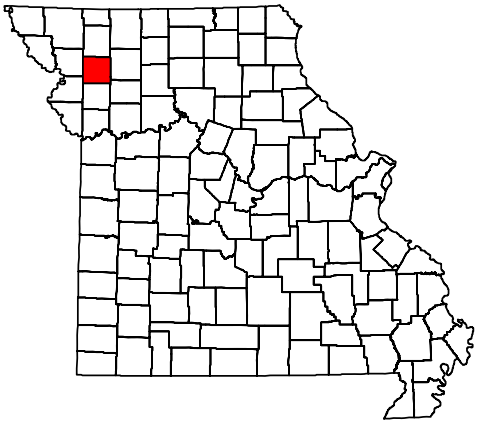
PRE-CERCLIS SITE SCREENING REPORT

Old Grindstone Quarry Site
Dekalb County, Missouri

July 29, 2009



Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

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I. PRE-CERCLIS SITE SCREENING NARRATIVE REPORT

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OLD GRINDSTONE QUARRY SITE
Pre-CERCLIS Site Screening Narrative Report

A. Introduction

The Missouri Department of Natural Resources (DNR), through a Cooperative Agreement (CA V997381-06-0) with the U.S. Environmental Protection Agency (EPA), conducted a Pre-CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) Site Screening (SS) at the Old Grindstone Quarry site in Dekalb County, Missouri. The purpose of this investigation was to determine whether there has been a release of a hazardous substance into the environment, or a substantial threat of such a release, which may present a danger to human health or the environment. If such a release has occurred, the site may be eligible for entry onto CERCLIS, EPA's inventory of potential hazardous substance sites that are evaluated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (References 1 and 2).

The Old Grindstone Quarry site is the location of an abandoned quarry where wasterock/slag from Rockwool Industries, a former fiber insulation manufacturing company, was dumped. The facility may have used lead slag for a short period of time when it was in operation but primarily used steel slag which contains iron which is not a toxic heavy metal. In May 2008, DNR received complaints from a Cameron resident of suspected abnormally high rates of brain tumors in the area. In response to questions raised about the Rockwool site as a source of contamination, it was decided that the DNR would conduct in-depth sampling in and around the former facility site. The SS investigation of Grindstone Quarry was initiated simultaneously with the Preliminary Assessment/Site Inspection/Removal Site Evaluation (PA/SI/RSE) investigation of Rockwool Industries on June 4, 2008.

The scope of this SS investigation included a review of file information, sampling of environmental media, and collection of additional, non-sampling information. A site reconnaissance was conducted on July 14, 2008, and sampling was conducted on July 15, 2008, January 7, 2009, and March 5, 2009.

B. Site Description

The Old Grindstone Quarry site is located about 500 feet northeast of intersection of US Highway 36 and Grindstone Creek in Dekalb County, Missouri. The quarry is located approximately four miles northwest of the Rockwool Industries site in Cameron, Missouri. Figure 1 in Section III provides a site location map. The site is in the S ½ of the NW ¼ of Section 18, Township 57 North, Range 30 West. Geographic coordinates of the site as measured with the Trimble Geoexplorer XT global positioning System (GPS) unit are North America Datum 1983 15N Northing 4401504.758 m, Easting 387393.588 m (Reference 3). Directions to the site are as follows: From Cameron travel approximately four miles west on Highway 36 to Grindstone Creek. Access the site via Grindstone Creek on foot or with an all-terrain vehicle (ATV) at an ATV crossing from the Highway 36 right-of-way.

The site is an area of approximately two acres. The quarry is currently abandoned and used for ATV riding. Wasterock and slag is spread out in the area though two waste piles were distinguished. The quarry site is bordered on the south side by Highway 36, just west of the City of Cameron in Dekalb County. Grindstone Creek runs from south to north under Highway 36 and borders the west side of the site. DNR staff noted that there was no direct access route to the quarry, except by walking or all-terrain vehicle (ATV). The primary land uses in the surrounding area are agricultural fields and mining (Site Screening Report in Section V).

C. Site History/Ownership Information

In 1989, the EPA received an anonymous complaint concerning drums of hazardous waste allegedly buried on the former Rockwool Industries site, and that some hazardous materials were transported from the site and dumped in an abandoned limestone quarry. The EPA conducted a Complaint Investigation in February and September of 1990 and April of 1991. In May 2008, DNR received complaints from a Cameron resident of suspected abnormally high rates of brain tumors in the area. In response to questions raised about the Rockwool Industries site as a source of contamination, it was decided that the DNR would conduct in-depth sampling in and around the former facility site.

The Preliminary Assessment/Site Inspection/Removal Site Evaluation investigation of the Rockwool site and Pre-CERCLIS Site Screening (SS) investigation of the quarry were conducted simultaneously. Both investigations were initiated on June 4, 2008. Through research and interviews DNR determined that wasterock from Rockwool Industries was deposited in the old Grindstone Quarry. Quarry operations ceased several decades ago and the quarry property is now owned by the City of Cameron. Sometime after quarry operations ceased, the city allowed Rockwool Industries to dump processed waste slag on the quarry property. The quarry is currently used for ATV riding.

D. Site Reconnaissance/Sampling

On July 14, 2008 DNR staff from the Hazardous Waste Program (HWP) and Environmental Services Program (ESP) conducted a site reconnaissance of the Grindstone Quarry. The City of Cameron granted access. Wasterock/slag, surface soil, surface water and sediment samples were collected on July 15, 2008. Follow-up surface water and sediment sampling of Grindstone creek were conducted on January 7, 2009, and March 5, 2009. The site reconnaissance and sampling events are documented in Section V.

On July 15, 2008 DNR staff collected two wasterock and slag samples from wastepiles; two surface soil samples from the main ATV trail running through the site; and one surface water

sample and its duplicate, and one sediment sample and its duplicate from Grindstone Creek where the ATV trail crosses the creek. The Grindstone Creek sampling location is the probable point of entry (PPE) where surface water draining the site would be expected to enter permanently flowing water. The sampling locations are indicated on a sampling location map (Figure 2) in Section III. Wasterock samples were submitted to the DNR environmental laboratory for analysis of the 13 priority pollutant metals and manganese (Mn), molybdenum (Mo), vanadium (V), calcium (Ca), and magnesium (Mg). Soil, sediment, and surface water samples were submitted for laboratory analysis of the 13 priority pollutant metals, Mn, Mo, V, Ca, and Mg, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). Toxicity characteristic leaching procedure (TCLP) analyses were also requested for the soil samples if warranted based on total concentrations. The following samples were split with EPA: one wasterock, one surface water, one duplicate surface water, one sediment, and one duplicate sediment.

Based on relatively high concentrations of copper and zinc in the sediment sample results, ESP staff returned to the site for further sediment and surface water sampling of Grindstone Creek. On January 7, 2009 and March 5, 2009 ESP staff collected surface water and sediment samples from four locations twenty feet apart along the creek channel ranging from twenty feet upstream of the PPE (where ATV trail crosses the creek) to forty feet downstream of the PPE. These follow-up samples were submitted to the department environmental laboratory for analysis of total and dissolved arsenic, copper and zinc.

E. Analytical Results

Analytical results for samples collected as part of the Old Grindstone Quarry Site SS investigation are provided in Section V, and summarized in the Tables of Section IV. Sample results are compared to health and environment-based benchmarks from four primary sources: the EPA Region 6 Screening Levels, the Missouri Water Quality Standards (WQS), U. S. Geological Survey Consensus-Based Sediment Quality Guidelines, and the EPA EcoTox Thresholds.

The identity and concentrations of metals in soil were similar to the identity and concentrations of metals measured in slag/wasterock. The elevated concentrations of metals in soil at the site are inferred to be from the slag/wasterock. Barium, cadmium, calcium, copper, manganese, silver, thallium and zinc were measured in surface soils and wasterock at concentrations exceeding three times background. However, none of the metals detected in soil and wasterock exceed EPA Screening Levels for industrial use. Copper was measured in soil at 3,530 mg/kg, and in wasterock at 3,630 mg/kg. The EPA screening level for copper in soil for industrial use is 42,000 mg/kg. Manganese was measured in soil at 4,650 mg/kg, and in wasterock at 6,600 mg/kg. The EPA screening level for manganese in soil for industrial use is 35,000 mg/kg. Arsenic was measured in soil and wasterock at 15.1 mg/kg and 12.4 mg/kg respectively exceeding the EPA screening level of 1.8 mg/kg but below three times background. The

concentration of arsenic in background soil from the Rockwool Industries site approximately four miles away is 7.04 mg/kg (Reference 4). The average arsenic concentration in Dekalb County agricultural soils is 11.33 mg/kg (References 5).

Cadmium, copper and zinc were measured in sediment samples collected on July 15, 2008 at concentrations exceeding U.S. Geological Survey Threshold Effects Concentrations and EPA Ecological Toxicity Screening Levels. Further sampling was conducted to determine if the site poses risks to sensitive environments and/or wetlands in the area (Reference 6). Subsequent sampling and analysis of sediment for arsenic, copper and zinc six and eight months later reported concentrations below U.S. Geological Survey Threshold Effects Concentrations and EPA Ecological Toxicity Screening Levels. The initial relatively high concentrations of metals in surface water and sediment appear to be anomalous (see comparison charts in Section IV). These anomalous high concentrations of metals could be due to a number of reasons including pieces of wasterock collected in sample volumes, high number and volume of rain events before the sample date (Reference 7), etc. Metals detected in surface water were at concentrations below applicable health and environmental benchmarks where available for all three sampling events. Manganese was measured in surface water at concentrations exceeding the WQS benchmark for drinking water and groundwater, however the benchmark is not applicable as surface water is not used for drinking at this location. No VOCs or SVOCs were detected in surface water and sediment samples.

Duplicate surface water and sediment samples were collected at SS-01 (the creek crossing) and twenty feet downstream of SS-01. Tables 4 to 7 of Section IV summarize the overall sampling precision based on these quality control samples. The results of the duplicate water samples and duplicate sediment samples were in relatively close agreement for all metals analyzed. The relative percent difference (RPD) between the duplicate sample results were mostly within the control limits established in the Quality Assurance Project Plan (Reference 8). In two instances (Tables 5 and 7) the RPD exceeded the control limits, but the analytical results were significantly lower than screening levels or three times background such that there was no need to resample.

F. Conclusions

There is a documented release of hazardous substances at Old Grindstone Quarry site. Cadmium, copper, manganese, silver, and thallium were measured in soil samples at concentrations exceeding three times background. Barium, cadmium, copper, manganese, silver, and thallium were measured in wasterock/slag samples at concentrations exceeding three times soil background. The elevated concentrations of metals in soil at the site are inferred to be from the breakdown of slag/wasterock. However, none of the metals, except arsenic, detected in soil and wasterock exceed EPA Screening Levels for industrial use. The concentrations of arsenic in the soil and wasterock do not significantly exceed its background concentration. Cadmium, copper and zinc were measured in sediment samples collected on July 15, 2008 at concentrations exceeding U.S. Geological Survey Threshold Effects Concentrations and EPA Ecological

Toxicity Screening Levels. Subsequent sampling and analysis of sediment for arsenic, copper and zinc six and eight months later reported concentrations below these screening levels. Metals detected in surface water were at concentrations below health and environmental benchmarks. Groundwater was not assessed as part of the SS investigation. Drinking water in the site area is obtained primarily from surface water via public water supply, and the nearest drinking water well is about two miles away.

Based on the findings of the Pre-CERCLIS SS Investigation, the site is not recommended for entry onto CERCLIS or further investigation under CERCLA at this time.

REFERENCES

1 National Archives and Records Administration, Office of the Federal Register. U.S. Environmental Protection Agency Hazard Ranking System, 40 CFR Part 300, Appendix A, 55 FR 51583, December 14, 1990.

2 U.S. Environmental Protection Agency, June 1996 Superfund Chemical Data Matrix (SCDM).

3 Missouri Department of Natural Resources, Point Locational Data Collection Sheet: Old Grindstone Quarry. 2 pages.

4 Missouri Department of Natural Resources. Preliminary Assessment/Site Inspection/Removal Site Evaluation Report: Rockwool Industries Site, Clinton County, Missouri. December 31, 2008. 16 pages with attachments.

5 Tidball, Ronald, R. U. S. Department of the Interior, Geological Survey. Geography of Soil Geochemistry of Missouri Agricultural Soils; Geochemical Classification by Factor. Analysis of Missouri Soils. 1985

6 Missouri Department of Conservation. Site Project Query for UTM East (387219.424) and UTM North (4401506.754) by Chinwe Ndubuka. April 24, 2009. 2 pages with attachments.

7 Weather underground, Inc. Detailed History and Climate from June 1, 2008 to March 31, 2009 in St. Joseph, Missouri, (Weather station – Rosecrans Memorial Airport KSTJ). www.weatherunderground.com

8 Missouri Department of Natural Resources, Hazardous Waste Program, Superfund Section. Quality Assurance Project Plan for Pre-Remedial/Pre-Removal and Target Brownfields Site Assessments, Revision 6. December 7, 2007. 38 pages with appendices.

9 Drinking Water Watch. Drinking Water Branch, Missouri Department of Natural Resources. http://www.dnr.mo.gov/env/wpp/dww/index.html

10 U.S. Census Bureau, 2002 Census Data, http://www.census.gov/main/www/cen2000.html

II. PRE-CERCLIS SITE SCREENING FORM

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MISSOURI SUPERFUND PRE-CERCLIS SITE SCREENING FORM

I. SITE NAME AND LOCATION

Name: Old Grindstone Quarry		**Alias:**	
Address or other Location Identifier: About 500 feet northeast of intersection of US Highway 36 and Grindstone Creek.			
City:	**County:** Dekalb	**State:** MO	**Zip:**
Directions to Site: From Cameron, travel approximately four miles west on Highway 36. Access the site via Grindstone Creek on foot or with an all-terrain vehicle (ATV) at an ATV crossing from the Highway 36 right-of-way. **Map Attached:** X			

II. SITE REFERRAL INFORMATION

Referred By: Cameron Resident		**Date of Referral:** May 2008
Reason for Referral (if applicable): The site contains wasterock and slag transported from Rockwool Industries site, in Cameron, MO. A Preliminary Assessment/Site Inspection/Removal Site Evaluation was conducted at Rockwool Industries site in 2008.		
Mailing Address: N/A		
City:	**State:**	**Zip:**
Telephone:	**Fax:**	

III. SITE INFORMATION

Type of Facility: Former quarry.	**Type of Ownership:** City	
Owner Name: City of Cameron		
Mailing Address: 205 North Main Street		
City: Cameron	**State:** MO	**Zip:** 64429
Telephone: (816) 632-2177	**Fax:** (816) 632-1067	
Operator Name (if different from owner):		
Mailing Address:		
City:	**State:**	**Zip:**
Telephone:	**Fax:**	
Current Site Status:	**Years of Operation:**	

Operational History:

In 1989 the U. S. Environmental Protection Agency (EPA) received an anonymous complaint concerning drums of hazardous waste allegedly buried on the former Rockwool Industries site, and that some hazardous materials were transported from the site and dumped in an abandoned limestone quarry. In May 2008, DNR received complaints from a Cameron resident of suspected abnormally high rates of brain tumors in the area. In response to questions raised about the Rockwool Industries site as a source of contamination, it was decided that the DNR would conduct in-depth sampling in and around the former Rockwool facility site and the quarry. Cameron residents identified the referenced quarry as the old Grindstone quarry. The old Grindstone quarry is currently owned by the city of Cameron and used as recreational ATV terrain.

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IV. CERCLA APPLICABILITY [40 CFR 300.410(E)]

1. Is there a release as defined by the NCP? Yes X No ___

Explain:

Cadmium, copper, manganese, silver, calcium and thallium were measured in soil samples at concentrations exceeding three times background. These metals were also found in wasterock/slag at the site at concentrations exceeding three times their concentrations in background soil samples. Cadmium was measured in soil at 5.35 mg/kg. The average concentration of cadmium in background was 1.51mg/kg. Copper was measured in soil at 3,530 mg/kg exceeding three times the background concentration of 725.9 mg/kg. Note that soil background concentrations are published results from a CERCLA site (Rockwool Industries) approximately four miles away.

(A RELEASE Is Defined As Any Spilling, Leaking, Pumping, Pouring, Emitting, Emptying, Discharging, Injecting, Escaping, Leaching, Dumping, Or Disposing Into The Environment (Including The Abandonment Of Barrels, Containers, And Other Closed Receptacles Containing Any Hazardous Substances Or Pollutant Or Contaminant), But Excludes: Workplace Exposures; Engine Exhaust Emissions; Nuclear Releases Otherwise Regulated; And The Normal Application Of Fertilizer. For Purposes Of The NCP, Release Also Means Threat Of Release.)

2. Is the source a facility or vessel as defined by the NCP? Yes X No ___

Explain:

The source is a facility in that it is a site or area where a hazardous substance has been deposited or otherwise come to be located.

(A FACILITY Is Defined As Any Building, Structure, Installation, Equipment, Pipe Or Pipeline (Including Any Pipe Into A Sewer Or POTW), Well, Pit, Pond, Lagoon, Impoundment, Ditch, Landfill, Storage Container, Motor Vehicle, Rolling Stock, Or Aircraft Or Any Site Or Area, Where A Hazardous Substance Has Been Deposited, Stored, Disposed Of, Or Placed, Or Otherwise Come To Be Located; But Does Not Include Any Consumer Product In Consumer Use Or Any Vessel. A VESSEL Is Defined As Any Description Of Watercraft Or Other Artificial Contrivance Used, Or Capable Of Being Used, As A Means Of Transportation On Water Other Than A Public Vessel.)

3. Does the release involve either a hazardous substance, pollutant or contaminant as defined by the NCP? Yes X No ___

Explain:

Cadmium, copper, silver, thallium and zinc are listed hazardous substances.

(A HAZARDOUS SUBSTANCE Means Any Substance, Element, Compound, Mixture, Solution, Hazardous Waste, Toxic Pollutant, Hazardous Air Pollutant, Or Imminently Hazardous Chemical Substance Or Mixture Designated Pursuant To The CWA, CERCLA, SDWA, CAA Or TSCA. The Term Does Not Include Petroleum Products, Natural Gas, Natural Gas Liquids, Liquefied Natural Gas, Synthetic Gas Or Mixtures Of Natural And Synthetic Gas. The Definition Of POLLUTANT Or CONTAMINANT Includes, But Is Not Limited To, Any Element, Substance, Compound, Or Mixture, Including Disease-Causing Agents, Which After Release Into The Environment And Upon Exposure, Ingestion, Inhalation, Or Assimilation Into Any Organism, Either Directly From The Environment Or Indirectly By Ingestion Through Food Chains, Will Or May Reasonably Be Anticipated To Cause Death, Disease, Behavioral Abnormalities, Cancer, Genetic Mutation, Physiological Malfunctions Or Physical Deformations, In Such Organisms Or Their Offspring. The Term Does Not Include Petroleum Products, Natural Gas, Natural Gas Liquids, Liquefied Natural Gas, Synthetic Gas Or Mixtures Of Natural And Synthetic Gas.)

4. Is the release subject to the limitations on response? Yes ___ No X

Explain:

No limitations. The identity and concentrations of metals in soil are similar to the identity and concentrations of metals measured in slag/wasterock. The elevated concentrations of metals in soil at the site are inferred to be from the slag/wasterock.

(The LIMITATIONS ON RESPONSE Provisions Of The NCP (40 CFR 300.400(B) States That Removals Shall Not Be Undertaken In Response To A Release: Of A Naturally Occurring Substance In Its Unaltered Or Natural Form; From Products That Are A Part Of The Structure Of, And Result In Exposure Within, Residential Buildings Or Business Or Community Structures; Or Into Public Or Private Drinking Water Supplies Due To Deterioration Of The System Through Ordinary Use.)

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5. Is there a potential for other federal or state response mechanisms? **Yes ___** **No _X_**

If so, identify the appropriate program:

___ RCRA **___ NRC** **___ FIFRA** **___ UST**

___ State VCP **___ Other State Deferral** **___ Other Federal (_____)**

Explain:

V. PATHWAY EVALUATION

1. Source and Waste Characteristics

Source Types and Locations: Two piles of wasterock/slag were identified at the site.

Size of Sources: The size and volume of wasterock/slag at the site was not determined.

Waste Types and Quantities: Wasterock/slag. Quantity not determined.

Hazardous Substances Present: Metals antimony, arsenic, cadmium, chromium, copper, lead, nickel, silver, thallium, zinc were measured in wasterock/slag samples.

2. Groundwater Use and Characteristics Within 4 Miles

General Hydrology: The site is underlain by glacial till. Pennsylvanian-age shale, limestone and sandstone beneath the site constitute an unnamed aquitard. There are numerous thin limestone and sandstone water bearing units within the confining system. Beneath this confining unit lie the Mississippi aquifer, Upper confining bed, and Cambrian-Ordovician aquifer. All wells within four miles of the site draw water from the glacial till. The deepest wells are the Osborn city wells which are 86 feet deep and completed in glacial till.

Are Karst Features Present on or Near Site: No. No sinkholes, caves or springs were identified near the site in the DNR geographic information system (GIS) database.

Depth to Shallowest Groundwater: Between 20 ft. - 30 ft.

Groundwater Wells Within 4 Miles:

Private Wells: 2 (drinking), 3 (monitoring)

Municipal Wells: Osborn City wells #1 and #2.

Industrial/Agricultural Wells: 1

Locations and Populations Served (if known): Osborn City wells #1 and #2 serve a residential population of 480 (DNR Public Drinking Water Watch).

Distance to Nearest Drinking Water Well: Two miles northwest of site.

3. Surface Water Use and Characteristics

Is Site in a Flood Plain: No **If Yes,** **___ 10 year** **___ 100 year** **___ 500 year**

Distance to Nearest Surface Water: Surface water from Old Grindstone Quarry drains into Grindstone Creek approximately 300 feet to the west. Grindstone Creek runs through Grindstone reservoir and continues on as Grindstone Creek through the 15 miles target distance limit.
(If within 2 miles, fill out surface water pathway)

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List Surface Water Bodies Within 15 Downstream Miles:
Grindstone Creek. Grindstone reservoir.

Drinking Water Intakes Within 15 Downstream Miles: Grindstone Reservoir Intake.
Locations and Populations Served (if known): UTM Zone 15N, Easting 389195.3529 m; Northing 4403383.3411 m. Water from the Grindstone Reservoir is combined with water from the Cameron Reservoir as the primary source of water for the Cameron Water System (MO1010131), which serves a reported residential population of approximately 9,788 (DNR Drinking Water Watch).

Fisheries, Sensitive Environments or Wetlands Within 15 Downstream Miles: Grindstone Creek is listed in the U.S. Fish and Wildlife Service' inventory of wetlands and deep water habitats.

Significant Features (if known or applicable): Grindstone Creek is listed as a surface water body protected for aquatic life. The results of a Missouri Department of Conservation (MDC) query indicate that state endangered species, other species or natural communities of conservation concern (e.g., prairie, glade, fen) are known to occur on or near the site and may be impacted by project construction activities. The project site is near a state-designated "spawning stream," where fish spawn (lay and fertilize their eggs) during specific times of the year. Indiana bats (*myotis sodalis*, Federally endangered, State endangered) roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. The MDC query results indicate that no federally-listed threatened or endangered species (including those species proposed for listing) or critical habitat (designated or proposed) are known to occur on or near the site.

4. Soil and Air Exposure Characteristics

Number of People Living Within 200 Feet of Site: None

Number of Schools or Daycares Within 200 Feet of Site: None

General Population Within 4 Miles (rural, small city, heavy urban area, etc...): Two small city municipalities (Osborn City and City of Cameron) exist within four miles of the site. Osborn City has a population of approximately 455. A portion of the City of Cameron lies within four miles of the site. The total population of Cameron is approximately 8312. A total population of approximately 2966 live within four miles of the site.

Number of Workers On-Site: None

Any terrestrial sensitive environments and/or wetlands present on-site?	**Yes** ___	**No** X
Is site access restricted?	**Yes** ___	**No** X

VI. SUPERFUND SITE SCREENING CRITERIA [40 CFR 300.410(e)]

1. Does the quantity or concentration of hazardous substances warrant response?	**Yes** ___	**No** X

Explain:
Barium, cadmium, calcium, manganese, silver, thallium and zinc were measured in surface soils and wasterock at concentrations exceeding three times background. However, none of the metals detected in soil and wasterock exceed EPA Screening Levels for industrial use. Copper was measured in soil at 3,530 mg/kg, and in wasterock at 3,630 mg/kg. The EPA screening level for copper in soil is 42,000 mg/kg. Manganese was measured in soil at 4,650 mg/kg, and in wasterock at 6,600 mg/kg. The EPA screening level for manganese in soil is 35,000 mg/kg. Arsenic

was measured in soil and wasterock at 15.1 mg/kg and 12.4 mg/kg respectively exceeding the EPA screening level of 1.8 mg/kg but below three times background. The concentration of arsenic in background soil from a CERCLA site approximately four miles away is 7.04 mg/kg. The average arsenic concentration in Dekalb County agricultural soils is 11.33 mg/kg.

Cadmium, copper and zinc were initially measured in sediment samples at concentrations exceeding U.S. Geological Survey Threshold Effects Concentrations and EPA Ecological Toxicity Screening Levels. Subsequent sampling and analysis of sediment for arsenic, copper and zinc six and eight months later reported concentrations below U.S. Geological Survey Threshold Effects Concentrations and EPA Ecological Toxicity Screening Levels. Metals detected in surface water were at concentrations below health and environmental benchmarks where available. Manganese was measured in surface water at concentrations exceeding the Missouri Water Quality Standards benchmark for drinking water and groundwater, however the benchmark is not applicable as the Grindstone Creek surface water is not used for drinking at this location. No VOCs or SVOCs were detected in surface water and sediment samples.

2. Has a PRP been identified? Yes X No ___

Explain:
It is reported that Rockwool Industries dumped the slag and wasterock at the quarry while its former manufacturing plant site was in operation at 7426 NE 352nd Street, Cameron, MO 65803. Rockwool Industries has been dissolved and no longer exists. Old Grindstone Quarry site is currently owned by the city of Cameron.

3. Is there an actual or potential threat due to hazardous substances, pollutants or contaminants? *If "Yes", specify for which of the following exposure pathways an actual or potential threat exists:* Yes ___ No X

Groundwater	Yes ___	No X
Surface Water	Yes ___	No X
Soil Exposure/Air	Yes ___	No X

Explain:
Metals were detected in soil at concentrations exceeding three times background but below health and environmental benchmarks. Metals detected in surface water were at concentrations below health and environmental benchmarks where available. Manganese was measured in surface water at concentrations exceeding the Missouri Water Quality Standards benchmark for drinking water and groundwater, however the benchmark is not applicable as the Grindstone Creek surface water is not used for drinking at this location. No VOCs or SVOCs were detected in surface water and sediment samples. Groundwater was not sampled. The nearest drinking water well is about two miles away.

4. Are there hazardous substances, pollutants or contaminants in drums, barrels or bulk storage containers? Yes ___ No X

Explain:

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5. Are there high levels of hazardous substances, pollutants or contaminants in surface soils? Yes ___ No X

Explain:

Barium, cadmium, calcium, manganese, silver, thallium and zinc were measured in surface soils at concentrations exceeding three times background. However, none of the metals detected in soil and wasterock exceed EPA Screening Levels for industrial use. Copper was measured in soil at 3,530 mg/kg, and in wasterock at 3,630 mg/kg. The EPA screening level for copper in soil is 42,000 mg/kg. Manganese was measured in soil at 4,650 mg/kg, and in wasterock at 6,600 mg/kg. The EPA screening level for manganese in soil is 35,000 mg/kg. Arsenic was measured in soil and wasterock at 15.1 mg/kg and 12.4 mg/kg respectively exceeding the EPA screening level of 1.8 mg/kg but below three times background. The concentration of arsenic in background soil from a CERCLA site approximately four miles away is 7.04 mg/kg. The average arsenic concentration in Dekalb County agricultural soils is 11.33 mg/kg.

("High levels" may be determined by streamlined risk assessments, health consultations, state or federal soil screening criteria, and/or Superfund program policies or directives.)

6. Are there conditions on site which may be susceptible to impact from adverse weather conditions? Yes ___ No X

Explain:

7. Is there a threat of fire or explosion? Yes ___ No X

Explain:

8. Are there other situations or factors which warrant further Superfund response? Yes ___ No X

Explain:

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VII. SUPERFUND SITE SCREENING FINDINGS AND RECOMMENDATIONS

SITE SCREENING FINDINGS

Answer the following questions as support for the site recommendation.

Yes	No	Condition or Factor	Yes	No	Condition or Factor
X		Is there a release or threat of release?		X	Is there a direct soil exposure pathway threat to hazardous substances?
X		Is the source a facility or vessel?		X	Are there high levels of hazardous substances in surface soils?
X		Does the release involve a hazardous substance, pollutant, or contaminant?			Is there an air pathway threat from hazardous substances?
	X	Is the site subject to response limitations?		X	Is there a threat of fire or explosion?
	X	Does the quantity or concentration of hazardous substances warrant response?		X	Are there drums, barrels, or bulk storage containers present?
	X	Are there actual or potential exposure threats to hazardous substances?		X	Is the site susceptible to adverse weather conditions?
	X	Is there an actual or a potential threat for contamination of drinking water supplies with hazardous substances?		X	Is there a willing/capable PRP response?
	X	Is there a surface water pathway threat from hazardous substances?		X	Can the site be referred to another program?

SITE SCREENING RECOMMENDATIONS

X	**Superfund CERCLIS Entry Not Warranted** **No Further Superfund Response Action Required**
	Superfund CERCLIS Entry Warranted **Not Recommended For CERCLIS Entry At This Time – Other Response Action Planned**
	Superfund CERCLIS Entry Warranted **Recommended For CERCLIS Entry – Additional Integrated Assessment Recommended**
	Superfund CERCLIS Entry Warranted **Recommended For CERCLIS Entry – Removal Action Recommended** *(Complete A Removal Evaluation Form)* ___ Emergency ___ Time-Critical ___ Non-Time-Critical

Comments:

Barium, cadmium, calcium, manganese, silver, thallium and zinc were measured in surface soils at concentrations exceeding three times background. However, none of the metals detected in soil and wasterock exceed EPA Screening Levels for industrial use. Arsenic was measured in soil and wasterock at concentrations exceeding the EPA screening level but below three times background.

MISSOURI SUPERFUND PRE-CERCLIS SITE SCREENING FORM

VIII. ADDITIONAL INFORMATION OR COMMENTS

PREPARED BY:
NAME: Chinwe Ndubuka **SIGNATURE:** Chinwe Ndubuka **DATE:** July 28, 2009

REVIEWED BY:
NAME: Julieann Warren **SIGNATURE:** Julieann Warren **DATE:** 7-29-09

APPROVED BY:
NAME: Dennis Stinson **SIGNATURE:** Dennis Stinson **DATE:** 7-29-09

III. FIGURES

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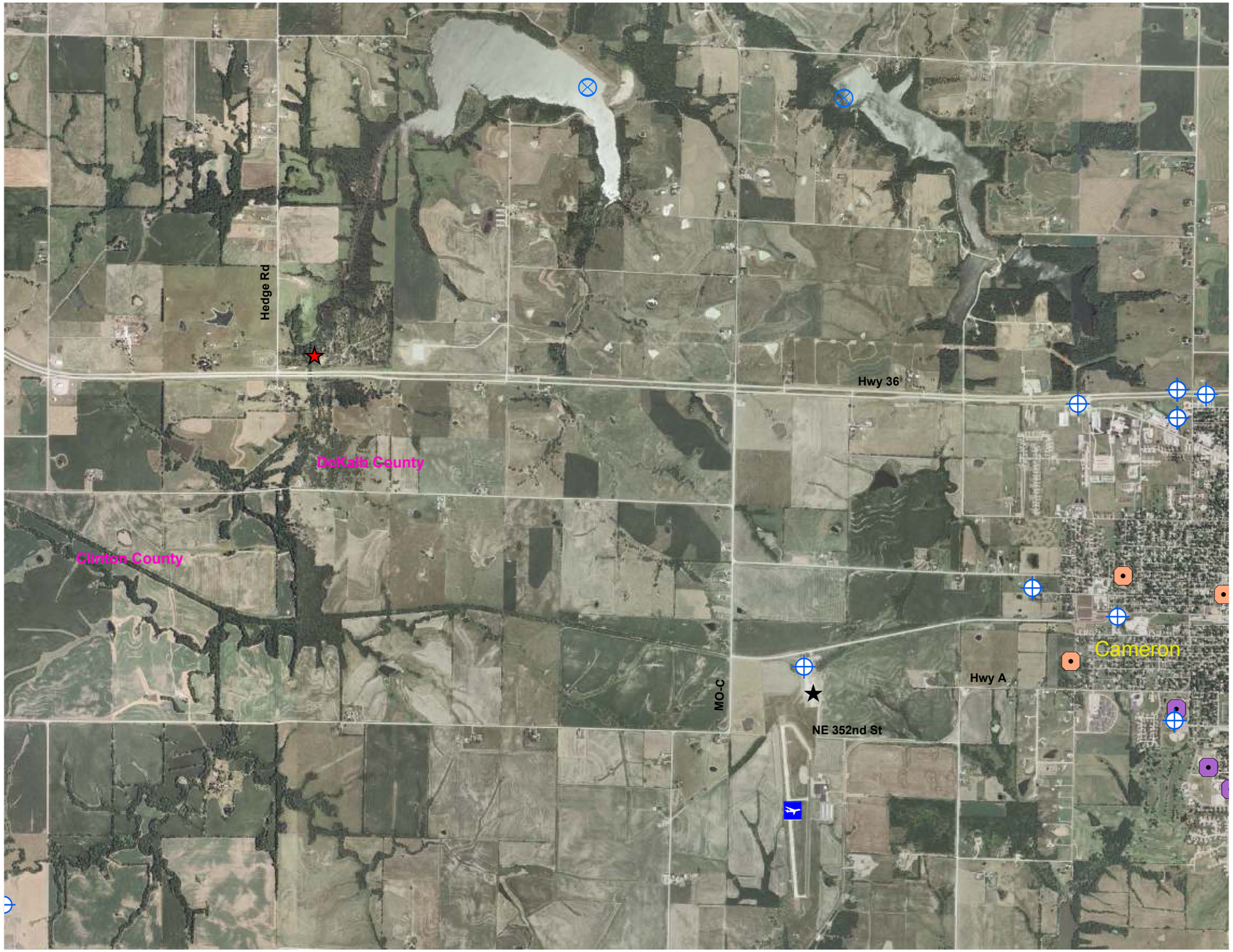
Figure 1
Site Location Map
Old Grindstone Quarry Site
Dekalb County, MO



1 0.5 0 1 2
Miles

Legend

- Old Grindstone Quarry
- Former Rockwool Industries
- Private Well
- Public Well (none in map area)
- Drinking Water Intake
- School
- Day care
- Cameron Memorial Airport
- Stream
- Road
- One Mile from Grindstone Quarry
- One Mile from Rockwool Facility
- County Boundary

N
W E
S

Created on: January 29, 2009 by Chinwe Ndubuka. This map is located at M/Superfund/Old_Grindstone_Quarry/Site_Location_Map

Base Map: National Agricultural Imagery Program, 2006.
Flight Date: 2005

Data Sources: Wellhead Protection, DNR Public Drinking Water Program.

Although data sets used to create this map have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

Figure 2
Sample Location Map
Old Grindstone Quarry Site
Dekalb County, MO

500 250 0 500 1,000
Feet

Legend

- Soil/Wasterock Sample
- Sediment/Surface Water Sample
- Grindstone Creek
- Highway 36
- Lake

N
W E
S

Created on: May 22, 2009 by Chinwe Ndubuka. This map is located at M/Superfund/Old_Grindstone_Quarry/Sample_Location_Map

Base Map: National Agricultural Imagery Program, 2006.
Flight Date: 2005

Although data sets used to create this map have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

IV. ANALYTICAL DATA TABLES AND CHARTS

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TABLE 1: SELECTED ANALYTICAL RESULTS FOR SOIL AND WASTEROCK SAMPLES COLLECTED JULY, 15, 2008
OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

- All values listed in parts per million (mg/kg) unless otherwise noted.
- NL denotes benchmark value not listed in reference source.
- NA denotes not analyzed
- Sample results in bold are significantly[1] above background concentrations
- Shaded sample results exceed EPA Region 6 Industrial screening levels[2]
- Arsenic compared to background concentraion and average arsenic concentration in Dekalb County agricultural soils. Average arsenic concentration for Dekalb County[4] is 11.33 mg/kg

Location ID	SS-02	SS-03	SS-04	SS-04	SS-05	Background	EPA SL[2]	TCLP[3] (mg/l)
Depth of Sample, in or ft	0-4 in	0-4 in	0-4 in	0-4 in	0-4 in	0-4 in	Ind.	
Description	Soil along main ATV traffic trail	Wasterock/slag from west waste piles*	Wasterock/slag from east waste piles*	EPA split sample (of #0808074)*	Soil along main ATV trail to creek	Average soil background from Rockwool Industries site.		
Laboratory Number	0808072	0808073	0808074	101	0808075			
Metals								
Antimony	3.06 (k)	4.24 (k)	4.01 (k)	NA	<1.0	2.24	450	NL
Arsenic	15.1	12.0	12.4	12	4.52	7.04	1.80	NL
Barium	512.0	423.0	**1,310**	**961 (J)**	77.9	280.5	100000	NL
Cadmium	**5.35**	3.11	1.78	**11.4**	.356 (e)	1.51	560	NL
Calcium	195,000	188,000	149,000	NA	**321,000**	88,650	NL	NL
Chromium, total	158.0	158.0	92.3	85.3	9.06	77.2	500	NL
Copper	**3,530**	**3,630**	1,800	NA	57.3	725.9	42000	NL
Lead	177.0	127.0	275.0	322	14.4	110.50	800	NL
Lead, TCLP, mg/l	.86	.9	.65	NA	NA	NA	NL	5
Magnesium	43,400	43,100	32,400	NA	7,070	16,225	NL	NL
Manganese	**4,650**	**4,510**	**6,600**	NA	906.0	1,407.5	35000	NL
Mercury	<.0025	.00414 (e)	.00321 (e)	<.0056	.00657 (e)	0.02	340	NL
Molybdenum	3.59	2.52	3.32	NA	1.86	2.72	5700	NL
Nickel	12.3	11.7	10.9	NA	7.71	21.2	23000	NL
Selenium	2.12 (e)	1.64 (e)	2.71	<8.7	<1.0	<1.0	5700	NL
Silver	**1.98 (k)**	**1.8 (k)**	**8.72**	**9.5**	<.25	<.25	5700	NL
Thallium	**3.62**	**4.19**	**8.3**	NA	**3.25**	<1.0	79	NL
Vanadium	64.0	58.5	47.8	NA	7.79	43.15	5700	NL
Zinc	1,070	587.0	**3,730**	NA	108.0	1,115.5	100000	NL

[1] Above the Practical Quantitation Limit (PQL) when background concentrations is <PQL, or three times the background when contaminant is detected in background sample. Background concentrations taken from Preliminary Assessment/Site Inspection/Removal Site Evaluation Report of Rockwool Industries Site, Clinton County, Missouri, 2008.

[2] EPA SL - EPA Region 6 Screening Levels, March 8, 2008, industrial use.

[3] TCLP - Toxicity Leaching Procedure regulatory limit, 40 CFR Part 261, Subpart C.

[4] Geography of soil geochemistry of Missouri agricultural soils ; Geochemical classification by factor analysis of Missouri agricultural soils, by Ronald R. Tidball, U.S. Dept. of the Interior, Geological Survey, 1985.

* Note: There are currently no health or environmental benchmarks related to exposure to rock.

(e) - Estimated value, detected below Practical Quantitation Limit (PQL).

(f) - Estimated value, Quality Control (QC) data outside limits.

(k) - Estimated value, matrix interference.

(J) - The identification of the analyte is acceptible; the reported value is an estimate.

TABLE 2: SELECTED ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES COLLECTED JULY, 15, 2008; JANUARY, 7, 2009; AND MARCH 5, 2009
OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

- All values listed in parts per billion (ug/l) unless otherwise noted.
- NL denotes benchmark value not listed in reference source.
- NA denotes not analyzed
- Sample results in bold are significantly[1] above background concentrations (none for 07/15/2008)
- Shaded results exceed Missouri drinking water/groundwater water quality standard.

Location ID	WS-01	WS-01	WS-01	WS-01	None	WS-01	None	None	None	None	None	WS-01	None	None	None	MO WQS[2]			
Description	At ATV creek crossing	EPA split sample (of #0808063)	At ATV creek crossing (duplicate)	EPA split sample (of #0808064)	20' upstream of creek crossing (background)	Creek crossing	20' downstream of creek crossing	20' downstream of creek crossing (duplicate)	40' downstream of creek crossing	Trip blank	20' upstream of creek crossing (background)	Creek crossing	20' downstream of creek crossing	40' downstream of creek crossing	Trip Blank				
Sample Date	July 15, 2008	July 15, 2008	July 15, 2008	July 15, 2008	January 7, 2009	January 7, 2009	January 7, 2009	January 7, 2009	January 7, 2009	January 7, 2009	March 5, 2009	March 5, 2009	March 5, 2009	March 5, 2009	March 5, 2009	DW / GW	Aq. Life	Fish Consmp	Irr. / Lvstock
Laboratory Number	0808063	201	0808064	201 FD (field duplicate)	0910283	0910281	0910285	0910289	0910287	0900066	0912179	0912177	0912175	0912173	0912171				
Metals																			
Antimony	.39 (e)	<2.0	.46 (e)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6	NL	4300	NL
Arsenic	3.95 (e)	3.8	3.87 (e)	NA	1.67	1.49 (f,e)	2.1 (f,e)	1.7 (f,e)	1.56 (f,e)	<1.0 (f)	<1.00	<1.00	<1.00	<1.00	<1.00	50	20	NL	100
Arsenic, dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.43 (e)	1.44 (e)	1.53 (e)	1.39 (e)	NA	50	20	NL	100
Barium	181.0	167	189.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2000	NL	NL	NL
Calcium	65,100	NA	64,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Copper	5.26	<2.0	4.14	NA	1.71	1.36	2.54	1.6	1.53	<0.25	1.54	1.46	1.47	1.49	<.25	1300	19	NL	500
Copper, dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.58	1.48	1.69	1.48	NA	1300	19	NL	500
Lead	1.72 (f)	<1.0	.85 (f,e)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	9	NL	NL
Magnesium	12,900	NA	12,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Manganese	236.0	176	220.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	NL	NL	NL
Molybdenum	2.19 (e)	NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Nickel	2.82	3.4	2.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	360	NL	NL
Vanadium	2.72 (e)	3.2	2.37 (e)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Zinc	26.5 (f)	<1.0	44.2 (f)	NA	3.23	1.56 (f,h)	7.08 (f)	2.8 (f)	2.65 (f)	1.08 (f,h)	3.06 (f,h)	2.92 (f,h)	2.35 (f,h)	2.67 (f,h)	1.82 (f,h)	5000	241	NL	NL
Zinc, dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.07	.97 (e)	2.02	2.46	NA	5000	241	NL	NL

[1] Above the Practical Quantitation Limit (PQL) when background concentration is < PQL, or three times the background concentration when contaminant is detected in background sample.

[2] MO WQS - Missouri Water Quality Standards, benchmarks for drinking water, groundwater, protection of aquatic life, fish consumption, and irrigation/livestock watering use categories, Missouri Code of State Regulations, 10 CSR 20-7.031, October 31, 1999.

e - Estimated value, detected below Practical Quantitation Limit (PQL).

f - Estimated value, Quality Control (QC) data outside limits.

h - Analyte present in blank at greater than half reported value.

Note: Table only shows United States Environmental Protection Agency (EPA) split results for analytes reported by Missouri Department of Natural Resources (DNR).

TABLE 3: SELECTED ANALYTICAL RESULTS FOR SEDIMENT SAMPLES COLLECTED JULY, 15, 2008; JANUARY, 7, 2009; AND MARCH 5, 2009
OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

- All values listed in parts per million (mg/kg) unless otherwise noted.
- NL denotes benchmark value not listed in reference source.
- NA denotes not analyzed

- Sample results in bold are significantly[1] above background concentrations (none for 07/15/2008)
- Sample results in shaded cells exceed the TEC
- Sample results in outlined cells exceed the PEC
- Circled sample results exceed the ECOTOX benchmark
- Arsenic compared to background concentrations and average arsenic concentration in Dekalb county agricultural soils. Average average arsenic concentration for Dekalb county[5] is 11.33 mg/kg

Location ID	SS-01	SS-01	SS-01	SS-01	None	SS-01	None	None	None	None	SS-01	None	None	EPA SL[2]	Sediment Quality Guidelines		
Description	Collected along stream bank at the ATV creek crossing	EPA split sample (of #0808065)	Collected along stream bank at the ATV creek crossing (duplicate)	EPA split sample (of #0808066)	20' upstream of creek crossing (background)	Creek crossing	20' downstream of creek crossing	20' downstream of creek crossing (duplicate)	40' downstream of creek crossing	20' upstream of creek crossing (background)	Creek crossing	20' downstream of creek crossing	40' downstream of creek crossing	Ind.*	USGS TEC[3]	USGS PEC[3]	EPA EcoTox[4]
Sample Date	July 15, 2008	July 15, 2008	July 15, 2008	July 15, 2008	January 7, 2009	January 7, 2009	January 7, 2009	January 7, 2009	January 7, 2009	March 5, 2009	March 5, 2009	March 5, 2009	March 5, 2009				
Laboratory Number	0808065	4	0808066	4 FD (field duplicate)	0910284	0910282	0910286	0910290	0910288	0912178	0912176	0912174	0912172				
Metals																	
Antimony	1.17 (e)	<2.0	1.13 (e)	<2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	450	NL	NL	NL
Arsenic	8.91	6.6	7.58	<5.3	6.07	3.44	5.96	9.96	3.17	2.4 (e)	3.04	4.86	4.88	1.80	9.79	33	8.2
Barium	105	105	117	157	NA	NA	NA	NA	NA	NA	NA	NA	NA	100000	NL	NL	NL
Cadmium	.285 (e)	1.5	.267 (e)	2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	560	0.99	4.98	1.2
Calcium	76,600	38800	73,200	73200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Chromium, total	27.1	11.3	18.7	16.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	500	43.4	111	81
Copper	151	106	146	133	5.76	1.77	1.99	2.21	1.39	1.44	2.17	1.83	1.79	42000	31.6	149	34
Lead	20.8	20.1	17.4	24.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	800	35.8	149	47
Magnesium	5,020	2820	3,830	4620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL	NL
Manganese	788	572	757	1130	NA	NA	NA	NA	NA	NA	NA	NA	NA	35000	NL	NL	NL
Mercury	.00639 (e)	.0086	.0044 (e)	<.0056	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	0.18	128	0.15
Molybdenum	1.15	<2.0	1.17	<2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	5700	NL	NL	NL
Nickel	13.3	7.2	12.6	12.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	23000	22.7	48.6	21
Thallium	1.27 (e)	<10.2	1.33 (e)	<10.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	NL	NL	NL
Vanadium	18.9	14.3	23.1	14.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	5700	NL	NL	NL
Zinc	234	159	181	203	25.1	10.6	11.2	12.5	8.25	9.89	10.2	10.9	12.4	100000	121	459	150

[1] Above the Practical Quantitation Limit (PQL) when background concentration is < PQL, or three times the background concentration when contaminant is detected in background sample.

[2] EPA SL - EPA Region 6 Screening Levels, 2008, industrial use.

[3] TEC and PEC - Threshold Effects and Probable Effects Concentration (TEC and PEC), U.S. Geological Survey Consensus-Based Sediment Quality Guidelines, June 2000.

[4] EcoTox - Ecotox Thresholds, EPA Bulletin, EPA/540/F-95/038, January, 1996.

[5] Geography of soil geochemistry of Missouri agricultural soils ; Geochemical classification by factor analysis of Missouri agricultural soils, by Ronald R. Tidball, U.S. Dept. of the Interior, Geological Survey, 1985.

(e) Estimated value, detected below Practical Quantitation Limit (PQL).

* Soil values used by Department of Health and Senior Services in calculating human health risk as there are currently no available sediment values for human health risk.

Note: Table only shows EPA split results for analytes reported by DNR.

TABLE 4: CALCULATION OF SAMPLE/SAMPLE DUPLICATE RELATIVE PERCENT DIFFERENCE (RPD) SURFACE WATER SAMPLES COLLECTED JULY 15, 2008 OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

All results are in (ug/l) unless otherwise noted

Sample ID	**SS-01**	**SS-01**	**RPD**
Laboratory Number	**0808063**	**0808064**	
Metals			
Barium	181.0	189.0	4.3
Calcium	65,100	64,700	0.6
Copper	5.26	4.14	23.8
Magnesium	12,900	12,800	0.8
Manganese	236.0	220.0	7.0
Nickel	2.82	2.64	6.6

TABLE 5: CALCULATION OF SAMPLE/SAMPLE DUPLICATE RELATIVE PERCENT DIFFERENCE (RPD) SURFACE WATER SAMPLES COLLECTED JANUARY 7, 2009 OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

All results are in (ug/l) unless otherwise noted

Sample ID	**20' downstream of ATV Creek Crossing**	**20' downstream of ATV Creek Crossing**	**RPD**
Laboratory Number	**0910285**	**0910289**	
Metals			
Copper	2.54	1.6	45.4

TABLE 6: CALCULATION OF SAMPLE/SAMPLE DUPLICATE RELATIVE PERCENT DIFFERENCE (RPD) SEDIMENT SAMPLES COLLECTED JULY 15, 2008 OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

All results are in (mg/kg) unless otherwise noted

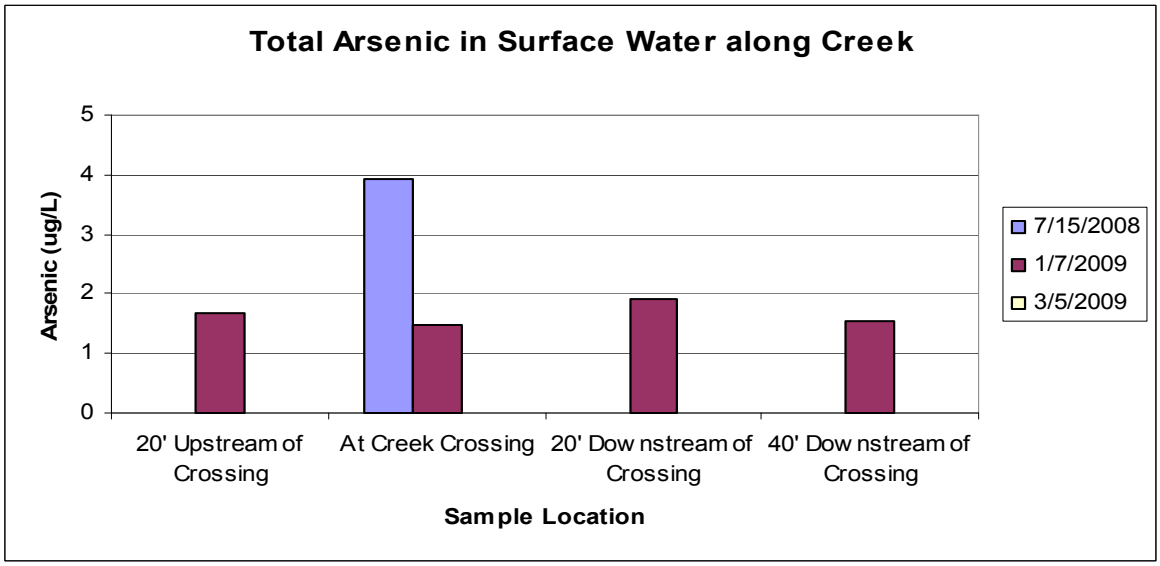
Sample ID	**SS-01**	**SS-01**	**RPD**
Laboratory Number	**0808065**	**0808066**	
Metals			
Arsenic	8.91	7.58	16.1
Barium	105	117	10.8
Calcium	76,600	73,200	4.5
Chromium, total	27.1	18.7	36.7
Copper	151	146	3.4
Lead	20.8	17.4	17.8
Magnesium	5,020	3,830	26.9
Manganese	788	757	4.0
Molybdenum	1.15	1.17	1.7
Nickel	13.3	12.6	5.4
Vanadium	18.9	23.1	20.0
Zinc	234	181	25.5

TABLE 7: CALCULATION OF SAMPLE/SAMPLE DUPLICATE RELATIVE PERCENT DIFFERENCE (RPD) SEDIMENT SAMPLES COLLECTED JANUARY 7, 2009 OLD GRINDSTONE QUARRY SITE, DEKALB COUNTY, MISSOURI

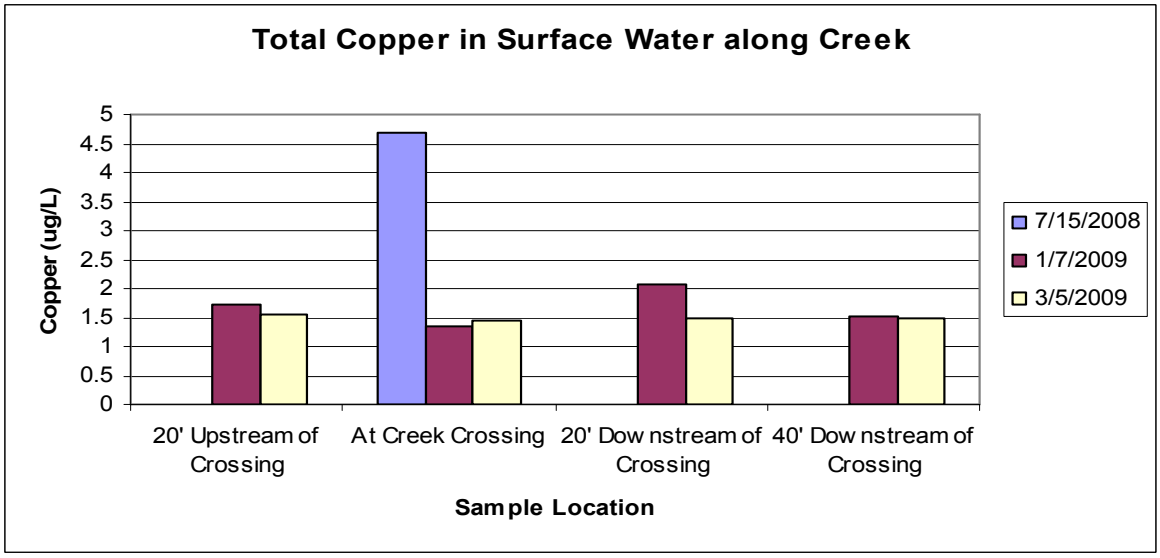
All results are in (mg/kg) unless otherwise noted

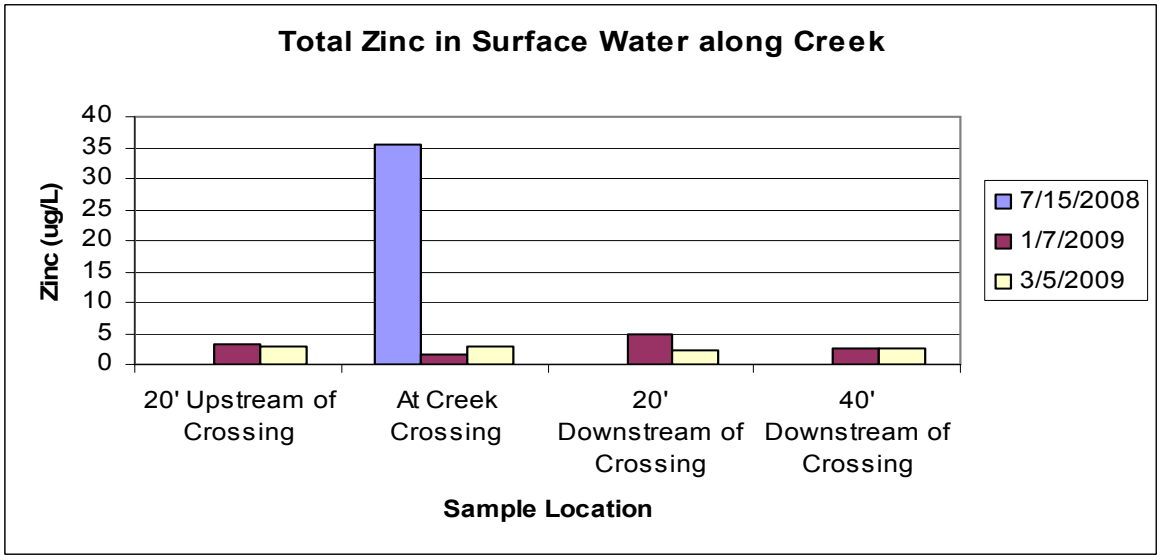
Sample ID	**20' downstream creek crossing**	**20' downstream creek crossing**	**RPD**
Laboratory Number	**0910286**	**0910290**	
Metals			
Arsenic	5.96	9.96	50.3
Copper	1.99	2.21	10.5
Zinc	11.2	12.5	11.0

Comparison Charts - Surface Water Sample Analyses Results



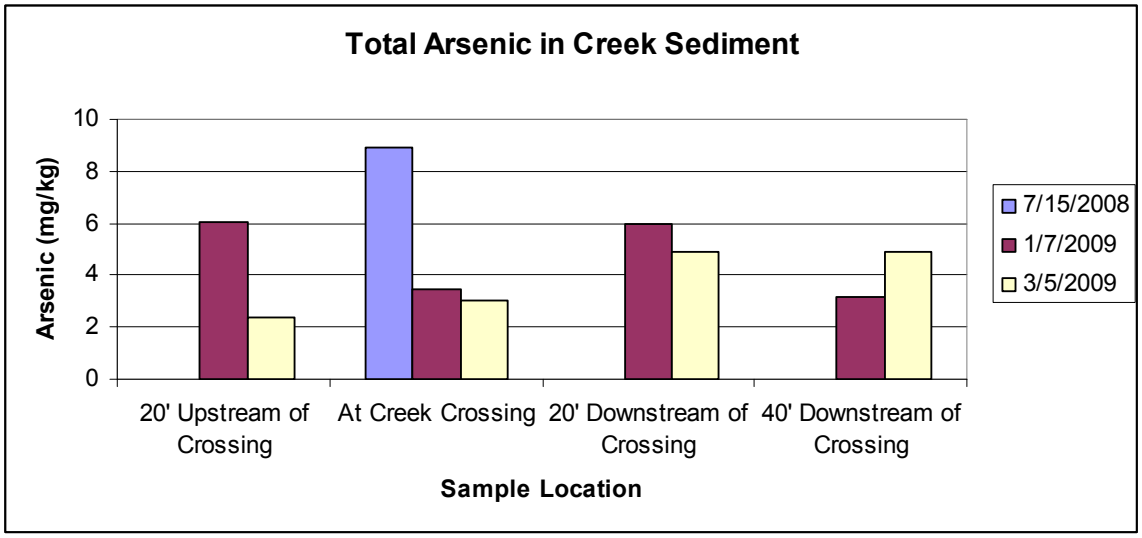
Note: No arsenic concentrations for sediment samples collected on 3/5/2009 were measured above the detection limit of 1.00 ug/L.

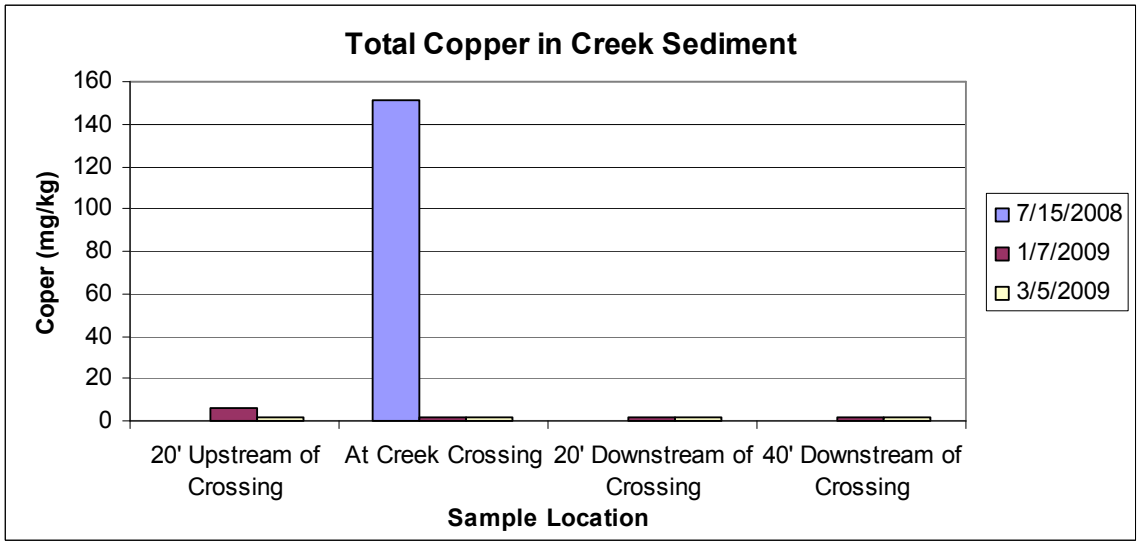


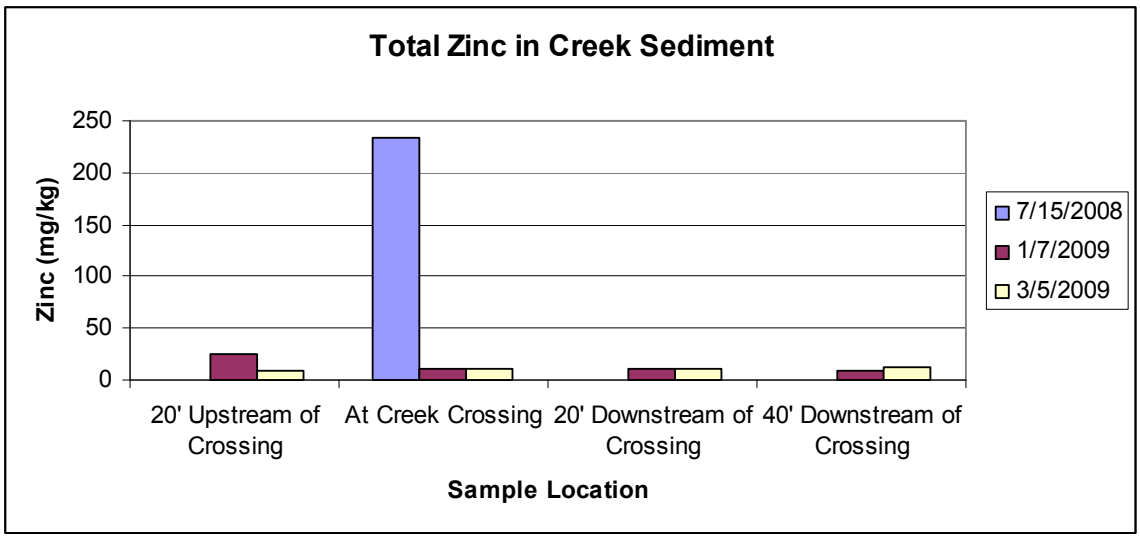


Note: Surface water sampling on 7/15/2008 was conducted at the creek crossing only.

Comparison Charts - Sediment Sample Analyses Results







Note: Sediment sampling on 7/15/2008 was conducted at the creek crossing only.

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V. SAMPLING AND ANALYTICAL DOCUMENTATION

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Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Sampling and Analysis Documentation A

Site Inspection/Removal Site Evaluation Sampling Report

Rockwool Industries Site
Cameron, Missouri
Clinton County

Order numbers
080716004 & 080721001

July 14-15 & 18, 2008

Prepared For:

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

Prepared By:

Missouri Department of Natural Resources
Field Services Division
Environmental Services Program

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Table 2 – Water sample descriptions

sample locations.

All aspects of sampling were performed using standard operating procedures (SOPs) established within the ESP for the collection, preservation, and transport of various media sampled.

3.1.1 Soil sampling

3.1.1.1 Depth discrete soil sampling

Soil borings were conducted in selected areas and grab samples were collected from discrete depths utilizing a truck-mounted hydraulic soil probe. Clean disposable polyvinyl chloride (PVC) heavy-walled liners were inserted into stainless steel macro core samplers fitted with clean cutting shoes. The core samplers were advanced to the desired sampling depth via drive rods and the samplers and soil retrieved. The PVC liners were removed and cut open exposing the soil. The portion of each sample to be analyzed for volatile organic compounds (VOAs) was immediately transferred directly to EnCore sample containers. Personnel utilized clean stainless steel spoons to transfer the remainder of each sample to clean aluminum foil pans for homogenization prior to placement into sample containers. Sample depths were determined from a combination of field observations and analysis from screening instruments which included a PID and XRF. Refer to Appendix C: Field Notes, pages 30 through 37 for XRF results collected by HWP personnel.

A split sample was collected on July, 18, 2008, by ESP personnel as part of additional sampling in a bean field located directly south of the initial sampling area. Allegations had been made that drums were buried in this field while the industry was active. The US EPA conducted sub-surface soil borings in this field and a split soil sample was collected by ESP personnel at soil boring SB-01. The split sample was collected along with its true sample in the same manner as the true sample using the same equipment. This sample was submitted for VOAs, base neutral/acid extractables (BNAs) and total metals (Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn, Mn, Mo, V, Ca and Mg) analyses.

3.1.1.2 Surface soil sampling

Surface soil samples were generally collected from the 0- to 4-inch depth using clean stainless steel spoons and sample jars. The portion of each sample to be analyzed for VOAs was immediately transferred directly to a two-ounce jar. The remainder of the soils was transferred to clean aluminum foil pans, homogenized, and placed into sample containers.

3.1.1.3 Ground Penetrating Radar (GPR) investigation

A geophysical investigation was performed at several locations on the site and a field directly south of the site. The data collected from this investigation was used to verify the allegations of buried drums possibly located on-site and at the quarry.

The geophysical investigation was performed using a Noggin Model 250 Smart Cart System Ground Penetrating Radar (GPR) unit to gather subsurface information. GPR was utilized at

several areas on the site to search for anomalies such as drums or other buried objects. GPR surveys were initially done at areas of the facility where waste slag had been disposed. The GPR effectiveness was limited in the slag pile areas due to the high reflectance and subsequent scattering of radar signal from the slag material. In effect, the signal penetrated "air space" in the slag pile until reflecting of the irregular shapes of the pieces of slag material. The signals then scattered and reflected off slag within the pile, reflecting very little back up to the GPR transceiver at the ground surface.

GPR surveys were also conducted at several areas around the Rockwool plant where there had been allegations of drums having possibly been buried. Several open, grassy areas within the former Rockwool property fence were examined, with no buried anomalies other than utility lines identified. Open pastures to the south and west of the property boundaries were also surveyed, with no unusual anomalies detected. GPR raw data is available upon request from the ESP.

3.1.2 Water Sampling

Field instruments used during water sample collection, including pH, specific conductivity, and temperature meters, were calibrated on-site per manufacturers' specifications. No water quality information was obtained on any groundwater samples due to the low volumes present in the temporary monitoring wells. Groundwater sample volumes were insufficient to collect for all requested sample parameters and sample collection was prioritized to the collection of metals analysis first and VOAs second. No temporary well contained enough sample volume for any other analyses.

3.1.2.1 Surface water sampling

A surface water grab sample was collected by immersing the sample containers directly into an unnamed creek located at an old quarry owned by the City of Cameron at the probable point of entry of any potential runoff from the site. Care was taken to minimize sediment disturbance during collection. Water quality parameters were not collected at the surface water location since there was only one set of meters and they remained at the Rockwool site for use with the groundwater sampling that was being performed at the same time.

3.1.2.2 Groundwater sampling

Three temporary direct push monitoring wells were installed on the site at locations determined from soil sampling data and HWP personnel input. Wells were installed by using a truck mounted hydraulic probe and advancing macro-cores down to a depth of not less than three feet below a point where shallow groundwater was encountered. A slotted well screen attached to schedule 40 PVC riser was advanced to the bottom of the bore hole.

Wells were not purged prior to sampling in anticipation of low water volumes. Attempts were made to sample for field parameters and all analytes of concern on the three wells installed on the site. All three wells ran dry prior to collecting the first parameters at each location (VOAs analysis). Wells were allowed to recharge and were initially re-sampled at 15-minute intervals with time intervals increasing as recharge volume became less per interval. The first well

installed (at location R-6) was allowed to recharge overnight and still did not produce enough water volume to collect a VOA sample and therefore no samples were collected at this location. After the first groundwater collection attempt, water collection was prioritized to the collection of metals first, VOAs second and BNAs/field parameters third. Wells R-9 and R-12 were analyzed for metals and VOAs analysis only. Water collection from the wells at locations R-9 and R-12 occurred during the course of a whole sampling day beginning around 1100 hours and continuing until personnel left the site at 1850 hours. Partial samples were stored on ice in coolers while awaiting recharge.

3.1.3 Sediment sample

A sediment grab sample was collected in conjunction with the surface water grab sample collection. The sediment grab sample was collected after its corresponding surface water grab had been collected by utilizing a clean stainless steel spoon to retrieve sediment from the 0- to 2-inch depth of the creek bed. The sediment was transferred to clean aluminum foil pans and the excess water removed. The sediment was then homogenized and placed into sample containers. Sediment was transferred directly into sample containers after excess water removal for the volatile organics portion of the sample.

3.1.4 Waste source sampling

Source grab samples were considered any slag or rock material found at both the Rockwool site and the quarry. The three source samples collected at the Rockwool site were designated S-X, where X represented a number unique to each location and the quarry samples were labeled SS-X. All samples were collected in the same manner. Samples were collected by filling a 10" x 12" zip lock bag approximately half full with a representative sample of the material using a stainless steel spoon. Samples were homogenized in the zipped bag and submitted for total metals analysis.

3.2 Sample Order

In the event personnel were required to utilize field-decontaminated equipment for sample collection, background samples were collected prior to any waste source or target samples. Two background samples were initially collected from locations deemed uncontaminated. Upon further investigation, it was determined that the samples collected for background could potentially be located in contaminated areas. Based on this information, new background sample locations were identified and sampled. These second locations were collected at the end of the first sampling day but were collected using clean equipment (new cutting shoes, macro cores, liners, etc.) When feasible, attempts were made to collect all samples in the order from least-to-most contaminated areas.

Containers for each sample were filled based upon the volatility of the analytes of concern with the most volatile analytes being collected first. For groundwater samples, modifications were made to the sample order based on site conditions and priority of contaminants of concern. Refer to section 3.1.2.2 for details.

7.0 Data Reporting

Please refer to Appendix B for analytical results of samples collected.

Submitted by: Kenneth Hannon

Kenneth A. Hannon
Environmental Specialist
Field Services Unit
Environmental Services Program

Date: _____

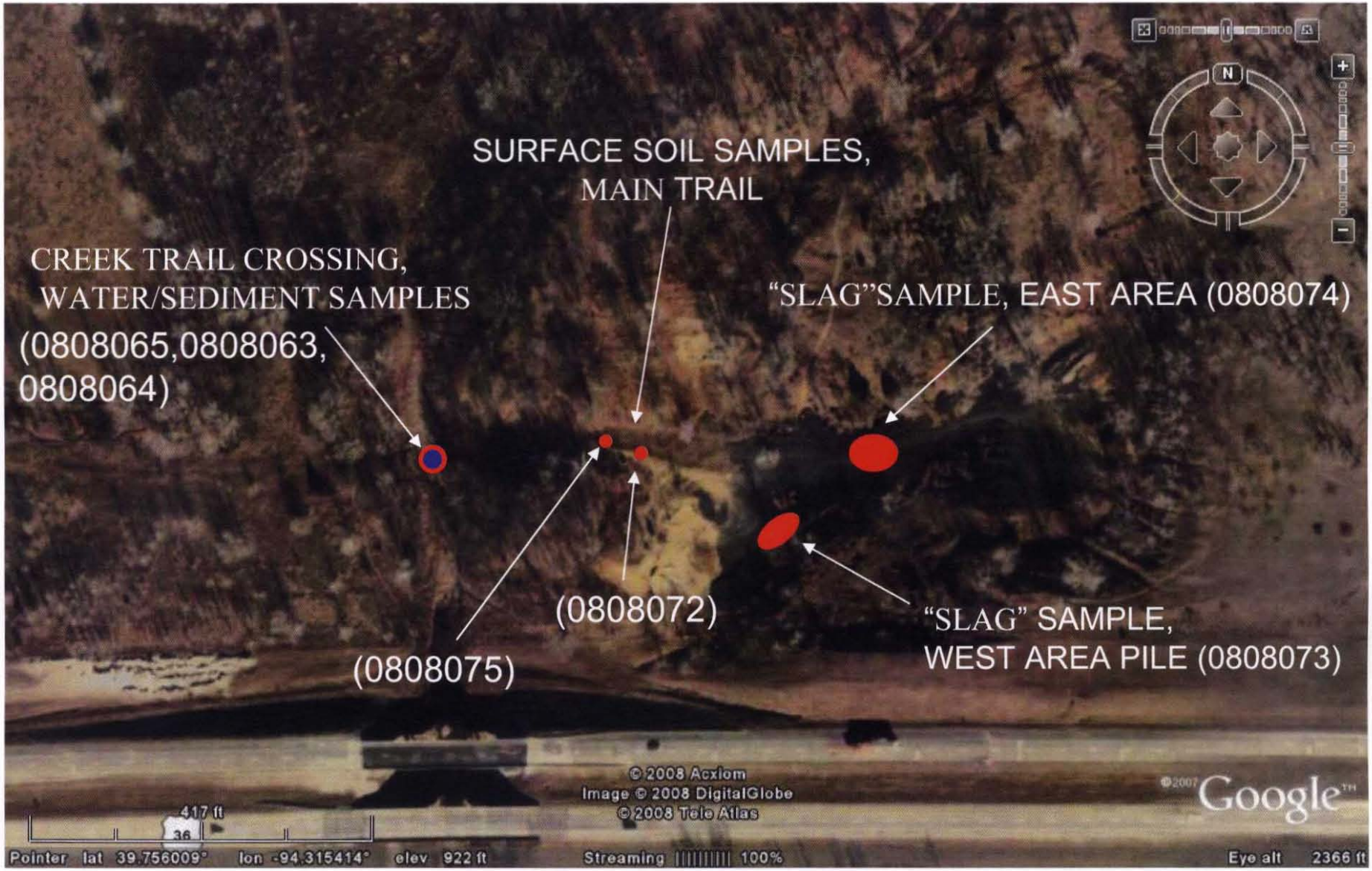
Approved by: Alan J. Reinkemeyer

Digitally signed by Alan Reinkemeyer
DN: cn=Alan Reinkemeyer, c=US, o=Missouri Department of Natural Resources, ou=Environmental Services Program, email=alan.reinkemeyer@dnr.mo.gov
Date: 2008.09.25 17:11:51 -05'00'

Alan Reinkemeyer
Director
Environmental Services Program

AR:khd

c: Julieann Warren, Unit Chief, HWP



Site Map: Rockwool Industries sampling event, city quarry location

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

B17

LABORATORY ORDER ID: 080716004

Collector's Name: Kenneth Hannon
(Please Print)

Affiliation: (ESP) KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:
(circle one)

Description of Shipment
Shipped-Carrier:
Tape sealed and initialed
X Hand Delivered
No. Of Containers: 18

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0808060 (Sample A)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab / Composite / Modified / Other:	Water / 5 Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 oz glass / 2 8 oz glass / VOA vial / 3 Encore / Other:	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / 5 4° C(None) / Disinfected / Other
For Lab Use Only 080716004-29	Time: 1220	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808061 (Sample B)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab / Composite / Modified / Other:	Water / 4 Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 2 oz glass / 2 8 oz glass / VOA vial / Encore / Other:	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / 4 4° C(None) / Disinfected / Other
For Lab Use Only -30	Time: 1229	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808062 (Sample C)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab / Composite / Modified / Other:	Water / 4 Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 2 oz glass / 2 8 oz glass / VOA vial / Encore / Other:	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / 4 4° C(None) / Disinfected / Other
For Lab Use Only -31	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808063 (Sample D)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab / Composite / Modified / Other:	5 Water / Soil / Organic / Sludge / Other:	2 1L amber / Cubitainer / 2 oz glass / 8 oz glass / 2 VOA vial / Encore / Other:	120 mL / Nalgene / 1L / 1 500mL / 250mL	H_2SO_4 / 1 HNO_3 / NAOH / 2 HCL / 2 4° C(None) / Disinfected / Other
For Lab Use Only -32	Time: 1057	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
Kenneth Hannon	[illegible]	7-16-08	13:15
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): R-13, north of the Sukup facility, northeast corner of the foundation just south of tree line. 3.0 to 4.0 ft. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): R-13, north of the Sukup facility, northeast corner of the foundation just south of tree line. 0.0 to 4.0 in. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Blind replicate.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Water grab WS-01, from creek at closed city quarry. Sample collected 20 yrds downstream from ATV crossing.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		

REMARKS:
Expedited turnaround on all samples.

B17

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

LABORATORY ORDER ID: 080716004

Collector's Name: (Please Print) Kenneth Hannon

Affiliation: (circle one) ESP KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment
- Shipped-Carrier:
- Tape sealed and initialed
- X Hand Delivered

No. Of Containers: 16

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0808064 (Sample A)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab; Composite; Modified; Other:	5 Water; Soil; Organic; Sludge; Other:	2 1L amber; Cubitainer; 2 oz glass; 8 oz glass; 2 VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 1 500mL; 250mL	H2SO4; 1 HNO3; NAOH; 2 HCL; 2 4° C(None); Disinfected; Other
For Lab Use Only 080716004-33	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808065 (Sample B)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab; Composite; Modified; Other:	3 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 1 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 250mL	H2SO4; HNO3; NAOH; HCL; 3 4° C(None); Disinfected; Other
For Lab Use Only -34	Time: 1140	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808066 (Sample C)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab; Composite; Modified; Other:	5 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 1 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 250mL	H2SO4; HNO3; NAOH; HCL; 3 4° C(None); Disinfected; Other
For Lab Use Only -35	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808067 (Sample D)	Date: 07/15/08	BNAs, VOAs, and total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						X Grab; Composite; Modified; Other:	5 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 2 oz glass; 8 oz glass; VOA vial; 3 Encore; Other:	120 mL; Nalgene; 1L; 500mL; 250mL	H2SO4; HNO3; NAOH; HCL; 5 4° C(None); Disinfected; Other
For Lab Use Only -36	Time: 1410	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
Kenneth Hannon	[illegible]	7-16-08	13:15
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Blind duplicate.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Blind replicate.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): R-14, eastern edge of foundation north of Sukup building, middle of foundation. 5.5 to 7.0 ft. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		

REMARKS:
Expedited turnaround on all samples.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

LABORATORY ORDER ID: 0807160004 B17

Collector's Name: Kenneth Hannon
(Please Print)

Affiliation: (ESP) KCRO NERO SERO SLRO SWRO WPP
(circle one) DGLS HWP Other:

Description of Shipment
Shipped-Carrier:
Tape sealed and initialed
X Hand Delivered
No. Of Containers: 4

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0808072 (Sample A)	Date: 07/15/08	Total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						Grab / X Composite / Modified / Other:	Water / [Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 oz glass / 8 oz glass / VOA vial / Encore / [Other: Baggie	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / [4° C(None) / Disinfected / Other
For Lab Use Only 0807160004-41	Time: 1025	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808073 (Sample B)	Date: 07/15/08	Total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						Grab / X Composite / Modified / Other:	Water / [Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 oz glass / 8 oz glass / VOA vial / Encore / [Other: Baggie	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / [4° C(None) / Disinfected / Other
For Lab Use Only -42	Time: 1030	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808074 (Sample C)	Date: 07/15/08	Total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						Grab / X Composite / Modified / Other:	Water / [Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 oz glass / 8 oz glass / VOA vial / Encore / [Other: Baggie	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / [4° C(None) / Disinfected / Other
For Lab Use Only -43	Time: 1035	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0808075 (Sample D)	Date: 07/15/08	Total metals (13 priority pollutants, Mn, Mo, V, Ca, and Mg). TCLP if applicable.						Grab / X Composite / Modified / Other:	Water / [Soil / Organic / Sludge / Other:	1L amber / Cubitainer / 2 oz glass / 8 oz glass / VOA vial / Encore / [Other: Baggie	120 mL / Nalgene / 1L / 500mL / 250mL	H_2SO_4 / HNO_3 / NAOH / HCL / [4° C(None) / Disinfected / Other
For Lab Use Only -44	Time: 1045	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
Kenneth Hannon	[illegible]	7-16-08	13:15

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): SS-02, closed city quarry, collected along main ATV traffic trail. 0.0 to 4.0 in. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): SS-03, closed city quarry, collected from the west waste piles. 0.0 to 4.0 in. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): SS-04, closed city quarry, collected from the east waste piles. 0.0 to 4.0 in. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Rockwool Industries	**County:** Clinton	**LDPR Code:** FEPA5	**Job Code:** NJ08ROCK
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): SS-05, closed city quarry, collected along main ATV trail to Grindstone Creek. 0.0 to 4.0 in. depth.				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	**EPE (meters)**		
			PDOP		

REMARKS:
Expedited turnaround on all samples.

Sample: 080716004-31 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808062 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Soils | **Sample Comment:** Blind replicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	2-Nitropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Chlorotoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Methyl-2-pentanone(MIBK)	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	acetone	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Acrylonitrile	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Allyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Benzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromodichloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromoform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	carbon disulfide	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Carbon Tetrachloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroacetonitrile	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloromethane	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,2-dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromomethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dichlorodifluoromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Diethyl ether	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachlorobutadiene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Iodomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Isopropylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	m&p-Xylenes	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methacrylonitrile	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methyl Acrylate	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylene chloride	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-31 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808062 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Soils | **Sample Comment:** Blind replicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Methyl-t-butyl ether	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Naphthalene	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Nitrobenzene	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Propylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	o-Xylene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Pentachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	p-isopropyltoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Propionitrile	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	sec-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Styrene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	tert-Butylbenzene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrachloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrahydrofuran	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Toluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Total Xylenes	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,2-Dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,4-Dichloro-2-butene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichlorofluoromethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Vinyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
Zinc-Total	Zinc	810000	09,17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total in Water	Antimony	0.39	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	3.95	05	ug/L		SW 846 6020 (ICP-MS)
Barium-Total in Water	Barium	181		ug/L		SW 846 6020 (ICP-MS)
BNAs	1,2,4-Trichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	1,2-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	1,3-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	1,4-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4,5-Trichlorophenol	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4,6-Trichlorophenol	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dichlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dimethylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dinitrophenol	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dinitrotoluene	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2,6-Dinitrotoluene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Chloronaphthalene	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Chlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methyl-4,6-dinitrophenol	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methylnaphthalene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Nitrophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	3,3-Dichlorobenzidine	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	3-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Bromophenyl phenyl ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chloro-3-methylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chloroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chlorophenyl phenyl ether	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Methylphenol	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Nitrophenol	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Acenaphthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Acenaphthylene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	azobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(a)anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(a)pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(b)fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(ghi)perylene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(k)fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzoic Acid	5.00	ND	ug/L	Q80723-05bna	8270C

Date Printed: 8/11/2008

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	bis(2-Chloroethoxy)methane	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-Chloroethyl)ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-chloroisopropyl)ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-Ethylhexyl) phthalate	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	Butyl benzyl phthalate	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	Chrysene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Dibenzo(a,h)anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Dibenzofuran	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Diethyl phthalate	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Dimethyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Di-n-butyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Di-n-octyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Fluorene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorobutadiene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorocyclopentadiene	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachloroethane	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Indeno(1,2,3-cd)pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Isophorone	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Naphthalene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Nitrobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	n-Nitroso-di-n-propylamine	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	n-Nitrosodiphenylamine	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Pentachlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Phenanthrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Phenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
Cadmium-Total in Water	Cadmium	0.20	ND	ug/L		SW 846 6020 (ICP-MS)
Calcium-Total in Water	Calcium	65.1	09	mg/L		SW 846 6010B (ICP)
Chromium-Total in Water	Chromium	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	5.26		ug/L		SW 846 6020 (ICP-MS)
Lead-Total in Water	Lead	1.72	06	ug/L		SW 846 6020 (ICP-MS)
Magnesium-Total in Water	Magnesium	12.9	09	mg/L		SW 846 6010B (ICP)
Manganese-Total in Water	Manganese	236		ug/L		SW 846 6020 (ICP-MS)
Mercury-Total in Water	Mercury	0.05	ND	ug/L		EPA 245.2

Date Printed: 8/11/2008

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Molybdenum-Total in Water	Molybdenum	2.19	05	ug/L		SW 846 6010B (ICP)
Nickel-Total in Water	Nickel	2.82		ug/L		SW 846 6020 (ICP-MS)
Selenium-Total in Water	Selenium	1.00	ND	ug/L		SW 846 6020 (ICP-MS)
Silver-Total in Water	Silver	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Thallium-Total in Water	Thallium	0.25	06, ND	ug/L		SW 846 6020 (ICP-MS)
Vanadium-Total in Water	Vanadium	2.72	05	ug/L		SW 846 6010B (ICP)
VOAs	1,1,1,2-Tetrachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,1-Trichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,2,2-Tetrachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,2-Trichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloropropanone	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,3-Trichlorobenzene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,3-Trichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,4-Trichlorobenzene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,4-Trimethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dibromo-3-chloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dibromoethane (EDB)	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3,5-Trimethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,4-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1-Chorobutane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2,2-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Butanone (MEK)	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Chlorotoluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Hexanone	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Nitropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	4-Chlorotoluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	4-Methyl-2-pentanone(MIBK)	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	acetone	10.0	ND	ug/L	Q80718-01VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Acrylonitrile	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Allyl Chloride	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Benzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromochloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromodichloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromoform	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromomethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	carbon disulfide	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Carbon Tetrachloride	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroacetonitrile	12.5	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroform	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloromethane	12.5	ND	ug/L	Q80718-01VOA	8260B
VOAs	cis-1,2-dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	cis-1,3-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dibromochloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dibromomethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dichlorodifluoromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Diethyl ether	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	Ethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Ethylmethacrylate	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Hexachlorobutadiene	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Hexachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Iodomethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Isopropylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	m&p-Xylenes	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methacrylonitrile	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methyl Acrylate	5.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methylene chloride	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methylmethacrylate	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methyl-t-butyl ether	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Naphthalene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	n-Butylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Nitrobenzene	5.00	ND	ug/L	Q80718-01VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-32 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808063 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:57 AM

Matrix: Nonpotable Water | **Sample Comment:** Water grab WS-01, from creek at closed quarry. Sample collected 20 yards downstream from ATV crossing.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	n-Propylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	o-Xylene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Pentachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	p-isopropyltoluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Propionitrile	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	sec-Butylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Styrene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	tert-Butylbenzene	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Tetrachloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Tetrahydrofuran	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Toluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Total Xylenes	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,2-Dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,3-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,4-Dichloro-2-butene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Trichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Trichlorofluoromethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Vinyl Chloride	0.50	ND	ug/L	Q80718-01VOA	8260B
Zinc-Total in Water	Zinc	26.5	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total in Water	Antimony	0.46	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	3.87	05	ug/L		SW 846 6020 (ICP-MS)
Barium-Total in Water	Barium	189		ug/L		SW 846 6020 (ICP-MS)
BNAs	1,2,4-Trichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	1,2-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	1,3-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	1,4-Dichlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4,5-Trichlorophenol	5.00	ND	ug/L	Q80723-05bna	8270C

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	2,4,6-Trichlorophenol	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dichlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dimethylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dinitrophenol	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2,4-Dinitrotoluene	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2,6-Dinitrotoluene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Chloronaphthalene	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Chlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methyl-4,6-dinitrophenol	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methylnaphthalene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Methylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	2-Nitrophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	3,3-Dichlorobenzidine	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	3-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Bromophenyl phenyl ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chloro-3-methylphenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chloroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Chlorophenyl phenyl ether	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Methylphenol	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Nitroaniline	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	4-Nitrophenol	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Acenaphthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Acenaphthylene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	azobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(a)anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(a)pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(b)fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(ghi)perylene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzo(k)fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Benzoic Acid	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-Chloroethoxy)methane	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-Chloroethyl)ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-chloroisopropyl)ether	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	bis(2-Ethylhexyl) phthalate	5.00	ND	ug/L	Q80723-05bna	8270C

Date Printed: 8/11/2008

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	Butyl benzyl phthalate	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	Chrysene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Dibenzo(a,h)anthracene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Dibenzofuran	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Diethyl phthalate	10.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Dimethyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Di-n-butyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Di-n-octyl phthalate	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Fluoranthene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Fluorene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorobutadiene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachlorocyclopentadiene	5.00	ND	ug/L	Q80723-05bna	8270C
BNAs	Hexachloroethane	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Indeno(1,2,3-cd)pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Isophorone	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Naphthalene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Nitrobenzene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	n-Nitroso-di-n-propylamine	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	n-Nitrosodiphenylamine	25.0	ND	ug/L	Q80723-05bna	8270C
BNAs	Pentachlorophenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Phenanthrene	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Phenol	2.50	ND	ug/L	Q80723-05bna	8270C
BNAs	Pyrene	2.50	ND	ug/L	Q80723-05bna	8270C
Cadmium-Total in Water	Cadmium	0.20	ND	ug/L		SW 846 6020 (ICP-MS)
Calcium-Total in Water	Calcium	64.7	09	mg/L		SW 846 6010B (ICP)
Chromium-Total in Water	Chromium	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	4.14		ug/L		SW 846 6020 (ICP-MS)
Lead-Total in Water	Lead	0.85	06, 05	ug/L		SW 846 6020 (ICP-MS)
Magnesium-Total in Water	Magnesium	12.8	09	mg/L		SW 846 6010B (ICP)
Manganese-Total in Water	Manganese	220		ug/L		SW 846 6020 (ICP-MS)
Mercury-Total in Water	Mercury	0.05	ND	ug/L		EPA 245.2
Molybdenum-Total in Water	Molybdenum	2.00	ND	ug/L		SW 846 6010B (ICP)
Nickel-Total in Water	Nickel	2.64		ug/L		SW 846 6020 (ICP-MS)
Selenium-Total in Water	Selenium	1.00	ND	ug/L		SW 846 6020 (ICP-MS)
Silver-Total in Water	Silver	0.25	ND	ug/L		SW 846 6020 (ICP-MS)

Date Printed: 8/11/2008

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Thallium-Total in Water	Thallium	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Vanadium-Total in Water	Vanadium	2.37	05	ug/L		SW 846 6010B (ICP)
VOAs	1,1,1,2-Tetrachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,1-Trichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,2,2-Tetrachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1,2-Trichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloropropanone	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,1-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,3-Trichlorobenzene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,3-Trichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,4-Trichlorobenzene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2,4-Trimethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dibromo-3-chloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dibromoethane (EDB)	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,2-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3,5-Trimethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,3-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1,4-Dichlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	1-Chorobutane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2,2-Dichloropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Butanone (MEK)	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Chlorotoluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Hexanone	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	2-Nitropropane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	4-Chlorotoluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	4-Methyl-2-pentanone(MIBK)	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	acetone	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	Acrylonitrile	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Allyl Chloride	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Benzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Bromochloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromodichloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromoform	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Bromomethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	carbon disulfide	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Carbon Tetrachloride	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroacetonitrile	12.5	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chlorobenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloroform	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Chloromethane	12.5	ND	ug/L	Q80718-01VOA	8260B
VOAs	cis-1,2-dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	cis-1,3-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dibromochloromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dibromomethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Dichlorodifluoromethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Diethyl ether	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	Ethylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Ethylmethacrylate	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Hexachlorobutadiene	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Hexachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Iodomethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Isopropylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	m&p-Xylenes	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methacrylonitrile	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methyl Acrylate	5.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methylene chloride	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methylmethacrylate	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Methyl-t-butyl ether	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Naphthalene	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	n-Butylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Nitrobenzene	5.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	n-Propylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	o-Xylene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Pentachloroethane	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	p-isopropyltoluene	0.50	ND	ug/L	Q80718-01VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-33 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808064 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Nonpotable Water | **Sample Comment:** Blind duplicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Propionitrile	10.0	ND	ug/L	Q80718-01VOA	8260B
VOAs	sec-Butylbenzene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Styrene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	tert-Butylbenzene	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	Tetrachloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Tetrahydrofuran	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Toluene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Total Xylenes	1.00	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,2-Dichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,3-Dichloropropene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	trans-1,4-Dichloro-2-butene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Trichloroethene	0.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Trichlorofluoromethane	2.50	ND	ug/L	Q80718-01VOA	8260B
VOAs	Vinyl Chloride	0.50	ND	ug/L	Q80718-01VOA	8260B
Zinc-Total in Water	Zinc	44.2	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	1170	05,17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	8910	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	105000	17	ug/kg		SW 846 6010B (ICP)
BNAs	1,2,4-Trichlorobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	1,2-Dichlorobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	1,3-Dichlorobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	1,4-Dichlorobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,4,5-Trichlorophenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,4,6-Trichlorophenol	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,4-Dichlorophenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,4-Dimethylphenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,4-Dinitrophenol	655	ND,17	ug/kg	Q80728-10bna	8270C

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	2,4-Dinitrotoluene	262	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2,6-Dinitrotoluene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Chloronaphthalene	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Chlorophenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Methyl-4,6-dinitrophenol	262	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Methylnaphthalene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Methylphenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Nitroaniline	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	2-Nitrophenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	3,3-Dichlorobenzidine	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	3-Nitroaniline	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Bromophenyl phenyl ether	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Chloro-3-methylphenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Chloroaniline	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Chlorophenyl phenyl ether	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Methylphenol	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Nitroaniline	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	4-Nitrophenol	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Acenaphthene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Acenaphthylene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Anthracene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	azobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzo(a)anthracene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzo(a)pyrene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzo(b)fluoranthene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzo(ghi)perylene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzo(k)fluoranthene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Benzoic Acid	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	bis(2-Chloroethoxy)methane	262	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	bis(2-Chloroethyl)ether	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	bis(2-chloroisopropyl)ether	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	bis(2-Ethylhexyl) phthalate	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Butyl benzyl phthalate	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Chrysene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Dibenzo(a,h)anthracene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Dibenzofuran	65.5	ND,17	ug/kg	Q80728-10bna	8270C

Date Printed: 8/11/2008

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	Diethyl phthalate	262	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Dimethyl phthalate	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Di-n-butyl phthalate	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Di-n-octyl phthalate	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Fluoranthene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Fluorene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Hexachlorobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Hexachlorobutadiene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Hexachlorocyclopentadiene	131	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Hexachloroethane	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Indeno(1,2,3-cd)pyrene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Isophorone	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Naphthalene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Nitrobenzene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	n-Nitroso-di-n-propylamine	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	n-Nitrosodiphenylamine	655	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Pentachlorophenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Phenanthrene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Phenol	65.5	ND,17	ug/kg	Q80728-10bna	8270C
BNAs	Pyrene	65.5	ND,17	ug/kg	Q80728-10bna	8270C
Cadmium-Total	Cadmium	285	05,17	ug/kg		SW 846 6010B (ICP)
Calcium-Total	Calcium	76600	09,17	mg/kg		SW 846 6010B (ICP)
Chromium-Total	Chromium	27100	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	151000	17	ug/kg		SW 846 6010B (ICP)
Lead-Total	Lead	20800	17	ug/kg		SW 846 6010B (ICP)
Magnesium-Total	Magnesium	5020	09,17	mg/Kg		SW 846 6010B (ICP)
Manganese-Total	Manganese	788000	09,17	ug/kg		SW 846 6010B (ICP)
Mercury-Total	Mercury	6.39	05,17	ug/kg		EPA 245.1
Molybdenum-Total	Molybdenum	1150	17	ug/kg		SW 846 6010B (ICP)
Nickel-Total	Nickel	13300	17	ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	23.5		%		Not Applicable
Selenium-Total	Selenium	1000	ND,17	ug/kg		SW 846 6010B (ICP)
Silver-Total	Silver	250	ND,17	ug/kg		SW 846 6010B (ICP)
Thallium-Total	Thallium	1270	05,17	ug/kg		SW 846 6010B (ICP)
Vanadium-Total	Vanadium	18900	09,17	ug/kg		SW 846 6010B (ICP)
VOAs	1,1,1,2-Tetrachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	1,1,1-Trichloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1,2,2-Tetrachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1,2-Trichloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1-Dichloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1-Dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1-Dichloropropanone	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,1-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2,3-Trichlorobenzene	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2,3-Trichloropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2,4-Trichlorobenzene	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2,4-Trimethylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2-Dibromo-3-chloropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2-Dibromoethane (EDB)	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2-Dichlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2-Dichloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,2-Dichloropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,3,5-Trimethylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,3-Dichlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,3-Dichloropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1,4-Dichlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	1-Chorobutane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2,2-Dichloropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Butanone (MEK)	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Chlorotoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Hexanone	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Nitropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Chlorotoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Methyl-2-pentanone(MIBK)	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	acetone	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Acrylonitrile	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Allyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Benzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromodichloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromoform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Bromomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	carbon disulfide	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Carbon Tetrachloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroacetonitrile	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloromethane	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,2-dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromomethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dichlorodifluoromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Diethyl ether	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachlorobutadiene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Iodomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Isopropylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	m&p-Xylenes	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methacrylonitrile	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methyl Acrylate	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylene chloride	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methyl-t-butyl ether	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Naphthalene	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Nitrobenzene	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Propylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	o-Xylene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Pentachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	p-isopropyltoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Propionitrile	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	sec-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Styrene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B

Date Printed: 8/11/2008

Sample: 080716004-34 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808065 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 11:40 AM

Matrix: Soils | **Sample Comment:** Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at the ATV trail.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	tert-Butylbenzene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrachloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrahydrofuran	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Toluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Total Xylenes	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,2-Dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,4-Dichloro-2-butene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichlorofluoromethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Vinyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
Zinc-Total	Zinc	234000	17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-35 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808066 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Soils | **Sample Comment:** Blind replicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	1130	05,17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	7580	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	117000	17	ug/kg		SW 846 6010B (ICP)
BNAs	1,2,4-Trichlorobenzene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	1,2-Dichlorobenzene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	1,3-Dichlorobenzene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	1,4-Dichlorobenzene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4,5-Trichlorophenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4,6-Trichlorophenol	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4-Dichlorophenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4-Dimethylphenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4-Dinitrophenol	610	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,4-Dinitrotoluene	244	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2,6-Dinitrotoluene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Chloronaphthalene	122	ND,17	ug/kg	Q80729-05bna	8270C

Sample: 080716004-35 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808066 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:**

Matrix: Soils | **Sample Comment:** Blind replicate.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
BNAs	2-Chlorophenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Methyl-4,6-dinitrophenol	244	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Methylnaphthalene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Methylphenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Nitroaniline	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	2-Nitrophenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	3,3-Dichlorobenzidine	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	3-Nitroaniline	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Bromophenyl phenyl ether	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Chloro-3-methylphenol	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Chloroaniline	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Chlorophenyl phenyl ether	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Methylphenol	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Nitroaniline	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	4-Nitrophenol	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Acenaphthene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Acenaphthylene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Anthracene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	azobenzene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzo(a)anthracene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzo(a)pyrene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzo(b)fluoranthene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzo(ghi)perylene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzo(k)fluoranthene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Benzoic Acid	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	bis(2-Chloroethoxy)methane	244	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	bis(2-Chloroethyl)ether	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	bis(2-chloroisopropyl)ether	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	bis(2-Ethylhexyl) phthalate	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Butyl benzyl phthalate	122	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Chrysene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Dibenzo(a,h)anthracene	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Dibenzofuran	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Diethyl phthalate	244	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Dimethyl phthalate	61.0	ND,17	ug/kg	Q80729-05bna	8270C
BNAs	Di-n-butyl phthalate	61.0	ND,17	ug/kg	Q80729-05bna	8270C

Date Printed: 8/11/2008

Sample: 080716004-40 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808071 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 3:30 PM

Matrix: Soils | **Sample Comment:** R-16, valley forest area north of facility, 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	2-Butanone (MEK)	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Chlorotoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Hexanone	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	2-Nitropropane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Chlorotoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	4-Methyl-2-pentanone(MIBK)	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	acetone	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Acrylonitrile	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Allyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Benzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromodichloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromoform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Bromomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	carbon disulfide	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Carbon Tetrachloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroacetonitrile	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chlorobenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloroform	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Chloromethane	62.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,2-dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	cis-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromochloromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dibromomethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Dichlorodifluoromethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Diethyl ether	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Ethylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachlorobutadiene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Hexachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Iodomethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Isopropylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	m&p-Xylenes	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methacrylonitrile	2.50	ND,17	ug/kg	Q80722-03VOA	8260B

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Sample: 080716004-40 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808071 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 3:30 PM

Matrix: Soils | **Sample Comment:** R-16, valley forest area north of facility, 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
VOAs	Methyl Acrylate	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylene chloride	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methylmethacrylate	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Methyl-t-butyl ether	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Naphthalene	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Nitrobenzene	25.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	n-Propylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	o-Xylene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Pentachloroethane	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	p-isopropyltoluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Propionitrile	50.0	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	sec-Butylbenzene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Styrene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	tert-Butylbenzene	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrachloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Tetrahydrofuran	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Toluene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Total Xylenes	5.00	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,2-Dichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,3-Dichloropropene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	trans-1,4-Dichloro-2-butene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichloroethene	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Trichlorofluoromethane	12.5	ND,17	ug/kg	Q80722-03VOA	8260B
VOAs	Vinyl Chloride	2.50	ND,17	ug/kg	Q80722-03VOA	8260B
Zinc-Total	Zinc	3100000	09,17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-41 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808072 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:25 AM

Matrix: Soils | **Sample Comment:** SS-02, closed city quarry, collected along main ATV traffic trail. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	3060	11,17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-41 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808072 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:25 AM

Matrix: Soils | **Sample Comment:** SS-02, closed city quarry, collected along main ATV traffic trail. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	15100	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	512000	17	ug/kg		SW 846 6010B (ICP)
Cadmium-Total	Cadmium	5350	17	ug/kg		SW 846 6010B (ICP)
Calcium-Total	Calcium	195000	09,17	mg/kg		SW 846 6010B (ICP)
Chromium-TCLP	Chromium	0.10	ND	ppm		SW 846 6010B (ICP)
Chromium-Total	Chromium	158000	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	3530000	09,17	ug/kg		SW 846 6010B (ICP)
Lead-TCLP	Lead	0.86		ppm		SW 846 6010B (ICP)
Lead-Total	Lead	177000	17	ug/kg		SW 846 6010B (ICP)
Magnesium-Total	Magnesium	43400	09,17	mg/Kg		SW 846 6010B (ICP)
Manganese-Total	Manganese	4650000	09,17	ug/kg		SW 846 6010B (ICP)
Mercury-Total	Mercury	2.50	ND,17	ug/kg		EPA 245.1
Molybdenum-Total	Molybdenum	3590	17	ug/kg		SW 846 6010B (ICP)
Nickel-Total	Nickel	12300	17	ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	11.8		%		Not Applicable
Selenium-Total	Selenium	2120	05,17	ug/kg		SW 846 6010B (ICP)
Silver-Total	Silver	1980	11,17	ug/kg		SW 846 6010B (ICP)
Thallium-Total	Thallium	3620	17	ug/kg		SW 846 6010B (ICP)
Vanadium-Total	Vanadium	64000	09,17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	1070000	09,17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-42 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808073 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:30 AM

Matrix: Soils | **Sample Comment:** SS-03, closed city quarry, collected from the west waste piles. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	4240	11,17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	12000	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	423000	17	ug/kg		SW 846 6010B (ICP)
Cadmium-Total	Cadmium	3110	17	ug/kg		SW 846 6010B (ICP)
Calcium-Total	Calcium	188000	09,17	mg/kg		SW 846 6010B (ICP)
Chromium-TCLP	Chromium	0.10	ND	ppm		SW 846 6010B (ICP)
Chromium-Total	Chromium	158000	17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-42 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808073 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:30 AM

Matrix: Soils | **Sample Comment:** SS-03, closed city quarry, collected from the west waste piles. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Copper-Total	Copper	3630000	09,17	ug/kg		SW 846 6010B (ICP)
Lead-TCLP	Lead	0.90		ppm		SW 846 6010B (ICP)
Lead-Total	Lead	127000	17	ug/kg		SW 846 6010B (ICP)
Magnesium-Total	Magnesium	43100	09,17	mg/Kg		SW 846 6010B (ICP)
Manganese-Total	Manganese	4510000	09,17	ug/kg		SW 846 6010B (ICP)
Mercury-Total	Mercury	4.14	05,17	ug/kg		EPA 245.1
Molybdenum-Total	Molybdenum	2520	17	ug/kg		SW 846 6010B (ICP)
Nickel-Total	Nickel	11700	17	ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	10.6		%		Not Applicable
Selenium-Total	Selenium	1640	05,17	ug/kg		SW 846 6010B (ICP)
Silver-Total	Silver	1800	11,17	ug/kg		SW 846 6010B (ICP)
Thallium-Total	Thallium	4190	17	ug/kg		SW 846 6010B (ICP)
Vanadium-Total	Vanadium	58500	09,17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	587000	17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-43 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808074 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:35 AM

Matrix: Soils | **Sample Comment:** SS-04, closed city quarry, collected from the east waste piles. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	4010	11,17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	12400	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	1310000	09,17	ug/kg		SW 846 6010B (ICP)
Cadmium-Total	Cadmium	1780	17	ug/kg		SW 846 6010B (ICP)
Calcium-Total	Calcium	149000	09,17	mg/kg		SW 846 6010B (ICP)
Chromium-TCLP	Chromium	0.10	ND	ppm		SW 846 6010B (ICP)
Chromium-Total	Chromium	92300	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1800000	09,17	ug/kg		SW 846 6010B (ICP)
Lead-TCLP	Lead	0.65		ppm		SW 846 6010B (ICP)
Lead-Total	Lead	275000	17	ug/kg		SW 846 6010B (ICP)
Magnesium-Total	Magnesium	32400	09,17	mg/Kg		SW 846 6010B (ICP)
Manganese-Total	Manganese	6600000	09,17	ug/kg		SW 846 6010B (ICP)
Mercury-Total	Mercury	3.21	05,17	ug/kg		EPA 245.1

Sample: 080716004-43 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808074 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:35 AM

Matrix: Soils | **Sample Comment:** SS-04, closed city quarry, collected from the east waste piles. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Molybdenum-Total	Molybdenum	3320	17	ug/kg		SW 846 6010B (ICP)
Nickel-Total	Nickel	10900	17	ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	12.1		%		Not Applicable
Selenium-Total	Selenium	2710	17	ug/kg		SW 846 6010B (ICP)
Silver-Total	Silver	8720	17	ug/kg		SW 846 6010B (ICP)
Thallium-Total	Thallium	8300	17	ug/kg		SW 846 6010B (ICP)
Vanadium-Total	Vanadium	47800	09,17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	3730000	09,17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-44 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808075 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 10:45 AM

Matrix: Soils | **Sample Comment:** SS-05, closed city quarry, collected along main ATV trail to Grindstone Creek. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	1000	ND,17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	4520	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	77900	17	ug/kg		SW 846 6010B (ICP)
Cadmium-Total	Cadmium	356	05,17	ug/kg		SW 846 6010B (ICP)
Calcium-Total	Calcium	321000	09,17	mg/kg		SW 846 6010B (ICP)
Chromium-Total	Chromium	9060	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	57300	17	ug/kg		SW 846 6010B (ICP)
Lead-Total	Lead	14400	17	ug/kg		SW 846 6010B (ICP)
Magnesium-Total	Magnesium	7070	09,17	mg/Kg		SW 846 6010B (ICP)
Manganese-Total	Manganese	906000	09,17	ug/kg		SW 846 6010B (ICP)
Mercury-Total	Mercury	6.57	05,17	ug/kg		EPA 245.1
Molybdenum-Total	Molybdenum	1860	17	ug/kg		SW 846 6010B (ICP)
Nickel-Total	Nickel	7710	17	ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	0.6		%		Not Applicable
Selenium-Total	Selenium	1000	ND,17	ug/kg		SW 846 6010B (ICP)
Silver-Total	Silver	250	ND,17	ug/kg		SW 846 6010B (ICP)
Thallium-Total	Thallium	3250	17	ug/kg		SW 846 6010B (ICP)
Vanadium-Total	Vanadium	7790	09,17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	108000	17	ug/kg		SW 846 6010B (ICP)

Sample: 080716004-45 | **Facility ID:** | **Site:** Rockwool Industries

Customer # : 0808076 | **County:** Clinton | **Sample Reference ID:** | **Collect Date:** 7/15/2008

Collector: Ken Hannon | **Affiliation:** ESP | **Collect Time:** 4:20 PM

Matrix: Soils | **Sample Comment:** R-17, east edge of pavement off of the northeast corner of Sukup building, approximately 20 ft. south of R-15. 0.0 to 4.0 in. depth.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Antimony-Total	Antimony	2500	17	ug/kg		SW 846 6010B (ICP)
Arsenic-Total	Arsenic	7360	17	ug/kg		SW 846 6010B (ICP)
Barium-Total	Barium	291000	17	ug/kg		SW 846 6010B (ICP)
BNAs	1,2,4-Trichlorobenzene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	1,2-Dichlorobenzene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	1,3-Dichlorobenzene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	1,4-Dichlorobenzene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4,5-Trichlorophenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4,6-Trichlorophenol	116	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4-Dichlorophenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4-Dimethylphenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4-Dinitrophenol	580	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,4-Dinitrotoluene	232	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2,6-Dinitrotoluene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Chloronaphthalene	116	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Chlorophenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Methyl-4,6-dinitrophenol	232	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Methylnaphthalene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Methylphenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Nitroaniline	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	2-Nitrophenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	3,3-Dichlorobenzidine	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	3-Nitroaniline	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Bromophenyl phenyl ether	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Chloro-3-methylphenol	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Chloroaniline	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Chlorophenyl phenyl ether	116	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Methylphenol	116	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Nitroaniline	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	4-Nitrophenol	116	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	Acenaphthene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	Acenaphthylene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	Anthracene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	azobenzene	58.0	ND,17	ug/kg	Q80729-01bna	8270C
BNAs	Benzo(a)anthracene	58.0	ND,17	ug/kg	Q80729-01bna	8270C

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R-4] 97.0 ft north and 29.0 ft west of the NE corner of SUKUP Bldg
ID# 080803B Depth = 0-2
PID 0-2 = 0 ppm 2-4 = 0.0 ppm 4-6 ~~6-8~~ = 0.0
6-8 = 0.0 Time: 1510
- 0-2.0 ft tight gray clay
- 0-4 ~~8~~" loose loamy topsoil
ID# 080803 9 Depth = 0-4 ~~8~~" Time 1520

R-5] 57.5 ft North and 24.0 ft west of the NW corner of SUKUP Bldg
PID Readings 0-2 = 0.0 ppm 2-4 = 0.0 ppm
4-6 = 0.0 ppm 6-8 = 0.0 ppm
ID# 080804 0 Depth = 0-4 ~~8~~ Time = 1530
- loose loamy topsoil
ID# 080804 1 Depth = 5-7 Time: 1610
- Tight Black to gray clay

R-6] NE corner of out ~~Bui~~ abandoned Building just north of SUKUP
- ID# 080804 2 Depth = 0-4" Time 1628
- loose loamy topsoil
PID 0-2 = 0.0 ppm ~~0~~2-4 = 0.0 ppm
4-6 = 0.0 ppm 6-8 = 0.0 ppm
ID# 080804 8 Time = 1710
- Gray Clay Depth = 3.5-5.5 ft.

~~S~~S-1] ~~Slag~~ Coke pile east side of North gate
Time = 1636 ID# 080803
- Black Rock

~~S~~S-2] slag pile east and south of North gate (Two different Rock Types)
ID# 080804 4 ID# 080845/080846
Time = 1640 Time = 1645
white/gray Rock - Black Rock

S-3] slag pile against upper north Foundation
ID# 080847 Time: 1645
Black Dense Rock

R-7] Background 54.0 ft north of Sukup grain tower and south of telephone lines
ID# 080849 Time = 1744
- 0-4" loose brown topsoil
PID #s 0-2 - 0 ppm 2-4 0 ppm 4-6 = 0 ppm 6-8 = 0 ppm
ID# 080850 Time = 1800 Depth = 4-6
- Tight gray brown Clay

R-8] Background. West end of driveway directly across from the southern edge of the parking lot.
ID# 080B051 Time = 1B35 21
Depth = 0-4"
- loose ~~loamy~~ loamy-clay topsoil
ID# 080B052 Time = 1840 Dep 2.0-3.5
- Tight gray/Brown Clay

Day 2 Arrival Time = 0800 hrs
7/15/08 Depart Time = 1850

R-9] Slag pile @ Yellow Flag

Slag from 0 → 4 = slag 4 → 8 Clay
water @ 10' Collect from 4.5-6.5 ft
ID# 080B053 Time = 0850
- moist Brown to Black Clay
ID# 080B054 Rep ~~Dup~~ #
ID# 080B057 (H2O) Time: 11:00
pH = 6.62 Temp 33.3°C Cond = 1263 us

R-10] Red flag in slag pile directly west of yellow flag
Slag from 0 → 6 Gray/Black moist Clay
at 6 → 8 Collect from 6-7.5 ft
ID# 080B055 Time: 1025

R-11] ~~Red~~ orange Flag ~~eas~~ in Slag pile directly east of yellow Flag
Slag from 0-~~4~~5.0 ft moist black Clay
from 5.0 → 8.0 Sample 5.5 to 6.5 ft.
ID # 080B056 Time = 1050

R-12] North of Sub station and NE of Sukup bldg.
Slag from 0 → 6.0 ft Black Clay 6 → 8.0
Slag 8 → 16 Collect sample 6 → 7.5
ID# 080B058 (6'-7.5') Time: 1132
ID# 080B059 (0-4') Time: 1135
- loose loamy topsoil
ID# 080B060 Time = 1100 - Brown muddy H2O
R-13] North of facility / East of Foundation
- Tight Blochy Brown Clay
PID 0-2 = 25.0 ppm 2-4 = 64.0 ppm
4-6 = 8.1 ppm 6-8 = 1.6 ppm
ID# 080B060 Time = 1220 Depth = 4.0-3.0
ID# 080B061 Time = 1227 Depth = 0-4"
080B062 Rep
- loamy clayey topsoil

Quarry Sample SS-01 and WS-01 20 yrds downstream from ATV X-ing and Bank at ATV Trail

SS-01/WS-01 can't
ID#0808063 Time: 1657
0808064 Dup
- water clear colorless + odorless
ID# 0808065 Time = 1140
0808066 Rep
- gravely sand

R-14 N. of Sukup middle of foundation
* Sat in Sun
ID#0808067 Time: 1410
PID 0-2-17.1 ppm 2-4 = 2.5 4-6 = ~~[illegible]~~ 102 ppm
6-7ft = 120 ppm 7.0 → 7"B" = 38.0 ppm
Collect from ~~6~~ 5.5-7'
- Tight olive green Clay - no odor
ID#0808069 (0-4") Time: 1440 Loamy T.S.

R-15 SE corner of Foundation N. of Sukup Bld.
* Sat in Sun
ID#0808068 Time: 1445
PID 522 ppm @ 0-1 1'-2' = 43.6 3'-4' = 1633
4-5 = 215 ppm 5-6 = 13.4 6-7 = 157 ppm
- Collected @ 3.5-4.5'
ID#0808070 Time: 1455 Depth - 0-4"
- loose loamy top soil

SS-05 Main ATV Trail to Grindstone Cr. Time = 1045 ID 0808075

R-16 Valley forest Area
0-4 = No recovery Surface sample collected only
ID#0808071 Time: ~~1600~~ 1530 Depth = 0-4"
- loose loamy topsoil

Quarry waste/Slag SS-02 Main ATV Traffic Local
ID#0808072 Time: 1025

SS-03 - West Waste Piles Time 1030
ID~~#08~~ 0808073

SS-04 - East Waste Piles Time: 1035
ID# 0808074

R-17 - ~~Edge of~~ East edge of pavement off of the NE corner of Sukup Bldg
ID# 0808076 (0-4") Time = 1620
PID 0-1 = 4.6 1-2' = 0 2-3 = 0 0-.5' = 17.5 ppm
Collect @ .5-2.0 ID#0808077 Time = 1645
- Clayey topsoil

R-18 NE of Building and NE of R-18
ID#0808078 time: 1652 Depth = 0-4"
- loose loamy topsoil
PID 0-1 = 74.1 1-2 = 45.2 2-3 = 11.3 3-4 = 14.1
Collect @ 0.5-2.0 ft Time: 1719
ID#0808079
- loamy clay topsoil w/ Brick fragments

Source/Sediment/Soil Sample Collection Data			
Sample Number	**Date Collected**	**Time Collected**	**Location Collected/Description**
0808060	7/15/08	1220	R-13, north of the Sukup facility, northeast corner of the foundation just south of the tree line. 3.0 to 4.0ft. depth. Tight blotchy brown clay.
0808061	7/15/08	1229	R-13, north of the Sukup facility, northeast corner of the foundation just south of the tree line. 0.0 to 4.0 in. depth. Loamy, clayey topsoil.
0808062	7/15/08	1229	Replicate of 0808061.
0808065	7/15/08	1140	Sediment sample SS-01, from creek at closed city quarry. Sample collected along stream bank at ATV trail. Gravely sand.
0808066	7/15/08	1140	Replicate of 0808065.
0808067	7/15/08	1410	R-14, eastern edge of foundation north of the Sukup building, middle of the foundation. 5.5 to 7.0 ft. depth. Tight olive green clay.
0808068	7/15/08	1445	R-15, eastern edge of the foundation north of Sukup building, southeast corner of the foundation. 3.0 to 4.5 ft. depth. Tight clay.
0808069	7/15/08	1440	R-14, eastern edge of foundation north of the Sukup building, middle of the foundation. 0.0 to 4.0 in. depth. Loamy topsoil.
0808070	7/15/08	1445	R-15, eastern edge of the foundation north of Sukup building, southeast corner of the foundation. 0.0 to 4.0 in. depth. Loose loamy topsoil.
0808071	7/15/08	1530	R-16, valley forest area north of facility. 0.0 to 4.0 in. depth. Loose loamy topsoil.
0808072	7/15/08	1025	SS-02, closed city quarry, collected along main ATV traffic trail. 0.0 to 4.0 in. depth. Rocky material.
0808073	7/15/08	1030	SS-03, closed city quarry, collected from the west waste piles. 0.0 to 4.0 in. depth. Rocky material.
0808074	7/15/08	1035	SS-04, closed city quarry, collected from the east waste piles. 0.0 to 4.0 in. depth. Rocky material.
0808075	7/15/08	1045	SS-05, closed city quarry, collected along main ATV trail to Grindstone Creek. 0.0 to 4.0 in. depth. Rocky material.
0808076	7/15/08	1620	R-17, east edge of the pavement off of the northeast corner of the Sukup building, approximately 20 ft. south of R-15. 0.0 to 4.0 in. depth. Clayey topsoil.
0808077	7/15/08	1645	R-17, east edge of the pavement off of the northeast corner of the Sukup building, approximately 20 ft. south of R-15. 0.5 to 2.0 ft. depth. Clayey topsoil.
0808078	7/15/08	1652	R-18, between R-15 and R-17 in low laying area just east of both locations. 0.0 to 4.0 in. depth. Loose loamy topsoil.
0808079	7/15/08	1719	R-18, between R-15 and R-17 in low laying area just east of both locations. 0.5 to 2.0 ft. depth. Loamy clayey topsoil with brick fragments.
0806130	7/18/08	1310	Composite soil sample collected from EPA soil boring SB-01. Composite of samples collected 4.0 to 10.5 foot depth.

Table 2
Rockwool Industries Site, Clinton County, Missouri

Water Sample Collection Data			
Sample Number	**Date Collected**	**Time Collected**	**Location Collected/Description**
0808032	7/14/08	------	Trip blank.
0808057	7/15/08	1100	Water grab collected from R-09. Muddy brown water.
0808063	7/15/08	1057	Water grab from a creek at closed old city quarry. Clear, colorless, and odorless.
0808064	7/15/08	1057	Duplicate of 0808063
080880	7/15/08	1100	Water grab collected from location R-12. Muddy brown water.

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: AUG 05 2008

Subject: Transmittal of Sample Analysis Results for ASR #: 3933
Project ID: RKA7L100
Project Description: Rockwool Industries - Site assessment split sampling

From: Michael F. Davis, Chief
Laboratory Branch, Environmental Services Division

To: Ron King
SUPR/EFLR

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Ron King **Org:** SUPR/EFLR **Phone:** 913-551-7568

Project ID: RKA7L100 **QAPP Number:** MDNR APPROVED QAPP

Project Desc: Rockwool Industries - Site assessment split sampling

Location: Cameron **State:** Missouri **Program:** Superfund

Site Name: ROCKWOOL INDUSTRIES - SITEWIDE **Site ID:** A7L1 **Site OU:** 00

Purpose: Site Characterization **GPRA PRC:** 302DD2C

Collecting splits from MDNR in their investigation of this former business. Activity connected to the brain tumors inquiry in Cameron, MO.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

% = Percent
mg/kg = Milligrams per Kilogram
ug/L = Micrograms per Liter
ug/kg = Micrograms per Kilogram

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

ASR Number: 3933 **Sample Information Summary** **08/05/2008**

Project ID: RKA7L100 **Project Desc:** Rockwool Industries - Site assessment split sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	__	Solid	MDNR 0808041 (Soil boring R-5 = 5-7' interval)		07/14/2008		07/14/2008	15:10	07/17/2008
2	__	Solid	MDNR 0808048 (Soil boring R-6 = 3.5-5.5' interval)		07/14/2008	17:10	07/14/2008	17:10	07/17/2008
3	__	Solid	MDNR 0808055 (Soil boring R-10 = 6-7.5' interval)		07/15/2008	10:25	07/15/2008	10:25	07/17/2008
4	__	Solid	MDNR 0808065 & 066 (SS-01 collected at Everett Quarry)		07/15/2008	11:40	07/14/2008	11:40	07/17/2008
4	FD	Solid	MDNR 0808065 & 066 (SS-01 collected at Everett Quarry)/Field Duplicate of sample 4		07/15/2008	11:40	07/15/2008	11:40	07/17/2008
5	__	Solid	Collected by EPA at pond on Cameron Municipal Golf Course		07/16/2008	10:00	07/16/2008	10:00	07/17/2008
6	__	Solid	Sediment sample collected by EPA at Burlington Reservoir		07/16/2008	11:22	07/16/2008	11:22	07/17/2008
7	__	Solid	EPA sample boring SB-02 (16-17' interval)		07/18/2008	10:42	07/18/2008	10:42	07/21/2008
8	__	Solid	EPA soil sample boring SB-01 (4-10.5' interval)		07/18/2008	12:10	07/18/2008	12:10	07/21/2008
9	__	Solid	Soil boring SB-03 (8-12' interval)		07/18/2008	13:00	07/18/2008	13:00	07/21/2008
10	__	Solid	EPA soil boring SB-04 (4-8' interval)		07/18/2008	15:30	07/18/2008	15:30	07/21/2008
11	__	Solid	Soil boring SB-05 (4-8' interval)		07/18/2008	16:30	07/18/2008	16:30	07/21/2008
12	__	Solid	Soil boring SB-07 (8-10' interval)		07/18/2008	19:00	07/18/2008	19:00	07/21/2008
101	__	Waste	MDNR 0808074 (SS-04 collected from Everett Quarry) - Haz. Waste sample		07/15/2008	10:35	07/15/2008	10:35	07/17/2008
201	__	Water	MDNR 0808063 & 064Dup (SW collected at Everett Quarry, WS-01)		07/15/2008	10:57	07/15/2008	10:57	07/17/2008
201	FD	Water	MDNR 0808063 & 064Dup (SW collected at Everette Quarry, WS-01)/Field Duplicate of sample 201		07/15/2008	10:57	07/15/2008	10:57	07/17/2008
202	__	Water	Surface water sample collected by EPA at pond on Cameron Municipal Golf Course		07/16/2008	09:45	07/16/2008	09:45	07/17/2008
203	__	Water	Surface water sample collected by EPA at Burlington Reservoir		07/16/2008	11:00	07/16/2008	11:00	07/17/2008
204	FB	Water	Surface Field Blank sample		07/14/2008	10:00	07/14/2008	10:00	07/17/2008
205	FB	Water	LDL VOA Trip Blank sample		07/14/2008	10:00	07/14/2008	10:00	07/17/2008

Analysis **Comments About Results For This Analysis**

1 Mercury in Soil or Sediment

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3121.23A

Basis: Dry

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 5-__ 6-__
7-__ 8-__ 9-__ 10-__ 11-__ 12-__

Comments:
(N/A)

1 Metals in Solids by ICP

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3122.3C

Basis: Dry

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 5-__ 6-__
7-__ 8-__ 9-__ 10-__ 11-__ 12-__

Comments:
Copper was J-coded in sample 1. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate. (16,11)

Dilutions were necessary in order to obtain valid results due to matrix interferences for samples 6-12 for analytes Aluminum, Copper, Iron, Magnesium, Manganese, Zinc. This increased the reporting limits by a factor of 10 for these samples.

Iron was J-coded in samples 6-12. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to low recovery of this analyte in the laboratory control sample. (76,80-109) The actual concentration for this analyte may be higher than the reported value.

1 Percent Solid

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3142.9E

Basis: N/A

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 5-__ 6-__
7-__ 8-__ 9-__ 10-__ 11-__ 12-__

Comments:
(N/A)

1 Semi-Volatile Organic Compounds in Soil

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Analysis	Comments About Results For This Analysis
	samples 201, 201FD, 202, 203, 204FB, and 205FB. These analytes were not found in the samples at or above the reporting limits, however, the reporting limits are an estimate (UJ-coded) due to low recovery of these analytes in the laboratory control sample. The actual reporting limits for these analytes may be higher than the reported values.

ASR Number: 3933 **RLAB Approved Sample Analysis Results** **08/05/2008**

Project ID: RKA7L100 **Project Desc:** Rockwool Industries - Site assessment split sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Mercury in Soil or Sediment					
Mercury	mg/kg	0.0410	0.0323	0.0311	0.0086
1 Metals in Solids by ICP					
Aluminum	mg/kg	15000	11400	13000	3740
Antimony	mg/kg	2.4 U	2.3 U	2.5 U	2.0 U
Arsenic	mg/kg	10.4	7.6	11.1	6.6
Barium	mg/kg	212	138	148	105
Beryllium	mg/kg	1.2 U	1.2 U	1.3 U	1.0 U
Cadmium	mg/kg	2.9	2.3	14.9	1.5
Calcium	mg/kg	4280	5430	5380	38800
Chromium	mg/kg	15.4	13.2	13.3	11.3
Cobalt	mg/kg	10.4	5.3	10.0	5.4
Copper	mg/kg	35.8 J	14.6	77.6	106
Iron	mg/kg	23200	16400	19100	10600
Lead	mg/kg	23.5	167	21.1	20.1
Magnesium	mg/kg	3310	2320	2240	2820
Manganese	mg/kg	537	360	312	572
Molybdenum	mg/kg	2.4 U	2.3 U	2.5 U	2.0 U
Nickel	mg/kg	16.6	13.7	18.7	7.2
Potassium	mg/kg	1300	732	2750	668
Selenium	mg/kg	11.9 U	11.5 U	12.7 U	10.2 U
Silver	mg/kg	2.4 U	2.3 U	2.5 U	2.0 U
Sodium	mg/kg	249	145	104	190
Thallium	mg/kg	11.9 U	11.5 U	12.7 U	10.2 U
Vanadium	mg/kg	35.6	28.3	32.9	14.3
Zinc	mg/kg	54.4	158	894	159
1 Percent Solid					
Solids, percent	%	79.5	78.0	76.4	84.9
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	480 U	480 U	99 U	74 U
Acenaphthylene	ug/kg	480 U	480 U	99 U	74 U
Anthracene	ug/kg	480 U	480 U	99 U	74 U
Benzo(a)anthracene	ug/kg	480 U	480 U	99 U	74 U
Benzo(a)pyrene	ug/kg	480 U	480 U	99 U	74 U
Benzo(b)fluoranthene	ug/kg	480 U	480 U	99 U	74 U
Benzo(g,h,i)perylene	ug/kg	480 U	480 U	99 U	74 U
Benzo(k)fluoranthene	ug/kg	480 U	480 U	99 U	74 U
Benzoic acid	ug/kg	2400 U	2400 U	500 U	370 U
Benzyl alcohol	ug/kg	1200 U	1200 U	250 U	190 U
bis(2-Chloroethoxy)methane	ug/kg	480 U	480 U	99 U	74 U
bis(2-Chloroethyl)ether	ug/kg	480 U	480 U	99 U	74 U
bis(2-Chloroisopropyl)ether	ug/kg	480 U	480 U	99 U	74 U
bis(2-Ethylhexyl)phthalate	ug/kg	1200 U	1200 U	250 U	190 U
4-Bromophenyl-phenylether	ug/kg	480 U	480 U	99 U	74 U
Butylbenzylphthalate	ug/kg	1200 U	1200 U	250 U	190 U
Carbazole	ug/kg	1200 U	1200 U	250 U	190 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
4-Chloro-3-methylphenol	ug/kg	1200 U	1200 U	250 U	190 U
4-Chloroaniline	ug/kg	2400 U	2400 U	500 U	370 U
2-Chloronaphthalene	ug/kg	480 U	480 U	99 U	74 U
2-Chlorophenol	ug/kg	1200 U	1200 U	250 U	190 U
4-Chlorophenyl-phenylether	ug/kg	480 U	480 U	99 U	74 U
Chrysene	ug/kg	480 U	480 U	99 U	74 U
Di-n-butylphthalate	ug/kg	1200 U	1200 U	250 U	190 U
Di-n-octylphthalate	ug/kg	1200 U	1200 U	250 U	190 U
Dibenz(a,h)anthracene	ug/kg	480 U	480 U	99 U	74 U
Dibenzofuran	ug/kg	480 U	480 U	99 U	74 U
1,2-Dichlorobenzene	ug/kg	480 U	480 U	99 U	74 U
1,3-Dichlorobenzene	ug/kg	480 U	480 U	99 U	74 U
1,4-Dichlorobenzene	ug/kg	480 U	480 U	99 U	74 U
3,3'-Dichlorobenzidine	ug/kg	1200 U	1200 U	250 U	190 U
2,4-Dichlorophenol	ug/kg	1200 U	1200 U	250 U	190 U
Diethylphthalate	ug/kg	480 U	480 U	99 U	74 U
2,4-Dimethylphenol	ug/kg	480 U	480 U	99 U	74 U
Dimethylphthalate	ug/kg	480 U	480 U	99 U	74 U
4,6-Dinitro-2-methylphenol	ug/kg	2400 U	2400 U	500 U	370 U
2,4-Dinitrophenol	ug/kg	2400 UJ	2400 UJ	500 UJ	370 UJ
2,4-Dinitrotoluene	ug/kg	480 U	480 U	99 U	74 U
2,6-Dinitrotoluene	ug/kg	480 U	480 U	99 U	74 U
Fluoranthene	ug/kg	480 U	480 U	99 U	74 U
Fluorene	ug/kg	480 U	480 U	99 U	74 U
Hexachlorobenzene	ug/kg	480 U	480 U	99 U	74 U
Hexachlorobutadiene	ug/kg	480 U	480 U	99 U	74 U
Hexachlorocyclopentadiene	ug/kg	480 U	480 U	99 U	74 U
Hexachloroethane	ug/kg	480 U	480 U	99 U	74 U
Indeno(1,2,3-cd)pyrene	ug/kg	480 U	480 U	99 U	74 U
Isophorone	ug/kg	480 U	480 U	99 U	74 U
2-Methylnaphthalene	ug/kg	480 U	480 U	99 U	74 U
2-Methylphenol	ug/kg	1200 U	1200 U	250 U	190 U
4-Methylphenol	ug/kg	1200 U	1200 U	250 U	190 U
Naphthalene	ug/kg	480 U	480 U	99 U	74 U
2-Nitroaniline	ug/kg	1200 U	1200 U	250 U	190 U
3-Nitroaniline	ug/kg	1200 U	1200 U	250 U	190 U
4-Nitroaniline	ug/kg	2400 U	2400 U	500 U	370 U
Nitrobenzene	ug/kg	480 U	480 U	99 U	74 U
2-Nitrophenol	ug/kg	1200 U	1200 U	250 U	190 U
4-Nitrophenol	ug/kg	2400 U	2400 U	500 U	370 U
N-nitroso-di-n-propylamine	ug/kg	1200 UJ	1200 UJ	250 UJ	190 UJ
N-nitrosodiphenylamine	ug/kg	480 U	480 U	99 U	74 U
Pentachlorophenol	ug/kg	1200 U	1200 U	250 U	190 U
Phenanthrene	ug/kg	480 U	480 U	99 U	74 U
Phenol	ug/kg	480 U	480 U	99 U	74 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Pyrene	ug/kg	480 U	480 U	99 U	74 U
1,2,4-Trichlorobenzene	ug/kg	480 U	480 U	99 U	74 U
2,4,5-Trichlorophenol	ug/kg	1200 U	1200 U	250 U	190 U
2,4,6-Trichlorophenol	ug/kg	1200 U	1200 U	250 U	190 U
1 VOCs in Solid Matrices by GC/MS					
Acetone	ug/kg	220 J	16 UJ	25 UJ	12 UJ
Benzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Bromodichloromethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Bromoform	ug/kg	13 U	13 U	13 U	12 U
Bromomethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
2-Butanone	ug/kg	36 J	6.4 UJ	6.6 UJ	5.9 UJ
Carbon Disulfide	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Carbon Tetrachloride	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Chlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Chloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Chloroform	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Chloromethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Cyclohexane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Dibromochloromethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2-Dibromoethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2-Dichlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,3-Dichlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,4-Dichlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Dichlorodifluoromethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1-Dichloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2-Dichloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1-Dichloroethene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
cis-1,2-Dichloroethene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
trans-1,2-Dichloroethene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2-Dichloropropane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
cis-1,3-Dichloropropene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
trans-1,3-Dichloropropene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Ethyl Benzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
2-Hexanone	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Isopropylbenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Methyl Acetate	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Methyl tert-butyl ether	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Methylcyclohexane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Methylene Chloride	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
4-Methyl-2-Pentanone	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Naphthalene	ug/kg	13 U	13 U	13 U	12 U
Styrene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Tetrachloroethene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U

ASR Number: 3933 **RLAB Approved Sample Analysis Results** **08/05/2008**

Project ID: RKA7L100 **Project Desc:** Rockwool Industries - Site assessment split sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Toluene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2,3-Trichlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,2,4-Trichlorobenzene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1,1-Trichloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1,2-Trichloroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Trichloroethene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Trichlorofluoromethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
Vinyl Chloride	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
m and/or p-Xylene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U
o-Xylene	ug/kg	6.3 U	6.4 U	6.6 U	5.9 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	7-__
1 Mercury in Soil or Sediment					
Mercury	mg/kg	0.0056 U	0.0131	0.0056 U	0.0167
1 Metals in Solids by ICP					
Aluminum	mg/kg	4290	5970	3600	20500
Antimony	mg/kg	2.1 U	2.3 U	1.9 U	3.2 U
Arsenic	mg/kg	5.3 U	5.7 U	4.8 U	11.2
Barium	mg/kg	157	66.0	51.5	247
Beryllium	mg/kg	1.1 U	1.1 U	1.0 U	1.9
Cadmium	mg/kg	2.0	1.1 U	1.0 U	4.3
Calcium	mg/kg	73200	1580	1830	55000
Chromium	mg/kg	16.0	8.3	5.3	78.4
Cobalt	mg/kg	9.6	5.6	3.2	14.5
Copper	mg/kg	133	7.3	9.7 U	903
Iron	mg/kg	12700	9320	4800 J	29000 J
Lead	mg/kg	24.6	8.2	9.7	106
Magnesium	mg/kg	4620	818	591	12300
Manganese	mg/kg	1130	151	150	1440
Molybdenum	mg/kg	2.1 U	2.3 U	1.9 U	3.2 U
Nickel	mg/kg	12.2	7.4	6.9	15.4
Potassium	mg/kg	814	603	362	2390
Selenium	mg/kg	10.5 U	11.3 U	9.7 U	15.8 U
Silver	mg/kg	2.1 U	2.3 U	1.9 U	3.2 U
Sodium	mg/kg	263	76.2	48.4 U	1640
Thallium	mg/kg	10.5 U	11.3 U	9.7 U	15.8 U
Vanadium	mg/kg	14.6	21.5	11.4	41.5
Zinc	mg/kg	203	12.5	48.4 U	1160
1 Percent Solid					
Solids, percent	%	85.0	73.8	74.4	61.6
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	73 U	88 UJ	160 U	220 UJ
Acenaphthylene	ug/kg	73 U	88 UJ	160 U	220 UJ
Anthracene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzo(a)anthracene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzo(a)pyrene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzo(b)fluoranthene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzo(g,h,i)perylene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzo(k)fluoranthene	ug/kg	73 U	88 UJ	160 U	220 UJ
Benzoic acid	ug/kg	360 U	440 U	810 U	1100 U
Benzyl alcohol	ug/kg	180 U	220 U	400 U	550 U
bis(2-Chloroethoxy)methane	ug/kg	73 U	88 UJ	160 U	220 UJ
bis(2-Chloroethyl)ether	ug/kg	73 U	88 UJ	160 U	220 UJ
bis(2-Chloroisopropyl)ether	ug/kg	73 U	88 UJ	160 U	220 UJ
bis(2-Ethylhexyl)phthalate	ug/kg	180 U	220 UJ	400 U	550 UJ
4-Bromophenyl-phenylether	ug/kg	73 U	88 UJ	160 U	220 UJ
Butylbenzylphthalate	ug/kg	180 U	220 UJ	400 U	550 UJ
Carbazole	ug/kg	180 U	220 UJ	400 U	550 UJ

Analysis/ Analyte	Units	4-FD	5-__	6-__	7-__
4-Chloro-3-methylphenol	ug/kg	180 U	220 U	400 U	550 U
4-Chloroaniline	ug/kg	360 U	440 UJ	810 U	1100 UJ
2-Chloronaphthalene	ug/kg	73 U	88 UJ	160 U	220 UJ
2-Chlorophenol	ug/kg	180 U	220 U	400 U	550 U
4-Chlorophenyl-phenylether	ug/kg	73 U	88 UJ	160 U	220 UJ
Chrysene	ug/kg	73 U	88 UJ	160 U	220 UJ
Di-n-butylphthalate	ug/kg	180 U	220 UJ	400 U	550 UJ
Di-n-octylphthalate	ug/kg	180 U	220 UJ	400 U	550 UJ
Dibenz(a,h)anthracene	ug/kg	73 U	88 UJ	160 U	220 UJ
Dibenzofuran	ug/kg	73 U	88 UJ	160 U	220 UJ
1,2-Dichlorobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
1,3-Dichlorobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
1,4-Dichlorobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
3,3'-Dichlorobenzidine	ug/kg	180 U	220 UJ	400 U	550 UJ
2,4-Dichlorophenol	ug/kg	180 U	220 U	400 U	550 U
Diethylphthalate	ug/kg	73 U	88 UJ	160 U	220 UJ
2,4-Dimethylphenol	ug/kg	73 U	88 U	160 U	220 U
Dimethylphthalate	ug/kg	73 U	88 UJ	160 U	220 UJ
4,6-Dinitro-2-methylphenol	ug/kg	360 U	440 U	810 U	1100 U
2,4-Dinitrophenol	ug/kg	360 U	440 U	810 U	1100 U
2,4-Dinitrotoluene	ug/kg	73 U	88 UJ	160 U	220 UJ
2,6-Dinitrotoluene	ug/kg	73 U	88 UJ	160 U	220 UJ
Fluoranthene	ug/kg	73 U	88 UJ	160 U	220 UJ
Fluorene	ug/kg	73 U	88 UJ	160 U	220 UJ
Hexachlorobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
Hexachlorobutadiene	ug/kg	73 U	88 UJ	160 U	220 UJ
Hexachlorocyclopentadiene	ug/kg	73 U	88 UJ	160 UJ	220 UJ
Hexachloroethane	ug/kg	73 U	88 UJ	160 U	220 UJ
Indeno(1,2,3-cd)pyrene	ug/kg	73 U	88 UJ	160 U	220 UJ
Isophorone	ug/kg	73 U	88 UJ	160 U	220 UJ
2-Methylnaphthalene	ug/kg	73 U	88 UJ	160 U	220 UJ
2-Methylphenol	ug/kg	180 U	220 U	400 U	550 U
4-Methylphenol	ug/kg	180 U	220 U	400 U	550 U
Naphthalene	ug/kg	73 U	88 UJ	160 U	220 UJ
2-Nitroaniline	ug/kg	180 U	220 UJ	400 U	550 UJ
3-Nitroaniline	ug/kg	180 U	220 UJ	400 U	550 UJ
4-Nitroaniline	ug/kg	360 U	440 UJ	810 U	1100 UJ
Nitrobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
2-Nitrophenol	ug/kg	180 U	220 U	400 U	550 U
4-Nitrophenol	ug/kg	360 U	440 U	810 U	1100 U
N-nitroso-di-n-propylamine	ug/kg	180 UJ	220 UJ	400 UJ	550 UJ
N-nitrosodiphenylamine	ug/kg	73 U	88 UJ	160 U	220 UJ
Pentachlorophenol	ug/kg	180 U	220 U	400 U	550 U
Phenanthrene	ug/kg	73 U	88 UJ	160 U	220 UJ
Phenol	ug/kg	73 U	88 U	160 U	220 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	7-__
Pyrene	ug/kg	73 U	88 UJ	160 U	220 UJ
1,2,4-Trichlorobenzene	ug/kg	73 U	88 UJ	160 U	220 UJ
2,4,5-Trichlorophenol	ug/kg	180 U	220 U	400 U	550 U
2,4,6-Trichlorophenol	ug/kg	180 U	220 U	400 U	550 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg				71 J
Benzene	ug/kg				24
Bromodichloromethane	ug/kg				8.6 U
Bromoform	ug/kg				8.6 U
Bromomethane	ug/kg				8.6 U
2-Butanone	ug/kg				17 U
Carbon Disulfide	ug/kg				8.6 U
Carbon Tetrachloride	ug/kg				8.6 U
Chlorobenzene	ug/kg				17
Chloroethane	ug/kg				8.6 U
Chloroform	ug/kg				8.6 U
Chloromethane	ug/kg				8.6 U
Cyclohexane	ug/kg				8.6 U
1,2-Dibromo-3-Chloropropane	ug/kg				8.6 U
Dibromochloromethane	ug/kg				8.6 U
1,2-Dibromoethane	ug/kg				8.6 U
1,2-Dichlorobenzene	ug/kg				8.6 U
1,3-Dichlorobenzene	ug/kg				8.6 U
1,4-Dichlorobenzene	ug/kg				8.6 U
Dichlorodifluoromethane	ug/kg				8.6 U
1,1-Dichloroethane	ug/kg				8.6 U
1,2-Dichloroethane	ug/kg				8.6 U
1,1-Dichloroethene	ug/kg				8.6 U
cis-1,2-Dichloroethene	ug/kg				8.6 U
trans-1,2-Dichloroethene	ug/kg				8.6 U
1,2-Dichloropropane	ug/kg				8.6 U
cis-1,3-Dichloropropene	ug/kg				8.6 U
trans-1,3-Dichloropropene	ug/kg				8.6 U
Ethyl Benzene	ug/kg				8.6 U
2-Hexanone	ug/kg				8.6 U
Isopropylbenzene	ug/kg				8.6 U
Methyl Acetate	ug/kg				8.6 U
Methyl tert-butyl ether	ug/kg				8.6 U
Methylcyclohexane	ug/kg				8.6 U
Methylene Chloride	ug/kg				8.6 U
4-Methyl-2-Pentanone	ug/kg				8.6 U
Naphthalene	ug/kg				17 U
Styrene	ug/kg				8.6 U
1,1,2,2-Tetrachloroethane	ug/kg				8.6 U
Tetrachloroethene	ug/kg				8.6 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	7-__
Toluene	ug/kg				8.6 U
1,2,3-Trichlorobenzene	ug/kg				8.6 U
1,2,4-Trichlorobenzene	ug/kg				8.6 U
1,1,1-Trichloroethane	ug/kg				8.6 U
1,1,2-Trichloroethane	ug/kg				8.6 U
Trichloroethene	ug/kg				8.6 U
Trichlorofluoromethane	ug/kg				8.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg				8.6 U
Vinyl Chloride	ug/kg				8.6 U
m and/or p-Xylene	ug/kg				8.6 U
o-Xylene	ug/kg				8.6 U
1 VOCs in Solid Matrices by GC/MS					
Acetone	ug/kg	12 UJ	35 UJ	44 UJ	
Benzene	ug/kg	5.8 U	6.8 U	6.7 U	
Bromodichloromethane	ug/kg	5.8 U	6.8 U	6.7 U	
Bromoform	ug/kg	12 U	14 U	13 U	
Bromomethane	ug/kg	5.8 U	6.8 U	6.7 U	
2-Butanone	ug/kg	5.8 UJ	6.8 UJ	9.9 UJ	
Carbon Disulfide	ug/kg	5.8 U	6.8 U	6.7 U	
Carbon Tetrachloride	ug/kg	5.8 U	6.8 U	6.7 U	
Chlorobenzene	ug/kg	5.8 U	6.8 U	6.7 U	
Chloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
Chloroform	ug/kg	5.8 U	6.8 U	6.7 U	
Chloromethane	ug/kg	5.8 U	6.8 U	6.7 U	
Cyclohexane	ug/kg	5.8 U	6.8 U	6.7 U	
1,2-Dibromo-3-Chloropropane	ug/kg	5.8 U	6.8 U	6.7 U	
Dibromochloromethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,2-Dibromoethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,2-Dichlorobenzene	ug/kg	5.8 U	6.8 U	6.7 U	
1,3-Dichlorobenzene	ug/kg	5.8 U	6.8 U	6.7 U	
1,4-Dichlorobenzene	ug/kg	5.8 U	6.8 U	6.7 U	
Dichlorodifluoromethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,1-Dichloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,2-Dichloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,1-Dichloroethene	ug/kg	5.8 U	6.8 U	6.7 U	
cis-1,2-Dichloroethene	ug/kg	5.8 U	6.8 U	6.7 U	
trans-1,2-Dichloroethene	ug/kg	5.8 U	6.8 U	6.7 U	
1,2-Dichloropropane	ug/kg	5.8 U	6.8 U	6.7 U	
cis-1,3-Dichloropropene	ug/kg	5.8 U	6.8 U	6.7 U	
trans-1,3-Dichloropropene	ug/kg	5.8 U	6.8 U	6.7 U	
Ethyl Benzene	ug/kg	5.8 U	6.8 U	6.7 U	
2-Hexanone	ug/kg	5.8 U	6.8 U	6.7 U	
Isopropylbenzene	ug/kg	5.8 U	6.8 U	6.7 U	
Methyl Acetate	ug/kg	5.8 U	6.8 U	6.7 UJ	
Methyl tert-butyl ether	ug/kg	5.8 U	6.8 U	6.7 U	

ASR Number: 3933 **RLAB Approved Sample Analysis Results** **08/05/2008**

Project ID: RKA7L100 **Project Desc:** Rockwool Industries - Site assessment split sampling

Analysis/ Analyte	Units	4-FD	5-__	6-__	7-__
Methylcyclohexane	ug/kg	5.8 U	6.8 U	6.7 U	
Methylene Chloride	ug/kg	5.8 U	6.8 U	6.7 U	
4-Methyl-2-Pentanone	ug/kg	5.8 U	6.8 U	6.7 U	
Naphthalene	ug/kg	12 U	14 U	13 UJ	
Styrene	ug/kg	5.8 U	6.8 U	6.7 U	
1,1,2,2-Tetrachloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
Tetrachloroethene	ug/kg	5.8 U	6.8 U	6.7 U	
Toluene	ug/kg	5.8 U	6.8 U	7.0	
1,2,3-Trichlorobenzene	ug/kg	5.8 U	6.8 U	6.7 UJ	
1,2,4-Trichlorobenzene	ug/kg	5.8 U	6.8 U	6.7 UJ	
1,1,1-Trichloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,1,2-Trichloroethane	ug/kg	5.8 U	6.8 U	6.7 U	
Trichloroethene	ug/kg	5.8 U	6.8 U	6.7 U	
Trichlorofluoromethane	ug/kg	5.8 U	6.8 U	6.7 U	
1,1,2-Trichlorotrifluoroethane	ug/kg	5.8 U	6.8 U	6.7 U	
Vinyl Chloride	ug/kg	5.8 U	6.8 U	6.7 U	
m and/or p-Xylene	ug/kg	5.8 U	6.8 U	6.7 U	
o-Xylene	ug/kg	5.8 U	6.8 U	6.7 U	

Analysis/ Analyte	Units	12-__	101-__	201-__	201-FD
Pyrene	ug/kg	1400 U			
1,2,4-Trichlorobenzene	ug/kg	1400 U			
2,4,5-Trichlorophenol	ug/kg	3400 U			
2,4,6-Trichlorophenol	ug/kg	3400 U			
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	150 J			
Benzene	ug/kg	10 U			
Bromodichloromethane	ug/kg	10 U			
Bromoform	ug/kg	10 U			
Bromomethane	ug/kg	10 U			
2-Butanone	ug/kg	21 U			
Carbon Disulfide	ug/kg	10 U			
Carbon Tetrachloride	ug/kg	10 U			
Chlorobenzene	ug/kg	10 U			
Chloroethane	ug/kg	10 U			
Chloroform	ug/kg	10 U			
Chloromethane	ug/kg	10 U			
Cyclohexane	ug/kg	10 U			
1,2-Dibromo-3-Chloropropane	ug/kg	10 U			
Dibromochloromethane	ug/kg	10 U			
1,2-Dibromoethane	ug/kg	10 U			
1,2-Dichlorobenzene	ug/kg	10 U			
1,3-Dichlorobenzene	ug/kg	10 U			
1,4-Dichlorobenzene	ug/kg	10 U			
Dichlorodifluoromethane	ug/kg	10 U			
1,1-Dichloroethane	ug/kg	10 U			
1,2-Dichloroethane	ug/kg	10 U			
1,1-Dichloroethene	ug/kg	10 U			
cis-1,2-Dichloroethene	ug/kg	10 U			
trans-1,2-Dichloroethene	ug/kg	10 U			
1,2-Dichloropropane	ug/kg	10 U			
cis-1,3-Dichloropropene	ug/kg	10 U			
trans-1,3-Dichloropropene	ug/kg	10 U			
Ethyl Benzene	ug/kg	10 U			
2-Hexanone	ug/kg	10 U			
Isopropylbenzene	ug/kg	10 U			
Methyl Acetate	ug/kg	10 U			
Methyl tert-butyl ether	ug/kg	10 U			
Methylcyclohexane	ug/kg	10 U			
Methylene Chloride	ug/kg	10 U			
4-Methyl-2-Pentanone	ug/kg	10 U			
Naphthalene	ug/kg	21 U			
Styrene	ug/kg	10 U			
1,1,2,2-Tetrachloroethane	ug/kg	10 U			
Tetrachloroethene	ug/kg	10 U			

Analysis/ Analyte	Units	12-__	101-__	201-__	201-FD
Toluene	ug/kg	10 U			
1,2,3-Trichlorobenzene	ug/kg	10 U			
1,2,4-Trichlorobenzene	ug/kg	10 U			
1,1,1-Trichloroethane	ug/kg	10 U			
1,1,2-Trichloroethane	ug/kg	10 U			
Trichloroethene	ug/kg	10 U			
Trichlorofluoromethane	ug/kg	10 U			
1,1,2-Trichlorotrifluoroethane	ug/kg	10 U			
Vinyl Chloride	ug/kg	10 U			
m and/or p-Xylene	ug/kg	10 U			
o-Xylene	ug/kg	10 U			
1 Mercury in Hazardous Samples					
Mercury	mg/kg		0.0056 U		
1 Metals in Haz.Waste by ICP					
Arsenic	mg/kg		12.0		
Barium	mg/kg		961 J		
Cadmium	mg/kg		11.4		
Chromium	mg/kg		85.3		
Lead	mg/kg		322		
Selenium	mg/kg		8.7 U		
Silver	mg/kg		9.5		
1 Mercury in Water					
Mercury	ug/L			0.281	
1 Metals in Water by ICP/MS					
Antimony	ug/L			2.0 U	
Arsenic	ug/L			3.8	
Barium	ug/L			167	
Beryllium	ug/L			1.0 U	
Cadmium	ug/L			1.0 U	
Chromium	ug/L			2.0 U	
Cobalt	ug/L			1.0 U	
Copper	ug/L			2.0 U	
Lead	ug/L			1.0 U	
Manganese	ug/L			176	
Nickel	ug/L			3.4	
Selenium	ug/L			5.0 UJ	
Silver	ug/L			1.0 UJ	
Thallium	ug/L			1.0 U	
Vanadium	ug/L			3.2	
Zinc	ug/L			1.0 U	
1 Semi-Volatile Organic Compounds in Water					
Acenaphthene	ug/L			2.0 U	
Acenaphthylene	ug/L			2.0 U	
Anthracene	ug/L			2.0 U	
Benzo(a)anthracene	ug/L			2.0 U	

Analysis/ Analyte	Units	12-__	101-__	201-__	201-FD
Benzo(a)pyrene	ug/L			2.0 U	
Benzo(b)fluoranthene	ug/L			2.0 U	
Benzo(g,h,i)perylene	ug/L			2.0 U	
Benzo(k)fluoranthene	ug/L			2.0 U	
Benzoic acid	ug/L			10 U	
Benzyl alcohol	ug/L			2.0 U	
bis(2-Chloroethoxy)methane	ug/L			2.0 U	
bis(2-Chloroethyl)ether	ug/L			2.0 U	
bis(2-Chloroisopropyl)ether	ug/L			2.0 U	
bis(2-Ethylhexyl)phthalate	ug/L			5.0 U	
4-Bromophenyl-phenylether	ug/L			2.0 U	
Butylbenzylphthalate	ug/L			5.0 U	
Carbazole	ug/L			5.0 U	
4-Chloro-3-methylphenol	ug/L			5.0 U	
4-Chloroaniline	ug/L			10 U	
2-Chloronaphthalene	ug/L			2.0 U	
2-Chlorophenol	ug/L			5.0 U	
4-Chlorophenyl-phenylether	ug/L			2.0 U	
Chrysene	ug/L			2.0 U	
Di-n-butylphthalate	ug/L			5.0 U	
Di-n-octylphthalate	ug/L			5.0 U	
Dibenz(a,h)anthracene	ug/L			5.0 U	
Dibenzofuran	ug/L			2.0 U	
1,2-Dichlorobenzene	ug/L			2.0 U	
1,3-Dichlorobenzene	ug/L			2.0 U	
1,4-Dichlorobenzene	ug/L			2.0 U	
3,3'-Dichlorobenzidine	ug/L			10 U	
2,4-Dichlorophenol	ug/L			5.0 U	
Diethylphthalate	ug/L			2.0 U	
2,4-Dimethylphenol	ug/L			2.0 U	
Dimethylphthalate	ug/L			2.0 U	
4,6-Dinitro-2-methylphenol	ug/L			10 U	
2,4-Dinitrophenol	ug/L			10 U	
2,4-Dinitrotoluene	ug/L			2.0 U	
2,6-Dinitrotoluene	ug/L			2.0 U	
Fluoranthene	ug/L			2.0 U	
Fluorene	ug/L			2.0 U	
Hexachlorobenzene	ug/L			2.0 U	
Hexachlorobutadiene	ug/L			2.0 U	
Hexachlorocyclopentadiene	ug/L			2.0 U	
Hexachloroethane	ug/L			2.0 U	
Indeno(1,2,3-cd)pyrene	ug/L			2.0 U	
Isophorone	ug/L			2.0 U	
2-Methylnaphthalene	ug/L			2.0 U	
2-Methylphenol	ug/L			5.0 U	

Analysis/ Analyte	Units	12-__	101-__	201-__	201-FD
4-Methylphenol	ug/L			5.0 U	
Naphthalene	ug/L			2.0 U	
2-Nitroaniline	ug/L			5.0 U	
3-Nitroaniline	ug/L			5.0 U	
4-Nitroaniline	ug/L			10 U	
Nitrobenzene	ug/L			2.0 U	
2-Nitrophenol	ug/L			2.0 U	
4-Nitrophenol	ug/L			10 U	
N-nitroso-di-n-propylamine	ug/L			5.0 U	
N-nitrosodiphenylamine	ug/L			2.0 U	
Pentachlorophenol	ug/L			5.0 U	
Phenanthrene	ug/L			2.0 U	
Phenol	ug/L			2.0 U	
Pyrene	ug/L			2.0 U	
1,2,4-Trichlorobenzene	ug/L			2.0 U	
2,4,5-Trichlorophenol	ug/L			5.0 U	
2,4,6-Trichlorophenol	ug/L			5.0 U	
1 VOCs in Drinking Water by GC/MS					
Acetone	ug/L			10 U	10 U
Benzene	ug/L			0.5 U	0.5 U
Bromobenzene	ug/L			0.5 U	0.5 U
Bromochloromethane	ug/L			0.5 U	0.5 U
Bromodichloromethane	ug/L			0.5 U	0.5 U
Bromoform	ug/L			0.5 UJ	0.5 UJ
Bromomethane	ug/L			1 U	1 U
2-Butanone	ug/L			5 U	5 U
n-Butylbenzene	ug/L			0.5 U	0.5 U
sec-Butylbenzene	ug/L			0.5 UJ	0.5 UJ
tert-Butylbenzene	ug/L			0.5 U	0.5 U
Carbon Disulfide	ug/L			0.5 U	0.5 U
Carbon Tetrachloride	ug/L			0.5 U	0.5 U
Chlorobenzene	ug/L			0.5 U	0.5 U
Chloroethane	ug/L			0.5 U	0.5 U
Chloroform	ug/L			0.5 U	0.5 U
Chloromethane	ug/L			1 U	1 U
2-Chlorotoluene	ug/L			0.5 U	0.5 U
4-Chlorotoluene	ug/L			0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	ug/L			1 U	1 U
Dibromochloromethane	ug/L			0.5 UJ	0.5 UJ
1,2-Dibromoethane	ug/L			0.5 U	0.5 U
Dibromomethane	ug/L			0.5 U	0.5 U
1,2-Dichlorobenzene	ug/L			0.5 U	0.5 U
1,3-Dichlorobenzene	ug/L			0.5 U	0.5 U
1,4-Dichlorobenzene	ug/L			0.5 U	0.5 U
Dichlorodifluoromethane	ug/L			0.5 U	0.5 U

Analysis/ Analyte	Units	12-__	101-__	201-__	201-FD
1,1-Dichloroethane	ug/L			0.5 U	0.5 U
1,2-Dichloroethane	ug/L			0.5 U	0.5 U
1,1-Dichloroethene	ug/L			0.5 U	0.5 U
cis-1,2-Dichloroethene	ug/L			0.5 U	0.5 U
trans-1,2-Dichloroethene	ug/L			0.5 U	0.5 U
1,2-Dichloropropane	ug/L			0.5 U	0.5 U
1,3-Dichloropropane	ug/L			1 U	1 U
2,2-Dichloropropane	ug/L			0.5 U	0.5 U
1,1-Dichloropropene	ug/L			0.5 U	0.5 U
cis-1,3-Dichloropropene	ug/L			0.5 U	0.5 U
trans-1,3-Dichloropropene	ug/L			0.5 U	0.5 U
Ethyl Benzene	ug/L			0.5 U	0.5 U
Hexachlorobutadiene	ug/L			0.5 U	0.5 U
2-Hexanone	ug/L			5 U	5 U
Isopropylbenzene	ug/L			0.5 U	0.5 U
p-Isopropyltoluene	ug/L			0.5 U	0.5 U
Methylene Chloride	ug/L			0.5 U	0.5 U
4-Methyl-2-Pentanone	ug/L			5 U	5 U
Naphthalene	ug/L			1 U	1 U
n-Propylbenzene	ug/L			0.5 U	0.5 U
Styrene	ug/L			0.5 UJ	0.5 UJ
1,1,1,2-Tetrachloroethane	ug/L			0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ug/L			1 U	1 U
Tetrachloroethene	ug/L			0.5 U	0.5 U
Toluene	ug/L			0.5 U	0.5 U
1,2,3-Trichlorobenzene	ug/L			0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/L			0.5 U	0.5 U
1,1,1-Trichloroethane	ug/L			0.5 U	0.5 U
1,1,2-Trichloroethane	ug/L			0.5 U	0.5 U
Trichloroethene	ug/L			0.5 U	0.5 U
Trichlorofluoromethane	ug/L			1 U	1 U
1,2,3-Trichloropropane	ug/L			0.5 U	0.5 U
1,2,4-Trimethylbenzene	ug/L			0.5 U	0.5 U
1,3,5-Trimethylbenzene	ug/L			0.5 U	0.5 U
Vinyl Chloride	ug/L			0.5 U	0.5 U
m and/or p-Xylene	ug/L			0.5 U	0.5 U
o-Xylene	ug/L			0.5 U	0.5 U

Analysis/ Analyte	Units	202-__	203-__	204-FB	205-FB
1 Mercury in Water					
Mercury	ug/L	0.229	0.229	0.200 U	
1 Metals in Water by ICP/MS					
Antimony	ug/L	2.0 U	2.0 U	2.0 U	
Arsenic	ug/L	6.2	5.7	1.0 U	
Barium	ug/L	80.3	77.6	5.0 U	
Beryllium	ug/L	1.0 U	1.0 U	1.0 U	
Cadmium	ug/L	1.0 U	1.0 U	1.0 U	
Chromium	ug/L	2.0 U	2.0 U	2.0 U	
Cobalt	ug/L	1.0 U	1.0 U	1.0 U	
Copper	ug/L	2.0 U	2.0 U	2.0 U	
Lead	ug/L	1.0 U	1.3	1.0 U	
Manganese	ug/L	57.9	147	1.0 U	
Nickel	ug/L	1.7	2.5	1.0 U	
Selenium	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	
Silver	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	
Thallium	ug/L	1.0 U	1.0 U	1.0 U	
Vanadium	ug/L	3.2	2.6	1.0 U	
Zinc	ug/L	1.0 U	1.0 U	1.0 U	
1 Semi-Volatile Organic Compounds in Water					
Acenaphthene	ug/L	2.0 U	2.0 U	2.0 U	
Acenaphthylene	ug/L	2.0 U	2.0 U	2.0 U	
Anthracene	ug/L	2.0 U	2.0 U	2.0 U	
Benzo(a)anthracene	ug/L	2.0 U	2.0 U	2.0 U	
Benzo(a)pyrene	ug/L	2.0 U	2.0 U	2.0 U	
Benzo(b)fluoranthene	ug/L	2.0 U	2.0 U	2.0 U	
Benzo(g,h,i)perylene	ug/L	2.0 U	2.0 U	2.0 U	
Benzo(k)fluoranthene	ug/L	2.0 U	2.0 U	2.0 U	
Benzoic acid	ug/L	10 U	10 U	10 UJ	
Benzyl alcohol	ug/L	2.0 U	2.0 U	2.0 UJ	
bis(2-Chloroethoxy)methane	ug/L	2.0 U	2.0 U	2.0 U	
bis(2-Chloroethyl)ether	ug/L	2.0 U	2.0 U	2.0 U	
bis(2-Chloroisopropyl)ether	ug/L	2.0 U	2.0 U	2.0 U	
bis(2-Ethylhexyl)phthalate	ug/L	5.0 U	5.0 U	5.0 U	
4-Bromophenyl-phenylether	ug/L	2.0 U	2.0 U	2.0 U	
Butylbenzylphthalate	ug/L	5.0 U	5.0 U	5.0 U	
Carbazole	ug/L	5.0 U	5.0 U	5.0 U	
4-Chloro-3-methylphenol	ug/L	5.0 U	5.0 U	5.0 UJ	
4-Chloroaniline	ug/L	10 U	10 U	10 U	
2-Chloronaphthalene	ug/L	2.0 U	2.0 U	2.0 U	
2-Chlorophenol	ug/L	5.0 U	5.0 U	5.0 UJ	
4-Chlorophenyl-phenylether	ug/L	2.0 U	2.0 U	2.0 U	
Chrysene	ug/L	2.0 U	2.0 U	2.0 U	
Di-n-butylphthalate	ug/L	5.0 U	5.0 U	5.0 U	
Di-n-octylphthalate	ug/L	5.0 U	5.0 U	5.0 U	
Dibenz(a,h)anthracene	ug/L	5.0 U	5.0 U	5.0 U	

SITE SCREENING REPORT
OLD GRINDSTONE QUARRY
Sample Order Numbers 090109008, 090306004
Cameron, MO
DeKalb County

Site Information:

ESP LDPR Code:	FEPA8	ESP Staff:	Doug Thompson
Job Code:	NJ09OGQY	Investigation Date:	1/7/2009 - 3/5/2009

Introduction:
The Environmental Services Program (ESP) was requested by the Hazardous Waste Program (HWP) to conduct additional sediment and surface water sampling at the Old Grindstone Quarry in conjunction with the investigation of the Rockwool Industries site in Cameron, Missouri. Initial sampling of waste slag, surface soil, creek sediment, and surface water was conducted at the quarry during the initial July 2008 Rockwool Industries investigation. The quarry site is bordered on the south side by Highway 36, just west of the City of Cameron in DeKalb County. Grindstone Creek runs south to north under Highway 36 and borders the west side of the property. Operations at the quarry property, which is owned by the City of Cameron, ceased several decades ago. Sometime after quarry operations ceased, the city allowed Rockwool Industries to dump processed waste slag on the quarry property. ESP Environmental Specialist Doug Thompson traveled to the site on January 7, 2009, and March 5, 2009, to collect surface water and sediment samples from Grindstone Creek. Sampling was conducted in accordance with established standard operating procedures within the Missouri Department of Natural Resources (MDNR), ESP.

Observations:
Personnel arrived on-site and accessed the creek at an all-terrain vehicle (ATV) crossing from the Highway 36 right-of-way. Sampling access points from the western bank were chosen at the creek crossing as well as both upstream and downstream from the crossing. Custody of all samples collected was maintained by ESP personnel. Weather conditions on January 7 were cloudy with a temperature of about 28 degrees Fahrenheit and gusty northwest winds. Large portions of the creek were covered with a thin layer of ice. Weather conditions on March 5 were sunny with a temperature around 60 degrees Fahrenheit with strong, gusty west winds.

Field Methods:
Surface water grab samples were collected by immersing the sample containers directly into the body of water of interest. Care was taken to minimize sediment disturbance during collection. Four surface water locations were identified. These were at the ATV trail crossing, 20 feet upstream from the crossing, 20 feet downstream from the crossing, and 40 feet downstream from the crossing.

Sediment samples were collected from the same locations as the surface waters. Sediment was collected from a zero to two inch depth. Each sample was transferred to a clean aluminum foil pan, homogenized, and excess water was decanted prior to placing the sample into sample containers.

Sample order parameters for these events were: Total arsenic (As), copper (Cu), and zinc (Zn) for all sediments. Parameters for all surface waters were total and dissolved As, Cu, and Zn. Refer to Tables 1-3 for specific information concerning each sample.

A trip blank consisting of analyte-free water was prepared in the laboratory, taken to the field, and accompanied samples collected and transported back to the laboratory. The trip blank received a numbered label, was entered onto the chain-of-custody form, and submitted for total and dissolved As, Cu, and Zn.

One duplicate water grab sample was collected during the sampling event. The duplicate sample was collected alongside its true sample using the same technique as for the true sample. The duplicate sample was assigned a unique sample number, was entered onto the chain-of-custody form as "blind duplicate," and was submitted for the same analytes as its true sample.

A site map (Appendix A), chain of custody/analytical results (Appendix B) and field notes (Appendix C) are provided at the end of this report.

Submitted by:

Doug Thompson
Environmental Specialist
EER Special Projects Unit
Environmental Services Program

Approved by:

Digitally signed by Brian Allen
DN: cn=Brian Allen, c=US, o=Dept. of Natural Resources, ou=State of Missouri, email=brian.allen@dnr.mo.gov
Reason: I am approving this document
Date: 2009.06.12 14:04:47 -05'00'

Brian Allen
Chief
Environmental Emergency Response/Field Services Section
Environmental Services Program

BA:dt

Table 1
Old Grindstone Quarry Site, DeKalb County, Missouri

Sediment Sample Collection Data			
Sample Number	**Date Collected**	**Time Collected**	**Location Collected/Description**
0910282	1/7/09	1242	Trail crossing.
0912176	3/5/09	0950	Trail crossing.
0910284	1/7/09	1250	20 feet upstream of trail crossing.
0912178	3/5/09	1030	20 feet upstream of trail crossing.
0910286	1/7/09	1305	20 feet downstream of trail crossing.
0912174	3/5/09	0925	20 feet downstream of trail crossing.
0910288	1/7/09	1320	40 feet downstream of trail crossing.
0912172	3/5/09	0900	40 feet downstream of trail crossing.
0910290	1/7/09	1312	Duplicate of 0910286.

Table 2
Old Grindstone Quarry Site, DeKalb County, Missouri

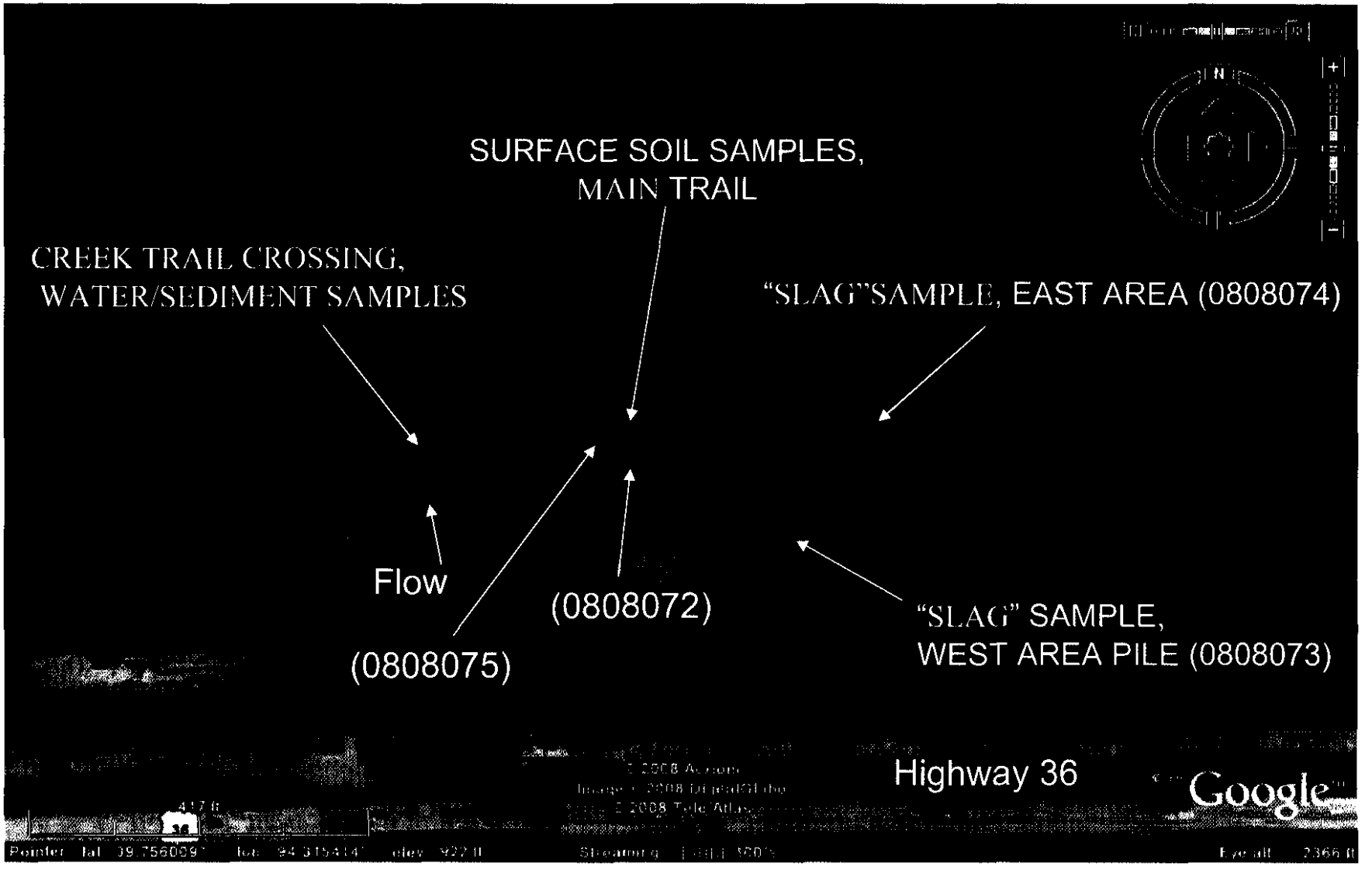
Water Sample Collection Data			
Sample Number	**Date Collected**	**Time Collected**	**Location Collected/Description**
0910281	1/7/09	1240	Trail crossing.
0912177	3/5/09	0950	Trail crossing.
0910283	1/7/09	1245	20 feet upstream of trail crossing.
0912179	3/5/09	1030	20 feet upstream of trail crossing.
0910285	1/7/09	1300	20 feet downstream of trail crossing.
0912175	3/5/09	0925	20 feet downstream of trail crossing.
0910287	1/7/09	1315	40 feet downstream of trail crossing.
0912173	3/5/09	0900	40 feet downstream of trail crossing.
0900066	1/7/09	0500	Trip blank.
0912171	3/5/09	0430	Trip blank.
0910289	1/7/09	1310	Duplicate of 0910285.

Table 3
Old Grindstone Quarry Site, DeKalb County, Missouri

Sample Location	Universal Transverse Mercator (Zone 15)	
	Easting	**Northing**
Trail Crossing	387219.22	4401507.17
Main traffic area slag pile	387390.99	4401501.92
Southwest slag pile	387359.01	4401474.47
Quarry entry trail	387306.32	4401500.61

APPENDIX A

Site Map
OLD GRINDSTONE QUARRY
Cameron, Missouri



Site Map: Rockwool Industries sampling event, city quarry location

APPENDIX B

Analytical Results/Chain of Custody
OLD GRINDSTONE QUARRY
Cameron, Missouri

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

B14

LABORATORY ORDER ID: 090109008

Collector's Name: (Please Print) Doug Thompson, ESP

Affiliation: (circle one) ESP KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment
- Shipped-Carrier:
- Tape sealed and initialed
- x Hand Delivered

No. Of Containers: 6

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0910281 (Sample A)	Date: 01/07/09	As, Cu, Zn Total + Dissolved						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only 090109008-01	Time: 1240	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0910282 (Sample B)	Date: 01/07/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	Water; 1 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 1 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 1 4° C(None); Disinfected; Other
For Lab Use Only -02	Time: 1242	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0910283 (Sample C)	Date: 01/07/09	As, Cu, Zn Total + Dissolved						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only -03	Time: 1245	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0910284 (Sample D)	Date: 01/07/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	Water; 1 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 1 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 1 250mL	H_2SO_4; HNO_3; NAOH; HCL; 1 4° C(None); Disinfected; Other
For Lab Use Only -04	Time: 1250	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
[signature]	[signature]	1-9-09	13:55
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJØOGQY 09
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Creek Crossing- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	[redacted]	[redacted]	EPE (meters)		
	387219.22	4401507.17	PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJØOGQY 09
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Creek Crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	[redacted]	[redacted]	EPE (meters)		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJØOGQY 09
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' upstream of creek crossing- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	[redacted]	[redacted]	EPE (meters)		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJØOGQY 09
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' upstream of creek crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	[redacted]	[redacted]	EPE (meters)		
			PDOP		

REMARKS:

B1C1

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

LABORATORY ORDER ID: 090109008

Collector's Name: Doug Thompson
(Please Print)

Affiliation: (ESP) KCRO NERO SERO SLRO SWRO WPP
(circle one) DGLS HWP Other:

Description of Shipment
- Shipped-Carrier:
- Tape sealed and initialed
- x Hand Delivered

No. Of Containers: 6

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0910285 (Sample A)	Date: 01/07/09	As, Cu, Zn total + dissolved						x Grab	2 Water	1L amber	120 mL	H_2SO_4
								Composite	Soil	Cubitainer		2 HNO_3
								Modified	Organic	2 oz glass	Nalgene	NAOH
									Sludge	8 oz glass	1L	HCL
For Lab Use Only 090109008-05	Time: 1300	D.O	Flow	pH	Spec. Cond.	Temp.	Other:	Other:	Other:	VOA vial	500mL	4° C(None)
										Encore	2 250mL	Disinfected
										Other:		Other
0910286 (Sample B)	Date: 01/07/09	As, Cu, Zn						x Grab	Water	1L amber	120 mL	H_2SO_4
								Composite	1 Soil	Cubitainer		HNO_3
								Modified	Organic	2 oz glass	Nalgene	NAOH
									Sludge	1 8 oz glass	1L	HCL
For Lab Use Only -06	Time: 1305	D.O	Flow	pH	Spec. Cond.	Temp.	Other:	Other:	Other:	VOA vial	500mL	1 4° C(None)
										Encore	250mL	Disinfected
										Other:		Other
0910287 (Sample C)	Date: 01/07/09	As, Cu, Zn Total + dissolved						x Grab	2 Water	1L amber	120 mL	H_2SO_4
								Composite	Soil	Cubitainer		2 HNO_3
								Modified	Organic	2 oz glass	Nalgene	NAOH
									Sludge	8 oz glass	1L	HCL
For Lab Use Only -07	Time: 1315	D.O	Flow	pH	Spec. Cond.	Temp.	Other:	Other:	Other:	VOA vial	500mL	4° C(None)
										Encore	2 250mL	Disinfected
										Other:		Other
0910288 (Sample D)	Date: 01/07/09	As, Cu, Zn						x Grab	Water	1L amber	120 mL	H_2SO_4
								Composite	1 Soil	Cubitainer		HNO_3
								Modified	Organic	2 oz glass	Nalgene	NAOH
									Sludge	1 8 oz glass	1L	HCL
For Lab Use Only -08	Time: 1320	D.O	Flow	pH	Spec. Cond.	Temp.	Other:	Other:	Other:	VOA vial	500mL	1 4° C(None)
										Encore	250mL	Disinfected
										Other:		Other

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Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' downstream of creek crossing- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' downstream of crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 40' downstream of creek crossing- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 40' downstream of creek crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		

REMARKS:

B1C1

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

LABORATORY ORDER ID: 090109008

Collector's Name: (Please Print) Doug Thompson

Affiliation: (circle one) ESP KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment
Shipped-Carrier:
Tape sealed and initialed
x Hand Delivered
No. Of Containers: 4

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container	Preserved
0910289 (Sample A)	Date: 01/07/09	As, Cu, Zn Total + Dissolved						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: 120 mL; Nalgene 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only 090109008-09	Time: 1310	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
0910290 (Sample B)	Date: 01/07/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	Water; 1 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 1 8 oz glass; VOA vial; Encore; Other: 120 mL; Nalgene 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 1 4° C(None); Disinfected; Other
For Lab Use Only -10	Time: 1312	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
0900066 (Sample C)	Date: 01/07/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	1 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: 120 mL; Nalgene 1L; 500mL; 1 250mL	H_2SO_4; 1 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only -11	Time: 500	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
(Sample D)	Date:							Grab; Composite; Modified; Other:	Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: 120 mL; Nalgene 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				

Relinquished By:	Received By:	Date:	Time:
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Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Duplicate sample- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Duplicate sample- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Trip Blank				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.):				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	Y Northing	EPE (meters)		
			PDOP		

REMARKS:

Missouri Department of Natural Resources

Environmental Services Program

Order ID: 090109008 **Program, Contact:** HWP, Julieann Warren

Report Date: 1/26/2009 **LDPR:** FEPA8/NJ09OGQY

Order Comment:

Sample: 090109008-01 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0910281 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 1/7/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 12:40 PM

Matrix: Nonpotable Water **Sample Comment:** Creek crossing - water UTM387219.22E, UTM4401507.17N

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.49	06, 05	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.36		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	1.56	06,08	ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-02 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0910282 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 1/7/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 12:42 PM

Matrix: Soils **Sample Comment:** Creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	3440	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1770	17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	10600	17	ug/kg		SW 846 6010B (ICP)

Sample: 090109008-03 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0910283 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 1/7/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 12:45 PM

Matrix: Nonpotable Water **Sample Comment:** 20' upstream of creek crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.67	06, 05	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.71		ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-03 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910283 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 12:45 PM

Matrix: Nonpotable Water | **Sample Comment:** 20' upstream of creek crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Zinc-Total in Water	Zinc	3.23	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-04 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910284 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 12:50 PM

Matrix: Soils | **Sample Comment:** 20' upstream of creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	6070	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	5760	17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	25100	17	ug/kg		SW 846 6010B (ICP)

Sample: 090109008-05 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910285 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:00 PM

Matrix: Nonpotable Water | **Sample Comment:** 20' downstream of creek crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	2.10	06, 05	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	2.54		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	7.08	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-06 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910286 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:05 PM

Matrix: Soils | **Sample Comment:** 20' downstream of creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	5960	17	ug/kg		SW 846 6010B (ICP)

Date Printed: 1/26/2009

Sample: 090109008-06 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910286 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:05 PM

Matrix: Soils | **Sample Comment:** 20' downstream of creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Copper-Total	Copper	1990	17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	11200	17	ug/kg		SW 846 6010B (ICP)

Sample: 090109008-07 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910287 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:15 PM

Matrix: Nonpotable Water | **Sample Comment:** 40' downstream of creek crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.56	06, 05	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.53		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	2.65	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-08 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910288 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:20 PM

Matrix: Soils | **Sample Comment:** 40' downstream of creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	3170	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1390	17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	8250	17	ug/kg		SW 846 6010B (ICP)

Date Printed: 1/26/2009

Sample: 090109008-09 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910289 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:10 PM

Matrix: Nonpotable Water | **Sample Comment:** Duplicate sample - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.70	06, 05	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.60		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	2.80	06	ug/L		SW 846 6020 (ICP-MS)

Sample: 090109008-10 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0910290 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 1:12 PM

Matrix: Soils | **Sample Comment:** Duplicate sample - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	9960	17	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	2210	17	ug/kg		SW 846 6010B (ICP)
Zinc-Total	Zinc	12500	17	ug/kg		SW 846 6010B (ICP)

Sample: 090109008-11 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0900066 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 1/7/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 5:00 AM

Matrix: Nonpotable Water | **Sample Comment:** Trip blank

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	1.08	06,08	ug/L		SW 846 6020 (ICP-MS)

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Chris Boldt

Chris Boldt, Laboratory Manager
Environmental Services Program
Field Services Division

Qualifier Descriptions

01	Improper collection method	02	Improper preservation
03	Exceeded holding time	04	Analyzed by Contract Laboratory
05	Estimated value, detected below PQL	06	Estimated value, QC data outside limits
07	Estimated value, analyte outside calibration range	08	Analyte present in blank at > 1/2 reported value
09	Sample was diluted during analysis	10	Laboratory error
11	Estimated value, matrix interference	12	Insufficient quantity
13	Estimated value, true result is > reported value	14	Estimated value, non-homogeneous sample
15	No Result - Failed Quality Controls Requirements	16	Not analyzed - related analyte not detected
17	Results in dry weight	18	Sample pH is outside the acceptable range
19	Estimated value	20	Not analyzed - Instrument failure
21	No result - spectral interference	22	pH was performed at the Laboratory
ND	Not detected at reported value		

Date Printed: 1/26/2009

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

B35

LABORATORY ORDER ID: 0903060 04

Collector's Name: (Please Print) Doug Thompson

Affiliation: (circle one) (ESP) KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment

Shipped-Carrier:

Tape sealed and initialed

x Hand Delivered

No. Of Containers: 7

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0912171 (Sample A)	Date: 03/05/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	1 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 1 250mL	H_2SO_4; 1 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only 0903060 04-01	Time: 430	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912172 (Sample B)	Date: 03/05/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 2 4° C(None); Disinfected; Other
For Lab Use Only -02	Time: 900	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912173 (Sample C)	Date: 03/05/09	Total and Dissolved As, Cu, Zn						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only -03	Time: 900	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912174 (Sample D)	Date: 03/05/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 2 4° C(None); Disinfected; Other
For Lab Use Only -04	Time: 925	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
[signature]	DMLiger	3-6-09	12:07

Sample I.D. Letter	Site Description				
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): Trip Blank				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	EPE (meters)		
			PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 40' downstream of creek crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	EPE (meters)		
			PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 40' downstream of crossing- water				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	EPE (meters)		
			PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb	**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' downstream of crossing- sediment				
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy** (check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**	EPE (meters)		
			PDOP		

REMARKS:

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

B3.5

LABORATORY ORDER ID: 090306004

Collector's Name: (Please Print) Doug Thompson

Affiliation: (circle one) (ESP) KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment
- Shipped-Carrier:
- Tape sealed and initialed
- x Hand Delivered

No. Of Containers: 8

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container		Preserved
0912175 (Sample A)	Date: 03/05/09	Total and Dissolved As, Cu, Zn						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only 090306004-05	Time: 925	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912176 (Sample B)	Date: 03/05/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	Water; 2 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 2 4° C(None); Disinfected; Other
For Lab Use Only -06	Time: 950	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912177 (Sample C)	Date: 03/05/09	Total and Dissolved As, Cu, Zn						x Grab; Composite; Modified; Other:	2 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only -07	Time: 950	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					
0912178 (Sample D)	Date: 03/05/09	As, Cu, Zn						x Grab; Composite; Modified; Other:	Water; 2 Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 2 8 oz glass; VOA vial; Encore; Other:	120 mL; Nalgene; 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 2 4° C(None); Disinfected; Other
For Lab Use Only -08	Time: 1030	D.O	Flow	pH	Spec. Cond.	Temp.	Other:					

Relinquished By:	Received By:	Date:	Time:
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Sample I.D. Letter	Site Description					
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb		**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' downstream of crossing- water					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample B	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb		**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): creek crossing- sediment					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample C	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb		**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): creek crossing- water					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample D	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb		**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' upstream of crossing- sediment					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		

REMARKS:

MISSOURI DEPARTMENT OF NATURAL RESOURCES

FIELD SHEET AND CHAIN-OF-CUSTODY RECORD

335

LABORATORY ORDER ID: 090306004

Collector's Name: (Please Print) Doug Thompson

Affiliation: (circle one) ESP KCRO NERO SERO SLRO SWRO WPP DGLS HWP Other:

Description of Shipment

Shipped-Carrier:

Tape sealed and initialed

x Hand Delivered

No. Of Containers: 2

Sample Number	Sample Collected	Analyses						Sample Type	For Lab Use Only: Matrix	Container	Preserved
0912179 (Sample A)	Date: 03/05/09	Total and Dissolved As, Cu, Zn						x Grab; Composite; Modified; Other:	32 Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: — 120 mL; Nalgene; 1L; 500mL; 2 250mL	H_2SO_4; 2 HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only 090306004-09	Time: 1030	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
(Sample B)	Date:							Grab; Composite; Modified; Other:	Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: — 120 mL; Nalgene; 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
(Sample C)	Date: 03/05/09							Grab; Composite; Modified; Other:	Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: — 120 mL; Nalgene; 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only	Time: 950	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				
(Sample D)	Date:							Grab; Composite; Modified; Other:	Water; Soil; Organic; Sludge; Other:	1L amber; Cubitainer; 2 oz glass; 8 oz glass; VOA vial; Encore; Other: — 120 mL; Nalgene; 1L; 500mL; 250mL	H_2SO_4; HNO_3; NAOH; HCL; 4° C(None); Disinfected; Other
For Lab Use Only	Time:	D.O	Flow	pH	Spec. Cond.	Temp.	Other:				

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Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Sample I.D. Letter	Site Description					
Sample A	**Facility ID:**	**Site/Study Name:** Old Cameron Quarry	**County:** Dekalb		**LDPR Code:** FEPA8	**Job Code:** NJ09OGQY
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.): 20' upstream of crossing- water					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample B	**Facility ID:**	**Site/Study Name:**	**County:**		**LDPR Code:**	**Job Code:**
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.):					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample C	**Facility ID:**	**Site/Study Name:**	**County:**		**LDPR Code:**	**Job Code:**
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.):					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		
Sample D	**Facility ID:**	**Site/Study Name:**	**County:**		**LDPR Code:**	**Job Code:**
	Sample Comment (briefly describe where and how the sample was collected, station number, sample type, etc.):					
	GPS Coordinates (Record Coordinates in UTM Zone 15 NAD 83 Only):		**Accuracy**	(check one)	**Sample Reference ID:**	
	X Easting	**Y Northing**		**EPE (meters)**		
				PDOP		

REMARKS:

Missouri Department of Natural Resources

Environmental Services Program

Order ID: 090306004 **Program, Contact:** HWP, Julieann Warren

Report Date: 4/7/2009 **LDPR:** FEPA8/NJ09OGQY

Order Comment:

Sample: 090306004-01 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0912171 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 3/5/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 4:30 AM

Matrix: Nonpotable Water **Sample Comment:** Trip blank

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	0.25	ND	ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	1.82	06,08	ug/L		SW 846 6020 (ICP-MS)

Sample: 090306004-02 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0912172 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 3/5/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 9:00 AM

Matrix: Soils **Sample Comment:** 40' downstream of creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	4880		ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1790		ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	22.0		%		Not Applicable
Zinc-Total	Zinc	12400		ug/kg		SW 846 6010B (ICP)

Sample: 090306004-03 **Facility ID:** **Site:** Old Cameron Quarry

Customer # : 0912173 **County:** Dekalb **Sample Reference ID:** **Collect Date:** 3/5/2009

Collector: Doug Thompson **Affiliation:** ESP **Collect Time:** 9:00 AM

Matrix: Nonpotable Water **Sample Comment:** 40' downstream of crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Dissolved	Arsenic	1.39	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)

Date Printed: 4/7/2009

Sample: 090306004-03 | Facility ID: | Site: Old Cameron Quarry

Customer # : 0912173 | County: Dekalb | Sample Reference ID: | Collect Date: 3/5/2009

Collector: Doug Thompson | Affiliation: ESP | Collect Time: 9:00 AM

Matrix: Nonpotable Water | Sample Comment: 40' downstream of crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Copper-Dissolved	Copper	1.48		ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.49		ug/L		SW 846 6020 (ICP-MS)
Zinc-Dissolved	Zinc	2.46		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	2.67	06,08	ug/L		SW 846 6020 (ICP-MS)

Sample: 090306004-04 | Facility ID: | Site: Old Cameron Quarry

Customer # : 0912174 | County: Dekalb | Sample Reference ID: | Collect Date: 3/5/2009

Collector: Doug Thompson | Affiliation: ESP | Collect Time: 9:25 AM

Matrix: Soils | Sample Comment: 20' downstream of crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	4860		ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1830		ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	20.2		%		Not Applicable
Zinc-Total	Zinc	10900		ug/kg		SW 846 6010B (ICP)

Sample: 090306004-05 | Facility ID: | Site: Old Cameron Quarry

Customer # : 0912175 | County: Dekalb | Sample Reference ID: | Collect Date: 3/5/2009

Collector: Doug Thompson | Affiliation: ESP | Collect Time: 9:25 AM

Matrix: Nonpotable Water | Sample Comment: 20' downstream of crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Dissolved	Arsenic	1.53	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Dissolved	Copper	1.69		ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.47		ug/L		SW 846 6020 (ICP-MS)
Zinc-Dissolved	Zinc	2.02		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	2.35	06,08	ug/L		SW 846 6020 (ICP-MS)

Date Printed: 4/7/2009

Sample: 090306004-06 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0912176 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 3/5/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 9:50 AM

Matrix: Soils | **Sample Comment:** Creek crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	3040		ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	2170		ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	20.0		%		Not Applicable
Zinc-Total	Zinc	10200		ug/kg		SW 846 6010B (ICP)

Sample: 090306004-07 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0912177 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 3/5/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 9:50 AM

Matrix: Nonpotable Water | **Sample Comment:** Creek crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Dissolved	Arsenic	1.44	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Dissolved	Copper	1.48		ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.46		ug/L		SW 846 6020 (ICP-MS)
Zinc-Dissolved	Zinc	0.97	05	ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	2.92	06,08	ug/L		SW 846 6020 (ICP-MS)

Sample: 090306004-08 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0912178 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 3/5/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 10:30 AM

Matrix: Soils | **Sample Comment:** 20' upstream of crossing - sediment

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Total	Arsenic	2400	05	ug/kg		SW 846 6010B (ICP)
Copper-Total	Copper	1440		ug/kg		SW 846 6010B (ICP)
Percent Moisture	Percent Moisture	18.8		%		Not Applicable
Zinc-Total	Zinc	9890		ug/kg		SW 846 6010B (ICP)

Date Printed: 4/7/2009

Appendix C

Field Notes
OLD GRINDSTONE QUARRY
Cameron, Missouri

Sample: 090306004-09 | **Facility ID:** | **Site:** Old Cameron Quarry

Customer # : 0912179 | **County:** Dekalb | **Sample Reference ID:** | **Collect Date:** 3/5/2009

Collector: Doug Thompson | **Affiliation:** ESP | **Collect Time:** 10:30 AM

Matrix: Nonpotable Water | **Sample Comment:** 20' upstream of crossing - water

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Arsenic-Dissolved	Arsenic	1.43	05	ug/L		SW 846 6020 (ICP-MS)
Arsenic-Total in Water	Arsenic	1.00	06, ND	ug/L		SW 846 6020 (ICP-MS)
Copper-Dissolved	Copper	1.58		ug/L		SW 846 6020 (ICP-MS)
Copper-Total in Water	Copper	1.54		ug/L		SW 846 6020 (ICP-MS)
Zinc-Dissolved	Zinc	2.07		ug/L		SW 846 6020 (ICP-MS)
Zinc-Total in Water	Zinc	3.06	06,08	ug/L		SW 846 6020 (ICP-MS)

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Qualifier Descriptions

01 Improper collection method
02 Improper preservation
03 Exceeded holding time
04 Analyzed by Contract Laboratory
05 Estimated value, detected below PQL
06 Estimated value, QC data outside limits
07 Estimated value, analyte outside calibration range
08 Analyte present in blank at > 1/2 reported value
09 Sample was diluted during analysis
10 Laboratory error
11 Estimated value, matrix interference
12 Insufficient quantity
13 Estimated value, true result is > reported value
14 Estimated value, non-homogeneous sample
15 No Result - Failed Quality Controls Requirements
16 Not analyzed - related analyte not detected
17 Results in dry weight
18 Sample pH is outside the acceptable range
19 Estimated value
20 Not analyzed - Instrument failure
21 No result - spectral interference
22 pH was performed at the Laboratory
ND Not detected at reported value

Chris Boldt

Chris Boldt, Laboratory Manager
Environmental Services Program
Field Services Division

Date Printed: 4/7/2009

[illegible] Cane continued

20090107

[illegible] TRAFFICSLAG [illegible]

20090107b

[illegible]

[illegible] N

[illegible] E

[illegible]

[illegible] Quarry
200[illegible]
[illegible] Trail
4401500.[illegible]m N
387306.[illegible] E
[illegible]50.0[illegible]m (HAE)

20090107d
Creek Crossing
4401507.17 m N
387219.22 m E
245.60 H AE

Cameron Quarry
creek crossing

A = creek cross
1240

B = 20' upstream
1245

C = 20' downstream
1300

D = 40' downstream
1315

DUP = C 1310

2/5/09

[illegible]

[illegible]

[illegible] Cupid 13

[illegible] Zumpa [illegible]

[illegible] Sunny

[illegible] Long Lugo

[illegible]

[illegible] 0425

[illegible] 0452

[illegible] [illegible]

VI. REFERENCES

STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES

POINT LOCATIONAL DATA COLLECTION SHEET

This sheet is used to record required point locational data. To record line, area, or vertical data, please complete the Supplemental Locational Data Collection Sheet.

Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #3

1. FACILITY INFORMATION

1A. FACILITY ID (for official use only)

1B. PERMIT NUMBER OR OTHER IDENTIFIER

1C. FACILITY OR SITE NAME

OLD GRINDSTONE QUARRY

1D. LOCATION (PHYSICAL/SITE) ADDRESS

APPROX. 500 FT. NORTHWEST OF HIGHWAY 36 AND GRINDSTONE CREEK INTERSECTION

2. DATA RECORDED FOR

(1) APCP	(2) ESP	(3) HWP	(4) LRP	(5) SWMP	(6) PDWB	(7) SWCP
(8) WPCB	(9) EAO	(10) EC	(11) SHPO	(12) Parks	(13) GSRAD	(14) Land Survey

2A. SECTION/UNIT

SUPERFUND/SITE ASSESSMENT

3. LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR, ZONE 15 NORTH, METERS)

UTM Easting 387393.588 m | UTM Northing 4401504.758 m

4. HORIZONTAL COLLECTION METHOD (indicate the method used to determine the locational data)

Global Positioning System (GPS)		Interpolation	
Static Mode	G1	Source Map Scale: 1:24,000 1:100,000 Other _____	
Dynamic Mode (Kinematic)	G2	Topographic Map or DRG	I1
Differential Post Processing	G3	Aerial Photograph or DOQQ	I2
Precise Positioning Service	G4	Satellite Imagery	I3
Signal Averaging	G5	Interpolation Other	IO
Real Time Differential Processing	G6		

5. HORIZONTAL ACCURACY ESTIMATE

GPS Data Quality		Interpolation Data Quality
FOM	± _____ Meters	
EPE	± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters
PDOP	3.8	

6. HORIZONTAL REFERENCE DATUM

All GPS readings must be referenced to NAD 83 | Interpolation Datum: NAD 83 or NAD 27

7. MANUFACTURER OF GPS RECEIVER

CMT	GARMIN	LOWRANCE	TRIMBLE	OTHER

7A. MODEL OF GPS RECEIVER

GEOEXPLORER XT

8. COORDINATE DATA SOURCE

Description	Code	Description	Code	Description	Code	Description	Code
SERO	D2	PDWB	N2	GSRAD	P2	Dun & Bradstreet	DB
SWRO	D3	SWCP	N3	LSP	P3	EPA Headquarters	HQ
KCRO	D4	SWMP	N4	Kansas City Local Agency	L1	EPA, Region 7	R7
NERO	D5	EAO/TAP	N5	Springfield Local Agency	L2	Private Sector	PV
SLRO	D6	WPCB	N6	St. Louis City Local Agency	L3	Regulated Entity	RE
APCP	D7	DEQ Admin.	N7	St. Louis County Local Agency	L4	Tribe	TR
ESP	D8	SHPO	N8	MoDNR	M1		
HWP	D9	EC	N9	Contractor	CR		
LRP	N1	DSP	P1	Citizen	CT		

9. DATA COLLECTOR AND DATE	
YOUR NAME (PLEASE PRINT) DOUG THOMPSON	DATE COLLECTED JANUARY 7, 2009

10. REFERENCE POINT (Mark the feature where the location of data was collected. If needed, use box 11, Location Comments, to provide enough information to correctly locate the collection site feature.)

Reference Point	Code	Reference Point	Code
Indoor Air	AI	Outfall Pipe	OP
Air Monitoring Station	AM	Pile	PL
Air Release/Stack	AS	Pumping Station	PS
Air Vent	AV	Radioactive Source	RA
Ambient Air	AO	Road	RD
Building	BL	Railroad	RR
Bridge	BR	Soil Boring Sampling	SB
Buried Waste/Waste Pit Area	BW	Species of Conservation Concern	SC
Cave Entrance	CE	Sediment Sampling	SD
Center of Facility or Site	CF	Southeast Corner of the Facility or Site	SE
Center of Operations	CO	Soil Gas	SG
Containers	CT	Stratigraphic Test Hole – Oil & Gas	SH
Drums	DM	Surface Impoundment	SI
Described by Site Name	DS	Seep Area	SP
Exploratory Hole (Mineral Prospect)	EH	Spring	SR
Entry Point (Water enters distribution system)	EP	Soil Sampling	SS
Ecological Research Plot	ER	Surface Water Sampling	ST
Equipment Point of Use	EU	Southwest Corner of the Facility or Site	SW
Foundation Test Hole	FH	Tank	TK
Groundwater Sampling	GS	Water Treatment Plant	TP
Institutional Control	IC	Transfer Station	TS
Impacted Groundwater	IG	Abandoned Well	WA
Intersection (Road, Pipe, Street, Etc.)	IN	Coal Bed Methane Well	WB
Raw Water Intake Structure	IP	Industrial High Capacity Well	WC
Impacted/Contaminated Soil/Spill	IS	Dry Oil or Gas Well	WD
Infectious Waste	IW	Return Well	WE
Land Survey Corners	LC	Monitoring Well	WG
Loading Facility or Dock	LD	Heat Pump Well	WH
Landfill	LF	Irrigation Well	WI
Lagoon or Pond	LS	Drinking Water Well	WK
Main Office/Admin Building	MA	Gas Monitoring Well	WM
Main Access/Entrance/Gate	MG	Natural Gas Well	WN
Missouri Land Survey Monument	MM	Petroleum Well	WP
Material Recovery Facility	MR	Reconstruction Well	WR
Northeast Corner of the Facility or Site	NE	Class II Injection Well	WS
Northwest Corner of the Facility or Site	NW	Class V Injection Well	WT
Outcrop	OC	Vertical Well	WV
Descriptive Comments (use Location Comments below) and code as DC			

11. LOCATION COMMENTS (If needed, further describe the feature represented by the Reference Point.)

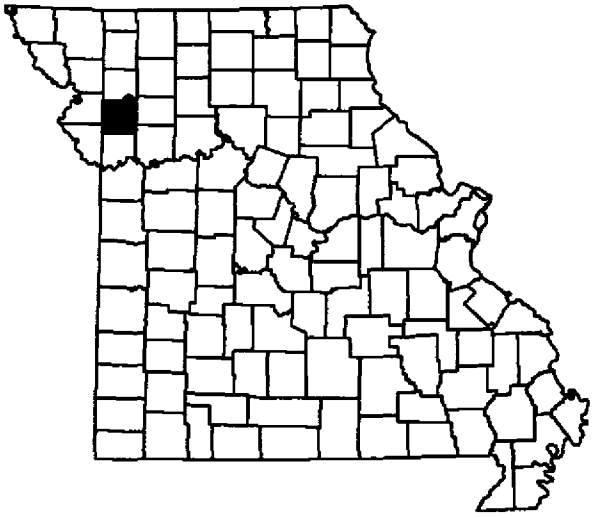
CORRESPONDS TO LOCATION OF SAMPLE #0808074 (EAST WASTE PILE)

Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #4

PRELIMINARY ASSESSMENT/SITE INSPECTION/REMOVAL SITE EVALUATION REPORT

Rockwool Industries Site
Clinton County, Missouri

December 31, 2008



Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

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Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #5

Geochemical Survey of Missouri

Geography of Soil Geochemistry of Missouri Agricultural Soils

By RONALD R. TIDBALL

Geochemical Classification by Factor Analysis of Missouri Agricultural Soils

By RONALD R. TIDBALL

GEOLOGICAL SURVEY PROFESSIONAL PAPER 954-H, I

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1984

R1016

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Geography of Soil Geochemistry of Missouri Agricultural Soils

By RONALD R. TIDBALL

GEOCHEMICAL SURVEY OF MISSOURI

GEOLOGICAL SURVEY PROFESSIONAL PAPER 954-H

A study of the distribution of 43 elements in agricultural soils at 1,140 locations in Missouri

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GEOGRAPHY OF SOIL GEOCHEMISTRY OF MISSOURI AGRICULTURAL SOILS

By RONALD R. TIDBALL

ABSTRACT

Samples of 1,140 agricultural soils from throughout the State of Missouri were analyzed for total concentrations of 43 elements. The results are shown on gray-level symbol maps. Soils developed on young parent materials, such as glacial till, loess, and alluvium, tend to have large concentrations of numerous elements, notably calcium, potassium, magnesium, and sodium. Soils developed on deeply weathered residuum from carbonate rocks have large amounts of silicon (exceeding 40 percent in some cases), titanium, and zirconium and have very small amounts of most other elements.

INTRODUCTION

The amounts of various elements in surficial geologic material differ from one location to another. This condition has resulted from geologic and soil-forming processes that have concentrated certain elements more in some environments than in others. More recent processes, including the activities of man, have tended to redistribute the elements in still more diverse patterns. The character of these patterns may be estimated by reconnaissance geochemical survey techniques such as those being developed by the U.S. Geological Survey (Miesch, 1976).

The geochemical survey of the agricultural soils of Missouri was undertaken (1) to determine typical natural concentrations of the elements in soils as expressed by total analyses, and (2) to describe the geographic patterns of compositional variation. Both univariate and multivariate interpretations of the data will be given, but the multivariate treatment appears separately in a companion report, Chapter I. Typical concentrations of elements are given by the grand mean and deviation, by histograms, and by the 95 percent expected range. The geographic distributions are illustrated by gray-level symbol maps.

The geochemical survey was conducted primarily to assist epidemiologists at the University of Missouri in their studies of the possible relation between health (animal and human) and trace substances in the environment. In addition, the survey is part of the continuing development of reconnaissance sampling techniques for large areas: Missouri contains about 180,000 square kilometers.

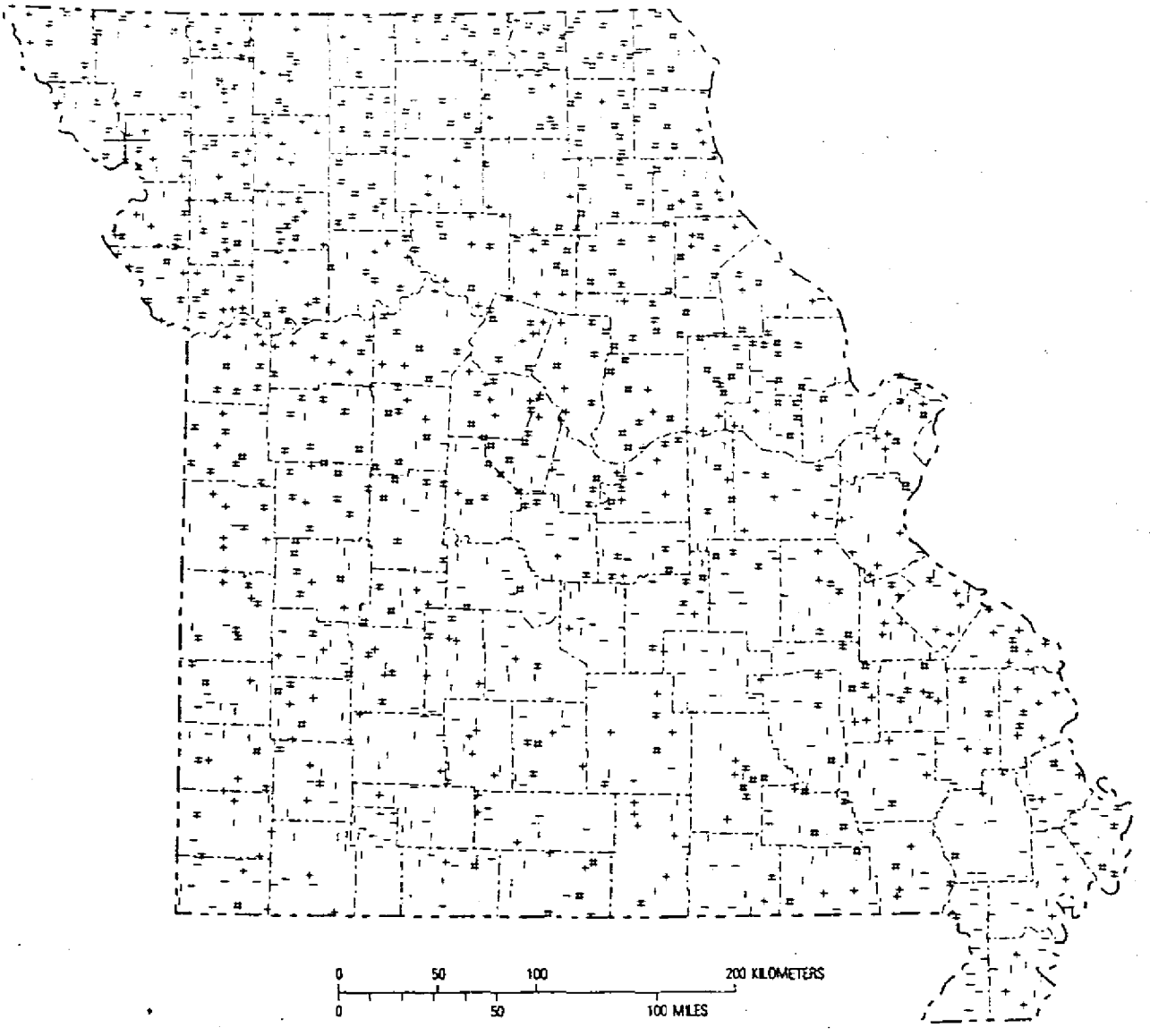
REVIEW OF LITERATURE

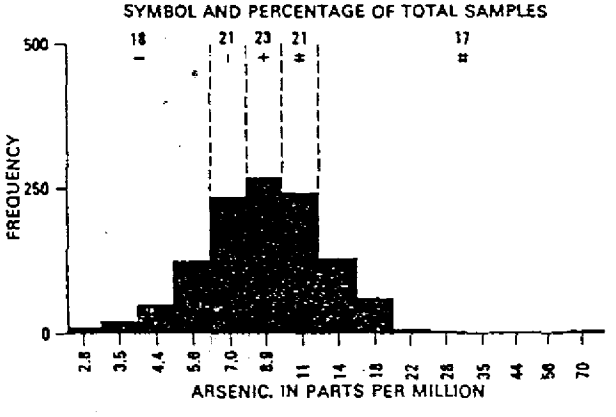
There are very few previous reports of total chemical analyses of soils in Missouri. Several important soil series were analyzed for both major and minor elements by Pickett and Dinius (1954). Johnson (1950) studied the cobalt and copper concentrations in 26 different soils. The arsenic, copper, and lead concentrations of both contaminated orchard soils and selected natural soils were reported by Hess and Blanchar (1977). Missouri was included in extensive geochemical maps of the conterminous U.S. that showed the distribution of over 30 elements in soils and other surficial materials (Shacklette and others, 1971a, b; 1973; 1974).

Plants and associated soils were collected from within major native-vegetation-type areas in Missouri in two different studies. In the first one, Erdman Shacklette, and Keith (1976a) collected native plants and the *B* horizon of uncultivated soils at 60 sites from throughout the State. In the second study (Erdman and others, 1976b), crop plants and the plow zone of cultivated soils were collected from 40 sites.

ACKNOWLEDGMENTS

Sample collection was guided by the Statewide staff of the Extension Division of the University of Missouri under the supervision of Dr. Walter F. Heidlage, Program Coordinator, Extension Environmental Health. Chemical analyses of all samples were made in the laboratories of the U.S. Geological Survey in Denver, Colorado and Reston, Virginia by: L. A. Bradley, semiquantitative spectrograph and J. S. Wahlberg, M. W. Solt, and Mike Brown, X-ray fluorescence. Additional analyses for selected elements were done by Johnnie Gardner and Violet Merritt, magnesium and





Geometric mean 8.7
Geometric deviation 1.46
Analytical error variance
(percent of total variance) 15
Number of analyses 1140

FIGURE 3.—Arsenic distribution in selected agricultural soils of Missouri. Map symbols correspond to frequency classes as shown in the histogram.

Geochemical Classification by Factor Analysis of Missouri Agricultural Soils

By RONALD R. TIDBALL

GEOCHEMICAL SURVEY OF MISSOURI

GEOLOGICAL SURVEY PROFESSIONAL PAPER 954-I

A multivariate study of agricultural soils from 1140 locations in Missouri by Q-mode and R-mode factor analysis

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GEOCHEMICAL CLASSIFICATION BY FACTOR ANALYSIS OF MISSOURI AGRICULTURAL SOILS

By RONALD R. TIDBALL

ABSTRACT

Samples of 1140 agricultural soils from the State of Missouri were classified according to similarity of chemical composition by factor analysis. The samples were classified into four groups by *Q*-mode analysis using an oblique rotation. The factors are interpreted as clay, resistate, glacial material, and silica.

R-mode analysis was used to identify the suite of elements associated with each group of samples. Lithium, iron, and several trace elements are associated with the clay factor; lithium and iron are likely structural elements but adsorption is also a dominant mechanism especially for the trace elements. Zirconium, titanium, ytterbium, and yttrium are associated with the resistate factor. The alkalies and alkaline-earth elements and aluminum are associated with the glacial factor; feldspars are more abundant in this material. Silicon and zironcium are the principal elements associated with the silica factor.

Extreme samples in each group represented soils that were developed from (1) shale and clay alluvium, (2) residuum of limestone of Mississippian age, (3) loess, glacial till, and outwash, and (4) residuum of dolomite of Late Cambrian to Early Ordovician age.

INTRODUCTION

Samples of 1140 agricultural soils from throughout the State of Missouri were analyzed for total element concentrations. The geographic variations in the concentrations of each element are illustrated on maps in a companion paper (Tidball, 1984). With over 40 maps that represent individual elements it was most difficult to define associations among samples of similar composition or to suggest common origins or soil-forming processes. Clearly a multivariate approach that can examine the variations in all of the elements simultaneously was needed.

In this report, *Q*-mode factor analysis is used to classify the samples by defining the interrelationships or similarities between the samples on the basis of element concentrations. The assemblage of elements associated with each group of samples is determined by *R*-mode factor analysis. The extreme types of samples are characterized by their composition and by their probable mineralogy. The identity of the *Q*-mode factors is deduced from the geographic distributions of the sample-vector loadings.

ACKNOWLEDGMENTS

Soil samples were obtained through the cooperation of the Statewide staff of the Extension Division of the University of Missouri under the supervision of Dr. Walter F. Heidlage, Program Coordinator, Extension Environmental Health. Chemical analyses of all samples were done by the U.S. Geological Survey in Denver, Colorado and Reston, Virginia by the following: L. A. Bradley, semiquantitative spectrograph; Johnnie Gardner and Violet Merritt, magnesium, and sodium; I. C. Frost, G. T. Burrow, and G. D. Shipley, carbon; J. P. Cahill, cadmium; J. A. Thomas, lithium and zinc; J. S. Wahlberg, M. W. Solt, and Mike Brown, X-ray fluorescence; R. L. Turner, mercury; F. W. Brown, Joseph Budinsky, B. A. McCall, Leung Mei, and Roosevelt Moore, arsenic and fluorine; A. J. Bartel, iodine; A. J. Bartel, E. Brandt, J. P. Hemming, R. J. Knight, H. T. Millard, R. J. Vinnola, R. J. White, uranium and thorium. Computer programs for mechanical plotting were written by M. R. Mall. Discussions with A. T. Miesch concerning the use and interpretations of his computer programs for factor analysis are gratefully acknowledged.

SAMPLES

Methods of sample collection and methods of laboratory analyses were described previously (Tidball, 1984). The soil samples, which represent the plow zone (A horizon, 0–15 cm in depth), were collected in each of the 114 counties of the State at the rate of 10 per

Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #6

4/24/2009 3:03:18 PM

This document (queryID 911) is confirmation of your Level 2 Species of Concern Response

Your login and project information below:

User ID: 911
First Name: Chinwe
Last Name: Ndubuka
Email Address: chinwe.ndubuka@dnr.mo.gov
Business: Missouri Department of Natural Resources
Project: Facility/Building

Your query information below:

User ID	Response Level	Township	Range	Section	Direction	Latitude	Longitude	Point	Line	UTM North	UTM Ea
911						0	0			4401506.754	387219.

Thank you for accessing the Missouri Natural Heritage Review Web Site developed by the Missouri Department of Conservation and the U.S. Fish and Wildlife Service with funding assistance by the U.S. Army Corps of Engineers. The purpose of this web site is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants and their habitats to assist in planning, designing and permitting stages of projects.

The results of a database query of the above referenced location indicate that **no** federally-listed threatened or endangered species (including those species proposed for listing) or critical habitat (designated or proposed) are known to occur on or near the project site. The U.S. Fish and Wildlife Service response is provided under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

The results of a database query of the above-referenced location indicate that state endangered species other species or natural communities of conservation concern (e.g., prairie, glade, fen) **are known** to occur on or near the project site and may be impacted by project construction activities. An MDC specialist needs to review your request to determine if your project is close enough to impact the resource in question. Please contact the Missouri Department of Conservation for further consultation. A written request containing the project description, county name, U.S.G.S. 1:24,000 topographic quadrangle name, township, range and section, and a location map (e.g., U.S.G.S topo. quad.) with the project area clearly identified, and a copy of this document noting the unique reference code should be sent to: Missouri Department of Conservation, Policy Coordination Section, Missouri Natural Heritage Review Web Site, P.O. Box 180, Jefferson City, MO 65102-0180.

The web site also provides additional information regarding management practices for planning purposes if your project is within the known range of certain sensitive species and habitats(e.g., karst areas, grasslands, stream reaches with critical spawning restrictions). Please note that this information does not serve as a substitute for direct consultation with Missouri Department of Conservation staff.

Thank you for helping us protect Missouri's sensitive natural resources. If you have any questions or require further assistance you may contact the U.S. Fish and Wildlife Service at (573)234-2132 or the Missouri Department at (573)522-4115, Ext. 3250.

Missouri Department of Conservation U.S. Fish and Wildlife Service
Missouri Natural Heritage Database Environmental Review Web Site

Fish Spawning Restrictions

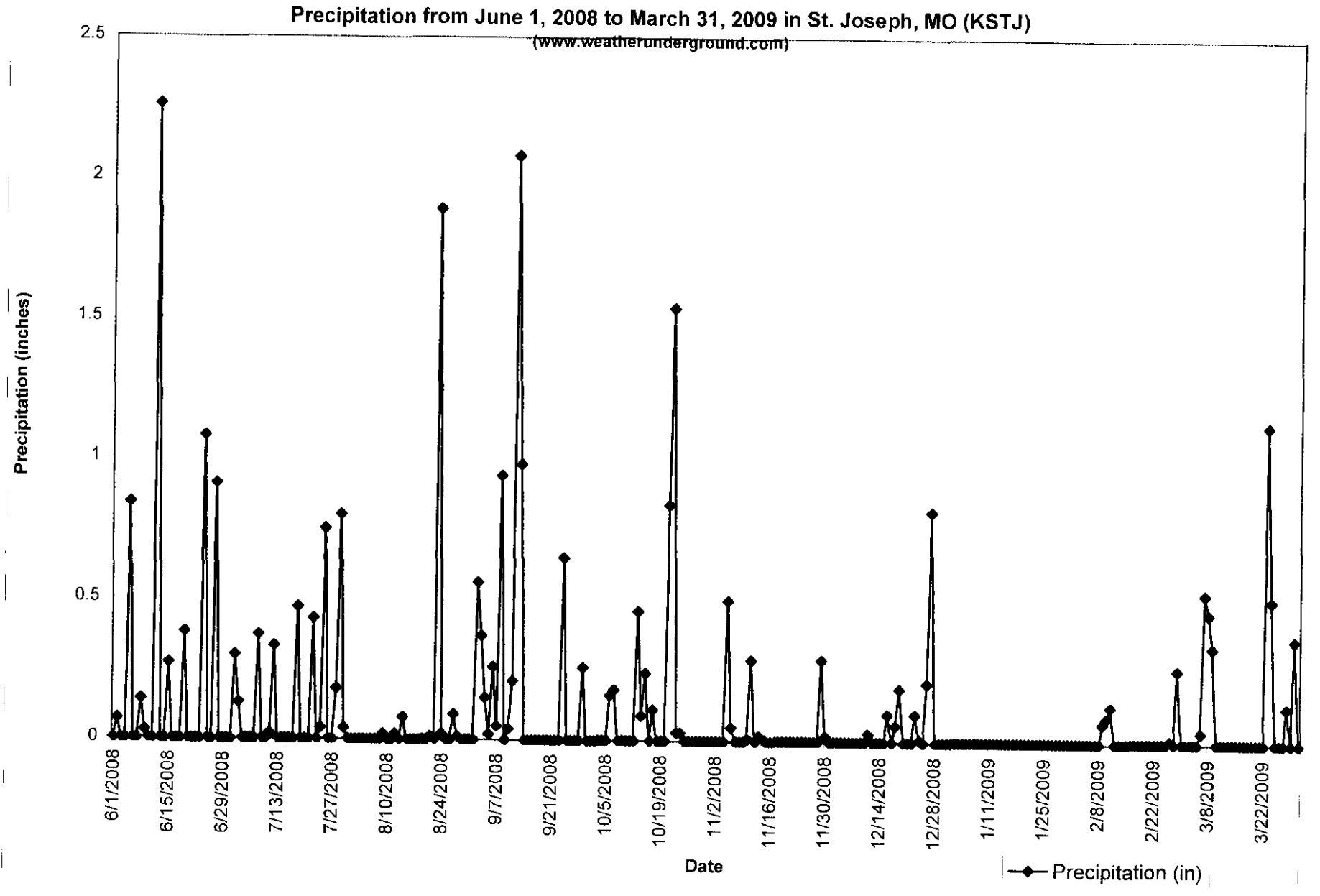
The project site is near a state-designated "spawning stream," where fish spawn (lay and fertilize their eggs) during specific times of the year. Fish eggs are vulnerable to habitat destruction; heavy sediment loads; or high levels of chemical or organic pollutants. All activities that alter, destabilize or destroy stream bottoms or banks should be avoided to prevent disrupting the spawning activities of stream fishes - for most species from XXXXX 15 to XXXX 15. In addition, avoid all activities that introduce chemical or organic pollutants to streams.

Stream reaches that have not been officially designated as critical habitat, but which may be considered critical to the maintenance or recovery of sensitive species. This may include buffer reaches upstream from or in tributaries to designated (officially listed) critical habitats. For example, we have typically applied a one mile buffer to the critical habitat reaches designated by USFWS for the Niangua darter.

Remnant examples of historic habitats especially in areas where streams have been severely impacted by channelization, levee construction, snagging, clearing and similar activities.

Indiana Bats

Indiana bats (*myotis sodalis*, Federally endangered, State endangered) roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Additional information to incorporate in planning documents is available at http://mdc.mo.gov/110



Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #7

Old Grindstone Quarry Site
Pre-CERCLIS Site Screening
Reference #8

QUALITY ASSURANCE PROJECT PLAN FOR PRE-REMEDIAL/PRE-REMOVAL AND TARGETED BROWNFIELDS SITE ASSESSMENTS

REVISION 6
DECEMBER 7, 2007

Prepared by the
Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program
Superfund Section

Department of Natural Resources
P.O. Box 176
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Table 3: Example Sampling Scenarios and Associated Precision QC Samples*

Project A (Pre-CERCLIS Site Screening)

Samples Collected/Analyses Requested	Precision QC Samples
4 Soil/VOCs, SVOCs, metals	1 Soil replicate split/SVOCs, metals
2 Sediment/VOCs,SVOCs	1 Soil duplicate for VOCs
2 Groundwater/VOCs	

Project B (Pre-CERCLIS Site Screening)

Samples Collected/Analyses Requested	Precision QC Samples
2 Soil/VOCs, SVOCs	1 Surface water duplicate/VOCs, metals
2 Sediment/metals	
2 Groundwater/VOCs	
4 Surface Water/VOCs, metals	

Project C (PA/SI)

Samples Collected/Analyses Requested	Precision QC Samples
6 Soil/VOCs, SVOC	1 Soil replicate split/ SVOCs
2 Sediment/VOCs, SVOC	1 Soil duplicate/VOCs
3 Groundwater/VOCs	1 Groundwater duplicate/VOCs
6 Surface water/VOCs, SVOC	1 Surface water duplicate/VOCs, SVOCs

Project D (ESI)

Samples Collected/Analyses Requested	Precision QC Samples
11 Soil/metals, VOCs	2 Soil replicate splits/metals
3 Sediment/metals, SVOCs	2 Soil duplicates/VOCs
20 Groundwater/VOCs	1 Sediment replicate split/metals, SVOCs
9 Surface water/metals, VOCs	2 Groundwater duplicates/VOCs
	1 Surface water duplicate/metals, VOCs

Project E (ESI)

Samples Collected/Analyses Requested	Precision QC Samples
11 Soil/metals	2 Soil replicate splits/metals
11 Sediment/metals, SVOCs	2 Sediment duplicates/metals, SVOCs
21 Groundwater/VOCs	3 Groundwater duplicates/VOCs
2 Surface water/metals, VOCs	1 Surface water duplicate/metals, VOCs

*These examples are intended as an aid in interpreting the precision QC sampling frequencies described in this section. They are not to be used as a general template or directly applied to any specific site.

For some projects, the physical properties of site soils will not lend themselves to effective homogenization. The inability to adequately mix some highly plastic clayey and silty clay soils may preclude collection of replicate split samples for some projects. The SAU Site Project Manager together with the ESP FSS personnel will use professional judgement in the field to determine when to forego the collection of non-aqueous replicate splits. For a limited number of projects a higher frequency of precision QC samples will be requested. In these cases, the SAU Site Project Manager will specify the QC sample requirements in the sample request memo to ESP.

Overall precision will be measured using the Relative Percent Difference (RPD) between duplicate

or replicate split samples. The RPD will be calculated by the SAU Site Project Manager as:

$$RPD = 100\left[\frac{x_1 - x_2}{\bar{x}}\right]$$

The criterion for RPD between primary and duplicate aqueous samples for each contaminant measured above the laboratory reporting level is ≤ 30%. The criterion for RPD between primary and replicate split non-aqueous samples and for duplicate non-aqueous VOC samples will be ≤ 50%. The criterion for RPD between primary and duplicate air samples will be 25%. If data fall within these limits, then the overall precision of the sampling and analytical process is adequate to meet the project DQOs. Data that do not meet these precision criteria will be qualified as described in the applicable validation procedure (Section D), and discussed in the project report.

Because this QAPP is generic, covering many different projects and project types, these precision criteria will be applied to a large number of analytes in various complex sample matrices. It is not likely that the precision limits for the overall sampling and analytical process will be met for every contaminant in every sample for every project. This is especially true for projects involving the sampling of non-aqueous matrices. When released to the environment, many contaminants distribute themselves extremely unevenly in soils; even on the small scale at which sampling occurs. This problem is further confounded by the heterogeneous nature of the dense clayey and silty clay soils found in many areas of the state. The need to collect duplicate non-aqueous samples for VOC analysis exacerbates the problem further still, since the primary and duplicate samples may not be homogenized prior to analysis. Great care will be taken when interpreting overall sampling and analysis precision data for non-aqueous duplicate and replicate split samples. The SAU QA Project Officer and Site Project Manager, in consultation with appropriate ESP personnel, will evaluate all qualified data on a project-specific basis, and determine how/whether to use the data.

B5.1.3 Accuracy

The accuracy of laboratory analyses will be assessed by analysis of preparation/method blanks, laboratory control samples, surrogates, internal standards, matrix spikes, and blind performance samples. The frequency with which laboratory accuracy is assessed, and the performance criteria vary by analyte, analytical method, and environmental media. Criteria for laboratory accuracy are specified in the analytical methods and will be developed and maintained in accordance with the following CAS SOPs: MDNR-CAS-2090, MDNR-CAS-2100.

Field accuracy will be assessed through the analysis of trip blanks, field blanks, and field equipment rinse blanks. For all projects involving the collection of aqueous samples, a trip blank will be included at a frequency of one per separate sampling event (mobilization) per sample cooler. If aqueous samples are collected from multiple projects during the same mobilization for the same analytical parameters, a single trip blank per cooler may be used to assess accuracy for all of the projects. A field blank may be requested by the SAU Site Project Manager for some projects where the potential for contamination of samples by atmospheric pollutants is suspected. An equipment rinsate blank will be collected for projects where the sampling equipment is decontaminated in the field for reuse. The equipment rinsate blank will be collected at a frequency of one per separate sampling event (mobilization) for each different combination of sampling equipment, decontamination method, and analytical parameter.