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To: NYSDEC	•	<del></del>	Date: 5/19	9/14 Job: 14NY110
Division	of Environment	al Remediation		Mr. Michael McLean
1115 Sta	ate Route 86			
PO Box	296		Re: Forme	r Haight/ American Hide Tannery Site
Ray Broo	ok, NY 12977-02	96	125 Ba	ath St., Ballston Spa, NY
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		SIGNED:	Michelle L. B	odower D. F.

cc:

# INTERIM REMEDIAL MEASURE #1 (Excavation Pit #1, EP1) CONSTRUCTION COMPLETION REPORT For

# FORMER HAIGHT /AMERICAN HIDE TANNERY SITE 125 Bath Street Ballston Spa, New York, Saratoga County

**NYSDEC BCP Site No. C546055-10-12** 

MAY 2 2 2014

NYSDEC - REGION 5
ENVIRONMENTAL QUALITY

Prepared For:

Angelica Textile Services, Inc.

Prepared By:

KHEOPS Architecture, Engineering & Survey, DPC 300 Pearl Street, Suite 100 Buffalo, New York 14202 (716) 849-8739

# **CERTIFICATIONS**

I, Michelle L. Bodewes, certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Interim Remedial Measure was implemented and that all construction activities were completed in substantial conformance with the DER-approved Interim Remedial Measure Work Plan.

082073

NYS Professional Engineer #

5/19/14

Michelle Fordewig Signature



# Interim Remedial Measure (IRM) Construction Completion Report (CCR)

# TABLE OF CONTENTS

1.0	Remedial Action and Technology							
2.0	Temporary Construction or Treatment Facilities							
3.0	Applicability of Standard Criteria or Guidance							
4.0	Environmental Control Programs							
	4.1 Soil Erosion Control							
	4.2 Storm Water Management							
	4.3 Community Air Monitoring Plan							
5.0	Health and Safety Plan (HASP)							
6.0	Confirmatory Sampling and Documentation							
7.0	Removal of Remedial Structures and Equipment	t						
8.0	Interim Remedial Measure Schedule							
9.0	Site Management Plan and Estimated Costs							
10.0	Conclusions							

# **Appendices**

Appendix A	Site Sampling Plan Map (See RIWP Appendix A)
Appendix B	Site Management Plan Map and EP1 Confirmatory Sampling Maps
Appendix C	Confirmatory Sampling Results and EP1 Wastewater Results
Appendix D	EP1 June 2013 and August 2010 Sampling Results
Appendix E	Backfill Sampling Results

# Section 1.0 Remedial Action and Technology

KHEOPS Architecture, Engineering & Survey, DPC (KHEOPS) in cooperation with Environmental Compliance, Inc., on behalf of the Brownfields Cleanup Program (BCP) applicant Angelica Textiles Services, Inc. has prepared this Interim Remedial Measure (IRM) Construction Completion Report (CCR) summarizing the remediation of designated area OU1/EP1. This document is specifically developed for the approximate 6.35 acre property identified by the New York State Department of Environmental Conservation (NYSDEC) in a Brownfield Cleanup Agreement Index No. C546055-10-12 as the Former Haight/American Hide Tannery Site located at 125 Bath Street, Ballston Spa, New York, Saratoga County, NYSDEC BCP Site No. C546055. This CCR has been prepared in accordance with requirements pursuant to the NYSDEC Part 375.3 of Title 6 of the Codes, Rules, and Regulations of the State of New York (6NYCRR) – Brownfield Cleanup Program regulations and applicable guidance documents including NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation issued May 2010 (DER-10) and CP-51, and the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York issued October 2006 (NYSDOH Vapor Guidance).

An interim remedial measure (IRM) was implemented for the excavation pit (EP1) as depicted on the Site Sampling Plan Map in Appendix A of the Remedial Investigation Work Plan (RIWP) and contained herein as Appendix A. The IRM implementation and completion is detailed in the maps located in Appendix B (Site Management Plan Map and EP1 Confirmatory Sampling Maps). The excavation pit EP1 was remediated as of August 23<sup>rd</sup>, 2013 for a total estimated cost of \$1,300,000, which also includes the RI effort to date. The remediation effort took place as depicted in the Interim Remedial Measure Work Plan (IRMWP) as updated May 23<sup>rd</sup>, 2013. The excavation of EP1 [identified as Operable Unit 1 (OU1) within the context of the BCP] continued moving outwards from the current center (as of May 2013) until grossly contaminated soils were removed based on visual observations. At that time, end point samples were taken and compared to all relevant standards. This was the remedial action objective for EP1. No deviation from the IRMWP was required.

In most cases, the confirmatory sample results were lower than the Commercial Soil Cleanup Objectives (SCOs). Only three (3) semi-volatile organic compounds (SVOCs) were present in concentrations above the Commercial SCOs, but all three (3) were below the Industrial SCOs. The three (3) SVOCs that were above the Commercial SCOs were obtained from one sample from the north wall. In addition, two (2) metals were present in concentrations above the Commercial SCOs, but both metals were below the Industrial SCOs (See Section 6.0 for more details).

The technology and equipment incorporated knowledgeable and experienced personnel, backhoe(s), front-end loader(s), bulldozer(s), vacuum-trucks, water pumps, water holding tank(s), and transportation trucks (excavated materials and backfill materials). No excavation problems were encountered during the implementation of the IRMWP with the exception of the excavator being stuck in the mud for a few hours requiring a tow truck for its removal.

The excavation removed the petroleum-contaminated soil (PCS), leather scrap and other materials such as building debris (bricks and concrete), coal ash, and other materials excavated from OU1/EP1.

## **Chronological Order of the Remedial Effort:**

The PCS and leather scrap that had been previously excavated from EP1, and stockpiled on-Site in 2010, were first removed from the Site during the week of June 17<sup>th</sup>, 2013 in order to clear the area for further excavation. Appendix B maps represent the Site Management Plan and EP1 Confirmatory Sampling locations. Appendix C represents the confirmatory soil sampling results and the wastewater sampling results obtained from the soil and wastewater removed from OU1/EP1 respectively in June through August 2013. It should be noted that the Remedial Investigation of the Site was completed between the week of June 17<sup>th</sup> and June 30<sup>th</sup>, 2013. During this time period samples from EP1 were removed and sent to the laboratory as samples TP1, TP2, and TP3 (*see* Appendix D). Samples TP1-TP3 were tested for TAL Metals as EP1 still contained PCS and the associated VOCs and SVOCs were known at this time based on August 2010 composite sample results (*see* Appendix D) removed from on-Site stock piled material excavated from EP1. In addition, Appendix D contains the sampling results from the excavation work that was completed for OU1/EP1 in and around 2010 and 2011.

The IRM effort started the week of July 8<sup>th</sup>, 2013 with the pumping out of the excavation pit EP1 that had filled with water. The water was analyzed and approval was obtained for disposal by the wastewater treatment (WWT) plant in Schenectady, New York. The water was then sent to the Schenectady facility for disposal as this facility is a licensed and certified wastewater disposal facility. An excavator was used to remove both PCS and leather scrap from the pit. Both solid materials were sent to an appropriate permitted landfill (Fulton County Landfill) for disposal. The leather scrap and other solid materials were accepted by the landfill as commercial solid waste. Other materials contained within the PCS such as building debris and coal ash were also accepted for disposal by the landfill.

The second week of the IRM continued July 15<sup>th</sup> through July 19<sup>th</sup> with the excavation of the existing pit location/area. There was an on-Site meeting with the NYSDEC project manager Mike McLean where he gave authorization to proceed with the petroleum and leather scrap remediation in the pit. Once the pit was excavated and determined visually clean of PCS and leather scrap, confirmation samples were obtained. Again the focus of the analysis was on total metals and total SVOCs representing petroleum and leather scrap remediation. Mr. McLean did request that one pit confirmation sample be analyzed for all of the contaminants [See Table A1 of Appendix A of the RIWP for the approved analysis and the sample results from Lab Sample ID 132721-02 (CS3-South-10)]. During this week confirmation samples were taken from the west, south, and east ends and the bottom of the pit for laboratory analysis.

The 3<sup>rd</sup> week of the IRM continued from July 22<sup>nd</sup> through July 26<sup>th</sup>. On July 23<sup>rd</sup>, during the on-Site meeting and after review of the laboratory results from the west, south, and east ends of the pit as well as the bottom sample results, Mr. McLean provided approval to backfill portions of

the pit. Visual inspection performed by Mr. McLean of the remediated portions of the pit also allowed for his determination to backfill appropriate areas of the pit. One of the objectives to allow backfilling of the pit was to use the backfilled areas to access the north dike area for excavation/remediation.

From July 29<sup>th</sup> through July 31<sup>st</sup> backfilling of the pit with virgin shale and sand material allowed access to the north dike area for the further removal of PCS and leather scrap. In total, during the month of July 2013, 1,600 tons of PCS and leather scrap were sent off-Site to the landfill, 43,141 gallons of water were sent off-Site to the WWT plant, and about 1,700 cubic yards of clean backfill material were brought on-Site to fill the excavation pit.

During the first week of August including August 1<sup>st</sup> and August 2<sup>nd</sup>, the work was confined to excavating the pit area adjacent to the north dike. In these two days approximately 400 tons of PCS and leather scrap were removed from the pit area adjacent to the north dike area. Both PCS and leather scrap solid waste materials were sent to an appropriate landfill (Fulton County Landfill) for disposal. The IRM work was halted for the week of August 5<sup>th</sup> through the 9<sup>th</sup> due to previous engagements of the excavation contractor.

The week of August 12<sup>th</sup> through August 16<sup>th</sup> included excavating the area adjacent to the north dike area and back filling selected areas so that the excavator could reach appropriate areas along the north dike for further excavation. Approval by the NYSDEC project manager Mike McLean was obtained during an on-Site meeting on August 13<sup>th</sup> to backfill the remediated areas adjacent to the north dike area along with approval to re-sample the north wall/dike. Approximately 540 tons of PCS and leather scrap were removed during this week and sent to the Fulton County Landfill for disposal. Approximately 840 cubic yards of clean virgin shale and sand were brought in as backfill during this week

During the last week of the IRM work effort, August 19<sup>th</sup> through August 23<sup>rd</sup>, approximately 1,290 cubic yards of clean backfill were brought in, and the remaining staged PCS and leather scrap materials were removed and sent to the Fulton County landfill (27 tons). The excavation pit area was final graded using a bulldozer. The 20,000 gallon Baker wastewater tank was cleaned and removed from the Site. The potable decontamination water tank was also emptied and removed from the Site.

In total during August 2013 there were approximately 967 tons of PCS and leather scrap material sent off-Site to the landfill, 13,871 gallons of water sent off-Site to the WWT plant, and approximately 2,130 cubic yards of clean backfill brought on-Site to fill the excavation pit.

For the July and August 2013 effort there was approximately 2,567 tons of PCS and leather scrap material sent off-Site to the Fulton County Landfill, approximately 3,870 cubic yards of backfill brought on-Site to fill excavation area EP1, and 57,012 gallons of wastewater was sent to the wastewater treatment plant in Schenectady, New York. The wastewater was pumped out of the excavation area EP1 during the July and August time frame.

For the entire IRM including the work effort in 2010, approximately 3,390 tons of PCS and leather scrap material and approximately 126,000 gallons of wastewater were removed from the EP1 excavation pit area, and 3,870 cubic yards of backfill were brought on-Site to fill the excavation pit area of EP1 (see Table 1.0-1 below).

**Table 1.0-1** 

OU1/EP1 Remediation Summary (5/12/14)									
Material	Estimated Date	Disposal Site	<b>Estimated Amount</b>						
PCS	10/10/2010	ESMI Incinerator Ft. Edward, NY	102.07 Tons						
PCS	12/10/2010	Town of Colonie, NY Landfill	270.7 Tons						
PCS	6/20/2011	Fulton County Landfill	450.4 Tons						
PCS	8/31/2013	Fulton County Landfill	870 Tons						
Commercial Soild Waste	8/31/2013	Fulton County Landfill	1,697 Tons						
Subtotal (Tons)			3,390.17 Tons						
Wastewater	12/7/2010	Wastewater Treatment Plant Schenectady, NY	15,000 gal.						
Wastewater	6/8/2011	Wastewater Treatment Plant Schenectady, NY	54,112 gal.						
Wastewater	8/31/2013	Wastewater Treatment Plant Schenectady, NY	57,012 gal.						
Subtotal (Gallons)			126,124 gal.						

The first excavation of PCS that was removed from the Site in October 2010 was transported to the Environmental Soil Management Companies (ESMI) facility for incineration and disposal at their Ft. Edward, NY facility. The second excavation of PCS that was removed from the Site in December 2010 went to the Town of Colonie, NY Landfill for disposal. The remainder of PCS and leather scrap (Commercial Solid Waste) went to the Fulton County Landfill in Johnstown, NY for disposal starting in June 2011 and finished in August 2013.

### **General Construction Comments:**

The excavation contractor through the use of New York State's Dig Safely program staked out the location of all utilities before commencing the excavation activities to avoid impact to existing utilities. In fact, New York State's Dig Safely program was contacted no less than six times and their utility contacts marked out appropriate utilities on numerous occasions throughout the excavation of EP1.

The mound of soil/dirt that encompassed the northern location of EP1 was not disturbed since it serves as a barrier to any potential off-site migration. In addition, the western boundary did not require shoring-up during the successful excavation of EP1.

The number and general locations of the confirmatory samples were approved by the NYSDEC project manager Mike McLean.

## 2.0 Temporary Construction or Treatment Facilities

A decontamination pad was installed for personnel and equipment adjacent to the 2,000 gallon potable water tank near the northwest corner of the existing building near EP1. Also included in this area was a portable bathroom.

A 20,000 gallon wastewater tank was delivered on-Site on or about July 9<sup>th</sup> and was removed from the Site on or about August 23<sup>rd</sup>, 2013. The location was near the northwest corner of the existing building and near EP1.

# 3.0 Applicability of Standard Criteria or Guidance

The applicable cleanup standards for this IRM excavation pit EP1 are the Restricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR 375-6.8(b) (Commercial/Industrial SCOs). The excavation contractor excavated EP1 until no grossly contaminated PCS was observed. Confirmatory samples were taken at the final excavated depth and on the side walls of the excavation pit, and compared to the Commercial/Industrial SCOs. If there were hot spots that remained, such hot spots were evaluated to determine if further excavation could be economically and technically implemented to achieve the Commercial/Industrial SCOs (See Section 6.0 for more details).

# 4.0 Environmental Control Programs

There were a number of environmental control programs implemented during the IRM; including soil erosion control, storm water management, and the community air monitoring plan (CAMP).

### 4.1 Soil Erosion Control

Due to the steep grade of the western side of the Site, surface water run-off and resulting soil erosion was a concern that had to be addressed. The excavation contractor used bales of hay in an effort to control erosion from and around the excavation pit.

In addition, minor amounts of excavated soils were temporarily staged on-Site. However, the piles that were staged were on-Site for only a few days.

## 4.2 Storm Water Management

As noted above, due to the steep grade of the Site, surface water run-off from storm water was a concern that had to be addressed. To control any potential groundwater over-flow of EP1 during excavation, since groundwater is very shallow at this location, bales of hay were brought on-Site (~100 bales) to be used in case any spills or overflow from EP1 were noticed. These engineering control measures also served to contain any soil erosion from the excavation area when present. When the excavation of EP1 was completed, the hay bales were properly disposed.

It should be noted that when it rained, additional controls were put in place to control the run-off, such as pumping water out of the excavation pit and into the  $\sim$ 20,000 gallon wastewater tank that was on-Site during the excavation of EP1.

# 4.3 Community Air Monitoring Plan

A community air monitoring plan (CAMP) was developed for the entire remedial investigation (RI) effort at the Site, and was implemented during this IRM. The Health and Safety Plan (HASP) Section 16 contains the CAMP in its entirety. The locations of the two continuous air monitoring stations required by the CAMP are shown on the Map contained in Appendix B. The two air monitoring stations were installed daily, and their locations moved based on the excavation/ground intrusive activities and wind direction.

# 5.0 Health and Safety Plan (HASP)

The HASP for the RIWP is included in Appendix F of the RIWP. This HASP was implemented during this IRM.

# 6.0 Confirmatory Sampling and Documentation

# **EP1 Excavation:**

Due to the geology and topography-related elevations of the site, during the excavation of EP1 there were a number of remediation/excavation practices that were required. First, the steep slope/grade on the west side of EP1 had to be addressed. While not requiring shoring, the slope did require that portions of EP1 that had been excavated to visually clean status, had to be sampled and then backfilled before the entire pit was remediated. This allowed the excavator to move in a north-south direction along the western boundary of EP1. The excavation was also very deep in many areas, with some excavation points reaching as deep as 12 feet to 20 feet below grade, due to the elevation differences. Thus, confirmation samples were taken from EP1 in a phased approach and in a practicable and safe manner.

Once an area of EP1 was visually inspected by the excavation contractor and deemed to be visually free of any grossly contaminated soil, confirmatory samples were taken and sent to the laboratory for analysis. The first confirmatory samples were taken on July 17<sup>th</sup>, 2013 from the west side (sample ID: CS1-West-10, indicating that the sample was removed from a depth of 10 feet from the west side of EP1). Sample ID: CS2-East-10 was also taken on July 17<sup>th</sup>, 2013 from a depth of 10 feet on the east side of EP1. Both samples were analyzed for metals and SVOCs. Both samples had non-detect results for all SVOCs, and the metals were well below the Restricted Use Commercial SCOs [Table 375-6.8(b)] with the exception of CS2-East-10 that had both Barium and Copper that exceeded their respective Restricted Use Commercial SCOs, but met their respective Restricted Use Industrial SCOs.

Additional confirmatory samples were taken on July 18<sup>th</sup>, 2013 from the south end and bottom of EP1. Sample ID: CS3-South-10 was removed from a depth of 10 feet on the south side of EP1. NYSDEC project manager Mike McLean requested that one confirmatory sample be analyzed for all of the contaminants as depicted in Appendix A1 of the RIWP; sample CS3-South-10 was this sample. Sample ID: CS4-Bottom-12 was removed from a depth of 12 feet towards the

middle of EP1. Both samples were analyzed for metals and SVOCs. Both samples had non-detect results for all SVOCs, with the exception of Bis (2-ethylhexyl) phthalate, where the results for both samples were estimated to be between the quantitation limit and half the quantitation limit. Bis (2-ethylhexyl) phthalate is not a compound listed on Table 375-6.8(b). The metals for both samples were well below the Restricted Use Commercial SCOs (Table 375-6.8(b). In addition, sample CS3-South-10 was analyzed for polychlorinated biphenyls (PCBs), pesticides, hexavalent chromium, total cyanide, and volatile organic compounds (VOCs), all of which were non-detect results with the exception of an extremely low result for Acetone.

An additional confirmatory sample was taken on August 2<sup>nd</sup>, 2013 after backfilling up to the north wall, and removing visually contaminated PCS and leather scrap. Sample ID: CS6-North-10 was removed from a depth of 10 feet on the north side of EP1. The metals results from this sample were below the Restricted Use Commercial SCOs with the exception of Barium and Copper which were above their respective Restricted Use Commercial SCOs but below their respective Restricted Use Industrial SCOs. The SVOCs were all below the Restricted Use Commercial SCOs with the exception of Benzo (a) pyrene, Benzo (a) anthracene, Benzo (b) flouranthene, and Dibenz (a,h) anthracene which were above their respective Restricted Use Commercial SCOs but below their respective Restricted Use Industrial SCOs. Only one SVOC was over both the Restricted Use Commercial and Industrial SCOs, which was Benzo (a) pyrene. After further excavation, a second sample (CS7-North -10) was taken from the north wall on August 20, 2013 and analyzed for Benzo (a) pyrene; the result for this sample was below the Restricted Use Commercial SCO.

The following Table 6.0-1 shows all the results that exceeded their respective Restricted Use Commercial SCO, but met their respective Restricted Use Industrial SCO, during the confirmatory sampling effort.

**Table 6.0-1** 

Sample ID	Metal/Compound	Sample Date	Result (ppm)	Commercial Use Soil Cleanup Objective (ppm)	Industrial Use Soil Cleanup Objective (ppm)
CS6-North-10	Barium	8/2/2013	431	400	10,000
CS6-North-10	Copper	8/2/2013	590	270	10,000
CS6-North-10	Benzo (a) anthracene	8/2/2013	5.91	5.6	11
CS6-North-10	Benzo (a) pyrene	8/2/2013	7.05	1	1.1
CS6-North-10	Benzo (b) flouranthene	8/2/2013	6.76	5.6	11
CS6-North-10	Dibenz (a,h) anthracene	8/2/2013	0.904	0.56	1.1
CS7-North-10	Benzo (a) pyrene	8/20/2013	0.939	1	1.1
CS2-East-10	Barium	7/17/2013	8590	400	10,000
CS2-East-10	Copper	7/17/2013	513	270	10,000

The above confirmatory sample results indicate that OU1/EP1 was remediated to Restricted Use Industrial SCOs (see Appendix C). Appendix B contains the EP1 Confirmatory Sampling Maps, which depicts the location and depth of the confirmatory samples. In addition, the wastewater sample results for the disposal of the water removed from EP1 during excavation is included in Appendix C.

It should be noted that further excavation of the north wall area would have undermined the integrity of the north wall. The north wall prevented off-site migration of groundwater and surface water from the hillside and EP1. In addition, the north wall seemed to be visually consistent with its contents. The north wall is a short distance from the property boundary to the north and east at its location. A decision at the time of the IRM was to halt further excavation to avoid possible groundwater and surface water issues. Based on this reasoning the approval to backfill the north dike area was provided by the NYSDEC project manager Mike McLean on August 13<sup>th</sup>, 2013.

The documentation for the sampling effort is described in detail in the Quality Assurance Project Plan (QAPP) that is contained in Appendix G of the RIWP.

## **Backfill:**

The backfill was virgin shale removed from a local excavation of an off-ramp for Route 87. The virgin shale was an excellent choice of material for use as backfill as it was stable (supported the heavy machinery required for the excavation and backfill of EP1) and supported the west slope area of EP1. The backfill sampling results indicate that the shale contained metals, metal oxides that make up shale, a sedimentary rock that forms as deposits of parallel orientated clay mineral flake in layers as strata. The backfill shale exhibited fissility and was easily broken into layers.

The sampling results for the virgin shale backfill for VOCs, SVOCs, PCBs, hexavalent chromium, total cyanide, and pesticides were all non-detects with the exception of alpha-BHC (a listed pesticide), which was at a level of 34.9 ug/Kg during the 10/1/2013 analysis. However, analysis of the sample taken during the same date and time (different glass jar) indicated the analytical result of alpha-BHC was non-detect at <2.85 ug/Kg when analyzed on 10/10/2013. It is unknown why the 10/1/2013 analysis showed the presence of alpha-BHC when the same sampling showed non-detect levels when analyzed by the same laboratory on 10/10/2103 (see Appendix E for the laboratory summary data for the backfill sample).

The presence of alpha-BHC in the initial results may have been from inadvertent sample contamination, lab issues, or possible run-off from the fairgrounds above the Site. However, a comparison of this initial alpha-BHC lab result to Table 375-6.8(b) shows the result is under the Restricted Use Protection of Ecological Resources SCO of 40 ug/Kg. The Restricted Use Commercial SCO limit is 480 ug/Kg.

# 7.0 Removal of Remedial Structures and Equipment

The decontamination pad was decontaminated, the two air monitoring stations removed, and the  $\sim$ 20,000 gallon wastewater tank as identified in Section 2.0 were removed from the site. The decontamination pad was an existing concrete section that was cleaned at the end of the Site work. The wastewater tank was emptied and the wastewater disposed of at an appropriate wastewater treatment facility. The wastewater tank was cleaned and removed from the Site.

## 8.0 Interim Remedial Measure Schedule

It was anticipated that shortly after the RI sampling effort had been completed the IRM excavation effort of EP1 would commence. The RI sampling effort ended on June 30<sup>th</sup>, 2013 and the IRM started on July 8<sup>th</sup>, 2013. It was anticipated that the IRM effort would be completed by the end of August 2013. The IRM effort ended on August 23<sup>rd</sup>, 2013. All IRM efforts were completed on schedule.

# 9.0 Site Management Plan and Estimated Costs

The IRM Site Management Plan (SMP) was included in the QAPP contained as Appendix G of the RIWP. This IRM SMP was implemented as the SMP for the IRM work effort. Section 3.0 and Figure 1 of the QAPP includes the personnel and their respective responsibilities to carry out the implementation of this IRM.

Mr. Schneckenberger, P.E. was the project manager. Ms. Jill Gulczewski, an environmental engineer, was given the responsibility of project manager when Mr. Schneckenberger was not on-Site. Capital Safety Services provided safety personnel to perform the duties of Health and Safety Coordinator (HSC) and were responsible for implementation of the Site Health and Safety Plan (HASP). Mr. Ed Nesselbeck was in charge of the CAMP implementation. Mr. Schneckenberger and Mr. Nesselbeck were the Quality Assurance Officers during implementation of the IRM. The Quality Assurance Officer (QAO) was responsible for ensuring that the quality of the data and the reports are suitable for the project objectives; the primary QAO responsibility was to provide review and guidance on all quality aspects of the project. Galloway Technical Services provided all of the physical remediation work/effort for the IRM in conjunction with a number of disposal and backfill haulers.

The following Table 9.0-1 depicts the estimated costs to date for the RI and IRM efforts.

**Table 9.0-1** 

Estimated Remediation Costs for NYSDEC BCP Site No. C546055-10-12 To Date (5/12/14)										
Unit Designation	Soil Volume	Estimated Remediation Costs <sup>(1)</sup>	Estimated Remediation Costs for Unit							
(Cost Parameter)	(Tons)	(Cost per Ton of Soil)	(\$)							
Excavation	3390	36.05	122209.5							
Transport <sup>(2)</sup>	3390	14.98	50782.2							
Disposal <sup>(2)</sup>	3390	44.65	151363.5							
Labor <sup>(3)</sup>	3390	63.34	214722.6							
CAMP <sup>(4)</sup>	3390	3.63	12305.7							
Laboratory/Sampling	3390	5.4	18306							
Equipment Rental	3390	1.59	5390.1							
Backfill <sup>(5)</sup>	3390	12.92	43798.8							
Groundwater <sup>(6)</sup>	3390	10.56	35798.4							
Engineering <sup>(7)</sup>	3390	19.18	65020.2							
Miscellaneous <sup>(8)</sup>	3390	9.59	32510.1							
Additional Construction <sup>(9)</sup>			25000							
RI Labaroator/DUSRs/EDD			113,500							
Documentation <sup>(10)</sup>			409,293							
Total Cost for Unit			1300000.1							

Note<sup>(1)</sup>: Uses costs for 2013 IRM

Note (2): Assumes all waste is non-hazardous for landfill disposal

Note (3): Includes all required BCP on-Site labor

Note (4): BCP required Community Air Monitoring Program

Note: (5): Includes backfill and transportation

Note (6): Includes removal, transport and disposal per ton of soil excavated

Note<sup>(7)</sup>: Assumes 10% of estimated remediation costs

Note<sup>(8)</sup>: Assumes 5% of estimate remediation costs

Note (9): Additional construction and engineering costs for utilities, errosion control, and delays

Note (10): Includes BCP Engineering and Reporting Requirements

### 10.0 Conclusions

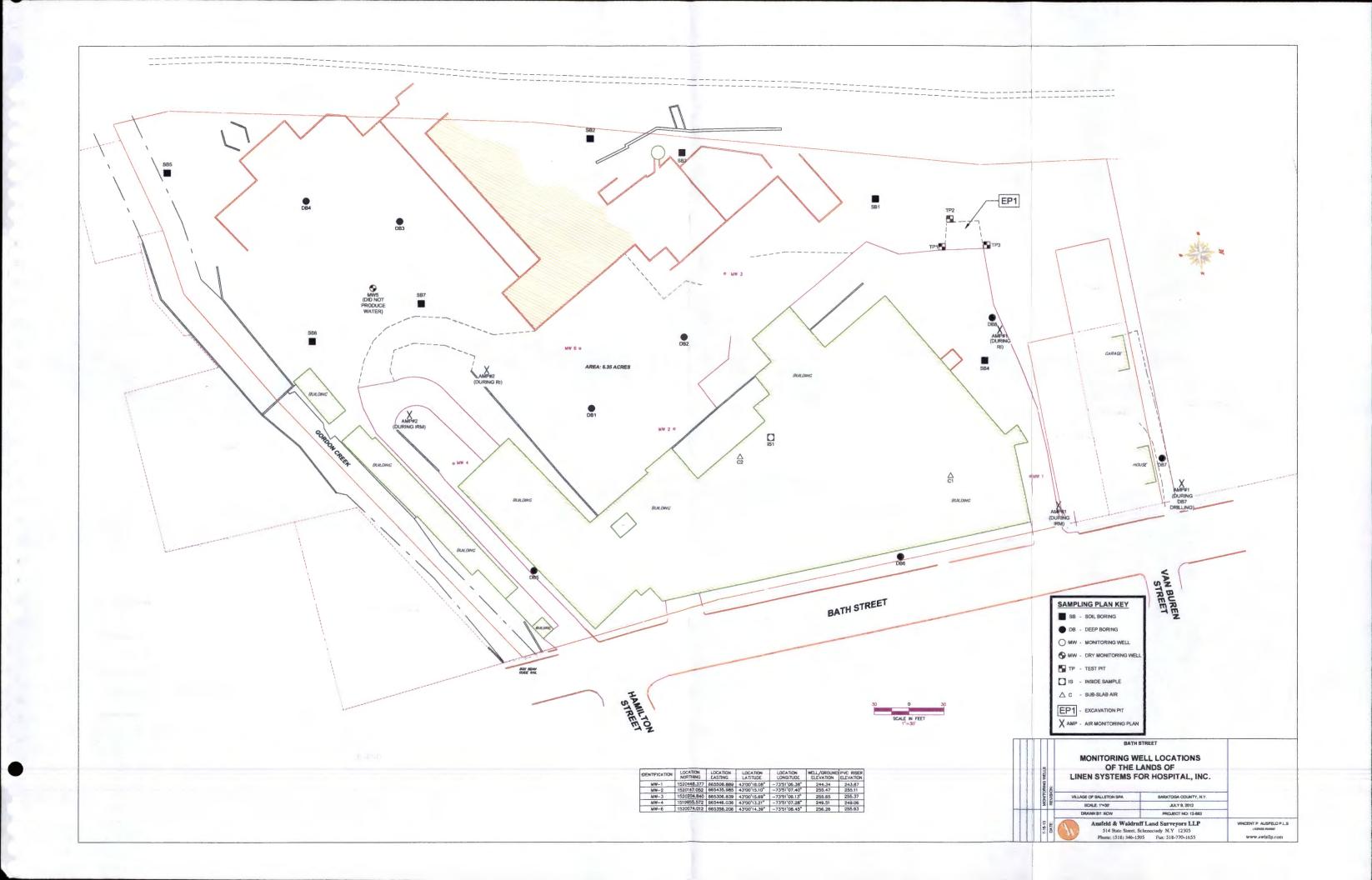
What remains in OU1/EP1 excavation area is historical fill. The historic fill that is contained in many locations on the Site will be addressed in the alternative analysis/remedial action work plan. The PCS and leather scrap from the initial remediation effort started in 2010 was removed in its entirety. OU1/EP1 was remediated to Unrestricted Use Soil Cleanup Objectives and Restricted Use Commercial/Industrial Soil Cleanup Objectives contained in Tables 375-6.8(a) and 375-6.8(b) respectively (see Appendix C).

What remains in OU1/EP1 meets mostly Restricted Use Commercial SCOs with only two (2) metals Barium and Copper above their respective Restricted Use Commercial SCOs for two (2) samples: CS2-East-10 and CS6-North-10. Barium and Copper are not considered contaminants of concern. Only sample CS6-North-10 contained sample results that are above their respective Restricted Use Commercial SCOs for SVOCs: Benzo (a) pyrene, Benzo (b) fluoranthene, and Dibenz (a,h) anthracene. Sample CS7-North-10 was removed after further excavation in the area

of CS6-North-10 and the result for Benzo (a) pyrene was below the Unrestricted Use SCO. Thus, only two SVOCs: Benzo (b) fluoranthene, and Dibenz (a,h) anthracene remain above their respective Restricted Use Commercial SCOs but meet their respective Restricted Use Industrial SCOs.

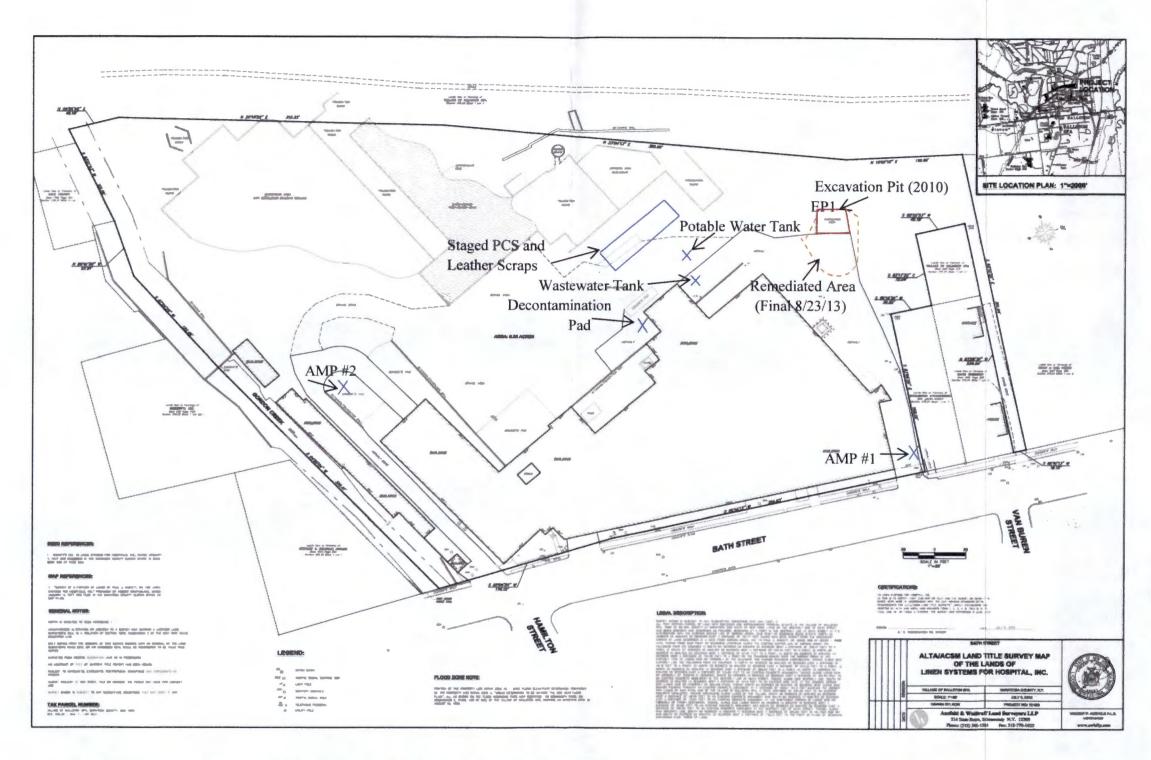
# **APPENDIX A**

# SITE SAMPLING PLAN MAP (SEE RIWP APPENDIX A)

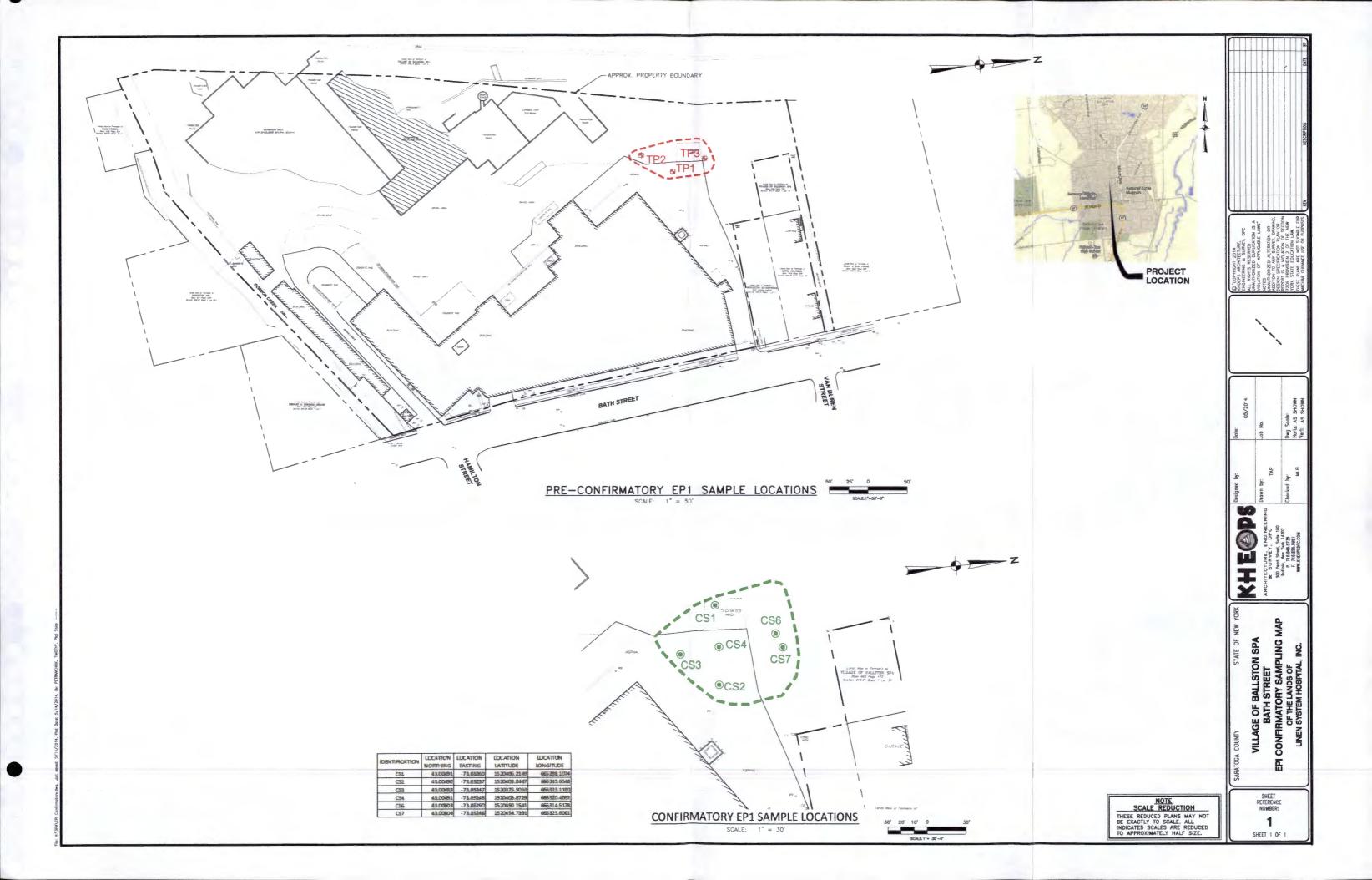


# **APPENDIX B**

# SITE MANAGEMENT PLAN MAP AND EP1 CONFIRMATORY SAMPLING MAPS



Appendix B: "Site Management Plan Map" 125 Bath Street, Ballston Spa, New York





1 SHEET 1 OF 1

# **APPENDIX C**

# CONFIRMATORY SAMPLING RESULTS AND EP1 WASTEWATER RESULTS

Angelica Sample

Confirmation Samples: CS1, CS2,CS3; CS4; CS6

Aligenca Sai		COU CLEANUE	ODIECTIVES			Confirmat	on Samples	s: CS1, CS2,C	\$3; C\$4; C\$(			
		SOIL CLEANUP										
CAS#	Contouring	Unrestricted		Industrial	Exceeds	CS 1	CS 2	CS 4	CS 3	CS 6	CS7	
CAS #	Contaminant	Use Use			-	West 10	East 10	Bottom 12		North 10	North 10	
		375-6.8(a)	375-6.8(b)	375-6.8(b)	Use	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/K	
57-12-5	Consider Total	mg/Kg	mg/Kg	mg/Kg								
7439-97-6			27	10,000		n/a	Acceptable of the second of the second					
7440-38-2		The second secon	2.8 j	5.7 j		< 0.0196	0.0658			0.694		
			16 f	16 f		< 1.15				8.99		
7440-39-3		350 °	400	10,000 d		40.3	The state of the s					
7440-41-7			590	2,700		0.608						
7440-43-9			9.3	60		< 0.573	< 0.639	0.676	0.544	1.68		
7440-47-3			1,500	6,800		9.89	97.6	3.83	6.95	54.1		
7440-50-8			270	10,000		6.92	513	2.94	3.36	590		
7439-92-1		63 °	1,000	10,000		2.87	110	1.47	1.13	184		
7439-96-5	Manganese	1600°	10,000 d	10,000 d		269	543	47.2	94.4	878		
7440-02-0	Nickel	30	310	10,000 d		7.54	25.5	5.41	4.09	9.54		
7782-49-2	Selenium	3.9 °	1,500	6,800		< 1.15	< 1.28	1.35	1.09	5.40		
. 7440-22-4	Silver	2	1,500	6,800		< 1.15	1.37	1.35	1.09	4.17		
7440-66-6	Zinc	109 <sup>c</sup>	10,000 d	10,000 d		39.7	82.8	14.3	20.3	141		
12674-11-2	PCB-1016	0.1	6.7	<b>5</b> 5		n/a	n/a	n/a	0.0320	n/a		
11104-28-2	PCB-1221	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
11141-16-5	PCB-1232	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
53469-21-9	PCB-1242	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
12672-29-6	PCB-1248	0.1	6.7	<b>5</b> 5		n/a	n/a	n/a	0.0320	n/a		
11097-69-1	PCB-1254	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
11096-82-5	PCB-1260	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
37324-23-5	PCB-1262	0.1	6.7	55		n/a	n/a	n/a	0.0320	n/a		
11100-14-4	PCB-1268	0.1	6.7	- 55		n/a	n/a	n/a	0.0320	n/a		
72-54-8		0.0033 <sup>b</sup>	92	180		n/a	n/a		0.0032	n/a		
72-55-9		0.0033 b	62	120		n/a	n/a	n/a	0.0032	n/a		
50-29-3			47	94		n/a	n/a	n/a	0.0032	n/a		

Angelica Sample Confirmation Samples: CS1, CS2,CS3; CS4; CS6

		SOIL CLEANUP	OBJECTIVES:								
		Unrestricted	Commercial	Industrial	Exceeds	CS 1	CS 2	CS 4	CS 3	CS 6	CS7
CAS#	Contaminant	Use	Use	Use	Industrial	West 10	East 10	Bottom 12	South 10	North 10	North 10
		375-6.8(a)	375-6.8(b)	375-6.8(b)	Use	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		mg/Kg	mg/Kg	mg/Kg							
309-00-2	Aldrin	0.005 °	0.68	1.4		n/a	n/a	n/a	0.0032	n/a	
319-84-6	alpha-BHC	0.02	3.4	6,8		n/a	n/a	n/a	0.0032	n/a	
319-85-7	beta-BHC	0.036	3	14		n/a	n/a	n/a	0.0032	n/a	
5103-71-9	cis-Chlordane	0.094	24	47		n/a	n/a	n/a	0.0032	n/a	
319-86-8	delta-BHC	0.04	500 b	1,000 c		n/a	n/a	n/a	0.0032	n/a	
60-57-1	Dieldrin	0.005 <sup>c</sup>	1.4	2.8		n/a	n/a	n/a	0.0032	n/a	
959-98-8	Endosulfan I	2.4	200 i	920 i		n/a	n/a	n/a	0.0032	n/a	
33213-65-9	Endosulfan II	2.4	200 i	920 i		n/a	n/a	n/a	0.0032	n/a	
1031-07-8	Endosulfan Sulfate	2.4	201 i	921 i		n/a	n/a	n/a	0.0032	n/a	
72-20-8	Endrin	0.014	89	410		n/a	n/a	n/a	0.0032	n/a	
58-89-9	Lindane	0.1	9.2	23		n/a	n/a	n/a	0.0032	n/a	
76-44-8	Heptachlor	0.042	15	29		n/a	n/a	n/a	0.0032	n/a	
83-32-9	Acenaphthene	20	500 b	1,000 c		< 0.359	< 0.340	0.347	0.32	0.721	
208-96-8	Acenaphthylene	100 a	501 b	1,000 c		< 0.359	< 0.340	0.347	0.32	0.87	
98-86-2	Acetophenone			-		< 0.359	< 0.340	0.347	0.32	0	
120-12-7	Anthracene	100 <sup>a</sup>	503 b	1,000 c		< 0.359	< 0.340	0.347	0.32	1.65	
56-55-3	Benzo (a) anthracene	1 c	5.6	11		< 0.359	< 0.340	0.347			
50-32-8	Benzo (a) pyrene	1 c	- 1f	1.1		< 0.359	< 0.340	0.347	0,32	7.05	0.93
205-99-2	Benzo (b) fluoranthene	1 c	5.6	11		< 0.359	< 0.340	0.347	0.32	6.76	
191-24-2	Benzo (g,h,i) perylene	100	500 b	1,000 c		< 0.359	< 0.340	0.347	0.32	5.42	
207-08-9	Benzo (k) fluoranthene	0.8 c	56	110		< 0.359	< 0.340	0.347	0.32	3.79	
218-01-9	Chrysene	1 c	56	110		< 0.359	< 0.340	0.347	0.32	7.3	
53-70-3	Dibenz (a,h) anthracene	0.33 b	0.56	1.1		< 0.359	< 0.340	0.347	0.32	0.904	
132-64-9	Dibenzofurar	7	350	1,000 c		< 0.719	< 679	0.347	0.32	0.721	
206-44-0	Fluoranthene	<b>10</b> 0 a	500 b	<b>1,000</b> c		< 0.359	< 0.340	0.347	0.32	12.6	
86-73-7	Fluorene	30	500 b	1,000 c		< 0.359	< 0.340	0.347	0.32	0.721	

**Angelica Sample** Confirmation Samples: CS1, CS2,CS3; CS4; CS6 **SOIL CLEANUP OBJECTIVES:** Unrestricted Commercial Industrial CS 1 CS 2 CS 4 Exceeds CS 3 CS 6 CS7 CAS# Contaminant Use Use Use Industrial West 10 East 10 **Bottom 12** South 10 North 10 North 10 mg/Kg mg/Kg mg/Kg mg/Kg 375-6.8(a) 375-6.8(b) 375-6.8(b) mg/Kg Use mg/Kg mg/Kg mg/Kg mg/Kg 118-74-1 Hexachlorobenzene 0.33 6 12 < 0.359 0.347 0.32 < 0.340 193-39-5 Indeno (1,2,3-cd) pyrene 0.5 c 5.6 < 0.359 11 < 0.340 0.347 0.32 4.28 91-20-3 Naphthalene 12 < 0.340 500 b 1,000 c < 0.359 0.347 0.32 0.721 87-86-5 Pentachlorophenol 0.8 b 6.7 55 < 0.719 < 679 0.693 0.641 1.44 85-01-8 Phenanthrene 500 b 10.5 100 1,000 c < 0.359 < 0.340 0.347 0.32 108-95-2 Phenol 0.33 b 500 b 1,000 c < 0.359 < 0.340 < 0.347 0.32 0.721 129-00-0 13.2 Pyrene 100 500 b 1,000 c < 0.359 < 0.340 0.347 0.32 71-55-6 1,1,1-Trichloroethane 0.68 500 b 1.000 c n/a n/a n/a 0.004 n/a 75-34-3 1.1-Dichloroethane 0.27 240 480 n/a n/a n/a 0.004 n/a 75-35-4 1.1-Dichloroethene 0.33 500 b 1,000 c n/a n/a n/a 0.004 n/a 95-50-1 1,2-Dichlorobenzene 1.1 500 b 1,000 c n/a n/a n/a 0.004n/a 107-06-2 1,2-Dichloroethane 0.02 c 30 60 n/a n/a n/a 0.004 n/a 541-73-1 1,3-Dichlorobenzene 2.4 280 560 n/a n/a n/a 0.004 n/a 106-46-7 1,4-Dichlorobenzene 1.8 130 250 n/a n/a 0.004 n/a n/a 123-91-1 1,4-dioxane 0.1 130 250 n/a n/a n/a 0.04 R n/a 78-93-3 2-Butanone 0.12 500 1000 n/a n/a n/a 0.02 R n/a n/a 67-64-1 n/a n/a Acetone 0.05 500 b 1,000 c n/a 0.0636 71-43-2 n/a Benzene 0.06 44 89 n/a n/a n/a 0.004 56-23-5 Carbon Tetrachloride n/a 0.76 22 44 n/a n/a n/a 0.004 108-90-7 Chlorobenzene 1.1 500 b 1,000 c n/a n/a n/a 0.004 n/a 67-66-3 Chloroform 0.37 350 700 n/a n/a n/a 0.004 n/a 156-59-2 cis-1,2-Dichloroethene 0.25 500 b n/a n/a 0.004 n/a 1,000 c n/a 100-41-4 Ethylbenzene n/a n/a n/a 0.004 n/a 1 390 780 n/a 1634-04-4 Methyl tert-butyl Ether 0.93 500 1000 n/a n/a n/a 0.004 75-09-2 Methylene chloride 0.05 500 0.00999 1000 n/a n/a n/a n/a 95-47-6 o-Xylene 0.26 500 b 0.004 n/a 1,000 c n/a n/a n/a

Angelica Sample Confirmation Samples: CS1, CS2,CS3; CS4; CS6

		SOIL CLEANUP	OBJECTIVES:									
		Unrestricted	Commercial	Industrial	Exceeds	CS 1	CS 2	CS 4	CS 3	CS 6	CS7	
CAS#	Contaminant	Use	Use	Use	Industrial	West 10	East 10	Bottom 12	South 10	North 10	North 10	
		375-6.8(a)	375-6.8(b)	375-6.8(b)	Use	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/K	
		mg/Kg	mg/Kg	mg/Kg								
127-18-4	Tetrachloroethene	1.3	150	300		n/a	n/a	n/a	0.004	n/a		
108-88-3	Toluene	0.7	500 b	1,000 c		n/a	n/a	n/a	0.004	n/a		
156-60-5	trans-1,2-Dichloroethene	0.19	500 b	1,000 c		n/a	n/a	n/a	0.004	n/a		
79-01-6	Trichloroethene	0.47	200	400		n/a	n/a	n/a	0.004	n/a		
75-01-4	Vinyl chloride	0.02	13	27		n/a	n/a	n/a	0.004	n/a		

# Values reported in RED do not meet validation criteria.

All soil cleanup objectives (SCOs) are in parts per million (ppm).

### Footnotes

(b) Restricted use soil cleanup objectives.

<sup>&</sup>lt;sup>a</sup> The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

<sup>&</sup>lt;sup>b</sup> For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

<sup>&</sup>lt;sup>c</sup> For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

<sup>&</sup>lt;sup>d</sup> SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

<sup>&</sup>lt;sup>e</sup> The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

f Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.



# Analytical Report For

# **Environmental Compliance Inc.**

For Lab Project ID

132384

Referencing

ATS-Ballston-RI

Prepared

Tuesday, July 16, 2013

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Lab Project ID: 132384

Client:

Environmental Compliance Inc.

**Project Reference:** 

ATS-Ballston-RI

Sample Identifier:

EP-1 thru 9

Lab Sample ID:

Matrix:

132384-01

Groundwater

Date/Time Sampled: 6/27/2013

**Date Received:** 6/28/2013

5-Day Biochemical Oxygen Demand

**Analyte** BOD 5

Result 3.40

<u>Units</u>

**Oualifier** Date/Time Analyzed

Method Reference(s):

mg/L

6/28/2013

**Subcontractor ELAP ID:** 

SM 5210 B 10145

**Hexavalent Chromium** 

**Analyte** 

Result < 0.010

Units **Oualifier**  Date/Time Analyzed

mg/L 7/11/2013

**Oualifier** 

Method Reference(s):

EPA 218.4

**Subcontractor ELAP ID:** 

Chrome, Hexavalent (Dissolved)

10145

**Total Cyanide** 

**Analyte** 

Cyanide, Total

Result < 0.010

**Units** mg/L Date/Time Analyzed

7/2/2013

Method Reference(s):

EPA 335.4

Subcontractor ELAP ID:

10142

Metals

<u>Analyte</u>	<u>Result</u>	<u>Units</u> Qualifier	Date/Time Analyzed
Arsenic	< 0.0100	mg/L	7/1/2013 11:49
Barium	0.131	mg/L	7/1/2013 11:49
Beryllium	< 0.00500	mg/L	7/1/2013 11:49
Cadmium	< 0.00500	mg/L	7/1/2013 11:49
Chromium	< 0.0100	mg/L	7/1/2013 11:49
Copper	< 0.0250	mg/L	7/1/2013 11:49
Lead (Axial)	< 0.0100	mg/L	7/1/2013 11:49
Nickel	< 0.0400	mg/L	7/1/2013 11:49
Selenium	< 0.0100	mg/L	7/1/2013 11:49
Silver	< 0.0100	mg/L	7/1/2013 11:49
Zinc	< 0.0600	mg/L	7/1/2013 11:49

Method Reference(s):

EPA 6010C

Data File:

EPA 3005 070113a

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Lab Project ID: 132384

Client:

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RI

Sample Identifier:

EP-1 thru 9

Lab Sample ID:

132384-01

Groundwater

Date/Time Sampled: 6/27/2013

**Oualifier** 

6/28/2013

**Mercury** 

Matrix:

**Analyte** Mercury

Result < 0.000200 **Units** mg/L

**Date Received:** 

**Date/Time Analyzed** 

14:45

7/2/2013 10:38

Method Reference(s):

EPA 7470A

Data File:

hg130702a

Oil and Grease

**Analyte** 

Result <5.0

Units mg/L **Oualifier** Date/Time Analyzed

7/1/2013

Oil & Grease (HEM) Method Reference(s):

**EPA 1664A** 

Subcontractor ELAP ID: 10142

pН

**Analyte** 

Result 8.08 @22.0 C **Units** S.U.

**Oualifier** 

**Date/Time Analyzed** 6/28/2013 15:20

рН

Method Reference(s):

SM 4500 H+ B / EPA 9040

**Total Phenolics** 

**Analyte** 

Result < 0.010

Units mg/L **Oualifier** 

**Date/Time Analyzed** 

7/5/2013

Method Reference(s):

Phenolics, Total

10-210-00-1-A

Subcontractor ELAP ID:

10142

Semi-Volatile Organics (Base Neutrals)

Bis (2-ethylhexyl) phthalate

**Analyte** 

Result < 10.0

Units ug/L **Oualifier** 

Date/Time Analyzed 7/1/2013 19:44

Method Reference(s):

EPA 625 Modified

Data File:

S70658.D

**Total Suspended Solids** 

**Analyte** 

Result 10.0

**Units** mg/L **Oualifier** 

**Date/Time Analyzed** 

7/2/2013

Solids, Suspended

SM 2540 D

Method Reference(s): Subcontractor ELAP ID:

10145

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Lab Project ID: 132384

Client:

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RI

Sample Identifier:

EP-1 thru 9

Lab Sample ID:

132384-01

Date/Time Sampled: 6/27/2013

Matrix:

Groundwater

**Date Received:** 

6/28/2013

**Metals** 

**Analyte** 

Molybdenum

Result < 0.05

**Units** mg/L **Oualifier Date/Time Analyzed** 

7/2/2013

Method Reference(s):

EPA 200.7 Subcontractor ELAP ID: 10142

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# **Analytical Report Appendix**

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

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This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

<sup>&</sup>quot;<" = Analyzed for but not detected at or above the quantitation limit.

<sup>&</sup>quot;E" = Result has been estimated, calibration limit exceeded.

<sup>&</sup>quot;Z" = See case narrative.

<sup>&</sup>quot;D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

<sup>&</sup>quot;M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

<sup>&</sup>quot;B" = Method blank contained trace levels of analyte. Refer to included method blank report.

<sup>&</sup>quot;V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.

<sup>&</sup>quot;I" = Result estimated between the quantitation limit and half the quantitation limit.

<sup>&</sup>quot;L" = Laboratory Control Sample recovery outside accepted QC limits.

<sup>&</sup>quot;C" = Concentration differs by more than 40% between the primary and secondary analytical columns.

					179	CHA							Fax (58	85) 64	<b>17-33</b> 1	11	•								
PAR	RADIG	$M^{-1}$		OLIMAN, A	REPORT	TO: /Z	(I)	CLIENT:				INV	OICE	E TO			-				LAB PROJE	CTID			<b>-</b> , '
	rio al mayeria			ENVICTOR ADDRESS	mental Ci	empliance,	Inc.	ADDRESS	S:			24	1	2	0				- 1	_		CIID			
		A		PO C	STATE	Z_ E. ZIP:		CITY:					STAT	E:		ZIP:			Juotai	tion #	384		Sec. 1		
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			7		1		1	T		REC	UES	TE	AN	ALY:	SIS		Т								
DATE COLLECTED	TIME COLLECTED	C O M P O S t T E	G R A		SAMPLE IDENTIFIE	Į.	M C C T D E S X	NUMTAINER OFS	130D, TSS	0,1 & Cuen	Total Phenol	15 H HCN	ME MO	HO	Hex Cr	Metals	COR			EMARKS	, Be ,Cá	.C.	SA NU	DIGM LA	
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# **Chain of Custody Supplement**

Client:		ECI	Completed by:	Muil
Lab Project ID	:	132384	Date:	6/28/13
		Sample Condition Per NELAC/ELAP 21	on Requirements 0/241/242/243/244	
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	Comments			
Transferred to met compliant containe				
Headspace (<1 mL)	Comments			
Preservation			TICH .	
	Comments	COLD NOT JUE	oto to TON to,	14712
Chlorine Absent (<0.10 ppm per to	est strip) Comments	¥25		
Holding Time	Comments		F M	
Temperature	Comments		Q Å	y netats
Sufficient Sample				

# CHAIN OF CUSTODY

COLUMBIA: ELAP ID: 10145

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CHAIN OF CUSTODY 67589-2 ENVIROTEST: ELAP ID: 10142

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# **APPENDIX D**

# EP1 JUNE 2013 AND AUGUST 2010 SAMPLING RESULTS

#### Appendix D: SOIL CLEANUP OBJECTIVES

Angelica Sample (June 2013)

TEST PIT 1, 2 and 3

		SOIL CLEANUP	OBJECTIVES:									
		Unrestricted	Commercial	Industrial	Exceeds	TP1-1	TP1-2	TP2-1	TP2-2	TP3-1	TP3-2	LAB
CAS #	Contaminant	Use	Use	Use	Industrial	Surface	(0.5'-2')	Surface	(0.5'-2')	Surface	(0.5'-2')	UNITS
		375-6.8(a)	375-6.8(b)	375-6.8(b)	Use							
		mg/Kg	mg/Kg	mg/Kg								
7439-97-6	Mercury	0.18	2.8 j	5.7 j		0.191	0.642	0.496	0.193	0.216	0.518	mg/Kg
7440-38-2	Arsenic	13 *	16 f	16 f		25.3	120	42.5	47.4	30.6	33.0	mg/Kg
7440-39-3	Barium	350 °	400	10,000 d		4550	2910	3910	3480	2110	3520	mg/Kg
7440-41-7	Beryllium	7.2	590	2,700		0.381	0.654	0.576	0.661	0.910	1.41	mg/Kg
7440-43-9	Cadmium	2.5 °	9.3	60		1.10	2.23	1.25	3.94	1.61	1.12	mg/Kg
7440-47-3	Chromium	30 °	1,500	6,800		566	1730	661	683	45.4	258	
7440-50-8	Copper	50	270	10,000		71.4	134	137	146	347	179	
7439-92-1	Lead (Axial)	63 <sup>c</sup>	1,000	10,000		171	398	365	191	117	188	mg/Kg
7439-96-5	Manganese	1600°	10,000 d	10,000 d		230	429	297	438	838	786	mg/Kg
7440-02-0	Nickel	30	310	10,000 d		9.74	14.6	14.7	35.4	19.2	14.4	mg/Kg
7782-49-2	Selenium	3.9 °	1,500	6,800		1.16	No Value	1.52	1.25	2.90	1.21	mg/Kg
7440-22-4	Silver	2	1,500	6,800		2.00	4.21	2.15	9.73	3.40	2.12	
7440-66-6	Zinc	109°	10,000 d	10,000 d		234	452	364	502	949	459	mg/Kg

### Values reported in RED do not meet validation criteria.

All soil cleanup objectives (SCOs) are in parts per million (ppm).

#### Footnotes

(b) Restricted use soil cleanup objectives.

<sup>&</sup>lt;sup>a</sup> The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

<sup>&</sup>lt;sup>b</sup> For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

<sup>&</sup>lt;sup>c</sup> For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

<sup>&</sup>lt;sup>d</sup> SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

<sup>&</sup>lt;sup>e</sup> The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

f Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.



## **Analytical Report Cover Page**

### ECI / Angelica

For Lab Project # 10-3425 Issued August 27, 2010 This report contains a total of 7 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.

"E" = Result has been estimated, calibration limit exceeded.

"Z" = See case narrative.

"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.

"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

### LAB REPORT FOR RCRA METALS ANALYSIS IN SOLIDS

**Client:** 

ECI/Angelica

Lab Project No.:

10-3425

Client Job Site:

Angelica / B. Spa

Lab Sample No.:

11208 Soil

Client Job No.:

N/A

Sample Type:

Date Sampled:

08/18/2010

Field Location:

**NW Corner Parking Lot** 

Date Received:

08/23/2010

Field ID No.:

N/A

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)						
Arsenic	08/27/2010	SW846 6010	30.3						
Barium	08/27/2010	SW846 6010	9610						
Cadmium	08/27/2010	SW846 6010	0.761						
Chromium	08/27/2010	SW846 6010	509						
Lead	08/27/2010	SW846 6010	252						
Mercury	08/25/2010	SW846 7471	0.524 D,M						
Selenium	08/27/2010	SW846 6010	2.81						
Silver	08/27/2010	SW846 6010	<1.03						

ELAP ID No.:10958

Comments:

Approved By: \_

Bruce Hoogesteger, Technical Director



### Diesel Range Organics Analysis Report for Soils/Solids/Sludges

Client: ECI / Angelica

Client Job Site:

Angelica / B. Spa

Lab Project Number: 10-3425

Lab Sample Number: 11208

Client Job Number: N/A

Field Location:

**NW Corner Parking Lot** 

Date Sampled:

08/18/2010 08/23/2010

Field ID Number: Sample Type: N/A Soil Date Received: Date Analyzed:

08/26/2010

PHC Classification

Results in ug / Kg

DRO

7,390,000

Closest reference standard match: Lube Oil

ELAP Number 10958

Method: EPA 8015B

Comments: ND denotes Non Detect

ug / Kg = microgram per Kilogram PHC = Petroleum Hydrocarbon

DRO = Diesel Range Organics. Quantfied as total response of all peaks, C10-C28 range

Signature:

Bruce Hoogesteger: Technical Director



#### PCB Analysis Report for Soils/Solids/Sludges

Client: ECI / Angelica

Client Job Site:

Angelica / B.Spa

Lab Project Number: 10-3425

Client Job Number:

N/A

Lab Sample Number: 11208

Field Location:

N.W. Corner Parking Lot

Date Sampled:

08/18/2010

Field ID Number:

3:1 Composite

Date Received:

08/23/2010

Sample Type:

Soil

Date Analyzed:

08/24/2010

PCB Identification	Results in mg / Kg
Aroclor 1016	ND< 0.390
Aroclor 1221	ND< 0.390
Aroclor 1232	ND< 0.390
Aroclor 1242	ND< 0.390
Aroclor 1248	ND< 0.390
Aroclor 1254	ND< 0.390
Aroclor 1260	ND< 0.390

ELAP Number 10958

Method: EPA 8082

Comments: ND denotes Non Detect

mg / Kg = milligram per Kilogram

Signature:

Bruce Hoogesteger: Tachnical Director



### Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: ECI / Angelica

Client Job Site: Angelica / B. Spa

Lab Project Number: 10-3425

Lab Sample Number: 11208

Client Job Number: N/A

Field Location:

N.W Corner Parking Lot

Date Sampled:

08/18/2010

Field ID Number: Sample Type: N/A Soil Date Received:

08/23/2010

Date Analyzed:

08/26/2010

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg			
Acenaphthene	ND< 7,530	Dibenz (a,h) anthracene	ND< 7,530			
Anthracene	17,500	Fluoranthene	16,500			
Benzo (a) anthracene	14,900	Fluorene	12,700			
Benzo (a) pyrene	25,100	Indeno (1,2,3-cd) pyrene	ND< 7,530			
Benzo (b) fluoranthene	ND< 7,530	Naphthalene	ND< 7,530			
Benzo (g,h,i) perylene	17,600	Phenanthrene	79,400			
Benzo (k) fluoranthene	ND< 7,530	Pyrene	104,000			
Chrysene	32,800	Acenaphthylene	ND< 7,530			
Diethyl phthalate	ND< 7,530	1,2-Dichlorobenzene	ND< 7,530			
Dimethyl phthalate	ND< 18,800	1,3-Dichlorobenzene	ND< 7,530			
Butylbenzylphthalate	ND< 7,530	1,4-Dichlorobenzene	ND< 7,530			
Di-n-butyl phthalate	ND< 7,530	1,2,4-Trichlorobenzene	ND< 7,530			
Di-n-octylphthalate	ND< 7,530	Nitrobenzene	ND< 7,530			
Bis (2-ethylhexyl) phthalate	ND< 7,530	2,4-Dinitrotoluene	ND< 7,530			
2-Chloronaphthalene	ND< 7,530	2,6-Dinitrotoluene	ND< 7,530			
Hexachlorobenzene	ND< 7,530	Bis (2-chloroethyl) ether	ND< 7,530			
Hexachloroethane	ND< 7,530	Bis (2-chloroisopropyl) ether	ND< 7,530			
Hexachlorocyclopentadiene	ND< 7,530	Bis (2-chloroethoxy) methan	ND< 7,530			
Hexachlorobutadiene	ND< 7,530	4-Bromophenyl phenyl ether	ND< 7,530			
N-Nitroso-di-n-propylamine	ND< 7,530	4-Chlorophenyl phenyl ether	ND< 7,530			
N-Nitrosodiphenylamine	ND< 7,530	Benzidine	ND< 18,800			
N-Nitrosodimethylamine	ND< 7,530	3,3'-Dichlorobenzidine	ND< 7,530			
Isophorone	ND< 7,530	4-Chloroaniline	ND< 7,530			
Benzyl alcohol	ND< 18,800	2-Nitroaniline	ND< 18,800			
Dibenzofuran	ND< 7,530	3-Nitroaniline	ND< 18,800			
2-Methylnapthalene	25,800	4-Nitroaniline	ND< 18,800			

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 7,530	2-Methylphenol	ND< 7,530
2-Chlorophenol	ND< 7,530	3&4-Methylphenol	ND< 7,530
2,4-Dichlorophenol	ND< 7,530	2,4-Dimethylphenol	ND< 7,530
2,6-Dichlorophenol	ND< 7,530	2-Nitrophenol	ND< 7,530
2,4,5-Trichlorophenol	ND< 18,800	4-Nitrophenol	ND< 18,800
2,4,6-Trichlorophenol	ND< 7,530	2,4-Dinitrophenol	ND< 18,800
Pentachlorophenol	ND< 18,800	4,6-Dinitro-2-methylphenol	ND< 18,800
4-Chloro-3-methylphenol	ND< 7,530	Benzoic acid	ND< 18,800
ELAP Number 10958	Method:	Data File: S52619.D	

Comments: ND denotes Non Detect

ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director



### Volatile Analysis Report for Soils/Solids/Sludges

Client: ECI / Angelica

Client Job Site: Angelica / B. Spa

Lab Project Number: 10-3425 Lab Sample Number: 11208

Client Job Number: N/A

Field Location:

N.W. Corner Parking Lot

Date Sampled:

08/18/2010

Field ID Number:

N/A

**Date Received:** 

08/23/2010

Sample Type:

Soil

Date Analyzed:

08/25/2010

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 11.4
Bromomethane	ND< 11.4
Bromoform	ND< 28.5
Carbon Tetrachloride	ND< 28.5
Chloroethane	ND< 11.4
Chloromethane	ND< 11.4
2-Chloroethyl vinyl Ether	ND< 56.9
Chloroform	ND< 11.4
Dibromochloromethane	ND< 11.4
1,1-Dichloroethane	ND< 11.4
1,2-Dichloroethane	ND< 11.4
1,1-Dichloroethene	ND< 11.4
cis-1,2-Dichloroethene	ND< 11.4
trans-1,2-Dichloroethene	ND< 11.4
1,2-Dichloropropane	ND< 11.4
cis-1,3-Dichloropropene	ND< 11.4
trans-1,3-Dichloropropene	ND< 11.4
Methylene chloride	ND< 28.5
1,1,2,2-Tetrachloroethane	ND< 11.4
Tetrachloroethene	ND< 11.4
1,1,1-Trichloroethane	ND< 11.4
1,1,2-Trichloroethane	ND< 11.4
Trichloroethene	ND< 11.4

Aromatics	Results in ug / Kg
Benzene	ND< 11.4
Chlorobenzene	ND< 11.4
Ethylbenzene	ND< 11.4
Toluene	ND< 11.4
m,p-Xylene	19.1
o-Xylene	17.4
Styrene	ND< 28.5
1,2-Dichlorobenzene	ND< 28.5
1,3-Dichlorobenzene	ND< 28.5
1,4-Dichlorobenzene	ND< 11.4

Ketones	Results in ug / Kg				
Acetone	. 397				
2-Butanone	ND< 56.9				
2-Hexanone	ND< 28.5				
4-Methyl-2-pentanone	ND< 28.5				

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 11.4
/inyl acetate	ND< 28.5

ELAP Number 10958

Vinyl chloride

Trichlorofluoromethane

Method: EPA 8260B

ND< 11.4

ND< 11.4

Data File: V77821.D

Comments: ND denotes Non Detect

ug / Kg = microgram per Kilogram

Internal standard outliers indicate probable matrix effects

Signature:

Bruce Hoogesteger: Technical Director

ATTN: JAME DAloia

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

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# **APPENDIX E**

**BACKFILL SAMPLING RESULTS** 



### Analytical Report For

# **Environmental Compliance Inc.**

For Lab Project ID

133743

Referencing

ATS-Ballston-RE

Prepared
Tuesday, October 08, 2013

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee



17:15

Date/Time Sampled: 9/27/2013

Client: <u>Environmental Compliance Inc.</u>

**Project Reference:** ATS-Ballston-RE

**Sample Identifier:** BF-1-1

**Lab Sample ID:** 133743-01

Matrix: Solid Date Received: 9/30/2013

### **Volatile Organics**

Analyte	Result	Units Qualifier	Date/Time Analyzed
1,1,1-Trichloroethane	< 9.17	ug/Kg	10/1/2013 19:26
1,1,2,2-Tetrachloroethane	< 9.17	ug/Kg	10/1/2013 19:26
1,1,2-Trichloroethane	< 9.17	ug/Kg	10/1/2013 19:26
1,1-Dichloroethane	< 9.17	ug/Kg	10/1/2013 19:26
1,1-Dichloroethene	< 9.17	ug/Kg	10/1/2013 19:26
1,2,3-Trichlorobenzene	< 22.9	ug/Kg	10/1/2013 19:26
1,2,4-Trichlorobenzene	< 22.9	ug/Kg	10/1/2013 19:26
1,2,4-Trimethylbenzene	< 9.17	ug/Kg	10/1/2013 19:26
1,2-Dibromo-3-Chloropropane	< 45.9	ug/Kg	10/1/2013 19:26
1,2-Dibromoethane	< 9.17	ug/Kg	10/1/2013 19:26
1,2-Dichlorobenzene	< 9.17	ug/Kg	10/1/2013 19:26
1,2-Dichloroethane	< 9.17	ug/Kg	10/1/2013 19:26
1,2-Dichloropropane	< 9.17	ug/Kg	10/1/2013 19:26
1,3,5-Trimethylbenzene	< 9.17	ug/Kg	10/1/2013 19:26
1,3-Dichlorobenzene	< 9.17	ug/Kg	10/1/2013 19:26
1,4-Dichlorobenzene	< 9.17	ug/Kg	10/1/2013 19:26
1,4-dioxane	< 91.7	ug/Kg	10/1/2013 19:26
2-Butanone	< 45.9	ug/Kg	10/1/2013 19:26
2-Hexanone	< 22.9	ug/Kg	10/1/2013 19:26
4-Methyl-2-pentanone	< 22.9	ug/Kg	10/1/2013 19:26
Acetone	< 45.9	ug/Kg	10/1/2013 19:26
Benzene	< 9.17	ug/Kg	10/1/2013 19:26
Bromochloromethane	< 22.9	ug/Kg	10/1/2013 19:26
Bromodichloromethane	< 9.17	ug/Kg	10/1/2013 19:26
Bromoform	< 22.9	ug/Kg	10/1/2013 19:26
Bromomethane	< 9.17	ug/Kg	10/1/2013 19:26
Carbon disulfide	< 9.17	ug/Kg	10/1/2013 19:26
Carbon Tetrachloride	< 9.17	ug/Kg	10/1/2013 19:26



**Environmental Compliance Inc. Client:** 

**Project Reference:** ATS-Ballston-RE

Sample Identifier: BF-1-1 Lab Sample ID: 133743-01

**Date/Time Sampled: 9/27/2013** 17:15

Matrix: Solid		Date/lime Sampled: 9/2//2013 1.				
	Da	te Receiveu:	9/30/2013			
Chlorobenzene	< 9.17	ug/Kg	10/1/2013 19:26			
Chloroethane	< 9.17	ug/Kg	10/1/2013 19:26			
Chloroform	< 9.17	ug/Kg	10/1/2013 19:26			
Chloromethane	< 9.17	ug/Kg	10/1/2013 19:26			
cis-1,2-Dichloroethene	< 9.17	ug/Kg	10/1/2013 19:26			
cis-1,3-Dichloropropene	< 9.17	ug/Kg	10/1/2013 19:26			
Cyclohexane	< 45.9	ug/Kg	10/1/2013 19:26			
Dibromochloromethane	< 9.17	ug/Kg	10/1/2013 19:26			
Dichlorodifluoromethane	< 9.17	ug/Kg	10/1/2013 19:26			
Ethylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
Freon 113	< 9.17	ug/Kg	10/1/2013 19:26			
Isopropylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
m,p-Xylene	< 9.17	ug/Kg	10/1/2013 19:26			
Methyl acetate	< 9.17	ug/Kg	10/1/2013 19:26			
Methyl tert-butyl Ether	< 9.17	ug/Kg	10/1/2013 19:26			
Methylcyclohexane	< 9.17	ug/Kg	10/1/2013 19:26			
Methylene chloride	< 22.9	ug/Kg	10/1/2013 19:26			
Naphthalene	< 22.9	ug/Kg	10/1/2013 19:26			
n-Butylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
n-Propylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
o-Xylene	< 9.17	ug/Kg	10/1/2013 19:26			
p-Isopropyltoluene	< 9.17	ug/Kg	10/1/2013 19:26			
sec-Butylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
Styrene	< 22.9	ug/Kg	10/1/2013 19:26			
tert-Butylbenzene	< 9.17	ug/Kg	10/1/2013 19:26			
Tetrachloroethene	< 9.17	ug/Kg	10/1/2013 19:26			
Toluene	< 9.17	ug/Kg	10/1/2013 19:26			
trans-1,2-Dichloroethene	< 9.17	ug/Kg	10/1/2013 19:26			
trans-1,3-Dichloropropene	< 9.17	ug/Kg	10/1/2013 19:26			
Trichloroethene	< 9.17	ug/Kg	10/1/2013 19:26			



**Client:** 

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RE

Sample Identifier:

BF-1-1

Lab Sample ID:

Matrix:

133743-01

Solid

Date/Time Sampled: 9/27/2013 17:15

**Date Received:** 

9/30/2013

Trichlorofluoromethane

< 9.17

ug/Kg

10/1/2013 19:26

Vinyl chloride

< 9.17

 $Internal\ standard\ outliers\ indicate\ probable\ matrix\ interference, Surrogate\ outliers\ indicate\ probable\ matrix\ interference$ 

ug/Kg

10/1/2013 19:26

Method Reference(s):

EPA 8260B

EPA 5035A

Data File:

x08667.D

Any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.



**Client:** 

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RE

Sample Identifier:

BF-1-2 Through BF-1-10

Lab Sample ID:

133743-02

Matrix:

Solid

**Date/Time Sampled:** 9/27/2013 1

**Date Received:** 9/30/2013

17

#### **Hexavalent Chromium**

**Analyte** 

Result

Units Qualifier

Date/Time Analyzed

Chrome, Hexavalent

<1.0

mg/Kg

10/2/2013

Method Reference(s):
Subcontractor ELAP ID:

EPA 7196 10478

**Total Cyanide** 

**Analyte** 

**Result** < 0.50

<u>Units</u>

Qualifier Date/Time Analyzed

mg/Kg 10/3/2013

Method Reference(s):

Cyanide, Total

EPA 9014 10478

Subcontractor ELAP ID:

**Herbicides** 

Analyte	Result	Units Qualifier	Date/Time Analyzed
2,4,5-T	<5.0	ug/Kg	10/5/2013
2,4,5-TP (Silvex)	<5.0	ug/Kg	10/5/2013
2,4-D	<10	ug/Kg	10/5/2013

Method Reference(s):
Subcontractor ELAP ID:

EPA 8151 10478

Part 375 Metals (ICP)

<u>375 Metals (ICP)</u>			
<u>Analyte</u>	Result	Units Qualifier	Date/Time Analyzed
Arsenic	6.56	mg/Kg	10/3/2013 11:54
Barium	58.7	mg/Kg	10/3/2013 11:54
Beryllium	0.578	mg/Kg	10/3/2013 11:54
Cadmium	< 0.441	mg/Kg	10/3/2013 11:54
Chromium	20.3	mg/Kg	10/3/2013 11:54
Copper	33.3	mg/Kg	10/3/2013 11:54
Lead	9.09	mg/Kg	10/3/2013 11:54
Manganese	475	mg/Kg	10/3/2013 11:54
Nickel	29.0	mg/Kg	10/3/2013 11:54
Selenium	< 0.882	mg/Kg	10/3/2013 11:54
Silver	< 0.882	mg/Kg	10/3/2013 11:54
Zinc	46.3	mg/Kg	10/3/2013 11:54



Client: Environmental Compliance Inc.

**Project Reference:** ATS-Ballston-RE

**Sample Identifier:** BF-1-2 Through BF-1-10

**Lab Sample ID:** 133743-02 **Date/Time Sampled:** 9/27/2013 17:15

Matrix: Solid Date Received: 9/30/2013

Method Reference(s):

EPA 6010C

EPA 3050

Data File:

100313a

**Mercury** 

AnalyteResultUnitsQualifierDate/Time AnalyzedMercury< 0.0153</td>mg/Kg10/4/2013 11:46

Method Reference(s): EPA 7471B

Data File: hg131004a

**PCBs** 

Analyte	Result	Units Qualifier	Date/Time Analyzed
PCB-1016	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1221	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1232	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1242	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1248	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1254	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1260	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1262	< 0.0283	mg/Kg	10/7/2013 01:09
PCB-1268	< 0.0283	mg/Kg	10/7/2013 01:09

Method Reference(s): EPA 8082A EPA 3550C

#### **Chlorinated Pesticides**

Analyte	Result	Units Qualifier	Date/Time Analyzed
4,4-DDD	< 2.83	ug/Kg	10/1/2013 15:19
4,4-DDE	< 2.83	ug/Kg	10/1/2013 15:19
4,4-DDT	< 2.83	ug/Kg	10/1/2013 15:19
Aldrin	< 2.83	ug/Kg	10/1/2013 15:19
alpha-BHC	34.9	ug/Kg	10/1/2013 15:19
beta-BHC	< 2.83	ug/Kg	10/1/2013 15:19
cis-Chlordane	< 2.83	ug/Kg	10/1/2013 15:19
delta-BHC	< 2.83	ug/Kg	10/1/2013 15:19

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



**Client:** 

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RE

Sample Identifier:

BF-1-2 Through BF-1-10

Lab Sample ID:

133743-02

Matrix: Solid

**Date/Time Sampled:** 9/27/2013 17:15

Date Received:

9/30/2013

	Da	te Receiveu.	7/30/2013
Dieldrin	< 2.83	ug/Kg	10/1/2013 15:19
Endosulfan I	< 2.83	ug/Kg	10/1/2013 15:19
Endosulfan II	< 2.83	ug/Kg	10/1/2013 15:19
Endosulfan Sulfate	< 2.83	ug/Kg	10/1/2013 15:19
Endrin	< 2.83	ug/Kg	10/1/2013 15:19
Endrin Aldehyde	< 2.83	ug/Kg	10/1/2013 15:19
Endrin Ketone	< 2.83	ug/Kg	10/1/2013 15:19
gamma-BHC (Lindane)	< 2.83	ug/Kg	10/1/2013 15:19
Heptachlor	< 2.83	ug/Kg	10/1/2013 15:19
Heptachlor Epoxide	< 2.83	ug/Kg	10/1/2013 15:19
Methoxychlor	< 2.83	ug/Kg	10/1/2013 15:19
Toxaphene	< 28.3	ug/Kg	10/1/2013 15:19
trans-Chlordane	< 2.83	ug/Kg	10/1/2013 15:19

Method Reference(s):

EPA 8081B EPA 3550C

### Semi-Volatile Organics (Acid/Base Neutrals)

Analyte	Result	Units Qualifier	Date/Time Analyzed
1,1-Biphenyl	< 285	ug/Kg	10/2/2013 16:13
1,2,4,5-Tetrachlorobenzene	< 285	ug/Kg	10/2/2013 16:13
1,2,4-Trichlorobenzene	< 285	ug/Kg	10/2/2013 16:13
1,2-Dichlorobenzene	< 285	ug/Kg	10/2/2013 16:13
1,3-Dichlorobenzene	< 285	ug/Kg	10/2/2013 16:13
1,4-Dichlorobenzene	< 285	ug/Kg	10/2/2013 16:13
2,3,4,6-Tetrachlorophenol	< 285	ug/Kg	10/2/2013 16:13
2,4,5-Trichlorophenol	< 570	ug/Kg	10/2/2013 16:13
2,4,6-Trichlorophenol	< 285	ug/Kg	10/2/2013 16:13
2,4-Dichlorophenol	< 285	ug/Kg	10/2/2013 16:13
2,4-Dimethylphenol	< 285	ug/Kg	10/2/2013 16:13
2,4-Dinitrophenol	< 570	ug/Kg	10/2/2013 16:13
2,4-Dinitrotoluene	< 285	ug/Kg	10/2/2013 16:13
2,6-Dinitrotoluene	< 285	ug/Kg	10/2/2013 16:13



Client: Environmental Compliance Inc.

**Project Reference:** ATS-Ballston-RE

**Sample Identifier:** BF-1-2 Through BF-1-10

Lab Sample ID: 133743-02 Date/Time Sampled: 9/27/2013 17:15

Matrix: Solid Date Paraised as 9/27/2013 17:15

Matrix:	Solid		Date Received:	9/30/2013
			Date Received.	7/30/2013
	2-Chloronaphthalene	< 285	ug/Kg	10/2/2013 16:13
	2-Chlorophenol	< 285	ug/Kg	10/2/2013 16:13
	2-Methylnapthalene	< 285	ug/Kg	10/2/2013 16:13
	2-Methylphenol	< 285	ug/Kg	10/2/2013 16:13
	2-Nitroaniline	< 570	ug/Kg	10/2/2013 16:13
	2-Nitrophenol	< 285	ug/Kg	10/2/2013 16:13
	3&4-Methylphenol	< 285	ug/Kg	10/2/2013 16:13
	3,3'-Dichlorobenzidine	< 285	ug/Kg	10/2/2013 16:13
	3-Nitroaniline	< 570	ug/Kg	10/2/2013 16:13
	4,6-Dinitro-2-methylphenol	< 570	ug/Kg	10/2/2013 16:13
	4-Bromophenyl phenyl ether	< 285	ug/Kg	10/2/2013 16:13
	4-Chloro-3-methylphenol	< 285	ug/Kg	10/2/2013 16:13
	4-Chloroaniline	< 285	ug/Kg	10/2/2013 16:13
	4-Chlorophenyl phenyl ether	< 285	ug/Kg	10/2/2013 16:13
	4-Nitroaniline	< 570	ug/Kg	10/2/2013 16:13
	4-Nitrophenol	< 570	ug/Kg	10/2/2013 16:13
	Acenaphthene	< 285	ug/Kg	10/2/2013 16:13
	Acenaphthylene	< 285	ug/Kg	10/2/2013 16:13
	Acetophenone	< 285	ug/Kg	10/2/2013 16:13
	Anthracene	< 285	ug/Kg	10/2/2013 16:13
	Atrazine	< 285	ug/Kg	10/2/2013 16:13
	Benzaldehyde	< 285	ug/Kg	10/2/2013 16:13
	Benzo (a) anthracene	< 285	ug/Kg	10/2/2013 16:13
	Benzo (a) pyrene	< 285	ug/Kg	10/2/2013 16:13
	Benzo (b) fluoranthene	< 285	ug/Kg	10/2/2013 16:13
	Benzo (g,h,i) perylene	< 285	ug/Kg	10/2/2013 16:13
	Benzo (k) fluoranthene	< 285	ug/Kg	10/2/2013 16:13
	Bis (2-chloroethoxy) methane	< 285	ug/Kg	10/2/2013 16:13
	Bis (2-chloroethyl) ether	< 285	ug/Kg	10/2/2013 16:13
	Bis (2-chloroisopropyl) ether	< 285	ug/Kg	10/2/2013 16:13



17:15

Client:

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RE

Sample Identifier:

BF-1-2 Through BF-1-10

Lab Sample ID:

133743-02

Matrix:

**Date/Time Sampled:** 9/27/2013 Solid 9/30/2013 Date Received

•	Sonu		Date Received:	9/30/2013
	Bis (2-ethylhexyl) phthalate	< 285	ug/Kg	10/2/2013 16:13
	Butylbenzylphthalate	< 285	ug/Kg	10/2/2013 16:13
	Caprolactam	< 285	ug/Kg	10/2/2013 16:13
	Carbazole	< 285	ug/Kg	10/2/2013 16:13
	Chrysene	< 285	ug/Kg	10/2/2013 16:13
	Dibenz (a,h) anthracene	< 285	ug/Kg	10/2/2013 16:13
	Dibenzofuran	< 285	ug/Kg	10/2/2013 16:13
	Diethyl phthalate	< 285	ug/Kg	10/2/2013 16:13
	Dimethyl phthalate	< 570	ug/Kg	10/2/2013 16:13
	Di-n-butyl phthalate	< 285	ug/Kg	10/2/2013 16:13
	Di-n-octylphthalate	< 285	ug/Kg	10/2/2013 16:13
	Fluoranthene	< 285	ug/Kg	10/2/2013 16:13
	Fluorene	< 285	ug/Kg	10/2/2013 16:13
	Hexachlorobenzene	< 285	ug/Kg	10/2/2013 16:13
	Hexachlorobutadiene	< 285	ug/Kg	10/2/2013 16:13
	Hexachlorocyclopentadiene	< 285	ug/Kg	10/2/2013 16:13
	Hexachloroethane	< 285	ug/Kg	10/2/2013 16:13
	Indeno (1,2,3-cd) pyrene	< 285	ug/Kg	10/2/2013 16:13
	Isophorone	< 285	ug/Kg	10/2/2013 16:13
	Naphthalene	< 285	ug/Kg	10/2/2013 16:13
	Nitrobenzene	< 285	ug/Kg	10/2/2013 16:13
	N-Nitroso-di-n-propylamine	< 285	ug/Kg	10/2/2013 16:13
	N-Nitrosodiphenylamine	< 285	ug/Kg	10/2/2013 16:13
	Pentachlorophenol	< 570	ug/Kg	10/2/2013 16:13
	Phenanthrene	< 285	ug/Kg	10/2/2013 16:13
	Phenol	< 285	ug/Kg	10/2/2013 16:13
	Pyrene	< 285	ug/Kg	10/2/2013 16:13
	Method Reference(s): EPA 92700			

Method Reference(s):

EPA 8270C

EPA 3550C

Data File:

S72418.D



# **Analytical Report Appendix**

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

<sup>&</sup>quot;<" = Analyzed for but not detected at or above the quantitation limit.

<sup>&</sup>quot;E" = Result has been estimated, calibration limit exceeded.

<sup>&</sup>quot;Z" = See case narrative.

<sup>&</sup>quot;D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

<sup>&</sup>quot;M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

<sup>&</sup>quot;B" = Method blank contained trace levels of analyte. Refer to included method blank report.

<sup>&</sup>quot;V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.

<sup>&</sup>quot;I" = Result estimated between the quantitation limit and half the quantitation limit.

<sup>&</sup>quot;L" = Laboratory Control Sample recovery outside accepted QC limits.

<sup>&</sup>quot;P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

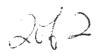


179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311



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# Chain of Custody Supplement

Client:		ECL	Completed by:	Mail
Lab Project ID	:	133743	Date:	9/30
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Condition	N	ELAC compliance with the sample Yes	e condition requirements upor No	n receipt N/A
Container Type			X 5015	
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		02-62,863		
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Headspace (<1 mL)	Comments			<del></del>
Preservation	Comments			
Chlorine Absent (<0.10 ppm per to	est strip) Comments			
Holding Time	Comments			
	Comments	,		<u> </u>
Temperature	Comments	TC FROM	HAND DOO	K
Sufficient Sample			`	
	Comments			

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

# **CHAIN OF CUSTODY**

106 | (D) H2M: ELAP ID: 10478

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## Analytical Report For

# **Environmental Compliance Inc.**

For Lab Project ID

133900

Referencing

ATS-Ballston-RE

Prepared

Thursday, October 17, 2013

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee



**Client:** 

**Environmental Compliance Inc.** 

**Project Reference:** 

ATS-Ballston-RE

Sample Identifier:

BF-1-2 Through BF-1-10

Lab Sample ID:

133900-01

Matrix:

Solid

Date/Time Sampled: 9/27/2013

**Oualifier** 

Date Received:

10/10/2013

### **Chlorinated Pesticides**

**Analyte** 

Result

< 2.85

**Units** ug/Kg **Date/Time Analyzed** 10/10/2013 20:36

alpha-BHC

Method Reference(s):

EPA 8081B

EPA 3550C



# **Analytical Report Appendix**

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.

"E" = Result has been estimated, calibration limit exceeded.

"Z" = See case narrative.

"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

"V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.

"I" = Result estimated between the quantitation limit and half the quantitation limit.

"L" = Laboratory Control Sample recovery outside accepted QC limits.

"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM
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				PHONE: 7/6	120	PI			IONE:						Email:						
PROJECT REFERENCE				Marc	cken	nberger			TN:												
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20/2



# Chain of Custody Supplement

Client:		Completed by:	Much				
Lab Project ID:	133743	Date:	9/30				
	Sample Conditi Per NELAC/ELAP 2	ion Requirements 210/241/242/243/244	l .				
Condition	ELAC compliance with the sample Yes	e condition requirements upor No	on receipt N/A				
Container Type		X 5075					
Comments	01-62						
Transferred to method- compliant container							
Headspace (<1 mL) Comments							
Preservation Comments							
Chlorine Absent (<0.10 ppm per test strip) Comments							
Holding Time Comments							
Temperature  Comments	4°C FROM	temp blur	K				
Sufficient Sample Quantity  Comments							