



NSRP Panel Project Final Report

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Control Technology Comparison for Heavy Metals Removal from Shipyard Storm Water Runoff

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1.0 EXECUTIVE SUMMARY

Storm water pollution has been a National Enforcement Initiative for the U.S. Environmental Protection Agency since 2008, and has led to more stringent storm water permitting requirements for shipyards, whichcommonly encounter high concentrations of heavy metals in storm watereffluent. Heavy metals are common at shipyards as a result of storm water exposure to metal materials, metalworking operations (grinding, polishing, fabricating, blasting, and welding), and use of coatings containing heavy metals. Recent studies have been conducted on filtration systems designed to remove metals and other contaminants from large and intermittent volumes of storm water. These systems require a substantial initial investment, have high operating and maintenance costs, and require a relatively large footprint. Water-front shipyards tend to be large-scale industrial operations with minimal available space for such a system.

In the previous project, *Removal of Metals from Shipyard Storm Water Runoff* (NSRP/ECS, 2013), adsorbent sponge media was deployed into filtration units using manufacturer recommendations followed by baseline sampling data at four test locations. Samples for four (4) storm water events of pre- and post-filteredstorm water were taken to determine the actual adsorption or removal and efficiency for each sampling event. Initial adsorption or removal efficiency at the test location where flow rates and adsorbent polymer media contact time were controlled, was 93.33% and 91.30% for Copper (Cu) and Zinc (Zn) respectively. The results showed that reductions in Total Suspended Solids (TSS) generally corresponded to reductions in heavy metals in storm water, and the adsorption or removal efficiency of the MetalZorbTM media degraded linearly over time.

As a follow up to the previous project, the primaryintent of this project was to test and compare the ability of various adsorbent materials to decrease heavy metal concentrations in shipyard storm water runoff and determine the most cost-effective control technology. Six (6) control technologies were selected as part of the project to be compared for the ability to remove heavy metals. Of the six (6) technologies, three (3) were selected for being designed specifically for heavy metal adsorption. The other three (3) technologies were selected as general mechanical filtration options due to the correlation between TSS removal and Heavy Metal reductions in the previous project. The six (6) control technologies were selected at Huntington Ingalls Inc., Ingalls Shipbuilding Division, Pascagoula Operations (Ingalls) as representative areas of significant metalworking operations at their shipyard and similar operations at other shipyards. The material was tested throughout the twelve (12) month project to determine removal efficiencies and life expectancy for each control technology.

During the twelve (12) month project, despite various issues related to damage and relocation of control materials and restricted storm water flow to the test areas, a total of nine (9) sampling events occurred. The results show thatthe control technologies have varying useful lives with one (1) material being completely ineffective at filtering storm water in the method used. The maximum useful life in this project belonged to CleanwayMetalzorb[™] and covered five (5) sampling events (or about 6 months).

Costs were compared for all technologies. The item with the least amount of cost as purchased was the pine bark material; however, pine bark material used in this project did not allow storm water to filter through and is, therefore, not a valid alternative as used in this project. The second item with the least initial cost as purchased was coconut husk. As some of the control technologies come in differing forms (e.g., booms of various lengths, material by the cubic yard, etc.), costs were broken down to a dollar amount per linear foot of control technology in boom form as utilized in this project. The technology with the least cost per linear foot was Filtrexx Sediment Control[®].

Throughout the project, sample results varied and were not observed to be proportional to the degradation of the control technologies. This finding is believed to be due, in large part, to various issues regarding operational impacts and control technology and sampling point setups. Degradations for all materials occurred as the project progressed, although a linear degradation was not observed. Analysis of sample results yielded CleanwayMetalzorb[™] as having the highest removal efficiencies (24.90% for Cu and 22.84% for Zn) over the life of the project, including samples taken after the useful life had surpassed. CleanwayMetalzorb[™] also returned the greatest removal efficiencies (53.74% for Cu and 54.53% for Zn) in a comparison of removal efficiencies over the useful life of each technology.

As the project was designed to include a cost feasibility determination, the removal rates of heavy metals were compared to the cost per linear foot of each control technology. As a result, Filtrexx Sediment Control[®] returned the greatest removal efficiency rates per cost at 10.07% per dollar for Cu and 13.63% per dollar for Zn.

At the conclusion of the storm water testing events, the control technologiesand sand bags wereanalyzed utilizing a toxicity characteristic leaching procedure (TCLP) analysis to confirm that the spent media was not characterized as a hazardous waste. In addition, TCLP analyses for Cu and Zn were performed on the sand bags. Due to the operational impacts, sand was consistently observed in the downstream sampling areas. The TCLP was performed to ensure that the sand did not negatively impact the sampling results. Finally, each control technology was analyzed to determine a useful life and constituent removal rates over time for this project.

This report details the issues presented during the life of the project, recommendations on filtration unit deployment, and conclusions based on costs and analytical testing results.

2.0 INTRODUCTION

2.1 Reviewof Adsorbent Materials

For this project, three (3) control technologies were selected for their ability to specifically adsorb heavy metals from storm water runoff. Material #1, CleanwayMetalzorb[™], was selected as it was used in the previous project. As a result, this will provide a benchmark for comparison with alternative technologies selected. The control technologies selected for this project are as follows:

2.1.1 Material #1 - CleanwayMetalzorb[™]

CleanwayMetalzorb[™] was the first product selected for purposes of continuity with the previous project, *Removal of Metals from Shipyard Storm Water Runoff* (NSRP/ECS, 2013). Results in the previous project suggested the material was efficient in removing heavy metals from shipyard storm water. Having a high affinity for heavy metals, this material was also shown to sequester the adsorbed heavy metals, thereby significantly decreasing disposal burdens. The product, which contains a water-insoluble polyamide chelating polymer, has previously been documented as removing up to 97% of heavy metal concentrations from groundwater in CERCLA Superfund sites. In addition, our previous project yielded removal efficiencies of 93.33% for Cu and 91.30% for Zn.

2.1.2 Material #2 - FiltrexxEnviroSoxx®

FiltrexxEnviroSoxx[®] was selected as a product designed to adsorb heavy metals from urban and postconstruction runoff. The material was created with the application of natural additives to a compost material. The specific additives used have been incorporated by the company due to their abilities to remove cadmium, chromium, copper, nickel, lead, and zinc.

2.1.3 Material #3 - Ultra-Filter Sock®

Ultra-Filter Sock[®] was chosen as another product designed to adsorb heavy metals, including zinc and copper, from storm water runoff. This product offers a more durable casing than other options. The material inside of the casing contains quartz, free silica, and coconut based activated carbon, and has been shown to remove up to 1,145 grams of heavy metals per unit.

2.2 Review of Materials for Mechanical Filtration

2.2.1 Material #4-FiltrexxSediment Control®

Filtrexx Sediment Control[®] was selected as the first material designed as a mechanical means of storm water pollution control. As the previous project suggested, heavy metals removal appeared to correlate to removal of total suspended solids. This material is constructed of carbon neutral composted materials.

In contrast to FiltrexxEnviroSoxx[®], this material is developed without any addition of chemicals or polymers.

2.2.2 Material #5 - Coconut Husk

Given the nature and location of many shipyards, coconut husk was picked as a mechanical means of storm water filtration due to the relatively waterproof, fibrous nature of the material. Coconut husk is known to be one of few natural materials resistant to damage and degradation from a coastal environment. With varying options for implementation such as woven mats and rolled wattles, coconut husk was found to be a low cost, easily accessible, renewable material.

2.2.3 Material #6 - Pine Bark

Similar to coconut husk, pine bark was chosen as a mechanical means of storm water filtration due to low cost, the fact that it is a renewable resource, and is readily accessible in many areas. In addition, previous research projects (*"Treatment of heavily contaminated storm water from an industrial site area by filtration through an adsorbent barrier with pine bark (PinusSilvestris), polonite and active carbon in a comparison study"*, Nehrenheim, Ribe, Carlsson, Eneroth, and Odlare, 2011) have used pine bark in industrial applications to remove heavy metals, particularly zinc, from storm water runoff.

2.3 Project Overview

This project investigated the effectiveness of each of the six (6) control technologies at removing heavy metals in similar locations at the Ingalls shipyard. The locations were representative of significant metalworking operations that occur at the majority of NSRP participant shipyards. Each control technology was obtained in wattles (booms) and deployed in a similar manner. Over the course of the project, storm water samples were collected immediately upstream and downstream of the control technologies to determine removal efficiencies.

The practical implementation of any control technology also depends upon cost and life expectancy. As such, the comparisons between the materials included a cost analysis breakdown and an analysis of degradation and determination of useful life for this project.

3.0 PROJECT IMPLEMENTATION

3.1 Site Evaluations

Typical of most NSRP participant shipyards, the Ingalls shipyard is relatively flat with operations occurring in all available locations. Active metalworking operations were selected as significant contributors of heavy metals to storm water runoff, which occur at most, if not all, NSRP participant shipyards. Treatment efforts at interior locations around the site were seen as more practical for deployment, maintenance, and removal purposes. In addition, interior locations potentially offer control technologies a better opportunity to remove heavy metals from areas of potentially heavy concentrationbefore combining with other drainage areas and exiting the property. Based on these criteria, the locations selected for the project are detailed below:

3.1.1 Production Bays

The production bays onsite are areas where significant metal working operations expose a large amount of raw material to storm water. The two (2) bays selected are approximately 110 feet in width by 500 feet in length with concrete barriers on the east and west borders. With elevation decreasing from north to south, the concrete barriers restrict all storm water flow inside the bays to exit from the south border. The production bays were selected for these reasons. The drainage area for each of the two (2) bays was determined to be approximately 0.92 acres. Primary heavy metal contributing activities in the area are outdoor storage of metal materials, metal cutting and grinding, outdoor exposure or abrasive removal of pre-construction primer containing high levels of Zinc, and welding. Rain that falls within the confines of either bay is routed from north to south, via sheet flow, prior to leaving the bay and comingling with other storm water. One of the concerns with this location included controlling storm water across the 110' width of each bay and creating a funnel so that all storm water filtered through the control technology. This concern was counteracted by deploying sand bags across the width of the bays at an obtuse angle to direct storm water through two locations at each bay where the control technologies were located. With two (2) test locations in each bay, four (4) total control technologies could be tested simultaneously. An aerial view of the drainage area has been provided as Figure 1.



Figure 1: Aerial View of Production Bays

3.1.2 Slurry Pit

The slurry pit is an area where structural ship components are blasted with abrasive material to clean or remove pre-construction primer and prepare surfaces for additional coatings. Coating applications also occur in this area using coatings that may contain high concentrations of zinc. The area is approximately 1.19 acres and is surrounded by an asphalt berm to prevent water in the area from discharging. Storm water is typically discharged from the pit during normal operations through valves installed in the berm. For this project, two voids were cut into the south side of the asphalt berm, allowing storm water to flow through.Two (2) of the remaining six (6) control technologies were deployed to at each location. Sand bags were installed upstream of the control technology and in line with the berm to hold storm water for accumulation. An aerial view of the slurry pit is provided in Figure 2.



Figure 2: Aerial View of Slurry Pit

3.2 Control Installation

Control technologies were installed in each of location described previously. With three (3) technologies specifically designed for metal adsorption and three (3) designed for general mechanical filtration, one (1) technology of each design was installed at each of the production bays and the slurry pit. Based on the site evaluations and the restrictions that each location presented, control installation took place as detailed below.

3.2.1 Production Bays

With heavy work activity within each bay and equipment and vehicular travel directly south of each bay, the control technology was deployed at the southern edges with storm water sheet flow from north to south. To control storm water flow through the bays, sand bags were deployed along the southern border of the bays in a manner which funneled storm water to the control technologies.

For each control technology, a uniform setup was used. Three (3) nine (9) feet long booms, approximately nine (9) inches in diameter, were placed close to the outfall location in sequential order perpendicular to the progression of storm water flow in the area. Later in the projectas the material degraded and became coated it was difficult for storm water to pass through. Tested materials were simultaneously reduced to two (2) booms, and later one (1) by removing the lead boom to allow adequate flow.Spray foam was utilized to plug crevices between sand bags and along the outer edges of the control technology to prevent storm water bypass. A picture showing the installation of the control technologies and a plan view of the installation and sample locations are provided as Figures 3 and 4, respectively.



Figure 3:Control technology installation at production bays.



Figure 4: Plan View of Production Bay Installation Plan

3.2.2 Slurry Pit

Control installation for the slurry pit had to be constructed in such a way as to not interfere with production that takes place at this location. In keeping with the design installation for the production bays, the facility cut two (2) voids into the southern edge of the asphalt berm. In each void, a control technology was located, consisting of three (3) nine (9) feet long booms, approximately nine (9) inches in diameter, placed in sequential order perpendicular to the progression of storm water flow in the area. Sand bags were located in front of the control technology, and in line with the asphalt berm, to allow for accumulation of storm water. Later in the projectas the material degraded and became coated, reducing flow, all tested materials were simultaneously reduced to two (2) booms, and later one (1) boom. Spray foam was utilized to plug crevices between sand bags and along the outer edges of the control technology to prevent bypass. A photo showing deployment of control technologies in the slurry pit is provided as Figure 5.



Figure 5: Slurry Pit Technology Installation

3.3 Controlled Sampling

The control technology installation and sampling procedures were uniform for all locations. Each sampling event occurred during an associated rain event. Sand bags were removed, which allowed storm water to flow through the controls. As storm water flowed through, grab samples were taken immediately upstream and downstream of the technology. After each rain event, accumulated storm water was allowed to completely flow out of each production bay and the slurry pit to ensure separate rain events were being tested. Analytical results for each test location and analysis of the analytical data is further detailed in Section 3.4.

3.4 Data Analysis of Adsorbent Materials

Data collected for adsorbent material technologies during the project was reviewed to determine removal efficiencies, data trends, and the useful life of the control technologies.Copies of the analytical results obtained from each sampling event have been provided in Appendix A.The results from each control technology are discussed further below. As observed throughout the project, equipment and foot traffic in the production bays and slurry pit continuously and consistently impacted the control technology installations. This ultimately led to rain events occurring that were not able to be collected and sampled.

3.4.1 Material #1 - CleanwayMetalzorb[™]

Analytical results for CleanwayMetalzorb[™]varied slightly over the course of the project. Sampling analyses are detailed in Table 1 below while Figures 6, 7, and 8 graphically represent percent reductions in total suspended solids (TSS), copper (Cu), and zinc (Zn), respectively, for the control technology over the life of the project. Blue trend lines are incorporated in the figures. The trend lines for Cu and Zn represent a steady degradation rate over the course of the project, where afterfive (5) sampling events and about five (5) or six (6) months, sufficient removal was no longer consistently observed. TSS returned positive results showing an increasing trend line. Sample 2 and Sample 6 returned increases rather than reductions, but were not outside of the standard deviation. Removing these two (2) outlier sampling events would reveal a slight decrease in reduction over the life of the project.

		Analytica	I Results	
Sample Date	Criteria	Pre-Control	Post-Control	Reduction
	T 00	mg/L	mg/L	0.4.400/
	155	281.0	24.0	91.46%
2/11/2014	Cu	2.120	0.095	95.52%
	Zn	7.840	0.412	94.74%
	рН	7.60	7.33	0.27
	TSS	6.90	15.60	-126.09%
2/26/2014	Cu	0.03	0.02	20.00%
2/20/2011	Zn	0.32	0.26	19.81%
	рН	7.29	7.31	-0.02
	TSS	38.00	20.00	47.37%
0/11/0014	Cu	0.65	0.05	92.34%
3/11/2014	Zn	2.23	0.67	69.96%
	рН	7.44	7.54	-0.10
	TSS	8.40	39.50	-370.24%
	Cu	0.12	0.06	52.14%
3/28/2014	Zn	1.00	0.38	62.50%
	pН	7.64	7.60	0.04
	TSS	87.00	51.60	40.69%
	Cu	0.09	0.08	8.70%
6/13/2014	Zn	1.01	0.75	25.64%
	pН	7.16	7.14	0.02
	TSS	27.00	55.00	-103.70%
	Cu	0.09	0.14	-51.09%
7/11/2014	Zn	1.210	1.050	13.22%
	pН	7.71	7.82	-0.11
	TSS	198.00	56.00	71.72%
7/10/0014	Cu	0.22	0.14	37.50%
7/18/2014	Zn	2.02	0.95	52.87%
	рН	8.16	8.15	0.01
	TSS	1140.00	690.00	39.47%
	Cu	1.01	3.22	-218.81%
10/2/2014	Zn	7.76	13.90	-79.12%
	pН	8.33	8.30	0.03
	TSS	900.00	100.00	88.89%
10/0/0011	Cu	0.42	0.77	-83.77%
10/3/2014	Zn	3.25	4.75	-46.15%
	рН	7.81	7.68	0.13

Table 1: Analytical Results for CleanwayMetalzorb[™]



Figure 6:TSS Reduction -CleanwayMetalzorb[™]



Figure 7:Copper Reduction -CleanwayMetalzorb[™]



Figure 8:Zinc Reduction -CleanwayMetalzorb[™]

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3.4.2 Material #2 - FiltrexxEnviroSoxx®

Analytical results for FiltrexxEnviroSoxx[®]varied over the course of the project. Sampling analyses are detailed in Table 2 below while Figures 9, 10, and 11 graphically represent percent reductions of TSS, Cu, and Zn, respectively, for the control technology over the life of the project. Blue trend lines are incorporated in the figures. The trend lines for TSS, Cu, and Zn represent a steady degradation rate over the course of the project. The trend lines represent a degradation suggesting the material has reached removal capacity after the fourth sampling event for Cu and Zn. The control technology, in this setup, was inefficient in removing TSS.This, in part, could be due to the destruction of sand bag barriers and interference that occurred with the technology over the course of the project.

		Analytica	I Results	
Sample Date	Criteria	Pre-Control	Post-Control	Reduction
		mg/L	mg/	
	TSS	33.0	46.0	-39.39%
0/11/0014	Cu	0.089	0.100	-12.36%
2/11/2014	Zn	0.565	0.585	-3.54%
	рН	7.35	7.35	0.00
	TSS	6.10	9.40	-54.10%
2/26/2014	Cu	0.14	0.02	85.93%
2/20/2014	Zn	0.71	0.32	55.32%
	рН	7.23	7.22	0.01
	TSS	25.00	45.00	-80.00%
3/11/2014	Cu	0.08	0.17	-110.00%
0/11/2014	Zn	0.76	1.23	-62.27%
	рН	7.45	7.51	-0.06
	TSS	19.40	9.80	49.48%
3/28/2014	Cu	0.08	0.02	70.51%
5/20/2014	Zn	0.87	0.39	54.71%
	рН	9.41	8.95	0.46
	TSS	8.60	237.00	-2655.81%
6/13/2014	Cu	0.02	0.04	-80.95%
0/10/2014	Zn	0.35	0.39	-12.72%
	рН	7.34	7.18	0.16
	TSS	27.00	37.00	-37.04%
7/11/2014	Cu	0.09	0.09	-2.25%
// 1/2011	Zn	0.846	0.786	7.09%
	рН	7.19	7.21	-0.02
	TSS	28.00	129.00	-360.71%
7/18/2014	Cu	0.04	0.05	-27.03%
7710/2014	Zn	0.27	0.30	-11.85%
	рН	8.09	7.88	0.21
	TSS	608.00	702.00	-15.46%
10/2/2014	Cu	0.61	0.98	-60.26%
10/2/2014	Zn	5.35	7.78	-45.42%
	рН	8.33	7.75	0.58

		Analytica	al Results	
Sample Date	Criteria	Pre-Control	Post-Control	Reduction
		mg/L	mg/	
	TSS	1300.00	1370.00	-5.38%
10/2/2014	Cu	0.41	0.51	-23.67%
10/3/2014	Zn	3.45	5.07	-46.96%
	pН	7.50	7.58	-0.08

Table 2: Analytical Results for FiltrexxEnviroSoxx®



Figure 9:TSS Reduction -FiltrexxEnviroSoxx®



Figure 10:Copper Reduction -FiltrexxEnviroSoxx®



Figure 11:Zinc Reduction -FiltrexxEnviroSoxx®

3.4.3 Material #3 - Ultra-Filter Sock®

Analytical results for Ultra-Filter Sock[®] revealed inefficiencies throughout the project in removing TSS, Cu, and Zn from storm water at the shipyard. Sampling analyses are detailed in Table 3 below while Figures 12,13, and 14 graphically represent percent reductions in TSS, Cu, and Zn, respectively, for the control technology over the life of the project. Blue trend lines are incorporated in the figures. The trend lines for Cu and Zn represent a steady degradation rate over the course of the project.TSS analytical results showed an increase in efficiency throughout the project. After further review, the other control technology (coconut husk) used in the slurry pit returned similar results for TSS, which suggests operations may have changed to alter the profile of suspended solids exposed to the technologies in this location.

During sampling events, Ultra-Filter Sock[®] was observed releasing a plume downstream of the control technology that became less noticeable over time. Ultra-Filter Sock[®]internalcomponents consist of quartz, free silica, and activated carbon. It appears that smaller components within the technology were released from the woven casing during exposure to storm water flows. The material is advertised as being able to remove 1,145 grams of heavy metals per boom (wattle), which equates to approximately 2.5 pounds. With the significant amount of blasting and painting that occurred in the slurry pit throughout the project, there appears to be great potential that Ultra-Filter Sock[®]reached inundation early in the project. While Zn removal efficiencies appear to dissipate around the third sampling event, Cu and TSS removal was not observed during this project in any measure of consistency.

Analytical Result			I Results		
Sample Date	Criteria	Pre-Control	Post-Control	Reduction	
		mg/L	mg/		
	TSS	33.0	815.0	-2369.70%	
0/11/0014	Cu	0.047	0.061	-29.79%	
2/11/2014	Zn	1.420	1.430	-0.70%	
	рН	7.39	7.54	-0.15	
	TSS	3.40	76.00	-2135.29%	
2/26/2014	Cu	0.00	0.00	0.00%	
2/20/2014	Zn	0.39	0.31	19.59%	
	рН	7.06	6.96	0.10	
	TSS	73.20	122.00	-66.67%	
0/11/0014	Cu	0.12	0.10	14.53%	
3/11/2014	Zn	2.66	2.51	5.64%	
	рН	7.62	7.81	-0.19	
	TSS	6.10	90.00	-1375.41%	
0/00/0014	Cu	0.02	0.02 0.06		
3/28/2014	Zn	0.50 1.22		-144.00%	
	рН	7.06	6.74	0.32	
	TSS	50.40	135.00	-167.86%	
6/10/0014	Cu	0.03	0.07	-108.82%	
6/13/2014	Zn	1.26	1.77	-40.48%	
	рН	7.33	7.33	0.00	
	TSS	99.00	155.00	-56.57%	
7/11/0014	Cu	0.28	0.06	77.90%	
//11/2014	Zn	20.700	4.370	78.89%	
	рН	7.26	7.28	-0.02	
	TSS				
7/10/0014	Cu	Sample was not ob	otained due to sedin	nent buildup from	
//18/2014	Zn	abrasive blasting	in the slurry pit. Sto	orm water did not	
	рН	uran		ogy.	
	TSS	722.00	1440.00	-99.45%	
10/0/0014	Cu	0.67	1.29	-92.25%	
10/2/2014	Zn	5.28	11.20	-112.12%	
	рН	8.33	7.78	0.55	
	TSS	910.00	2180.00	-139.56%	
10/0/0014	Cu	0.41	1.18	-190.64%	
10/3/2014	Zn	3.52	9.49	-169.60%	
	рН	7.31	7.43	-0.12	

Table 3: Analytical Results for Ultra-Filter Sock®







Figure 13:Copper Reduction - Ultra-Filter Sock®



Figure 14:Zinc Reduction - Ultra-Filter Sock®

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3.5 Data Analysis of Materials for Mechanical Filtration

Data collected for mechanical filtration technologies during the project was reviewed to determine removal efficiencies, data trends, and the useful life of the control technologies. Copies of the analytical results obtained from each sampling event have been provided in Appendix A. The results from each control technology are discussed further below. As observed throughout the project, equipment and foot traffic in the production bays and slurry pit impacted the control technology installations. This ultimately led to rain events occurring that were not able to be collected and sampled.

3.5.1 Material #4 - FiltrexxSediment Control®

Analytical results for Filtrexx*Sediment Control*[®]revealed slight variations in removal efficiencies over the course of the project; however, removal efficiency variations trended in a decreasing manner as would be expected.Sampling analyses are detailed in Table 4 below while Figures 15, 16, and 17 graphically represent percent reductions in TSS, Cu, and Zn, respectively, for the control technology over the life of the project. Blue trend lines are incorporated in the figures. The trend lines for TSS, Cu, and Zn represent a steady degradation rate over the course of the project, which correlated to about five (5) sampling events occurring over approximately four (4) months before effective removal was no longer consistently observed. TSS returned negative results for six (6) of the eight (8) sampling events for four (4) of the eight (8) sampling events, resulting in decreasing trend lines as well. For Cu and Zn, no sampling analyses returned were outside of the standard deviation. For this technology, Cu and Zn removal does appear to follow TSS trends; however, trends are not directly proportionate.

		Analytica	I Results	
Sample Date	Criteria	Pre-Control	Post-Control	Reduction
		mg/L	mg/	
	TSS	71.0	52.0	26.76%
2/11/2014	Cu	0.138	0.102	26.09%
2/11/2014	Zn	0.872	0.680	22.02%
	рН	7.05	7.05	0.00
	TSS	5.30	10.70	-101.89%
2/26/2014	Cu	0.02	0.02	-10.00%
2/20/2014	Zn	0.41	0.30	25.85%
	рН	7.27	7.30	-0.03
	TSS	19.00	42.00	-121.05%
2/11/2014	Cu	0.10	0.07	27.08%
5/11/2014	Zn	1.09	0.60	44.68%
	рН	7.11	7.21	-0.10
	TSS	72.00	48.00	33.33%
2/20/2014	Cu	0.07	0.03	57.53%
3/20/2014	Zn	0.92	0.52	43.78%
	pН	8.25	7.71	0.54

		Analytica	I Results	
Sample Date	Criteria	Pre-Control	Post-Control	Reduction
		mg/L	mg/	
	TSS	7.90	14.60	-84.81%
6/12/2014	Cu	0.05	0.05	-6.25%
0/13/2014	Zn	0.50	0.60	-19.64%
	pН	7.37	7.14	0.23
	TSS	69.00	227.00	-228.99%
7/11/2014	Cu	0.19	0.12	38.66%
//11/2014	Zn	0.988	0.896	9.31%
	pН	7.21	7.21	0.00
	TSS	147.00	175.00	-19.05%
7/19/2014	Cu	0.10	0.24	-156.84%
7/10/2014	Zn	0.63	1.11	-76.75%
	pН	8.21	8.00	0.21
	TSS	394.00	1360.00	-245.18%
10/2/2014	Cu	0.61	1.17	-92.12%
10/2/2014	Zn	5.37	8.91	-65.92%
	pН	8.33	7.87	0.46
	TSS	730.00	1170.00	-60.27%
10/3/2014	Cu	0.31	0.53	-73.53%
10/3/2014	Zn	2.48	4.71	-89.92%
	pН	7.56	7.48	0.08

Table 4: Analytical Results for FiltrexxSediment Control®



Figure 15:TSS Reduction - FiltrexxSediment Control®







Figure 17:Zinc Reduction - FiltrexxSediment Control®

3.5.2 Material #5- Coconut Husk

Analytical results for coconut huskvaried throughout the project. Sampling analyses are detailed in Table 5 below while Figures 18, 19, and 20 graphically represent percent reductions in TSS, Cu, and Zn, respectively, for the control technology over the life of the project. Blue trend lines are incorporated in the figures. Based upon standard deviations, no outliers were observed in samples sets for this control technology. The trend lines for Cu and Zn represent a degradation rate over the course of the project, with Zn being more pronounced and Cu being more gradual. TSS analytical results displayed an increase in removal efficiency throughout the project, similar to the Ultra-Filter Sock[®], the other material tested in the slurry pit. Both materials tested in the slurry pit showed similar trends. Until the fourth sampling event, removal efficiencies of TSS decreased into the negative significantly. Beginning on the fifth sampling event, a slight removal efficiency was observed.

		Analytical	Results		
Sample Date	Criteria	Pre-Control	Post-Control	Reduction	
		mg/L	mg/		
	TSS	67.0	57.0	14.93%	
0/11/0014	Cu	0.081	0.073	9.88%	
2/11/2014	Zn	2.920	1.860	36.30%	
	рН	7.50	7.02	0.48	
	TSS	2.80	6.40	-128.57%	
2/26/2014	Cu	0.00	0.00	0.00%	
2/20/2014	Zn	0.51	0.51	0.00%	
	рН	7.31	7.18	0.13	
	TSS	58.00	98.00	-68.97%	
2/11/2014	Cu	0.10	0.11	-13.54%	
3/11/2014	Zn	2.15	2.53	-17.67%	
	рН	7.54	7.75	-0.21	
	TSS	5.70	15.00	-163.16%	
2/20/2014	Cu	0.02	0.02	5.56%	
3/20/2014	Zn	0.61 0.55		11.07%	
	рН	7.03	6.88	0.15	
	TSS	93.00	90.00	3.23%	
6/12/2014	Cu	0.02	0.03	-68.75%	
0/13/2014	Zn	1.17	1.30	-11.11%	
	рН	7.30	7.24	0.06	
	TSS				
7/11/0014	Cu	Sample was not obta	ined due to sedime	ent buildup from	
7/11/2014	Zn	durasive biasting in t	m water did not		
	pН		58.		
	TSS	274.00	168.00	38.69%	
7/10/2014	Cu	0.25	0.11	53.88%	
//10/2014	Zn	10.20	6.05	40.69%	
	рН	8.25	8.24	0.01	
	TSS	642.00	334.00	47.98%	
10/0/0014	Cu	0.51	0.32	38.48%	
10/2/2014	Zn	4.09	4.00	2.20%	
	рН	8.33	8.13	0.20	
	TSS	1570.00	1270.00	19.11%	
10/2/2014	Cu	0.74	1.16	-55.91%	
10/3/2014	Zn	5.18	7.98	-54.05%	
	pН	7.88	7.89	-0.01	

Table 5: Analytical Results for Coconut Husk



Figure 18:TSS Reduction -Coconut Husk



Figure19:Copper Reduction - Coconut Husk



Figure 20:Zinc Reduction - Coconut Husk

Control Technology Comparison for Heavy Metals Removal from Shipyard Storm Water Runoff National Shipbuilding Research Program November 21, 2014 Page 23 of 29

3.5.3 Material #6 - Pine Bark

The pine bark media selected for this project was untreated log shavings from a local timber industry. Socks were ordered from Filtrexx to be used as the casing. The material was impregnated into the Filtrexx socks to create wattles of similar length and diameter as the other control technologies being tested. Throughout the project, the pine bark wattles allowed no measurable flow to pass through. As composted material is utilized in other control technologies used in this project, it is believed that the natural pine bark material experienced early degradation and decomposition, which resulted in compacted contentswithin the wattles and no storm water penetration. As a result, no samples were obtained from this material.

3.6 Cost Analysis

Average removal efficiencies over the life of the project were compared against the cost of each technology. Results can be observed in Table 6 below. During this project, the technology with the greatest average removal of Cu and Zn over the life of the project was CleanwayMetalzorb[™]. This technology yielded an average Cu removal efficiency of 0.23% per dollar and an average Zn removal efficiency of 0.21% per dollar. All other media, with the exclusion of coconut husk for Zn removal, returned negative removal efficiencies per dollar over the life of the project. It is believed that removal efficiencies are potentially much lower than would be expected in a fully controlled setting and by not using technologies past the point where they are no longer effective. On an operating shipyard, complications and issues arise often that jeopardize the control installations. In addition, changes in operations that contribute to storm water pollution vary significantly and at a rapid pace. The complications and issues observed during this project, which are believed to have affected removal efficiencies, are discussed in Section 4.0.

Toobhology	Ave	erage Remov	al Efficienc	Cost per	Cu Removal	Zn Removal	
reciniology	TSS	Copper	Zinc	рН	linear foot	per Dollar	per Dollar
Ultra-Filter Sock [®]	-801.31%	-66.13%	-45.35%	0.06	\$15.44	-4.28%	-2.94%
CleanwayMetalzorb [™]	10.00%	24.90%	22.84%	0.01	\$109.90	0.23%	0.21%
FiltrexxEnviroSoxx [®]	-67.83%	-17.79%	-7.29%	0.14	\$11.25	-1.58%	-0.65%
FiltrexxSediment Control [®]	-71.52%	-21.04%	-11.84%	0.15	\$2.50	-8.42%	-4.74%
Coconut Husk	-29.60%	-3.80%	0.93%	0.10	\$10.62	-0.36%	0.09%
Pine Bark	-	-	-	0.00	\$8.35	-	-

Table 6: Cost AnalysisOver the Life of the Project

To counteract issues and data from ineffective use of technologies, each technology's removal efficiencies have also been determined based upon a perceived effective use time period. This was determined by reviewing data and selecting an average time in sampling where removal efficiencies

decreased below zero. The determination was based upon heavy metals removal efficiencies alone. Again, as seen inTable 7, the greatest removal efficiencies were by CleanwayMetalzorb[™]. In terms of costs, however, Filtrexx Sediment Control[®]showed the greatest removal of Cu and Zn per initial investment dollar over the effective use of the product.

	Effective Use	Avera	ge Remova	I Efficienc	;y	Cost	Cu Removal	Zn Bemoval
Technology	(# of samples)	TSS	Copper	Zinc	pН	linear foot	per Dollar	per Dollar
Ultra-Filter Sock [®]	3	-1523.89%	-5.09%	8.17%	-0.08	\$15.44	-0.33%	0.53%
CleanwayMetalzorb [™]	5	-63.36%	53.74%	54.53%	0.04	\$109.90	0.49%	0.50%
FiltrexxEnviroSoxx [®]	4	-31.00%	8.52%	11.06%	0.10	\$11.25	0.76%	0.98%
FiltrexxSediment Control [®]	4	-40.71%	25.18%	34.08%	0.10	\$2.50	10.07%	13.63%
Coconut Husk	4	-86.44%	0.47%	7.43%	0.14	\$10.62	0.04%	0.70%
Pine Bark	0	-	-	-	-	\$8.35	-	-

Table 7: Cost Analysis During Effective Use

To further compare a relative cost for each material, the cost per linear foot per effective sample has been determined. Table 8 represents a value for each control technology. The value defines the cost associated with a single effective use for each control technology. Again, in this project, Filtrexx Sediment Control[®] yielded the least cost per effective use. It is important to note that CleanwayMetalzorb[™] had the highest cost.

Technology	Effective Use (# of samples)	Total Cost of Purchase	Total Material (ft)	Cost per linear foot	Cost per linear foot per effective sample
Ultra-Filter Sock [®]	3	\$139.00	9	\$15.44	\$5.15
CleanwayMetalzorb [™]	5	\$1,318.80	12	\$109.90	\$21.98
FiltrexxEnviroSoxx®	4	\$1,800.00	160	\$11.25	\$2.81
FiltrexxSediment Control®	4	\$400.00	160	\$2.50	\$0.63
Coconut Husk	4	\$127.43	12	\$10.62	\$2.65
Pine Bark	0	\$100.23	12	\$8.35	-

Table 8: Cost Analysis Per Effective Sample

3.7 Disposal Requirements

After sampling was finalized, a Toxicity Characteristic Leaching Procedure (TCLP) analysiswas performed on each of the six (6) control technologies to determine if any materials would be classified as a hazardous waste after treating shipyard storm water runoff. The analytical results indicated that none of the control technologies for this project were classified as characteristic wastes and the spent materials are

Paramet er	Unit s	MR L	Limi t	FiltrexxEnviroSo xx [®]	Filtrexx Sedime nt Control	CleanwayMetalzor b TM	Pine Bark	Ultra- Filter Sock [®]	Cocon ut Husk
Arsenic	mg/ L	0.10 0	5.0	ND	ND	ND	ND	ND	ND
Barium	mg/ L	0.50 0	100. 0	ND	1.00	1.12	ND	ND	1.39
Cadmiu m	mg/ L	0.10 0	1.0	ND	ND	ND	ND	ND	ND
Chromiu m	mg/ L	0.10 0	5.0	ND	ND	ND	ND	ND	ND
Lead	mg/ L	0.10 0	5.0	ND	ND	ND	ND	ND	ND
Selenium	mg/ L	0.10 0	1.0	ND	ND	ND	ND	ND	ND
Silver	mg/ L	0.10 0	5.0	ND	ND	ND	ND	ND	ND
Mercury	mg/ L	0.01 5	0.2	ND	ND	ND	ND	ND	ND
Copper	mg/ L	0.10 0	-	ND	ND	0.241	ND	0.225	0.213
Zinc	mg/ L	0.10 0	-	0.808	1.700	2.820	2.19 0	16.300	100.00 0
				Table 9:	TCLP Analy	/ses			

also not listed wastes; therefore, the spent materials were able to be disposed of as a solid waste. Table 9 below summarizes the results. A copy of the TCLP analyses has been provided as Appendix B.

The sand used in sand bags was analyzed and also determined to not have any hazardous characteristics that would alter sample results. The numerous sand bags and sand used in this project could have been disposed of as a solid waste. TCLP analysis results can be seen in Table 10.

Parameter	Units	MRL	Limit	Sand	
Arsenic	mg/L	0.250	5.0	ND	
Barium	mg/L	0.500	100.0	ND	
Cadmium	mg/L	0.100	1.0	ND	
Chromium	mg/L	0.100	5.0	ND	
Lead	mg/L	0.250	5.0	ND	
Selenium	mg/L	0.250	1.0	ND	
Silver	mg/L	0.100	5.0	ND	
Mercury	mg/L	0.015	0.2	ND	
Copper	mg/L	0.100	N/A	ND	
Zinc	mg/L	0.100	N/A	ND	
Table 10: TCLP Analyses					

4.0 PROJECT COMPLICATIONS AND ISSUES

During the course of the project, several complications and issues were encountered that hindered the progress and/or impacted the results that were obtained from the project. Each issue encountered is discussed below:

- System configurations, particularly in the production bays, were installed in active working areas. Throughout the project, damage occurred on multiple occasions from equipment driving over the sand bags. In addition, control technologies were relocated by people working in the areas, presumably to prevent damage. Therefore, multiple rain events did not result in samples being taken as water was not held in the bays. The repeated relocation of control technologies resulted in the wattle casings being compromised with tears, so new cases had to be placed on multiple technologies. In addition, the effective life of the controls lapsed without sample collections presumably resulting in lower efficiencies over time.
- During a storm event after initial deployment of the control technologies and sand bags, storm water was observed leaching through the sand bags and avoiding the control technology. The configurations were improved by adding additional sand bags and utilizing spray foam in bag crevices and crane tracks to prevent the leaching. Spray foam was used on multiple occasions to seal any voids that allowed storm water to bypass the control technology.
- Storm water was observed passing under, and attempting to go around control materials. Initially, it is believed that head pressure in the sheet flow existed in quantities too small to create flow through the technologies. Sand bags were utilized to allow the storm water to accumulate. As the project progressed, materials became more inundated with sediment and other constituents over the course of the project. To alleviate the issue of insufficient head pressure, control technologies were decreased from three (3) wattles each down to two (2) wattles each. This decrease occurred during the July 11, 2014 sampling event, approximately five (5) months after the technologies were initially deployed. The issue is not believed to be a direct result of degradation of material, but more of a result of product coating or of dense treatment technologies requiring higher head pressure to allow storm water to pass through three (3) parallel wattles.
- In June 2014, the two (2) production bays housed production on large modules that spanned nearly the entire length of each bay. As a result, the surface area within the production bays that were exposed to storm water was significantly reduced. The presence of the modules existed throughout the remainder of the project, which ended in October 2014. Two (2) sample sets were taken in July and two (2) were taken in October. Much larger rain events were required to create a conveyance of water for adequate sampling. Multiple rain events occurred during this five (5) month time period that did not result in enough flow for samples to be taken.

In July 2014, the slurry pit was observed as having a large accumulation of abrasive blasting material near the control technologies. This buildup prevented samples from being taken, but was later alleviated for future events. However, it is possible that this contact reduced the life expectancy and ability to control the monitored pollutants.

5.0 CONCLUSIONS AND RECOMMENDATIONS

One of the objectives of the project was to analyze sample results to determine overall reduction efficiencies for each control technology. Upon analysis of the entire set of data from each technology, there appeared to be a general relationship, or correlation, between the amount of Cu removed and the amount of Zn removed for each technology. Although TSS, Zn, and Cu followed similar trends at times in the project, no consistent, direct correlations appeared that would suggest TSS reductions played a significant role in reducing total recoverable metals in storm water runoff. The reduction rates of TSS and heavy metals fluctuated throughout the project, due in part to changes in operation and impacts to the deployed configurations. While TSS varied more significantly, Cu and Zn removal efficiencies displayed a general degradation over the course of the project. The simple mechanical filtrations also displayed noticeable removal efficienciesuntil the point of a perceived end of the effective use period, at which point the material was no longer consistent in removing heavy metals,.

Ultimately, the reduction efficiencies and costs were compared to determine the most cost-effective means of removing heavy metals from shipyard storm water runoff. For this project, Table 11 below depicts a summary for each control technology, including the effective use during this project, a cost per linear foot per effective sample, and average Cu and Zn removal efficiencies per dollar during the effective use period. In comparison, Filtrexx Sediment Control[®] yielded the least expense per effective sample combined with the greatest Cu and Zn average removal efficiencies over the effective use period of 4 sample events.

Technology	Effective Use (# of samples)	Cost per linear foot per effective sample	Cu Removal per Dollar	Zn Removal per Dollar
Ultra-Filter Sock [®]	3	\$5.15	-0.33%	0.53%
CleanwayMetalzorb [™]	5	\$21.98	0.49%	0.50%
FiltrexxEnviroSoxx [®]	4	\$5.63	0.76%	0.98%
FiltrexxSediment Control®	4	\$0.63	10.07%	13.63%
Coconut Husk	4	\$2.65	0.04%	0.70%
Pine Bark	0	-	-	-

Table 11: Project Summary of Results

The effective use period for all technologies was likely reduced from complications early on in the project. Degradation of materials occurred from exposure to the elements during periods when samples were not able to be taken. As a result of the issues noted previously in this report, samples were not able to be taken during multiple rain events. It is highly recommended that any deployed materials be located in a manner which specifically limits disturbance and destruction from site operations.

APPENDICES

APPENDIX A

ANALYTICAL RESULTS



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

February 13, 2014

Jake White

Work Order #: 1402196

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Metals Removal* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 02/11/14 12:48. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



Environmental Compliance Services, Inc.	Project: Metals Removal	
P O Box 906	Project Number: SCRA	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	02/13/14 15:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
Ultra F Un.	1402196-01	Water	02/11/14 10:20	Jake White	02/11/14 12:48
Ultra F Cont.	1402196-02	Water	02/11/14 10:20	Jake White	02/11/14 12:48
Cleanway Cont.	1402196-03	Water	02/11/14 09:55	Jake White	02/11/14 12:48
Cleanway Uncont.	1402196-04	Water	02/11/14 09:55	Jake White	02/11/14 12:48
COC Cont.	1402196-05	Water	02/11/14 10:10	Jake White	02/11/14 12:48
COC Un.	1402196-06	Water	02/11/14 10:10	Jake White	02/11/14 12:48
FMU	1402196-07	Water	02/11/14 09:30	Jake White	02/11/14 12:48
FMC	1402196-08	Water	02/11/14 09:30	Jake White	02/11/14 12:48
FMU Metal	1402196-09	Water	02/11/14 09:40	Jake White	02/11/14 12:48
FMC Metal	1402196-10	Water	02/11/14 09:40	Jake White	02/11/14 12:48
Sample Receipt Conditions					
Date/Time Received: 2/11/2014 12:48			Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Justi	in Bates	

Date/Time Logged: 2/11/2014 12:59 Cooler ID: #700		Logged by: Sarah E. Tomek		
		Receipt Temperature: 2.7 °C		
Custody Seals	No	Received on Ice	Yes	
Containers Intact	Yes	No Ice, Short Trip	No	
COC/Labels Agree	Yes	Obvious Contamination	No	
Labels Complete	No	Rush to meet HT	No	
COC Complete	Yes			



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Metals Removal Project Number: SCRA Project Manager: Jake White

Reported: 02/13/14 15:55

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None


Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Ma	roject: Imber: nager:	Metals Remo SCRA Jake White		Repo 02/13/14	rted: 4 15:55			
			U	ltra F	Un.					
			14021	96-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	33.0 s Methods	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Copper	0.047	0.010	mg/L	1	4B12005	SCH	02/12/14	02/12/14	EPA 200.7	
Zinc	1.42	0.020	"			SCH	09.30	14.23		



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Ma	roject: Imber: nager:	Metals Rem SCRA Jake White	oval			Repo 02/13/14	rted: 4 15:55	
			Ult	ra F (Cont.					
			14021	96-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	815 Methods	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Copper	0.061	0.010	mg/L	1	4B12005	SCH	02/12/14	02/12/14	EPA 200.7	
Zinc	1.43	0.020	"	"	"	SCH	"	"	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	Metals Remo SCRA Jake White	oval			Repo 02/13/14	rted: 4 15:55
			14021	96-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	24.0	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.095	0.010	mg/L	1	4B12005	SCH	02/12/14 09:30	02/12/14 14:37	EPA 200.7	
Zinc	0.412	0.020	"	"	"	SCH			"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: Imber: nager:	Metals Remo SCRA Jake White	oval			Reported: 02/13/14 15:55		
			Clear	way	Uncont.						
			14021	96-04	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	281	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D		
Metals by EPA 200 Series	s Methods										
Copper	2.12	0.010	mg/L	1	4B12005	SCH	02/12/14 09:30	02/12/14 14:41	EPA 200.7		
Zinc	7.84	0.020	"	"	"	SCH			"		



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Ma	roject: umber: nager:	Metals Rem SCRA Jake White	oval			Reported: 02/13/14 15:55		
			С	oc c	ont.					
			14021	96-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	57.0 Methods	1.0	mg/L	1	4B12010) DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Copper	0.073	0.010	mg/L	1	4B12005	5 SCH	02/12/14 09:30	02/12/14 14:45	EPA 200.7	
Zinc	1.86	0.020	"		"	SCH	"	"	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Ma		Reported: 02/13/14 15:55						
			(Un.					
			14021	96-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	67.0 s Methods	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Copper	0.081	0.010	mg/L	1	4B12005	SCH	02/12/14	02/12/14 14:49	EPA 200.7	
Zinc	2.92	0.020	"	"	"	SCH	"	"		



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: Imber: nager:	Metals Remo SCRA Jake White	oval			Reported: 02/13/14 15:55		
				FM	U						
			14021	96-07	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	71.0	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D		
Metals by EPA 200 Series	wethoas										
Copper	0.138	0.010	mg/L "	1	4B12005 "	SCH	02/12/14 09:30	02/12/14 14:53 "	EPA 200.7		



P O Box 906 Ocean Springs MS, 39566	s, Inc.	I	P Project Nu Project Ma	roject: Imber: nager:	Metals Remo SCRA Jake White	oval			Repo 02/13/14	r ted: 4 15:55
				FM	C					
			14021	96-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	52.0	1.0	mg/L	1	4B12010	DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D	
Wetals by EFA 200 Series	wethous	0.040				0.011				
Copper –	0.102	0.010	mg/L	1	4B12005	SCH	02/12/14 09:30	02/12/14 14:57	EPA 200.7	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	Metals Rem SCRA Jake White	oval			Reported: 02/13/14 15:55		
			F	MUN	letal						
			14021	96-09	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	33.0 s Methods	1.0	mg/L	1	4B12010) DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D		
Copper	0.089	0.010	mg/L	1	4B12005	5 SCH	02/12/14	02/12/14	EPA 200.7		
Zinc	0.565	0.020	"		"	SCH	09:30 "	15:01 "	"		



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	Metals Rem SCRA Jake White	oval			Reported: 02/13/14 15:55		
			F	MC N	letal						
			14021	96-10	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids Metals by EPA 200 Series	46.0 s Methods	1.0	mg/L	1	4B12010) DLW	02/11/14 13:45	02/11/14 13:45	SM 2540 D		
Copper	0.100	0.010	mg/L	1	4B12005	5 SCH	02/12/14	02/12/14	EPA 200.7		
Zinc	0.585	0.020	"			SCH	U9.30 "	15:05	"		



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566			Reported: 02/13/14 15:55							
Cla	assical Che	emistry	Paran	neters -	Quality	y Cont	rol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B12010 - Default Prep Ge	enChem									
Blank (4B12010-BLK1)					Pr	epared &	Analyzed:	02/11/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4B12010-BS1)					Pre	epared &	Analyzed:	02/11/14		
Total Suspended Solids	84.0		mg/L	100		84.0	75-125			
LCS Dup (4B12010-BSD1)					Pre	epared &	Analyzed:	02/11/14		
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	1.20	25	
Duplicate (4B12010-DUP1)	Sou	rce: 14021	96-10		Pr	epared &	Analyzed:	: 02/11/14		
Total Suspended Solids	48.0	1.0	mg/L		46.0			4.26	5	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Metals Removal Project Number: SCRA Project Manager: Jake White

Reported: 02/13/14 15:55

Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B12005 - EPA 200.2										
Blank (4B12005-BLK1)					Pr	epared &	Analyzed	: 02/12/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020	н							
LCS (4B12005-BS1)					Pr	epared &	Analyzed	02/12/14		
Copper	0.212	0.010	mg/L	0.200		106	85-115			
Zinc	0.203	0.020		0.200		102	85-115			
LCS Dup (4B12005-BSD1)					Pr	epared &	Analyzed	02/12/14		
Copper	0.210	0.010	mg/L	0.200		105	85-115	1.27	20	
Zinc	0.201	0.020	н	0.200		100	85-115	1.22	20	
Matrix Spike (4B12005-MS1)	Sou	r ce: 1402 1	96-01		Pr	epared &	Analyzed	02/12/14		
Copper	0.251	0.010	mg/L	0.200	0.047	102	70-130			
Zinc	1.60	0.020		0.200	1.42	89.6	70-130			
Matrix Spike Dup (4B12005-MSD1)	Sou	rce: 14021	96-01		Pr	epared &	Analyzed	: 02/12/14		
Copper	0.251	0.010	mg/L	0.200	0.047	102	70-130	0.0460	20	
Zinc	1.60	0.020	н	0.200	1.42	92.1	70-130	0.303	20	



Environmental Compliance Services, Inc.	Project: Metals Removal	
P O Box 906	Project Number: SCRA	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	02/13/14 15:55

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 200.7 in Water	
Aluminum	C01,C02
Antimony	C01,C02
Arsenic	C01,C02
Barium	C01,C02,C04
Beryllium	C01,C02,C04
Boron	C01,C02
Cadmium	C01,C02,C04
Calcium	C01,C02,C04
Chromium	C01,C02,C04
Cobalt	C01,C02
Copper	C01,C02,C04
Iron	C01,C02,C04
Lead	C01,C02,C04
Magnesium	C01,C02
Manganese	C01,C02
Molybdenum	C01,C02
Nickel	C01,C02,C04
Potassium	C01,C02
Selenium	C01,C02,C04
Silver	C01,C02
Sodium	C01,C02,C04
Strontium	C01,C02
Thallium	C01,C02
Tin	C01,C02
Titanium	C01,C02,C04
Vanadium	C01,C02
Zinc	C01,C02
Phosphorus	C01,C02
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: Metals Removal	
P O Box 906	Project Number: SCRA	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	02/13/14 15:55

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/19/2014
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/04/2014
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/04/2014
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	05/23/2014
C13	MsDEQ Air Monitor: H.P. Howell	ABM-00001344	03/22/2014
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	03/30/2014
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	03/30/2014

Report Definitions

DET ND NR	Analyte DETECTED Analyte NOT DETECTED at or above the minimum reporting limit Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

Land & land					-		Received by
BY AV					0		Relinquished by
Then Detwee	11/11/14	MM	TAMUK	Savah	~ Anner	Kana	Received by
	81721 11/11/2	503	BATES	Justin		191	Relinquished by
100	2/11/14 1805	ELS	Babes	Justia		120	Received by
Sample Royal on the Vise Vise 10	Zicalia 1/28	Ŝ	MADE	Tame J	r fundo	Clarks	Relinquished by
	bate, line	Company		Printed	intury		
		2		Marko 2		5m-	HUC W
**				orro :			Env Me
Lab Use Only				2 CS JO			FmC
Sample Code: G= Grab C= Composite							Emu
Matrix Code: W= Water, S= Soil, O= Oit, L= Liquid, SL= Sludge				0101			
			2 1	5 01 01		ユ	197 2 02
			<u> </u>	0955 2		Uncont	(JERN MAN
				0955 3		Can	CERMUNA
			2 2 2	10201	1	301T	ULTRA F
			2 2 4	10201	214	un	ULARA F
QC Level: Level 1 Level 2 Level 3			sa 7	oling Date/Time	Sam	entification	Sample Ide
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Field D.O. Collect Time Read Time			Cod		MOVAL	IETALS LE	Droigot #-
Field pH Collect Time ReadTime		5	e			- 7	Project Name:
		-/lul					- a
2nd Day* prior approvedFax			Name Printed:	sample	E C	217-62	278 -
Normal *All rush orderPhone Next Day* requests must beMail	scomp.net	e @ envin	Hurderss Jurit	Email A	Zip:	State:	City:
			e Order #:	Purchas			Address:
Turn Around Time & Reporting	TE	A VH	Manager: JA	Project I	JANCE SERVI	TAL COMPL	Company Name:
						odslab.com	www.micrometho
0/170H					gs, MS 39564 123	ve, Ocean Sprin; AX (228) 875-64	6500 Sunplex Dri (228) 875-6420 F
MMLab		ody Kecora	ain of Custo	Ch		KU - VIL II	
	-	3					

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DCN# F316 Rev.#1

Client $\underline{\square}$ WO $\underline{\square}$ $\underline{\square}$ $\underline{\square}$ Date/Time Received $\underline{\square}$ $\underline{\square}$ $\underline{\square}$ $\underline{\square}$	Shipped By Unpacked/(Checked By
Cooler ID Ice Present Temperature Them Yes/No 4700 <u>Y(S</u> 2.7%	nometer ID Cut 743	stody Sealed Custody Seal Intac Yes/No Yes/No NO N/A
		······································
If not iced, were samples received within one ho Temperature Blank Used Yes V No	ur of collection? If not, temperatury	Yes <u>No</u> N/A <u>X</u> e taken from cooler or bottle
Multi Cooler shipment: ID of samples in coolers	that exceed 6°C	
Custody Seals on Bottles Present	Yes No X	· · · · · · · · · · · · · · · · · · ·
Containers Intact	$\frac{\text{Yes} \times \text{No}}{\text{Ves} \times \text{No}}$	
rroper Containers for Requested Analysis	, ino <u>×</u> ino <u> </u>	
Correct Preservation Used for All Samples	Yes X No	
Adequate Sample for Analysis Requested	Yes <u>×</u> No	-
Volatile Vials Headspace Greater than 6mm in	Diameter Yes	_NoN/A 🗡
Chain of Custody Form Included	Yes X No	
Chain of Custody Form Complete	Yes <u>No</u>	-
Chain of Custody Form Properly Relinquished	Yes <u>No</u>	
Field Sheets/Special Instructions Included	Yes No	_N/A_X
Sample Container Labels Match COC	$\frac{103}{\text{Yes} \times \text{No}}$	-
• • • • • • • • • • • • • • • • • •		, .
Samples Received Within Holding Time Dent Manager Notified of Rush/Short Holding	Yes <u>N</u> Times Yes	NoN/AX
Dept. manager rounies of reasonant roluing	I	<u> </u>
Does work order meet Micro Methods sample a Note: Samples that do not meet acceptance crit Log.	acceptance criter teria must be doc	ia Yes <u>^</u> No umented in the Sample Rejection
Client ContactedContacted B	yDat	e/Time
Client Instructions: Cancel Work Order		l he anali fa J
Proceed with Work Order	·(Data wil	n de quantied)
		<u>. </u>

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6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

March 03, 2014

Jake White

Work Order #: 1402422

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: SCRA Mult. Controls* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 02/26/14 10:20. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



COC/Labels Agree

Labels Complete

COC Complete

Г

Environmental Compliance Services, Inc.	Project: SCRA Mult. Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	03/03/14 14:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
COC-UN	1402422-01	Water	02/26/14 08:50	Jake White	02/26/14 10:20
coc-c	1402422-02	Water	02/26/14 08:58	Jake White	02/26/14 10:20
UFUN	1402422-03	Water	02/26/14 09:02	Jake White	02/26/14 10:20
UFC	1402422-04	Water	02/26/14 09:25	Jake White	02/26/14 10:20
FMUN	1402422-05	Water	02/26/14 07:40	Jake White	02/26/14 10:20
FMC	1402422-06	Water	02/26/14 07:50	Jake White	02/26/14 10:20
FSUN	1402422-07	Water	02/26/14 07:54	Jake White	02/26/14 10:20
FSC	1402422-08	Water	02/26/14 08:08	Jake White	02/26/14 10:20
MTLUC	1402422-09	Water	02/26/14 08:20	Jake White	02/26/14 10:20
MTLC	1402422-10	Water	02/26/14 08:35	Jake White	02/26/14 10:20
Sample Receipt Conditions					
Date/Time Received: 2/26/2014 10:	:20		Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Jake	White	
Date/Time Logged: 2/26/2014 10):35		Logged by: Sara	lh E. Tomek	
Cooler ID: #700		Recei	ipt Temperature: _5	.1 °C	
Custody Seals	No		Received on Ice		Yes
Containers Intact	Yes		No Ice, Short Trip		No

Obvious Contamination

Rush to meet HT

Yes

No

Yes

No

No



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: SCRA Mult. Controls Project Number: [none] Project Manager: Jake White

Reported: 03/03/14 14:44

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	Project: SCRA Mult. Controls Project Number: [none] Project Manager: Jake White							Repo 03/03/14	rted: 4 14:44	
			(coc-	UN					
			14024	22-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	2.8 s Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Copper	ND	0.010	mg/L	1	4B28005	SCH	02/28/14 08:45	02/28/14	EPA 200.7	
Zinc	0.509	0.020	"	"	"	SCH	"	"		



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.	, Inc. Project: SCRA Mult. Controls Project Number: [none] Project Manager: Jake White						Repo 03/03/14	rted: 4 14:44	
				coc	-C					
			14024	22-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	6.4 s Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Copper	ND	0.010	mg/L	1	4B28005	SCH	02/28/14 08:45	02/28/14	EPA 200.7	
Zinc	0.509	0.020	"			SCH	"	"		



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.	, Inc. Project: SCRA Mult. Controls Project Number: [none] Project Manager: Jake White							Repo 03/03/14	rted: 4 14:44
				UFU	N					
			14024	22-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	3.4 s Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Copper	ND	0.010	mg/L	1	4B28005	SCH	02/28/14	02/28/14	EPA 200.7	
Zinc	0.388	0.020	"	"		SCH	"	"		



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	Invironmental Compliance Services, Inc.Project:SCRA Mult. ControlsO Box 906Project Number:[none]Dean Springs MS, 39566Project Manager:Jake White							Repo 03/03/14	r ted: 4 14:44	
				UFC	C					
			14024	22-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	76.0	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Nielais by EFA 200 Series	wiethous									
Copper	ND 0 312	0.010	mg/L "	1 "	4B28005 "	SCH SCH	02/28/14 08:45 "	02/28/14 12:34 "	EPA 200.7 "	



Environmental Compliance Services, Inc.Project:SCRA Mult. ControlsP O Box 906Project Number:[none]Ocean Springs MS, 39566Project Manager:Jake White									Rеро 03/03/1	o rted: 4 14:44
				FMU	IN					
			14024	22-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	6.1 Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Conner	0 135	0.010	ma/l	1	4B28005	SCH	02/28/14	02/28/14	EPA 200 7	
Zinc	0.705	0.020	"		-020003	SCH	08:45	12:38	"	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	s, Inc.	Project: SCRA Mult. Controls Project Number: [none] Project Manager: Jake White							Repo 03/03/14	rted: 4 14:44
				FMC	C					
			14024	22-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	9.4 Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Connor	0.019	0.010	ma/l	1	1020005	SCH	02/28/14	02/28/14	EPA 200 7	
	0.045	0.020	"	,	4020000	0011	08:45	12:42	LI A 200.7	



Environmental Compliance Services, Inc.Project: SCRA Mult. ControlsP O Box 906Project Number: [none]Ocean Springs MS, 39566Project Manager: Jake White									Rеро 03/03/1	orted: 4 14:44
				FSU	N					
			14024	22-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids Metals by EPA 200 Series	5.3 s Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Conner	0.020	0.010	ma/l	1	4B28005	SCH	02/28/14	02/28/14	FPA 200 7	
Zinc	0.410	0.020	"		"	SCH	08:45	12:46	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:		Repo 03/03/14	rted: 4 14:44			
				FSC	>					
			14024	22-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	10.7 Methods	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Conner	0.022	0.010	ma/l	1	4B28005	SCH	02/28/14	02/28/14	FPA 200 7	
Zinc	0.304	0.020	"		-D20003	SCH	08:45	12:50	"	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	ironmental Compliance Services, Inc.Project:SCRA Mult. ControlsBox 906Project Number:[none]an Springs MS, 39566Project Manager:Jake White								Rеро 03/03/1	rted: 4 14:44
				MTLI	JC					
			14024	22-09	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	6.9 Mothodo	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
Metals by EPA 200 Series	wiethous	0.040				0.011				
Copper	0.025	0.010	mg/L "	1	4B28005 "	SCH	02/28/14 08:45 "	02/28/14 12:54 "	EPA 200.7 "	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	NVironmental Compliance Services, Inc. Project: SCRA Mult. Controls O Box 906 Project Number: [none] Icean Springs MS, 39566 Project Manager: Jake White								Repo 03/03/14	rted: 4 14:44
				MTL	C					
			14024	22-10	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
otal Suspended Solids	15.6	1.0	mg/L	1	4B26010	DLW	02/26/14 12:00	02/26/14 12:00	SM 2540 D	
vietais by EPA 200 Series	s methods									
Copper	0.020	0.010	mg/L	1	4B28005	SCH	02/28/14 08:45	02/28/14 12:58	EPA 200.7	
Linc	0.255	0.020	"	"	"	SCH			"	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566		Project Nu Project Mar	roject: SC mber: [noi nager: Jak	RA Mult. Co ne] e White	ontrols				Report 03/03/14	ed: 14:44
Cla	assical Che	mistry	Param	eters -	Qualit	y Cont	rol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B26010 - Default Prep Ge	nChem									
Blank (4B26010-BLK1)					Pr	epared &	Analyzed:	02/26/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4B26010-BS1)					Pr	epared &	Analyzed:	02/26/14		
Total Suspended Solids	88.0		ma/l	100		99.0	75-125			
	00.0		mg/∟	100		00.0	10 120			
LCS Dup (4B26010-BSD1)	00.0		ilig/E	100	Pr	epared &	Analyzed:	02/26/14		
LCS Dup (4B26010-BSD1) Total Suspended Solids	88.0		mg/L	100	Pr	epared & 88.0	Analyzed: 75-125	02/26/14	25	
LCS Dup (4B26010-BSD1) Total Suspended Solids Duplicate (4B26010-DUP1)	88.0 Sou	[.] ce: 14024	mg/L 122-04	100	Pro	88.0 88.0 88.0	Analyzed: 75-125 Analyzed:	02/26/14 0.00 02/26/14	25	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: SCRA Mult. Controls Project Number: [none]

Project Manager: Jake White

Reported: 03/03/14 14:44

Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B28005 - EPA 200.2										
Blank (4B28005-BLK1)					Pr	epared &	Analyzed:	02/28/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020								
LCS (4B28005-BS1)			Prepared & Analyzed: 02/28/14							
Copper	0.199	0.010	mg/L	0.200		99.6	85-115			
Zinc	0.201	0.020		0.200		101	85-115			
LCS Dup (4B28005-BSD1)					Pr	epared &	Analyzed:	02/28/14		
Copper	0.195	0.010	mg/L	0.200		97.6	85-115	2.00	20	
Zinc	0.196	0.020		0.200		97.9	85-115	2.65	20	
Matrix Spike (4B28005-MS1)	Sou	r ce: 1402 4	22-01		Pr	epared &	Analyzed:	02/28/14		
Copper	0.202	0.010	mg/L	0.200	0.009	96.4	70-130			
Zinc	0.694	0.020		0.200	0.509	92.8	70-130			
Matrix Spike Dup (4B28005-MSD1)	Sou	Source: 1402422-01 Prepared & Analyzed: 02/28/14								
Copper	0.211	0.010	mg/L	0.200	0.009	101	70-130	4.15	20	
Zinc	0.707	0.020		0.200	0.509	99.3	70-130	1.86	20	



Environmental Compliance Services, Inc.	Project: SCRA Mult. Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	03/03/14 14:44

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 200.7 in Water	
Aluminum	C01,C02
Antimony	C01,C02
Arsenic	C01,C02
Barium	C01,C02,C04
Beryllium	C01,C02,C04
Boron	C01,C02
Cadmium	C01,C02,C04
Calcium	C01,C02,C04
Chromium	C01,C02,C04
Cobalt	C01,C02
Copper	C01,C02,C04
Iron	C01,C02,C04
Lead	C01,C02,C04
Magnesium	C01,C02
Manganese	C01,C02
Molybdenum	C01,C02
Nickel	C01,C02,C04
Potassium	C01,C02
Selenium	C01,C02,C04
Silver	C01,C02
Sodium	C01,C02,C04
Strontium	C01,C02
Thallium	C01,C02
Tin	C01,C02
Titanium	C01,C02,C04
Vanadium	C01,C02
Zinc	C01,C02
Phosphorus	C01,C02
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: SCRA Mult. Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	03/03/14 14:44

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/19/2014
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/04/2014
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/04/2014
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	05/23/2014
C13	MsDEQ Air Monitor: H.P. Howell	ABM-00001344	03/22/2014
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	03/30/2014
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	03/30/2014

Report Definitions

DET ND NR RPD	Analyte DETECTED Analyte NOT DETECTED at or above the minimum reporting limit Not Reported Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

MICRO-MUTHODS	Chain of Custody Record	M-MLab
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		1402422
www.micromethodslab.com		
Environmental Compliance Services (ECS)	Project Manager: Jake White	Turn Around Time & Reporting
Address:	Purchase Order #:	Our normal turn around time is 7-10 working days
City: Occan Sprives State: MS ZIP:	Email Address : jwhite @ envirocomp. net	Normal *All rush orderPhone
Phone: (228) 217 - 6254	Sampler Name Printed: Jake White	
Fax:	Sampler Name Signed:	Other*
	Liber Arich vergenzahlen and	Note Special InstructionalComments
SCRA Mult. Controls	ainers Code	Field pH Collect Time ReadTime
Project #:	f Conta mple (55 m ppc	Field D.OCollect Time Read Time
Sample Identification Sampling Date		QC Level: Level 1 Level 2 Level 3
COC-UN 211 15		
20 12 - C		
UFC 214 09		
EMUN Aliv 07		
FMC AND OT		Matrix Code: W= Water, S= Soli, O= Oil, L= Liquid, SL= Sludge
NN ST		Sample Code: G= Grab C= Composite
MTLUC AIL 00		Notes
MTLC 911 08	35 2 1 1 1 2 25	
Signature	Printed Name Company Data Titra	-
Relinquished by CAUS JAN	tes J (Jakelwhite ecs gladin heo	Sample Royd, on Ice Yes 🖄 No 🗆
Received by Shak Homed Sa	ah Tonnel MM Hadly non	(JU6 , Z
Relinquished by		
Received by		Receipt Parts (.C.) 27.1 Sample [] Blank 3
Relinquished by		By M
Received by		Date & Time

Page 18 of 19

UCN# F316 Rev.#1

Client ECS WO 1402422 Shipped By CUULT Date/Time Received 124414@//20 Unpacked/Checked By Unpacked/Checked By Cooler ID Ice Present Temperature Thermometer ID Custody Sealed Custody S Yes/No Yes/No Unpacked/Checked By Yes/No Yes/No Yes/No Yes/No Yes/No Unpacked/Checked By Yes/No Yes/No Unpacked/Checked By Unpacked/Checked/Checked/Checked/Checked/By Unpacked/Checked/By Unpacked/Checked/ByUnpacked/Checked/Checked/ByUnpacked/Checked/Checked/ByUnpacked/Checked/ByUnpacked/Checked/Checked/ByUnpacked/Checked/ByUnpacked/Checked/ByUnpacked/Checked/ByUnpacked/Checked/ByUnpacked/Checked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/ByUnpacked/By	
Cooler ID Ice Present Temperature Thermometer ID Custody Sealed Custody S # 700 # 8 5.1°C # 3 MU MU If not iced, were samples received within one hour of collection? Yes No N/A Temperature Blank Used Yes No If not, temperature taken from cooler or Multi Cooler shipment: ID of samples in coolers that exceed 6°C	
If not iced, were samples received within one hour of collection? YesNoNA Temperature Blank Used YesNoIf not, temperature taken from cooleror Multi Cooler shipment: ID of samples in coolers that exceed 6°C Custody Seals on Bottles Present YesNo YesNo Custody Seals on Bottles Present YesNo Proper Containers Intact YesNo Proper Containers for Requested Analysis Yes XNo Correct Preservation Used for All Samples Yes XNo Adequate Sample for Analysis Requested Yes XNo Volatile Vials Headspace Greater than 6mm in Diameter Yes No Chain of Custody Form Included Yes X Yes X Yes X	Seal Intac No A
If not iced, were samples received within one hour of collection? Yes No_N/A Temperature Blank Used Yes No_ If not, temperature taken from cooler or Multi Cooler shipment: ID of samples in coolers that exceed 6°C Custody Seals on Bottles Present Yes No_Y Containers Intact Yes No_Y Proper Containers for Requested Analysis Yes X No_ Correct Preservation Used for All Samples Yes X No_ Adequate Sample for Analysis Requested Yes X No_ Volatile Vials Headspace Greater than 6mm in Diameter Yes No_N/A X Chain of Custody Form Included Yes X No_ Chain of Custody Form Complete Yes X No_ Chain of Custody Form Properly Relinquished Yes X No_	
Custody Seals on Bottles Present Yes No X Containers Intact Yes No Y Proper Containers for Requested Analysis Yes X No Correct Preservation Used for All Samples Yes X No Adequate Sample for Analysis Requested Yes X No Volatile Vials Headspace Greater than 6mm in Diameter Yes No N/A X Chain of Custody Form Included Yes Yes No Y Chain of Custody Form Complete Yes Yes No Y Chain of Custody Form Properly Relinquished Yes No Y	bottle
Correct Preservation Used for All Samples Adequate Sample for Analysis Requested Yes X No Volatile Vials Headspace Greater than 6mm in Diameter Yes No N/A X Chain of Custody Form Included Chain of Custody Form Complete Yes X No Yes X No Yes X No	
Volatile Vials Headspace Greater than 6mm in Diameter Yes No N/A Chain of Custody Form Included Yes X No Chain of Custody Form Complete Yes X No Chain of Custody Form Properly Relinquished Yes X No	
Chain of Custody Form IncludedYes X NoChain of Custody Form CompleteYes X NoChain of Custody Form Properly RelinquishedYes X No	
Field Sheets/Special Instructions Included Samples Missing on COC or From Cooler Sample Container Labels Match COCYes NoN/AXYes NoYes NoYes NoYes	
Samples Received Within Holding Time Yes XNo Dept. Manager Notified of Rush/Short Holding Times Yes No_N/A X	
Does work order meet Micro Methods sample acceptance criteria Yes XNo	ejection
Client ContactedContacted ByDate/Time Client Instructions: Cancel Work Order Proceed with Work Order(Data will be qualified) Comments:	

Controlled Document



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

March 25, 2014

Jake White

Work Order #: 1403251

Purchase Order #:

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: NSRD*

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 03/14/14 12:19. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.


Environmental Compliance Services, Inc.	Project:	NSRD	
P O Box 906	Project Number:	Sample Event #3	Reported:
Ocean Springs MS, 39566	Project Manager:	Jake White	03/25/14 10:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
MZC	1403251-01	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
MZUC	1403251-02	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
FSC	1403251-03	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
FSUC	1403251-04	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
FMC	1403251-05	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
FMUC	1403251-06	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
СНС	1403251-07	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
СНИС	1403251-08	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
UFSC	1403251-09	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
UFSUC	1403251-10	Water	03/11/14 16:00	Justin Bates	03/14/14 12:19
Sample Receipt Conditions					
Date/Time Received: 3/14/2014 12	2:19		Shipped by: Clier	nt Delivery	
Received by: Barbara K. McMillan			Submitted by: Just	in Bates	

Data/Tima Laggadu	0/14/0014	10.00
Date/Time Logged.	3/14/2014	13.20

Cooler ID: #700

Custody Seals	No
Containers Intact	Yes
COC/Labels Agree	Yes
Labels Complete	No
COC Complete	Yes

Submitted by: Justin Bates	
Logged by: Sarah E. Tomek	
Receipt Temperature: <u>1.4 °C</u>	
Received on Ice	Yes
No Ice, Short Trip	No
Obvious Contamination	No
Rush to meet HT	No



Project: NSRD Project Number: Sample Event #3 Project Manager: Jake White

Reported: 03/25/14 10:33

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	nt #3	Веро 03/25/1	rted: 4 10:33		
				MZ	C					
			14032	51-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	20.0 s Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Copper	0.050	0.010	mg/L	1	4C17024	, SCH	03/17/14	03/21/14	EPA 200.7	
Zinc	0.670	0.020	"	"	"	SCH	"	03/19/14 16:10	"	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	s, Inc.		P Project Nu Project Ma	Project: umber: nager:	NSRD Sample Eve Jake White	nt #3	Reported: 03/25/14 10:33			
				MZU	IC					
			14032	51-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	38.0 Mothods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Wetals by LFA 200 Series	Methous	0.040				0.011				
Copper Zinc	0.653 2.23	0.010	mg/L "	1	4C17024 "	SCH	03/17/14 09:45 "	03/21/14 12:20 03/19/14	EPA 200.7 "	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	nt #3			Repo 03/25/14	rted: 4 10:33	
				FSC	2					
			14032	51-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	42.0 Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Copper	0.070	0.010	mg/L	1	4C17024	SCH	03/17/14 09:45	03/21/14 12:22	EPA 200.7	
Zinc	0.603	0.020	"	"	"	SCH		03/19/14 16:23		



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	nt #3	Веро 03/25/1	rted: 4 10:33		
				FSU	С					
			14032	51-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	19.0 S Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Copper	0.096	0.010	mg/L	1	4C17024	, SCH	03/17/14	03/21/14	EPA 200.7	
Zinc	1.09	0.020	"	"		SCH	09:45 "	12:24 03/19/14 16:27	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	nt #3	Repo 03/25/14	Reported: 03/25/14 10:33		
				FMC	2					
			14032	51-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	45.0	1.0	mg/L	1	4C17039	DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper Zinc	0.168 1.23	0.010 0.020	mg/L "	1 "	4C17024 "	SCH SCH	03/17/14 09:45 "	03/21/14 12:27 03/19/14	EPA 200.7 "	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	nt #3	Веро 03/25/14	rted: 4 10:33		
				FMU	IC					
			14032	51-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	25.0 Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Common	0.090	0.010		1	101700	- 90U	00/17/14	00/01/11	EDA 000 7	
Copper	0.080	0.010	nig/L	1	4017024	, 30N	03/17/14 09:45	03/21/14 12:29	EPA 200.7	
Zinc	0.758	0.020	"		"	SCH		03/19/14 16:35	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	Project: umber: nager:	NSRD Sample Eve Jake White	nt #3	Веро 03/25/1	rted: 4 10:33		
				СН	C					
			14032	51-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	_{98.0} s Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Copper	0.109	0.010	mg/L	1	4C17024	, SCH	03/17/14	03/21/14	EPA 200.7	
Zinc	2.53	0.020	"	"	"	SCH	"	03/19/14 16:39	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	NSRD Sample Eve Jake White	nt #3	Reported: 03/25/14 10:33				
				CHU	IC					
			14032	51-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids Metals by EPA 200 Series	58.0 s Methods	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Copper	0.096	0.010	mg/L	1	4C17024	, SCH	03/17/14	03/21/14	EPA 200.7	
Zinc	2.15	0.020	"	"		SCH	09:45 "	12:34 03/19/14 16:43	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	Reported: 03/25/14 10:33				
				UFS	C					
			14032	51-09	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids	122	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Metals by EPA 200 Series	s methods									
Copper Zinc	0.100 2.51	0.010 0.020	mg/L "	1 "	4C17024 "	SCH SCH	03/17/14 09:45 "	03/21/14 12:36 03/19/14 16:47	EPA 200.7 "	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	NSRD Sample Eve Jake White	Reported: 03/25/14 10:33				
				UFSI	JC					
			14032	51-10	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids	73.2	1.0	mg/L	1	4C17039) DLW	03/17/14 10:15	03/17/14 10:15	SM 2540 D	
Metals by EPA 200 Series	sweinous									
Copper Zinc	0.117 2.66	0.010 0.020	mg/L "	1 "	4C17024 "	SCH	03/17/14 09:45 "	03/21/14 12:49 03/19/14 16:51	EPA 200.7 "	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	Project: NSRD Project Number: Sample Event #3 39566 Project Manager: Jake White									
Cla	assical Che	mistry	Param	eters -	Qualit	y Cont	rol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4C17039 - Default Prep Ge	enChem									
Blank (4C17039-BLK1)					Pr	epared &	Analyzed	: 03/17/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4C17039-BS1)					Pr	epared &	Analyzed	: 03/17/14		
Total Suspended Solids	84.0		mg/L	100		84.0	75-125			
LCS Dup (4C17039-BSD1)					Pr	epared &	Analyzed	: 03/17/14		
Total Suspended Solids	85.0		mg/L	100		85.0	75-125	1.18	25	
Duplicate (4C17039-DUP1)	Sou	rce: 14032	251-10		Pr	epared &	Analyzed	: 03/17/14		
Total Suspended Solids	74.4	1.0	mg/L		73.2			1.63	5	



Project: NSRD Project Number: Sample Event #3 Project Manager: Jake White

Reported: 03/25/14 10:33

Metals by EPA 200 Series Methods - Quality Control

Analvte	Result	MRL	Units	Spike	Source	%REC	%REC	RPD	RPD Limit	Notes
				Level	riesult		Liitiits			
Batch 4C17024 - EPA 200.2										
Blank (4C17024-BLK1)					Prepared:	03/17/14	Analyzed	: 03/21/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020								
LCS (4C17024-BS1)					Prepared:	03/17/14	Analyzed	: 03/21/14		
Copper	0.209	0.010	mg/L	0.200		104	85-115			
Zinc	0.201	0.020	н	0.200		101	85-115			
LCS Dup (4C17024-BSD1)					Prepared:	03/17/14	Analyzed	: 03/21/14		
Copper	0.210	0.010	mg/L	0.200		105	85-115	0.594	20	
Zinc	0.206	0.020	н	0.200		103	85-115	2.40	20	
Matrix Spike (4C17024-MS1)	Sou	rce: 14032	251-01		Prepared:	03/17/14	Analyzed	: 03/21/14		
Copper	0.253	0.010	mg/L	0.200	0.050	101	70-130			
Zinc	0.865	0.020	н	0.200	0.670	97.7	70-130			
Matrix Spike Dup (4C17024-MSD1)	Sou	rce: 14032	251-01		Prepared:	03/17/14	Analyzed	: 03/21/14		
Copper	0.261	0.010	mg/L	0.200	0.050	105	70-130	3.11	20	
Zinc	0.867	0.020	н	0.200	0.670	98.8	70-130	0.262	20	



Environmental Compliance Services, Inc.	Project: NSF	RD	
P O Box 906	Project Number: San	nple Event #3	Reported:
Ocean Springs MS, 39566	Project Manager: Jake	e White	03/25/14 10:33

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 200.7 in Water	
Aluminum	C01,C02
Antimony	C01,C02
Arsenic	C01,C02
Barium	C01,C02,C04
Beryllium	C01,C02,C04
Boron	C01,C02
Cadmium	C01,C02,C04
Calcium	C01,C02,C04
Chromium	C01,C02,C04
Cobalt	C01,C02
Copper	C01,C02,C04
Iron	C01,C02,C04
Lead	C01,C02,C04
Magnesium	C01,C02
Manganese	C01,C02
Molybdenum	C01,C02
Nickel	C01,C02,C04
Potassium	C01,C02
Selenium	C01,C02,C04
Silver	C01,C02
Sodium	C01,C02,C04
Strontium	C01,C02
Thallium	C01,C02
Tin	C01,C02
Titanium	C01,C02,C04
Vanadium	C01,C02
Zinc	C01,C02
Phosphorus	C01,C02
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Project: NSRD Project Number: Sample Event #3 Project Manager: Jake White

Reported: 03/25/14 10:33

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/19/2014
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/04/2014
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/04/2014
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	05/23/2014
C13	MsDEQ Air Monitor: H.P. Howell	AM-00001344	03/22/2014
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	03/30/2014
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	03/30/2014

Report Definitions

DET ND NR RPD	Analyte DETECTED Analyte NOT DETECTED at or above the minimum reporting limit Not Reported Relative Percent Difference
ICV	Initial Calibration Verfucation
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

Relinquished by Received by	Received by	Relinquished by	Received by Khata MEMIL	Relinquished by	Signature	1/2 June 1	UFSC JVI	CHUC 3/11	CHC 3/1	Finuc	FMC (3/i)	Fsuc 3/11	FSC 3/1	MEUC 3/1	MEC 3/1	Pour No Spank 3/	PBC - No Sample 3/1	Sample Identification	Sample Event H	Project Name:		Fax:	(128) 217 - 6254	SHERMAN STATE LIP: 2086	Address: Po Box 356	Company Name: Ecs	www.micromethodslab.com	5500 Sunplex Drive, Ocean Springs, MS 39564 228) 875-6420 FAX (228) 875-6423	MICRO-METHODS
			Barbary MEMiles M/M Sinfine 1	dustin Bates ECS S/14/M	Printed Name Company Date 1				14-1600 2 1 1 1	11 100 2 1 1 1 1	14-1600 2 1 1 1	14-1600 2 494 1 1 1	1/14-400 Z PBT 1 1 1 1	1/14-1600 2 100 1 1 1 1	1/14-1620 2 19:11 1 1	1/14 76m 0 PX 0 0 0	1/14-1600 0 Pt 0 0 0 0	ling Date/Time # 3° C 27		ainers		Sampler Name Signed:	sampler name Printed:	of Email Address Junkite@envirocomp, net	Purchase Order #:	Project Manager: JAKE WHITE			Chain of Custody Record
By & Alexan Minimum	Receipt Temp ("C) 1." Sample Blank Id		and the second first	12 A Sample Road on Ins You X No []	ine -				Noiss	Lab Uso Only	Sample Code: G= Grab C= Composite	Matrix Code: W= Water, S= Soil, O= Oit, L= Liquid, SL= Sludge						QC Level: Level 1 Level 2 Level 3	Field Temp. Collect Time Read Time	Field pH Collect Time ReadTime	Note Special Instructions/Comments		2nd Day* prior approved.			Curr normal time around time is 7.10 working		WO# 1403251	M-M Lab

Page 18 of 19

DCN# F316 Rev.#1

	Micro-Methods Labora Log-In Checklist	DCN: F207 Date Revised: 7-18-11 Revision: 4
Client <u>ECS</u> w Date/Time Received <u>3</u>	0 <u> 4()3257</u> Shipped <u>14 14@ 219</u> Unpac	By <u>UUNT</u> cked/Checked By <u>ST</u>
Cooler ID Ice Present 470 Yes/No 48	Temperature Thermometer II 1.4°C T#3	D Custody Sealed Custody Seal Intac Yes/No Yes/No NO NA
If not iced, were samples ro Temperature Blank Used Multi Cooler shipment: ID	ecceived within one hour of colle Yes No If not, temp of samples in coolers that excee	ction? Yes <u>No N/A X</u> perature taken from cooler <u>or bottle</u>
Custody Seals on Bottles P Containers Intact Proper Containers for Req	resent Yes Yes Wes Xes Xes Xes	No No No
Correct Preservation Used Adequate Sample for Anal	for All Samples Yes 🗡 ysis Requested Yes 🔀	No No
Volatile Vials Headspace (Greater than 6mm in Diameter `	Yes No N/A 🖌
Chain of Custody Form In Chain of Custody Form Co Chain of Custody Form Pr Field Sheets/Special Instru Samples Missing on COC of Sample Container Labels I	cludedYesompleteYesoperly RelinquishedYesctions IncludedYesor From CoolerYesMatch COCYes	No No No N/A <u>/</u> No No
Samples Received Within D Dept. Manager Notified of	Holding Time Ye Rush/Short Holding Times Ye	s <u>× No</u> sNoN/A <u>×</u>
Does work order meet Mic Note: Samples that do not Log.	ro Methods sample acceptance meet acceptance criteria must	criteria Yes <u>X</u> No be documented in the Sample Rejection
	Contracted Dr.	Dato/Time
Client Contacted Client Instructions: Cancer Proce	el with Work Order	

Controlled Document



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

April 07, 2014

Jake White

Work Order #: 1403481

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 03/28/14 13:00. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	Project: Multiple Controls Project Number: [none] Project Manager: Jake White	Reported: 04/07/14 11:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
сос-с	1403481-01	Water	03/28/14 10:53	Jake White	03/28/14 13:00
COC-UC	1403481-02	Water	03/28/14 10:59	Jake White	03/28/14 13:00
UFS-C	1403481-03	Water	03/28/14 11:21	Jake White	03/28/14 13:00
UFS-UC	1403481-04	Water	03/28/14 11:09	Jake White	03/28/14 13:00
MZ-C	1403481-05	Water	03/28/14 10:47	Jake White	03/28/14 13:00
MZ-UC	1403481-06	Water	03/28/14 10:44	Jake White	03/28/14 13:00
FM-C	1403481-07	Water	03/28/14 10:28	Jake White	03/28/14 13:00
FM-UC	1403481-08	Water	03/28/14 10:24	Jake White	03/28/14 13:00
FS-C	1403481-09	Water	03/28/14 10:33	Jake White	03/28/14 13:00
FS-UC	1403481-10	Water	03/28/14 10:38	Jake White	03/28/14 13:00
Sample Receipt Conditions					
Date/Time Received: 3/28/2014 13:	00		Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Jake	White	
Date/Time Logged: 3/28/2014 13	:15		Logged by: Sara	h E. Tomek	

Cooler ID: #700		Receipt Temperature: 2.3 °C	
Custody Seals	No	Received on Ice	Yes
Containers Intact	Yes	No Ice, Short Trip	No
COC/Labels Agree	Yes	Obvious Contamination	No
Labels Complete	No	Rush to meet HT	No
COC Complete	Yes		



Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 04/07/14 11:07

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: umber: nager:	Multiple Con [none] Jake White			Веро 04/07/1	rted: 4 11:07	
			-C							
			14034	81-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	15.0	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Conner	0.017	0.010	ma/l	1	4001003	SCH	04/01/14	04/02/14	EPA 200 7	
Zinc	0.546	0.020	" "	"	4D01003	SCH	09:00	14:15	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.	l	P Project Nu Project Ma		Repo 04/07/1	rted: 4 11:07				
			(coc-	UC					
			14034	81-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	5.7	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Metals by EPA 200 Series	s methods									
Copper	0.018	0.010	mg/L	1	4D01003	SCH	04/01/14 09:00	04/02/14 14:56	EPA 200.7	
Zinc	0.614	0.020	"	"	"	SCH	"		"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	ces, Inc.	ļ	P Project Nu Project Ma	roject: umber: nager:		Repo 04/07/14	rted: 4 11:07			
			14034	81-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids	90.0	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
A CONTRACTOR OF THE CONTRACT OF THE CONTRACT.		0.010				0011				
Copper	0.063	0.010	mg/L	1	4D01003	30H	04/01/14 09:00	04/02/14 15:00	EPA 200.7	
Zinc	1.22	0.020	"	"		SCH	"		"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: Imber: nager:	Multiple Con [none] Jake White	trols			Reported: 04/07/14 11:07	
				UFS-	UC					
			14034	81-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	6.1 Methods	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Copper	0.021	0.010	mg/L	1	4D01003	SCH	04/01/14	04/02/14	EPA 200.7	
Zinc	0.500	0.020	"		51000	SCH	09:00	15:04	"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma		Rеро 04/07/1	rted: 4 11:07				
				MZ-	С					
			14034	81-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	39.5	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.056	0.010	mg/L	1	4D01003	SCH	04/01/14 09:00	04/02/14 15:08	EPA 200.7	
Zinc	0.375	0.020	"	"		SCH			"	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: Imber: nager:	Multiple Con [none] Jake White	trols			Reported: 04/07/14 11:07		
				MZ-U	JC						
			14034	81-06	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	8.4 Methods	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D		
Coppor	0 117	0.010	ma/l	1	4001002	SCH	04/01/14	04/02/14	EDA 200 7		
Copper Zinc	1 00	0.020	"	"	4001003	SCH	09:00	15:12	"		



s, Inc.	ļ	P Project Nu Project Ma		Reported: 04/07/14 11:07					
			FM-	с					
		14034	81-07	(Water)					
Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
neters									
9.8 Mothoda	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
wethous	0.040				0.011				
0.023	0.010	mg/L	1	4D01003	SCH	04/01/14 09:00	04/02/14 15:16	EPA 200.7	
	Result neters 9.8 Methods 0.023 0 394	Result MRL neters 9.8 1.0 Methods 0.023 0.010 0.394 0.020	s, Inc. P Project Nu Project Ma 14034 Result MRL Units neters 9.8 1.0 mg/L Methods 0.023 0.010 mg/L 0.394 0.020 "	s, Inc. Project: Project Number: Project Nanager: FM- 1403481-07 Result MRL Units Dil neters 9.8 1.0 mg/L 1 Methods 0.023 0.010 mg/L 1 0.394 0.020 " "	s, Inc. Project: Multiple Con Project Number: [none] Project Manager: Jake White FM-C 1403481-07 (Water) Result MRL Units Dil Batch Neters 9.8 1.0 mg/L 1 4C31010 Methods 0.023 0.010 mg/L 1 4D01003 0.394 0.020 " " "	s, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1403481-07 (Water) Result MRL Units Dil Batch Analyst Neters 9.8 1.0 mg/L 1 4C31010 DLW Methods 0.023 0.010 mg/L 1 4D01003 SCH 0.394 0.020 " " " SCH	s, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1403481-07 (Water) Result MRL Units Dil Batch Analyst Prepared MRL Units Dil Batch Analyst Prepared Methods 0.023 0.010 mg/L 1 4D01003 SCH 04/01/14 10:30 0.394 0.020 " " " SCH "	s, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1403481-07 (Water) Result MRL Units Dil Batch Analyst Prepared Analyzed neters 9.8 1.0 mg/L 1 4C31010 DLW 03/31/14 10:30 03/31/14 10:30 03/31/14 10:30 03/31/14 10:30 15:16 9:00 15:16	s, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C FM-C T403481-07 (Water) Result MRL Units Dil Batch Analyst Prepared Analyzed Method neters 9.8 1.0 mg/L 1 4C31010 DLW 03/31/14 03/31/14 SM 2540 D 10:30 10:30 15:16 Methods 0.023 0.010 mg/L 1 4D01003 SCH 04/01/14 04/02/14 EPA 200.7 0.394 0.020 " " " SCH " " " "



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma		Repo 04/07/1	rted: 4 11:07				
				FM-U	JC					
			14034	81-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	19.4	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.078	0.010	mg/L	1	4D01003	SCH	04/01/14 09:00	04/02/14 15:20	EPA 200.7	
Zinc	0.870	0.020	"	"	"	SCH			"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma		Веро 04/07/1	rted: 4 11:07				
			С							
			14034	81-09	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	ameters									
Total Suspended Solids	48.0	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D	
Metals by EPA 200 Series	smethods									
Copper	0.031	0.010	mg/L	1	4D01003	SCH	04/01/14 09:00	04/02/14 15:24	EPA 200.7	
Zinc	0.515	0.020	"	"	"	SCH	"		"	



Environmental Compliance Servic P O Box 906 Ocean Springs MS, 39566	es, Inc.		P Project Nu Project Ma	roject: Imber: nager:	Multiple Con [none] Jake White	trols			Reported: 04/07/14 11:07		
				FS-U	IC						
			14034	81-10	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	72.0 Methods	1.0	mg/L	1	4C31010	DLW	03/31/14 10:30	03/31/14 10:30	SM 2540 D		
Coppor	0.073	0.010	ma/l	1	4001002	SCH	04/01/14	04/02/14	EPA 200 7		
Zinc	0.916	0.020	""""""""""""""""""""""""""""""""""""""	"	4001003	SCH	09:00	15:28	"		



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566		P Project Nu Project Mar	roject: Mul mber: [noi nager: Jak	ltiple Contro ne] e White	ls				Report 04/07/14	ed: 11:07
Cl	lassical Che	mistry	Param	eters -	Qualit	y Cont	trol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4C31010 - Default Prep G	enChem									
Blank (4C31010-BLK1)					Pr	epared &	Analyzed:	03/31/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4C31010-BS1)					Pr	epared &	Analyzed:	03/31/14		
Total Suspended Solids	83.0		mg/L	100		83.0	75-125			
LCS Dup (4C31010-BSD1)					Pr	epared &	Analyzed:	03/31/14		
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	0.00	25	
Duplicate (4C31010-DUP1)	Sou	rce: 14034	81-10		Pr	epared &	Analyzed:	03/31/14		
Total Suspended Solids	69.2	1.0	mg/L		72.0			3.97	5	



Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 04/07/14 11:07

Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4D01003 - EPA 200.2										
Blank (4D01003-BLK1)					Prepared:	04/01/14	Analyzed	: 04/02/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020	н							
LCS (4D01003-BS1)					Prepared:	04/01/14	Analyzed	: 04/02/14		
Copper	0.207	0.010	mg/L	0.200		104	85-115			
Zinc	0.188	0.020		0.200		94.2	85-115			
LCS Dup (4D01003-BSD1)					Prepared:	04/01/14	Analyzed	: 04/02/14		
Copper	0.206	0.010	mg/L	0.200		103	85-115	0.664	20	
Zinc	0.189	0.020		0.200		94.4	85-115	0.275	20	
Matrix Spike (4D01003-MS1)	Sou	rce: 14034	81-01		Prepared:	04/01/14	Analyzed	: 04/02/14		
Copper	0.219	0.010	mg/L	0.200	0.017	101	70-130			
Zinc	0.746	0.020	н	0.200	0.546	100	70-130			
Matrix Spike Dup (4D01003-MSD1)	Sou	r ce: 1403 4	81-01		Prepared:	04/01/14	Analyzed	: 04/02/14		
Copper	0.219	0.010	mg/L	0.200	0.017	101	70-130	0.0332	20	
Zinc	0.738	0.020		0.200	0.546	96.2	70-130	1.04	20	



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	04/07/14 11:07

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 200.7 in Water	
Aluminum	C01,C02
Antimony	C01,C02
Arsenic	C01,C02
Barium	C01,C02,C04
Beryllium	C01,C02,C04
Boron	C01,C02
Cadmium	C01,C02,C04
Calcium	C01,C02,C04
Chromium	C01,C02,C04
Cobalt	C01,C02
Copper	C01,C02,C04
Iron	C01,C02,C04
Lead	C01,C02,C04
Magnesium	C01,C02
Manganese	C01,C02
Molybdenum	C01,C02
Nickel	C01,C02,C04
Potassium	C01,C02
Selenium	C01,C02,C04
Silver	C01,C02
Sodium	C01,C02,C04
Strontium	C01,C02
Thallium	C01,C02
Tin	C01,C02
Titanium	C01,C02,C04
Vanadium	C01,C02
Zinc	C01,C02
Phosphorus	C01,C02
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	04/07/14 11:07

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/19/2014
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/04/2014
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/04/2014
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	05/23/2014
C13	MsDEQ Air Monitor: H.P. Howell	AM-00001344	03/22/2014
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	03/30/2014
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	03/30/2014

Report Definitions

DET ND NR RPD	Analyte DETECTED Analyte NOT DETECTED at or above the minimum reporting limit Not Reported Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

IVICKO - WEIHODS	Chain of Custody Record	
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		1X45041
www.micromethodslab.com		
$\frac{\mathcal{L}_{\text{Company Name:}}}{\mathcal{L}_{\text{CS}}}$	oject Manager: JACE WHITE	Turn Around Time & Reporting
Address: Po Box 35-6 PL	urchase Order #:	Our normal turn around time is 7-10 working days
City State WARTIS City City	nall Address: jwh:te@envincomp.act	Normal *All rush orderPhone
Phone: (228) 217-6254	ampler Name Printed: JAKE WEHLTE	
Fax: Sa	Impler Name Signed: Jacy OWW	Other*Email
	Life Analyses Referended	Note Special Instructions/Comments
Project Name: Multiple Controls	ainers Code	Field pH Collect Time ReadTime
Tioject #.	Cont mple 55 72 72	Field U.OCollect Time Read Time
Sample Identification Sampling Date/Tin	# of Sa T: Me	QC Level: Level 1 Level 2 Level 3
COC-C 378/14 10:52		
COC-UC 31814 10:2		
01-11 H 12 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
MZ-C 38/14/10:4-		
MZ- UC 328/14 10:44		Matrix Code: W= Water, S= Soit, O= Oil, L= Liquid, SL= Sludge
FM-C 3/28/14 10:28		Sample Code: G= Grab C= Composite
$F_{M} = UC$ 3/2(1+ 10:2:		Lab Use Only
		Noms
20.01 11 12 E		
He anneudig he	Hed Mame Company Date Time	
Relinquished by GAWY GAWAS, TAKE	WHITE ECS 3/2/14/13004	Sample Road on los Yes X No []
Received by Kingh Mmul Salla	IN TIMMER AM Shalling 1300	ove , e
Relinquished by		
Received by		tecaipt Jump (C) 4.2 Sample Blank A
Relinquished by		W X
Received by		Date & Time
DCN#F316 Rev.#1		

Page 18 of 19
Client <u>tw</u> W	0 <u>140348</u> Shipped B	<u>cuent</u> C
Date/Time Received 3	<u>5/28/14@ 1300</u> Unpacke	ed/Checked By
Cooler ID Ice Present	Temperature Thermometer ID	Custody Sealed Custody Seal Intac
#nm 1/19	230, T#3	Yes/No Yes/No
- IVU yrs	A-00 10	
······		· · · · · · · · · · · · · · · · · · ·
· · · · · · · · · · · · · · · · · · ·		
If not iced, were samples re	eceived within one hour of collectio	on? Yes No N/A X
Temperature Blank Used	Yes <u>X</u> No If not, tempera	ature taken from cooleror bottle
Multi Cooler shipment: ID	of samples in coolers that exceed (5°C
Outto do Contra Da Villa D		
Custody Seals on Bottles P Containers Intact	$\begin{array}{ccc} resent & Yes No \\ Yes \times No \end{array}$	<u>_X</u>
Proper Containers for Req	uested Analysis Yes X No	
Correct Preservation Used	for All Samples Yes XNo	
Adequate Sample for Anal	lysis Requested Yes $\underline{\times}$ No	 >
Volatile Vials Headspace C	Greater than 6mm in Diameter Yes	<u>No N/A X</u>
Chain of Custody Form In	cluded Yes ×No	
Chain of Custody Form Co	omplete Yes X No	
Chain of Custody Form Pr Field Sheets/Special Instru	coperly Relinquished Yes X No actions Included Yes No	
Samples Missing on COC	or From Cooler Yes No	
Sample Container Labels I	Match COC Yes \times No)
Samples Received Within 1	Holding Time Yes 🗙	No
Dept. Manager Notified of	Rush/Short Holding Times Yes	NoN/A_ <u>Y</u>
Does work order meet Mic	ero Methods sample acceptance cri	teria Yes 🗙 No
Note: Samples that do not	meet acceptance criteria must be	documented in the Sample Rejection
Log.		
Client Contacted	Contacted ByI	Date/Time
Client Instructions: Cance Proce	el Work Order (Data	will be analified)
Comments:		

Page 19 of 19



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

June 19, 2014

Jake White

Work Order #: 1406271

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 06/13/14 11:48. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: NSRP	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	06/19/14 14:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
CW-C	1406271-01	Water	06/13/14 09:14	Jake White	06/13/14 11:48
CW-U	1406271-02	Water	06/13/14 09:13	Jake White	06/13/14 11:48
FS-C	1406271-03	Water	06/13/14 10:18	Jake White	06/13/14 11:48
FS-UC	1406271-04	Water	06/13/14 10:13	Jake White	06/13/14 11:48
FM-C	1406271-05	Water	06/13/14 10:02	Jake White	06/13/14 11:48
FM-UC	1406271-06	Water	06/13/14 09:58	Jake White	06/13/14 11:48
CH-C	1406271-07	Water	06/13/14 09:31	Jake White	06/13/14 11:48
CH-U	1406271-08	Water	06/13/14 09:27	Jake White	06/13/14 11:48
UFS-C	1406271-09	Water	06/13/14 09:45	Jake White	06/13/14 11:48
UFS-UC	1406271-10	Water	06/13/14 09:41	Jake White	06/13/14 11:48
Sample Receipt Conditions					
Date/Time Received: 6/13/2014 11:	48:00AM		Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Jake	White	
Date/Time Logged: 6/13/2014 12	2:02:00PM		Logged by: Sara	h E. Tomek	

Cooler ID: #700		Receipt Temperature: 2.8 °C	
Custody Seals	No	Received on Ice	Yes
Containers Intact	Yes	No Ice, Short Trip	No
COC/Labels Agree	No	Obvious Contamination	No
Labels Complete	No	Rush to meet HT	No
COC Complete	Yes		



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: NSRP Project Manager: Jake White

Reported: 06/19/14 14:55

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments:

Chain of custody does not match sample labels on first 2 samples. Contacted J. White on 6/13/14 @1153 to notify. Client said labels on containers are correct. SET

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur oject Man	oject: nber: ager:	Multiple C NSRP Jake Whit	ontrols e			Repo 06/19/1	rted: 4 14:55
				CW-	C					
			14062	71-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	51.6	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Conner	0.084	0.010	ma/L	1	4F16023	SCH	06/16/14	06/17/14	EPA 200.7	
Zinc	0.751	0.020	"		"	SCH	09:15	13:56	"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C NSRP Jake White			rted: 4 14:55		
				CW-	U					
			14062	71-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	87.0	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Metals by EPA 200 Series	swethous									
Copper	0.092	0.010	mg/L	1	4F16023	SCH	06/16/14 09:15	06/17/14 14:00	EPA 200.7	
Zinc	1.01	0.020	"	"		SCH			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C NSRP Jake Whit	Reported: 06/19/14 14:55				
				FS-0	C					
			14062	71-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	14.6 Methods	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Copper	0.051	0.010	mg/L	1	4F16023	SCH	06/16/14	06/17/14	EPA 200.7	
Zinc	0.597	0.020	"	"	"	SCH	U9.15 "	14:03	"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pr Pro	Pro oject Nur oject Man	oject: nber: ager:	Multiple C NSRP Jake Whit	ontrols e			Repo 06/19/1	rted: 4 14:55
				FS-U	JC					
			14062	71-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	7.9 Mothods	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Nietais by EPA 200 Series	Methous	0.010				0.011				
Copper Zinc	0.499	0.010	mg/L "	1	4F16023 "	SCH	06/16/14 09:15 "	06/17/14 14:07 "	EPA 200.7	



Г

Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple Co NSRP Jake White	ontrols e			Repo 06/19/14	rted: 4 14:55
				FM-	С					
			14062	71-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	237	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper	0.038	0.010	mg/L	1	4F16023	SCH	06/16/14 09:15	06/17/14 14:16	EPA 200.7	
Zinc	0.390	0.020	"	"	"	SCH				



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pr Pro	Pro oject Nur oject Man	oject: nber: ager:	Multiple C NSRP Jake Whit	Reported: 06/19/14 14:55				
				FM-U	JC					
			14062	71-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Param	eters									
Total Suspended Solids	8.6	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Wetals by EFA 200 Series I	nethous	0.040				0.011				
Copper	0.021	0.010	mg/L "	1	4F16023	SCH	06/16/14 09:15 "	06/17/14 14:20 "	EPA 200.7	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C NSRP Jake Whit			Rеро 06/19/1	o rted: 4 14:55	
				CH-	С					
			14062	71-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	90.0	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Conner	0 027	0.010	ma/l	1	4E16023	SCH	06/16/14	06/17/14	EPA 200 7	
Zinc	1.30	0.020	"		-i 10025 "	SCH	09:15	14:24	"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Pr Prc	Pro oject Nur oject Man	oject: nber: ager:	Multiple C NSRP Jake Whit			Repo 06/19/1	rted: 4 14:55		
				CH-	U					
			14062	71-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	93.0	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D	
Coppor	0.016	0.010	ma/l	1	4516022	SCH	06/16/14	06/17/14	EPA 200 7	
	5.010	0.000	g/L		41 10023	0011	09:15	14:57		
Zinc	1.17	0.020		"	"	SCH	"	"	"	



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pr Pro	Project: Multiple Controls Project Number: NSRP Project Manager: Jake White					Reported: 06/19/14 14:55			
				UFS	-C						
1406271-09 (Water)											
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Param	eters										
Total Suspended Solids	135 Aothoda	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D		
Wetals by EFA 200 Series F		0.040				0.011					
Copper	0.071	0.010	mg/L "	1	4F16023 "	SCH	06/16/14 09:15 "	06/17/14 15:01 "	EPA 200.7 "		



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Project: Multiple Controls Project Number: NSRP Project Manager: Jake White						Reported: 06/19/14 14:55			
				UFS-	UC						
1406271-10 (Water)											
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids	50.4	1.0	mg/L	1	4F16007	DLW	06/16/14 09:40	06/16/14 09:40	SM 2540 D		
		0.010	ma/l	1	4540000	80U	00/40/44	00/47/44			
Copper	0.034	0.010	mg/∟	1	4F16023	3011	06/16/14 09:15	15:05	EPA 200.7		
Zinc	1.26	0.020	"	"	"	SCH		"	"		



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	es, Inc. F P	Project Nur roject Man	oject: Mu nber: NS ager: Jal	ultiple Cont SRP ke White	trols				Report 06/19/14	ed: 14:55			
Classical Chemistry Parameters - Quality Control													
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes			
Batch 4F16007 - Default Prep (GenChem												
Blank (4F16007-BLK1)					Pr	epared &	Analyzed:	06/16/14					
Total Suspended Solids	ND	1.0	mg/L										
LCS (4F16007-BS1)					Pr	epared &	Analyzed:	06/16/14					
Total Suspended Solids	80.0		mg/L	100		80.0	75-125						
LCS Dup (4F16007-BSD1)					Pr	epared &	Analyzed:	06/16/14					
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	3.68	25				
Duplicate (4F16007-DUP1)	Sou	rce: 14062	271-10		Pr	epared &	Analyzed:	06/16/14					
Total Suspended Solids	48.0	1.0	ma/l		50.4			1 88	5				



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: NSRP Project Manager: Jake White

Reported: 06/19/14 14:55

Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4F16023 - EPA 200.2										
Blank (4F16023-BLK1)					Prepared:	06/16/14	Analyzed:	06/17/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020	"							
LCS (4F16023-BS1)					Prepared:	06/16/14	Analyzed:	06/17/14		
Copper	0.212	0.010	mg/L	0.200		106	85-115			
Zinc	0.188	0.020	"	0.200		93.9	85-115			
LCS Dup (4F16023-BSD1)					Prepared:	06/16/14	Analyzed:	06/17/14		
Copper	0.207	0.010	mg/L	0.200		103	85-115	2.42	20	
Zinc	0.190	0.020	"	0.200		94.8	85-115	0.951	20	
Matrix Spike (4F16023-MS1)	Sou	rce: 14062	271-04		Prepared: 06/16/14 Analyzed: 06/17/14					
Copper	0.253	0.010	mg/L	0.200	0.048	103	70-130			
Zinc	0.681	0.020	"	0.200	0.499	91.0	70-130			
Matrix Spike Dup (4F16023-MSD1)	Sou	rce: 14062	271-04		Prepared:	06/16/14	Analyzed:	06/17/14		
Copper	0.254	0.010	mg/L	0.200	0.048	103	70-130	0.127	20	
Zinc	0.675	0.020	"	0.200	0.499	88.0	70-130	0.891	20	



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: NSRP	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	06/19/14 14:55

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 200.7 in Water	
Aluminum	C01,C02
Antimony	C01,C02
Arsenic	C01,C02
Barium	C01,C02,C04
Beryllium	C01,C02,C04
Boron	C01,C02
Cadmium	C01,C02,C04
Calcium	C01,C02,C04
Chromium	C01,C02,C04
Cobalt	C01,C02
Copper	C01,C02,C04
Iron	C01,C02,C04
Lead	C01,C02,C04
Magnesium	C01,C02
Manganese	C01,C02
Molybdenum	C01,C02
Nickel	C01,C02,C04
Potassium	C01,C02
Selenium	C01,C02,C04
Silver	C01,C02
Sodium	C01,C02,C04
Strontium	C01,C02
Thallium	C01,C02
Tin	C01,C02
Titanium	C01,C02,C04
Vanadium	C01,C02
Zinc	C01,C02
Phosphorus	C01,C02
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: NSRP	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	06/19/14 14:55

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

	Report Definitions								
DET	Analyte DETECTED								
ND	Analyte NOT DETECTED at or above the minimum reporting limit								
NR	Not Reported								
RPD	Relative Percent Difference								
ICV	Initial Calibration Verflication								
CCV	Continuing Calibration Verification Standard								
SSV	Secondary Source Verfication Standard								
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.								
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.								
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.								
MRL	Minimum Reporting Limit								

- %REC Percentage Recovery of known concentration added to matrix
- Batch Group of samples prepared for analysis not to exceed 20 samples.
- Matrix Material containing analyte/s of interest

Analyte added to sample to determine extraction efficiency of method. Surrogate

VIICKO - VIETHODS	Chain of Custody Record	
6500 Sunplex Drive, Ocean Springs, MS 399 (228) 875-6420 FAX (228) 875-6423	564	14002 11
www.micromethodslab.com		
Company Name: ECS , INC.	Project Manager: JAKE WIHTE	Turn Around Time & Reporting
Address: PO BOX 356	Purchase Order #:	Our normal turn around time is /-iu working days
city: Sthermann State: MS ZID:	38867 Email Address: juhited envirocomp. net	Normal *All rush orderPhone
Phone: (228) 217-6254	Sampler Name Printed: JAKE WHITE	2nd Day* prior approvedFax
Fax:	Sampler Name Signed:	
	Enderstein I.	Note Special Instructions/Comments
Project Name: NSRP-MUHD	C (Ontrals aimers Code	Field pH Collect Time ReadTime
Project #:	Continues of the second	Field Temp. Collect Time Read Time
Sample Identification	Sampling Date/Time # 3 7. M	QC Level: Level 1 Level 2 Level 3
MANNEC- CWC	61314 0514h 2 × ×	
(B) MEUS CWU		
HWV.	UBH 1001 2 XX	
Fmu	12 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	Matrix Code: W= Water, S= Soil, O= Oil, L= Liquid, SL= Sludge
CHC	Walk 0131 2 XX	Sample Code: G= Grab C= Composite
CHM	(a) 13/14 (27/27 2 × ×	Lab Use Only
UHSC		Notes
ursou		
N Stoppture	Printed Name Company Data Time	
Relinquished by	, JAKE WHITE ECS UNBIN ///4X	Sample Roval on Los You 🕅 No 🗔
Received by	NOL STUTIL TOWNER NIM 4/3/14 1/48	(MC S
Relinquished by		
Received by		Receipting ("C)X. 5 (Semple) / Blank L
Relinquished by		By DL
Received by		Date & Time
DCN# F316 Rev.#1		

Page 18 of 19

Re

Issue Date: 7/18/11 Implementation Date: 7/18/11	Micro-Methods Laboratory Log-In Checklist	DCN: F207 Date Revised: 7-18-11 Revision: 4
Client <u>ECS</u> W Date/Time Received <u>6</u>	'0 <u> Ц (()2</u> 7 Shipped By_ 1 <u>/13/14 @_/148_</u> Unpacked/	<u>Checked By</u>
Cooler ID Ice Present Yes/No #700 Yes	Temperature Thermometer ID Cu 2.8°C 7#3	nstody Sealed Custody Seal Intact Yes/No Yes/No <u>NO N/A</u>
If not iced, were samples r Temperature Blank Used Multi Cooler shipment: II	eceived within one hour of collection? YesNoIf not, temperatur of samples in coolers that exceed 6°C	Yes <u>No N/A</u> re taken from cooler <u>or bottle</u>
Custody Seals on Bottles H Containers Intact Proper Containers for Rea	'resent Yes No Yes No quested Analysis Yes No	<u>_</u>
Correct Preservation Used Adequate Sample for Ana	I for All Samples Yes X No lysis Requested Yes X No	-
Volatile Vials Headspace	Greater than 6mm in Diameter Yes _	NoN/A X
Chain of Custody Form In Chain of Custody Form C Chain of Custody Form P Field Sheets/Special Instru Samples Missing on COC Sample Container Labels	icluded Yes No_ omplete Yes No_ roperly Relinquished Yes No_ ictions Included Yes No_ or From Cooler Yes No Match COC Yes No	-
Samples Received Within Dept. Manager Notified o	Holding Time Yes XI f Rush/Short Holding Times Yes	NoN/AX
Does work order meet Mi Note: Samples that do no	cro Methods sample acceptance criter t meet acceptance criteria must be do	ia Yes <u>/</u> No cumented in the Sample Rejection
Log.		112/116 1102
Log. Client Contacted W Client Instructions: Cano Proc	<u>Alte</u> Contacted By <u>S</u> Dat eel Work Order <u></u> eed with Work Order <u></u> (Data wi	te/Time $(0/13/14)$ (0) (155)
Log. Client Contacted J. W Client Instructions: Cano Proc Comments: AJAA AMC COMPC	<u>MIR Contacted By ST</u> Dat eel Work Order eed with Work Order (Data wi 	te/Time <u>(113/14</u>) Il be qualified) <u>US_TA_(MAAMUS</u>

Controlled Document



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

July 25, 2014

Jake White

Work Order #: 1407248

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 07/14/14 16:59. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



	Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	Proje Project Numb Project Manag	ect: Multiple Controls per: [none] per: Jake White	Reported: 07/25/14 12:41						
ANALYTICAL REPORT FOR SAMPLES										
	Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received				
	MZ-C	1407248-01	Water	07/11/14 15:30	Justin Bates	07/14/14 16:59				
	MZ-UC	1407248-02	Water	07/11/14 15:30	Justin Bates	07/14/14 16:59				
	FS-C	1407248-03	Water	07/11/14 15:35	Jake White	07/14/14 16:59				
	FS-UC	1407248-04	Water	07/11/14 15:35	Justin Bates	07/14/14 16:59				
	FM-C	1407248-05	Water	07/11/14 15:40	Justin Bates	07/14/14 16:59				
	FM-UC	1407248-06	Water	07/11/14 15:40	Justin Bates	07/14/14 16:59				
	UFS-C	1407248-07	Water	07/11/14 16:05	Justin Bates	07/14/14 16:59				

UFS-UC	1407248-08	Water	07/11/14 16:05	Justin Bates	07/14/14 16:59
Sample Receipt Con	ditions				
Date/Time Received:	7/14/2014 4:59:00PM		Shipped by: Clien	t Delivery	
Received by: Harry	P. Howell		Submitted by: Justin	n Bates	
Date/Time Logged:	7/15/2014 8:00:00AM		Logged by: Saral	n E. Tomek	
Cooler ID: #700		Rec	eipt Temperature:	5 °C	
Custody Se	als No		Received on Ice		Yes
Containers	Intact Yes		No Ice, Short Trip		No
COC/Labels	s Agree Yes		Obvious Contaminat	tion	No
Labels Com	nplete No		Rush to meet HT		No
COC Comp	lete Yes				



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 07/25/14 12:41

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification:

Total Suspended Solids-SM 2540 D

RPD04 The RPD between the sample and sample duplicate exceeded the acceptance limits. The batch was accepted based on the lab controls.

Total Suspended Solids 4G15032-DUP1



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Multiple Co [none] Jake White		Repo 07/25/1	rted: 4 12:41		
				MZ-	с					
			14072	48-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	55.0	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.139	0.010	mg/L	1	4G16007	KRL	07/16/14 09:00	07/22/14 14:24	EPA 200.7	
Zinc	1.05	0.020	"			KRL			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Multiple Co [none] Jake White		Repo 07/25/1	rted: 4 12:41		
				MZ-U	JC					
			14072	48-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	27.0	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.092	0.010	mg/L	1	4G16007	KRL	07/16/14 09:00	07/22/14 14:28	EPA 200.7	
Zinc	1.21	0.020	"		"	KRL			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple Co [none] Jake White			Repo 07/25/1	rted: 4 12:41	
				FS-	C					
			14072	48-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	227	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.119	0.010	mg/L	1	4G16007	KRL	07/16/14 09:00	07/22/14 14:32	EPA 200.7	
Zinc	0.896	0.020	"		"	KRL			"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Multiple C [none] Jake Whit		Rеро 07/25/1	rted: 4 12:41		
				FS-U	IC					
			14072	48-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	neters									
Total Suspended Solids	69.0 Mothods	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Connor	0 194	0.010	ma/l	1	4016007	KRI	07/16/14	07/22/14	EPA 200 7	
Zinc	0.988	0.020	"	"	4010007	KRL	09:00	14:36	"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pr oject Nur oject Man	oject: mber: ager:	Multiple Co [none] Jake White		rted: 4 12:41			
				FM-	С					
			14072	48-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	37.0	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Metals by EPA 200 Series	6 Methods									
Copper	0.091	0.010	mg/L	1	4G16007	KRL	07/16/14 09:00	07/22/14 14:39	EPA 200.7	
Zinc	0.786	0.020	"	"	"	KRL			"	



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake White		Rеро 07/25/1	rted: 4 12:41		
				FM-U	JC					
			14072	48-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Param	eters									
Total Suspended Solids	27.0	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Conner	0.089	0.010	ma/l	1	4016007	KRI	07/16/14	07/22/14	EPA 200 7	
Zinc	0.846	0.020	"		-010007	KRI	09:00	14:43	"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple Co [none] Jake White		Repo 07/25/1	rted: 4 12:41		
				UFS	-C					
			14072	48-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	155	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.061	0.010	mg/L	1	4G16007	KRL	07/16/14 09:00	07/22/14 14:47	EPA 200.7	
Zinc	4.37	0.020	"		"	KRL			"	



Γ

Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple Co [none] Jake White	ontrols e			Repo 07/25/14	rted: 4 12:41
				UFS-	UC					
			14072	48-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	99.0 s Methods	1.0	mg/L	1	4G15032	DLW	07/15/14 13:00	07/15/14 13:00	SM 2540 D	
Copper	0.276	0.010	mg/L	1	4G16007	KRL	07/16/14	07/22/14	EPA 200.7	
Zinc	20.7	0.020	"	"	"	KRL	"	"	"	



Environmental Compliance Services, P O Box 906 Ocean Springs MS, 39566	vironmental Compliance Services, Inc. Project: Multiple Controls D Box 906 Project Number: [none] ean Springs MS, 39566 Project Manager: Jake White											
Cl	assical Cl	hemistry	Paran	neters -	Qualit	y Cont	rol					
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes		
Batch 4G15032 - Default Prep Ge	enChem											
Blank (4G15032-BLK1)					Pr	epared &	Analyzed:	: 07/15/14				
Total Suspended Solids	ND	1.0	mg/L									
LCS (4G15032-BS1)					Pr	epared &	Analyzed:	07/15/14				
Total Suspended Solids	81.0		mg/L	100		81.0	75-125					
LCS Dup (4G15032-BSD1)					Pr	epared &	Analyzed:	07/15/14				
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	2.44	25			
Duplicate (4G15032-DUP1)	S	ource: 14072	248-01		Pr	epared &	Analyzed:	07/15/14				
Total Suspended Solids	59.0	1.0	mg/L		55.0			7.02	5	RPD04		



Environmental Compliance Services, In P O Box 906 Ocean Springs MS, 39566	c. P Pr	Pro Project Nun Project Mana	oject: M nber: [n ager: Ja	Multiple Controls [none] Jake White					Reported: 07/25/14 12:41		
Metals by EPA 200 Series Methods - Quality Control											
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	

Batch 4G16007 - EPA 200.2	
---------------------------	--

Blank (4G16007-BLK1)				F	Prepared:	07/16/14	Analyzed:	07/22/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020								
LCS (4G16007-BS1)				F	Prepared:	07/16/14	Analyzed:	07/22/14		
Copper	0.196	0.010	mg/L	0.200		98.0	85-115			
Zinc	0.182	0.020		0.200		91.2	85-115			
LCS Dup (4G16007-BSD1)				F	Prepared:	07/16/14	Analyzed:	07/22/14		
Copper	0.206	0.010	mg/L	0.200		103	85-115	4.86	20	
Zinc	0.195	0.020		0.200		97.7	85-115	6.92	20	
Matrix Spike (4G16007-MS1)	Sou	urce: 1407	253-02	F	Prepared:	07/16/14	Analyzed:	07/22/14		
Copper	0.196	0.010	mg/L	0.200	ND	98.2	70-130			
Zinc	0.177	0.020		0.200	ND	88.5	70-130			
Matrix Spike Dup (4G16007-MSD1)	Sou	urce: 1407	253-02	F	Prepared:	07/16/14	Analyzed:	07/22/14		
Copper	0.194	0.010	mg/L	0.200	ND	96.8	70-130	1.41	20	
Zinc	0.173	0.020	"	0.200	ND	86.3	70-130	2.58	20	



Environmental Compliance Services, Inc.	Project: Multiple Cont	rols
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	07/25/14 12:41

Certified Analyses Included in this Report

Analyte	Certification Code	
EPA 200.7 in Water		
Aluminum	C01,C02	
Antimony	C01,C02	
Arsenic	C01,C02	
Barium	C01,C02,C04	
Beryllium	C01,C02,C04	
Boron	C01,C02	
Cadmium	C01,C02,C04	
Calcium	C01,C02,C04	
Chromium	C01,C02,C04	
Cobalt	C01,C02	
Copper	C01,C02,C04	
Iron	C01,C02,C04	
Lead	C01,C02,C04	
Magnesium	C01,C02	
Manganese	C01,C02	
Molybdenum	C01,C02	
Nickel	C01,C02,C04	
Potassium	C01,C02	
Selenium	C01,C02,C04	
Silver	C01,C02	
Sodium	C01,C02,C04	
Strontium	C01,C02	
Thallium	C01,C02	
Tin	C01,C02	
Titanium	C01,C02,C04	
Vanadium	C01,C02	
Zinc	C01,C02	
Phosphorus	C01,C02	
SM 2540 D in Water		
Total Suspended Solids	C01,C02	



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	07/25/14 12:41

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2015
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2015
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

Poport Definitions

	Report Definitions
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix

- Group of samples prepared for analysis not to exceed 20 samples. Batch
- Matrix Material containing analyte/s of interest

Analyte added to sample to determine extraction efficiency of method. Surrogate

MICRO-METHODS	Chain of Custody Record				
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		847×1041 #0M			
www.micromethodslab.com					
$\frac{Company Name}{ECS}, T_{O} \mathcal{L}$	Project Manager: (lake white	Turn Around Time & Reporting			
Address: P.O. Box 356	Purchase Order #:	Our normal turn around time is 7-10 working days			
City: Starman MS 3869	Email Address: dwhite Genvirocompact	All rush orderPhone			
Phone: (178) 217-6254	Sampler Name Printed:				
Fax:	Sampler Name Signed:	Other*Email			
		And Share a state of the second state of the			
Project Name: MUUTTPLC (07177),	iners code	Field pH Collect Time Read Time			
Project #:	Conta mple C SS als	Field D.OCollect Time Read Time			
Sample Identification Sam	pling Date/Time # of Sa / K K	QC Level: Level 1 Level 2 Level 3			
72 M	12/4/338m Z X X X				
	XXX 2 M30:6 H/4				
FSC, 7//	XXXX 7 12 12 12 12 12 12 12 12 12 12 12 12 12				
	$\frac{1}{14} \frac{3}{25} \frac{1}{10} \frac{1}{2} \frac{1}{12} $				
Enc 7/4					
		Matrix Code: W= Water, S= Soit, O= Oil, L= Liquid, SL= Sludge			
ULESU Z/II					
Stratig	Printed Name Company Date Time				
Relinquished by	Justin Bates PCS 7/14 4:59 m				
Received by Than Law	Hanny Dowell mon 7/14 1659				
Relinquished by					
Received by		were the second of the second of the second			
Relinquished by		A ANY NO			
Received by		Dent and The State of the second			
DCN# F316 Rev.#1					
Revision: 4 Client ECS WO //// 72/// Shipped By ////// Shipped By ////// Shipped By ////// Shipped By ///////////////////////////////////	Implementation Date: 7/18/11	Micro-Methods Labe Log-In Checkli	oratory st	DCN: F207 Date Revised: 7-18-	
--	---	---	--	---------------------------------------	---------------------------------------
Client ECS WO //// 72/// Shipped By ///// Shipped By ///////////////////////////////////				Revision: 4	
Cooler ID Ice Present Temperature Thermometer ID Custody Sealed Custody Sealed Yes/No	Client <u>ECS</u> wo Date/Time Received _7/1	<i>1407248</i> Ship <u>j</u> 14/14/@7659 Un	oed By packed/C	<i>Chicht</i> Checked By	ST
If not iced, were samples received within one hour of collection? Yes No_N/A Temperature Blank Used Yes No_If not, temperature taken from cooler or both Multi Cooler shipment: ID of samples in coolers that exceed 6°C Custody Seals on Bottles Present Yes No_ Containers Intact Yes No_ Proper Containers for Requested Analysis Yes No_ Correct Preservation Used for All Samples Yes No_ Adequate Sample for Analysis Requested Yes No_ Volatile Vials Headspace Greater than 6mm in Diameter Yes No_ Chain of Custody Form Included Yes No_ Chain of Custody Form Property Relinquished Yes No_ Field Sheets/Special Instructions Included Yes No_ Samples Missing on COC or From Cooler Yes No_ Samples Received Within Holding Time Yes No_ Samples Notified of Rush/Short Holding Times Yes No_ Note: Samples that do not meet acceptance criteria Yes No_ Note: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log. Client Contacted Contacted By Date/Time	Cooler ID Ice Present Te Yes/No # 700 <u>J</u>	mperature Thermometer 1.5° 7%	er ID Cus	tody Sealed Cu (es/No ND	stody Seal Intac Yes/No
Custody Seals on Bottles Present Yes No Xes No Containers Intact Yes No Yes No Proper Containers for Requested Analysis Yes No Yes No Correct Preservation Used for All Samples Yes No Yes No Adequate Sample for Analysis Requested Yes No Yes No Volatile Vials Headspace Greater than 6mm in Diameter Yes No N/A Yes Chain of Custody Form Included Yes No Yes No Chain of Custody Form Complete Yes No No Yes No Field Sheets/Special Instructions Included Yes No N/A Yes No Samples Missing on COC or From Cooler Yes No No Yes No Samples Received Within Holding Time Yes No N/A Yes No No Does work order meet Micro Methods sample acceptance criteria Yes No No No No Note: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log. Client Contacted Contacted By	If not iced, were samples recei Temperature Blank Used Ye Multi Cooler shipment: ID of	ived within one hour of c esNo If not, t samples in coolers that e	ollection? emperature xceed 6°C_	Yes <u>No</u> N/ taken from cooler	A/or bottle
Containers Intact Containers Intact Proper Containers for Requested Analysis Correct Preservation Used for All Samples Adequate Sample for Analysis Requested Volatile Vials Headspace Greater than 6mm in Diameter Yes No Chain of Custody Form Included Chain of Custody Form Complete Chain of Custody Form Properly Relinquished Field Sheets/Special Instructions Included Samples Missing on COC or From Cooler Samples Received Within Holding Time Dept. Manager Notified of Rush/Short Holding Times Dept. Manager Notified of Rush/Short Holding Times Note: Samples that do not meet acceptance criteria Yes No Note: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log. Client Contacted Contacted Contacted By Date/Time	Custody Seals on Bottles Pres	ent Ves	No	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Correct Preservation Used for All Samples Yes \checkmark No Adequate Sample for Analysis Requested Yes \checkmark No Volatile Vials Headspace Greater than 6mm in Diameter Yes No No Chain of Custody Form Included Yes \checkmark No Chain of Custody Form Complete Yes \checkmark No Chain of Custody Form Properly Relinquished Yes \checkmark No Field Sheets/Special Instructions Included Yes $_$ No Samples Missing on COC or From Cooler Yes $_$ No Samples Received Within Holding Time Yes \checkmark No Dept. Manager Notified of Rush/Short Holding Times Yes $_$ No Does work order meet Micro Methods sample acceptance criteria Yes \checkmark No Note: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log. Client Contacted Contacted By Date/Time	Containers Intact Proper Containers for Reques	sted Analysis Yes			
Volatile Vials Headspace Greater than 6mm in Diameter YesNoN/A \checkmark Chain of Custody Form Included Yes $\checkmark No$ Chain of Custody Form Complete Yes $\checkmark No$ Chain of Custody Form Properly Relinquished Yes $\checkmark No$ Field Sheets/Special Instructions Included Yes $\checkmark No$ Samples Missing on COC or From Cooler Yes $_ No$ Sample Container Labels Match COC Yes $_ No$ Samples Received Within Holding Time Yes $_ No$ Dept. Manager Notified of Rush/Short Holding Times Yes $_ No$ Note: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log. No Client Contacted Contacted By Date/Time	Correct Preservation Used for Adequate Sample for Analysis	r All Samples Yes s Requested Yes	Х _{№_} Х№_		
Chain of Custody Form Included Yes ∠No	Volatile Vials Headspace Grea	ater than 6mm in Diamet	er Yes	No N/A 🗡	
Samples Received Within Holding Time Yes Yes NoNoN/A YesNoN/A YesNoN/A YesNoN/A YesNoNote: Samples that do not meet acceptance criteria must be documented in the Sample Reject Log.	Chain of Custody Form Inclu Chain of Custody Form Comp Chain of Custody Form Prope Field Sheets/Special Instructic Samples Missing on COC or I Sample Container Labels Mat	dedYespleteYeserly RelinquishedYesons IncludedYesFrom CoolerYestch COCYes	XN0 XN0 N0 N0 N0 XN0 XN0	n/aX	
Does work order meet Micro Methods sample acceptance criteria Yes X No	Samples Received Within Hol Dept. Manager Notified of Ru	ding Time sh/Short Holding Times	Yes <u>X</u> No Yes <u>N</u> o	∑	
Client Contacted By Date/Time	Does work order meet Micro Note: Samples that do not me Log.	Methods sample acceptar eet acceptance criteria m	nce criteria 1st be docu	Yes X No mented in the Sau	nple Rejection
	Client Contacted	Contacted By	Date/	Time	-
Comments: (Data will be qualified)	Chent Instructions: Cancel W Proceed Comments:	work Order with Work Order	(Data will	be qualified)	
				······	

Controlled Document



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

July 30, 2014

Jake White

Work Order #: 1407404

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 07/21/14 16:26. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566		Proje Project Numb Project Manag	et: Multiple Contro er: [none] er: Jake White	Reported: 07/30/14 10:35			
		ANALYTICAL RE	PORT FOR SAM	MPLES			
	Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received	
	MZ-C	1407404-01	Water	07/18/14 15:59	Jake White	07/21/14 16:26	
	MZ-UC	1407404-02	Water	07/18/14 15:57	Jake White	07/21/14 16:26	

Date/Time Received: 7/21/2014	4:26:00PM		Shipped by: Client	Delivery	
Sample Receipt Conditions					
FS-UC	1407404-08	Water	07/18/14 16:06	Jake White	07/21/14 16:26
FS-C	1407404-07	Water	07/18/14 16:09	Jake White	07/21/14 16:26
CH-U	1407404-06	Water	07/18/14 15:38	Jake White	07/21/14 16:26
CH-C	1407404-05	Water	07/18/14 15:43	Jake White	07/21/14 16:26
FM-C	1407404-04	Water	07/18/14 16:16	Jake White	07/21/14 16:26
FM-UC	1407404-03	Water	07/18/14 16:12	Jake White	07/21/14 16:26
MZ-UC	1407404-02	Water	07/18/14 15:57	Jake White	07/21/14 16:26

Date/Time Received: 7/21/2014 4:26:00PM

Received by: Sarah E. Tomek

Date/Time Logged: 7/22/2014 8:20:00AM

Cooler ID: #700 **Custody Seals**

Γ

No Containers Intact Yes COC/Labels Agree Yes Labels Complete No COC Complete Yes

Submitted by: Justin Bates
Logged by: Sarah E. Tomek
Receipt Temperature: 0.0 °C
Received on Ice
No Ice, Short Trip

Obvious Contamination

Rush to meet HT

Yes

No

No

No



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 07/30/14 10:35

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified: None



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Reported: 07/30/14 10:35					
				MZ-	с					
			14074	04-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	56.0 Methods	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Copper	0.140	0.010	mg/L	1	4G22010	KRL	07/22/14	07/28/14	EPA 200.7	
Zinc	0.952	0.020	"	"	"	KRL	10:00 "	14:49 "	"	



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Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake White	ontrols e			Repo 07/30/14	rted: 4 10:35
				MZ-U	JC					
			14074	04-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	198	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Metals by EPA 200 Series	methods									
Copper	0.224	0.010	mg/L	1	4G22010) KRL	07/22/14 10:00	07/28/14 14:53	EPA 200.7	
Zinc	2.02	0.020	"	"		KRL	"		"	



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Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple Co [none] Jake White	ontrols e		Reported: 07/30/14 10:35							
				FM-U	JC										
			14074	04-03	(Water)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes					
Classical Chemistry Para	meters														
Total Suspended Solids	28.0	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D						
Metals by EPA 200 Series	Methods														
Copper	0.037	0.010	mg/L	1	4G22010	KRL	07/22/14 10:00	07/28/14 14:58	EPA 200.7						
Zinc	0.270	0.020	"	"	"	KRL									



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Prc	Pro oject Nur oject Man	oject: nber: ager:	Multiple Co [none] Jake White	ontrols			Repo 07/30/14	rted: 4 10:35
				FM-	с					
			14074	04-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	129	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	0.047	0.010	mg/L	1	4G22010	KRL	07/22/14 10:00	07/28/14 15:02	EPA 200.7	
Zinc	0.302	0.020	"			KRL			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Multiple Co [none] Jake White	Reported: 07/30/14 10:3				
				CH-	с					
			14074	04-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	168 Mathada	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Metals by EPA 200 Series										
Copper	0.113	0.010	mg/L "	1	4G22010	KRL	07/22/14 10:00	07/28/14 15:06	EPA 200.7	
Zinc	6.05	0.020	"	"	"	KRL			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Reported: 07/30/14 10:35					
				CH-	U					
			14074	04-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	274 Mothoda	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Nietais by EFA 200 Series		0.010		1			07/00/11	07/00/44		
Copper	0.245	0.010	mg/L	1	4G22010	NRL	07/22/14 10:00	07/28/14 15:10	EPA 200.7	
Zinc	10.2	0.020	"	"	"	KRL			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pr oject Nur ject Man	oject: nber: ager:	Reported: 07/30/14 10:3:					
				FS-	C					
			14074	04-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	175 Mothods	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
Common		0.010	ma/l	1	4000040	KDI	07/00/44	07/00/44		
Copper	0.244	0.010	mg/L	I	4G22010	NRL	07/22/14 10:00	07/28/14 15:14	EPA 200.7	
Zinc	1.11	0.020	"		"	KRL			"	



rvices, Inc.	Pr Pro	Pro oject Nur iject Man	oject: nber: ager:	Multiple Co [none] Jake White	ontrols e			Repo 07/30/1	rted: 4 10:35
			FS-U	IC					
		14074	04-08	(Water)					
Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
eters									
147	1.0	mg/L	1	4G23004	DLW	07/22/14 11:20	07/23/14 08:39	SM 2540 D	
lethous			<u> </u>						
0.095	0.010	mg/L "	1	4G22010	KRL	07/22/14 10:00	07/28/14 15:18	EPA 200.7	
	Result eters 147 lethods 0.095	rvices, Inc. Pro Pro Result MRL eters 147 1.0 lethods 0.095 0.010	rvices, Inc. Project Nur Project Man 14074 Result MRL Units eters 147 1.0 mg/L lethods 0.095 0.010 mg/L	rvices, Inc. Project: Project Number: Project Manager: FS-U 1407404-08 Result MRL Units Dil eters 147 1.0 mg/L 1 Iethods 0.095 0.010 mg/L 1	rvices, Inc. Project: Multiple C Project Number: [none] Project Manager: Jake White FS-UC 1407404-08 (Water) Result MRL Units Dil Batch eters 147 1.0 mg/L 1 4G23004 lethods 0.095 0.010 mg/L 1 4G22010	rvices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FS-UC 1407404-08 (Water) Result MRL Units Dil Batch Analyst eters 147 1.0 mg/L 1 4G23004 DLW Iethods 0.095 0.010 mg/L 1 4G22010 KRL	rvices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FS-UC 1407404-08 (Water) Result MRL Units Dil Batch Analyst Prepared eters 147 1.0 mg/L 1 4G23004 DLW 07/22/14 11:20 Prepared 0.095 0.010 mg/L 1 4G22010 KRL 07/22/14 10:00	rvices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FS-UC 1407404-08 (Water) Result MRL Units Dil Batch Analyst Prepared Analyzed eters 147 1.0 mg/L 1 4G23004 DLW 07/22/14 11:20 07/23/14 08:39 147 0.010 mg/L 1 4G22010 KRL 07/22/14 15:18 0.095 0.010 mg/L 1 4G22010 KRL 07/22/14 15:18	rvices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FS-UC 1407404-08 (Water) Result MRL Units Dil Batch Analyst Prepared Analyzed Method eters 147 1.0 mg/L 1 4G23004 DLW 07/22/14 11:20 07/23/14 SM 2540 D 00:39 SM 2540 D 15:18 EPA 200.7 10:00 15:18



Environmental Compliance Services, P O Box 906 Ocean Springs MS, 39566	Inc. F	Pro Project Nur Project Man	oject: Mu nber: [no ager: Ja	ultiple Con one] ke White	itrols				Report 07/30/14	red: 10:35
Classical Chemistry Parameters - Quality Control										
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4G23004 - Default Prep Ge	enChem									
Blank (4G23004-BLK1)					Prepared:	07/22/14	Analyzed	: 07/23/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4G23004-BS1)					Prepared:	07/22/14	Analyzed	: 07/23/14		
Total Suspended Solids	84.0		mg/L	100		84.0	75-125			
LCS Dup (4G23004-BSD1)					Prepared:	07/22/14	Analyzed	: 07/23/14		
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	1.20	25	
Duplicate (4G23004-DUP1)	So	urce: 14074	104-01		Prepared:	07/22/14	Analyzed	: 07/23/14		
Total Suspended Solids	57.0	1.0	mg/L		56.0			1.77	5	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 07/30/14 10:35

Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4G22010 - EPA 200.2										
Blank (4G22010-BLK1)					Prepared:	07/22/14	Analyzed:	07/28/14		
Copper	ND	0.010	mg/L							
Zinc	ND	0.020	"							
LCS (4G22010-BS1)					Prepared:	07/22/14	Analyzed:	07/28/14		
Copper	0.209	0.010	mg/L	0.200		105	85-115			
Zinc	0.187	0.020	"	0.200		93.5	85-115			
LCS Dup (4G22010-BSD1)				Prepared: 07/22/14 Analyzed: 07/28/14						
Copper	0.208	0.010	mg/L	0.200		104	85-115	0.651	20	
Zinc	0.187	0.020	"	0.200		93.3	85-115	0.225	20	
Matrix Spike (4G22010-MS1)	Sou	rce: 14073	397-01		Prepared:	07/22/14	Analyzed:	07/28/14		
Copper	0.193	0.010	mg/L	0.200	ND	96.6	70-130			
Zinc	0.181	0.020	"	0.200	ND	90.7	70-130			
Matrix Spike Dup (4G22010-MSD1)	Sou	rce: 14073	397-01		Prepared:	07/22/14	Analyzed:	07/28/14		
Copper	0.197	0.010	mg/L	0.200	ND	98.3	70-130	1.70	20	
Zinc	0.181	0.020		0.200	ND	90.5	70-130	0.164	20	



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	07/30/14 10:35

Certified Analyses Included in this Report

Analyte	Certification Code	
EPA 200.7 in Water		
Aluminum	C01,C02	
Antimony	C01,C02	
Arsenic	C01,C02	
Barium	C01,C02,C04	
Beryllium	C01,C02,C04	
Boron	C01,C02	
Cadmium	C01,C02,C04	
Calcium	C01,C02,C04	
Chromium	C01,C02,C04	
Cobalt	C01,C02	
Copper	C01,C02,C04	
Iron	C01,C02,C04	
Lead	C01,C02,C04	
Magnesium	C01,C02	
Manganese	C01,C02	
Molybdenum	C01,C02	
Nickel	C01,C02,C04	
Potassium	C01,C02	
Selenium	C01,C02,C04	
Silver	C01,C02	
Sodium	C01,C02,C04	
Strontium	C01,C02	
Thallium	C01,C02	
Tin	C01,C02	
Titanium	C01,C02,C04	
Vanadium	C01,C02	
Zinc	C01,C02	
Phosphorus	C01,C02	
SM 2540 D in Water		
Total Suspended Solids	C01,C02	



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	07/30/14 10:35

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2015
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2015
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

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	Report Definitions
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit

- %REC Percentage Recovery of known concentration added to matrix
- Batch Group of samples prepared for analysis not to exceed 20 samples.
- Matrix Material containing analyte/s of interest
- Analyte added to sample to determine extraction efficiency of method. Surrogate

MICRO-METHODS	Chain of Custody Record	
6500 Sunplex Drive, Ocean Springs, MS 39564		WO# 11/17/1/1/1
(228) 8/5-6420 FAX (228) 8/5-6425		
www.micromethodslab.com		
Company Name: ECS	Project Manager: JAKE WHITE	Turn Around Time & Reporting
Address: P.D. BOX 356	Purchase Order #:	Our normal turn around time is /-10 working days
City: SHERMAN State: MS ZIP: 38869	Email Address: Juhite @ envirocompinet	Normal *All rush orderPhone
Phone: (228) 217-6254	Sampler Name Printed: JAKE WHITE	
Fax:	Sampler Name Signed: January OWAAS	
	part for the second	Note Special Instructions/Comments
Project Name: Multiple Controls	iners code (u)	Field pH Collect Time ReadTime
Project #:	Conta mple C S tals (Field D.OCollect Time Read Time
Sample Identification Sampling Da		QC Level: Level 1 Level 2 Level 3
MZC TIMH		
HINE NEW		
CHU TINIH P	5% Z X X I I I I I	Matrix Code: W= Water, S= Soil, O= Oil, L= Liquid, SL= Sludge
		Sample Code: G= Grab C= Composite
FSU TIME I		Lab Use Only
L AV C A	Printed Manne Company Date Time	Ŷ
The families of the second		
Relinquished by	102/1 1000 ECS JUNING	Provide Land Contract of Street
Received by	and the wind the second	Want rinding - 100 had
Relinquished by		
Received by		and a final state of the state

Page 16 of 17

DCN# F316 Rev.#1

Date/Time Received 🗋	7 <u>/21/14/@//626</u> Unpacked/	Checked By/
Cooler ID Ice Present	Temperature Thermometer ID Cu	stody Sealed Custody Seal Intact
Yes/No	$\begin{array}{c} 1 \text{ cmperature r memormeter no cu} \\ 1 \text{ cmperature r memory no cu} \\ 1 cmperatu$	Yes/No Yes/No
#100 UC	0.0% 173	no nja
/		· · · · · · · · · · · · · · · · · · ·
	<u> </u>	
If not iced, were samples r	eceived within one hour of collection?	Yes <u>No N/A</u>
l'emperature Blank Used Multi Cooler shipment: II	$1 \text{ es } \underline{/ } \overline{/ } \text{ No } \underline{/ } 11 \text{ not, temperature}$ O of samples in coolers that exceed 6°C	colleror bottle
· · · · · ·	-	
Custody Seals on Bottles I	Present Yes No 🗡	/
Containers Intact	$Yes \ge No_{-}$	-
Proper Containers for Re-	quested Analysis Yes X No	
Correct Preservation Use	d for All Samples Yes X_No	_
Adequate Sample for Ana	lysis Requested Yes \angle No	_
Volatile Vials Headspace	Greater than 6mm in Diameter Yes	_NoN/A 🗡
Chain of Custody Form I	ncluded Ves XNo	
Chain of Custody Form C	Complete Yes XNo	
Chain of Custody Form P	roperly Relinquished Yes <u>X</u> No	
Field Sheets/Special Instr Samples Missing on COC	uctions Included Yes No or From Cooler Yes No >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
Sample Container Labels	Match COC Yes No_	
Complex Dessived Within	Holding Time Vec X	No
Dept. Manager Notified o	f Rush/Short Holding Times Yes	NoN/AX
Note: Samples that do not	tero meet acceptance criteria must be do	cumented in the Sample Rejection
Log.	······	• •
Client Contacted	Contacted By Dat	te/Time
Client Instructions: Can	cel Work Order	
Proc	eed with Work Order(Data wi	ill be qualified)
Comments:		

.

Page 17 of 17



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

October 06, 2014

Jake White

Work Order #: 1410055

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls*

Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 10/02/14 15:59. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	10/06/14 12:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
FM-UC	1410055-01	Water	10/02/14 11:07	Jake White	10/02/14 15:59
FM-C	1410055-02	Water	10/02/14 11:12	Jake White	10/02/14 15:59
FS-C	1410055-03	Water	10/02/14 11:24	Jake White	10/02/14 15:59
FS-UC	1410055-04	Water	10/02/14 11:19	Jake White	10/02/14 15:59
CW-U	1410055-05	Water	10/02/14 11:36	Jake White	10/02/14 15:59
CW-C	1410055-06	Water	10/02/14 11:42	Jake White	10/02/14 15:59
CH-U	1410055-07	Water	10/02/14 11:59	Jake White	10/02/14 15:59
CH-C	1410055-08	Water	10/02/14 12:07	Jake White	10/02/14 15:59
UF-U	1410055-09	Water	10/02/14 12:21	Justin Bates	10/02/14 15:59
UF-C	1410055-10	Water	10/02/14 12:28	Justin Bates	10/02/14 15:59
Sample Receipt Conditions					
Date/Time Received: 10/2/2014 3:	59:00PM		Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Jake	White	
Date/Time Logged: 10/3/2014 8	03.00AM		Longed by: Sara	h F. Tomek	

Cooler ID: #383		Receipt Temperature: 2.1 °C	
Custody Seals	No	Received on Ice	Yes
Containers Intact	Yes	No Ice, Short Trip	No
COC/Labels Agree	Yes	Obvious Contamination	No
Labels Complete	No	Rush to meet HT	No
COC Complete	Yes		



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 10/06/14 12:14

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification:

Total Metals-EPA 200.8

QD-10 The analyte concentration is greater than 10 times the spike concentration. The Matrix Spike result reported as Duplicate. The QC batch was accepted based on LCS/LCSD and Duplicate recoveries within the acceptance limits.

Zinc

4J03016-DUP1



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man		Reported: 10/06/14 12:14					
				FM-U	JC					
			14100	55-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	608	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Metals by EPA 200 Series	s wiethoas									
Copper	0.614	0.010	mg/L	10	4J03016	SCH	10/03/14 10:00	10/03/14 14:12	EPA 200.8	
Zinc	5.35	0.020	"		"	SCH			"	



vices, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:		Repo 10/06/14	rted: 4 12:14			
			FM-0	C					
		14100	55-02	(Water)					
Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
ters									
702	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
0.084	0.010	ma/l	10	4 102040	SCH	10/02/14	10/02/14	EDA 200 9	
0.304	0.010	mg/L	10	4JU3016	0011	10:00	14:14	EFA 200.0	
	rices, Inc. Result ters 702 ethods 0.984	vices, Inc. Pro Pro Result MRL ters 702 1.0 ethods 0.984 0.010	vices, Inc. Project Nur Project Nur Project Man 14100 Result MRL Units ters 702 1.0 mg/L ethods 0.984 0.010 mg/L	vices, Inc. Project: Project Number: Project Manager: FM-4 1410055-02 Result MRL Units Dil ters 702 1.0 mg/L 1 ethods 0.984 0.010 mg/L 10	vices, Inc. Project: Multiple Co Project Number: [none] Project Manager: Jake White FM-C 1410055-02 (Water) Result MRL Units Dil Batch ters 702 1.0 mg/L 1 4J03013 ethods 0.984 0.010 mg/L 10 4J03016	vices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1410055-02 (Water) Result MRL Units Dil Batch Analyst ters 702 1.0 mg/L 1 4J03013 DLW ethods 0.984 0.010 mg/L 10 4J03016 SCH	vices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1410055-02 (Water) 1410055-02 (Water) 1410055-02 (Water) 1410055-02 (Water) 100055-02 (Water)	vices, Inc. Project: Multiple Controls Project Number: [none] Project Manager: Jake White FM-C 1410055-02 (Water) Terset MRL Units Dil Batch Analyst Prepared Date Time Time Analyzed ters 702 1.0 mg/L 1 4J03013 DLW 10/03/14 10/03/14 10:45 10/03/14	vices, Inc. Project: Number: [none] Repo Project Number: [none] Repo Project Manager: Jake White 10/06/14 FM-C 1410055-02 (Water) Date Time Time Analyzed Method Result MRL Units Dil Batch Analyst Prepared Analyzed Method 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 10/03/14 14:14 OB44 0.984 0.010 mg/L 10 4J03016 SCH 10/03/14 10/03/14 10/03/14 14:14 EPA 200.8



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man		Repo 10/06/14	rted: 4 12:14				
				FS-0	C					
			14100	55-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	1360	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	1.17	0.010	mg/L	10	4J03016	SCH	10/03/14 10:00	10/03/14 14:17	EPA 200.8	
Zinc	8.91	0.020	"		"	SCH				



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	Repo 10/06/14	rted: 4 12:14					
				FS-U	C					
			14100	55-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	394 Mothodo	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Metals by EFA 200 Series		0.040				0.011				
Copper	0.609	0.010	mg/L	10	4J03016	SCH	10/03/14 10:00	10/03/14 14:20	EPA 200.8	
Zinc	5.37	0.020	"	"	"	SCH			"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:		Repo 10/06/14	rted: 4 12:14			
				CW-	U					
			14100	55-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	1140	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Metals by EPA 200 Series	s Methods									
Copper	1.01	0.010	mg/L	10	4J03016	SCH	10/03/14 10:00	10/03/14 14:23	EPA 200.8	
Zinc	7.76	0.020	"	"	"	SCH			"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro	Pr oject Nui ject Man	oject: nber: ager: ,	Multiple C [none] Jake Whit	ontrols e			Reported: 10/06/14 12:14		
				CW-	С						
			14100	55-06	(Water)						
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Para	meters										
Total Suspended Solids Motals by EPA 200 Sorios	690 Methods	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D		
Connor	3 22	0.010	ma/l	10	4 100040	SCH	10/02/14	10/02/14	EDA 200 9		
Copper	3.22	0.010	iiig/L	10	4J03016	0011	10:00	14:29	EFA 200.0		
Zinc	13.9	0.200	"	100	"	SCH	"	10/03/14 15:29	"		



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pro Pro	Pro oject Nur ject Man		Repo 10/06/1	rted: 4 12:14				
				CH-	U					
			14100	55-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Paran	neters									
Total Suspended Solids	642 Methods	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Connor	0 512	0.010	ma/l	10	4 102016	SCH	10/03/14	10/03/14	EPA 200 8	
Zinc	4 09	0.020	"	"	400010	SCH	10:00	14:31	LI A 200.0	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e	Reported: 10/06/14 12:14			
				CH-	С					
			14100	55-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	334 Mothode	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Nietais by EFA 200 Series	Wiethous	0.001				0011				
Copper	0.315	0.001	mg/L	1	4J03016	SCH	10/03/14 10:00	10/03/14 15:21	EPA 200.8	
Zinc	4.00	0.020	"	10		SCH		10/03/14 14:34	"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man		Reported: 10/06/14 12:14					
				UF-	U					
			14100	55-09	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	722 Mothods	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Nietais by LFA 200 Series	0.674	0.010		10	4100040	80U	10/00/11	10/00/11/	FDA 000 0	
Copper Zinc	5.28	0.010	mg/L "	10 "	4J03016 "	SCH	10/03/14 10:00 "	10/03/14 14:48 "	EPA 200.8	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro	Pr oject Nur ject Man	oject: nber: ager: 、	Multiple C [none] Jake White	ontrols e		Reported: 10/06/14 12:14		
				UF-C	2					
			14100	55-10	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	1440 Methods	1.0	mg/L	1	4J03013	DLW	10/03/14 10:45	10/03/14 10:45	SM 2540 D	
Copper	1.29	0.010	mg/L	10	4J03016	SCH	10/03/14	10/03/14	EPA 200.8	
Zinc	11.2	0.200		100	"	SCH	10:00 "	14:51 10/03/14 15:31	"	



Environmental Compliance Service P O Box 906 Ocean Springs MS, 39566	is, Inc. F	Pro Project Nur Project Man	oject: Mu nber: [no ager: Ja	ultiple Con one] ke White	trols				Report 10/06/14	ed: 12:14
(Classical Ch	emistry	Param	eters -	Qualit	y Cont	trol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J03013 - Default Prep 0	GenChem									
Blank (4J03013-BLK1)					Pr	epared &	Analyzed:	: 10/03/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4J03013-BS1)					Pr	epared &	Analyzed:	10/03/14		
Total Suspended Solids	82.0		mg/L	100		82.0	75-125			
LCS Dup (4J03013-BSD1)					Pr	epared &	Analyzed:	10/03/14		
Total Suspended Solids	87.0		mg/L	100		87.0	75-125	5.92	25	
Duplicate (4J03013-DUP1)	Sou	urce: 14100	55-10		Pr	epared &	Analyzed:	: 10/03/14		
Total Suspended Solids	1420	1.0	mg/L		1440			1.40	5	



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	F	Project Nur Project Man Project Man	oject: Mu mber: [nc ager: Jal	ultiple Con one] ke White	trols				Report 10/06/14	ed: 12:14
Metals	by EPA	200 Se	ries M	ethods	- Quali	ity Col	ntrol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J03016 - EPA 200.2										
Blank (4J03016-BLK1)					Pr	epared &	Analyzed	: 10/03/14		
Copper	ND	0.001	mg/L							
Zinc	ND	0.002	"							
LCS (4J03016-BS1)					Pr	epared &	Analyzed	: 10/03/14		
Copper	0.218	0.001	mg/L	0.200		109	85-115			
Zinc	0.197	0.002	"	0.200		98.7	85-115			
LCS Dup (4J03016-BSD1)					Pr	epared &	Analyzed	: 10/03/14		
Copper	0.202	0.001	mg/L	0.200		101	85-115	7.93	20	
Zinc	0.187	0.002	"	0.200		93.4	85-115	5.53	20	
Duplicate (4J03016-DUP1)	So	urce: 1410	055-08		Pr	epared &	Analyzed	: 10/03/14		
Zinc	4.28	0.020	mg/L		4.00			6.86	20	QD-10
Matrix Spike (4J03016-MS1)	So	urce: 1410	055-08		Pr	epared &	Analyzed	: 10/03/14		
Copper	0.497	0.001	mg/L	0.200	0.315	91.4	70-130			
Matrix Spike (4J03016-MS2)	So	urce: 1410	061-01		Pr	epared &	Analyzed	: 10/03/14		
Copper	0.210	0.001	mg/L	0.200	0.003	104	70-130			
Zinc	0.213	0.002	"	0.200	0.018	97.8	70-130			
Matrix Spike Dup (4J03016-MSD1)	So	urce: 1410	055-08		Pr	epared &	Analyzed	: 10/03/14		

лр (4 1) p Copper 0.483 0.001 0.200 mg/L 0.315 84.2 70-130 2.95 20 Matrix Spike Dup (4J03016-MSD2) Source: 1410061-01 Prepared & Analyzed: 10/03/14 Copper 0.204 0.001 mg/L 0.200 0.003 101 70-130 2.95 20 0.002 Zinc 0.209 ... 0.200 0.018 95.5 70-130 2.18 20



Environmental Compliance Services, Inc.	Project:	Multiple Controls	
P O Box 906	Project Number:	[none]	Reported:
Ocean Springs MS, 39566	Project Manager:	Jake White	10/06/14 12:14

Certified Analyses Included in this Report

Analyte	Certification Code
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	10/06/14 12:14

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2015
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2015
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

	Report Definitions
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.

- MS Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
- MSD Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.

MRL Minimum Reporting Limit

- %REC Percentage Recovery of known concentration added to matrix
- Batch Group of samples prepared for analysis not to exceed 20 samples.
- Matrix Material containing analyte/s of interest
- Surrogate Analyte added to sample to determine extraction efficiency of method.

MICRO-METHODS	Chain of Custody Record	
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		WO# 1410055
www.micromethodslab.com		
Company Name: FCS, IAC.	Project Manager: JAKE WHITE	Turn Around Time & Reporting
Address: P.O. Box 356	Purchase Order #:	Our normal turn around time is <i>i</i> -itu working days
City: SHERMAN State: Zip: 38:	869 Email Address: Julite@ enviroumy, net	Normal *All rush orderPhone
Phone: (778) 217 - 6254	Sampler Name Printed: Jake White	2nd Day* prior approvedFax
Fax:	Sampler Name Signed:	
Project Name:		Note Special Instructions/ comments
Project # /VU/ (7/ /// ()/ // ///	ontaine de Coc	Field D.OCollect Time Read Time
Sample Identification	Sampling Date/Time # of C Samp	Field TempCollect Time Read Time
Fmu	10/2/14 1107Am 2 X X	
FmC	10 2118 11 2 X X	
	1130 mm 2 XX	
CWC	HHZAM 2 XX	Matrix Code: W= Water, S= Soil, O= Oll, L= Liquid, SL= Sludge
CHU	11:59 am 2 XX	Sample Code: G= Grab C= Composite
CHC		Lab Use Ciny Notes
UFC	V 12 29 Pm ~ X X	
Signature	Printed Name Company Date Time	
Relinquished by Mangaluko	Take WHITE , EQS , 10/2/14/537	Semple Rord on los Yes 🕅 No 🖂
Received by	- SUMM TOMIK MM WIPH 1559	
Relinquished by		
Received by		
Relinquished by		by Cr

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1 s i

DCN# F316 Rev.#1
		Revision: 4
Client <u>ECS</u> wo <u>/4/1/755</u> Date/Time Received <u>/0/2/14(a) 1559</u>	Shipped By Unpacked/0	Checked By ST
Cooler ID Ice Present Temperature Thern Yes/No #282 /111 2/°/	nometer ID Cu	stody Sealed Custody Seal Inta Yes/No Yes/No バハ ハノ
ys and		10 11/00
	a zı , a	
		_
If not iced, were samples received within one ho	ur of collection?	Yes <u>No N/A</u>
Temperature Blank Used Yes <u>X</u> No	If not, temperatur	e taken from cooleror bottle
Multi Cooler shipment: ID of samples in coolers	that exceed 6°C	
	······································	
Custody Seals on Bottles Present	Yes No X	-
Containers Intact	Yes X No	-
Proper Containers for Requested Analysis	Yes 🗡 No	-
Correct Preservation Used for All Samples	Yes 🗸 No	
Adequate Sample for Analysis Requested	Yes 🗙 No	-
	,	-
Volatile Vials Headspace Greater than 6mm in l	Diameter Yes	_NoN/A <u>X</u>
Chain of Custody Form Included	Yes 🗙 No	
Chain of Custody Form Complete	Yes No	-
Chain of Custody Form Properly Relinquished	Yes 🔀 No	
Field Sheets/Special Instructions Included	Yes <u>No</u>	, N/A <u>×</u>
Samples Missing on COC or From Cooler	$\frac{\text{Yes} \text{No} \times \times$	_
Sample Container Ladels Match COC	Yes AINO	_
Samples Received Within Holding Time	Yes X N	٩٥ .
Dept. Manager Notified of Rush/Short Holding	Times Yes	NoN/AX
Does work order meet Micro Methods sample a	cceptance criteri	la Yes /~No
Note: Samples that do not meet acceptance crit	erta must de doc	umenteu in the Sample Rejection
Lvg.		
Client ContactedContacted By	Date	e/Time
Client Instructions: Cancel Work Order		
Proceed with Work Order	(Data wil	l be qualified)
Comments:		· · · · · · · · · · · · · · · · · · ·

Page 19 of 19



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

October 09, 2014

Jake White

Work Order #: 1410071

Purchase Order #:

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls*

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 10/03/14 13:54. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

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Containers Intact

Labels Complete

COC Complete

COC/Labels Agree

Ocean Springs MS, 39566 Project Manager: Jake White 10/09/14 15:13	Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	Project: Multiple Controls Project Number: [none] Project Manager: Jake White	Reported: 10/09/14 15:13
--	---	---	---------------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
FM-UC	1410071-01	Water	10/03/14 08:17	Jake White	10/03/14 13:54
FM-C	1410071-02	Water	10/03/14 08:24	Jake White	10/03/14 13:54
FS-UC	1410071-03	Water	10/03/14 08:36	Jake White	10/03/14 13:54
FS-C	1410071-04	Water	10/03/14 08:41	Jake White	10/03/14 13:54
CW-U	1410071-05	Water	10/03/14 08:55	Jake White	10/03/14 13:54
CW-C	1410071-06	Water	10/03/14 08:59	Jake White	10/03/14 13:54
UF-U	1410071-07	Water	10/03/14 09:08	Jake White	10/03/14 13:54
UF-C	1410071-08	Water	10/03/14 09:14	Jake White	10/03/14 13:54
CH-U	1410071-09	Water	10/03/14 09:27	Jake White	10/03/14 13:54
CH-C	1410071-10	Water	10/03/14 09:33	Jake White	10/03/14 13:54
Sample Receipt Conditions					
Date/Time Received: 10/3/2014 1	:54:00PM		Shipped by: Clier	nt Delivery	
Received by: Sarah E. Tomek			Submitted by: Jake	White	
Date/Time Logged: 10/3/2014 2	2:02:00PM		Logged by: Sara	ah E. Tomek	
Cooler ID: #700		Rece	eipt Temperature: _0	.7 °C	
Custody Seals	No		Received on Ice		Yes

No Ice, Short Trip

Rush to meet HT

Obvious Contamination

Yes

Yes

No

Yes

No

No

No



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 10/09/14 15:13

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification:

Total Metals-EPA 200.8

QD-10 The analyte concentration is greater than 10 times the spike concentration. The Matrix Spike result reported as Duplicate. The QC batch was accepted based on LCS/LCSD and Duplicate recoveries within the acceptance limits.

Zinc

4J06002-DUP1



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	controls e			Repo 10/09/1	rted: 4 15:13
				FM-U	JC					
			14100	71-01	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	1300 Mathada	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	wethoas									
Copper	0.414	0.001	mg/L	1	4J06002	SCH	10/06/14 10:00	10/08/14 12:53	EPA 200.8	
Zinc	3.45	0.020	"	10	"	SCH	"	10/08/14 13:53	"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e	Reported: 10/09/14 15:13			
				FM-0	C					
			14100	71-02	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	neters									
Total Suspended Solids	1370	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper Zinc	0.512 5.07	0.001 0.020	mg/L "	1 10	4J06002 "	SCH SCH	10/06/14 10:00 "	10/08/14 13:01 10/08/14	EPA 200.8 "	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e			Repo 10/09/1	rted: 4 15:13
				FS-U	C					
			14100	71-03	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	730	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper	0.306	0.001	mg/L	1	4J06002	SCH	10/06/14 10:00	10/08/14 13:04	EPA 200.8	
Zinc	2.48	0.020	"	10	"	SCH	"	10/08/14 14:40	"	



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	rvices, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit			Rеро 10/09/1-	rted: 4 15:13	
				FS-0	C					
			14100	71-04	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Param	eters									
Total Suspended Solids	1170	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
wetais by EPA 200 Series w	lethous									
Copper Zinc	0.531 4.71	0.001 0.020	mg/L "	1 10	4J06002 "	SCH SCH	10/06/14 10:00 "	10/08/14 13:06 10/08/14	EPA 200.8 "	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e	Reported: 10/09/14 15:13			
				CW-	U					
			14100	71-05	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids	900	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper	0.419	0.001	mg/L	1	4J06002	SCH	10/06/14 10:00	10/08/14 13:09	EPA 200.8	
Zinc	3.25	0.020		10	"	SCH	"	10/08/14 14:12		



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake White	ontrols e	Reported: 10/09/14 15:13			
				CW-	С					
			14100	71-06	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Param	eters									
Total Suspended Solids	1000	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series N	letnoas									
Copper Zinc	0.770 4.75	0.001 0.020	mg/L "	1 10	4J06002 "	SCH SCH	10/06/14 10:00 "	10/08/14 13:12 10/08/14	EPA 200.8 "	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e			Repo 10/09/14	rted: 4 15:13
				UF-I	U					
			14100	71-07	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	910	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper	0.406	0.001	mg/L	1	4J06002	SCH	10/06/14 10:00	10/08/14 13:14	EPA 200.8	
Zinc	3.52	0.020		10	"	SCH	"	10/08/14 14:17	"	



Environmental Compliance S P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pro	Pro oject Nur ject Man	Reported: 10/09/14 15:13						
				UF-0	C					
			14100	71-08	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Parar	neters									
Total Suspended Solids	2180	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Metals by EPA 200 Series	Methods									
Copper	1.18	0.010	mg/L	10	4J06002	SCH	10/06/14 10:00	10/08/14 14:20	EPA 200.8	
Zinc	9.49	0.040	"	20	"	SCH		10/08/14 14:42	"	



Environmental Compliance P O Box 906 Ocean Springs MS, 39566	Services, Inc.	Pr Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e	Reported: 10/09/14 15:13			
				CH-	U					
			14100	71-09	(Water)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Classical Chemistry Para	meters									
Total Suspended Solids Metals by EPA 200 Series	1570 Methods	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D	
Copper	0.744	0.001	mg/L	1	4J06002	SCH	10/06/14	10/08/14	EPA 200.8	
Zinc	5.18	0.020	"	10	"	SCH	10:00 "	13:20 10/08/14 14:23	"	



Environmental Compliance Se P O Box 906 Ocean Springs MS, 39566	ervices, Inc.	Pro Pro	Pro oject Nur ject Man	oject: nber: ager:	Multiple C [none] Jake Whit	ontrols e			Repo 10/09/14	rted: 4 15:13	
				CH-0	С						
1410071-10 (Water)											
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes	
Classical Chemistry Param	eters										
Total Suspended Solids	1270	1.0	mg/L	1	4J06017	DLW	10/06/14 11:10	10/06/14 11:10	SM 2540 D		
metals by EPA 200 Series h	nethous										
Copper Zinc	1.16 7.98	0.010 0.040	mg/L "	10 20	4J06002 "	SCH SCH	10/06/14 10:00 "	10/08/14 14:26 10/08/14	EPA 200.8 "		



Environmental Compliance Services P O Box 906 Ocean Springs MS, 39566	, Inc. F	Project Nur Project Man	oject: Mi nber: [no ager: Ja	ultiple Con one] ke White	trols				Report 10/09/14	ed: 15:13
Cl	assical Ch	emistry	Paran	neters -	Qualit	y Cont	trol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J06017 - Default Prep Ge	enChem									
Blank (4J06017-BLK1)					Pr	epared &	Analyzed	: 10/06/14		
Total Suspended Solids	ND	1.0	mg/L							
LCS (4J06017-BS1)					Pr	epared &	Analyzed	: 10/06/14		
Total Suspended Solids	85.0		mg/L	100		85.0	75-125			
LCS Dup (4J06017-BSD1)					Pr	epared &	Analyzed	: 10/06/14		
Total Suspended Solids	83.0		mg/L	100		83.0	75-125	2.38	25	
Duplicate (4J06017-DUP1)	Sou	ırce: 14100	071-01		Pr	epared &	Analyzed	: 10/06/14		
Total Suspended Solids	1310	1.0	mg/L		1300			0.919	5	



Environmental Compliance Services, In P O Box 906 Ocean Springs MS, 39566	c. F	Pr Project Nur Project Man	oject: Mu mber: [no ager: Ja	ultiple Cor one] ke White	ntrols				Report 10/09/14	ed: 15:13
Metal	s by EPA	200 Se	ries M	ethods	- Qual	ity Co	ntrol			
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J06002 - EPA 200.2										
Blank (4J06002-BLK1)					Prepared:	10/06/14	Analyzed	: 10/08/14		
Copper	ND	0.001	mg/L							
Zinc	ND	0.002	"							
LCS (4J06002-BS1)					Prepared:	10/06/14	Analyzed	: 10/08/14		
Copper	0.206	0.001	mg/L	0.200		103	85-115			
Zinc	0.186	0.002	"	0.200		92.9	85-115			
LCS Dup (4J06002-BSD1)					Prepared:	10/06/14	Analyzed	: 10/08/14		
Copper	0.208	0.001	mg/L	0.200		104	85-115	1.03	20	
Zinc	0.190	0.002	"	0.200		94.8	85-115	1.98	20	
Duplicate (4J06002-DUP1)	Sou	urce: 1410	071-01		Prepared:	10/06/14	Analyzed	: 10/08/14		
Zinc	3.74	0.020	mg/L		3.45			8.11	20	QD-10
Matrix Spike (4J06002-MS1)	Sou	urce: 1410	071-01		Prepared:	10/06/14	Analyzed	: 10/08/14		
Copper	0.608	0.001	mg/L	0.200	0.414	96.8	70-130			
Matrix Spike Dup (4J06002-MSD1)	Sou	urce: 1410	071-01		Prepared:	10/06/14	Analyzed	: 10/08/14		

Copper	0.602	0.001	mg/L	0.200	0.414	94.0	70-130	0.922	20



Environmental Compliance Services, Inc.	Project: Mu	ultiple Controls	
P O Box 906	Project Number: [no	one]	Reported:
Ocean Springs MS, 39566	Project Manager: Jak	ke White	10/09/14 15:13

Certified Analyses Included in this Report

Analyte	Certification Code
SM 2540 D in Water	
Total Suspended Solids	C01,C02



Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	10/09/14 15:13

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2015
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2015
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

	Report Definitions	
DET	Analyte DETECTED	
ND	Analyte NOT DETECTED at or above the minimum reporting limit	
NR	Not Reported	
RPD	Relative Percent Difference	
ICV	Initial Calibration Verfiication	
CCV	Continuing Calibration Verification Standard	
SSV	Secondary Source Verfication Standard	

- LCS Lab Control Spike Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
- MS Matrix Spike Sample prepared with known concentration of analyte/s of interest analyzed by method.
- MSD Matrix Spike Duplicate Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
- MRL Minimum Reporting Limit
- %REC Percentage Recovery of known concentration added to matrix
- Batch Group of samples prepared for analysis not to exceed 20 samples.
- Matrix Material containing analyte/s of interest
- Surrogate Analyte added to sample to determine extraction efficiency of method.

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www.microsoftworkshuk.nom Turn Actual Time & Reporting. community for the state of the sta	6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423			1410011
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Politis P.D. Build and the procession of	Company Name: ECS, Inc.	Proji	act Manager: JAKE WHITE	Turn Around Time & Reporting
City: State: AV 2012 City: Sumpler Nume Printer: Log AV	Address: P.O. Bur 356	Puro	hase Order #:	Our normal turn around time is /-10 working days
Phone C 228 217 - C 25Y Sampler Name Cut with Sampler Name Cut with Sample	City: Cherman State: MS ZID: 34	r869 Ema	ill Address: J white envirocome. no	Normal *All rush orderPhone
Fac: Sample Name Signed Cut year Cut year Cut year Name Signed Na	Phone: (228) 217 - 6254	Sam	pler Name Printed: Jabe White	2nd Day* prior approvedFax
Project Nume: Multifial Contribution Sample Code Sample Code Sample Code Field pit Collect Time Read Time Sample Identification Sample Code 10/21 // 2.2 2	Fax:	Sam	pler Name Signed Laver of Why	
Project Name: Multiple Control / subject Field pH Collect Time Read Time Sample Identification Sampling DatesTime # of control field Field D.O Collect Time Read Time Sample Identification Sampling DatesTime # of control field Field D.O Collect Time Read Time Field D.O		-	Lington all sale Reconstant	Note Special Instructions/Comments
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FSL Indit f: 2 X Indit f: 2 X Indit f: 1 CWC Indit f: 12 X Indit f: 1 1 1 1 CWC Indit f: 12 X Indit f: 1 1 1 1 CWC Indit f: 12 X Indit f: 1 1 1 1 CWC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 1 UFC Indit f: 12 X Indit f: 1 1 1 UFC Indit f:	Fmc	2 N 8: 24		
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UWC MSIN 0.05 2 X 4 Sample Code: Grad: C - Grad: C	N N N	52:30 HIE		Mattic Date: We Water of or or I - Did I - Liquid of a state
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	Received by			

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Page 18 of 19

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DCN# F316 Rev.#1

Client <u>FCS</u> wo <u>141067</u> Date/Time Received <u>10/3/14(</u>	Shipped By (alignat a
	1354 Unpacked/C	Thecked By
Cooler ID Ice Present Temperature Yes/No #700 YL 0.7°C	THermometer ID Cu	stody Sealed Custody Seal Intac Yes/No Yes/No NA
If not iced, were samples received within (Temperature Blank Used Yes <u>No</u> Multi Cooler shipment: ID of samples in (one hour of collection? If not, temperatur coolers that exceed 6°C	Yes No N/A_X e taken from cooleror bottle
Custody Seals on Bottles Present Containers Intact Proper Containers for Requested Analysi	$\begin{array}{c c} Yes & No \\ Yes & No \\ s & Yes & No \\ \end{array}$	
Correct Preservation Used for All Sample Adequate Sample for Analysis Requested	es Yes $\underline{\times}$ No Yes $\underline{\times}$ No	-
Volatile Vials Headspace Greater than 6n	nm in Diameter Yes	_NoN/A X
Chain of Custody Form Included Chain of Custody Form Complete Chain of Custody Form Properly Relinqu Field Sheets/Special Instructions Included Samples Missing on COC or From Cooler Sample Container Labels Match COC	$\begin{array}{c} Yes \swarrow No _ \\ Yes \bigstar No _ \\ Yes \bigstar No _ \\ No _ \\ Yes \bigstar No _ \\ Yes _ No \cr Yes _ No \cr Yes \large No \cr Yes \cr Yes Yes Yes Yes Yes Yes Yes Yes Yes$	N/A <u>×</u>
Samples Received Within Holding Time Dept. Manager Notified of Rush/Short He	Ves Yes	loN/A_X
Does work order meet Micro Methods san Note: Samples that do not meet acceptan Log.	mple acceptance criteri ce criteria must be doc	a Yes <u>×</u> No umented in the Sample Rejection
Client ContactedContac Client Instructions: Cancel Work Order Proceed with Work	ted By Data Order (Data wil	e/Time l be qualified)
Comments:		• •

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APPENDIX B

TCLP ANALYSIS (SAND and CONTROL TECHNOLOGIES)



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

October 10, 2014

Jake White

Work Order #: 1410057

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls-Sand* Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 10/02/14 15:59. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.

10/02/14 15:59

Sample ID	ANALYTICAL RE	PORT FOR SA Matrix	MPLES Date/Time Sampled	Sampled by	Date/Time
P O Box 906 Ocean Springs MS, 39566	Project Numb Project Manag	er: [none] er: Jake White	Reported: 10/10/14 10:55		
Environmental Compliance Services, Inc.	Proje	ct: Multiple Contr	ols-Sand		

Solid

10/02/14 13:01

Jake White

1410057-01

SND-01

Date/Time Received: 10/2/2014 3:	:59:00PM	Shipped by: Client Delivery				
Received by: Sarah E. Tomek		Submitted by: Jake White				
Date/Time Logged: 10/3/2014 8	3:12:00AM	Logged by: Sarah E. Tomek				
Cooler ID: no cooler		Receipt Temperature:				
Custody Seals	No	Received on Ice	No			
Containers Intact	Yes	No Ice, Short Trip	No			
COC/Labels Agree	Yes	Obvious Contamination	No			
	N/-	Duch to most UT	No			
Labels Complete	NO	Rush to meet mi	110			



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand Project Number: [none] Project Manager: Jake White

Reported: 10/10/14 10:55

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

Qualification: No Data Qualification

Analyte & Samples(s) Qualified:

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Multiple Controls-Sand Project Number: [none]

Project Manager: Jake White

Reported: 10/10/14 10:55

SND-01										
1410057-01 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.250	mg/L	1	4J08022	SCH	10/08/14 08:45	10/08/14 14:34	SW 6010B	
Barium	ND	0.500	"	"	"	SCH				
Cadmium	ND	0.100	"	"	"	SCH			"	
Chromium	ND	0.100	"	"	"	SCH	"		"	
Lead	ND	0.250		"	"	SCH	"		"	
Selenium	ND	0.250		"	"	SCH	"			
Silver	ND	0.100		"	"	SCH			•	
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J09005	SCH	10/09/14 09:15	10/09/14 13:37	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand

Project Number: [none]

Reported: 10/10/14 10:55

Project Manager: Jake White

TCLP Metals by 1311/6010B - Quality Control RPD Spike Source %REC Analyte Result MRL Units %REC RPD Notes Level Result Limits Limit Batch 4J08022 - EPA 3010A Prepared & Analyzed: 10/08/14 Blank (4J08022-BLK1) Arsenic ND 0.100 mg/L Barium ND 0.500 . ND ... Cadmium 0.100 Chromium ND 0.100 . Lead ND 0.100 ... Selenium ND 0.100 ... Silver ND 0.100 LCS (4J08022-BS1) 0.209 Arsenic 0.100 mg/L 0.200 105 85-115 Barium 0.205 0.500 ... 0.200 103 85-115 Cadmium 0.216 0.100 0.200 108 85-115 . Chromium 0.197 0.100 0.200 98.3 85-115 Lead 0.205 0.100 . 0.200 102 85-115 Selenium . 0.100 90.4 0.181 0.200 85-115 " Silver 0.100 0.100 0.100 99.9 85-115 LCS Dup (4J08022-BSD1) Arsenic 0.206 0.100 mg/L 0.200 103 85-115 1.81 20 Barium 0.207 0.500 ... 0.200 104 85-115 0.976 20 . Cadmium 0.214 0.100 0.200 107 85-115 1.05 20 . Chromium 0.203 0.100 0.200 101 85-115 3.02 20 0.100 . I ead 0.217 0.200 109 85-115 6.06 20 . Selenium 0.188 0.100 0.200 94.0 85-115 3.90 20 ... Silver 0.101 0.100 0.100 101 85-115 1.36 20 Matrix Spike (4J08022-MS1) Source: 1410057-01 Arsenic 1.06 0.250 mg/L 1.00 ND 106 75-125 Barium 1.05 0.500 ... 1.00 0.053 99.4 75-125 . Cadmium 1.05 0.100 ND 105 1.00 75-125 ... Chromium 0.942 0.100 1.00 ND 94.2 75-125 ... 0.250 Lead 1.01 1.00 0.072 94.2 75-125 . 0.250 Selenium 0.941 1.00 ND 94.1 75-125 ... Silver 0.465 0.100 0.500 ND 93.0 75-125

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project Number: [none] Project Manager: Jake White

Project: Multiple Controls-Sand

Reported: 10/10/14 10:55

TCLP Mercury by 1311/7470A - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J09005 - SW 7470A						Prepared	d & Analyz	zed: 10/0	9/14	
Blank (4J09005-BLK1)										
Mercury	ND	0.015	mg/L							
LCS (4J09005-BS1)										
Mercury	0.022	0.015	mg/L	0.0200		108	85-115			
LCS Dup (4J09005-BSD1)										
Mercury	0.020	0.015	mg/L	0.0200		102	85-115	5.74	20	
Matrix Spike (4J09005-MS1)	Sou	rce: 1410 [,]	114-01							
Mercury	0.021	0.015	mg/L	0.0200	ND	103	75-125			
Matrix Spike (4J09005-MS2)	Source: 1410125-02									
Mercury	0.020	0.015	mg/L	0.0200	ND	100	75-125			
Matrix Spike (4J09005-MS3)	Sou	rce: 1410	057-01							
Mercury	0.021	0.015	mg/L	0.0200	ND	106	75-125			

Environmental Compliance Services, Inc.	Project: Multiple Controls-Sand
P O Box 906	Project Number: [none]
Ocean Springs MS, 39566	Project Manager: Jake White

Reported: 10/10/14 10:55

Certified Analyses Included in this Report

Analyte	Certification Code
TCLP Metals in Leachate	
Arsenic	C01,C02
Barium	C01,C02
Cadmium	C01,C02
Chromium	C01,C02
Lead	C01,C02
Selenium	C01,C02
Silver	C01,C02
TCLP Mercury in Leachate	
Mercury	C01,C02

MICRO-MITHODS	Chain of Custody Record	
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		WO# 14/0057
www.micromethodslab.com		
Company Name: ECS; IAC;	Project Manager: JAKE WHITE	Turn Around Time & Reporting
Address: P.O. Box 356	Purchase Order #:	Our normal turn around time is 7-10 working days
City: SHORMAN MS Zip: SHORMAN MS Zip:	Email Address: Juhite @ envirocomp. me	Normal *All rush orderPhone
Phone: (228) 217 - 6254	Sampler Name Printed: JEKE WHIE,	nd Day* prior approved
Fax:	Sampler Name Signed:	Other*CIIIall
		Note Spacial Instructions/Comments
Project #: Multiple Controls - Sand	P-RCP	Field pH Collect Time ReadTime Field D.O Collect Time Read Time
Sample Identification Sampling D	aterTime # of Sar TCL	C Level 1 Level 2 Level 3
5ND-01 10/2/14		
		Matrix Code: W= Water, S= Soli, O= Oil, L= Liquid, SL= Sludge
		Notes
Signature /	Planted Name Company Date Tane	
Relinquished by	AKE WHITE ECS 142/14 1559	Sample Royd on tos Yes No
Received by SWOUK/DMUL XI	1210 TOT YUK MM 4914 1559	
Relinquished by		
Received by		Receiv Temp ("C)SampleL) Blank Li
Relinquished by		8y
Received by		

Page 8 of 10

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DCN# F316 Rev.#1

mplementation Date: 7/18/11	Log-In Checklist	DCN: F207 Date Revised: 7-18-11 Revision: 4
Client <u>ECS</u> W Date/Time Received _	0/4/ <i>105</i> 7Shipped By_ <u>6/2/14@ 1559</u> _Unpacked/	Checked By ST
Cooler ID Ice Present Yes/No NOV NO	Temperature Thermometer ID Cu	stody Sealed Custody Seal Intac Yes/No Yes/No
If not iced, were samples r Temperature Blank Used Multi Cooler shipment: II	eceived within one hour of collection? YesNoIf not, temperatur of samples in coolers that exceed 6°C	Yes No N/A e taken from cooleror bottle
Custody Seals on Bottles F Containers Intact Proper Containers for Red	resent Yes No X Yes X No quested Analysis Yes X No	-
Correct Preservation Used Adequate Sample for Ana	i for All Samples Yes X No lysis Requested Yes X No	-
Volatile Vials Headspace (Greater than 6mm in Diameter Yes	_NoN/A _X
Chain of Custody Form In Chain of Custody Form C Chain of Custody Form P Field Sheets/Special Instru Samples Missing on COC Sample Container Labels	ncluded Yes XNo omplete Yes No roperly Relinquished Yes No nctions Included Yes No or From Cooler Yes No Match COC Yes XNo	 N/A_ <u>×</u>
Samples Received Within Dept. Manager Notified o	Holding Time Yes Yes I f Rush/Short Holding Times Yes I	NoN/A_X
Does work order meet Mi Note: Samples that do no Log.	cro Methods sample acceptance criter t meet acceptance criteria must be doc	ia Yes <u>×</u> No <u></u> cumented in the Sample Rejection
Client Contacted Client Instructions: Cano Proc	Contacted ByDat cel Work Order eed with Work Order(Data wi	e/Time Il be qualified)
Comments:		

Page 9 of 10

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand Project Number: [none] Project Manager: Jake White

Reported:

10/10/14 10:55

	Metals, Volatiles, Semi Volatiles	DCN: F031 Date Revised: 1-16-2012
	Pesticides Herbicides	Revision: 5
fiero-Methods Laboratory Inc.	i esticides, fierbicides	
nero-weillous Laboratory, me.	TCI D DECILI ATODV I IMITE	
	TCLP REGULATORY LIMITS	
Arsenic		<u>mg/1</u> 5.0
Darium		100.0
		100.0
Cadmium		1.0
Chromium		5.0
Lead		5.0
Mercury		0.2
Selenium		1.0
Silver		5.0
Volatile Target Compounds:		
Benzene		0.5
Carbon Tetrachloride		0.5
Chlorobenzene		100.0
Chloroform		6.0
1.2 dichloroethane		0.5
1.1 Dichloroethene		0.7
Mothed Ethyd Katara (2 Datar		200.0
Tetrachloroethene		200.0
Trichloroethens		0.7
Vinyl Chloride		0.5
vinyi Unioriae		0.2
Semi Volatile Target Compounds:		
1,4 Dichlorobenzene		7.5
2,4 Dinitrotoluene		0.13
2,4,5 Trichlorophenol		400.0
2,4,6 Trichlorophenol		2.0
Hexachlorobenzene		0.13
Hexachlorobutadiene		0.5
Hexachloroethane		3.0
Nitrobenzene		2.0
Pentachlorophenol		100.0
Pwridine		5.0
m Cresol		200.0
a Cresol		200.0
p-Cresol		200.0
1		
Pesticide Target Compounds:		0.03
Endrin		0.03
Lentachlar		0.02
Henterhler and h		0.008
Heptachior epoxide		0.008
Lindane		0.4
Methoxychlor		10.0
Toxaphene		0.5
Herbicide Target Compounds:		
2,4 D		10.0
2,4,5-TP Silvex		1.0
<u>Inorganic</u>		
Flash Point		>140°F
Cyanide		<250 mg/kg
pH		2.00 – 12.5 SU
ТС	LP – Toxicity Characteristics Leachate Procedure, SW 846, Sec. 1311	



DOCUMENT CHANGE NOTICE

6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

Revised Report

November 04, 2014

Jake White

Work Order # :

Purchase Order #

1410057

Environmental Compliance Services, Inc. P O Box 906

Ocean Springs, MS 39566

RE: Multiple Controls-Sand

Enclosed is the revised report for samples received by the laboratory on 10/02/14 15:59. This report supercedes any previous version of the above noted work order. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hamy P. Howell

Harry P. Howell

President

DISCLAIMER

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SND-01

10/02/14 15:59

Jake White

10/02/14 13:01

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566	nce Services, Inc. Project: Multiple Controls-Sand Project Number: [none] 566 Project Manager: Jake White				
	ANALYTICAL RE	EPORT FOR SAI	MPLES		
Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received

Solid

1410057-01

ample Receipt Conditions						
Date/Time Received: 10/2/2014 3:59:00PM		Shipped by: Client Delivery	1			
Received by: Sarah E. Tomek		Submitted by: Jake White				
Date/Time Logged: 10/3/2014 8:12:00AM		Logged by: Sarah E. Tomek				
Cooler ID: no cooler		Receipt Temperature:				
Custody Seals	No	Received on Ice	No			
Containers Intact	Yes	No Ice, Short Trip	No			
COC/Labels Agree	Yes	Obvious Contamination	No			
Labels Complete	No	Rush to meet HT	No			



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand Project Number: [none] Project Manager: Jake White

Reported:

11/04/14 15:06

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments:

Metals Analyst Comments-SCH:

CAR: M110314-01: Client requested copper and zinc analysis on TCLP leachate. Sample was redigested and reanalyzed and a revised report generated.

Qualification: No Data Qualification

Analyte & Samples(s) Qualified:

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Multiple Controls-Sand Project Number: [none]

Project Manager: Jake White

Reported:

11/04/14 15:06

SND-01										
			14100	57-01	(Solid)					
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Copper	ND	0.100	mg/L	1	4K04004	SCH	11/03/14 13:00	11/04/14 12:03	SW 6010B	
Arsenic	ND	0.250	"	"	4J08022	SCH	10/08/14 08:45	10/08/14 14:34	"	
Barium	ND	0.500	"	"	"	SCH			"	
Cadmium	ND	0.100	"	"	"	SCH	"		"	
Chromium	ND	0.100	"	"	"	SCH			"	
Lead	ND	0.250	"	"	"	SCH			"	
Selenium	ND	0.250	"	"	"	SCH			"	
Silver	ND	0.100	"	"	"	SCH	"	"	"	
Zinc	ND	0.100		"	4K04004	SCH	11/03/14 13:00	11/04/14 12:03	n	
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J09005	SCH	10/09/14 09:15	10/09/14 13:37	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand

Project Number: [none]

Reported: 11/04/14 15:06

Project Manager: Jake White

TCLP Metals by 1311/6010B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J08022 - EPA 3010A				Prepared & Analyzed: 10/08/14						
Blank (4J08022-BLK1)										
Arsenic	ND	0.100	mg/L							
Barium	ND	0.500	"							
Cadmium	ND	0.100	"							
Chromium	ND	0.100	"							
Lead	ND	0.100	"							
Selenium	ND	0.100	"							
Silver	ND	0.100	"							
LCS (4J08022-BS1)										
Arsenic	0.209	0.100	mg/L	0.200		105	85-115			
Barium	0.205	0.500	"	0.200		103	85-115			
Cadmium	0.216	0.100	"	0.200		108	85-115			
Chromium	0.197	0.100	"	0.200		98.3	85-115			
Lead	0.205	0.100	"	0.200		102	85-115			
Selenium	0.181	0.100	"	0.200		90.4	85-115			
Silver	0.100	0.100	"	0.100		99.9	85-115			
LCS Dup (4J08022-BSD1)										
Arsenic	0.206	0.100	mg/L	0.200		103	85-115	1.81	20	
Barium	0.207	0.500	"	0.200		104	85-115	0.976	20	
Cadmium	0.214	0.100	"	0.200		107	85-115	1.05	20	
Chromium	0.203	0.100	"	0.200		101	85-115	3.02	20	
Lead	0.217	0.100	"	0.200		109	85-115	6.06	20	
Selenium	0.188	0.100	"	0.200		94.0	85-115	3.90	20	
Silver	0.101	0.100	"	0.100		101	85-115	1.36	20	
Matrix Spike (4J08022-MS1)	Sou	Source: 1410057-01								
Arsenic	1.06	0.250	mg/L	1.00	ND	106	75-125			
Barium	1.05	0.500	"	1.00	0.053	99.4	75-125			
Cadmium	1.05	0.100	"	1.00	ND	105	75-125			
Chromium	0.942	0.100	"	1.00	ND	94.2	75-125			
Lead	1.01	0.250	"	1.00	0.072	94.2	75-125			
Selenium	0.941	0.250	"	1.00	ND	94.1	75-125			
Silver	0.465	0.100	"	0.500	ND	93.0	75-125			
Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand

Project Number: [none]

Reported: 11/04/14 15:06

Project Manager: Jake White

TCLP Metals by 1311/6010B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4K04004 - EPA 3010A						Prepared	1: 11/03/1	4 Analyz	ed: 11/04	/14
Blank (4K04004-BLK1)										
Copper	ND	0.100	mg/L							
Zinc	ND	0.100	"							
LCS (4K04004-BS1)										
Copper	0.193	0.100	mg/L	0.200		96.7	85-115			
Zinc	0.171	0.100	"	0.200		85.7	85-115			
LCS Dup (4K04004-BSD1)										
Copper	0.197	0.100	mg/L	0.200		98.5	85-115	1.80	20	
Zinc	0.170	0.100	"	0.200		85.1	85-115	0.746	20	
Matrix Spike (4K04004-MS1)	Sou	rce: 14100)57-01							
Copper	0.182	0.100	mg/L	0.200	0.013	84.5	75-125			
Zinc	0.224	0.100	"	0.200	0.057	83.5	75-125			

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project Number: [none] Project Manager: Jake White

Project: Multiple Controls-Sand

Reported: 11/04/14 15:06

TCLP Mercury by 1311/7470A - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J09005 - SW 7470A						Prepareo	l & Analyz	red: 10/0	9/14	
Blank (4J09005-BLK1)										
Mercury	ND	0.015	mg/L							
LCS (4J09005-BS1)										
Mercury	0.022	0.015	mg/L	0.0200		108	85-115			
LCS Dup (4J09005-BSD1)										
Mercury	0.020	0.015	mg/L	0.0200		102	85-115	5.74	20	
Matrix Spike (4J09005-MS1)	Sour	r ce: 1410 1	114-01							
Mercury	0.021	0.015	mg/L	0.0200	ND	103	75-125			
Matrix Spike (4J09005-MS2)	Sour	r ce: 1410 1	125-02							
Mercury	0.020	0.015	mg/L	0.0200	ND	100	75-125			
Matrix Spike (4J09005-MS3)	Sour	rce: 1410()57-01							
Mercury	0.021	0.015	mg/L	0.0200	ND	106	75-125			

Environmental Compliance Services, Inc.	Project: Multiple Controls-Sand
P O Box 906	Project Number: [none]
Ocean Springs MS, 39566	Project Manager: Jake White

Reported: 11/04/14 15:06

Certified Analyses Included in this Report

Analyte	Certification Code
TCLP Metals in Leachate	
Arsenic	C01,C02
Barium	C01,C02
Cadmium	C01,C02
Chromium	C01,C02
Lead	C01,C02
Selenium	C01,C02
Silver	C01,C02
TCLP Mercury in Leachate	
Mercury	C01,C02

	Chrin of Frietady Ronard	
6500 Sunplex Drive, Ocean Springs, MS 39564 (228) 875-6420 FAX (228) 875-6423		MO# 14/0057
www.micromethodslab.com		
Company Name:	Project Manager: JAKE WHITE	Turn Around Time & Reporting
Address: P.O. Box 356	Purchase Order #:	Our normal turn around time is /-10 working days
City: SHOWAN MS ZID: SHOWAN MS ZID:	Email Address: Julite @ envirocomp. me	Normal *All rush orderPhone
Phone: (228) 217 - 6254	Sampler Name Printed:) BKE WHITE ,	2nd Day* prior approved
Fax:	Sampler Name Signed:	Other*Email
	Ust Andysee Republied	Note Special Instructions/Comments
Project Name: Multiple Controls - Sond	tainers Code RCPA Metols	Field pH Collect Time ReadTime
Project #:		Field U.U. Collect Time Read Time
Sample Identification Sampling Date/		QC Level: Level 1 Level 2 Level 3
SND-01 10/2/14/30		
		Matrix Code: W= Water, S= Soil, O= Oil, L= Liquid, SL= Sludge
		Sample Code: G= Grab C≂ Composite
		Lab Use Only
Signature to P	nnted Name Company Usite Time	
Relinquished by Cabuy Linho TAK	E WHITE ECS 14/2/14 /559	Sample Rovid on ice Yes [] No []
Received by BWOUK/MMUL XU/B	10 TOLACK WW MALLET UN	
Relinquished by		jenosti i stati
Received by		Receipt Tempi ("C)SampleLJ Blank LJ
Relinquished by		8y
Received by		
DCN# F316 Rev.#1		

Page 9 of 11

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mplementation Date: 7/18/11	Micro-Methods Laboratory Log-In Checklist	DCN: F207 Date Revised: 7-18-11 Revision: 4
Client <u>ECS</u> W Date/Time Received	0/4///057Shipped By_(0/2/14@/559_Unpacked/0	Checked By ST
Cooler ID Ice Present Yes/No NOVL NO	Temperature Thermometer ID Cu	stody Sealed Custody Seal Intac Yes/No Yes/No
If not iced, were samples r	eceived within one hour of collection?	Yes <u>No N/A</u>
Multi Cooler shipment: ID	of samples in coolers that exceed 6°C	
Custody Seals on Bottles P Containers Intact Proper Containers for Rec	resent Yes No X Yes X No quested Analysis Yes X No	-
Correct Preservation Used Adequate Sample for Ana	I for All Samples Yes X No Iysis Requested Yes X No	-
Volatile Vials Headspace	Greater than 6mm in Diameter Yes	_NoN/A 🗡
Chain of Custody Form In Chain of Custody Form C Chain of Custody Form P Field Sheets/Special Instru Samples Missing on COC Sample Container Labels	Included Yes X No omplete Yes Xo roperly Relinquished Yes Xo ictions Included Yes No or From Cooler Yes No Match COC Yes Xo	N/A_ <u>×</u>
Samples Received Within Dept. Manager Notified o	Holding Time Yes Yes I FRush/Short Holding Times Yes I	NoN/A_X
Does work order meet Mi Note: Samples that do no Log.	cro Methods sample acceptance criter t meet acceptaπce criteria must be doc	ia Yes <u>X</u> No umented in the Sample Rejection
Client Contacted Client Instructions: Cano Proc	Contacted ByDat eel Work Order eed with Work Order(Data wi	e/Time ll be qualified)
Comments:		
<u> </u>		

Page 10 of 11

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls-Sand Project Number: [none] Project Manager: Jake White

Reported:

11/04/14 15:06

	Metals, Volatiles, Semi Volatiles	DCN: F031 Date Revised: 1-16-2012
	Pesticides, Herbicides	Revision: 5
icro-Methods Laboratory,	Inc.	
	TCLP REGULATORY LIMITS	
TCLP Metals:		<u>mg/l</u>
Arsenic		5.0
Barium		100.0
Cadmium		1.0
Chromium		5.0
Lead		5.0
Mercury		0.2
Selenium		1.0
Silver		5.0
Volatile Target Compounds		
Benzene	-	0.5
Carbon Tetrachloride		0.5
Chlorobenzene		100.0
Chloroform		6.0
1.2 dichloroethane		0.5
1.1 Dichloroethene		0.5
Methyl Ethyl Vatona (2 Duta	none)	200.0
Tetrachloroethene	none)	200.0
Trichloroethene		0.5
Vinyd Chlonida		0.3
vinyi Chioride		0.2
Semi Volatile Target Compo	ounds:	
1,4 Dichlorobenzene		7.5
2,4 Dinitrotoluene		0.13
2,4,5 Trichlorophenol		400.0
2,4,6 Trichlorophenol		2.0
Hexachlorobenzene		0.13
Hexachlorobutadiene		0.5
Hexachloroethane		3.0
Nitrobenzene		2.0
Pentachlorophenol		100.0
Pyridine		5.0
m-Cresol		200.0
o-Cresol		200.0
p-Cresol		200.0
Pesticide Target Compound	<u>s:</u>	
Chlordane		0.03
Endrin		0.02
Heptachlor		0.008
Heptachlor epoxide		0.008
Lindane		0.4
Methoxychlor		10.0
Toxaphene		0.5
Herbicide Target Compoun	ds:	10.0
2,4 D		10.0
2,4,5-TP Silvex		1.0
Inorganic		
Flash Point		>140°F
Sulfide		~230 mg/kg 500 mg/kg
pH		2.00 – 12.5 SU
	TCLP - Toxicity Characteristics Leachate Procedure, SW 846, Sec. 1311	



6500 Sunplex Drive Ocean Springs, MS 39564 228.875.6420 Phone 228.875.6423 Fax

October 27, 2014

Jake White

Work Order #: 1410334

Purchase Order #:

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs, MS 39566 *RE: Multiple Controls*

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 10/17/14 12:33. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Hamy P. Nowell

Harry P. Howell

President Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAC 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.

Environmental Compliance Services, Inc.	Project: Multiple Controls
P O Box 906	Project Number: [none]
Ocean Springs MS, 39566	Project Manager: Jake White

Reported:

10/27/14 14:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
FM-ECS-01	1410334-01	Solid	10/17/14 11:59	Jake White	10/17/14 12:33
FS-ECS-02	1410334-02	Solid	10/17/14 12:01	Jake White	10/17/14 12:33
CW-ECS-03	1410334-03	Solid	10/17/14 12:04	Jake White	10/17/14 12:33
PB-ECS-04	1410334-04	Solid	10/17/14 12:06	Jake White	10/17/14 12:33
UF-ECS-05	1410334-05	Solid	10/17/14 12:10	Jake White	10/17/14 12:33
CH-ECS-06	1410334-06	Solid	10/17/14 12:15	Jake White	10/17/14 12:33

Date/Time Received: 10/17/2014	2:33:00PM	Shipped by: Client Delivery					
Received by: Sarah E. Tomek		Submitted by: Jake White					
Date/Time Logged: 10/17/2014 12:39:00PM		Logged by: Sarah E. Tomek					
Cooler ID: no cooler		Receipt Temperature:					
Custody Seals	No	Received on Ice	No				
Containers Intact	Yes	No Ice, Short Trip	No				
COC/Labels Agree	Yes	Obvious Contamination	No				
Labels Complete No		B. de la secol da IT	N/-				
Labels Complete	No	Rush to meet HT	INO				



Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 10/27/14 14:50

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: No Summary Comments

TCLP Metals-SW 6010B

Qualification:

CC-01 CCV above acceptance limits. Results reported from this calibration were below the reporting limits.

Analyte & Samples(s) Qualified:

Cadmium

1410334-01[FM-ECS-01], 1410334-02[FS-ECS-02], 1410334-03[CW-ECS-03], 1410334-04[PB-ECS-04], 1410334-05[UF-ECS-05], 1410334-06[CH-ECS-06]

CC-03 CCV above acceptance limits. QC Results reported from this calibration within acceptance limits.

Analyte & Samples(s) Qualified:

Cadmium

4J23004-BLK1, 4J23004-BSD1, 4J23004-MS1, 4J23004-MS2, 4J23004-MS3, 4J23004-MS4, 4J23004-MS5

CC-04 CCV above acceptance limits. Results reported are estimated values.

Analyte & Samples(s) Qualified:

Cadmium

4J23004-BS1

L1 LCS and/or LCSD Recovery Limit exceeded.

Analyte & Samples(s) Qualified:

Cadmium 4J23004-BS1

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project Number: [none] Project Manager: Jake White

Project: Multiple Controls

Reported:

10/27/14 14:50

FM-ECS-01										
1410334-01 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:02	SW 6010B	
Barium	0.680	0.500	"	"	"	SCH			"	
Cadmium	ND	0.100	"	"	"	SCH			•	CC-01
Chromium	ND	0.100	"	"	"	SCH				
Lead	ND	0.100	"	"	"	SCH			"	
Selenium	ND	0.100	"	"	"	SCH			"	
Silver	ND	0.100	"	"	"	SCH			•	
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project Number: [none] Project Manager: Jake White

Project: Multiple Controls

Reported:

10/27/14 14:50

			F٤	S-EC	S-02					
1410334-02 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:08	SW 6010B	
Barium	1.00	0.500	"	"	"	SCH		"		
Cadmium	ND	0.100	"	"	"	SCH				CC-01
Chromium	ND	0.100	"	"	"	SCH				
Lead	ND	0.100	"	"	"	SCH				
Selenium	ND	0.100	"	"	"	SCH				
Silver	ND	0.100	"	"	"	SCH				
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Multiple Controls Project Number: [none]

Project Manager: Jake White

Reported:

10/27/14 14:50

CW-ECS-03										
	1410334-03 (Solid)									
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:19	SW 6010B	
Barium	1.12	0.500	"	"	"	SCH			"	
Cadmium	ND	0.100	"	"	"	SCH				CC-01
Chromium	ND	0.100	"	"	"	SCH				
Lead	ND	0.100	"	"	"	SCH			"	
Selenium	ND	0.100		"	"	SCH			"	
Silver	ND	0.100	"	"	"	SCH			"	
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported:

10/27/14 14:50

			PE	B-EC	S-04					
1410334-04 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:31	SW 6010B	
Barium	ND	0.500	"	"	"	SCH			"	
Cadmium	ND	0.100	"	"	"	SCH				CC-01
Chromium	ND	0.100	"	"	"	SCH			"	
Lead	ND	0.100	"	"	"	SCH			"	
Selenium	ND	0.100	"	"	"	SCH			"	
Silver	ND	0.100	"	"	"	SCH		"		
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project Number: [none] Project Manager: Jake White

Project: Multiple Controls

Reported:

10/27/14 14:50

			UI	F-EC	S-05					
1410334-05 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:42	SW 6010B	
Barium	ND	0.500	"		"	SCH				
Cadmium	ND	0.100	"	"	"	SCH				CC-01
Chromium	ND	0.100	"	"	"	SCH	"		"	
Lead	ND	0.100	"	"	"	SCH	"		"	
Selenium	ND	0.100	"	"	"	SCH	"		"	
Silver	ND	0.100	"	"	"	SCH				
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Multiple Controls Project Number: [none]

Project Manager: Jake White

Reported:

10/27/14 14:50

			CI	I-EC	S-06					
1410334-06 (Solid)										
Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
TCLP Metals by 1311/6010B										
Arsenic	ND	0.100	mg/L	1	4J23004	SCH	10/22/14 09:30	10/24/14 12:53	SW 6010B	
Barium	1.39	0.500	"	"	"	SCH			"	
Cadmium	ND	0.100	"		"	SCH				CC-01
Chromium	ND	0.100	"	"	"	SCH				
Lead	ND	0.100	"	"	"	SCH			"	
Selenium	ND	0.100	"	"	"	SCH			"	
Silver	ND	0.100	"	"	"	SCH				
TCLP Mercury by 1311/7470A										
Mercury	ND	0.015	mg/L	1	4J23007	SCH	10/23/14 09:15	10/23/14 15:18	SW 7470A	

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none]

Reported: 10/27/14 14:50

Project Manager: Jake White

TCLP Metals by 1311/6010B - Quality Control RPD Spike Source %REC Analyte Result MRL Units %REC RPD Notes Level Result Limits Limit Batch 4J23004 - EPA 3010A Prepared: 10/22/14 Analyzed: 10/24/14 Blank (4J23004-BLK1) Arsenic ND 0.100 mg/L Barium ND 0.500 . ND ... CC-03 Cadmium 0.100 Chromium ND 0.100 . Lead ND 0.100 ... Selenium ND 0.100 ... Silver ND 0.100 LCS (4J23004-BS1) 0.210 Arsenic 0.100 mg/L 0.200 105 85-115 Barium 0.207 0.500 ... 0.200 104 85-115 ... Cadmium 0.237 0.100 0.200 119 85-115 CC-04, L1 . Chromium 0.200 0.100 0.200 99.9 85-115 Lead 0.204 0.100 . 0.200 102 85-115 . Selenium 0.189 0.100 94.6 0.200 85-115 " Silver 0.102 0.100 0.100 102 85-115 LCS Dup (4J23004-BSD1) Arsenic 0.204 0.100 mg/L 0.200 102 85-115 3.14 20 Barium 0.208 0.500 ... 0.200 104 85-115 0.496 20 ... Cadmium 0.224 0.100 0.200 112 85-115 5.93 20 CC-03 . Chromium 0.196 0.100 0.200 98.2 85-115 1.74 20 I ead 0.202 0.100 . 0.200 101 85-115 1.15 20 . Selenium 0.192 0.100 0.200 96.0 85-115 1.46 20 ... Silver 0.102 0.100 0.100 102 85-115 0.0646 20 Matrix Spike (4J23004-MS1) Source: 1410334-02 Arsenic 0.200 0.100 mg/L 0.200 ND 99.9 75-125 Barium 1.19 0.500 ... 0.200 1.00 94.1 75-125 . 0.100 0.200 0.0007 88.7 CC-03 Cadmium 0.178 75-125 . Chromium 0.165 0.100 0.200 0.004 80.7 75-125 ... 0.187 0.100 0.200 0.018 84.8 75-125 Lead . Selenium 0.198 0.100 0.200 ND 98.8 75-125 ... Silver 0.089 0.100 0.003 0.100 86.1 75-125

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566

Project: Multiple Controls Project Number: [none]

Reported: 10/27/14 14:50

Project Manager: Jake White

TCLP Metals by 1311/6010B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J23004 - EPA 3010A						Prepared	1: 10/22/14	4 Analyz	ed: 10/24	/14
Matrix Spike (4J23004-MS2)	Sou	rce: 1410	334-03							
Arsenic	0.216	0.100	mg/L	0.200	0.004	106	75-125			
Barium	1.32	0.500	"	0.200	1.12	100	75-125			
Cadmium	0.209	0.100	"	0.200	ND	105	75-125			CC-03
Chromium	0.198	0.100	"	0.200	0.008	94.9	75-125			
Lead	0.221	0.100	"	0.200	0.021	100	75-125			
Selenium	0.215	0.100	"	0.200	ND	107	75-125			
Silver	0.095	0.100	"	0.100	0.002	93.4	75-125			
Matrix Spike (4J23004-MS3)	Sou	rce: 1410	334-04							
Arsenic	0.174	0.100	mg/L	0.200	ND	87.0	75-125			
Barium	0.360	0.500	"	0.200	0.189	85.2	75-125			
Cadmium	0.168	0.100	"	0.200	ND	83.8	75-125			CC-03
Chromium	0.153	0.100	"	0.200	0.002	75.4	75-125			
Lead	0.164	0.100	"	0.200	0.007	78.6	75-125			
Selenium	0.173	0.100	"	0.200	ND	86.5	75-125			
Silver	0.081	0.100	"	0.100	0.002	79.3	75-125			
Matrix Spike (4J23004-MS4)	Sou	rce: 1410	334-05							
Arsenic	0.189	0.100	mg/L	0.200	ND	94.4	75-125			
Barium	0.321	0.500	"	0.200	0.130	95.3	75-125			
Cadmium	0.189	0.100	"	0.200	ND	94.3	75-125			CC-03
Chromium	0.170	0.100	"	0.200	0.003	83.8	75-125			
Lead	0.173	0.100	"	0.200	ND	86.4	75-125			
Selenium	0.202	0.100	"	0.200	ND	101	75-125			
Silver	0.090	0.100	"	0.100	ND	89.5	75-125			
Matrix Spike (4J23004-MS5)	Sou	rce: 1410	334-06							
Arsenic	0.184	0.100	mg/L	0.200	ND	91.8	75-125			
Barium	1.57	0.500	"	0.200	1.39	90.8	75-125			
Cadmium	0.175	0.100	"	0.200	0.002	86.9	75-125			CC-03
Chromium	0.164	0.100	"	0.200	0.002	81.2	75-125			
Lead	0.177	0.100	"	0.200	0.008	84.5	75-125			
Selenium	0.187	0.100	"	0.200	ND	93.3	75-125			
Silver	0.085	0.100	"	0.100	0.001	83.7	75-125			

Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported: 10/27/14 14:50

TCLP Mercury by 1311/7470A - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J23007 - SW 7470A						Prepared	l & Analyz	zed: 10/2	3/14	
Blank (4J23007-BLK1)										
Mercury	ND	0.015	mg/L							
LCS (4J23007-BS1)										
Mercury	0.021	0.015	mg/L	0.0200		104	85-115			
LCS Dup (4J23007-BSD1)										
Mercury	0.021	0.015	mg/L	0.0200		104	85-115	0.482	20	
Matrix Spike (4J23007-MS1)	Sou	rce: 14103	334-02							
Mercury	0.022	0.015	mg/L	0.0200	ND	110	75-125			
Matrix Spike (4J23007-MS2)	Sou	rce: 14103	334-03							
Mercury	0.021	0.015	mg/L	0.0200	ND	107	75-125			
Matrix Spike (4J23007-MS3)	Sou	rce: 14103	334-04							
Mercury	0.021	0.015	mg/L	0.0200	ND	107	75-125			
Matrix Spike (4J23007-MS4)	Sou	rce: 14103	334-05							
Mercury	0.022	0.015	mg/L	0.0200	ND	111	75-125			
Matrix Spike (4J23007-MS5)	Sou	rce: 14103	334-06							
Mercury	0.023	0.015	mg/L	0.0200	ND	114	75-125			

Environmental Compliance Services, Inc.	Project: Multiple Controls	
P O Box 906	Project Number: [none]	Reported:
Ocean Springs MS, 39566	Project Manager: Jake White	10/27/14 14:50

Certified Analyses Included in this Report

Analyte	Certification Code
TCLP Metals in Leachate	
Arsenic	C01,C02
Barium	C01,C02
Cadmium	C01,C02
Chromium	C01,C02
Lead	C01,C02
Selenium	C01,C02
Silver	C01,C02
TCLP Mercury in Leachate	
Mercury	C01,C02

	"hain of Custady Rocord	
500 Sunplex Drive, Ocean Springs, MS 39564 228) 875-6420 FAX (228) 875-6423		WO# 1410334
vww.micromethodslab.com		
Sompany Name: ECS, INC. Proje	ect Manager: JAKE WIHITE	Turn Around Time & Reporting
uddress: P.O. Box 356 Purch	:hase Order #:	Our normal turn around time is /-10 working days
The Strephan State: Zip: 38863 Ema	in Address: Jwhite @ envirocoup.ret	Normal *All rush order Phone Mail
none: \$ (228) 217-6254 Sam	pler Name Printed: JAMES J. WHITE	2nd Day* prior approved.
ax: Sam	pler Name Signed: Caul C. With	Other*
		Vote Special Instructions Comments
roject Name: Multiple Controls	ainers Code KCCA	Field pH Collect Time ReadTime
roject #:	Conti mple (Field D.O. Collect Time Read Time
Sample Identification Sampling Date/Time	# 0 S₽	QC Level 1 Level 2 Level 3
$E_{W} = E_{CS} = 01$ m/m/m 11:59		
$\frac{1}{100}$		
00.11 hilding the - 573 - 86		
UF - ECS - OS INTUNIO		
	>	Sample Code: G= Grab C= Composite
		Ang man gen
Signature Printe	ed Name Company Date Trips	
relinquished by aloung Auto TAMES	. J. WHITE ECS, Inc. 10/17/4/233	Sample Read whiles Yes II and II
acceived by	TOVALO MIN MINISZ	
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telinquished by		
eceived by		
CN# F316 Rev.#1		

Page 14 of 16

	.	
Client <u>F(S</u> wo <u>/4/0334</u> Date/Time Received <u>10/17/14(2)</u> 23	/Shipped By Shipped By 3Unpacked/(<u>Checked By</u> <u>ST</u>
Cooler ID Ice Present Temperature Th Yes/No NOUL MO —	ermometer ID Cus	stody Sealed Custody Seal Intac Yes/No Yes/No
······································		
	······································	
If not iced, were samples received within one Temperature Blank Used YesNo Multi Cooler shipment: ID of samples in coo	hour of collection? If not, temperature lers that exceed 6°C	Yes No N/A e taken from cooleror bottle
Custody Scale on Pottles Descent	Ver No V	Ner dana 2000 - 1
Containers Intact Proper Containers for Requested Analysis	$\begin{array}{c} 1 \text{ cs} \underline{\qquad} 1 \text{ No} \underline{\times} \\ Y \text{ es} \underline{\times} \text{ No} \underline{\qquad} \\ Y \text{ es} \underline{\times} \text{ No} \underline{\qquad} \end{array}$	
Correct Preservation Used for All Samples Adequate Sample for Analysis Requested	Yes <u>×</u> No Yes <u>×</u> No	
Volatile Vials Headspace Greater than 6mm	in Diameter Yes	No N/A
Chain of Custody Form Included Chain of Custody Form Complete Chain of Custody Form Properly Relinquish Field Sheets/Special Instructions Included Samples Missing on COC or From Cooler Sample Container Labels Match COC	Yes <u>No</u> Yes <u>No</u> Yes <u>No</u> Yes <u>No</u> Yes <u>No</u> Yes <u>No</u>	N/A <u>×</u>
Samples Received Within Holding Time Dept. Manager Notified of Rush/Short Hold	Yes X N ing Times Yes	loN/AX
Does work order meet Micro Methods samp Note: Samples that do not meet acceptance Log.	le acceptance criteri criteria must be doc	a Yes <u>X</u> No umented in the Sample Rejection
Client Contacted Contacted Client Instructions: Cancel Work Order	l ByDate	/Time
Comments:		i ve quanneu)

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Environmental Compliance Services, Inc. P O Box 906 Ocean Springs MS, 39566 Project: Multiple Controls Project Number: [none] Project Manager: Jake White

Reported:

10/27/14 14:50

		Dorn 1001
	Metals, Volatiles, Semi Volatiles	Date Revised: 1-16-2012
Jes l	Pesticides Herbicides	Revision: 5
	T esticides, fiel bicides	
licro-Methods Laboratory, Inc.		
	TCLP REGULATORY LIMITS	
TCLP Metals:		<u>mg/l</u>
Arsenic		5.0
Barium		100.0
Cadmium		1.0
Chromium		5.0
Lend		5.0
Lead		0.0
Mercury		0.2
Selenium		1.0
Silver		5.0
Volatile Target Compounds:		
Benzene		0.5
		0.5
Carbon Tetrachloride		0.5
Chlorobenzene		100.0
Chloroform		6.0
1,2 dichloroethane		0.5
1,1 Dichloroethene		0.7
Methyl Ethyl Ketone (2-Butanone)		200.0
Tetrachloroethene		0.7
Trichloroethene		0.5
Vinyl Chloride		0.2
(my) emeride		
Semi Volatile Target Compounds:		
1,4 Dichlorobenzene		7.5
2,4 Dinitrotoluene		0.13
2.4.5 Trichlorophenol		400.0
2.4.6 Trichlorophenol		2.0
2,4,0 memorophenor		2.0
Hexachioroberizene		0.13
Hexachlorobutadiene		0.5
Hexachloroethane		3.0
Nitrobenzene		2.0
Pentachlorophenol		100.0
Pyridine		5.0
m-Cresol		200.0
o-Cresol		200.0
p-Cresol		200.0
.P		
Pesticide Target Compounds:		
Chlordane		0.03
Endrin		0.02
Heptachlor		0.008
Heptachlor epoxide		0.008
Lindane		0.4
Methoxychlor		10.0
Toxaphene		0.5
Herbicide Target Compounds:		
2,4 D		10.0
2,4,5-TP Silvex		1.0
Inorganic		
Flash Point		>140°F
Cyanide		<250 mg/kg
Sulfide		500 mg/kg
pH		$2.00 - 12.5 \ { m SU}$
TCLP	- Toxicity Characteristics Leachate Procedure, SW 846, Sec. 1311	

APPENDIX C

INFORMATION ON CONTROL TECHNOLOGIES



For highly effective removal of metals from stormwater, industrial and wastewater discharge, CleanWay[®] offers a proven product that efficiently removes heavy metals through ion absorption and filtration.

Features & Benefits

- Targets heavy metals including zinc, copper, lead and more
- Thoroughly tested media blends address site-specific pollutants to reduce effluent concentrations
- Highly absorptive sponge prevents release of pollutants once captured
- Improves water quality
- Effective ground water remediation

Applications

- Stormwater compliance
- Industrial and commercial facilities
- Metal, coating and plating facilities
- Buildings with metal roofs
- Groundwater remediation
- Potable water filtration plants
- Auto dismantling
- Port facilities, boatyards
- Waste handling and transport
- Municipal sewage
- Mining operations
- Bioreactor sediment
- Drilling muds
- Soil remediation

Remove Metals with MetalZorb[™]



MetalZorb is a high capacity sponge product that effectively yet simply removes metals from various water treatment applications that include:

- stormwater filtration devices, by replacing or augmenting existing media
- industrial and wastewater effluent, by capturing and retaining dissolved metals

Targets metals

MetalZorb reduces and removes zinc, copper, lead and other heavy metals commonly found in stormwater and industrial process water discharge. With high ion absorption capabilities and quick, aggressive kinetics, dissolved metals are captured and held in the media so they won't leach out. Metal-saturated sponge may be easily disposed as solid waste or valuable metals recovered.

For retrofits and new sites

MetalZorb products work in catch basins, filter vaults and downspout filtration units, in both retrofits and new sites.

For commercial, industrial and residential sites, our customized media can be deployed in:

- 1. New installations with the media blend incorporated into CleanWay catch basin filtration systems
- 2. Retrofits for other manufacturers' structural BMPs—by safely and simply replacing the filtration system's current media
- 3. Custom fabricated pressure or gravity fed systems for addressing specific considerations at industrial sites
- 4. Absorption booms

To address site-specific water quality requirements, we work with you to determine the right media blend for each installation.

cleanwayusa.com

CleanWay Environmental Partners, Inc. PO Box 30087 10620 NE Marx Street Portland, Oregon 97294 Call 800-723-1373 Direct 503-280-5102

The Gold Standard in Metals Removal

Get rid of metals

MetalZorb[™] sponge provides the ideal technology for reducing and absorbing heavy metals and metallic ions from applications where rapid removal of metals is required, including industrial effluents, landfill leachates, stormwater runoff, and any type of non-point source pollution where unattended gravity flow occurs.

MetalZorb is also highly effective for treatment of sludge and slurries derived from industrial processes such as sewage treatment, mine tailings and harbor dredging.

Remote monitoring

This sponge product works well when installed in remote or unattended locations for effective absorption that can be monitored effectively by radio-transmitting sensors.

Easy to use

Sponge cubes can fill a conduit that's sized for the flow volume at each location or compacted into elongated fishnet bags as absorption units for use within a conduit. When confined in a conduit, they offer little impedance to water flowing through the unit and are not clogged by suspended solids.



Achieve effective ground water remediation by vertically positioning fishnet bags filled with MetalZorb at the gate of a barrier wall funnel system.

Units filled with sponge product can be periodically retrieved and replaced with fresh sponge.

Licensed exclusively to CleanWay[®] Environmental Partners, this product was originally developed under the name FORAGER[®] Sponge. The remediation of ground water using FORAGER[®] Sponge is described in EPA Superfund Innovative Technology Evaluation Report EPA/540/R-94/522.

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How does it work?

Sponge product consists of multiple highly absorbent half inch cubes, combined in various configurations to address metals removal at any site.



Sponge pores are self-filtering to prevent total occlusion of the active polymer component.

In some applications, elevated temperatures shorten treatment time. Solvating agents may be added to the slurry to expedite metal transfer from the suspended particles to the sponge. For example, citric or acetic acids can be employed in specific metal-removing applications.

How long does it last?

The duration of treatment and operational lifetime depend upon several factors such as:

- unit size
- cumulative flow volume
- concentration of pollutants of concern
- absorption efficiency of the unit within a specific treatment system
- desired removal efficiency
- consistency of slurry
- average size of suspended particles

For example, a cubic foot of Type M sponge product holds about 190 grams of lead at saturation. If the water to be treated contains 1 ppm of lead, the unit is achieving 100% lead removal and not absorbing anything else, one cubic foot of sponge can treat 50,000 or more gallons of water. At an average flow rate of 1000 gal/week, one cubic foot will last almost a year.

Get the Gold Standard

Frequently Asked Questions and more information are available at <u>www.cleanwayusa.com</u> or call 800-723-1373 today and we'll help you get started with the gold standard in metals removal.

cleanwayusa.com

Call 800-723-1373 Direct 503-280-5102



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EnviroSoxx[®] consist of sediment control devices with one or more natural additives used to remove invisible pollutants. The EnviroSoxx[®] product line includes BactoLoxx[®] for bacteria removal, MetalLoxx[®] for heavy metals removal, NutriLoxx[®] for nutrient removal, and PetroLoxx[®] for hydrocarbon removal, such as diesel, gasoline, and motor oil. **Available prefilled on pallets for easy installation.**



Call for Local Distributor Information: 440-926-2607

www.filtrexx.com

LAND IMPROVEMENT SYSTEMS

Filtrexx, EnviroSoxx, BactoLoxx, MetalLoxx, NutriLoxx, PetroLoxx, & the branch and leaf logo are Registered Trademarks of Filtrexx International, LLC. FilterMedia is a Trademark of Filtrexx International, LLC. All Rights Reserved. US Patents 7,226,240, 7,452,165 & patents pending.



Filtrexx[®] SiltSoxx[™] is the **original** mesh tube filled with FilterMedia[™]. Use it **instead** of silt fence.

It's the sediment control device that **actually works.** It stops silt and sediment leaving your jobsite, and helps **keep you in compliance.**

SiltSoxx[™] stops pollutants in two ways: by allowing water to temporarily pond outside the sock, and by cleansing water as it passes through the sock. Sediment is either filtered or settled out.

One more thing, **Our Soxx Don't Fall Down!**



USDA NRCS AASHTO USACE </ No Trenching </ Easy Installation </ Easy Removal </ Gas & Oil Proven

 \checkmark Approved By:

EPA

Look for the Green SiltSoxx™ on Pallets





For more information go to www.biopreferred.gov

Product	LINEAR FEET	Use
SiltSoxx [™] , 8-inch		
SiltSoxx tm , 12-inch	100 ft/pallet; continuous	PERIMETER CONTROL
SiltSoxx tm , 18-inch		
INLETSOXX TM , 8-INCH		
D ітснСнехх [™] , 12-ілсн	80 ft/pallet; 8 - 10' pieces	CHECK DAMS, LARGE INLETS

Filtrexx[®] Soxx[™] Meet Specifications

Filtrexx® products meet all EPA, AASHTO, USACE and USDA-NCRS as well as the regulations of most state agencies throughout the U.S.

Using Filtrexx® products is your assurance that the product:

- Meets EPA and most state specifications for perimeter sediment control
- Avoids the risk of regulatory non-compliance
- Eliminates costly re-install and non-compliance costs for contractors
- Saves money for you and your customer over the life of the project

Nobody compares to Filtrexx[®] in quality, specification & experience.

Regulatory Criteria	Filtrexx [®] Mesh	E Tube	Silt Sock
Size of Hole	\checkmark	No	No
Material	\checkmark	No	No
Media	\checkmark	No	No
Flow Rate	\checkmark	No	No
Tensile Strength	\checkmark	No	No
Longevity	~	No	No
Diameter	\checkmark	\checkmark	\checkmark

Sediment Control BMP: More than Just Mesh



What makes Filtrexx® mesh different?

Unlike fence or inferior sock, Filtrexx® lets water through while keeping silt and clay inside the Soxx[™]. Only Filtrexx® has the independent test data to prove its performance.



What's so special about Filtrexx[®] FilterMedia[™]? Meeting particle size specification. Two-thirds of the silt stopping capacity is <u>IN</u> the Soxx[™]. Only Filtrexx[®] FilterMedia[™] is certified to meet the necessary flow-through rates specified by both the EPA and most state regulators.



Why use a Filtrexx[®] Certified[™] Installer? Either through a Filtrexx[®] Certified[™] Installer or authorized palletized product dealer, you'll save time and money because our products meet spec. The Filtrexx[®] Certified[™] Installer network is

the largest and best in our industry.



Look for the Filtrexx® Certified™ Logo & Scan Tag



Compare the size of the hole in Filtrexx[®] mesh to the imitation mesh when filled.



SiltSoxx™ Material Type	Multi-Filament Polypropylene DuraSoxx® HD	
Material Characteristic	Photodegradable	
Design Diameters	8 in (200mm), 12 in (300mm), 18 in (400mm),	
Mesh Opening	1/8 in (3mm)	
Tensile Strength	242 psi	
% Original Strength from Ultraviolet Exposure (AS [™] G-155)	100% at 1000 hr	
Functional Longevity/ Project Duration	2-5 yr	



Local Distributor Information



ULTRA-FILTER SOCK SPECIFICATIONS

MATERIAL SPECIFICATIONS				
Properties	ASTM Test	Value		
Material: High Density Polyethylene (HDPE), Woven Geotextile				
Grab Tensile (MD/TD)	D 4632	326 / 216 lbs		
Trapezoid Tear (MD/TD)	D 4533	141 / 70 lbs		
Puncture	D 4833	109 lbs		
Mullen Burst	D 3786	376 psi		
UV Resistance (2000 hours)	D 4355	> 70%		

MEDIA SPECIFICATIONS		
Media Type	Capacity Information*	
Activated Carbon	 Each Filter Sock is filled with granular activated carbon. This media is an excellent polishing filter, due to its immense surface area and the wide range of components it is capable of absorbing. Helps with removing odors. Dry Filter Sock Weight of approximately 36 lbs 	
Heavy Metal Removal Media	 Each Filter Sock can remove up to 1145 grams of heavy metals Removal rates up to 50% per Filter Sock See Heavy Metal Removal Data Sheet for more information Dry Filter Sock Weight is approximately 32.5 lbs 	
Sorb 44	 Each Filter Sock can absorb up to 5.33 gallons (20 liters) of hydrocarbon Dry Filter Sock Weight is approximately 9 lbs 	
PhosFilter	 Each Filter Sock can remove up to 26 lbs of phosphorus with up to 95% efficiency Dry Filter Sock Weight is approximately 50 lbs 	
Sediment Removal Media	 Recycled rubber material keeps unit in place and allows for maximum water flow Dry Filter Sock Weight is approximately 40 lbs 	

* Note – All information is based on a standard 9-foot long Ultra-Filter Sock

07/12/2011

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