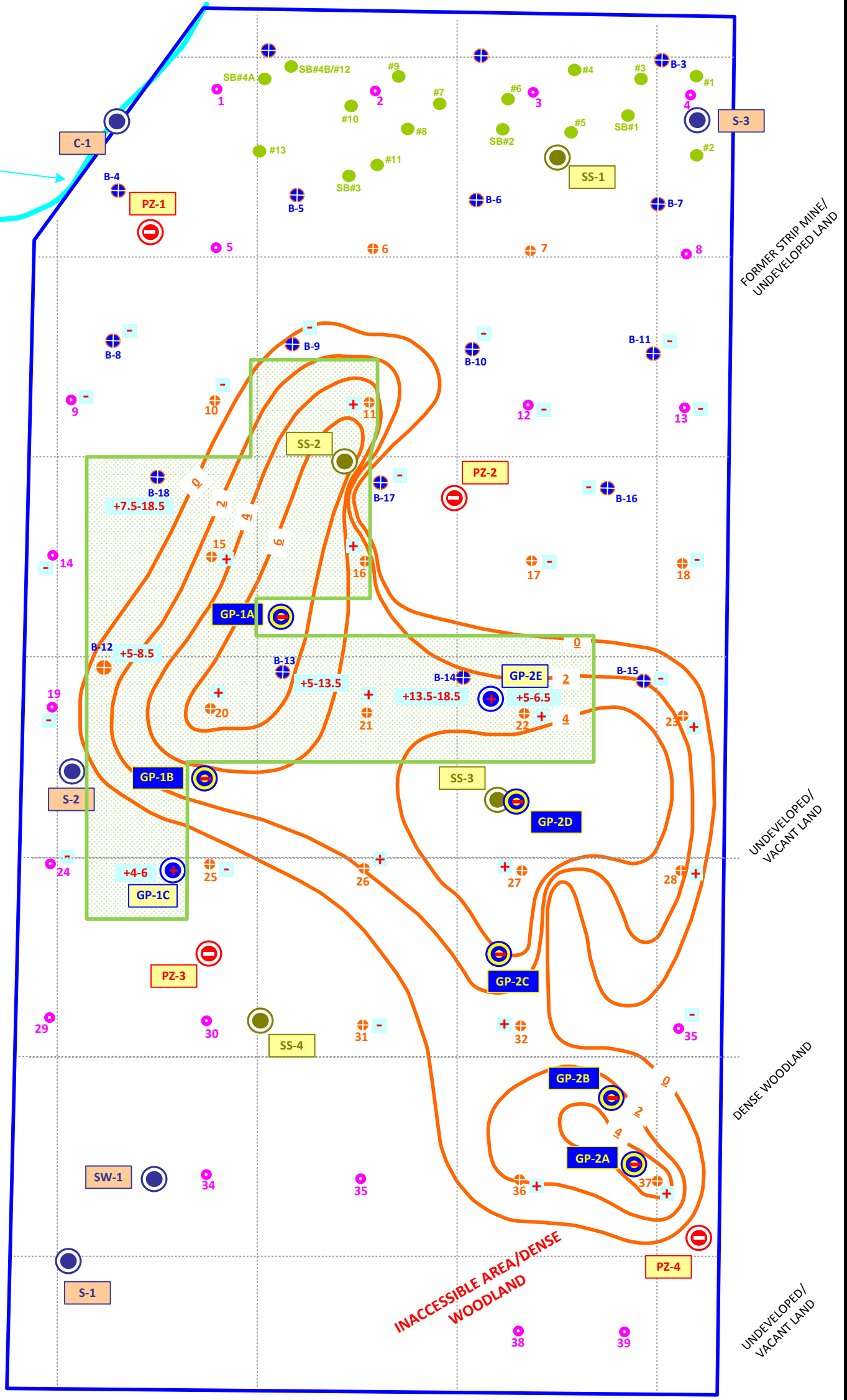


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**SAMPLE LOCATIONS**

FORMER BROKEN ARROW LANDFILL – JM ASSETS SEC. 8 – T18N – R15E - BROKEN ARROW, WAGONER COUNTY, OKLAHOMA		
SCALE: AS SHOWN	DATE: 06/08/2011	FIGURE NO. FIGURE 7
APPROVED BY: IT	DRAWN BY: AML	PROJECT NO. 2028-004





**LEGEND**

- TERRACON GEOTECHNICAL BORING (JUNE 2007)
- BLACKSHARE/CINNABAR BORING (JANUARY 2006)
- SUBSURFACE REFUSE THICKNESS MAP BOREHOLE (HEMPHILL DRILLING REPORT – SEPTEMBER 13, 1972)
- SUBSURFACE REFUSE THICKNESS MAP BOREHOLE W/ CASING
- DELINEATED SURFACE REFUSE THICKNESS MAP (HEMPHILL DRILLING REPORT – SEPTEMBER 13, 1972)
- A & M SAMPLE POINT (JANUARY 2008)
- A & M GAS PROBE (AUGUST 2010)
- A & M PIEZOMETER (AUGUST 2010)
- LIKELY WASTE AREAS
- POSITIVE TRASH
- NEGATIVE TRASH
- +13.5-18.5 TERRACON BORING – DEPTH OF TRASH IN FEET

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PREVIOUS SAMPLE LOCATIONS WITH UPDATED WASTE AREA		
<b>FORMER BROKEN ARROW LANDFILL – JM ASSETS</b>		
SEC. 8 – T18N – R15E - BROKEN ARROW, WAGONER COUNTY, OKLAHOMA		
SCALE: AS SHOWN	DATE: 05/18/2011	FIGURE NO. FIGURE 10
APPROVED BY: IT	DRAWN BY: AML	PROJECT NO. 2028-004



## Appendix B

Table 1 Sediment Sample Analytical Results for the Unnamed Tributary of Adams

Table 2 Surface Water from Adams Creek Sample Analytical Results for Detected Parameters

Table 3 Soil Sample Analytical Results for Detected Parameters (Updated June 2011)

Table 4 Groundwater Sample Analytical Results for Detected Parameters





TABLE 1 - SEDIMENT SAMPLE ANALYTICAL RESULTS FOR THE UNNAMED TRIBUTARY OF ADAMS CREEK (UPDATED JUNE 2011)

FORMER BROKEN ARROW LANDFILL - BROKEN ARROW, OKLAHOMA

ODEQ-LPD CASE NO. 09-057

SAMPLE DATES: AUGUST 4, 2010 & NOVEMBER 10, 2010

Parameter	CS-1 SEDIMENT (08/04/10)	CS-1 SEDIMENT (11/10/10)	CS-2 SEDIMENT (08/04/10)	CS-2 SEDIMENT (11/10/10)	Industrial Soil Screening Level
Sample Depth					
Antimony	2.8	N/A	< 5	N/A	410
Arsenic	<b>52.9</b>	N/A	<b>48.3</b>	N/A	1.6
Beryllium	5.66	N/A	5.45	N/A	2,000
Cadmium	4.39	N/A	3.16	N/A	800
Chromium	24.3	N/A	21.4	N/A	180,000*
Copper	29.2	N/A	21.3	N/A	41,000
Lead	66.8	N/A	37.1	N/A	800
Mercury	0.018	N/A	< 0.033	N/A	43
Nickel	439	N/A	401	N/A	2,000
Selenium	41	N/A	43	N/A	5,130
Silver	2.4	N/A	2.06	N/A	5,130
Thallium	< 0.192	0.099	< 0.2	0.099	1
Zinc	1130	N/A	906	N/A	310,000
pH (S.U.)	7.48	N/A	7.82	N/A	
Specific Conductance	1530 <i>umhos/cm</i>	N/A	958 <i>umhos/cm</i>	N/A	

All values are in mg/Kg or ppm unless otherwise noted

MCL values are based on the Regional Screening Level Summary Table (May 2011)

\* Protection of Groundwater SSL values (according to the Regional Screening Level Summary Table (May 2011)

\*\* ODEQ Risk Based Cleanup Levels

Concentrations in **BOLD** are above the Industrial Soil Screening Level

N/A: Not Analyzed

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**TABLE 2 - SURFACE WATER FROM ADAMS CREEK SAMPLE ANALYTICAL RESULTS FOR DETECTED PARAMETERS  
FORMER BROKEN ARROW LANDFILL - BROKEN ARROW, WAGONER COUNTY, OKLAHOMA  
ODEQ-LPD CASE NO. 09-057**

**SAMPLE DATES: AUGUST 4, 2010 & OCTOBER 28, 2010**

Parameter	CW-1 Unfiltered (8/4/2010)	CW-1 Filtered (8/4/2010)	CW-1 Unfiltered (10/28/2010)	CW-2 Unfiltered (8/4/2010)	CW-2 Filtered (8/4/2010)	CW-2 Unfiltered (10/28/2010)	MCL
Antimony	< 0.05	< 0.05	< 0.005	< 0.05	< 0.05	< 0.005	0.006
Arsenic	0.011	< 0.025		< 0.025	< 0.025		0.05
Beryllium	0.004	0.0038		0.0039	0.0038		0.004
Cadmium	0.0016	0.0016		0.0015	0.0017		0.01
Chromium	0.0052	<b>0.0111</b>		0.0069	< 0.01		0.05
Copper	< 0.01	< 0.01		< 0.01	< 0.01		1.3
Lead	0.0087	0.014		0.015	0.015		0.05
Nickel	0.0836	0.783		0.85	0.813		0.05
Selenium	0.045	0.03		0.046	0.031		0.05
Silver	0.0064	0.0081		0.0057	0.0051		0.1*
Thallium	< 0.002	< 0.002		< 0.002	< 0.002		0.002
Zinc	0.958	0.914		0.985	0.951		5*
Mercury	< 0.0002	< 0.0002		< 0.0002	< 0.0002		0.002
Phosphorus	0.045	N/A		0.051	N/A		
Nitrogen/Nitrite	< 0.01	N/A		0.01	N/A		1*
Nitrogen/Nitrate	0.054	N/A		0.038	N/A		10*
2-Methylnaphthalene	< 0.023	N/A		< 0.024	N/A		
Benzene	< 0.002	N/A		< 0.002	N/A		0.005
pH (S.U.)	3.52	N/A		3.53	N/A		6.5-8.5*
Specific Conductance	3330	N/A		3420	N/A		

All values are in mg/L or ppm unless otherwise noted

\*Based on EPA Primary and Secondary Drinking Water Standards or groundwater protection

N/A - Not Analyzed

Concentrations in **BOLD** are above the MCL

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**TABLE 3 - SOIL SAMPLE ANALYTICAL RESULTS FOR DETECTED PARAMETERS (UPDATED JUNE 2011)**  
**FORMER BROKEN ARROW LANDFILL - BROKEN ARROW, OKLAHOMA**  
**ODEQ-LPD CASE NO. 09-057**  
**SAMPLE DATE: AUGUST 4, 2010**

Parameter	SS-1 (0-6")	SS-2 (0-6")	SS-3 (0-6")	SS-4 (0-6")	DUP/SS-2 (0-6")	Industrial Soil Screening Level
Sample Depth						
Antimony	< 4.9	< 4.9	< 4.81	3.6	< 5	410
Arsenic	<b>13.8</b>	<b>19.2</b>	<b>11.1</b>	<b>22.6</b>	<b>15.7</b>	1.6
Beryllium	0.84	1.27	0.59	1.3	1.27	2,000
Cadmium	0.38	1.87	0.29	0.99	1.12	800
Chromium	22.8	59.4	30.2	48.4	34.9	180,000*
Copper	21.1	95.2	29.7	59.7	40.1	41,000
Lead	20.4	30	21.4	28.7	22.7	800
Mercury	0.03	0.12	0.051	0.1	0.055	43
Nickel	22.4	170	22.6	91.5	89.3	2,000
Selenium	< 3.77	< 3.85	< 3.92	< 3.7	< 4.81	5,130
Silver	< 0.52	0.87	< 0.54	< 0.51	< 0.53	5,130
Thallium	0.13	0.802	0.297	0.443	0.378	10
Zinc	65.4	341	87	204	189	310,000
pH (S.U.)	7.66	5.88	4.89	4.37	6.51	
Specific Conductance	409 <i>umhos/cm</i>	1510 <i>umhos/cm</i>	183 <i>umhos/cm</i>	677 <i>umhos/cm</i>	1530 <i>umhos/cm</i>	

All values are in mg/kg or ppm unless otherwise noted

\* Protection of Groundwater SSL values (according to the Regional Screening Level Summary Table (May 2011)

\*\* ODEQ Risk Based Cleanup Levels

Concentrations in **BOLD** are above the Industrial Soil Screening Level

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TABLE 4 - GROUNDWATER SAMPLE ANALYTICAL RESULTS FOR DETECTED PARAMETERS  
 FORMER BROKEN ARROW LANDFILL - BROKEN ARROW, WAGONER COUNTY, OKLAHOMA  
 ODEQ-LPD CASE NO. 09-057

SAMPLE DATES: AUGUST 4, 2010 & OCTOBER 28, 2010

Parameter	PZ-1 Unfiltered	PZ-1 Filtered	PZ-2 Unfiltered	PZ-2 Filtered	PZ-3 Unfiltered	PZ-3 Filtered	PZ-4 Unfiltered	PZ-4 Filtered	DUP Unfiltered	DUP Filtered	MCL
Antimony (08/04/2010)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.006
Antimony (10/28/2010)	< 0.005	N/A	< 0.005	N/A	< 0.005	N/A	< 0.005	N/A	< 0.005	N/A	0.006
Arsenic	<b>0.069</b>	< 0.025	0.038	< 0.025	0.018	< 0.025	0.016	< 0.025	< 0.025	< 0.025	0.05
Beryllium	0.0038	< 0.001	0.0014	< 0.001	0.0004	< 0.001	0.0036	0.0005	0.0007	< 0.001	0.004
Cadmium	0.003	0.0004	0.0042	0.0031	0.0017	0.0012	<b>0.0183</b>	0.0094	0.0028	0.0035	0.01
Chromium	<b>0.174</b>	0.0043	<b>0.0506</b>	< 0.01	0.0241	0.0066	<b>0.0975</b>	0.022	0.0234	0.009	0.05
Copper	0.142	< 0.01	0.0501	< 0.01	0.0116	< 0.01	0.0655	< 0.01	0.0187	< 0.01	1.3
Lead	<b>0.0904</b>	< 0.04	0.034	0.012	0.016	0.0094	<b>0.0909</b>	0.021	0.024	0.013	0.05
Nickel	0.244	0.0218	1.14	0.871	0.451	0.417	1.2	1.05	1.06	0.983	
Selenium	0.024	0.025	0.04	0.024	0.03	0.035	< 0.05	0.024	0.032	0.026	0.05
Silver	< 0.01	< 0.01	0.0069	0.006	0.0057	0.0038	<b>0.0103</b>	0.0068	0.0063	0.005	0.11*
Thallium	0.0017	< 0.002	0.0013	< 0.002	0.0006	< 0.002	0.001	< 0.002	< 0.002	< 0.002	0.002
Zinc	0.06	0.0096	0.537	0.256	0.328	0.311	0.898	0.556	0.388	0.294	5*
Mercury	<b>0.0043</b>	< 0.0002	0.00022	< 0.0002	0.00009	< 0.0002	0.00034	< 0.0002	0.00011	< 0.0002	0.002
Phosphorus	8.99	N/A	4.95	N/A	2.63	N/A	4.82	N/A	0.963	N/A	
Nitrogen/Nitrite	0.01	N/A	0.01	N/A	0.01	N/A	0.02	N/A	0.01	N/A	1*
Nitrogen/Nitrate	0.061	N/A	0.05	N/A	0.041	N/A	0.093	N/A	0.045	N/A	10*
2-Methylnaphthalene	0.003	N/A	< 0.022	N/A	< 0.023	N/A	< 0.031	N/A	< 0.025	N/A	
Benzene	0.0009	N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	0.005
pH (S.U.)	6.69	N/A	6.08	N/A	5.93	N/A	5.88	N/A	6.01	N/A	6.5-8.5*
Specific Conductance	3560	N/A	3570	N/A	3230	N/A	3570	N/A	3520	N/A	

All values are in mg/L or ppm unless otherwise noted

\*Based on EPA Primary and Secondary Drinking Water Standards or groundwater protection  
 N/A - Not Analyzed

Concentrations in **BOLD** are above the MCL

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## Appendix C

Previous Investigation Reports

Boring Logs

Lab reports

Field notes

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May 22, 2007

Mr. Brian J. Shloss  
Underwriting Associate  
Western Capital Partners, LLC  
Historic Alta Court Offices  
1490 Lafayette Street, Suite 306  
Denver, CO 80218

**Subject: Limited Phase II Investigation of  
Undeveloped Property  
South side of 71<sup>st</sup> Street between S. 217<sup>th</sup> E. and S. 222<sup>nd</sup> E. Avenue  
Broken Arrow, OK  
CES Project #866-06**

Dear Mr. Shloss:

Western Capital Partners, LLC, its successors, and/or assigns may rely on the referenced report dated February 10, 2006 which was prepared by our firm under our former company name - Cinnabar Environmental Services. To summarize the results from the report:

- The results of the soil gas survey revealed no measurable concentrations of methane in any of the borings.
- If the groundwater were pumped and discharged, a permit would have to be obtained from the Oklahoma Department of Environmental Quality (ODEQ). In addition, according to the ODEQ, as long as the water is not used for drinking water purposes, the levels of metals in the groundwater are not a threat to human health or the environment.

We trust that this letter provides you with the information you need to provide financing to Mr. Rusty Russell with Russell Capital Acquisitions. If you require any additional information, please do not hesitate to call our Tulsa office at (918) 388-0970.

Sincerely,

**Blackshare Environmental Solutions**

A handwritten signature in black ink that reads 'Derek T. Blackshare'.

Derek T. Blackshare, P.E., CHMM  
CEO & President







February 10, 2006

Mr. Bill Deatherage  
The Deatherage Companies  
1805 North Sixteenth Street  
Broken Arrow, OK 74012-9339

**Subject:** Limited Phase II Investigation of  
Undeveloped Property  
South side of 71<sup>st</sup> Street between S. 217<sup>th</sup> E. and S. 222<sup>nd</sup> E. Avenue  
Broken Arrow, OK  
CES Project #866-06

Dear Mr. Deatherage:

The following summarizes the results of the referenced project conducted by Cinnabar Environmental Services (Cinnabar). This letter report is organized as follows:

- Background
- Description of Field Sampling Activities and Results

### Background

At least parts of the property were formerly used as a municipal landfill. Cinnabar was contracted to investigate whether or not the past use of the property as a landfill had implications for the future development of the property. Specifically, the site was to be investigated for the presence of methane gas in the soil or elevated concentrations of metals in the groundwater. Representatives of Cinnabar met with the engineer for the developer and locations for soil borings/survey were chosen based on the anticipated development and the topography of the property in relation to the historic landfill operations. A topographic map of the subject property is included as Attachment A.

### Description of Field Sampling Activities and Results

#### *Soil Borings*

Field activities were conducted on January 13, 2006 by Mr. Jon Boyd and Mr. Manuel Barrett of Cinnabar. A total of seventeen (17) soil borings were advanced by either a hand probe or geoprobe. The geoprobe was operated by Great Plains Probing Services, LLC. The purpose of the borings were to allow soil gas samples to be collected to conduct a methane survey. The borings were advanced to depths ranging from three to eight feet. A site aerial map, which indicates the approximate locations of the borings in relation to pertinent structures and general site boundaries, is attached to this report as Attachment B.

3121 S. Wheeling Ave. • Tulsa, OK 74105-6421 • TEL: 918.742.0032 • FAX: 918.742.0097 • [ces@tulsat@cinnabar.com](mailto:ces@tulsat@cinnabar.com)

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Mr. Bill Deatherage  
February 10, 2006  
Page 2 of 3

In addition, a total of five (5) soil borings were advanced by geoprobe to auger refusal or the presence of water for the purpose of collecting ground water samples.

#### *Soil Gas Survey*

Soil gas samples were collected from each of the borings referenced above and analyzed utilizing a Gas-Ranger™ detector for the presence of methane. The Gas-Ranger™ detector is capable of reading 0 to 100% by volume of methane, and is used frequently to conduct field screening of methane when a source is suspected and/or in instances of development. **The results of the soil gas survey revealed no measurable concentrations of methane in any of the borings and are summarized in the table in Attachment C to this report.**

In addition, the five (5) Geoprobe wells were also sampled for the presence of methane using the above referenced techniques. No measurable concentrations of methane were observed, as noted in the previously referenced table.

#### *Ground Water Sampling*

A total of five (5) temporary wells were installed to test for the presence of metals in the groundwater. A hollow core sampling unit was advanced using the Geoprobe unit to refusal or groundwater. The sampling equipment was decontaminated prior to commencement of the project and following the completion of each soil boring using an Alconox® detergent and potable water wash followed by a potable water rinse. Water samples were collected from four of the five holes (one hole was advanced to a layer of coal and no groundwater was available for sampling. Noted as SB#4A on the site map) by using disposable bailers dedicated to each well to prevent cross contamination of samples.

The collected samples were containerized in the proper sample bottles using Nitric acid as a preservative. Water samples were analyzed for the presence of eight (8) Resource Conservation and Recovery Act (RCRA) metals by Green Country Testing using EPA method 245.2 for Mercury in water and EPA method E200.7 for the remaining seven (7) RCRA metals.

The temporary wells were compliantly plugged after sampling was conducted by employing the use of bentonite clay in accordance with Oklahoma Water Resources Board (OWRB) protocol.

All soil cuttings were containerized and compliantly disposed of by Cinnabar. Water samples were taken in only the amounts required for laboratory analysis and therefore no excess water was collected.

Boring logs are included in Attachment D to this report detailing the soil types encountered and the depths of the borings. The results from of analysis received from Green Country Testing are included in Attachment E. The results are above EPA primary drinking water maximum contaminant levels (MCLs). However, MCLs do not apply in this instance for the following reasons.

- \* The water is not from a recognized or categorized aquifer but instead from a perched water aquifer held within the former coal strip mining pit.

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Mr. Bill Deatherage  
February 10, 2006  
Page 3 of 3

- There are no groundwater wells in the area and the use of groundwater as a drinking water source is not necessary as the area is supplied with city water.

Cinnabar consulted with the Oklahoma Department of Mines regarding the metals in the groundwater. The Department of Mines referred us to the abandoned mines section of the Oklahoma Conservation Commission (OCC) as the agency that would establish action levels for cleanup, if any. Mr. Mike Kastl, Director with the Abandoned Mine Land Reclamation section of the OCC, stated that unless the groundwater is pumped for discharge, metals would cause no public health concerns with surface activities above it and that it has never been addressed in any of the projects the OCC has been involved with. He also stated that if the groundwater were pumped and discharged, a permit would have to be obtained from the Oklahoma Department of Environmental Quality (ODEQ). In addition, according to the ODEQ, as long as the water is not used for drinking water purposes, the levels of metals in the groundwater are not a threat to human health or the environment.

If there are any questions regarding this report or any of the associated findings, please feel free to call our Tulsa office at (918) 742-0082.

Sincerely,

**Cinnabar Environmental Services**



Jon Boyd  
Environmental Specialist

**Attachments:**

- A - Topographic Map
- B - Site Aerial Map
- C - Soil Gas Survey Results Table
- D - Boring Logs
- E - Laboratory Analytical Results



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July 5, 2007

Mr. Rusty Russell  
Russell Capital Acquisitions  
25695 E. 71<sup>st</sup> Street, Suite B  
Broken Arrow, OK 74014

**Subject: Environmental Review of Property South of 71<sup>st</sup> Street and between 217<sup>th</sup> E. and 222<sup>nd</sup> E. Avenue  
Broken Arrow, OK**

Dear Mr. Russell:

Following our conference call with Western Capital Partners, I was tasked with reviewing all known reports for the subject property and issuing an opinion on what, if any, further environmental investigation should be completed since the various reports covered different portions of the property. I have completed my review and this letter contains a summary of my findings and recommendations.

The reports that were reviewed for this analysis include:

- Hemphill Report of Test Borings dated September 13, 1972
- Enercon Preliminary Investigation & Report dated January 28, 1997
- Kleinfelder Phase I ESA Report dated July 16, 2004
- Cinnabar Limited Phase II Investigation Report dated February 10, 2006
- Terracon Preliminary Geotechnical Engineering Report dated June 15, 2007

The first comment is to note that the reports were commissioned by various entities for various purposes and covered different portions of the property. Therefore, items that were a concern in one report were not covered by another report and this fact confuses the issue(s).

The fact that part of the property was used as a municipal landfill is well documented and has been analyzed in most of the reports for various purposes and concerns. Conditions related to this activity seem to be adequately characterized and, at least from an environmental perspective, appear to have minimal consequence on future development of the property.

The fact that most of the property was also used for strip mining of coal is also well documented. And similar to the municipal landfill concern, from an environmental perspective, this issue also appears to have minimal consequence on the future development of the property.

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It appears, however, that the permitting of a hazardous waste disposal facility in the far southwest corner of the property, identified in the Kleinfelder Phase I report, has not been investigated in the same depth of other concerns. The remainder of this letter will focus on that activity.

In summary, we do not believe the fact that the property was permitted as a hazardous waste facility requires any further action for the following reasons:

- The small piece of property (400' x 800') is not on the subject property being considered for development or included in this loan.
- Knowledge of the property does not indicate that any facility was ever built or that any activities were actually conducted on the property by the entity that obtained the permit (USPCI).
- Groundwater results from other portions of the property do not indicate any influence by possible contaminants that would have resulted from the hazardous waste operations.

Since the loan from Western Capital Partners involves only the front (north) 40 or 50 acres of the 80-acre tract, we believe that all issues have been adequately addressed and that no further action is necessary from an environmental perspective.

Note that this opinion does not have any affect on the geotechnical and/or engineering aspects of development.

If you have any questions or would like to discuss this matter in more detail, please do not hesitate to call our Tulsa office at (918) 388-0970.

Sincerely,

**Blackshare Environmental Solutions**

Derek T. Blackshare, P.E., CHMM  
CEO & President





# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>	<b>DRILLING METHOD:</b>				<b>BORING NO.</b>			
	CME ATV – ROTARY AUGER				PZ-1			
<b>SITE NAME AND LOCATION</b>				<b>SAMPLING METHOD:</b>				
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001				SPLIT SPOON				
				<b>DRILLING</b>		<b>START</b>		<b>FINISH</b>
<b>WEATHER:</b> SUNNY		<b>TEMP:</b> 91°		<b>TIME:</b>		<b>TIME</b>		
		<b>G.L. ELEV:</b>		<b>DATE:</b>		<b>DATE</b>		
<b>DATUM:</b>		<b>TOC ELEV:</b> 649.367		<b>CASING DEPTH:</b>		<b>DATE</b>		
						<b>8/3/10 8/3/10</b>		
<b>DRILL RIG:</b> CME ATV			<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 2"		<b>SCREEN DIA:</b> 2"	
<b>ANGLE:</b> VERTICAL			<b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM		<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>			<b>FT-LBS</b>					

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
	0 ppm		0' - 1': TOPSOIL, BROWN – NO ODOR	
	0 ppm		1' - 5': BROWN, BLACK LOOSE SPOIL – NO ODOR	
5	0 ppm		5' - 6': NO RECOVERY	
	0 ppm		6' - 7.5': BROWN, BLACK LOOSE SPOIL – NO ODOR	
	0 ppm		7.5' - 8': GREY LOOSE SPOIL – NO ODOR	
10	0 ppm		8' - 10': BROWN, BLACK LOOSE SPOIL – NO ODOR	
	0 ppm		10' - 12': NO RECOVERY	
	0 ppm		12' - 13': WET GREY LOOSE SPOIL – NO ODOR	
15	0 ppm		13' - 14': MOIST LIGHT BROWN LOOSE SPOIL – NO ODOR	
	0 ppm		14' - 15': WET GREY LOOSE SPOIL – NO ODOR	
	0 ppm		15' - 18.5': NO RECOVERY	
20	0 ppm		18.5' - 20': WET GREY LOOSE SPOIL – NO ODOR	
			TOTAL DEPTH: 20'	
25				
30				

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BROKEN ARROW  
PLAN DEVELOPMENT

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 3 AUGUST 2010 CHECKED BY: IT

# SOIL BORING AND WELL COMPLETION LOG


<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER				PZ-2	
<b>SITE NAME AND LOCATION</b>  FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
		SPLIT SPOON				1 OF 1	
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 105°		<b>WATER LEVEL:</b>				<b>START</b>	<b>FINISH</b>
		<b>TIME:</b>				1420	1445
<b>DATUM:</b>		<b>G.L. ELEV:</b>		<b>DATE:</b>		<b>DATE</b>	
		<b>TOC ELEV:</b> 660.685		<b>CASING DEPTH:</b>		8/3/10	8/3/10
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 2"		<b>SCREEN DIA:</b> 2"	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					


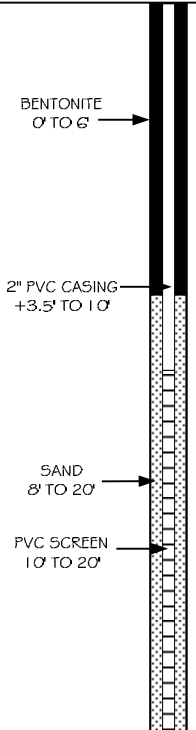
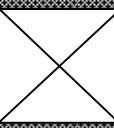
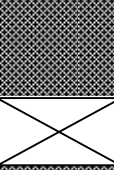

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm	X	0' - 2': NO RECOVERY	
	0 ppm	/	2' - 5': BROWN, GREY LOOSE SPOIL – NO ODOR	
	0 ppm	X	5' - 7': NO RECOVERY	
10	0 ppm	/	7' - 15': BLACK/GREY LOOSE SPOIL – NO ODOR	
	0 ppm	/		
	0 ppm	/		
	0 ppm	/		
	0 ppm	/		
15	0 ppm	/		
20			TOTAL DEPTH: 15.15'	
25			DUPLICATE WATER SAMPLE COLLECTED FROM PZ-2	
30				

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 PLAN DEVELOPMENT

**DRILLING CONTRACTOR:** MOHAWK DRILLING, INC.  
**DRILLER:** ERIK CHRISTIAN  
**LOGGED BY:** ABBY LAZAR  
**DATE:** 3 AUGUST 2010    **CHECKED BY:** IT

# SOIL BORING AND WELL COMPLETION LOG

 <b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>	<b>DRILLING METHOD:</b>				<b>BORING NO.</b>		
	CME ATV – ROTARY AUGER				PZ-3		
<b>SITE NAME AND LOCATION</b>				<b>SHEET</b>			
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001				<b>SAMPLING METHOD:</b>			
				SPLIT SPOON			
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 104°				<b>WATER LEVEL:</b>		<b>START</b>	
<b>DATUM:</b>				<b>TIME:</b>		<b>FINISH</b>	
<b>G.L. ELEV:</b>				<b>DATE:</b>		<b>TIME</b>	
<b>TOC ELEV:</b> 660.486				<b>CASING DEPTH:</b>		<b>DATE</b>	
<b>DRILL RIG:</b> CME ATV				<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 2"	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>				<b>TYPE OF BENTONITE:</b> SODIUM		<b>SCREEN DIA:</b> 2"	
<b>SAMPLE HAMMER TORQUE:</b> <b>FT-LBS</b>				<b>SLOT SIZE</b>			

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION	
5	0 ppm		0' - 2': GREY, LOOSE SPOIL – NO ODOR		
	0 ppm		2' - 3': GREY, BROWN LOOSE SPOIL – NO ODOR		
	0 ppm		3' - 6': NO RECOVERY		
10	0 ppm		6' - 10': GREY, BROWN, BLACK LOOSE SPOIL – NO ODOR		
	0 ppm		10' - 12': NO RECOVERY		
	0 ppm		12' - 13': WET GREY LOOSE SPOIL – NO ODOR		
	0 ppm		13' - 15': MOIST GREY LOOSE SPOIL – NO ODOR		
15	0 ppm		15' - 19': NO RECOVERY		
	0 ppm		19' - 20': GREY LOOSE SPOIL – NO ODOR		
20	0 ppm		TOTAL DEPTH: 20'		
25					<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>RECEIVED</b>                      March 13, 2017                      BROKEN ARROW                      PLAN DEVELOPMENT</p> </div>
30					

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 3 AUGUST 2010      CHECKED BY: IT

# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>					
		CME ATV – ROTARY AUGER				PZ-4					
<b>SITE NAME AND LOCATION</b>						<b>SHEET</b>					
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001						<b>SAMPLING METHOD:</b>					
						SPLIT SPOON				<b>DRILLING</b>	
						<b>WATER LEVEL:</b>				<b>START</b>	<b>FINISH</b>
<b>WEATHER:</b> SUNNY		<b>TEMP:</b> 105°		<b>TIME:</b>		<b>TIME</b>					
		<b>G.L. ELEV:</b>		<b>DATE:</b>		<b>DATE</b>					
<b>DATUM:</b>		<b>TOC ELEV:</b> 660.875		<b>CASING DEPTH:</b>							
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 2"		<b>SCREEN DIA:</b> 2"					
<b>ANGLE:</b> VERTICAL		<b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM		<b>SLOT SIZE</b>					
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>									

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm 0 ppm 0 ppm		0' – 1.5': NO RECOVERY  1.5' – 5': BROWN, GREY LOOSE SPOIL – NO ODOR  5' – 6.5': NO RECOVERY	
10	0 ppm 0 ppm 0 ppm 0 ppm		6.5' – 10': BROWN/GREY LOOSE SPOIL – NO ODOR  10' – 12.5': NO RECOVERY	
15	0 ppm 0 ppm 0 ppm 0 ppm	  	12.5' – 15': BROWN/GREY LOOSE SPOIL – NO ODOR  15' – 16': GREY LOOSE SPOIL – NO ODOR  16' – 17': BLACK COAL – NO ODOR	
20			TOTAL DEPTH: 17'	
25				
30				

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DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

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DATE: 3 AUGUST 2010 CHECKED BY: IT

# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>	<b>DRILLING METHOD:</b>				<b>BORING NO.</b>			
	CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-1a			
<b>SITE NAME AND LOCATION</b>			<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001							1 OF 1	
			<b>DRILLING</b>					
			<b>WATER LEVEL:</b>		<b>START</b>		<b>FINISH</b>	
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 73°			<b>TIME:</b>		750		810	
<b>DATUM:</b>			<b>DATE:</b>		<b>DATE</b>		<b>DATE</b>	
<b>G.L. ELEV:</b>			<b>TOC ELEV:</b>		8/4/10		8/4/10	
<b>CASING DEPTH:</b>								
<b>DRILL RIG:</b> CME ATV			<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>			<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b> <b>FT-LBS</b>								

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm		0' - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
10			1' - 15': BROWN, BLACK LOOSE SPOIL – NO ODOR	
15			TOTAL DEPTH: 15'	
20				
25				
30				

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**DRILLING CONTRACTOR:** MOHAWK DRILLING, INC.  
**DRILLER:** ERIK CHRISTIAN  
**LOGGED BY:** ABBY LAZAR  
**DATE:** 4 AUGUST 2010      **CHECKED BY:** IT



# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b> CME ATV – ROTARY AUGER CONTINUOUS CORE				<b>BORING NO.</b> GP-1b	
<b>SITE NAME AND LOCATION</b> FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001		<b>SAMPLING METHOD:</b>				<b>SHEET</b> 1 OF 1	
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 76°		<b>WATER LEVEL:</b>				<b>DRILLING</b>	
<b>DATUM:</b> <b>G.L. ELEV:</b>		<b>TIME:</b>				<b>START</b> <b>FINISH</b>	
<b>TOC ELEV:</b>		<b>DATE:</b>				<b>TIME</b> <b>TIME</b>	
<b>CASING DEPTH:</b>						<b>DATE</b> <b>DATE</b>	
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b> <b>FT-LBS</b>							

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm	[Dotted Pattern]	0 - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED
	0 ppm	[Diagonal Lines]	1' - 15': BROWN, BLACK LOOSE SPOIL – NO ODOR	
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
	0 ppm			
10				
15				
20			TOTAL DEPTH: 15'	
25				
30				

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PLAN DEVELOPMENT

**DRILLING CONTRACTOR:** MOHAWK DRILLING, INC.

**DRILLER:** ERIK CHRISTIAN

**LOGGED BY:** ABBY LAZAR

**DATE:** 4 AUGUST 2010      **CHECKED BY:** IT

# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-1c	
<b>SITE NAME AND LOCATION</b>  FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
						1 OF 1	
						<b>DRILLING</b>	
		<b>WATER LEVEL:</b>				<b>START</b>	<b>FINISH</b>
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 79°		<b>TIME:</b>				845	900
		<b>DATE:</b>				<b>DATE</b>	<b>DATE</b>
<b>DATUM:</b>		<b>G.L. ELEV:</b>		<b>CASING DEPTH:</b>		8/4/10	8/4/10
		<b>TOC ELEV:</b> 659.51					
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 1"		<b>SCREEN DIA:</b> 1"	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm		0' - 1': TOPSOIL, BROWN – NO ODOR	<p style="font-size: small;">BENTONITE 0' TO 1'</p> <p style="font-size: small;">1" PVC CASING +3' TO 1'</p> <p style="font-size: small;">SAND 1' TO 7.5'</p> <p style="font-size: small;">PVC SCREEN 0.5' TO 7.5'</p>
	0 ppm		1' - 4': BROWN, BLACK LOOSE SPOIL – NO ODOR	
	0 ppm			
	0 ppm			
	0 ppm		4' - 6': TRASH (PAPER WRAPPINGS, PLASTIC SHEETING, PLASTIC BAGS) NO ODOR	
	0 ppm			
	0 ppm		6' - 7.5': GREY LOOSE SPOIL – NO ODOR	
10			TOTAL DEPTH: 7.5'	
15				
20				
25				
30				


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DRILLING CONTRACTOR: MOHAWK DRILLING, INC.  
 DRILLER: ERIK CHRISTIAN  
 LOGGED BY: ABBY LAZAR  
 DATE: 4 AUGUST 2010      CHECKED BY: IT

# SOIL BORING AND WELL COMPLETION LOG

 <b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-2a	
<b>SITE NAME AND LOCATION</b>		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A&M JOB NO. 2028-001						OF	
						<b>DRILLING</b>	
		<b>WATER LEVEL:</b>					<b>START</b>
<b>WEATHER:</b> SUNNY	<b>TEMP:</b> 84°	<b>TIME:</b>				<b>TIME</b>	<b>TIME</b>
	<b>G.L. ELEV:</b>	<b>DATE:</b>				<b>DATE</b>	<b>DATE</b>
<b>DATUM:</b>	<b>TOC ELEV:</b>	<b>CASING DEPTH:</b>				8/4/10	8/4/10
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					
DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION			
5	0 ppm	[Dotted Pattern]	0' - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED			
	0 ppm	[Diagonal Hatching]					
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
10	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
15	0 ppm						
	0 ppm						
20			TOTAL DEPTH: 15'				
25							
30							

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 4 AUGUST 2010 CHECKED BY: IT

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# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-2b	
<b>SITE NAME AND LOCATION</b>		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A&M JOB NO. 2028-001						OF	
						<b>DRILLING</b>	
		<b>WATER LEVEL:</b>					
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 85°		<b>TIME:</b>					
<b>G.L. ELEV:</b>		<b>DATE:</b>					
<b>DATUM:</b>		<b>TOC ELEV:</b>		<b>CASING DEPTH:</b>			
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					
DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION			
5	0 ppm	[Dotted Pattern]	0' - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED			
	0 ppm	[Diagonal Hatching]					
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
10					1' - 15': BROWN, BLACK LOOSE SPOIL – NO ODOR		
15			TOTAL DEPTH: 15'				
20							
25							
30							

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 4 AUGUST 2010      CHECKED BY: IT

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BROKEN ARROW  
PLAN DEVELOPMENT

# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-2c	
<b>SITE NAME AND LOCATION</b>		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A&M JOB NO. 2028-001						OF	
						<b>DRILLING</b>	
		<b>WATER LEVEL:</b>					<b>START</b>
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 86°		<b>TIME:</b>			<b>TIME</b>	<b>TIME</b>	
		<b>DATE:</b>			<b>DATE</b>	<b>DATE</b>	
<b>DATUM:</b>		<b>TOC ELEV:</b>		<b>CASING DEPTH:</b>			
					8/4/10	8/4/10	
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					
DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION			
<div style="display: flex; flex-direction: column; justify-content: space-between;"> <span>5</span> <span>10</span> <span>15</span> <span>20</span> <span>25</span> <span>30</span> </div>	0 ppm	[Dotted Pattern]	0' - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED			
	0 ppm	[Diagonal Lines]					
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
TOTAL DEPTH: 15'							

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 4 AUGUST 2010      CHECKED BY: IT


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March 13, 2017

BROKEN ARROW  
PLAN DEVELOPMENT



# SOIL BORING AND WELL COMPLETION LOG

 <b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-2d	
<b>SITE NAME AND LOCATION</b>		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A&M JOB NO. 2028-001						OF	
						<b>DRILLING</b>	
		<b>WATER LEVEL:</b>					<b>START</b>
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 89°		<b>TIME:</b>			<b>TIME</b>	<b>TIME</b>	
		<b>DATE:</b>			<b>DATE</b>	<b>DATE</b>	
<b>DATUM:</b>		<b>TOC ELEV:</b>		<b>CASING DEPTH:</b>			
					8/4/10	8/4/10	
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b>		<b>CASING DIA:</b>		<b>SCREEN DIA:</b>	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					
DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION			
<div style="display: flex; flex-direction: column; justify-content: space-between;"> <span>5</span> <span>10</span> <span>15</span> <span>20</span> <span>25</span> <span>30</span> </div>	0 ppm	[Dotted Pattern]	0' - 1': TOPSOIL, BROWN – NO ODOR	NO WELL SET. NO TRASH ENCOUNTERED			
	0 ppm	[Diagonal Lines]					
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
	0 ppm						
TOTAL DEPTH: 15'							

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 4 AUGUST 2010      CHECKED BY: IT

**RECEIVED**  
 March 13, 2017  
 BROKEN ARROW  
 PLAN DEVELOPMENT

# SOIL BORING AND WELL COMPLETION LOG

<b>A &amp; M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.</b>		<b>DRILLING METHOD:</b>				<b>BORING NO.</b>	
		CME ATV – ROTARY AUGER CONTINUOUS CORE				GP-2e	
<b>SITE NAME AND LOCATION</b>  FORMER BROKEN ARROW LANDFILL BROKEN ARROW, WAGONER COUNTY, OKLAHOMA A#M JOB NO. 2028-001		<b>SAMPLING METHOD:</b>				<b>SHEET</b>	
						1 OF 1	
						<b>DRILLING</b>	
						<b>START</b>	<b>FINISH</b>
<b>WEATHER:</b> SUNNY <b>TEMP:</b> 91°		<b>WATER LEVEL:</b>				<b>TIME</b>	<b>TIME</b>
						1105	1120
						<b>DATE</b>	<b>DATE</b>
						8/4/10	8/4/10
<b>DATUM:</b>		<b>TOC ELEV:</b>		<b>CASING DEPTH:</b>			
<b>DRILL RIG:</b> CME ATV		<b>TYPE OF GRAVEL:</b> SAND #20/40		<b>CASING DIA:</b> 1"		<b>SCREEN DIA:</b> 1"	
<b>ANGLE:</b> VERTICAL <b>BEARING:</b>		<b>TYPE OF BENTONITE:</b> SODIUM				<b>SLOT SIZE</b>	
<b>SAMPLE HAMMER TORQUE:</b>		<b>FT-LBS</b>					

DEPTH IN FEET	PID READING	SYMBOL	DESCRIPTION OF MATERIAL	AS-BUILT DRAWING & DESCRIPTION
5	0 ppm		0' - 1': TOPSOIL, BROWN – NO ODOR	
	0 ppm		1' - 5': BROWN, BLACK LOOSE SPOIL – NO ODOR	
	0 ppm			
	0 ppm			
	0 ppm		5' - 6.5': TRASH (PAPER, PLASTIC SHEETING, FABRIC) NO ODOR	
	0 ppm			
	0 ppm		6.5' - 9': GREY LOOSE SPOIL – NO ODOR	
	0 ppm			
10			TOTAL DEPTH: 9'	
15				
20				
25				
30				

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BROKEN ARROW

PLAN DEVELOPMENT

DRILLING CONTRACTOR: MOHAWK DRILLING, INC.

DRILLER: ERIK CHRISTIAN

LOGGED BY: ABBY LAZAR

DATE: 4 AUGUST 2010      CHECKED BY: IT

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

August 17, 2010

Abby Lazar  
A&M Engineering  
10010 E. 16th St.  
Tulsa, OK 74128  
TEL: (918) 665-6575  
FAX: (918) 665-6576



**RE:** BA Landfill 2028-004

**WorkOrder:** 10080226

Dear Abby Lazar:

TEKLAB, INC received 16 samples on 8/5/2010 11:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Richard H. Mannz  
Project Manager  
(618)344-1004 ex 38

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

**Client:** A&M Engineering

**Project:** BA Landfill 2028-004

**LabOrder:** 10080226

**Report Date:** 17-Aug-10

## CASE NARRATIVE

**Cooler Receipt Temp:** 5.8 °C

**State accreditations:**

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0

### Qualifiers

<b>DF</b> - Dilution Factor	<b>B</b> - Analyte detected in the associated Method Blank	<b>C</b> - Client requested RL below PQL
<b>RL</b> - Reporting Limit	<b>J</b> - Analyte detected below reporting limits	<b>D</b> - Diluted out of sample
<b>ND</b> - Not Detected at the Reporting Limit	<b>R</b> - RPD outside accepted recovery limits	<b>E</b> - Value above quantitation range
<b>Surr</b> - Surrogate Standard added by lab	<b>S</b> - Spike Recovery outside accepted recovery limits	<b>H</b> - Holding time exceeded
<b>TNTC</b> - Too numerous to count (> 200 CFU)	<b>X</b> - Value exceeds Maximum Contaminant Level	<b>MI</b> - Matrix interference
<b>Q</b> - QC criteria failed or noncompliant <b>CCV</b>	<b>#</b> - Unknown hydrocarbon	<b>DNI</b> - Did not ignite
<b>NELAP</b> - IL ELAP and NELAP Accredited Field of Testing	<b>IDPH</b> - IL Dept. of Public Health	

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BROKEN ARROW  
PLAN DEVELOPMENT

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-001  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-1  
Collection Date: 8/4/2010 1:00:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.300		8.99	mg/L	4	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050		0.061	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 12:41:16 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 4:32:12 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 12:41:16 PM	LAL
Cadmium	NELAP	0.0020	J	0.0004	mg/L	1	8/9/2010 4:32:12 PM	LAL
Chromium	NELAP	0.0100	J	0.0043	mg/L	1	8/10/2010 12:41:16 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 12:41:16 PM	LAL
Lead	NELAP	0.0400		< 0.0400	mg/L	1	8/7/2010 2:06:46 AM	LAL
Nickel	NELAP	0.0100		0.0218	mg/L	1	8/9/2010 4:32:12 PM	LAL
Selenium	NELAP	0.0500	J	0.025	mg/L	1	8/9/2010 4:32:12 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/11/2010 9:49:26 AM	JMW
Zinc	NELAP	0.0100	J	0.0096	mg/L	1	8/9/2010 4:32:12 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/9/2010 2:56:54 PM	LAL
Arsenic	NELAP	0.0250		0.0690	mg/L	1	8/9/2010 2:56:54 PM	LAL
Beryllium	NELAP	0.0010		0.0038	mg/L	1	8/9/2010 2:56:54 PM	LAL
Cadmium	NELAP	0.0020		0.0030	mg/L	1	8/9/2010 2:56:54 PM	LAL
Chromium	NELAP	0.0100		0.174	mg/L	1	8/9/2010 2:56:54 PM	LAL
Copper	NELAP	0.0100		0.142	mg/L	1	8/9/2010 2:56:54 PM	LAL
Lead	NELAP	0.0400		0.0904	mg/L	1	8/7/2010 3:46:52 AM	LAL
Nickel	NELAP	0.0100		0.244	mg/L	1	8/9/2010 2:56:54 PM	LAL
Selenium	NELAP	0.0500	J	0.024	mg/L	1	8/9/2010 2:56:54 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/9/2010 2:56:54 PM	LAL
Zinc	NELAP	0.0100		0.600	mg/L	1	8/9/2010 2:56:54 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 4:37:24 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020	J	0.0017	mg/L	1	8/12/2010 5:42:40 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-001  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-1  
Collection Date: 8/4/2010 1:00:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 8:02:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		103.0	%REC	1	8/8/2010 8:02:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		65.8	%REC	1	8/8/2010 8:02:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 12:59:00 AM	HE
Surr: Decachlorobiphenyl		5-174		87.7	%REC	1	8/9/2010 12:59:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		65.2	%REC	1	8/9/2010 12:59:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: PZ-1

Lab ID: 10080226-001

Collection Date: 8/4/2010 1:00:00 PM

Report Date: 17-Aug-10

Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Chloronaphthalene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Chlorophenol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Methoxy-4-methylphenol		0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Methylnaphthalene	NELAP	0.029	J	0.003	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Nitroaniline	NELAP	0.118		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
2-Nitrophenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
3-Nitroaniline	NELAP	0.118		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Chloroaniline	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Nitroaniline	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
4-Nitrophenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Acenaphthene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Acenaphthylene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Aniline	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Anthracene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Azobenzene		0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzidine	NELAP	0.118		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzo(a)anthracene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzo(a)pyrene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzoic acid	NELAP	0.147		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Benzyl alcohol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.018		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Carbazole	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Chrysene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH

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TEL: 618-344-1004

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-001  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-1  
**Collection Date:** 8/4/2010 1:00:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Dibenzo(a,h)anthracene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Dibenzofuran	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Diethyl phthalate	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Dimethyl phthalate	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Fluoranthene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Fluorene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Hexachlorobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Hexachlorobutadiene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Hexachloroethane	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Isophorone	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
m,p-Cresol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Naphthalene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Nitrobenzene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
o-Cresol	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Pentachlorophenol	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Phenanthrene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Phenol	NELAP	0.015		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Pyrene	NELAP	0.029		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Pyridine	NELAP	0.059		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Quinoline		0.015		ND	mg/L	1	8/10/2010 1:29:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		81.4	%REC	1	8/10/2010 1:29:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		58.4	%REC	1	8/10/2010 1:29:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		30.0	%REC	1	8/10/2010 1:29:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		62.5	%REC	1	8/10/2010 1:29:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		20.2	%REC	1	8/10/2010 1:29:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		49.2	%REC	1	8/10/2010 1:29:00 AM	DMH
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-001  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-1  
**Collection Date:** 8/4/2010 1:00:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Benzene	NELAP	2.0		0.9	µg/L	1	8/5/2010 5:17:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-001  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-1  
Collection Date: 8/4/2010 1:00:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-001  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-1  
Collection Date: 8/4/2010 1:00:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 5:17:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		102.4	%REC	1	8/5/2010 5:17:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		100.7	%REC	1	8/5/2010 5:17:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		100.0	%REC	1	8/5/2010 5:17:00 PM	CCF
Surr: Toluene-d8		84.3-114		96.1	%REC	1	8/5/2010 5:17:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		0.00043	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B. LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		6.69		1	8/5/2010 2:16:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3560	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-002  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-2  
Collection Date: 8/4/2010 1:10:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.300		4.95	mg/L	4	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050		0.079	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 12:47:56 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:03:59 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 12:47:56 PM	LAL
Cadmium	NELAP	0.0020		0.0031	mg/L	1	8/11/2010 10:17:19 AM	JMW
Chromium	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 12:47:56 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 12:47:56 PM	LAL
Lead	NELAP	0.0400	J	0.012	mg/L	1	8/7/2010 2:13:28 AM	LAL
Nickel	NELAP	0.0100		0.871	mg/L	1	8/9/2010 5:03:59 PM	LAL
Selenium	NELAP	0.0500	J	0.024	mg/L	1	8/10/2010 12:47:56 PM	LAL
Silver	NELAP	0.0100	J	0.0060	mg/L	1	8/11/2010 9:52:55 AM	JMW
Zinc	NELAP	0.0100		0.256	mg/L	1	8/9/2010 5:03:59 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/9/2010 3:03:31 PM	LAL
Arsenic	NELAP	0.0500	J	0.038	mg/L	2	8/10/2010 3:37:25 PM	LAL
Beryllium	NELAP	0.0010		0.0014	mg/L	1	8/9/2010 3:03:31 PM	LAL
Cadmium	NELAP	0.0020		0.0042	mg/L	1	8/11/2010 11:21:19 AM	JMW
Chromium	NELAP	0.0100	B	0.0506	mg/L	1	8/9/2010 3:03:31 PM	LAL
Copper	NELAP	0.0100		0.0501	mg/L	1	8/9/2010 3:03:31 PM	LAL
Lead	NELAP	0.0400	J	0.034	mg/L	1	8/7/2010 3:53:30 AM	LAL
Nickel	NELAP	0.0100		1.14	mg/L	1	8/9/2010 3:03:31 PM	LAL
Selenium	NELAP	0.0500	J	0.040	mg/L	1	8/10/2010 2:16:15 PM	LAL
Silver	NELAP	0.0100	BJ	0.0069	mg/L	1	8/9/2010 3:03:31 PM	LAL
Zinc	NELAP	0.0100		0.537	mg/L	1	8/9/2010 3:03:31 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 4:47:44 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020	J	0.0013	mg/L	1	8/12/2010 5:32:16 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-002  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-2  
Collection Date: 8/4/2010 1:10:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 8:27:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		73.1	%REC	1	8/8/2010 8:27:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		74.7	%REC	1	8/8/2010 8:27:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 1:16:00 AM	HE
Surr: Decachlorobiphenyl		5-174		65.5	%REC	1	8/9/2010 1:16:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		71.2	%REC	1	8/9/2010 1:16:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH

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FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-002  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-2  
**Collection Date:** 8/4/2010 1:10:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Chloronaphthalene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Chlorophenol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Methoxy-4-methylphenol		0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Methylnaphthalene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Nitroaniline	NELAP	0.087		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
2-Nitrophenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
3-Nitroaniline	NELAP	0.087		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Chloroaniline	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Nitroaniline	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
4-Nitrophenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Acenaphthene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Acenaphthylene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Aniline	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Anthracene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Azobenzene		0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzidine	NELAP	0.087		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzo(a)anthracene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzo(a)pyrene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzoic acid	NELAP	0.109		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Benzyl alcohol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.013		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Carbazole	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Chrysene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH

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TEL: 618-344-1004

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-002  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-2  
**Collection Date:** 8/4/2010 1:10:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Dibenzofuran	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Diethyl phthalate	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Dimethyl phthalate	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Fluoranthene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Fluorene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Hexachlorobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Hexachlorobutadiene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Hexachloroethane	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Isophorone	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
m,p-Cresol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Naphthalene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Nitrobenzene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
o-Cresol	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Pentachlorophenol	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Phenanthrene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Phenol	NELAP	0.011		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Pyrene	NELAP	0.022		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Pyridine	NELAP	0.043		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Quinoline		0.011		ND	mg/L	1	8/10/2010 2:01:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		79.8	%REC	1	8/10/2010 2:01:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		51.2	%REC	1	8/10/2010 2:01:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		28.6	%REC	1	8/10/2010 2:01:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		48.0	%REC	1	8/10/2010 2:01:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		18.5	%REC	1	8/10/2010 2:01:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		59.3	%REC	1	8/10/2010 2:01:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-002  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-2  
Collection Date: 8/4/2010 1:10:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: PZ-2

Lab ID: 10080226-002

Collection Date: 8/4/2010 1:10:00 PM

Report Date: 17-Aug-10

Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-002  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-2  
**Collection Date:** 8/4/2010 1:10:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 5:47:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		102.2	%REC	1	8/5/2010 5:47:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		101.9	%REC	1	8/5/2010 5:47:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		99.8	%REC	1	8/5/2010 5:47:00 PM	CCF
Surr: Toluene-d8		84.3-114		94.7	%REC	1	8/5/2010 5:47:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		0.00022	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		6.08		1	8/5/2010 2:16:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3570	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3005A, 6010B, Metals by ICP (Total)

As - Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-003  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-3  
**Collection Date:** 8/4/2010 1:20:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.300		2.63	mg/L	4	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050	J	0.041	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 12:55:01 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:11:03 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 12:55:01 PM	LAL
Cadmium	NELAP	0.0020	J	0.0012	mg/L	1	8/9/2010 5:11:03 PM	LAL
Chromium	NELAP	0.0100	J	0.0066	mg/L	1	8/9/2010 5:11:03 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 12:55:01 PM	LAL
Lead	NELAP	0.0400	J	0.0094	mg/L	1	8/7/2010 2:20:31 AM	LAL
Nickel	NELAP	0.0100		0.417	mg/L	1	8/9/2010 5:11:03 PM	LAL
Selenium	NELAP	0.0500	J	0.035	mg/L	1	8/9/2010 5:11:03 PM	LAL
Silver	NELAP	0.0100	J	0.0038	mg/L	1	8/11/2010 9:56:26 AM	JMW
Zinc	NELAP	0.0100		0.311	mg/L	1	8/9/2010 5:11:03 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/9/2010 3:10:33 PM	LAL
Arsenic	NELAP	0.0250	J	0.018	mg/L	1	8/9/2010 3:10:33 PM	LAL
Beryllium	NELAP	0.0010	J	0.0004	mg/L	1	8/9/2010 3:10:33 PM	LAL
Cadmium	NELAP	0.0020	J	0.0017	mg/L	1	8/9/2010 3:10:33 PM	LAL
Chromium	NELAP	0.0100		0.0241	mg/L	1	8/9/2010 3:10:33 PM	LAL
Copper	NELAP	0.0100		0.0116	mg/L	1	8/10/2010 2:23:13 PM	LAL
Lead	NELAP	0.0400	J	0.016	mg/L	1	8/7/2010 4:00:34 AM	LAL
Nickel	NELAP	0.0100		0.451	mg/L	1	8/9/2010 3:10:33 PM	LAL
Selenium	NELAP	0.0500	J	0.030	mg/L	1	8/10/2010 2:23:13 PM	LAL
Silver	NELAP	0.0100	J	0.0057	mg/L	1	8/11/2010 11:04:21 AM	JMW
Zinc	NELAP	0.0100		0.328	mg/L	1	8/9/2010 3:10:33 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 4:51:08 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020	J	0.0006	mg/L	1	8/12/2010 5:35:44 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-003  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-3  
Collection Date: 8/4/2010 1:20:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 8:51:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		83.0	%REC	1	8/8/2010 8:51:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		63.2	%REC	1	8/8/2010 8:51:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 1:33:00 AM	HE
Surr: Decachlorobiphenyl		5-174		73.0	%REC	1	8/9/2010 1:33:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		61.0	%REC	1	8/9/2010 1:33:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-003  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-3  
**Collection Date:** 8/4/2010 1:20:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Chloronaphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Chlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Methoxy-4-methylphenol		0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Methylnaphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Nitroaniline	NELAP	0.091		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
2-Nitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
3-Nitroaniline	NELAP	0.091		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Chloroaniline	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Nitroaniline	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
4-Nitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Acenaphthene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Acenaphthylene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Aniline	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Azobenzene		0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzidine	NELAP	0.091		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzo(a)anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzo(a)pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzoic acid	NELAP	0.114		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Benzyl alcohol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.014		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Carbazole	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Chrysene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-003  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-3  
Collection Date: 8/4/2010 1:20:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Dibenzo(a,h)anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Dibenzofuran	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Diethyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Dimethyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Fluorene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Hexachlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Hexachlorobutadiene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Hexachloroethane	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Isophorone	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
m,p-Cresol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Naphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Nitrobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
o-Cresol	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Pentachlorophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Phenanthrene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Phenol	NELAP	0.011		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Pyridine	NELAP	0.045		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Quinoline		0.011		ND	mg/L	1	8/10/2010 2:33:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		72.8	%REC	1	8/10/2010 2:33:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		47.9	%REC	1	8/10/2010 2:33:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		25.1	%REC	1	8/10/2010 2:33:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		47.9	%REC	1	8/10/2010 2:33:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		16.6	%REC	1	8/10/2010 2:33:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		46.7	%REC	1	8/10/2010 2:33:00 AM	DMH
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: PZ-3

Lab ID: 10080226-003

Collection Date: 8/4/2010 1:20:00 PM

Report Date: 17-Aug-10

Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Bromofom	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-003  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-3  
Collection Date: 8/4/2010 1:20:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-003  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** PZ-3  
**Collection Date:** 8/4/2010 1:20:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 6:16:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		102.4	%REC	1	8/5/2010 6:16:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		101.7	%REC	1	8/5/2010 6:16:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		99.8	%REC	1	8/5/2010 6:16:00 PM	CCF
Surr: Toluene-d8		84.3-114		96.6	%REC	1	8/5/2010 6:16:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020	J	0.00009	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		5.93		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3230	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-004  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-4  
Collection Date: 8/4/2010 1:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.300		4.82	mg/L	4	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.02	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050		0.093	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:02:00 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:18:00 PM	LAL
Beryllium	NELAP	0.0010	J	0.0005	mg/L	1	8/10/2010 1:02:00 PM	LAL
Cadmium	NELAP	0.0020		0.0094	mg/L	1	8/11/2010 9:59:56 AM	JMW
Chromium	NELAP	0.0100		0.0220	mg/L	1	8/9/2010 5:18:00 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:02:00 PM	LAL
Lead	NELAP	0.0400	J	0.021	mg/L	1	8/7/2010 2:27:32 AM	LAL
Nickel	NELAP	0.0100		1.05	mg/L	1	8/10/2010 1:02:00 PM	LAL
Selenium	NELAP	0.0500	J	0.024	mg/L	1	8/10/2010 1:02:00 PM	LAL
Silver	NELAP	0.0100	J	0.0068	mg/L	1	8/11/2010 9:59:56 AM	JMW
Zinc	NELAP	0.0100		0.556	mg/L	1	8/9/2010 5:18:00 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/9/2010 3:17:34 PM	LAL
Arsenic	NELAP	0.0250	J	0.016	mg/L	1	8/9/2010 3:17:34 PM	LAL
Beryllium	NELAP	0.0010		0.0036	mg/L	1	8/9/2010 3:17:34 PM	LAL
Cadmium	NELAP	0.0020		0.0183	mg/L	1	8/11/2010 11:07:51 AM	JMW
Chromium	NELAP	0.0100		0.0975	mg/L	1	8/9/2010 3:17:34 PM	LAL
Copper	NELAP	0.0100		0.0655	mg/L	1	8/9/2010 3:17:34 PM	LAL
Lead	NELAP	0.0400		0.0909	mg/L	1	8/9/2010 3:17:34 PM	LAL
Nickel	NELAP	0.0100		1.20	mg/L	1	8/9/2010 3:17:34 PM	LAL
Selenium	NELAP	0.0500		< 0.0500	mg/L	1	8/9/2010 3:17:34 PM	LAL
Silver	NELAP	0.0100		0.0103	mg/L	1	8/11/2010 11:07:51 AM	JMW
Zinc	NELAP	0.0100		0.898	mg/L	1	8/9/2010 3:17:34 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 4:54:32 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020	J	0.0010	mg/L	1	8/12/2010 5:39:12 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-004  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-4  
Collection Date: 8/4/2010 1:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 9:16:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		48.1	%REC	1	8/8/2010 9:16:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		49.7	%REC	1	8/8/2010 9:16:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 1:50:00 AM	HE
Surr: Decachlorobiphenyl		5-174		40.9	%REC	1	8/9/2010 1:50:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		47.0	%REC	1	8/9/2010 1:50:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH

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Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-004  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-4  
Collection Date: 8/4/2010 1:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Chloronaphthalene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Chlorophenol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Methoxy-4-methylphenol		0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Methylnaphthalene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Nitroaniline	NELAP	0.125		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
2-Nitrophenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
3-Nitroaniline	NELAP	0.125		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Chloroaniline	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Nitroaniline	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
4-Nitrophenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Acenaphthene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Acenaphthylene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Aniline	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Anthracene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Azobenzene		0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzidine	NELAP	0.125		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzo(a)anthracene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzo(a)pyrene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzoic acid	NELAP	0.156		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Benzyl alcohol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.019		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Carbazole	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Chrysene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-004  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-4  
Collection Date: 8/4/2010 1:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	~0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Dibenzofuran	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Diethyl phthalate	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Dimethyl phthalate	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Fluoranthene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Fluorene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Hexachlorobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Hexachlorobutadiene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Hexachloroethane	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Isophorone	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
m,p-Cresol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Naphthalene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Nitrobenzene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
o-Cresol	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Pentachlorophenol	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Phenanthrene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Phenol	NELAP	0.016		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Pyrene	NELAP	0.031		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Pyridine	NELAP	0.062		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Quinoline		0.016		ND	mg/L	1	8/10/2010 3:05:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		86.0	%REC	1	8/10/2010 3:05:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		57.0	%REC	1	8/10/2010 3:05:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		35.5	%REC	1	8/10/2010 3:05:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		63.6	%REC	1	8/10/2010 3:05:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		21.0	%REC	1	8/10/2010 3:05:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		64.4	%REC	1	8/10/2010 3:05:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: PZ-4

Lab ID: 10080226-004

Collection Date: 8/4/2010 1:35:00 PM

Report Date: 17-Aug-10

Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF

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Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-004  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: PZ-4  
Collection Date: 8/4/2010 1:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 6:46:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		102.6	%REC	1	8/5/2010 6:46:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		100.6	%REC	1	8/5/2010 6:46:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		98.3	%REC	1	8/5/2010 6:46:00 PM	CCF
Surr: Toluene-d8		84.3-114		95.7	%REC	1	8/5/2010 6:46:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		0.00034	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		5.88		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3570	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-005  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-1  
Collection Date: 8/4/2010 12:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.075	J	0.045	mg/L	1	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		< 0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050		0.054	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:08:58 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:24:59 PM	LAL
Beryllium	NELAP	0.0010		0.0038	mg/L	1	8/10/2010 1:08:58 PM	LAL
Cadmium	NELAP	0.0020	J	0.0016	mg/L	1	8/9/2010 5:24:59 PM	LAL
Chromium	NELAP	0.0100		0.0111	mg/L	1	8/9/2010 5:24:59 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:08:58 PM	LAL
Lead	NELAP	0.0400	J	0.014	mg/L	1	8/7/2010 2:34:31 AM	LAL
Nickel	NELAP	0.0100		0.783	mg/L	1	8/9/2010 5:24:59 PM	LAL
Selenium	NELAP	0.0500	J	0.030	mg/L	1	8/10/2010 1:08:58 PM	LAL
Silver	NELAP	0.0100	J	0.0081	mg/L	1	8/10/2010 1:08:58 PM	LAL
Zinc	NELAP	0.0100		0.914	mg/L	1	8/9/2010 5:24:59 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 2:37:23 PM	LAL
Arsenic	NELAP	0.0250	J	0.011	mg/L	1	8/9/2010 3:57:30 PM	LAL
Beryllium	NELAP	0.0010		0.0040	mg/L	1	8/10/2010 2:37:23 PM	LAL
Cadmium	NELAP	0.0020	J	0.0016	mg/L	1	8/9/2010 3:57:30 PM	LAL
Chromium	NELAP	0.0100	J	0.0052	mg/L	1	8/9/2010 3:57:30 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 2:37:23 PM	LAL
Lead	NELAP	0.0400	J	0.0087	mg/L	1	8/7/2010 4:14:37 AM	LAL
Nickel	NELAP	0.0100		0.836	mg/L	1	8/9/2010 3:57:30 PM	LAL
Selenium	NELAP	0.0500	J	0.045	mg/L	1	8/9/2010 3:57:30 PM	LAL
Silver	NELAP	0.0100	J	0.0064	mg/L	1	8/11/2010 11:11:21 AM	JMW
Zinc	NELAP	0.0100		0.958	mg/L	1	8/9/2010 3:57:30 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 4:57:56 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020	S	< 0.0020	mg/L	1	8/12/2010 5:56:24 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-005  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-1  
Collection Date: 8/4/2010 12:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 9:40:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		55.8	%REC	1	8/8/2010 9:40:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		56.6	%REC	1	8/8/2010 9:40:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 2:07:00 AM	HE
Surr: Decachlorobiphenyl		5-174		47.5	%REC	1	8/9/2010 2:07:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		53.0	%REC	1	8/9/2010 2:07:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: CS-1

Lab ID: 10080226-005

Collection Date: 8/4/2010 12:35:00 PM

Report Date: 17-Aug-10

Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Chloronaphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Chlorophenol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Methoxy-4-methylphenol		0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Methylnaphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Nitroaniline	NELAP	0.091		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
2-Nitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
3-Nitroaniline	NELAP	0.091		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Chloroaniline	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Nitroaniline	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
4-Nitrophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Acenaphthene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Acenaphthylene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Aniline	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Azobenzene		0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzidine	NELAP	0.091		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzo(a)anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzo(a)pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzoic acid	NELAP	0.114		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Benzyl alcohol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.014		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Carbazole	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Chrysene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-005  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-1  
Collection Date: 8/4/2010 12:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Dibenzo(a,h)anthracene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Dibenzofuran	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Diethyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Dimethyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Fluoranthene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Fluorene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Hexachlorobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Hexachlorobutadiene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Hexachloroethane	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Isophorone	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
m,p-Cresol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Naphthalene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Nitrobenzene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
o-Cresol	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Pentachlorophenol	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Phenanthrene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Phenol	NELAP	0.011		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Pyrene	NELAP	0.023		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Pyridine	NELAP	0.045		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Quinoline		0.011		ND	mg/L	1	8/10/2010 3:37:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		59.8	%REC	1	8/10/2010 3:37:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		51.8	%REC	1	8/10/2010 3:37:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		29.8	%REC	1	8/10/2010 3:37:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		60.2	%REC	1	8/10/2010 3:37:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		21.1	%REC	1	8/10/2010 3:37:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		44.9	%REC	1	8/10/2010 3:37:00 AM	DMH
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-005  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** CS-1  
**Collection Date:** 8/4/2010 12:35:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-005  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-1  
Collection Date: 8/4/2010 12:35:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF

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TEL: 618-344-1004  
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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-005  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** CS-1  
**Collection Date:** 8/4/2010 12:35:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 7:15:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		101.5	%REC	1	8/5/2010 7:15:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		101.0	%REC	1	8/5/2010 7:15:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		99.4	%REC	1	8/5/2010 7:15:00 PM	CCF
Surr: Toluene-d8		84.3-114		96.0	%REC	1	8/5/2010 7:15:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		3.52		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3330	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3020A, Metals by GFAA (Total)

TI- Matrix interference present in sample.

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-006  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-2  
Collection Date: 8/4/2010 12:15:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.075	J	0.051	mg/L	1	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050	J	0.038	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:16:03 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:32:01 PM	LAL
Beryllium	NELAP	0.0010		0.0038	mg/L	1	8/10/2010 1:16:03 PM	LAL
Cadmium	NELAP	0.0020	J	0.0017	mg/L	1	8/9/2010 5:32:01 PM	LAL
Chromium	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:16:03 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:16:03 PM	LAL
Lead	NELAP	0.0400	J	0.015	mg/L	1	8/7/2010 2:41:36 AM	LAL
Nickel	NELAP	0.0100		0.813	mg/L	1	8/9/2010 5:32:01 PM	LAL
Selenium	NELAP	0.0500	J	0.031	mg/L	1	8/10/2010 1:16:03 PM	LAL
Silver	NELAP	0.0100	J	0.0051	mg/L	1	8/11/2010 10:06:58 AM	JMW
Zinc	NELAP	0.0100		0.951	mg/L	1	8/9/2010 5:32:01 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 2:44:21 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 4:04:32 PM	LAL
Beryllium	NELAP	0.0010		0.0039	mg/L	1	8/10/2010 2:44:21 PM	LAL
Cadmium	NELAP	0.0020	J	0.0015	mg/L	1	8/10/2010 2:44:21 PM	LAL
Chromium	NELAP	0.0100	J	0.0069	mg/L	1	8/9/2010 4:04:32 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 2:44:21 PM	LAL
Lead	NELAP	0.0400	J	0.015	mg/L	1	8/9/2010 4:04:32 PM	LAL
Nickel	NELAP	0.0100		0.850	mg/L	1	8/9/2010 4:04:32 PM	LAL
Selenium	NELAP	0.0500	J	0.046	mg/L	1	8/9/2010 4:04:32 PM	LAL
Silver	NELAP	0.0100	J	0.0057	mg/L	1	8/11/2010 11:14:49 AM	JMW
Zinc	NELAP	0.0100		0.985	mg/L	1	8/9/2010 4:04:32 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:01:22 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:17:38 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-006  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-2  
Collection Date: 8/4/2010 12:15:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 10:05:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		47.8	%REC	1	8/8/2010 10:05:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		49.0	%REC	1	8/8/2010 10:05:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 2:24:00 AM	HE
Surr: Decachlorobiphenyl		5-174		41.8	%REC	1	8/9/2010 2:24:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		46.1	%REC	1	8/9/2010 2:24:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-006  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** CS-2  
**Collection Date:** 8/4/2010 12:15:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Chloronaphthalene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Chlorophenol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Methoxy-4-methylphenol		0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Methylnaphthalene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Nitroaniline	NELAP	0.095		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
2-Nitrophenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
3-Nitroaniline	NELAP	0.095		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Chloroaniline	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Nitroaniline	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
4-Nitrophenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Acenaphthene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Acenaphthylene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Aniline	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Anthracene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Azobenzene		0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzidine	NELAP	0.095		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzo(a)anthracene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzo(a)pyrene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzoic acid	NELAP	0.119		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Benzyl alcohol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.014		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Carbazole	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Chrysene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH

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## LABORATORY RESULTS

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**Lab ID:** 10080226-006  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** CS-2  
**Collection Date:** 8/4/2010 12:15:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Dibenzofuran	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Diethyl phthalate	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Dimethyl phthalate	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Fluoranthene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Fluorene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Hexachlorobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Hexachlorobutadiene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Hexachloroethane	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Isophorone	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
m,p-Cresol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Naphthalene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Nitrobenzene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
o-Cresol	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Pentachlorophenol	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Phenanthrene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Phenol	NELAP	0.012		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Pyrene	NELAP	0.024		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Pyridine	NELAP	0.048		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Quinoline		0.012		ND	mg/L	1	8/10/2010 4:09:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		66.4	%REC	1	8/10/2010 4:09:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		49.2	%REC	1	8/10/2010 4:09:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		30.0	%REC	1	8/10/2010 4:09:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		55.2	%REC	1	8/10/2010 4:09:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		19.7	%REC	1	8/10/2010 4:09:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		65.4	%REC	1	8/10/2010 4:09:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-006  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: CS-2  
Collection Date: 8/4/2010 12:15:00 PM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Acetone	NELAP	25.0	J	5.2	µg/L	1	8/5/2010 7:44:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-006  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** CS-2  
**Collection Date:** 8/4/2010 12:15:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF

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Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 7:44:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		101.2	%REC	1	8/5/2010 7:44:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		103.1	%REC	1	8/5/2010 7:44:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		98.6	%REC	1	8/5/2010 7:44:00 PM	CCF
Surr: Toluene-d8		84.3-114		95.2	%REC	1	8/5/2010 7:44:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		3.53		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3420	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

<p style="text-align: center;"><b>RECEIVED</b> March 13, 2017 BROKEN ARROW PLAN DEVELOPMENT</p>
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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-007  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.075		0.963	mg/L	1	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050	J	0.045	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:23:06 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:39:03 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 1:23:06 PM	LAL
Cadmium	NELAP	0.0020		0.0035	mg/L	1	8/9/2010 5:39:03 PM	LAL
Chromium	NELAP	0.0100	J	0.0090	mg/L	1	8/9/2010 5:39:03 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:23:06 PM	LAL
Lead	NELAP	0.0400	J	0.013	mg/L	1	8/7/2010 2:48:42 AM	LAL
Nickel	NELAP	0.0100		0.983	mg/L	1	8/9/2010 5:39:03 PM	LAL
Selenium	NELAP	0.0500	J	0.026	mg/L	1	8/10/2010 1:23:06 PM	LAL
Silver	NELAP	0.0100	J	0.0050	mg/L	1	8/11/2010 10:10:27 AM	JMW
Zinc	NELAP	0.0100		0.294	mg/L	1	8/9/2010 5:39:03 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 2:51:21 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 4:11:35 PM	LAL
Beryllium	NELAP	0.0010	J	0.0007	mg/L	1	8/10/2010 2:51:21 PM	LAL
Cadmium	NELAP	0.0020		0.0028	mg/L	1	8/11/2010 11:28:59 AM	JMW
Chromium	NELAP	0.0100		0.0234	mg/L	1	8/9/2010 4:11:35 PM	LAL
Copper	NELAP	0.0100		0.0187	mg/L	1	8/10/2010 2:51:21 PM	LAL
Lead	NELAP	0.0400	J	0.024	mg/L	1	8/9/2010 4:11:35 PM	LAL
Nickel	NELAP	0.0100		1.06	mg/L	1	8/9/2010 4:11:35 PM	LAL
Selenium	NELAP	0.0500	J	0.032	mg/L	1	8/10/2010 2:51:21 PM	LAL
Silver	NELAP	0.0100	J	0.0063	mg/L	1	8/11/2010 11:18:18 AM	JMW
Zinc	NELAP	0.0100		0.388	mg/L	1	8/9/2010 4:11:35 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:04:46 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:21:02 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-007  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 10:29:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		61.6	%REC	1	8/8/2010 10:29:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		60.2	%REC	1	8/8/2010 10:29:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 2:41:00 AM	HE
Surr: Decachlorobiphenyl		5-174		53.6	%REC	1	8/9/2010 2:41:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		55.2	%REC	1	8/9/2010 2:41:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-007  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Chloronaphthalene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Chlorophenol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Methoxy-4-methylphenol		0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Methylnaphthalene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Nitroaniline	NELAP	0.100		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
2-Nitrophenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
3-Nitroaniline	NELAP	0.100		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Chloroaniline	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Nitroaniline	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
4-Nitrophenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Acenaphthene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Acenaphthylene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Aniline	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Anthracene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Azobenzene		0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzidine	NELAP	0.100		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzo(a)anthracene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzo(a)pyrene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzoic acid	NELAP	0.125		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Benzyl alcohol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.015		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Carbazole	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Chrysene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-007  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Dibenzofuran	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Diethyl phthalate	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Dimethyl phthalate	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Fluoranthene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Fluorene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Hexachlorobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Hexachlorobutadiene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Hexachloroethane	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Isophorone	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
m,p-Cresol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Naphthalene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Nitrobenzene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
o-Cresol	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Pentachlorophenol	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Phenanthrene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Phenol	NELAP	0.012		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Pyrene	NELAP	0.025		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Pyridine	NELAP	0.050		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Quinoline		0.012		ND	mg/L	1	8/10/2010 4:41:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		75.6	%REC	1	8/10/2010 4:41:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		57.0	%REC	1	8/10/2010 4:41:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		37.8	%REC	1	8/10/2010 4:41:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		64.0	%REC	1	8/10/2010 4:41:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		24.6	%REC	1	8/10/2010 4:41:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		41.4	%REC	1	8/10/2010 4:41:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF

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PLAN DEVELOPMENT

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-007  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF

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## LABORATORY RESULTS

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**Lab ID:** 10080226-007  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
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Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF

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**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 8:14:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		101.4	%REC	1	8/5/2010 8:14:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		101.4	%REC	1	8/5/2010 8:14:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		98.9	%REC	1	8/5/2010 8:14:00 PM	CCF
Surr: Toluene-d8		84.3-114		95.7	%REC	1	8/5/2010 8:14:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020	J	0.00011	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		6.01		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		3520	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-008  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: FIELD  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.075	J	0.045	mg/L	1	8/6/2010 2:18:49 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050	J	0.042	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:30:10 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:46:06 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 1:30:10 PM	LAL
Cadmium	NELAP	0.0020	J	0.0004	mg/L	1	8/9/2010 5:46:06 PM	LAL
Chromium	NELAP	0.0100	J	0.0085	mg/L	1	8/9/2010 5:46:06 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:30:10 PM	LAL
Lead	NELAP	0.0400		< 0.0400	mg/L	1	8/7/2010 2:55:46 AM	LAL
Nickel	NELAP	0.0100		< 0.0100	mg/L	1	8/9/2010 5:46:06 PM	LAL
Selenium	NELAP	0.0500	J	0.040	mg/L	1	8/9/2010 5:46:06 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:30:10 PM	LAL
Zinc	NELAP	0.0100	J	0.0048	mg/L	1	8/9/2010 5:46:06 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 2:58:20 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 4:18:37 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 2:58:20 PM	LAL
Cadmium	NELAP	0.0020		< 0.0020	mg/L	1	8/9/2010 4:18:37 PM	LAL
Chromium	NELAP	0.0100	J	0.0085	mg/L	1	8/9/2010 4:18:37 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 2:58:20 PM	LAL
Lead	NELAP	0.0400		< 0.0400	mg/L	1	8/9/2010 4:18:37 PM	LAL
Nickel	NELAP	0.0100		< 0.0100	mg/L	1	8/9/2010 4:18:37 PM	LAL
Selenium	NELAP	0.0500	J	0.027	mg/L	1	8/9/2010 4:18:37 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 2:58:20 PM	LAL
Zinc	NELAP	0.0100	J	0.0060	mg/L	1	8/9/2010 4:18:37 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:08:12 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:10:54 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Alachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE

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Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 10:54:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		68.5	%REC	1	8/8/2010 10:54:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		59.2	%REC	1	8/8/2010 10:54:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 2:59:00 AM	HE
Surr: Decachlorobiphenyl		5-174		60.9	%REC	1	8/9/2010 2:59:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		67.0	%REC	1	8/9/2010 2:59:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH

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**WorkOrder:** 10080226  
**Lab ID:** 10080226-008  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** FIELD  
**Collection Date:** 8/4/2010  
**Matrix:** AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Chloronaphthalene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Chlorophenol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Methoxy-4-methylphenol		0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Methylnaphthalene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Nitroaniline	NELAP	0.105		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
2-Nitrophenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
3-Nitroaniline	NELAP	0.105		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Chloroaniline	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Nitroaniline	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
4-Nitrophenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Acenaphthene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Acenaphthylene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Aniline	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Anthracene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Azobenzene		0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzidine	NELAP	0.105		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzo(a)anthracene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzo(a)pyrene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzoic acid	NELAP	0.132		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Benzyl alcohol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.016		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Carbazole	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Chrysene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-008  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: FIELD  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Dibenzofuran	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Diethyl phthalate	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Dimethyl phthalate	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Fluoranthene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Fluorene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Hexachlorobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Hexachlorobutadiene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Hexachloroethane	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Isophorone	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
m,p-Cresol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Naphthalene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Nitrobenzene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
o-Cresol	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Pentachlorophenol	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Phenanthrene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Phenol	NELAP	0.013		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Pyrene	NELAP	0.026		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Pyridine	NELAP	0.053		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Quinoline		0.013		ND	mg/L	1	8/10/2010 5:13:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		74.6	%REC	1	8/10/2010 5:13:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		56.9	%REC	1	8/10/2010 5:13:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		33.0	%REC	1	8/10/2010 5:13:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		58.3	%REC	1	8/10/2010 5:13:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		21.0	%REC	1	8/10/2010 5:13:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		86.8	%REC	1	8/10/2010 5:13:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-008  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: FIELD  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Acetone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-008  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: FIELD  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-008  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: FIELD  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 4:48:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		101.5	%REC	1	8/5/2010 4:48:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		102.4	%REC	1	8/5/2010 4:48:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		100.2	%REC	1	8/5/2010 4:48:00 PM	CCF
Surr: Toluene-d8		84.3-114		95.7	%REC	1	8/5/2010 4:48:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		7.99		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		519	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-009  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** EQUIP  
**Collection Date:** 8/4/2010  
**Matrix:** AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 365.4 (TOTAL)</u></b>								
Phosphorus, Total (as P)	NELAP	0.107	J	0.068	mg/L	1	8/11/2010 8:05:44 PM	RCE
<b><u>STANDARD METHODS 18TH ED. 4500-NO2 B (TOTAL)</u></b>								
Nitrogen, Nitrite (as N)	NELAP	0.01		0.01	mg/L	1	8/5/2010 1:05:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 4500-NO3 F (TOTAL)</u></b>								
Nitrogen, Nitrate (as N)	NELAP	0.050	J	0.046	mg/L	1	8/5/2010 1:35:00 PM	DLW
<b><u>SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 1:37:01 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 5:52:51 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 1:37:01 PM	LAL
Cadmium	NELAP	0.0020	J	0.0003	mg/L	1	8/9/2010 5:52:51 PM	LAL
Chromium	NELAP	0.0100	J	0.0079	mg/L	1	8/9/2010 5:52:51 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:37:01 PM	LAL
Lead	NELAP	0.0400		< 0.0400	mg/L	1	8/7/2010 3:14:53 AM	LAL
Nickel	NELAP	0.0100		< 0.0100	mg/L	1	8/9/2010 5:52:51 PM	LAL
Selenium	NELAP	0.0500	J	0.042	mg/L	1	8/9/2010 5:52:51 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 1:37:01 PM	LAL
Zinc	NELAP	0.0100	J	0.0077	mg/L	1	8/9/2010 5:52:51 PM	LAL
<b><u>SW-846 3005A, 6010B, METALS BY ICP (TOTAL)</u></b>								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	8/10/2010 3:05:10 PM	LAL
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	8/9/2010 4:25:24 PM	LAL
Beryllium	NELAP	0.0010		< 0.0010	mg/L	1	8/10/2010 3:05:10 PM	LAL
Cadmium	NELAP	0.0020		< 0.0020	mg/L	1	8/9/2010 4:25:24 PM	LAL
Chromium	NELAP	0.0100	J	0.0073	mg/L	1	8/9/2010 4:25:24 PM	LAL
Copper	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 3:05:10 PM	LAL
Lead	NELAP	0.0400		< 0.0400	mg/L	1	8/9/2010 4:25:24 PM	LAL
Nickel	NELAP	0.0100		< 0.0100	mg/L	1	8/9/2010 4:25:24 PM	LAL
Selenium	NELAP	0.0500	J	0.023	mg/L	1	8/9/2010 4:25:24 PM	LAL
Silver	NELAP	0.0100		< 0.0100	mg/L	1	8/10/2010 3:05:10 PM	LAL
Zinc	NELAP	0.0100		0.0460	mg/L	1	8/9/2010 4:25:24 PM	LAL
<b><u>SW-846 3005A, METALS BY GFAA (DISSOLVED)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:11:38 PM	MEK
<b><u>SW-846 3020A, METALS BY GFAA (TOTAL)</u></b>								
Thallium 7841	NELAP	0.0020		< 0.0020	mg/L	1	8/12/2010 5:14:16 PM	MEK
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
4,4'-DDE	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
4,4'-DDT	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Aiachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE

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## LABORATORY RESULTS

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WorkOrder: 10080226  
Lab ID: 10080226-009  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: EQUIP  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3510C, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
Aldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
alpha-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
beta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Chlordane	NELAP	0.50		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
delta-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Dieldrin	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endosulfan I	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endosulfan II	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endosulfan sulfate	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endrin	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endrin aldehyde	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Endrin ketone	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
gamma-BHC	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Heptachlor	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Heptachlor epoxide	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Methoxychlor	NELAP	0.05		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Toxaphene	NELAP	0.50		ND	µg/L	1	8/8/2010 11:18:00 PM	HE
Surr: Decachlorobiphenyl		5.54-150		42.6	%REC	1	8/8/2010 11:18:00 PM	HE
Surr: Tetrachloro-m-xylene		13-129		45.8	%REC	1	8/8/2010 11:18:00 PM	HE
<b><u>SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1221	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1232	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1242	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1248	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1254	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Aroclor 1260	NELAP	1.00		ND	µg/L	1	8/9/2010 3:16:00 AM	HE
Surr: Decachlorobiphenyl		5-174		37.0	%REC	1	8/9/2010 3:16:00 AM	HE
Surr: Tetrachloro-meta-xylene		22.2-139		49.5	%REC	1	8/9/2010 3:16:00 AM	HE
<b><u>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
1,2-Dichlorobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
1,3-Dichlorobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
1,4-Dichlorobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,4,5-Trichlorophenol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,4,6-Trichlorophenol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,4-Dichlorophenol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,4-Dimethylphenol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-009  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: EQUIP  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
2,4-Dinitrophenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,4-Dinitrotoluene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2,6-Dinitrotoluene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Chloronaphthalene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Chlorophenol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Methoxy-4-methylphenol		0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Methylnaphthalene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Nitroaniline	NELAP	0.040		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
2-Nitrophenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
3,3'-Dichlorobenzidine	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
3-Nitroaniline	NELAP	0.040		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4,6-Dinitro-2-methylphenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Bromophenyl phenyl ether	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Chloro-3-methylphenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Chloroaniline	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Nitroaniline	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
4-Nitrophenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Acenaphthene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Acenaphthylene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Aniline	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Anthracene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Azobenzene		0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzidine	NELAP	0.040		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzo(a)anthracene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzo(a)pyrene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzoic acid	NELAP	0.050		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Benzyl alcohol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Bis(2-chloroethyl)ether	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.006		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Butyl benzyl phthalate	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Carbazole	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Chrysene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-009  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: EQUIP  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Dibenzo(a,h)anthracene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Dibenzofuran	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Diethyl phthalate	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Dimethyl phthalate	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Di-n-butyl phthalate	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Di-n-octyl phthalate	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Fluoranthene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Fluorene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Hexachlorobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Hexachlorobutadiene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Hexachlorocyclopentadiene	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Hexachloroethane	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Indeno(1,2,3-cd)pyrene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Isophorone	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
m,p-Cresol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Naphthalene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Nitrobenzene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
N-Nitrosodimethylamine	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
N-Nitrosodiphenylamine	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
o-Cresol	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Pentachlorophenol	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Phenanthrene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Phenol	NELAP	0.005		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Pyrene	NELAP	0.010		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Pyridine	NELAP	0.020		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Quinoline		0.005		ND	mg/L	1	8/10/2010 5:44:00 AM	DMH
Surr: 2,4,6-Tribromophenol		27.7-149		88.0	%REC	1	8/10/2010 5:44:00 AM	DMH
Surr: 2-Fluorobiphenyl		44.9-116		75.8	%REC	1	8/10/2010 5:44:00 AM	DMH
Surr: 2-Fluorophenol		10.6-78.7		40.1	%REC	1	8/10/2010 5:44:00 AM	DMH
Surr: Nitrobenzene-d5		41.4-104		79.6	%REC	1	8/10/2010 5:44:00 AM	DMH
Surr: Phenol-d5		9.04-52.9		24.2	%REC	1	8/10/2010 5:44:00 AM	DMH
Surr: p-Terphenyl-d14		23.5-114		95.6	%REC	1	8/10/2010 5:44:00 AM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1,2-Trichloro-1,2,2-trifluoroethane		20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF

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Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1-Dichloro-2-propanone		50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,1-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2,3-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2,3-Trimethylbenzene		5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2,4-Trichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2,4-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,3,5-Trimethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,3-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,3-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
1-Chlorobutane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2-Butanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2-Chloroethyl vinyl ether	NELAP	20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2-Hexanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
2-Nitropropane	NELAP	50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
4-Chlorotoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Acetone	NELAP	25.0	J	5.2	µg/L	1	8/5/2010 4:18:00 PM	CCF
Acetonitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Acrolein	NELAP	100		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Acrylonitrile	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Allyl chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Benzene	NELAP	2.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Bromobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Bromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Bromoform	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: EQUIP

Lab ID: 10080226-009

Collection Date: 8/4/2010

Report Date: 17-Aug-10

Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Bromomethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Butyl acetate		25.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Carbon disulfide	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Chlorobenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Chloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Chloroform	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Chloromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Chloroprene	NELAP	20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
cis-1,4-Dichloro-2-butene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Cyclohexanone		50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Dibromomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Dichlorodifluoromethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Ethyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Ethyl ether	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Ethyl methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Ethylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Heptane		20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Hexachlorobutadiene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Hexachloroethane	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Iodomethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Isopropylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
m,p-Xylenes	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Methacrylonitrile	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Methyl Methacrylate	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Methyl tert-butyl ether	NELAP	2.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Methylacrylate		10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Methylene chloride	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Naphthalene	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
n-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
n-Hexane		20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Nitrobenzene	NELAP	50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
n-Propylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
o-Xylene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Pentachloroethane	NELAP	20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-009  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: EQUIP  
Collection Date: 8/4/2010  
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
p-Isopropyltoluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Propionitrile	NELAP	50.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
sec-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Styrene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
tert-Butylbenzene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Tetrahydrofuran	NELAP	20.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Toluene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Trichloroethene	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Vinyl acetate	NELAP	10.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Vinyl chloride	NELAP	2.0		ND	µg/L	1	8/5/2010 4:18:00 PM	CCF
Surr: 1,2-Dichloroethane-d4		74.7-129		101.6	%REC	1	8/5/2010 4:18:00 PM	CCF
Surr: 4-Bromofluorobenzene		86-119		100.4	%REC	1	8/5/2010 4:18:00 PM	CCF
Surr: Dibromofluoromethane		81.7-123		100.6	%REC	1	8/5/2010 4:18:00 PM	CCF
Surr: Toluene-d8		84.3-114		96.4	%REC	1	8/5/2010 4:18:00 PM	CCF
<b><u>SW-846 7470A (DISSOLVED)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 7470A (TOTAL)</u></b>								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	8/10/2010	MEK
<b><u>SW-846 9040B, LABORATORY ANALYZED</u></b>								
Lab pH	NELAP	0		8.05		1	8/5/2010 2:43:00 PM	CS
<b><u>SW-846 9050A</u></b>								
Conductivity	NELAP	1		525	µmhos/cm	1	8/6/2010	KNS

### Sample Narrative

SW-846 3510C, 8270C, Semi-Volatile Organic Compounds by GC/MS

Laboratory control sample duplicate was outside of lower recovery limits. Batch verified on MS recovery.

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid		1		409	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		12.9	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		87.1	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	4.90		< 4.90	mg/Kg-dry	1	8/9/2010 12:59:31 PM	LAL
Arsenic	NELAP	2.36		13.8	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Beryllium	NELAP	0.09		0.84	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Cadmium	NELAP	0.19		0.38	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Chromium	NELAP	0.94		22.8	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Copper	NELAP	0.94		21.1	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Lead	NELAP	3.77		20.4	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Nickel	NELAP	0.94		22.4	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Selenium	NELAP	3.77		< 3.77	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Silver	NELAP	0.52		< 0.52	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
Zinc	NELAP	0.94		65.4	mg/Kg-dry	1	8/10/2010 4:42:16 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.200	J	0.13	mg/Kg-dry	1	8/12/2010 4:26:58 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
4,4'-DDE	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
4,4'-DDT	NELAP	470		ND	µg/Kg-dry	250	8/16/2010 2:27:00 AM	HE
Alachlor	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Aldrin	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
alpha-BHC	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
alpha-Chlordane	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
beta-BHC	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Chlordane	NELAP	188		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
delta-BHC	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Dieldrin	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endosulfan I	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endosulfan II	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endosulfan sulfate	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endrin	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endrin aldehyde	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Endrin ketone	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
gamma-BHC	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Heptachlor	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Heptachlor epoxide	NELAP	94.0		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Methoxychlor	NELAP	470		ND	µg/Kg-dry	250	8/16/2010 2:27:00 AM	HE
Toxaphene	NELAP	1690		ND	µg/Kg-dry	50	8/11/2010 3:12:00 AM	HE
Surr: Decachlorobiphenyl		48-149		99.6	%REC	50	8/11/2010 3:12:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		85.8	%REC	50	8/11/2010 3:12:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1221	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1232	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1242	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1248	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1254	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Aroclor 1260	NELAP	42.2		ND	µg/Kg-dry	1	8/9/2010 6:41:00 PM	HE
Surr: Decachlorobiphenyl		5-156		68.0	%REC	1	8/9/2010 6:41:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		67.5	%REC	1	8/9/2010 6:41:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
1,2-Dichlorobenzene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
1,3-Dichlorobenzene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
1,4-Dichlorobenzene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4-Dichlorophenol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4-Dimethylphenol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4-Dinitrophenol	NELAP	28.7		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,4-Dinitrotoluene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2,6-Dinitrotoluene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Chloronaphthalene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Chlorophenol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Methoxy-4-methylphenol		18.6		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Methylnaphthalene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Nitroaniline	NELAP	28.7		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
2-Nitrophenol	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
3-Nitroaniline	NELAP	28.7		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	28.7		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4-Chloroaniline	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4-Nitroaniline	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
4-Nitrophenol	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Acenaphthene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Acenaphthylene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Aniline	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Anthracene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Azobenzene		10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzidine	NELAP	30.3		see note	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzo(a)anthracene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzo(a)pyrene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzo(b)fluoranthene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzo(k)fluoranthene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzoic acid	NELAP	43.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Benzyl alcohol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Butyl benzyl phthalate	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Carbazole		14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Chrysene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Dibenzofuran	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Diethyl phthalate	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Dimethyl phthalate	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Di-n-butyl phthalate	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Di-n-octyl phthalate	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Fluoranthene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Fluorene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Hexachlorobenzene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Hexachlorobutadiene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Hexachloroethane	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8270C. SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Indeno(1,2,3-cd)pyrene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Isophorone	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
m,p-Cresol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Naphthalene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Nitrobenzene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
N-Nitrosodimethylamine	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
o-Cresol	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Pentachlorophenol	NELAP	57.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Phenanthrene	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Phenol	NELAP	10.0		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Pyrene	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Pyridine	NELAP	14.3		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
1,2-Diphenylhydrazine		24.1		ND	mg/Kg-dry	25	8/10/2010 12:15:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		79.8	%REC	25	8/10/2010 12:15:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		87.6	%REC	25	8/10/2010 12:15:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		79.1	%REC	25	8/10/2010 12:15:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		86.8	%REC	25	8/10/2010 12:15:00 PM	DMH
Surr: Phenol-d5		34.9-110		84.2	%REC	25	8/10/2010 12:15:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		82.2	%REC	25	8/10/2010 12:15:00 PM	DMH
<b><u>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1,1-Trichloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1,2,2-Tetrachloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1,2-Trichloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1-Dichloro-2-propanone		77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1-Dichloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1-Dichloroethene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,1-Dichloropropene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2,3-Trichlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2,3-Trichloropropane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2,3-Trimethylbenzene		7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2,4-Trichlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2,4-Trimethylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2-Dibromo-3-chloropropane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2-Dibromoethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2-Dichloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,2-Dichloropropane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,3,5-Trimethylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,3-Dichlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,3-Dichloropropane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1,4-Dichlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
1-Chlorobutane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
2,2-Dichloropropane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
2-Butanone	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
2-Chlorotoluene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
2-Hexanone	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
2-Nitropropane	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
4-Chlorotoluene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
4-Methyl-2-pentanone	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Acetone	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Acrolein	NELAP	156		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Acrylonitrile	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Allyl chloride	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Benzene	NELAP	156		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Bromobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Bromochloromethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Bromodichloromethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Bromoforn	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Bromomethane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Carbon disulfide	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Carbon tetrachloride	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Chlorobenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Chloroethane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Chloroforn	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Chloromethane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
cis-1,2-Dichloroethene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
cis-1,3-Dichloropropene	NELAP	6.23		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Cyclohexanone		156		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Dibromochloromethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Dibromomethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Dichlorodifluoromethane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Ethyl acetate	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Ethyl methacrylate	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Ethylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Heptane		31.1		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Hexachlorobutadiene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Hexachloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Iodomethane	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Isopropylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
m,p-Xylenes	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Methacrylonitrile	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Methyl Methacrylate	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Methyl tert-butyl ether	NELAP	3.11		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Methylacrylate		15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Methylene chloride	NELAP	7.78	J	4.3	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Naphthalene	NELAP	15.6		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
n-Butylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
n-Hexane		31.1		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Nitrobenzene	NELAP	156		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
n-Propylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
o-Xylene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Pentachloroethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
p-Isopropyltoluene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Propionitrile	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
sec-Butylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Styrene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
tert-Butylbenzene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Tetrachloroethene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Tetrahydrofuran	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Toluene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
trans-1,2-Dichloroethene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
trans-1,3-Dichloropropene	NELAP	6.23		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Trichloroethene	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Trichlorofluoromethane	NELAP	7.78		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Vinyl acetate	NELAP	77.8		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Vinyl chloride	NELAP	3.11		ND	µg/Kg-dry	1	8/6/2010 11:46:00 AM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		102.8	%REC	1	8/6/2010 11:46:00 AM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		96.1	%REC	1	8/6/2010 11:46:00 AM	RWE
Surr: Dibromofluoromethane		77.7-120		102.9	%REC	1	8/6/2010 11:46:00 AM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-010  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-1  
Collection Date: 8/4/2010 8:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Surr: Toluene-d8		86-116		98.7	%REC	1	8/6/2010 11:46:00 AM	RWE
<b>SW-846 7471A</b>								
Mercury	NELAP	0.011		0.030	mg/Kg-dry	1	8/6/2010	MEK
<b>SW-846 9045C</b>								
pH (1:1)	NELAP	1.00		7.66		1	8/6/2010 8:46:00 AM	KNS

### Sample Narrative

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid				1510	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		16.8	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		83.2	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	4.90		< 4.90	mg/Kg-dry	1	8/9/2010 1:06:48 PM	LAL
Arsenic	NELAP	4.81		19.2	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Beryllium	NELAP	0.19		1.27	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Cadmium	NELAP	0.38		1.87	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Chromium	NELAP	0.96		59.4	mg/Kg-dry	1	8/10/2010 4:49:21 PM	LAL
Copper	NELAP	1.92		95.2	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Lead	NELAP	7.69		30.0	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Nickel	NELAP	1.92		170	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
Selenium	NELAP	3.85		< 3.85	mg/Kg-dry	1	8/10/2010 4:49:21 PM	LAL
Silver	NELAP	0.53		0.87	mg/Kg-dry	1	8/10/2010 4:49:21 PM	LAL
Zinc	NELAP	1.92		341	mg/Kg-dry	2	8/11/2010 10:04:13 AM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.200		0.802	mg/Kg-dry	1	8/12/2010 4:37:06 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
4,4'-DDE	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
4,4'-DDT	NELAP	501		ND	µg/Kg-dry	250	8/16/2010 2:51:00 AM	HE
Alachlor	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Aldrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
alpha-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
alpha-Chlordane	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
beta-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Chlordane	NELAP	20.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
delta-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Dieldrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endosulfan I	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endosulfan II	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endosulfan sulfate	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endrin aldehyde	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Endrin ketone	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
gamma-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Heptachlor	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Heptachlor epoxide	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Methoxychlor	NELAP	501		ND	µg/Kg-dry	250	8/16/2010 2:51:00 AM	HE
Toxaphene	NELAP	180		ND	µg/Kg-dry	5	8/11/2010 3:36:00 AM	HE
Surr: Decachlorobiphenyl		48-149		85.1	%REC	5	8/11/2010 3:36:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		57.7	%REC	5	8/11/2010 3:36:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1221	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1232	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1242	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1248	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1254	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Aroclor 1260	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 6:58:00 PM	HE
Surr: Decachlorobiphenyl		5-156		75.7	%REC	1	8/9/2010 6:58:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		57.3	%REC	1	8/9/2010 6:58:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
1,2-Dichlorobenzene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
1,3-Dichlorobenzene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
1,4-Dichlorobenzene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4-Dichlorophenol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4-Dimethylphenol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4-Dinitrophenol	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,4-Dinitrotoluene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2,6-Dinitrotoluene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Chloronaphthalene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Chlorophenol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Methoxy-4-methylphenol		0.779		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Methylnaphthalene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Nitroaniline	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
2-Nitrophenol	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
3-Nitroaniline	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4-Chloroaniline	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4-Nitroaniline	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
4-Nitrophenol	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Acenaphthene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Acenaphthylene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Aniline	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Anthracene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Azobenzene		0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzidine	NELAP	1.27		see note	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzo(a)anthracene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzo(a)pyrene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzo(b)fluoranthene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzo(k)fluoranthene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzoic acid	NELAP	1.80		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Benzyl alcohol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Butyl benzyl phthalate	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Carbazole		0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Chrysene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Dibenzofuran	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Diethyl phthalate	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Dimethyl phthalate	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Di-n-butyl phthalate	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Di-n-octyl phthalate	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Fluoranthene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Fluorene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Hexachlorobenzene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Hexachlorobutadiene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Hexachloroethane	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Indeno(1,2,3-cd)pyrene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Isophorone	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
m,p-Cresol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Naphthalene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Nitrobenzene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
N-Nitrosodimethylamine	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
o-Cresol	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Pentachlorophenol	NELAP	2.40		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Phenanthrene	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Phenol	NELAP	0.420		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Pyrene	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Pyridine	NELAP	0.600		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
1,2-Diphenylhydrazine		1.01		ND	mg/Kg-dry	1	8/8/2010 6:20:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		90.5	%REC	1	8/8/2010 6:20:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		86.0	%REC	1	8/8/2010 6:20:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		72.6	%REC	1	8/8/2010 6:20:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		83.3	%REC	1	8/8/2010 6:20:00 PM	DMH
Surr: Phenol-d5		34.9-110		78.1	%REC	1	8/8/2010 6:20:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		115.4	%REC	1	8/8/2010 6:20:00 PM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1,1-Trichloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1,2-Trichloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1-Dichloro-2-propanone		94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1-Dichloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1-Dichloroethene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,1-Dichloropropene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2,3-Trichloropropane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2,3-Trimethylbenzene		9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2-Dibromoethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2-Dichloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,2-Dichloropropane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,3-Dichlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,3-Dichloropropane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1,4-Dichlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
1-Chlorobutane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
2,2-Dichloropropane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
2-Butanone	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
2-Chlorotoluene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
2-Hexanone	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
2-Nitropropane	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
4-Chlorotoluene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
4-Methyl-2-pentanone	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Acetone	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Acrolein	NELAP	188		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Acrylonitrile	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Allyl chloride	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Benzene	NELAP	1.88		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Bromobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Bromochloromethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Bromodichloromethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Bromoform	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Bromomethane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Carbon disulfide	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Carbon tetrachloride	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Chlorobenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Chloroethane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Chloroform	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Chloromethane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	7.54		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Cyclohexanone		188		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Dibromochloromethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Dibromomethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Dichlorodifluoromethane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Ethyl acetate	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-011  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-2  
Collection Date: 8/4/2010 9:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Ethyl methacrylate	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Ethylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Heptane		37.7		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Hexachlorobutadiene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Hexachloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Iodomethane	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Isopropylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
m,p-Xylenes	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Methacrylonitrile	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Methyl Methacrylate	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Methyl tert-butyl ether	NELAP	3.77		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Methylacrylate		18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Methylene chloride	NELAP	9.42	J	5.0	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Naphthalene	NELAP	18.8		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
n-Butylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
n-Hexane		37.7		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Nitrobenzene	NELAP	188		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
n-Propylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
o-Xylene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Pentachloroethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
p-Isopropyltoluene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Propionitrile	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
sec-Butylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Styrene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
tert-Butylbenzene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Tetrachloroethene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Tetrahydrofuran	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Toluene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	7.54		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Trichloroethene	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Trichlorofluoromethane	NELAP	9.42		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Vinyl acetate	NELAP	94.2		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Vinyl chloride	NELAP	3.77		ND	µg/Kg-dry	1	8/6/2010 1:11:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		99.1	%REC	1	8/6/2010 1:11:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		87.3	%REC	1	8/6/2010 1:11:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		105.1	%REC	1	8/6/2010 1:11:00 PM	RWE

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-011  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** SS-2  
**Collection Date:** 8/4/2010 9:30:00 AM  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		104.8	%REC	1	8/6/2010 1:11:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.012		0.120	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		5.88		1	8/6/2010 8:46:00 AM	KNS

**Sample Narrative**

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-012  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-3  
Collection Date: 8/4/2010 11:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid		1		183	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		13.5	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		86.5	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	4.81		< 4.81	mg/Kg-dry	1	8/9/2010 1:14:18 PM	LAL
Arsenic	NELAP	2.45		11.1	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Beryllium	NELAP	0.10		0.59	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Cadmium	NELAP	0.20		0.29	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Chromium	NELAP	0.98		30.2	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Copper	NELAP	0.98		29.7	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Lead	NELAP	3.92		21.4	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Nickel	NELAP	0.98		22.6	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Selenium	NELAP	3.92		< 3.92	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Silver	NELAP	0.54		< 0.54	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
Zinc	NELAP	0.98		87.0	mg/Kg-dry	1	8/10/2010 4:56:51 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.196		0.297	mg/Kg-dry	1	8/12/2010 4:40:28 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
4,4'-DDE	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
4,4'-DDT	NELAP	477		ND	µg/Kg-dry	250	8/16/2010 3:14:00 AM	HE
Alachlor	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Aldrin	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
alpha-BHC	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
alpha-Chlordane	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
beta-BHC	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Chlordane	NELAP	19.1		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
delta-BHC	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Dieldrin	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endosulfan I	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endosulfan II	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endosulfan sulfate	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endrin	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endrin aldehyde	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Endrin ketone	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
gamma-BHC	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: SS-3

Lab ID: 10080226-012

Collection Date: 8/4/2010 11:30:00 AM

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Heptachlor	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Heptachlor epoxide	NELAP	9.53		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Methoxychlor	NELAP	477		ND	µg/Kg-dry	250	8/16/2010 3:14:00 AM	HE
Toxaphene	NELAP	171		ND	µg/Kg-dry	5	8/11/2010 3:59:00 AM	HE
Surr: Decachlorobiphenyl		48-149		91.8	%REC	5	8/11/2010 3:59:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		65.8	%REC	5	8/11/2010 3:59:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1221	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1232	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1242	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1248	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1254	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Aroclor 1260	NELAP	42.8		ND	µg/Kg-dry	1	8/9/2010 7:15:00 PM	HE
Surr: Decachlorobiphenyl		5-156		80.2	%REC	1	8/9/2010 7:15:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		66.0	%REC	1	8/9/2010 7:15:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
1,2-Dichlorobenzene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
1,3-Dichlorobenzene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
1,4-Dichlorobenzene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4-Dichlorophenol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4-Dimethylphenol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4-Dinitrophenol	NELAP	1.15		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,4-Dinitrotoluene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2,6-Dinitrotoluene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Chloronaphthalene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Chlorophenol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Methoxy-4-methylphenol		0.745		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Methylnaphthalene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Nitroaniline	NELAP	1.15		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
2-Nitrophenol	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
3-Nitroaniline	NELAP	1.15		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	1.15		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-012  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** SS-3  
**Collection Date:** 8/4/2010 11:30:00 AM  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4-Chloroaniline	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4-Nitroaniline	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
4-Nitrophenol	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Acenaphthene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Acenaphthylene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Aniline	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Anthracene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Azobenzene		0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Benzidine	NELAP	1.21		see note	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Benzo(a)anthracene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Benzo(a)pyrene	NELAP	0.401		ND	mg/Kg-dry	1	8/10/2010 11:43:00 AM	DMH
Benzo(b)fluoranthene	NELAP	0.401		ND	mg/Kg-dry	1	8/10/2010 11:43:00 AM	DMH
Benzo(g,h,i)perylene	NELAP	0.401		ND	mg/Kg-dry	1	8/10/2010 11:43:00 AM	DMH
Benzo(k)fluoranthene	NELAP	0.401		ND	mg/Kg-dry	1	8/10/2010 11:43:00 AM	DMH
Benzoic acid	NELAP	1.72		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Benzyl alcohol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Butyl benzyl phthalate	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Carbazole		0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Chrysene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	0.401		ND	mg/Kg-dry	1	8/10/2010 11:43:00 AM	DMH
Dibenzofuran	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Diethyl phthalate	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Dimethyl phthalate	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Di-n-butyl phthalate	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Di-n-octyl phthalate	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Fluoranthene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Fluorene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Hexachlorobenzene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Hexachlorobutadiene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Hexachloroethane	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-012  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-3  
Collection Date: 8/4/2010 11:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Indeno(1,2,3-cd)pyrene	NELAP	0.401		ND	mg/Kg-dry	-1	8/10/2010 11:43:00 AM	DMH
Isophorone	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
m,p-Cresol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Naphthalene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Nitrobenzene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
N-Nitrosodimethylamine	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
o-Cresol	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Pentachlorophenol	NELAP	2.29		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Phenanthrene	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Phenol	NELAP	0.401		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Pyrene	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Pyridine	NELAP	0.573		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
1,2-Diphenylhydrazine		0.963		ND	mg/Kg-dry	1	8/8/2010 6:52:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		98.0	%REC	1	8/8/2010 6:52:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		89.8	%REC	1	8/8/2010 6:52:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		80.3	%REC	1	8/8/2010 6:52:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		84.8	%REC	1	8/8/2010 6:52:00 PM	DMH
Surr: Phenol-d5		34.9-110		80.1	%REC	1	8/8/2010 6:52:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		105.5	%REC	1	8/8/2010 6:52:00 PM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1,1-Trichloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1,2-Trichloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1-Dichloro-2-propanone		93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1-Dichloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1-Dichloroethene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,1-Dichloropropene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2,3-Trichloropropane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2,3-Trimethylbenzene		9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2-Dibromoethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: SS-3

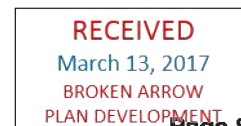
Lab ID: 10080226-012

Collection Date: 8/4/2010 11:30:00 AM

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2-Dichloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,2-Dichloropropane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,3-Dichlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,3-Dichloropropane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1,4-Dichlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
1-Chlorobutane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
2,2-Dichloropropane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
2-Butanone	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
2-Chlorotoluene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
2-Hexanone	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
2-Nitropropane	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
4-Chlorotoluene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
4-Methyl-2-pentanone	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Acetone	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Acrolein	NELAP	186		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Acrylonitrile	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Allyl chloride	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Benzene	NELAP	1.86		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Bromobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Bromochloromethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Bromodichloromethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Bromoform	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Bromomethane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Carbon disulfide	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Carbon tetrachloride	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Chlorobenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Chloroethane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Chloroform	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Chloromethane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	7.46		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Cyclohexanone		186		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Dibromochloromethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Dibromomethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Dichlorodifluoromethane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Ethyl acetate	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE



ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: SS-3

Lab ID: 10080226-012

Collection Date: 8/4/2010 11:30:00 AM

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Ethyl methacrylate	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Ethylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Heptane		37.3		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Hexachlorobutadiene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Hexachloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Iodomethane	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Isopropylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
m,p-Xylenes	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Methacrylonitrile	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Methyl Methacrylate	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Methyl tert-butyl ether	NELAP	3.73		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Methylacrylate		18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Methylene chloride	NELAP	9.32		3.5	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Naphthalene	NELAP	18.6		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
n-Butylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
n-Hexane		37.3		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Nitrobenzene	NELAP	186		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
n-Propylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
o-Xylene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Pentachloroethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
p-Isopropyltoluene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Propionitrile	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
sec-Butylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Styrene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
tert-Butylbenzene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Tetrachloroethene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Tetrahydrofuran	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Toluene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	7.46		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Trichloroethene	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Trichlorofluoromethane	NELAP	9.32		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Vinyl acetate	NELAP	93.2		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Vinyl chloride	NELAP	3.73		ND	µg/Kg-dry	1	8/6/2010 1:39:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		101.1	%REC	1	8/6/2010 1:39:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		88.7	%REC	1	8/6/2010 1:39:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		108.2	%REC	1	8/6/2010 1:39:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-012  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-3  
Collection Date: 8/4/2010 11:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		103.9	%REC	1	8/6/2010 1:39:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.012		0.051	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		4.89		1	8/6/2010 8:46:00 AM	KNS

### Sample Narrative

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

<p style="text-align: center;"><b>RECEIVED</b> March 13, 2017 BROKEN ARROW PLAN DEVELOPMENT</p>
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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-013  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-4  
Collection Date: 8/4/2010 10:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid				677	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		10.7	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		89.3	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	4.90	J	3.6	mg/Kg-dry	1	8/8/2010 10:41:41 PM	LAL
Arsenic	NELAP	2.31		22.6	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Beryllium	NELAP	0.09		1.30	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Cadmium	NELAP	0.19		0.99	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Chromium	NELAP	0.93		48.4	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Copper	NELAP	0.93		59.7	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Lead	NELAP	3.70		28.7	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Nickel	NELAP	0.93		91.5	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Selenium	NELAP	3.70		< 3.70	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Silver	NELAP	0.51		< 0.51	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
Zinc	NELAP	0.93		204	mg/Kg-dry	1	8/10/2010 5:04:10 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.189		0.443	mg/Kg-dry	1	8/12/2010 4:43:50 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
4,4'-DDE	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
4,4'-DDT	NELAP	465		ND	µg/Kg-dry	250	8/16/2010 3:38:00 AM	HE
Alachlor	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Aldrin	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
alpha-BHC	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
alpha-Chlordane	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
beta-BHC	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Chlordane	NELAP	18.6		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
delta-BHC	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Dieldrin	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endosulfan I	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endosulfan II	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endosulfan sulfate	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endrin	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endrin aldehyde	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Endrin ketone	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
gamma-BHC	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE

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ENVIRONMENTAL TESTING LABORATORY

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: SS-4

Lab ID: 10080226-013

Collection Date: 8/4/2010 10:30:00 AM

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</b>								
gamma-Chlordane	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Heptachlor	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Heptachlor epoxide	NELAP	9.30		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Methoxychlor	NELAP	465		ND	µg/Kg-dry	250	8/16/2010 3:38:00 AM	HE
Toxaphene	NELAP	167		ND	µg/Kg-dry	5	8/11/2010 4:23:00 AM	HE
Surr: Decachlorobiphenyl		48-149		84.4	%REC	5	8/11/2010 4:23:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		63.4	%REC	5	8/11/2010 4:23:00 AM	HE
<b>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</b>								
Aroclor 1016	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1221	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1232	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1242	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1248	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1254	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Aroclor 1260	NELAP	41.8		ND	µg/Kg-dry	1	8/9/2010 7:32:00 PM	HE
Surr: Decachlorobiphenyl		5-156		81.4	%REC	1	8/9/2010 7:32:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		63.0	%REC	1	8/9/2010 7:32:00 PM	HE
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2,4-Trichlorobenzene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
1,2-Dichlorobenzene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
1,3-Dichlorobenzene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
1,4-Dichlorobenzene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4-Dichlorophenol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4-Dimethylphenol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4-Dinitrophenol	NELAP	1.11		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,4-Dinitrotoluene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2,6-Dinitrotoluene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Chloronaphthalene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Chlorophenol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Methoxy-4-methylphenol		0.724		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Methylnaphthalene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Nitroaniline	NELAP	1.11		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
2-Nitrophenol	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
3-Nitroaniline	NELAP	1.11		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	1.11		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-013  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-4  
Collection Date: 8/4/2010 10:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4-Chloroaniline	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4-Nitroaniline	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
4-Nitrophenol	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Acenaphthene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Acenaphthylene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Aniline	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Anthracene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Azobenzene		0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzidine	NELAP	1.18		see note	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzo(a)anthracene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzo(a)pyrene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzo(b)fluoranthene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzo(k)fluoranthene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzoic acid	NELAP	1.67		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Benzyl alcohol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Butyl benzyl phthalate	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Carbazole		0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Chrysene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Dibenzofuran	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Diethyl phthalate	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Dimethyl phthalate	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Di-n-butyl phthalate	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Di-n-octyl phthalate	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Fluoranthene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Fluorene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Hexachlorobenzene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Hexachlorobutadiene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Hexachloroethane	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH

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TEL: 618-344-1004

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-013  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** SS-4  
**Collection Date:** 8/4/2010 10:30:00 AM  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Indeno(1,2,3-cd)pyrene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Isophorone	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
m,p-Cresol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Naphthalene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Nitrobenzene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
N-Nitrosodimethylamine	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
o-Cresol	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Pentachlorophenol	NELAP	2.23		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Phenanthrene	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Phenol	NELAP	0.390		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Pyrene	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Pyridine	NELAP	0.557		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
1,2-Diphenylhydrazine		0.936		ND	mg/Kg-dry	1	8/8/2010 7:24:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		92.5	%REC	1	8/8/2010 7:24:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		79.1	%REC	1	8/8/2010 7:24:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		70.5	%REC	1	8/8/2010 7:24:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		73.4	%REC	1	8/8/2010 7:24:00 PM	DMH
Surr: Phenol-d5		34.9-110		72.2	%REC	1	8/8/2010 7:24:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		104.0	%REC	1	8/8/2010 7:24:00 PM	DMH
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1,1-Trichloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1,2-Trichloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1-Dichloro-2-propanone		76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1-Dichloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1-Dichloroethene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,1-Dichloropropene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2,3-Trichloropropane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2,3-Trimethylbenzene		7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2-Dibromoethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-013  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-4  
Collection Date: 8/4/2010 10:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2-Dichloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,2-Dichloropropane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,3-Dichlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,3-Dichloropropane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1,4-Dichlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
1-Chlorobutane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
2,2-Dichloropropane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
2-Butanone	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
2-Chlorotoluene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
2-Hexanone	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
2-Nitropropane	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
4-Chlorotoluene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
4-Methyl-2-pentanone	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Acetone	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Acrolein	NELAP	153		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Acrylonitrile	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Allyl chloride	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Benzene	NELAP	1.53		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Bromobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Bromochloromethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Bromodichloromethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Bromoform	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Bromomethane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Carbon disulfide	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Carbon tetrachloride	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Chlorobenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Chloroethane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Chloroform	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Chloromethane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	6.13		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Cyclohexanone		153		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Dibromochloromethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Dibromomethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Dichlorodifluoromethane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Ethyl acetate	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-013  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: SS-4  
Collection Date: 8/4/2010 10:30:00 AM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Ethyl methacrylate	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Ethylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Heptane		30.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Hexachlorobutadiene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Hexachloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Iodomethane	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Isopropylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
m,p-Xylenes	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Methacrylonitrile	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Methyl Methacrylate	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Methyl tert-butyl ether	NELAP	3.07		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Methylacrylate		15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Methylene chloride	NELAP	7.67	J	4.8	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Naphthalene	NELAP	15.3		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
n-Butylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
n-Hexane		30.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Nitrobenzene	NELAP	153		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
n-Propylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
o-Xylene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Pentachloroethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
p-Isopropyltoluene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Propionitrile	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
sec-Butylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Styrene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
tert-Butylbenzene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Tetrachloroethene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Tetrahydrofuran	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Toluene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	6.13		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Trichloroethene	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Trichlorofluoromethane	NELAP	7.67		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Vinyl acetate	NELAP	76.7		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Vinyl chloride	NELAP	3.07		ND	µg/Kg-dry	1	8/6/2010 2:07:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		103.0	%REC	1	8/6/2010 2:07:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		86.8	%REC	1	8/6/2010 2:07:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		109.2	%REC	1	8/6/2010 2:07:00 PM	RWE

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-013  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** SS-4  
**Collection Date:** 8/4/2010 10:30:00 AM  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		102.6	%REC	1	8/6/2010 2:07:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.011		0.100	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		4.37		1	8/6/2010 8:46:00 AM	KNS

**Sample Narrative**

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-014  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid		1		1530	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		17.6	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		82.4	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	5.00		< 5.00	mg/Kg-dry	1	8/8/2010 10:48:59 PM	LAL
Arsenic	NELAP	2.40		15.7	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Beryllium	NELAP	0.10		1.27	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Cadmium	NELAP	0.19		1.12	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Chromium	NELAP	0.96		34.9	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Copper	NELAP	0.96		40.1	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Lead	NELAP	3.85		22.7	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Nickel	NELAP	0.96		89.3	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Selenium	NELAP	4.81		< 4.81	mg/Kg-dry	1	8/11/2010 10:24:42 AM	LAL
Silver	NELAP	0.53		< 0.53	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
Zinc	NELAP	0.96		189	mg/Kg-dry	1	8/10/2010 5:11:29 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.182		0.378	mg/Kg-dry	1	8/12/2010 4:47:10 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
4,4'-DDE	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
4,4'-DDT	NELAP	501		ND	µg/Kg-dry	250	8/16/2010 4:02:00 AM	HE
Alachlor	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Aldrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
alpha-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
alpha-Chlordane	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
beta-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Chlordane	NELAP	20.1		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
delta-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Dieldrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endosulfan I	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endosulfan II	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endosulfan sulfate	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endrin	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endrin aldehyde	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Endrin ketone	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
gamma-BHC	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-014  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** DUP  
**Collection Date:** 8/4/2010  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Heptachlor	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Heptachlor epoxide	NELAP	10.0		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Methoxychlor	NELAP	501		ND	µg/Kg-dry	250	8/16/2010 4:02:00 AM	HE
Toxaphene	NELAP	180		ND	µg/Kg-dry	5	8/11/2010 4:47:00 AM	HE
Surr: Decachlorobiphenyl		48-149		96.1	%REC	5	8/11/2010 4:47:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		63.6	%REC	5	8/11/2010 4:47:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1221	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1232	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1242	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1248	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1254	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Aroclor 1260	NELAP	45.0		ND	µg/Kg-dry	1	8/9/2010 7:49:00 PM	HE
Surr: Decachlorobiphenyl		5-156		96.1	%REC	1	8/9/2010 7:49:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		70.7	%REC	1	8/9/2010 7:49:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
1,2-Dichlorobenzene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
1,3-Dichlorobenzene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
1,4-Dichlorobenzene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4-Dichlorophenol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4-Dimethylphenol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4-Dinitrophenol	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,4-Dinitrotoluene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2,6-Dinitrotoluene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Chloronaphthalene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Chlorophenol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Methoxy-4-methylphenol		0.782		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Methylnaphthalene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Nitroaniline	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
2-Nitrophenol	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
3-Nitroaniline	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	1.20		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-014  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4-Chloroaniline	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4-Nitroaniline	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
4-Nitrophenol	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Acenaphthene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Acenaphthylene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Aniline	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Anthracene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Azobenzene		0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzidine	NELAP	1.27		see note	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzo(a)anthracene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzo(a)pyrene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzo(b)fluoranthene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzo(k)fluoranthene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzoic acid	NELAP	1.80		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Benzyl alcohol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	0.421	J	0.15	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Butyl benzyl phthalate	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Carbazole		0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Chrysene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Dibenzofuran	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Diethyl phthalate	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Dimethyl phthalate	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Di-n-butyl phthalate	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Di-n-octyl phthalate	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Fluoranthene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Fluorene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Hexachlorobenzene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Hexachlorobutadiene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Hexachloroethane	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-014  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: DUP  
Collection Date: 8/4/2010  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Indeno(1,2,3-cd)pyrene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Isophorone	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
m,p-Cresol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Naphthalene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Nitrobenzene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
N-Nitrosodimethylamine	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
o-Cresol	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Pentachlorophenol	NELAP	2.41		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Phenanthrene	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Phenol	NELAP	0.421		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Pyrene	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Pyridine	NELAP	0.602		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
1,2-Diphenylhydrazine		1.01		ND	mg/Kg-dry	1	8/8/2010 7:57:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		76.7	%REC	1	8/8/2010 7:57:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		76.4	%REC	1	8/8/2010 7:57:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		63.0	%REC	1	8/8/2010 7:57:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		75.7	%REC	1	8/8/2010 7:57:00 PM	DMH
Surr: Phenol-d5		34.9-110		68.3	%REC	1	8/8/2010 7:57:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		104.8	%REC	1	8/8/2010 7:57:00 PM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1,1-Trichloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1,2-Trichloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1-Dichloro-2-propanone		95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1-Dichloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1-Dichloroethene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,1-Dichloropropene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2,3-Trichloropropane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2,3-Trimethylbenzene		9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2-Dibromoethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: DUP

Lab ID: 10080226-014

Collection Date: 8/4/2010

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260E, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2-Dichloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,2-Dichloropropane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,3-Dichlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,3-Dichloropropane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1,4-Dichlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
1-Chlorobutane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
2,2-Dichloropropane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
2-Butanone	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
2-Chlorotoluene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
2-Hexanone	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
2-Nitropropane	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
4-Chlorotoluene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
4-Methyl-2-pentanone	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Acetone	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Acrolein	NELAP	191		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Acrylonitrile	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Allyl chloride	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Benzene	NELAP	1.91		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Bromobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Bromochloromethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Bromodichloromethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Bromoform	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Bromomethane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Carbon disulfide	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Carbon tetrachloride	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Chlorobenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Chloroethane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Chloroform	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Chloromethane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	7.63		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Cyclohexanone		191		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Dibromochloromethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Dibromomethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Dichlorodifluoromethane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Ethyl acetate	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE

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TEL: 618-344-1004

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-014  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** DUP  
**Collection Date:** 8/4/2010  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Ethyl methacrylate	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Ethylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Heptane		38.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Hexachlorobutadiene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Hexachloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Iodomethane	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Isopropylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
m,p-Xylenes	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Methacrylonitrile	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Methyl Methacrylate	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Methyl tert-butyl ether	NELAP	3.81		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Methylacrylate		19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Methylene chloride	NELAP	9.54	J	3.2	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Naphthalene	NELAP	19.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
n-Butylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
n-Hexane		38.1		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Nitrobenzene	NELAP	191		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
n-Propylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
o-Xylene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Pentachloroethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
p-Isopropyltoluene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Propionitrile	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
sec-Butylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Styrene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
tert-Butylbenzene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Tetrachloroethene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Tetrahydrofuran	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Toluene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	7.63		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Trichloroethene	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Trichlorofluoromethane	NELAP	9.54		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Vinyl acetate	NELAP	95.4		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Vinyl chloride	NELAP	3.81		ND	µg/Kg-dry	1	8/6/2010 2:35:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		104.0	%REC	1	8/6/2010 2:35:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		87.0	%REC	1	8/6/2010 2:35:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		111.0	%REC	1	8/6/2010 2:35:00 PM	RWE

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-014  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** DUP  
**Collection Date:** 8/4/2010  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		103.1	%REC	1	8/6/2010 2:35:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.012		0.055	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		6.51		1	8/6/2010 8:46:00 AM	KNS

### Sample Narrative

SW-846 3050B, 6010B, Metals by ICP

Se - Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-015  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-1  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid		1		1530	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		80.1	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED. 2540 G</u></b>								
Total Solids		0.1		19.9	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	4.81	J	2.8	mg/Kg-dry	1	8/8/2010 10:56:32 PM	LAL
Arsenic	NELAP	48.1		52.9	mg/Kg-dry	20	8/11/2010 12:54:04 PM	LAL
Beryllium	NELAP	0.10		5.66	mg/Kg-dry	1	8/10/2010 5:19:02 PM	LAL
Cadmium	NELAP	0.19		4.39	mg/Kg-dry	1	8/12/2010 11:37:40 AM	JMW
Chromium	NELAP	0.96		24.3	mg/Kg-dry	1	8/10/2010 5:19:02 PM	LAL
Copper	NELAP	19.2		29.2	mg/Kg-dry	20	8/11/2010 12:54:04 PM	LAL
Lead	NELAP	19.2		66.8	mg/Kg-dry	5	8/11/2010 12:13:57 PM	LAL
Nickel	NELAP	19.2		439	mg/Kg-dry	20	8/11/2010 12:54:04 PM	LAL
Selenium	NELAP	76.9	J	41	mg/Kg-dry	20	8/11/2010 12:54:04 PM	LAL
Silver	NELAP	0.53		2.40	mg/Kg-dry	1	8/12/2010 11:37:40 AM	JMW
Zinc	NELAP	19.2		1130	mg/Kg-dry	20	8/11/2010 12:54:04 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.192		< 0.192	mg/Kg-dry	1	8/12/2010 4:50:32 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
4,4'-DDE	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
4,4'-DDT	NELAP	2080		ND	µg/Kg-dry	250	8/16/2010 4:25:00 AM	HE
Alachlor	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Aldrin	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
alpha-BHC	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
alpha-Chlordane	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
beta-BHC	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Chlordane	NELAP	416		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
delta-BHC	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Dieldrin	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endosulfan I	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endosulfan II	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endosulfan sulfate	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endrin	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endrin aldehyde	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Endrin ketone	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
gamma-BHC	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE

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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-015  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-1  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Heptachlor	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Heptachlor epoxide	NELAP	208		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Methoxychlor	NELAP	2080		ND	µg/Kg-dry	250	8/16/2010 4:25:00 AM	HE
Toxaphene	NELAP	3740		ND	µg/Kg-dry	25	8/11/2010 5:11:00 AM	HE
Surr: Decachlorobiphenyl		48-149		118.8	%REC	25	8/11/2010 5:11:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		68.4	%REC	25	8/11/2010 5:11:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1221	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1232	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1242	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1248	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1254	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Aroclor 1260	NELAP	187		ND	µg/Kg-dry	1	8/9/2010 8:06:00 PM	HE
Surr: Decachlorobiphenyl		5-156		89.0	%REC	1	8/9/2010 8:06:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		76.5	%REC	1	8/9/2010 8:06:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
1,2-Dichlorobenzene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
1,3-Dichlorobenzene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
1,4-Dichlorobenzene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4-Dichlorophenol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4-Dimethylphenol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4-Dinitrophenol	NELAP	25.4		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,4-Dinitrotoluene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2,6-Dinitrotoluene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Chloronaphthalene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Chlorophenol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Methoxy-4-methylphenol		16.5		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Methylnaphthalene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Nitroaniline	NELAP	25.4		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
2-Nitrophenol	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
3-Nitroaniline	NELAP	25.4		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	25.4		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-015  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-1  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4-Chloroaniline	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4-Nitroaniline	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
4-Nitrophenol	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Acenaphthene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Acenaphthylene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Aniline	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Anthracene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Azobenzene		8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzidine	NELAP	26.8		see note	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzo(a)anthracene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzo(a)pyrene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzo(b)fluoranthene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzo(k)fluoranthene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzoic acid	NELAP	38.0		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Benzyl alcohol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Butyl benzyl phthalate	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Carbazole		12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Chrysene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Dibenzofuran	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Diethyl phthalate	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Dimethyl phthalate	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Di-n-butyl phthalate	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Di-n-octyl phthalate	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Fluoranthene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Fluorene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Hexachlorobenzene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Hexachlorobutadiene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Hexachloroethane	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-015  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-1  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Indeno(1,2,3-cd)pyrene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Isophorone	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
m,p-Cresol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Naphthalene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Nitrobenzene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
N-Nitrosodimethylamine	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
o-Cresol	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Pentachlorophenol	NELAP	50.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Phenanthrene	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Phenol	NELAP	8.87		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Pyrene	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Pyridine	NELAP	12.7		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
1,2-Diphenylhydrazine		21.3		ND	mg/Kg-dry	5	8/10/2010 12:48:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		96.5	%REC	5	8/10/2010 12:48:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		83.0	%REC	5	8/10/2010 12:48:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		83.2	%REC	5	8/10/2010 12:48:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		95.5	%REC	5	8/10/2010 12:48:00 PM	DMH
Surr: Phenol-d5		34.9-110		89.6	%REC	5	8/10/2010 12:48:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		95.9	%REC	5	8/10/2010 12:48:00 PM	DMH
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,1,1,2-Tetrachloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1,1-Trichloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1,2-Trichloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1-Dichloro-2-propanone		37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1-Dichloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1-Dichloroethene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,1-Dichloropropene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2,3-Trichloropropane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2,3-Trimethylbenzene		37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2-Dibromoethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-015  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-1  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
1,2-Dichlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2-Dichloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,2-Dichloropropane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,3-Dichlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,3-Dichloropropane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1,4-Dichlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
1-Chlorobutane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
2,2-Dichloropropane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
2-Butanone	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
2-Chlorotoluene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
2-Hexanone	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
2-Nitropropane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
4-Chlorotoluene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
4-Methyl-2-pentanone	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Acetone	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Acrolein	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Acrylonitrile	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Allyl chloride	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Benzene	NELAP	7.42		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Bromobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Bromochloromethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Bromodichloromethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Bromoform	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Bromomethane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Carbon disulfide	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Carbon tetrachloride	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Chlorobenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Chloroethane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Chloroform	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Chloromethane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	29.7		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Cyclohexanone		74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Dibromochloromethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Dibromomethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Dichlorodifluoromethane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Ethyl acetate	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE

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TEL: 618-344-1004

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## LABORATORY RESULTS

Client: A&M Engineering

Client Project: BA Landfill 2028-004

WorkOrder: 10080226

Client Sample ID: C-1

Lab ID: 10080226-015

Collection Date: 8/4/2010 12:30:00 PM

Report Date: 17-Aug-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Ethyl methacrylate	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Ethylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Heptane		148		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Hexachlorobutadiene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Hexachloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Iodomethane	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Isopropylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
m,p-Xylenes	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Methacrylonitrile	NELAP	371		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Methyl Methacrylate	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Methyl tert-butyl ether	NELAP	14.8		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Methylacrylate		74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Methylene chloride	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Naphthalene	NELAP	74.2		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
n-Butylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
n-Hexane		148		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Nitrobenzene	NELAP	742		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
n-Propylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
o-Xylene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Pentachloroethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
p-Isopropyltoluene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Propionitrile	NELAP	371		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
sec-Butylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Styrene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
tert-Butylbenzene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Tetrachloroethene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Tetrahydrofuran	NELAP	371		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Toluene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	29.7		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Trichloroethene	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Trichlorofluoromethane	NELAP	37.1		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Vinyl acetate	NELAP	371		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Vinyl chloride	NELAP	14.8		ND	µg/Kg-dry	1	8/6/2010 3:03:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		104.9	%REC	1	8/6/2010 3:03:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		100.2	%REC	1	8/6/2010 3:03:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		107.7	%REC	1	8/6/2010 3:03:00 PM	RWE

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## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10080226  
**Lab ID:** 10080226-015  
**Report Date:** 17-Aug-10

**Client Project:** BA Landfill 2028-004  
**Client Sample ID:** C-1  
**Collection Date:** 8/4/2010 12:30:00 PM  
**Matrix:** SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		94.3	%REC	1	8/6/2010 3:33:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.050	J	0.018	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		7.48		1	8/6/2010 8:46:00 AM	KNS

### Sample Narrative

SW-846 3050B, 6010B, Metals by ICP

Se - Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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TEL: 618-344-1004  
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## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-016  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-2  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>EPA 600 2-78-054 METHOD 3.2.18.1</u></b>								
Specific Conductance, Solid		1		958	µmhos/cm	1	8/9/2010	NJM
<b><u>EPA SW846 3550C, 5035A, ASTM D2974</u></b>								
Percent Moisture		0.1		69.2	%	1	8/5/2010 2:00:00 PM	MK
<b><u>STANDARD METHODS 18TH ED, 2540 G</u></b>								
Total Solids		0.1		30.8	%	1	8/5/2010 2:00:00 PM	MK
<b><u>SW-846 3050B, 6010B, METALS BY ICP</u></b>								
Antimony	NELAP	5.00		< 5.00	mg/Kg-dry	1	8/8/2010 11:03:41 PM	LAL
Arsenic	NELAP	46.3		48.3	mg/Kg-dry	20	8/11/2010 1:00:57 PM	LAL
Beryllium	NELAP	0.09		5.45	mg/Kg-dry	1	8/10/2010 5:26:11 PM	LAL
Cadmium	NELAP	0.19		3.16	mg/Kg-dry	1	8/12/2010 11:41:24 AM	JMW
Chromium	NELAP	0.93		21.4	mg/Kg-dry	1	8/10/2010 5:26:11 PM	LAL
Copper	NELAP	18.5		21.3	mg/Kg-dry	20	8/11/2010 1:00:57 PM	LAL
Lead	NELAP	18.5		37.1	mg/Kg-dry	5	8/11/2010 12:20:47 PM	LAL
Nickel	NELAP	18.5		401	mg/Kg-dry	20	8/11/2010 1:00:57 PM	LAL
Selenium	NELAP	74.1	J	43	mg/Kg-dry	20	8/11/2010 1:00:57 PM	LAL
Silver	NELAP	0.51		2.06	mg/Kg-dry	1	8/12/2010 11:41:24 AM	JMW
Zinc	NELAP	18.5		906	mg/Kg-dry	20	8/11/2010 1:00:57 PM	LAL
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium 7841	NELAP	0.200		< 0.200	mg/Kg-dry	1	8/12/2010 5:00:48 PM	MEK
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
4,4'-DDD	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
4,4'-DDE	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
4,4'-DDT	NELAP	1290		ND	µg/Kg-dry	250	8/16/2010 4:49:00 AM	HE
Alachlor	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Aldrin	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
alpha-BHC	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
alpha-Chlordane	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
beta-BHC	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Chlordane	NELAP	258		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
delta-BHC	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Dieldrin	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endosulfan I	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endosulfan II	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endosulfan sulfate	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endrin	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endrin aldehyde	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Endrin ketone	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
gamma-BHC	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE

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Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8081A, CHLORINATED PESTICIDES BY GC/ECD</u></b>								
gamma-Chlordane	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Heptachlor	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Heptachlor epoxide	NELAP	129		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Methoxychlor	NELAP	1290		ND	µg/Kg-dry	250	8/16/2010 4:49:00 AM	HE
Toxaphene	NELAP	2320		ND	µg/Kg-dry	25	8/11/2010 5:34:00 AM	HE
Surr: Decachlorobiphenyl		48-149		120.4	%REC	25	8/11/2010 5:34:00 AM	HE
Surr: Tetrachloro-m-xylene		19-145		70.9	%REC	25	8/11/2010 5:34:00 AM	HE
<b><u>SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD</u></b>								
Aroclor 1016	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1221	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1232	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1242	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1248	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1254	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Aroclor 1260	NELAP	116		ND	µg/Kg-dry	1	8/9/2010 8:23:00 PM	HE
Surr: Decachlorobiphenyl		5-156		82.1	%REC	1	8/9/2010 8:23:00 PM	HE
Surr: Tetrachloro-meta-xylene		7.35-123		68.8	%REC	1	8/9/2010 8:23:00 PM	HE
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,2,4-Trichlorobenzene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
1,2-Dichlorobenzene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
1,3-Dichlorobenzene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
1,4-Dichlorobenzene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4,5-Trichlorophenol	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4,6-Trichlorophenol	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4-Dichlorophenol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4-Dimethylphenol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4-Dinitrophenol	NELAP	16.1		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,4-Dinitrotoluene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2,6-Dinitrotoluene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Chloronaphthalene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Chlorophenol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Methoxy-4-methylphenol		10.5		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Methylnaphthalene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Nitroaniline	NELAP	16.1		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
2-Nitrophenol	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
3,3'-Dichlorobenzidine	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
3-Nitroaniline	NELAP	16.1		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4,6-Dinitro-2-methylphenol	NELAP	16.1		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH

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Report Date: 17-Aug-10

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Client Sample ID: C-2  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
4-Bromophenyl phenyl ether	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4-Chloro-3-methylphenol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4-Chloroaniline	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4-Chlorophenyl phenyl ether	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4-Nitroaniline	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
4-Nitrophenol	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Acenaphthene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Acenaphthylene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Aniline	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Anthracene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Azobenzene		5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzidine	NELAP	17.0		see note	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzo(a)anthracene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzo(a)pyrene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzo(b)fluoranthene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzo(g,h,i)perylene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzo(k)fluoranthene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzoic acid	NELAP	24.2		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Benzyl alcohol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Bis(2-chloroethoxy)methane	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Bis(2-chloroethyl)ether	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Bis(2-chloroisopropyl)ether	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Bis(2-ethylhexyl)phthalate	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Butyl benzyl phthalate	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Carbazole		8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Chrysene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Dibenzo(a,h)anthracene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Dibenzofuran	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Diethyl phthalate	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Dimethyl phthalate	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Di-n-butyl phthalate	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Di-n-octyl phthalate	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Fluoranthene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Fluorene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Hexachlorobenzene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Hexachlorobutadiene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Hexachlorocyclopentadiene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Hexachloroethane	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH

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## LABORATORY RESULTS

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Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3550B, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Indeno(1,2,3-cd)pyrene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Isophorone	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
m,p-Cresol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Naphthalene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Nitrobenzene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
N-Nitrosodimethylamine	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
N-Nitroso-di-n-propylamine	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
N-Nitrosodiphenylamine	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
o-Cresol	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Pentachlorophenol	NELAP	32.2		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Phenanthrene	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Phenol	NELAP	5.64		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Pyrene	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Pyridine	NELAP	8.06		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
1,2-Diphenylhydrazine		13.5		ND	mg/Kg-dry	5	8/10/2010 1:20:00 PM	DMH
Surr: 2,4,6-Tribromophenol		32.7-130		80.9	%REC	5	8/10/2010 1:20:00 PM	DMH
Surr: 2-Fluorobiphenyl		34.1-116		81.5	%REC	5	8/10/2010 1:20:00 PM	DMH
Surr: 2-Fluorophenol		30.5-99		81.1	%REC	5	8/10/2010 1:20:00 PM	DMH
Surr: Nitrobenzene-d5		34.1-101		88.0	%REC	5	8/10/2010 1:20:00 PM	DMH
Surr: Phenol-d5		34.9-110		85.7	%REC	5	8/10/2010 1:20:00 PM	DMH
Surr: p-Terphenyl-d14		41.7-124		87.7	%REC	5	8/10/2010 1:20:00 PM	DMH
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
1,1,1,2-Tetrachloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1,1-Trichloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1,2,2-Tetrachloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1,2-Trichloro-1,2,2-trifluoroethane		26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1,2-Trichloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1-Dichloro-2-propanone		26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1-Dichloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1-Dichloroethene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,1-Dichloropropene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2,3-Trichlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2,3-Trichloropropane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2,3-Trimethylbenzene		26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2,4-Trichlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2,4-Trimethylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2-Dibromo-3-chloropropane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2-Dibromoethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE

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1,2-Dichlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2-Dichloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,2-Dichloropropane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,3,5-Trimethylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,3-Dichlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,3-Dichloropropane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1,4-Dichlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
1-Chlorobutane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
2,2-Dichloropropane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
2-Butanone	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
2-Chlorotoluene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
2-Hexanone	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
2-Nitropropane	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
4-Chlorotoluene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
4-Methyl-2-pentanone	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Acetone	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Acrolein	NELAP	538		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Acrylonitrile	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Allyl chloride	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Benzene	NELAP	5.38		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Bromobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Bromochloromethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Bromodichloromethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Bromoform	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Bromomethane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Carbon disulfide	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Carbon tetrachloride	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Chlorobenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Chloroethane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Chloroform	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Chloromethane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
cis-1,2-Dichloroethene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
cis-1,3-Dichloropropene	NELAP	21.5		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Cyclohexanone		538		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Dibromochloromethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Dibromomethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Dichlorodifluoromethane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Ethyl acetate	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-016  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-2  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 5030, 8260B. VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>								
Ethyl ether	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Ethyl methacrylate	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Ethylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Heptane		108		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Hexachlorobutadiene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Hexachloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Iodomethane	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Isopropylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
m,p-Xylenes	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Methacrylonitrile	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Methyl Methacrylate	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Methyl tert-butyl ether	NELAP	10.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Methylacrylate		53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Methylene chloride	NELAP	26.9	J	18	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Naphthalene	NELAP	53.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
n-Butylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
n-Hexane		108		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Nitrobenzene	NELAP	538		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
n-Propylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
o-Xylene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Pentachloroethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
p-Isopropyltoluene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Propionitrile	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
sec-Butylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Styrene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
tert-Butylbenzene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Tetrachloroethene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Tetrahydrofuran	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Toluene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
trans-1,2-Dichloroethene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
trans-1,3-Dichloropropene	NELAP	21.5		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Trichloroethene	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Trichlorofluoromethane	NELAP	26.9		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Vinyl acetate	NELAP	269		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Vinyl chloride	NELAP	10.8		ND	µg/Kg-dry	1	8/6/2010 3:31:00 PM	RWE
Surr: 1,2-Dichloroethane-d4		72.2-131		102.7	%REC	1	8/6/2010 3:31:00 PM	RWE
Surr: 4-Bromofluorobenzene		82.1-116		96.7	%REC	1	8/6/2010 3:31:00 PM	RWE
Surr: Dibromofluoromethane		77.7-120		109.4	%REC	1	8/6/2010 3:31:00 PM	RWE

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10080226  
Lab ID: 10080226-016  
Report Date: 17-Aug-10

Client Project: BA Landfill 2028-004  
Client Sample ID: C-2  
Collection Date: 8/4/2010 12:30:00 PM  
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS</u></b>								
Surr: Toluene-d8		86-116		96.6	%REC	1	8/6/2010 3:31:00 PM	RWE
<b><u>SW-846 7471A</u></b>								
Mercury	NELAP	0.033		< 0.033	mg/Kg-dry	1	8/6/2010	MEK
<b><u>SW-846 9045C</u></b>								
pH (1:1)	NELAP	1.00		7.82		1	8/6/2010 8:46:00 AM	KNS

### Sample Narrative

SW-846 3050B, 6010B, Metals by ICP

Se - Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 3550B, 8081A, Chlorinated Pesticides by GC/ECD

Elevated reporting limit due to sample composition.

SW-846 3550B, 8270C, Semi-Volatile Organic Compounds by GC/MS

Note: Benzidine is currently not reportable while extraction efficiency and recovery are investigated.

LCS was outside upper QC limits. Sample results are below reporting limit - data is reportable.

Elevated reporting limit due to high levels of target and/or non-target analytes.

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

RPD was outside of QC limit on 1,1-Dichloro-2-propanone in the LCSD.

Marginal Exceedance on Trichloroethene in the LCS is verified per NELAC Appendix D 1.1.2

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TEL: 618-344-1004  
FAX: 618-344-1005

**Client:** A&M Engineering  
**Project:** BA Landfill 2028-004  
**Lab Order:** 10080226  
**Report Date:** 17-Aug-10

## RECEIVING CHECK LIST

Carrier: FedEx

Received By: MLD

Completed by: *Marvin L. Darling II*

Reviewed by: *Richard H. Mannz*

On: 05-Aug-10  
Marvin L. Darling

On: 05-Aug-10  
Richard H. Mannz

Pages to follow: Chain of custody  Extra pages included

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Temp °C 5.8
Type of thermal preservation?	None <input type="checkbox"/>	Ice <input checked="" type="checkbox"/>	Blue Ice <input type="checkbox"/>	Dry Ice <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Reported field parameters measured:	Field <input type="checkbox"/>	Lab <input checked="" type="checkbox"/>	NA <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials <input type="checkbox"/>	
Water - TOX containers have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No TOX containers <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		

Any No responses must be detailed below or on the COC.

Additional nitric acid was needed upon arrival at the laboratory for PZ-1 and PZ-4. DB 8/5/10

Samples were filtered and preserved for the dissolved parameters upon arrival at the laboratory.

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Customer Information		Project Information		Analyses/Methods	
PO:		Project Name:	BA Landfill	A. VOCs	K
WO:		Project Number:	2028-004	B. SVOCs	L
Company:	AEM Engineering	Bill To:		C. PCBs, Pesticides	M
Report to:	Abby Lazar	Invoice ATTN:		D. Priority Pollutant Metals	N
Address:	10010 E. 16th Street Tulsa, OK 74128	Address:		E. Dissolved PPH	O
E-mail:	alazar@aemengineering.com	Phone:		F. pH, Conductivity	P
Phone:	918.885.6575	Fax:		G. Nitrates (Nitrite)	Q
Fax:	918.885.6575			H. Phosphorus	R
				I. Other:	
				J. Other:	

No.	Sample Description	Preservation	Date	Time	Type	Matrix	# Containers	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	SS-1		8/14	8:20				V	V	V	V	V	V	V	V								-010
2	SS-2		8/14	9:20				V	V	V	V	V	V	V	V								-011
3	SS-3		8/14	11:20				V	V	V	V	V	V	V	V								-012
4	SS-4		8/14	10:30				V	V	V	V	V	V	V	V								-013
5	DUP		8/14	10:30				V	V	V	V	V	V	V	V								-014
6	C-1		8/14	10:30				V	V	V	V	V	V	V	V								-015
7	C-2		8/14	10:30				V	V	V	V	V	V	V	V								-016
8																							
9																							
10																							

Shipment Method:		Date Due (fax):	
1. Requisitioned by:	Date: 8/14	4. Recalled by:	Date:
Company: AEM	Time: 10:45	Company:	Time:
2. Requisitioned by:	Date: 8/15/10	4. Recalled by:	Date:
Company: Mearns & Darling II (Fuels)	Time: 1100	Company:	Time:
3. Requisitioned by:	Date:	4. Recalled by:	Date:
Company:	Time:	Company:	Time:

Comments:	48hr Hold on Nitrate/Nitrite	Standard turn	Other
		Rush turn	Coder Temp: 5.8°C F66

**TEKLAB, INC.**  
5445 Houseshoe Lake Road  
Collinsville, IL 62234

Project manager: Rich Mannz  
Phone: 877.344.1003 Fax: 818.344.1005

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

November 03, 2010

Abby Lazar  
A&M Engineering  
10010 E. 16th St.  
Tulsa, OK 74128  
TEL: (918) 665-6575  
FAX: (918) 665-6576



**RE:** 2028-004

**WorkOrder:** 10110003

Dear Abby Lazar:

TEKLAB, INC received 7 samples on 10/30/2010 10:10:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Richard H. Mannz  
Project Manager  
(618)344-1004 ex 38

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

**Client:** A&M Engineering

**Project:** 2028-004

**LabOrder:** 10110003

**Report Date:** 03-Nov-10

## CASE NARRATIVE

**Cooler Receipt Temp:** 1.6 °C

**State accreditations:**

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0

### Qualifiers

<b>DF</b> - Dilution Factor	<b>B</b> - Analyte detected in the associated Method Blank	<b>C</b> - Client requested RL below PQL
<b>RL</b> - Reporting Limit	<b>J</b> - Analyte detected below reporting limits	<b>D</b> - Diluted out of sample
<b>ND</b> - Not Detected at the Reporting Limit	<b>R</b> - RPD outside accepted recovery limits	<b>E</b> - Value above quantitation range
<b>Surr</b> - Surrogate Standard added by lab	<b>S</b> - Spike Recovery outside accepted recovery limits	<b>H</b> - Holding time exceeded
<b>TNTC</b> - Too numerous to count (> 200 CFU)	<b>X</b> - Value exceeds Maximum Contaminant Level	<b>MI</b> - Matrix interference
<b>Q</b> - QC criteria failed or noncompliant CCV	<b>#</b> - Unknown hydrocarbon	<b>DNI</b> - Did not ignite
<b>NELAP</b> - IL ELAP and NELAP Accredited Field of Testing	<b>IDPH</b> - IL Dept. of Public Health	

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10110003  
**Lab ID:** 10110003-001  
**Report Date:** 03-Nov-10

**Client Project:** 2028-004  
**Client Sample ID:** PZ01  
**Collection Date:** 10/28/2010 1:56:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 9:46:26 AM	MEK

### Sample Narrative

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10110003  
**Lab ID:** 10110003-002  
**Report Date:** 03-Nov-10

**Client Project:** 2028-004  
**Client Sample ID:** PZ02  
**Collection Date:** 10/28/2010 12:00:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 9:49:42 AM	MEK

### Sample Narrative

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10110003  
Lab ID: 10110003-003  
Report Date: 03-Nov-10

Client Project: 2028-004  
Client Sample ID: PZ03  
Collection Date: 10/28/2010 10:25:00 AM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 9:52:56 AM	MEK

### Sample Narrative

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10110003  
Lab ID: 10110003-004  
Report Date: 03-Nov-10

Client Project: 2028-004  
Client Sample ID: PZ04  
Collection Date: 10/28/2010 9:20:00 AM  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 10:22:42 AM	MEK

Sample Narrative

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TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10110003  
**Lab ID:** 10110003-005  
**Report Date:** 03-Nov-10

**Client Project:** 2028-004  
**Client Sample ID:** CW01  
**Collection Date:** 10/28/2010 3:00:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 10:06:10 AM	MEK

### Sample Narrative

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

## LABORATORY RESULTS

**Client:** A&M Engineering  
**WorkOrder:** 10110003  
**Lab ID:** 10110003-006  
**Report Date:** 03-Nov-10

**Client Project:** 2028-004  
**Client Sample ID:** CW02  
**Collection Date:** 10/28/2010 2:45:00 PM  
**Matrix:** GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 10:16:04 AM	MEK

### Sample Narrative

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering  
WorkOrder: 10110003  
Lab ID: 10110003-007  
Report Date: 03-Nov-10

Client Project: 2028-004  
Client Sample ID: DUP  
Collection Date: 10/28/2010  
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3020A, METALS BY GFAA (TOTAL)</b>								
Antimony	7041	NELAP	0.0050	< 0.0050	mg/L	1	11/3/2010 10:19:22 AM	MEK

Sample Narrative

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TEL: 618-344-1004

FAX: 618-344-1005

**Client:** A&M Engineering

**Project:** 2028-004

**Lab Order:** 10110003

**Report Date:** 03-Nov-10

## RECEIVING CHECK LIST

Carrier: FedEx

Received By: DB

Completed by:

On:  
01-Nov-10

*Timothy W. Mathis*  
Timothy W. Mathis

Reviewed by:

On:  
01-Nov-10

*Elizabeth A. Hurley*  
Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Temp °C 1.6
Type of thermal preservation?	None <input type="checkbox"/>	Ice <input checked="" type="checkbox"/>	Blue Ice <input type="checkbox"/>	Dry Ice <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Reported field parameters measured:	Field <input type="checkbox"/>	Lab <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
<div style="border: 1px solid black; padding: 2px;"><i>When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.</i></div>				
Water - vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials <input checked="" type="checkbox"/>	
Water - TOX containers have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No TOX containers <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. DB 10/30/10

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March 13, 2017  
BROKEN ARROW  
PLAN DEVELOPMENT



# CHAIN OF CUSTODY

pg.      of      Work Order # 1D11D003

**TEKLAB, INC.** 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: ADM ENGINEERING  
 Address: 10010 E 10<sup>th</sup> ST  
 City/State/Zip: TULSA, OK 74105  
 Contact: ABBY LAZAR Phone: 918-665-6575  
 E-Mail: alazare@admengineering.com Fax: 918-665-6576

\* Are these samples known to be involved in litigation? If yes, a surcharge will apply.  Yes  No  
 • Are there any samples known to be hazardous?  Yes  No  
 • Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section.  Yes  No

Samples on:  Ice  Blue Ice  No Ice  
 Preserved in:  Lab  Field **FOR LAB USE ONLY**  
 Lab Notes: Consistency seen in subject 175 9/30/10

Comments:  
**\* DETECTION LIMIT NEEDS TO BE 0.006 mg/L or LESS!**

Project Name / Number	Sample Collector's Name	Billing Instructions	Date/Time Sampled	# and Type of Containers							MATRIX					Date / Time	
				UNPRS	HNO <sub>3</sub>	NaOH	H <sub>2</sub> SO <sub>4</sub>	HCL	MeOH	NaHSO <sub>4</sub>	Other	Water	Drinking Water	Soil	Sludge		Sp. Waste
2008-004	ABBY LAZAR		10/28/10 1350	X							X						
	PZ-1		1200	X							X						
	PZ-2		1025	X							X						
	PZ-3		920	X							X						
	PZ-4		1500	X							X						
	CW-1		1445	X							X						
	CW-2			X							X						
	DUP			X							X						

Relinquished By: [Signature] Date / Time: 10/29/2010 @ 1030am  
 Received By: [Signature] Date / Time: 10/30/10 1010

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 BROKEN ARROW  
 PLAN DEVELOPMENT

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW - LAB PINK - SAMPLER'S COPY

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

November 18, 2010

Abby Lazar  
A&M Engineering  
10010 E. 16th St.  
Tulsa, OK 74128  
TEL: (918) 665-6575  
FAX: (918) 665-6576



NELAP Accredited #100226

**RE:** 2028-004

**WorkOrder:** 10110538

Dear Abby Lazar:

TEKLAB, INC received 2 samples on 11/11/2010 11:25:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Richard H. Mannz  
Project Manager  
(618)344-1004 ex 38



ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

**Client:** A&M Engineering

**Project:** 2028-004

**LabOrder:** 10110538

**Report Date:** 18-Nov-10

## CASE NARRATIVE

**Cooler Receipt Temp:** 3.8 °C

**State accreditations:**

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0 | LA: NELAP #166493

### Qualifiers

<b>DF</b> - Dilution Factor	<b>B</b> - Analyte detected in the associated Method Blank	<b>C</b> - Client requested RL below PQL
<b>RL</b> - Reporting Limit	<b>J</b> - Analyte detected below reporting limits	<b>D</b> - Diluted out of sample
<b>ND</b> - Not Detected at the Reporting Limit	<b>R</b> - RPD outside accepted recovery limits	<b>E</b> - Value above quantitation range
<b>Surr</b> - Surrogate Standard added by lab	<b>S</b> - Spike Recovery outside accepted recovery limits	<b>H</b> - Holding time exceeded
<b>TNTC</b> - Too numerous to count (> 200 CFU)	<b>X</b> - Value exceeds Maximum Contaminant Level	<b>MI</b> - Matrix interference
<b>Q</b> - QC criteria failed or noncompliant CCV	<b>#</b> - Unknown hydrocarbon	<b>DNI</b> - Did not ignite
<b>NELAP</b> - IL, ELAP and NELAP Accredited Field of Testing	<b>IDPH</b> - IL Dept. of Public Health	

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: 2028-004

WorkOrder: 10110538

Client Sample ID: CS-1

Lab ID: 10110538-001

Collection Date: 11/10/2010 12:35:00 PM

Report Date: 18-Nov-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b>SW-846 3050B, METALS BY GFAA</b>								
Thallium 7841	NELAP	0.137	J	0.099	mg/Kg-dry	1	11/16/2010 1:02:32 PM	MEK

### Sample Narrative

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ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

## LABORATORY RESULTS

Client: A&M Engineering

Client Project: 2028-004

WorkOrder: 10110538

Client Sample ID: CS-2

Lab ID: 10110538-002

Collection Date: 11/10/2010 1:00:00 PM

Report Date: 18-Nov-10

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<b><u>SW-846 3050B, METALS BY GFAA</u></b>								
Thallium	7841	NELAP	0.132	J	0.099	mg/Kg-dry	1	11/16/2010 1:05:54 PM MEK

### Sample Narrative

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March 13, 2017  
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PLAN DEVELOPMENT

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004  
FAX: 618-344-1005

**Client:** A&M Engineering  
**Project:** 2028-004  
**Lab Order:** 10110538  
**Report Date:** 18-Nov-10

## RECEIVING CHECK LIST

Carrier: FedEx

Received By: DB

Completed by:

On:

11-Nov-10

*Timothy W. Mathis*  
Timothy W. Mathis

Reviewed by:

On:

11-Nov-10

*Elizabeth A. Hurley*  
Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Temp °C 3.8
Type of thermal preservation?	None <input type="checkbox"/>	Ice <input checked="" type="checkbox"/>	Blue Ice <input type="checkbox"/>	Dry Ice <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
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Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. DB 11/11/10

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PLAN DEVELOPMENT



# CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 1010538

445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (318) 341-1005

LINEARING  
L' + ST  
OK 74128  
 Phone: 918 665 6575  
 Fax: 918 665 6576

Samples on:  Ice  Blue Ice  No Ice 3-8 °C  
 Preserved in:  Lab  Field **FOR LAB USE ONLY**  
 Lab Notes: Custody seal intact on cooler DB 11/11/10

Comments:  
**\* REPORTING LIMIT NEEDS TO BE UNDER 0.14 mg/kg**

litigation? If yes, a surcharge will apply.  Yes  No  
 Yes  No  
 met on the requested analysis? If yes, please provide

Billing Instructions	Sample Collector's Name <u>ABBY LAZAR</u>	# and Type of Containers						MATRIX					INDICATE ANALYSIS REQUESTED																												
		UNPRES	HNO <sub>3</sub>	NaOH	H <sub>2</sub> SO <sub>4</sub>	HCL	MeOH	NaHSO <sub>4</sub>	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	THALLIUM																										
Date/Time Sampled																																									
<u>11/10/10 1235</u>											X				X																										
<u>11/10/10 1300</u>											X				X																										

Date / Time 11/10/10 1505 Received By [Signature] Fedex Date / Time 11/11/10 1925

half of client acknowledges that he/she has read and understands the terms and side, and that he/she has the authority to sign on behalf of client.

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**RECEIVED**  
 March 13, 2017  
 BROKEN ARROW  
 PLAN DEVELOPMENT