UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
FINAL DECISION AND RESPONSE TO COMMENTS

TE CONNECTIVITY
LANDISVILLE, PENNSYLVANIA
EPA ID NO. PAD980554778

I. FINAL DECISION

The United States Environmental Protection Agency (EPA) determined that no further action or land use controls are necessary at the Facility at this time. Based on the findings detailed in the Statement of Basis (SB) and the subsequent December 2014 Plating Pit Investigation Report, EPA concluded that there are no current or unaddressed releases of hazardous wastes or hazardous constituents from the Facility. This determination of "Corrective Action Complete without Controls" is consistent with EPA's February 2003 *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities* (reference 68 FR 8757).

II. PUBLIC COMMENT PERIOD

On August 28, 2014, EPA issued a SB in which it announced its proposed decision of "Corrective Action Complete without Controls" for the Facility. Consistent with public participation provisions under the Resource Conservation and Recovery Act (RCRA), EPA requested comments from the public on the proposed decision. The commencement of a thirty-day public comment period was announced in the *Intelligencer Journal* newspaper on September 16, 2014 and on the EPA Region III website. The public comment period ended on October 15, 2014.

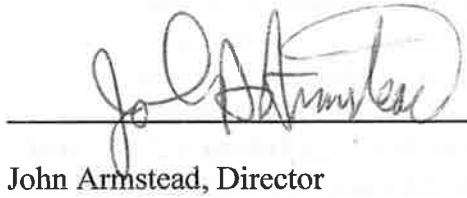
EPA received one comment from the Facility on the proposed decision. During the comment period the Facility discovered that the concrete pit that transports plating wastewater to the onsite wastewater treatment system exhibited visible deterioration in certain areas of the pit. As a result, the Facility requested that EPA defer the Final Decision until the Facility completed its investigation to determine if the deterioration in the pit resulted in adverse releases to the environment. On December 14, 2014, the Facility submitted the investigation report and concluded that the deterioration in the concrete pit was surficial and did not result in any adverse releases to the environment. The deteriorated areas in the concrete pit will be repaired. The Facility will implement a maintenance program that includes routine washing and repairs of the concrete pit to prevent future deterioration and any potential releases to the environment. EPA approves the investigation report and concurs with the maintenance program. Subsequently, the Final Decision is unchanged from that proposed in the SB.

III. AUTHORITY

EPA is issuing this Final Decision and Response to Comments under the authority of the Solid Waste Disposal Act, as amended by RCRA, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6992k.

IV. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the TE Connectivity facility, EPA has determined that this Final Decision and Response to Comments is protective of human health and the environment.



1.20.15

John Armstead, Director
Land & Chemicals Division
U.S. EPA Region III

Date

Attachment A: TE Connectivity Statement of Basis, August 28, 2014
Attachment B: TE Connectivity Plating Pit Investigation Report, December 14, 2014

Attachment A

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

TE CONNECTIVITY
(Formerly Tyco Electronics Corporation and AMP Inc.)
LANDISVILLE, PENNSYLVANIA
EPA ID No. PAD980554778

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
August 2014

Table of Contents

List of Acronyms

EI	Environmental Indicator
EPA	Environmental Protection Agency
MCL	Maximum Contaminant Level
MSC	Medium Specific Concentration
PADEP	Pennsylvania Department of Environmental Protection
RCRA	Resource Conservation and Recovery Act
SB	Statement of Basis

Section 1: Introduction

The U.S. Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) in accordance with the Corrective Action Program to solicit public comment on its proposed remedy for the TE Connectivity (TE) facility located at 1590 Kauffman Road, Landisville, Pennsylvania (the Facility or the Site). EPA's review of available information indicates that there are no unaddressed releases of hazardous wastes or hazardous constituents from the Facility. Based on that assessment, EPA is proposing no further corrective action or land use controls are necessary at this time at the Facility. EPA has determined that its proposed decision is protective of human health and the environment. This SB highlights key information relied upon by EPA in making its proposed decision.

The Facility is also subject to EPA's Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 *et seq*. (Corrective Action Program). The Corrective Action program is designed to ensure that certain facilities subject to RCRA have been investigated and that all releases of hazardous waste and hazardous constituents have been remediated. The Commonwealth of Pennsylvania (the Commonwealth) is not authorized for the Corrective Action program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth for the Corrective Action program.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed decision is based. The Index to the AR may be found at the end of the SB. See Section 5, Public Participation, for information on how you may review the documents contained in the AR and submit any comments you may have concerning EPA's proposed decision for the Facility.

Section 2: Facility Background

The Facility encompasses approximately 7.5 acres and is located within an area that is primarily rural/residential and farmland with some light commercial/industrial uses intermixed. The Facility mainly consists of a 64,000 square foot manufacturing building and a 17,000 cubic foot retention pond that receives surface water runoff via underground piping from storm sewers located throughout the property. A site plan is presented in Figure 1.

TE manufactures electronic and electrical connection devices for consumers and the automotive industry. Processes conducted at the Facility include stamping of copper and copper alloys into terminals and connectors, brazing a portion of the connectors, heat treating parts and electroplating the surface of the connectors and terminals with nickel, tin, tin-lead, copper, or gold. Processes also include machining, baking, parts assembly, and packaging.

The Facility is classified as a large quantity generator (LQG) of hazardous wastes. Wastes currently generated from the Facility's operations consist of primarily spent non-halogenated solvents and wastes produced from the electroplating process. Spent non-halogenated solvents, electroplating sludges and other manufacturing wastes are sent offsite for disposal. Wastewaters from the electroplating and any miscellaneous spills are directed to the onsite wastewater treatment system (WWTS) for treatment. Treated water is discharged to the Lancaster Area Sewer Authority (LASA) Publicly Owned Treatment Works (POTW). The remaining filtered sludges from the wastewater treatment are disposed offsite at permitted facilities.

Section 3: Summary of Environmental Investigation

In 1995, TE conducted a Baseline Environmental Site Assessment (BESA) at the facility to assess the general environmental condition of the property and to identify and evaluate any potential environmental concerns associated with the site. The assessment consisted of an environmental information survey, site reconnaissance and field investigation.

The environmental information survey mainly consisted of a comprehensive review of all obtainable files about the site. This includes the review of federal, state, and municipal records, available internal files and site physical data such as topography and aerial photographs. The site reconnaissance comprised of a walk-through to document and assess general environmental conditions at the site. The Facility procured several sub slab corings, soil and groundwater samples as part of the field investigation to confirm the environmental conditions.

The environmental information survey and site reconnaissance did not reveal any potential environmental concerns. The field investigation evaluated sub slab corings, soils and groundwater at the facility. Six sub slab corings and several soil boring were installed throughout the site. The corings and soil boring samples were visually inspected and screened for volatile organic compounds (VOCs) and hydrogen cyanide. Several soil samples were procured at various depths for each boring location. TE procured multiple groundwater samples over a span of several years at various locations and depths to assess the groundwater conditions at the site. Soil and groundwater samples were analyzed for VOCs, semi-volatile organic compounds (SVOCs), total phenols, cyanide and heavy metals.

The presence of low concentrations of VOCs, SVOCs and heavy metals were detected in the sub slab corings and soils at the site. Heavy metal results for the soil samples and the sub slab corings were below EPA risk based residential standards or natural background levels. None of the VOCs, SVOCs, total phenols and cyanide constituents detected in soils and corings exceeded the Pennsylvania Department of Environmental Protection (PADEP) Residential Direct Contact Medium-Specific Concentrations (MSCs) or EPA allowable risk range for direct contact for residential land use. Initially, low levels of tetrachloroethene (PCE) and 1,2-dichloroethane (1,2-DCA) were detected above the EPA

Maximum Contaminant Levels (MCLs), a level EPA determined to be protective for human health, in one of the monitoring wells. The levels detected for PCE and 1,2-DCA were 16 ug/L and 6 ug/L, respectively. Subsequent groundwater sample results for PCE and 1,2-DCA were non-detects or below MCLs and confirmed that these constituents do not pose a concern in groundwater. No other VOCs were detected in groundwater. Similarly, no SVOCs, heavy metals, cyanide, and total phenols were detected in groundwater.

Section 4: Environmental Indicators

EPA sets national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. EPA has determined that the Facility met these indicators (i.e., there is no contamination problem that creates an unacceptable risk to human health nor is there any evidence of groundwater contamination caused by the Facility) on August 26, 2014.

Section 5: Public Participation

Before EPA makes a final decision on its proposed remedy for the Facility, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The Index to the Administrative Record lists the documents and all information considered by EPA in reaching this proposed decision. The AR is available for public review during normal business hours at:

U.S. EPA Region III
1650 Arch Street
Mail code: 3LC30
Philadelphia, PA 19103
Contact: Khai M. Dao
Phone: (215) 814-5467
Fax: (215) 814-3113
Email: dao.khai@epa.gov

Interested parties are encouraged to review the AR and comment on EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to Khai M. Dao. EPA will hold a public meeting to discuss this proposed decision upon request. Requests for a public meeting should be made to Khai M. Dao.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the proposed remedy, EPA will modify the proposed remedy or select other alternatives based on such new information and/or public comments. EPA will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All persons who comment on this proposed remedy will receive a copy of the FDRTC. Others may obtain a copy by contacting Khai M. Dao at the address listed above.

Date: 8.28.14

John Armstead, Director
Land and Chemicals Division
US EPA, Region III

Index to Administrative Record

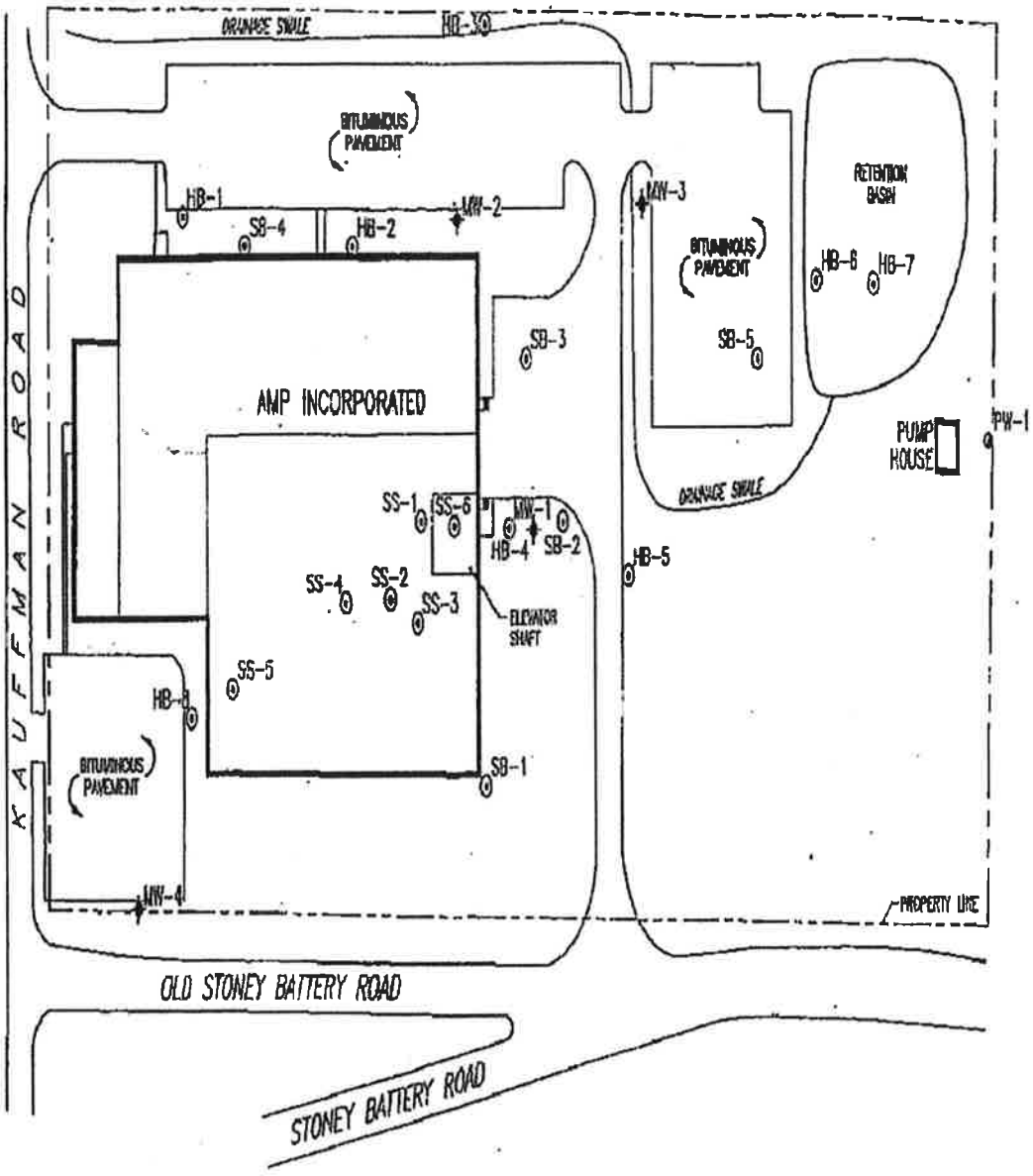
Site Closure Report, TE Electronics Corporation, Landisville, PA, prepared by R.E. Wright Associates, Inc., March 1989.

Baseline Environmental Site Assessment Report, TE Electronics Corporation, Landisville, PA, prepared by Groundwater Technology, August 1995.

Water Sampling Results, TE Electronics Corporation, Landisville, PA prepared by Science Applications International Corporation, August 2011.

Environmental Indicator Inspection Report, TE Electronics Corporation, Landisville, PA, prepared by Baker, March 2012.

Attachment A



LEGEND

- EXISTING WELL
- MONITORING WELL
- SB SOIL BORING
- HB HAND BORING
- SS SUBSLAB CORING

NOTE: GROUNDWATER SAMPLE PS-1 LOCATED IN THE ELEVATOR SHAFT.

N

0 80 160

SCALE FEET

SOURCE: AMP INCORPORATED HARRISBURG, PA. FACILITIES SERVICES SITE PLAN ELECTRICAL 30 KAUFFMAN ROAD LANDISVILLE, PA. NO.: 108-SPE-1 DATE: 3-9-84 REV.: 3-12-84

GROUNDWATER TECHNOLOGY 340 NORDEN CENTER DRIVE HEWITT, NEW JERSEY 07421 (201) 567-0300

REV. NO.:	DRAWING DATE: 2/16/95	ACAD FILE: 0130SITE

SITE PLAN

CLIENT: AMP INCORPORATED

LOCATION: 30 KAUFFMAN ROAD LANDISVILLE, PENNSYLVANIA

DESIGNED:	DETAILED:	PROJECT NO.:	FIGURE:
SEE SOURCE	KPE	04100-0130	2

Attachment B

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
FAX (717) 564-1158
www.hrg-inc.com

December 15, 2014

VIA EMAIL
glfoster@te.com

Mr. Glen Foster, Manager
Environmental Health & Safety
TE Connectivity
M.S. 1400-042
P.O. Box 3608
Harrisburg, Pennsylvania 17105-3608

Re: Plating Pit Sampling Findings
Kauffman Road Facility
Landisville, Lancaster County
HRG Project No. R004625.0435

Dear Glen:

Herbert, Rowland & Grubic, Inc. (HRG) is pleased to present this letter report that presents our findings for the project referenced above. The findings show that no soil is present beneath the pit's floor and that there is a low potential for a significant mass of plating wastewater contaminants to penetrate the plating pit's concrete floor and impact the underlying bedrock and subsequently the groundwater system. Consequently, no further assessment is warranted.

BACKGROUND

TE Connectivity's (TEC) Kauffman Road facility utilizes the metal electroplating process in the manufacture of electrical connectors. The plating lines are located on a fiberglass-grate floor spanning a large concrete pit. The pit dimensions are approximately 85 feet by 100 feet and at least eight feet high from the pit floor to the fiberglass floor above. In much of the pit, structural members, large air ducts, and wastewater piping reduce the headroom by one-half or more.

Among its other attributes, the pit serves as a pipe chase to convey plating wastewater to a basement, wastewater treatment system. The pit also serves as containment for any releases from the plating baths and wastewater piping. The pit floor is sloped such that any releases flow toward two floor trenches that discharge to the wastewater treatment system.

Acidic wastewater releases over the last approximately 50 years have deteriorated the pit's concrete floor. At various times, the concrete floor has been patched and/or surface coated to

restore impermeability. Evident are areas where the concrete floor surface has partially disintegrated to varying degrees or where previous repairs and coating have failed.

In planning for pit floor repair, soil sampling was initially proposed to assess the potential for subsurface soil impacts resulting from plating wastewater infiltration through the concrete floor. That objective was changed shortly after sampling began when competent concrete was encountered and no subsoil was found. Absent soil for sampling, the project objective was modified to assess the depth of wastewater penetration into the concrete of the pit floor.

SCOPE OF WORK

Twenty sampling locations (S-1 to S-20) were initially proposed for subsoil sampling. On October 29, 2014, HRG inspected the pit to identify and mark the sampling locations. Twelve locations were randomly selected by adapting to this characterization sampling, the statistical random sampling method recognized by PADEP's Land Recycling Program. Four biased locations were selected in areas that showed significant surficial concrete deterioration. During the period November 7 - 9, 2014 Tier De, Inc., Gap, PA was retained by TEC to pressure wash the pit floor. On November 8, 2014, HRG selected the remaining four biased sampling locations in areas where surficial concrete was deteriorated.

On November 10, 2014, HRG attempted to collect the subsoil samples and encountered the following conditions:

Location	Description (inches below pit floor)	
S-7	0-16	concrete; limit of drill bit
S-14	0 - 6	concrete
	6 - 10	2A aggregate
	10 - 10.5	limestone bedrock
S-15	0 - 6.5	concrete
	6.5 – 10	2A aggregate
	10 – 12	limestone bedrock
S-16	0 - 4	concrete
	4 – 7	2A aggregate
	7 – 8	limestone bedrock
S-20	0 - 6	concrete
	6 – 10	2A aggregate
	10 – 10.5	limestone bedrock

On November 11, 2014, because no soil was observed in the five borings, the sampling objective was modified to assess the depth of plating wastewater penetration into the concrete floor. Seven biased sampling locations were selected. Four of the seven locations (S-21 to S-24) represent worst-case conditions where the concrete surface had deteriorated to a depth of approximately

one inch. At S-23, deterioration extended to a depth of four inches. The deteriorated concrete or rotten concrete was characterized as a wet paste. Concrete below the deterioration was dry and intact. Photographs of locations S-21 and S-23 are attached.

Three additional locations (S-25 to S-27) were selected as background reference locations. Located near the periphery of the overhead plating operations, there was no evidence of plating wastewater impact (concrete staining or deterioration) at the location of these background samples.

Below the surficial rotten layer, a hand-held, electric hammer drill with a two-inch bit was used to penetrate the full thickness of the concrete at each of the four locations. Concrete dust generated over each one-inch depth interval was collected for laboratory analysis using a spoon. The facility provided an electronic balance to ensure the necessary five grams of sample material were collected. A shop vacuum was used to remove the remaining dust from each interval after sampling. At the three background locations, concrete dust from the one to two inch depth interval was sampled. All sampling locations were backfilled with bentonite and a non-shrink, quick setting cement.

Not all concrete depth interval samples were analyzed. Upon review of concrete thickness and field observations, select depth intervals from each location were submitted for laboratory analysis. The goal was to obtain analytical data from the shallow, intermediate and deep concrete intervals. Accordingly, in locations with the thickest concrete, some intermediate interval samples were not submitted for analysis. These sample intervals were reserved for future analysis if warranted upon review of the initial data.

ALS Global, Middletown, PA provided analysis of the following parameters indicative of the plating process: free cyanide, total lead, total nickel, total silver and total tin. One worst case and one background sample location were analyzed for additional metals including: total antimony, total arsenic, total barium, total cadmium, hexavalent chromium, total mercury and total zinc. Lastly, one sample was analyzed for lead, nickel, silver and tin using the toxicity characteristic leaching procedure (TCLP).

Analytical data were compared to two reference standards. The background reference standard is the numerical average for analyzed metals concentrations at the three background locations (S-25 to S-27). The clean fill reference standards are the metal and inorganic clean fill concentration limits found in Table FP-1b of PADEP's *Management of Fill Policy* (258-2182-773) August 7, 2010. Clean fill includes uncontaminated concrete from construction or demolition activities and can be used in an unrestricted or unregulated manner.

FINDINGS

The plating pit is situated with its long dimension oriented north-south with a gradual slope to the south to facilitate drainage. Its short dimension is situated east-west and is divided into two drainage areas that slope to two trench drains that discharge to the wastewater treatment system

on the south side. The pit is operated as a gravity drainage unit rather than a containment unit with a constant head of wastewater present on the pit floor.

No subsoil was encountered in the nine locations that penetrated the concrete floor. A generalized cross section of the pit floor describes six to eight inches of reinforced concrete and two to four inches of 2A aggregate subbase over limestone bedrock. Subsurface profiles are described below:

Location	Description (inches below pit floor)	
S-21	0 - 1	rotten concrete
	1 - 8	dry concrete
	8 – 12	2A aggregate
	12+	limestone bedrock
S-22	0 - 1	rotten concrete
	1 - 6	dry concrete
	6+	limestone bedrock
S-23	0 - 4	rotten concrete
	4 – 8	dry concrete
	8 - 9	2A aggregate
	9+	limestone bedrock
S-24	0 - 1	rotten concrete
	1 – 6	dry concrete
	6 – 7.5	2A aggregate
	7.5+	limestone bedrock
S-25, S-26, S-27	0 - 2	dry concrete

The highest concentrations of indicator parameters (lead, nickel, silver, tin and free cyanide) were observed in the rotten concrete layer at the surface of all four sampling locations (Table 1). However, only tin exceeded the Clean Fill standard of 240 mg/Kg ranging up to 34,100 mg/Kg. At three of the four locations, tin concentrations attenuated to below the Clean Fill standard with depth, which in most cases was within a few inches of the surface and before reaching the full thickness of the concrete floor. However, one location S-23 exceeded the tin Clean Fill standard to a depth of 8 inches, the thickness of the floor at that location. Attenuation with depth to either nondetect or background concentrations was also observed for the other metals detected in the rotten layer.

S-23 was deemed the worst-case location based on physical indications in the field and an additional suite of metals was analyzed for in the rotten layer sample to determine if additional metals should be analyzed at the other sample locations. Of the additional metals, only antimony exceeded its Clean Fill standard. The remaining metals were well below Clean Fill standards. Given the marginal antimony exceedance and observation of metal concentration attenuation with depth at the other locations, no additional analyses were performed.

The rotten concrete at S-23 was also analyzed for select TCLP metals indicative of the plating process. Nickel was detected at 7.5 mg/L and the remaining three metals including tin were nondetect.

Both the summarized data (Table 1) and the complete laboratory data are attached.

CONCLUSIONS AND RECOMMENDATION

Deterioration of the plating pit floor is limited to the approximate southern two thirds of the pit. Within this area, rotten concrete is not ubiquitous but occurs in defined areas associated with either an overhead plating line or a consistent drip from wastewater piping. It appears that in the majority of these areas, the deterioration is a surface phenomenon affecting both the pit floor's epoxy-like coating and the concrete substrate where the coating has failed.

The four locations sampled by HRG are representative of worst-case conditions where deterioration extends below the surface. In these locations, rotten concrete was found to a depth of one inch and in one location (S-23) to four inches. However, in all locations, from four to seven inches of dry, competent concrete was present below the deteriorated surface. Even in areas of deteriorated concrete, the analytical data demonstrate that the overall thickness of the concrete floor remains effective in attenuating the vertical migration of plating fluids to the bedrock beneath the floor.

The concentrations of select metals and free cyanide, indicators of the plating process, are elevated in the rotten concrete layer, but those concentrations attenuate significantly to background or nondetect concentrations within the floor's top two inches in most cases. For example, the lead concentrations in the rotten layer at locations S-21 and S-24 are 51.2 mg/Kg and 26.2 mg/Kg, respectively. At a depth of two inches, lead concentrations are either nondetect or consistent with background.

The same degree of attenuation in the top two inches of concrete is also demonstrated for the indicator parameters free cyanide, nickel and silver. In the case of tin, which is present in the rotten layer at the highest concentration of all the indicator parameters, attenuation to concentrations below the Clean Fill standard is demonstrated within the top four inches of concrete.

At S-23, a worst-case location where the top four of eight inches of concrete is rotten, the data also demonstrate indicator parameter attenuation within the remaining four inches of dry, intact concrete. For example, free cyanide, lead, nickel and silver concentrations are nondetect or achieve background concentrations before reaching bedrock. The tin concentration in the deepest interval at seven to eight inches below the floor is 290 mg/Kg. This is also a significant reduction from the 11,900 mg/Kg concentration in the rotten layer, though it marginally exceeds the Clean Fill standard of 240 mg/Kg. However, as a further point of reference, this 290 mg/Kg tin

concentration is three orders of magnitude less that 190,000 mg/Kg, the PADEP Act 2, residential standard for the soil to groundwater pathway.

Based on these findings, no further assessment is warranted. The deteriorated concrete and epoxy-like coating needs to be repaired and maintained with routine and regular flushing/washing. Removal of the surficial layer of concrete as part of any pit floor repair would require its disposal as a listed hazardous waste for cyanide. Annual inspection, and repairs as necessary, will maintain the effectiveness of the plating pit in preventing subsurface impacts.

If you have any questions, do not hesitate to call.

Very truly yours,

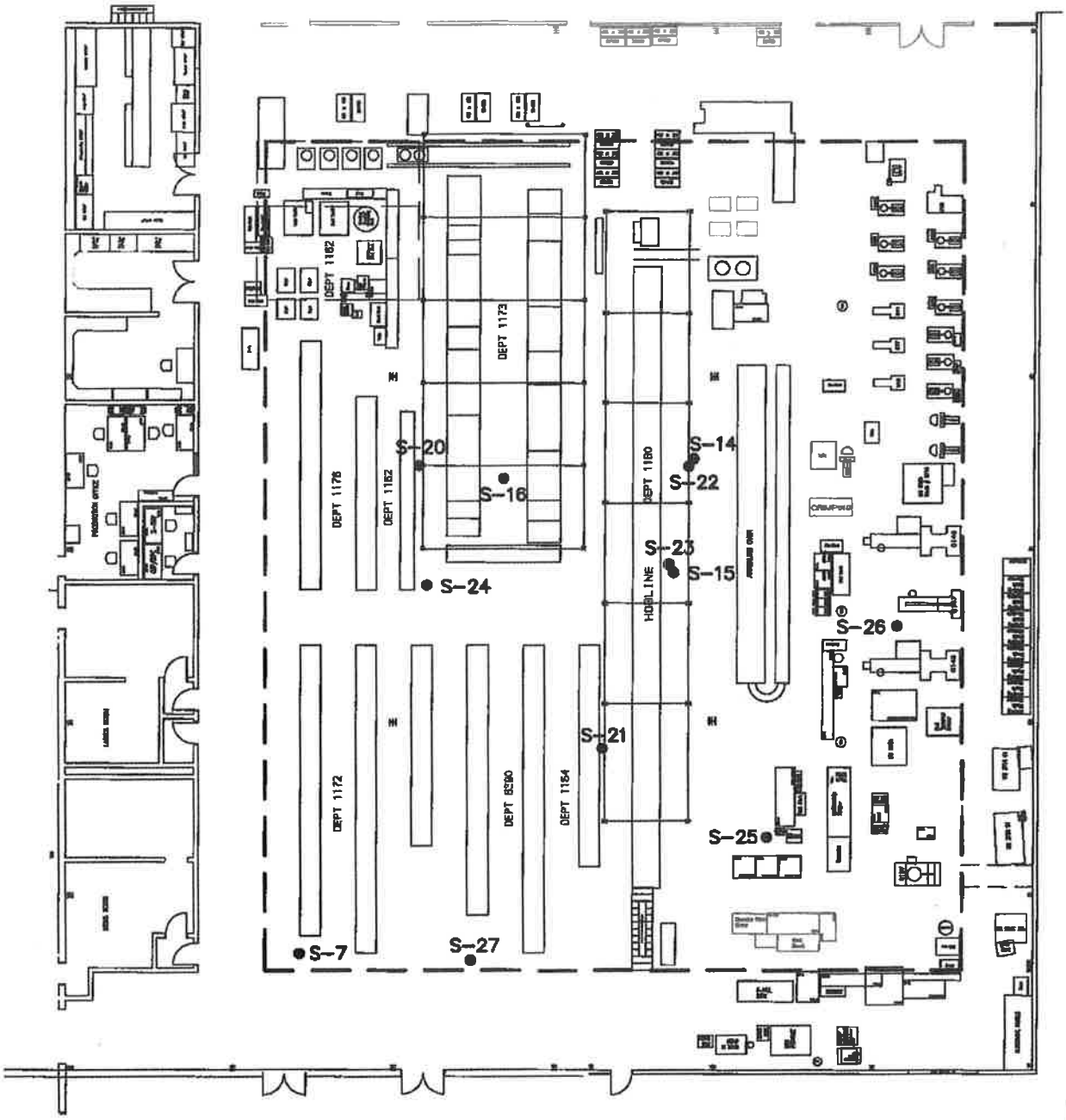
Herbert, Rowland & Grubic, Inc.

Jim LaRegina, P.G.
Senior Project Manager

Michael Techky

Michael Techky
Project Geoscientist

JL/
Attachments: Sample Location Map
Data Summary Table
Photographs
Laboratory Reports



LEGEND

● S-23 SAMPLE LOCATION

GRAPHIC SCALE

40' 20' 0' 40'

SCALE: 1"= 40'

HRG
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

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CONCRETE SAMPLING LOCATIONS
TE CONNECTIVITY
KAUFFMAN ROAD FACILITY
LANDISVILLE, PA

LANDISVILLE LANCASTER COUNTY PENNSYLVANIA

PROJ. MGR. – JAL	
DESIGN– JAL	
CADD– DEF	
CHECKED– JAL	
SCALE– 1" = 40'	
DATE– 12/8/14	

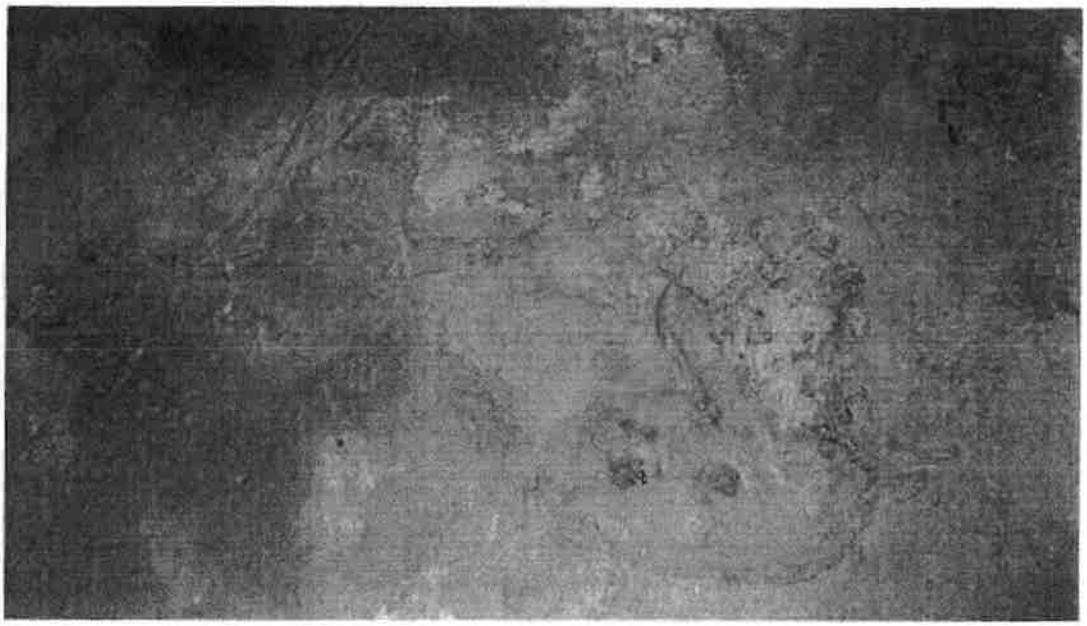
DRAWING NO.
FIG. 1
SHEET NO.
OF
PROJECT 80408.0426

Table 1 - TE Connectivity
Kauffman Road Facility- Landisville, Lancaster County PA

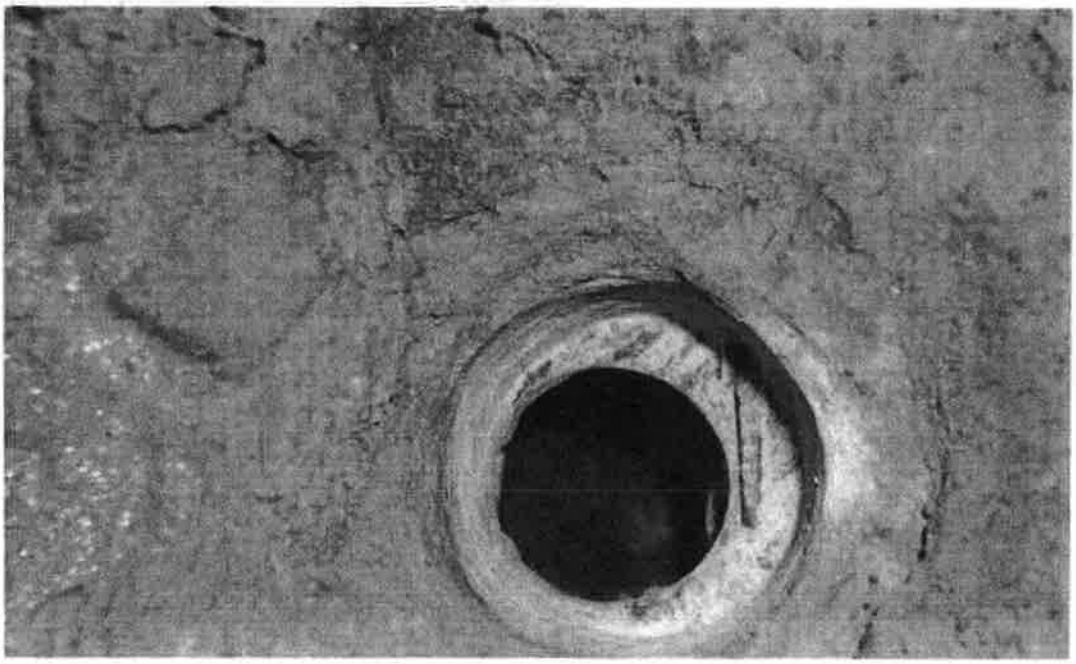
ANALYTE	S-25 (1-2")	S-26 (1-2")	S-27 (1-2")	References		S-21 (0-1")	S-21 (1-2")	S-21 (3-4")	S-21 (7-8")	S-22 (0-1")	S-22 (1-2")	S-22 (3-4")	S-22 (5-6")	S-23 (0-4")	S-23 (4-7")	S-23 (7-8")	S-24 (0-1")	S-24 (1-2")	S-24 (3-4")	S-24 (5-6")
	Background			Bkg. Ave.	Clean Fill	Rotten Concrete	Dry Concrete			Rotten Concrete	Dry Concrete			Rotten Concrete	Dry Concrete		Rotten Concrete	Dry Concrete		
Antimony, Total	-	-	5.4	5.4	27	-	-	-	-	-	-	-	-	77.8	-	-	-	-	-	-
Arsenic, Total	-	-	<3.9	<3.9	12	-	-	-	-	-	-	-	-	5.4	-	-	-	-	-	-
Barium, Total	-	-	32.9	32.9	8,200	-	-	-	-	-	-	-	-	27.1	-	-	-	-	-	-
Cadmium, Total	-	-	<0.96	<0.96	38	-	-	-	-	-	-	-	-	<1.3	-	-	-	-	-	-
Cyanide, Free	<0.26	<0.27	<0.26	<0.26	200	10.7	<0.28	<0.27	<0.27	<0.36	<0.25	<0.27	<0.26	0.70	<0.27	<0.27	5.8	<0.27	<0.27	<0.27
Chromium 6+	-	-	<2.1	<2.1	94	-	-	-	-	-	-	-	-	<2.7	-	-	-	-	-	-
Lead, Total	4.7	<3.5	4.3	4.5	450	51.2	<3.8	4.0	<4.0	4.7	4.2	4.6	4.2	20.7	4.7	5.0	26.2	4.1	3.9	4.0
Mercury, Total	-	-	<0.052	<0.052	10	-	-	-	-	-	-	-	-	<0.061	-	-	-	-	-	-
Nickel, Total	6.0	6.0	6.3	6.1	650	119	9.1	6.8	9.5	32.9	6.2	6.4	7.3	210	23.1	13.1	122	7.7	8.1	5.4
Silver, Total	<0.98	<0.88	<0.96	<0.94	84	20.3	<0.96	<0.99	<1.0	<0.67	<1.0	<0.95	<0.99	1.3	<1.0	<1.1	<3.4	<0.92	<0.97	<0.94
Tin, Total	<9.8	<8.8	<9.6	<9.4	240	21,700	186	55.8	90.2	1,170	31.2	<9.5	<9.9	11,900	632	290	34,100	254	51.7	144
Zinc, Total	-	-	11.6	11.6	12,000	-	-	-	-	-	-	-	-	83.7	-	-	-	-	-	-

ANALYTE	TCLP Reference	S-23 (0-4")
		Rotten Concrete
Lead, TCLP	5	<0.013
Nickel, TCLP	NA	7.5
Silver, TCLP	5	<0.0089
Tin, TCLP	NA	<0.044

Notes and abbreviations:
Dash - Not analyzed
Total Analytes and reference concetrations in mg/Kg
TCLP Analytes and reference concetrations in mg/L
mg/kg- milligrams per kilogram
mg/L- milligrams per liter
Samples designated S-1 through S-20 not collected



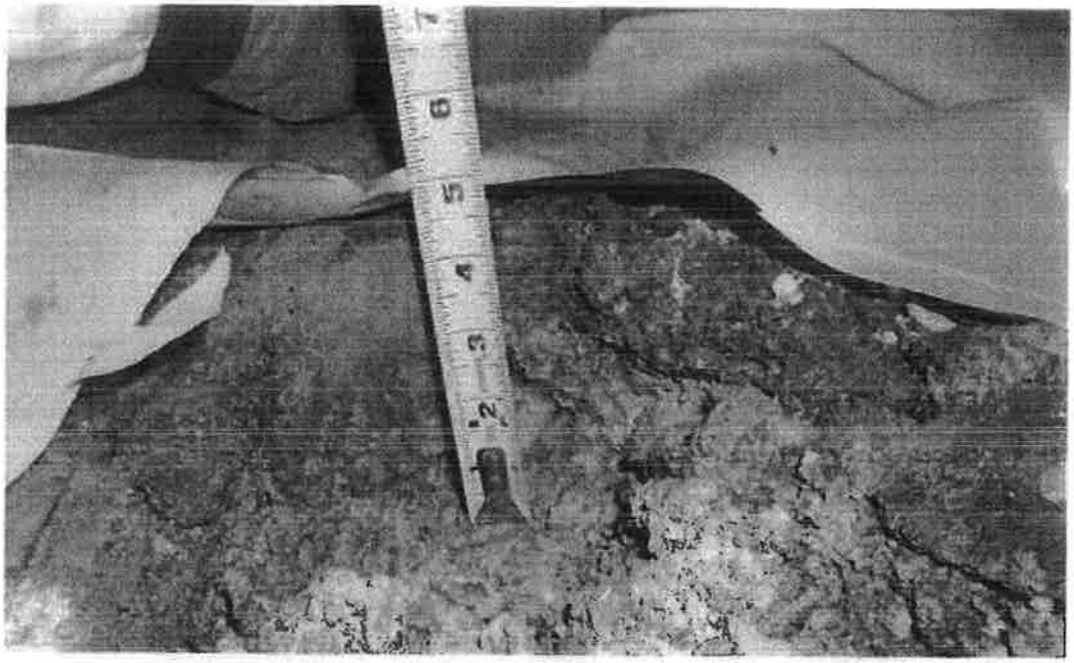
S-21: rotten concrete



S-21: drill hole with rebar present

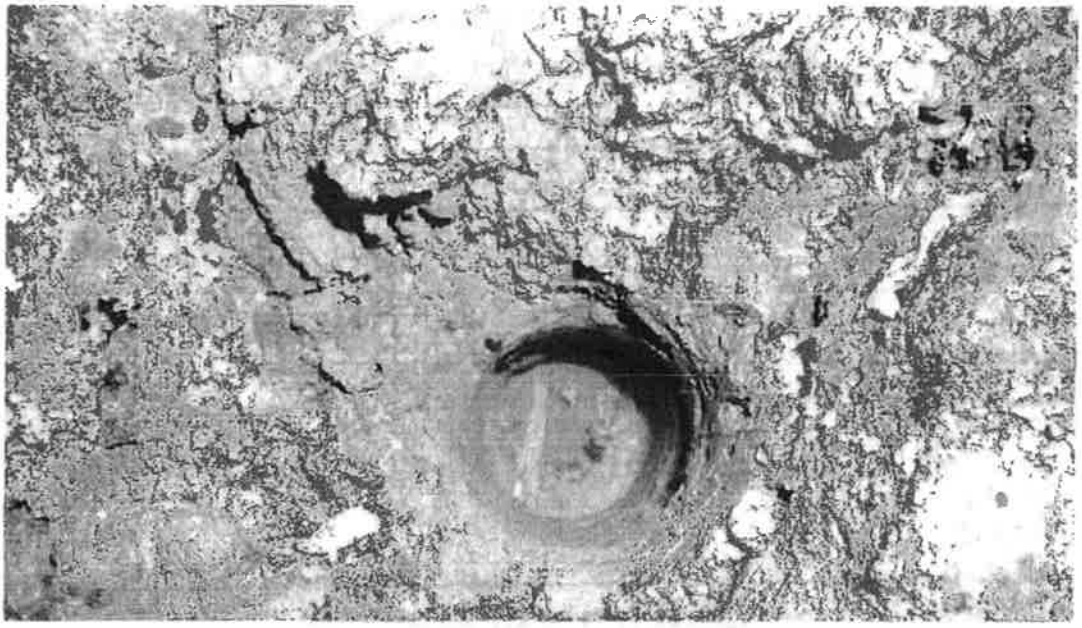
SITE PHOTOGRAPHS **TE Connectivity** **Kauffman Road Facility** **Landisville, PA**			HRG Herbert, Rowland & Grubic, Inc. Engineering & Related Services	369 East Park Drive Harrisburg, PA 17111 (717) 564-1121 www.hrg-inc.com	DESIGN MFT
					SCALE NA
SHEET: 1	OF: 3	DATE: 11/11/2014			PROJECT 4625.0435

S-23: concrete drilling

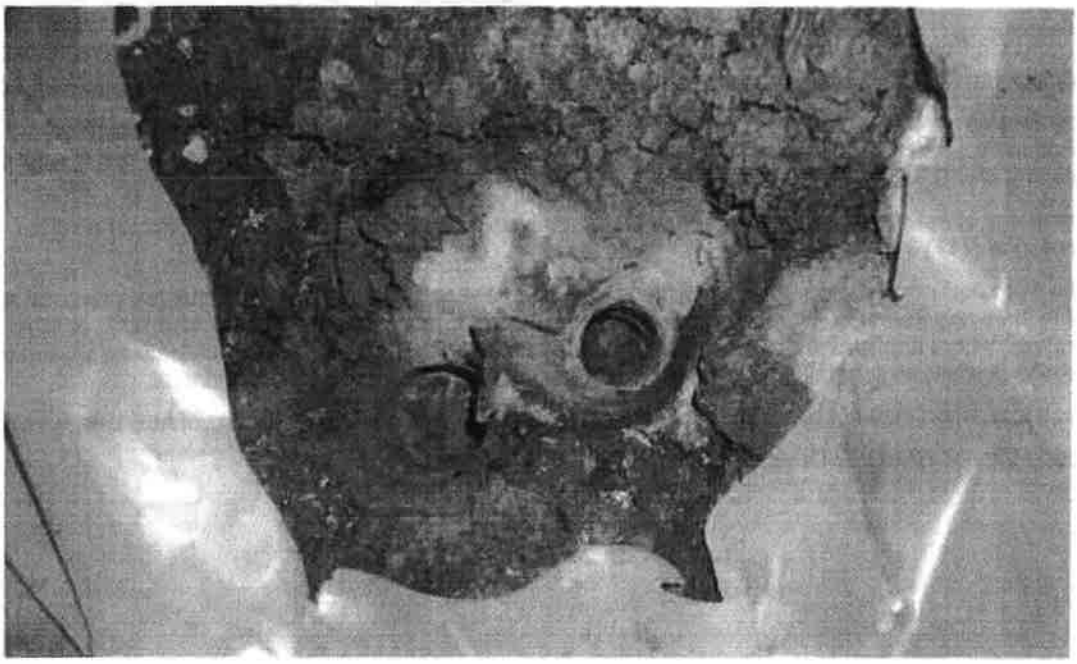


S-23: 4 inches of rotten concrete

SITE PHOTOGRAPHS **TE Connectivity** **Kauffman Road Facility** **Landisville, PA**			HRG Herbert, Rowland & Grubic, Inc. Engineering & Related Services 369 East Park Drive Harrisburg, PA 17111 (717) 564-1121 www.hrg-inc.com	DESIGN MFT SCALE NA PROJECT 4625.0435
SHEET: 2	OF: 3	DATE: 11/11/2014		



S-23: 8 inches of concrete



S-23: shallow refusal and offset showing rotten concrete

SITE PHOTOGRAPHS **TE Connectivity** **Kauffman Road Facility** **Landisville, PA**			HRG Herbert, Rowland & Grubic, Inc. Engineering & Related Services	369 East Park Drive Harrisburg, PA 17111 (717) 564-1121 www.hrg-inc.com	**DESIGN** MFT
					SCALE NA
SHEET: 3	**OF:** 3	**DATE:** 11/11/2014			**PROJECT** 4625.0435

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

November 26, 2014

Mr. Michael Techky
Herbert Rowland & Grubic
369 East Park Drive
Harrisburg, PA 17111

Certificate of Analysis

Revised Report - 11/26/2014 11:54:17 AM - See workorder comment section for explanation

Project Name:	Kauffman Road/46250435	Workorder:	2039637
Purchase Order:	46250435	Workorder ID:	Kauffman Road/4625.0435

Dear Mr. Techky:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 12, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mr. Brad W Kintzer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Brad W. Kintzer
Mr. Brad W Kintzer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2039637001	S-21 (0-1)	Solid	11/11/2014 10:50	11/12/2014 15:36	Mr. Michael Techky
2039637002	S-21 (1-2)	Solid	11/11/2014 10:55	11/12/2014 15:36	Mr. Michael Techky
2039637003	S-21 (3-4)	Solid	11/11/2014 11:00	11/12/2014 15:36	Mr. Michael Techky
2039637004	S-21 (7-8)	Solid	11/11/2014 11:05	11/12/2014 15:36	Mr. Michael Techky
2039637005	S-22 (0-1)	Solid	11/11/2014 13:05	11/12/2014 15:36	Mr. Michael Techky
2039637006	S-22 (1-2)	Solid	11/11/2014 13:09	11/12/2014 15:36	Mr. Michael Techky
2039637007	S-22 (3-4)	Solid	11/11/2014 13:11	11/12/2014 15:36	Mr. Michael Techky
2039637008	S-22 (5-6)	Solid	11/11/2014 13:20	11/12/2014 15:36	Mr. Michael Techky
2039637009	S-23 (0-4)	Solid	11/11/2014 18:00	11/12/2014 15:36	Mr. Michael Techky
2039637010	S-23 (4-7)	Solid	11/11/2014 14:40	11/12/2014 15:36	Mr. Michael Techky
2039637011	S-23 (7-8)	Solid	11/11/2014 14:45	11/12/2014 15:36	Mr. Michael Techky
2039637012	S-24 (0-1)	Solid	11/11/2014 15:40	11/12/2014 15:36	Mr. Michael Techky
2039637013	S-24 (1-2)	Solid	11/11/2014 15:45	11/12/2014 15:36	Mr. Michael Techky
2039637014	S-24 (3-4)	Solid	11/11/2014 15:55	11/12/2014 15:36	Mr. Michael Techky
2039637015	S-24 (5-6)	Solid	11/11/2014 16:05	11/12/2014 15:36	Mr. Michael Techky
2039637016	S-25 (1-2)	Solid	11/11/2014 16:35	11/12/2014 15:36	Mr. Michael Techky
2039637017	S-26 (1-2)	Solid	11/11/2014 16:58	11/12/2014 15:36	Mr. Michael Techky
2039637018	S-27 (1-2)	Solid	11/11/2014 17:20	11/12/2014 15:36	Mr. Michael Techky

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SAMPLE SUMMARY

Workorder: 2039637 Kauffman Road/4625.0435

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - Indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637001 Date Collected: 11/11/2014 10:50 Matrix: Solid

Sample ID: S-21 (0-1) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	10.7		mg/kg	0.34	S4500CNI-99	11/25/14	SYB	11/25/14 14:07	LJF	A
Moisture	29.7		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	70.3		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	51.2		mg/kg	4.8	SW846 6010C	1/17/14	AAM	11/18/14 16:29	SRT	A1
Nickel, Total	119		mg/kg	4.8	SW846 6010C	1/17/14	AAM	11/18/14 16:29	SRT	A1
Silver, Total	20.3		mg/kg	1.2	SW846 6010C	1/17/14	AAM	11/18/14 16:29	SRT	A1
Tin, Total	21700		mg/kg	12.0	SW846 6010C	1/17/14	AAM	11/18/14 16:29	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637002 **Date Collected:** 11/11/2014 10:55 **Matrix:** Solid

Sample ID: S-21 (1-2) **Date Received:** 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.28	S4500CNI-99	11/14/14	SYB	11/14/14 12:48	LJF	A
Moisture	5.4		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	94.6		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	ND		mg/kg	3.8	SW846 6010C	1/17/14	AAM	11/18/14 16:32	SRT	A1
Nickel, Total	9.1		mg/kg	3.8	SW846 6010C	1/17/14	AAM	11/18/14 16:32	SRT	A1
Silver, Total	ND		mg/kg	0.96	SW846 6010C	1/17/14	AAM	11/18/14 16:32	SRT	A1
Tin, Total	188		mg/kg	9.6	SW846 6010C	1/17/14	AAM	11/18/14 16:32	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637003 **Date Collected:** 11/11/2014 11:00 **Matrix:** Solid
Sample ID: S-21 (3-4) **Date Received:** 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	4.7		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.3		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.0		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 16:35	SRT	A1
Nickel, Total	6.8		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 16:35	SRT	A1
Silver, Total	ND		mg/kg	0.99	SW846 6010C	11/16/14 AAM	11/18/14 16:35	SRT	A1
Tin, Total	55.6		mg/kg	9.9	SW846 6010C	11/16/14 AAM	11/18/14 16:35	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID:	**2039637004**	**Date Collected:** 11/11/2014 11:05	**Matrix:** Solid
Sample ID:	**S-21 (7-8)**	**Date Received:** 11/12/2014 15:36	

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14	SYB	11/14/14 12:46	LJF	A
Moisture	3.2		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	96.8		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	ND		mg/kg	4.0	SW846 6010C	11/16/14	AAM	11/18/14 16:38	SRT	A1
Nickel, Total	9.5		mg/kg	4.0	SW846 6010C	11/16/14	AAM	11/18/14 16:38	SRT	A1
Silver, Total	ND		mg/kg	1.0	SW846 6010C	11/16/14	AAM	11/18/14 16:38	SRT	A1
Tin, Total	90.2		mg/kg	10.1	SW846 6010C	11/16/14	AAM	11/18/14 16:38	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637005 Date Collected: 11/11/2014 13:05 Matrix: Solid
Sample ID: S-22 (0-1) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND	1	mg/kg	0.36	S4500CNI-99	11/25/14	SYB	11/25/14 14:07	LJF	A
Moisture	29.4		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	70.6		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	4.7		mg/kg	2.7	SW846 6010C	11/16/14	AAM	11/18/14 16:41	SRT	A1
Nickel, Total	32.9		mg/kg	2.7	SW846 6010C	11/16/14	AAM	11/18/14 16:41	SRT	A1
Silver, Total	ND		mg/kg	0.67	SW846 6010C	11/16/14	AAM	11/18/14 16:41	SRT	A1
Tin, Total	1170		mg/kg	6.7	SW846 6010C	11/16/14	AAM	11/18/14 16:41	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637006 Date Collected: 11/11/2014 13:09 Matrix: Solid
Sample ID: S-22 (1-2) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.25	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	5.2		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	94.8		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.2		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 16:50	SRT	A1
Nickel, Total	6.2		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 16:50	SRT	A1
Silver, Total	ND		mg/kg	1.0	SW846 6010C	11/16/14 AAM	11/18/14 16:50	SRT	A1
Tin, Total	31.2		mg/kg	10	SW846 6010C	11/16/14 AAM	11/18/14 16:50	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637007 **Date Collected:** 11/11/2014 13:11 **Matrix:** Solid
Sample ID: S-22 (3-4) **Date Received:** 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	4.8		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.2		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.6		mg/kg	3.8	SW846 6010C	11/16/14 AAM	11/18/14 16:59	SRT	A1
Nickel, Total	6.4		mg/kg	3.8	SW846 6010C	11/16/14 AAM	11/18/14 16:59	SRT	A1
Silver, Total	ND		mg/kg	0.95	SW846 6010C	11/16/14 AAM	11/18/14 16:59	SRT	A1
Tin, Total	ND		mg/kg	9.5	SW846 6010C	11/16/14 AAM	11/18/14 16:59	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637008 Date Collected: 11/11/2014 13:20 Matrix: Solid

Sample ID: S-22 (5-6) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.26	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	4.6		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.4		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.2		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 17:02	SRT	A1
Nickel, Total	7.3		mg/kg	4.0	SW846 6010C	11/16/14 AAM	11/18/14 17:02	SRT	A1
Silver, Total	ND		mg/kg	0.99	SW846 6010C	11/16/14 AAM	11/18/14 17:02	SRT	A1
Tin, Total	ND		mg/kg	9.9	SW846 6010C	11/16/14 AAM	11/18/14 17:02	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637009 Date Collected: 11/11/2014 18:00 Matrix: Solid

Sample ID: S-23 (0-4) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	0.70		mg/kg	0.35	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Hexavalent Chromium	ND		mg/kg	2.7	SW846 7196A	11/18/14 THB	11/18/14 17:00	THB	A
Moisture	27.2		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	72.8		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Antimony, Total	77.6		mg/kg	25.9	SW846 6010C	11/16/14 AAM	11/19/14 10:21	SRT	A1
Arsenic, Total	5.4		mg/kg	5.2	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Barium, Total	27.1		mg/kg	2.6	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Cadmium, Total	ND		mg/kg	1.3	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Lead, Total	20.7		mg/kg	5.2	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Mercury, Total	ND		mg/kg	0.061	SW846 7471B	11/24/14 MNP	11/24/14 11:23	MNP	A3
Nickel, Total	210		mg/kg	5.2	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Silver, Total	1.3		mg/kg	1.3	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Tin, Total	11900		mg/kg	13.0	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
Zinc, Total	83.7		mg/kg	5.2	SW846 6010C	11/16/14 AAM	11/18/14 17:05	SRT	A1
TCLP METALS									
Lead, Total	ND		mg/L	0.013	SW846 6010C	11/18/14 AAM	11/18/14 11:34	SRT	A2
Nickel, Total	7.5		mg/L	0.044	SW846 6010C	11/18/14 AAM	11/18/14 11:34	SRT	A2
Silver, Total	ND		mg/L	0.0089	SW846 6010C	11/18/14 AAM	11/18/14 11:34	SRT	A2
Tin, Total	ND		mg/L	0.044	SW846 6010C	11/18/14 AAM	11/18/14 11:34	SRT	A2

Brad W. Kintzer

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Project Coordinator

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637010 Date Collected: 11/11/2014 14:40 Matrix: Solid

Sample ID: S-23 (4-7) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	6.6		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	93.4		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.7		mg/kg	4.1	SW846 6010C	11/16/14 AAM	11/18/14 17:07	SRT	A1
Nickel, Total	23.1		mg/kg	4.1	SW846 6010C	11/16/14 AAM	11/18/14 17:07	SRT	A1
Silver, Total	ND		mg/kg	1.0	SW846 6010C	11/16/14 AAM	11/18/14 17:07	SRT	A1
Tin, Total	632		mg/kg	10.3	SW846 6010C	11/16/14 AAM	11/18/14 17:07	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637011 Date Collected: 11/11/2014 14:45 Matrix: Solid
Sample ID: S-23 (7-8) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14	SYB	11/14/14 12:46	LJF	A
Moisture	5.5		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	94.5		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	5.0		mg/kg	4.2	SW846 6010C	11/16/14	AAM	11/18/14 17:10	SRT	A1
Nickel, Total	13.1		mg/kg	4.2	SW846 6010C	11/16/14	AAM	11/18/14 17:10	SRT	A1
Silver, Total	ND		mg/kg	1.1	SW846 6010C	11/16/14	AAM	11/18/14 17:10	SRT	A1
Tin, Total	290		mg/kg	10.6	SW846 6010C	11/16/14	AAM	11/18/14 17:10	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637012 Date Collected: 11/11/2014 15:40 Matrix: Solid

Sample ID: S-24 (0-1) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	5.8		mg/kg	0.34	S4500CNI-99	11/25/14	SYB	11/25/14 14:07	LJF	A
Moisture	25.9		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	74.1		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	26.2		mg/kg	13.8	SW846 6010C	11/16/14	AAM	11/18/14 17:13	SRT	A1
Nickel, Total	122		mg/kg	13.8	SW846 6010C	11/16/14	AAM	11/18/14 17:13	SRT	A1
Silver, Total	ND		mg/kg	3.4	SW846 6010C	11/16/14	AAM	11/18/14 17:13	SRT	A1
Tin, Total	34100		mg/kg	34.4	SW846 6010C	11/16/14	AAM	11/18/14 17:13	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637013 **Date Collected:** 11/11/2014 15:45 **Matrix:** Solid

Sample ID: S-24 (1-2) **Date Received:** 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND	I	mg/kg	0.27	S4500CNI-99	11/14/14 SYB	11/14/14 12:46	LJF	A
Moisture	4.3		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.7		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.1		mg/kg	3.7	SW846 6010C	11/16/14 AAM	11/18/14 17:16	SRT	A1
Nickel, Total	7.7		mg/kg	3.7	SW846 6010C	11/16/14 AAM	11/18/14 17:16	SRT	A1
Silver, Total	ND		mg/kg	0.92	SW846 6010C	11/16/14 AAM	11/18/14 17:16	SRT	A1
Tin, Total	254		mg/kg	9.2	SW846 6010C	11/16/14 AAM	11/18/14 17:16	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637014 Date Collected: 11/11/2014 15:55 Matrix: Solid

Sample ID: S-24 (3-4) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14	SYB	11/17/14 04:32	LJF	A
Moisture	4.3		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	95.7		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	3.9		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:25	SRT	A1
Nickel, Total	8.1		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:25	SRT	A1
Silver, Total	ND		mg/kg	0.97	SW846 6010C	11/16/14	AAM	11/18/14 17:25	SRT	A1
Tin, Total	51.7		mg/kg	9.7	SW846 6010C	11/16/14	AAM	11/18/14 17:25	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039837 Kauffman Road/4625.0435

Lab ID: 2039837015 **Date Collected:** 11/11/2014 16:05 **Matrix:** Solid
Sample ID: S-24 (5-6) **Date Received:** 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14 SYB	11/17/14 04:32	LJF	A
Moisture	4.7		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.3		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.0		mg/kg	3.7	SW846 6010C	11/16/14 AAM	11/18/14 17:28	SRT	A1
Nickel, Total	5.4		mg/kg	3.7	SW846 6010C	11/16/14 AAM	11/18/14 17:28	SRT	A1
Silver, Total	ND		mg/kg	0.94	SW846 6010C	11/16/14 AAM	11/18/14 17:28	SRT	A1
Tin, Total	144		mg/kg	9.4	SW846 6010C	11/16/14 AAM	11/18/14 17:28	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: **2039637016** Date Collected: 11/11/2014 16:35 Matrix: Solid

Sample ID: **S-25 (1-2)** Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.26	S4500CNI-99	11/14/14 SYB	11/17/14 04:32	LJF	A
Moisture	4.1		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
Total Solids	95.9		%	0.1	S2540G-97		11/13/14 10:01	AAP	A
METALS									
Lead, Total	4.7		mg/kg	3.9	SW846 6010C	11/16/14 AAM	11/18/14 17:31	SRT	A1
Nickel, Total	6.0		mg/kg	3.9	SW846 6010C	11/16/14 AAM	11/18/14 17:31	SRT	A1
Silver, Total	ND		mg/kg	0.98	SW846 6010C	11/16/14 AAM	11/18/14 17:31	SRT	A1
Tin, Total	ND		mg/kg	9.8	SW846 6010C	11/16/14 AAM	11/18/14 17:31	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637017 Date Collected: 11/11/2014 16:58 Matrix: Solid

Sample ID: S-26 (1-2) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.27	S4500CNI-99	11/14/14	SYB	11/17/14 04:32	LJF	A
Moisture	4.0		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	96.0		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Lead, Total	ND		mg/kg	3.5	SW846 6010C	11/16/14	AAM	11/18/14 17:34	SRT	A1
Nickel, Total	6.0		mg/kg	3.5	SW846 6010C	11/16/14	AAM	11/18/14 17:34	SRT	A1
Silver, Total	ND		mg/kg	0.88	SW846 6010C	11/16/14	AAM	11/18/14 17:34	SRT	A1
Tin, Total	ND		mg/kg	8.8	SW846 6010C	11/16/14	AAM	11/18/14 17:34	SRT	A1

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ANALYTICAL RESULTS

Workorder: 2039637 Kauffman Road/4625.0435

Lab ID: 2039637018 Date Collected: 11/11/2014 17:20 Matrix: Solid
Sample ID: S-27 (1-2) Date Received: 11/12/2014 15:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Cyanide,Weak/Dissociable(Free)	ND		mg/kg	0.26	S4500CNI-99	11/14/14	SYB	11/17/14 04:32	LJF	A
Hexavalent Chromium	ND		mg/kg	2.1	SW846 7196A	11/18/14	THB	11/18/14 17:00	THB	A
Moisture	4.0		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
Total Solids	96.0		%	0.1	S2540G-97			11/13/14 10:01	AAP	A
METALS										
Antimony, Total	5.4		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Arsenic, Total	ND		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Barium, Total	32.9		mg/kg	1.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Cadmium, Total	ND		mg/kg	0.96	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Lead, Total	4.3		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Mercury, Total	ND		mg/kg	0.052	SW846 7471B	11/24/14	MNP	11/24/14 11:24	MNP	A2
Nickel, Total	6.3		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Silver, Total	ND		mg/kg	0.96	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Tin, Total	ND		mg/kg	9.6	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1
Zinc, Total	11.6		mg/kg	3.9	SW846 6010C	11/16/14	AAM	11/18/14 17:37	SRT	A1

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2039637005	1	S-22 (0-1)	S4500CNI-99	Cyanide,Weak/Dissociable(Free)
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				
2039637013	1	S-24 (1-2)	S4500CNI-99	Cyanide,Weak/Dissociable(Free)
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.				

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Bulk

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 3
Courier:
Tracking #:

2039637

Co. Name: HRG
Contact (Report to): Michael Techky
Phone: 717 564 1121
Address: 364 East Park Drive Harrisburg PA 17111
Bill to (if different than Report to):
PO#:
Project Name/#: Kauffman Road/4625.0435 ALS Quote #:
TAT: [x] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:
Email? Y mtechky@hrg-inc.com
Fax? Y No:

Container Type: CG; Container Size: 4oz; Preservative: —

ANALYSES/METHOD REQUESTED: Ni, Sn, Pb, Ag, Free CN

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	G or C	Matrix	Ni, Sn, Pb, Ag, Free CN
1 S-21 (0-1')		11/11/14	1050	G	CO	1
2 S-21 (1-2')		↓	1055	G	CO	1
3 S-21 (3-4')	Bulk	↓	1100	G	CO	1
4 S-21 (7-8')	11-13-14	↓	1105	G	CO	1
5 S-22 (0-1')		↓	1305	G	CO	1
6 S-22 (3-4')		↓	1309	G	CO	1
7 S-22 (3-4')	111214 2257	↓	1311	G	CO	1
8 S-22 (5-6')		↓	1320	G	CO	1

Enter Number of Containers Per Analysis

Received by: JS
Cooler Temp: 8.2
Therm. ID: TH-91
No. of Coolers:
Notes:

Circle appropriate Y or N.

	Y/N
Correct containers?	Y
Correct sample volumes?	Y
Correct preservation?	Y
Headspace/Volatiles?	—
Custody seals Present?	N
(if present) Seals Intact?	—
Received on Ice?	Y
COC/Labels complete/accurate?	Y
Container in good condition?	Y

SAMPLED BY (Please Print): Michael Techky

Project Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Michael Techky / HRG	11/12/14	1536	2	[signature] ALS	11/12	1536
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (see)
EDD Required? [ ] If yes, format type:
SDWA Forms? yes / yes / yes / yes / Other
State Samples Collected In? MD / NJ / NY / PA [x]
DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater CO=Concrete
***Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz, etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 01-2013

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ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Courier:
Tracking #:

COC# 2039637

Co. Name: HRG
Contact (Report to): Michael Techty
Address: 369 East Park Drive
Harrisburg PA 17111
Phone: 717 5641121

Bill to (if different from Report to):
PO#:

Project Name/#: Kauffman Road/4625.0435 ALS Quote #:

TAT: Normal-Standard TAT is 10-12 business days. / Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:

Email? —Y mtechty@hrg-inc.com
Fax? -Y No.:

Container Type: CG
Container Size: 2oz
Preservative: —

ANALYSES/METHOD REQUESTED: TCLP(Ni, Sn, Pb, Ag) Ni, Sn, Pb, Ag, Free CN, As, Ba, Cd, Cr, Se, Zn, Cu, Hg; Ni, Sn, Pb, Ag, Free CN

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	TCLP(...)	Ni, Sn, Pb, Ag, Free CN
9	1 S-23 (0-4")		11/12/14	1620	C	So	1	
10	2 S-23 (4-7")		↓	1440	G	So		1
11	3 S-23 (7-8")	Bulk 11-13-14 1616	↓	1445	G	So		1
12	4 S-24 (0-1")		↓	1540	G	So		1
13	5 S-24 (1-2")		↓	1545	G	So		1
14	6 S-24 (3-4')		↓	1555	G	So		1
15	7 S-24 (5-6')	11/12/14 2257	↓	1605	G	So		1
16	8							

Receipt Information (completed by Sample Receiving)
Received by: [illegible]
Cooler Temp: 8°
Therm. ID: TH-296
No. of Coolers:
Notes:

Circle appropriate Y or N.
Correct containers? Y
Correct sample volumes? Y
Correct preservation? Y
Headspace/Volatiles? Y N
Custody seals Present? N
(If present) Seals Intact? N
Received on Ice? Y
COC/Labels complete/accurate? Y
Container in good condition? Y

SAMPLED BY (Please Print): Michael Techty

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Michael Techty/HRG	11/12/14	1536	2 [signature] ALS	11/12	1536
3			4		
5			6		
7			8		
9			10		

Data Deliverables: Standard / CLP-like / NJ-Reduced / NJ-Full / EDD Required? If yes, format type: Other
SDWA Forms?: yes / yes / yes / yes
State Samples Collected In?: MD / NJ / NY / PA
DOD Criteria Required?

ALS FIELD SERVICES: Pickup / Labor / Composite Sampling / Rental Equipment / Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz, etc. Preservative: HCl, HNO3, NaOH, etc.
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ALS Environmental

34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Cooler:
Tracking #:

2059637 (SGC#)

Co. Name: HRG
Contact (Report to): Michael Techky — Phone: 717 564 1121
Address: 369 East Park Drive, Harrisburg PA 1711

Bill to (if different from Report to): — PO#:

Project Name/#: Kauffman Road/4625.0436 — ALS Quote #:

TAT: [✓] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges. — Date Required: — Approved By:

Email? Y mtechky@hrg-inc.com
Fax? Y No.:

	Container Type	Container Size	Preservative
Ni, Sn, Pb, Ag, FreeCN	CG	4oz	—
Ni, Sn, Pb, Ag, FreeCN, As, Ba, Cd, Be, Zn, Cr(VI), Hg	CG	4oz	—

ANALYSES/METHOD REQUESTED — Enter Number of Containers Per Analysis

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	G or C	Matrix	Ni, Sn, Pb, Ag, FreeCN	Ni, Sn, Pb, Ag, FreeCN, As, Ba, Cd, Be, Zn, Cr(VI), Hg
16 1 S-25 (1-2")		11/11/14	1635	G	CO	1	
17 2 S-26 (1-2")	BMK 11-13-14 16:46	↓	1658	G	CO	1	
18 3 S-27 (1-2")		↓	1720	G	CO		1
4							
5							
6							
7	11-12-14 2217						
8							

Receipt Information (completed by Receiving Lab)
Performed by:
Cooler Temp: 8.2
Therm. ID: 711-396
No. of Coolers:
Notes:

Circle appropriate Y or N: Correct containers? Y; Correct sample volume? Y; Correct preservation? Y; Headspace/Volatiles? Y; Custody seals Present? Y N; (if present) Seals intact? Y N; Received on ice? Y; COC/Labels complete/accurate? Y; Container in good condition? Y

SAMPLED BY (Please Print):

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Michael Techky/HRG	11/12/14	1536	2 [signature] ALS	11/12	1536
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] [ ] If yes, format type:
EDD Required?
EDD/EDF Forms/Tro: yes [ ] yes [ ] yes [ ] yes [ ] Other
State Samples Collected In?: MD [ ] NJ [ ] NY [ ] PA [ ]
DOD Criteria Required?

ALS FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz, etc. Preservative: HCl, HNO3, NaOH, etc.

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