

December 19, 2008

**FINAL REPORT
LIMITED PIIESA/BARGE ASSESSMENT
MICHOU D CANAL/GIWW SUNKEN BARGES
NEW ORLEANS, LA**

Prepared for



**US Army Corps
of Engineers®**

New Orleans District

**Under Contract to
U.S. Army Corps of Engineers – New Orleans District
Environmental Services IAW
W912P8-08-D-0029 Task Order #0005**

By:

SPA-MMG Joint Venture, LLC.



Materials Management Group, Inc.

Comments on:
 SPA-MMG
 Draft Report PII ESA
 CTO Number: W912P8-08-D-0029
 Task #0005
Limited PII ESA/Barge Assessment
New Orleans, LA

Reviewer: John Templeton, Haekyung Kim
Respondent: Carly Gibbs

1. Respondent concurs (C), Does not Concur (D), or takes Exception (E).
2. Commenter Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Section : Item/Page	Paragraph/ Line	Comment	C, D, E ¹	Response	A or D ²
1. Templeton	TOC	Figures	Titles of Figures within the body and TOC do not match	C	Titles corrected for consistency.	
2. Templeton	SOW	Barge Assessment 3.b	Asked for dimension of barges and its contents. Please provide value or best estimate	C	This information has been included, see Section 4.3 and Table 3.	
3. Templeton	5.1		Please provide better separation for easy reading of each barge and what exceeded RECAP, (just like in section 4.2 but with only the RECAP exceeding constituents)	C	Section 5.1, 5 th paragraph, added additional breakdown of samples and results exceeding RECAP standards.	
4. Templeton	Figures		Please provide a scale for reference on figures	C	Scale has been added to the figures.	
5. Kim	3.1.2	3 rd para	Remove "potential" from the potential barge contents as well as the potential for discharge of the contents to the canal.	C	Section 3.1.2, 3 rd paragraph, 2 nd sentence, the wording has been changed.	
6. Kim	Figure		Suggest to include an overall figure depicting all the barges that were sampled. This will help PM to locate contaminated barge and where all the other barges are located.	C	See new Figure 2, Barge Location Map	

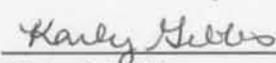
Phase II Environmental Site Assessment / Barge Assessment Report

for

Sunken Barges
Michoud Canal – GIWW Area
New Orleans, LA

Approval Page


Materials Management Group, Inc.
C. Paul Lo, Project Manager


Materials Management Group, Inc.
Karly Gibbs, Risk Assessor


Materials Management Group, Inc.
Wendell Thompson, Geologist

USACE – NOD
Contracting Officer

USACE – NOD
Project Manager

USACE – NOD
Technical Representative

USACE – NOD
Technical Representative

Table of Contents

Table of Contents.....	ii
Executive Summary.....	iv
1.0 Introduction.....	1
1.1 Purpose.....	1
1.2 Special Terms and Conditions.....	1
1.3 Limitations and Exceptions of Assessment.....	2
1.4 Limiting Conditions and Methodology Used.....	2
2.0 Background.....	3
2.1 Site Description and Features.....	3
2.2 Physical Setting.....	3
2.3 Site History and Land Use.....	3
2.4 Summary of Previous Assessments.....	4
3.0 Phase II Activities.....	4
3.1 Scope of Assessment.....	4
3.1.1 Supplemental Record Review.....	4
3.1.2 Sampling and Chemical Testing Plan.....	4
3.1.3 Deviations from the Work Plan.....	5
3.2 Field Explorations and Methods.....	5
3.3 Sampling and Chemical Analyses and Methods.....	6
4.0 Evaluation and Presentation of Results.....	7
4.1 Subsurface Conditions.....	7
4.1.1 Geologic Setting.....	7
4.1.2 Hydrogeologic Conditions.....	7
4.1.2 Verification of Sampling and Quality Objectives.....	7
4.2 Analytical Data.....	7
4.3 Barge Volumes.....	9
5.0 Discussion of Findings and Conclusions.....	9
5.1 Recognized Environmental Conditions.....	9
5.2 Affected Media.....	10
5.3 Evaluation of Media Quality.....	11
5.4 Other Concerns (Adequacy of Assessment).....	12
6.0 Recommendations.....	12

Tables

Table 1: Summary of Sludge/Sediment Analytical Results

Table 2: Summary of Water Analytical Results

Table 3: Barge Volume Estimates

Figures

Figure 1: Site Location Map

Figure 2: Barge Location Map

Figure 3: Overall Discrete Sample Location Map – Aerial View

Figure 4: Barge 1 Discrete Sample Location Map – Aerial View
Figure 5: Barge 2 Discrete Sample Location Map – Aerial View
Figure 6: Barge 3 Discrete Sample Location Map – Aerial View
Figure 7: Sunken Barge Discrete Sample Location Map – Aerial View

Appendices

Appendix A: Sampling Logs
Appendix B: Final Analytical Report
Appendix C: Field Logs
Appendix D: Photographs
Appendix E: Final Safety Report

Executive Summary

Background

This report addresses the findings of the limited Phase II Environmental Site Assessment (PIIESA) / Barge Assessment conducted near the intersection of the Michoud Canal and the Gulf Intracoastal Waterway (GIWW) in New Orleans, Louisiana. The investigation involves four sunken/shored barges and the adjacent canal area along the northern bank of the GIWW near the Michoud Canal. The barges were identified during a Phase I Environmental Site Assessment conducted in the area in 2006. The area under investigation (where the barges are located) is included in the proposed location for construction of a flood control gate and floodwall. Therefore, characterization of the barge contents (for disposal options and management of the barges) as well as evaluation of the canal immediately adjacent the barge area for potential impact prior to removal of the barges and construction activities was necessary. The PIIESA/ Barge Assessment included field hazard categorization and sampling and analysis of the barge contents as well as sampling and analysis of the canal sediment and water.

Findings

The analytical results from the limited PIIESA and Barge Assessment are summarized in Tables 1 and 2, and the final analytical report is included in Appendix B. Overall, most of the COCs were detected in all of the barge sludge and in the canal sediment, but there were few COCs detected in the water samples. The detected COCs in the sludge/sediment samples included TPH-D, TPH-O, TPH-G (in a few locations), metals (arsenic, barium, cadmium (in two locations), chromium, lead, and mercury), and oil & grease in barge 2 only. The detected COCs in the water samples included TPH-D (in barge 2), TPH-O, and lead. TPH-D, TPH-O, barium (barge sludge only), and chromium (barge sludge only) are the only contaminants detected above the limiting RECAP screening standards.

Recommendations

Based on the findings, the sludge/sediment in barge 2 will require disposal at a permitted disposal facility. Sediment and water from barges 1 and 3 as well as the sunken barge can be discharged to the canal. The majority of the water from barge 2 can likely be discharged to the canal (based on the rationale in Section 5.2 – evaluation of the TPH-O and COD results). Some water can be left in the barge to mix with the sludge and allow for easy removal with a vacuum truck. The vacuum truck can then take the water/sludge mix for disposal.

1.0 Introduction

Under Indefinite Quantity Requirements Contract (IQRC) W912P8-08-D-0029 Task Order 5, the U.S. Army Corps of Engineers (USACE) New Orleans District (MVN) tasked Strategic Planning Associates – Materials Management Group Joint Venture, LLC. (SPA-MMG) to conduct a limited Phase II Environmental Site Assessment (PIIESA) and Barge Assessment of four sunken/shored barges and the adjacent canal area along the northern bank of the GIWW near the Michoud Canal in New Orleans, Louisiana. The area under investigation (where the barges are located) is included in the proposed location for construction of a flood control gate and floodwall. The USACE granted Notice to Proceed with the project on November 21, 2008. This report follows the guidance outlined in the ASTM Standard E 1903-97. The report will be submitted to the USACE initially, however the USACE will ultimately determine the final distribution list.

1.1 Purpose

The purpose of the limited Phase II ESA/Barge Assessment was to characterize the barge contents for management and disposal (if necessary) and to evaluate the potential for impact to the adjacent canal. The scope of work included hazard categorization and sampling and analysis of composite sludge and water samples from the barges as well as sampling and analysis of sediment and water samples from the adjacent canal area. The purpose of this report is to summarize the field activities of the assessment, discuss the findings, and provide recommendations for future management of the barges.

1.2 Special Terms and Conditions

This report does not constitute legal advice, nor does SPA-MMG purport to give legal advice. Environmental conditions and regulations are subject to constant change and reinterpretation. It should not be assumed that current conditions and/or regulatory positions will remain constant. Furthermore, because the facts stated in this report are subject to professional interpretation, other professionals might reach differing conclusions.

No warranty can be made that conditions were representative of areas not sampled (or investigated). Tests or data collected during this investigation were obtained only for the purposes or objectives stated in the work plan or in this report, and should not be used for reasons other than those intended.

Possession of this report does not imply the rights of publication, and any parts thereof may not be reproduced in any form without written permission of its writer or that of the client (USACE) who ordered the report.

The client (USACE) and their designated users may rely on the information presented in this report. Should substantial time pass or a change in the investigation area occur, the accuracy of this report may be compromised and additional site investigation may be required.

1.3 Limitations and Exceptions of Assessment

Composite sludge and water samples were collected from the four barges. In general, the composites consisted of four discrete samples from within the barge compartment(s) (sample points D1-D4 in each barge sample area). In some cases, the composites did not consist of four grabs/discrete samples; there was not sludge and/or water in all selected discrete sample areas. This occurred in the sunken barge sludge sample (no sediment material at location D3), barge 2 sludge sample 01 (no sediment material at D1 or D4), barge 2 water sample 02 (no water at D3), barge 3 water sample 01 (no water at D2 or D3), and barge 3 sludge sample 02 (no sediment material at D4). In addition, two separate composite samples were not collected from barge 2; there was not enough sediment dispersed inside the barge. Rather, composite sample 01 was collected with a split also collected from this composite material. A split sample was also collected from barge 1 at sample location 02.

1.4 Limiting Conditions and Methodology Used

Under the requirements of the Task Order, the site assessment was performed in accordance with brief work plans. The site assessment was designed to compare the results with the Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) screening standards and Louisiana Pollutant Discharge Elimination System (LPDES) water quality criteria for data evaluation purposes.

The guidance and regulations followed over the course of this project included:

- American Society for Testing and Standards (ASTM) E 1903-97 “Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process;”
- LDEQ RECAP document (2003);
- LPDES water quality parameters and discharge criteria;
- USACE EM 200-1-3 “Requirements for the Preparation of Sampling and Analysis Plans.”

This limited PIIESA/Barge Assessment was conducted to characterize the barge contents for management and disposal (if necessary) and to evaluate the potential for impact to the adjacent canal.

Specific contaminants based on the likely contaminants expected inside the barges as well as parameters necessary to evaluate the potential for discharging the material to waters of the State; these were petroleum hydrocarbons (gasoline, diesel, and oil ranges), RCRA metals, oil & grease, and pH. In addition, water samples were also analyzed for chemical oxygen demand (COD) and total suspended solids (TSS).

2.0 Background

For the purposes of this PIIESA/Barge Assessment report, general background information has been summarized (more detailed background information has been presented to the USACE in previous reports for the area).

2.1 Site Description and Features

The area under investigation is the northern bank of the GIWW east of the Michoud Canal where four barges are shored and/or sunken along the bank. The area is at the southern end of the industrial complex located on the east bank of Michoud Canal. North of the site is Industrial Parkway, with two industrial facilities to the east and west, and the GIWW is located south. The NASA Michoud Assembly Facility located immediately across the Michoud Canal to the west of the area. The surrounding area north of the GIWW is primarily industrial while south of the GIWW is marsh and wetlands that are part of the Mississippi River Gulf Outlet (MRGO) spoil area. See Figure 1 for a site location map.

2.2 Physical Setting

Based on review of the most current USGS Topographic Map, the physical setting of the site is indicated below.

Geography

The site is located in New Orleans, LA along the Gulf Intracoastal Waterway (GIWW). The site is located on the bank of the GIWW at the end of Industrial Pkwy. The site is north of the Mississippi River Gulf Outlet, south of Chef Mentour Hwy, east of the Michoud Canal, and west of Industrial Pkwy.

Physical Setting

Based on "The Soil Survey of Orleans Parish LA" provided by the U.S. Department of Agriculture Soil Conservation Service (1989), the site has soils classified as Aquents.

Aquents:

Aquents are a sandy to clayey muck material that has been excavated from other places during the construction of navigable waterways. These soils are slightly saline to saline thought. They are level, highly permeable, and are very poorly drained.

2.3 Site History and Land Use

The subject property is the northern bank of the GIWW. The area is currently not in use and is primarily covered with vegetation around the barges.

2.4 Summary of Previous Assessments

Previous investigations (including a Phase I Environmental Site Assessment of the canal sediment and a PIIESA of the property to the west of the site) have been conducted in the Michoud area. The findings of these investigations indicated that the canal sediment has not been significantly impacted by industrial activity and the neighboring property contained concentrations of a few COCs likely associated with historical surface spills.

3.0 Phase II Activities

SPA-MMG conducted the limited PIIESA/Barge Assessment of the barges and canal area on December 2-3, 2008. The scope of work and field and analytical methods are described in the following sections.

3.1 Scope of Assessment

The scope of work under the limited PIIESA/Barge Assessment included hazard categorization of the barge contents, composite sludge and water sampling from the four barges, and sampling of the adjacent canal sediment and water for the contaminants of concern (COCs), including Total Petroleum Hydrocarbons – gasoline, diesel, and oil ranges (TPH-G, TPH-D, and TPH-O), RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), oil & grease, and pH, with the water samples also analyzed for TSS and COD.

3.1.1 Supplemental Record Review

Part of the scope development for the investigation involved some records review, including site background information. This information aided in determining the contaminants of concern (COCs) and the appropriate sampling locations.

3.1.2 Sampling and Chemical Testing Plan

Prior to conducting the limited PIIESA/Barge Assessment site activities, SPA-MMG prepared work plans; a SAP to incorporate the components of a Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP), and a H&S Plan to address health and safety requirements; these plans documented the tasks to be completed, quality requirements, and the health and safety hazards. The SAP described the investigation methodologies, including sample collection and analysis methods and the quality objectives of the site assessment, including quality of data and quality assurance for sampling protocols. The H&S Plan addressed the health and safety hazards and their mitigation.

The rationale for the investigation was as follows. The purpose of the investigation was to characterize the barge contents for management and disposal (if necessary) and to evaluate the potential for impact to the adjacent canal. As is typical of sampling unknown contents of containers, hazard categorization was conducted on the barge contents for pre-screening to provide preliminary information including potential contaminants as well as hazards for

future handling. Composite samples were also collected for laboratory analysis. The USACE Task Order specified the number of composite samples to be collected from each barge. The desired outcome was to collect samples from areas representing each entire barge. In addition, samples representing the canal were necessary for comparison and evaluation for potential impact. SPA-MMG determined the number of discrete samples comprising each barge composite sample; four discrete samples were attempted for each composite. Therefore, the sample breakdown was as follows:

- Barge 1 (long barge) – three composite sludge samples and three composite water samples;
- Barge 2 (under tilted barge) – two composite sludge samples and two composite water samples;
- Barge 3 (barge beyond tilted barge) – two composite sludge samples and two composite water samples;
- Sunken barge (concrete structure) – one composite sludge sample and one composite water sample;
- Canal – one sediment sample and one water sample.

The actual discrete sample locations were based on accessibility and the presence of material within the barges, while the canal samples were collected from the shoreline adjacent to the barges; see Figures 3-6 for the actual discrete locations within the barges as well as the canal sample locations. The purpose was to evaluate potential contamination from barge contents as well as the feasibility for discharging the contents to the canal in the future, therefore, the contaminants of concern included TPH-G, TPH-D, TPH-O, RCRA metals, oil & grease, and pH, with TSS and COD also analyzed for the water samples.

3.1.3 Deviations from the Work Plan

There were no deviations from the SAP; all activities were conducted, although two separate composite sludge samples were not collected from barge2 since there was not enough material dispersed inside the barge. Rather, a split was collected at location 01 in barge 2 so that two samples were collected from this barge.

3.2 Field Explorations and Methods

Photo documentation of all site activities is included in Appendix D. Copies of all field logs and paperwork are included in Appendix C. The final safety report is included in Appendix E.

SPA-MMG conducted hazard categorization and composite sludge and water sampling from the four barges as well as sampling from the adjacent canal. The investigation was conducted on December 2-3, 2008. All sludge/sediment samples were collected using the Wilco sediment sampler and all water samples were collected using disposable bailers.

The discrete sample locations (indicated on Figures 3, 4, 5, and 6) were chosen to reflect areas representing each entire barge and were also based on accessibility. The canal sample locations were chosen to reflect an area with likely impact and that would be useful for comparison with the barge contents. The geographic coordinates for all sample locations are included in the field logs. Soil lithology is described in Section 4.1. Depending on the thickness of the barge sludge material, multiple grabs were taken from each discrete location. All sampling was conducted from the surface of each barge and atmospheric monitoring was conducted for organic vapors and explosive gases.

Prior to producing each composite sludge sample, field hazard categorization analysis was conducted on the material from each discrete location within each barge. The results are included in the hazard categorization summary table and field logs in Appendix C. The testing was conducted in a portable hooded area and included flammability within a watch glass, corrosivity with pH paper as well as multiple tests using SpilFyter classifying strips (acid/base risk, oxidizer risk, fluoride risk, organic solvent and petroleum distillate risk, and iodine, bromine, chloride risk).

The sample material from each of the discrete borings grouped for each composite was placed in a plastic baggie and homogenized to produce composite samples. Split samples were collected from sample locations Barge 1 02 and Barge 2 01. Field blanks were collected each day of sampling and trip blanks were included in the coolers containing the volatile samples. A rinsate blank was not necessary since disposable water sampling equipment and sediment liners were used. The laboratory matrix spike/matrix spike duplicate (MS/MSD) sample was adequate to meet data quality requirements. All samples were analyzed for TPH-G, TPH-D, TPH-O, RCRA metals, oil & grease, and pH. Water samples were also analyzed for TSS and COD. Accelerated turn around time was requested for all analyses. The samples were packaged in a cooler (according to SPA-MMG's standard operating procedures) and dropped at Pace Analytical Laboratories (Pace) in St. Rose, Louisiana. The analytical results are presented in Tables 1 and 2, and are discussed briefly in Section 4.0. The final analytical report is included in Appendix B.

3.3 Sampling and Chemical Analyses and Methods

The SAP addresses the laboratory procedures and analyses that were performed in more detail. This section lists the specific EPA SW-846 (or other) analytical methods used over the course of the limited PIIESA/Barge Assessment.

The analytical methods used for analysis of the sludge/sediment and water samples were:

- TPH-G – 5035, 8015
- TPH-D and TPH-O – 8015
- RCRA metals – 6010, 7471
- Oil & Grease – 9071 (solid), 1664 (water)

- pH – 9045 (solid), 9445 (water)
- TSS – 2540
- COD – 5220

4.0 Evaluation and Presentation of Results

The following sections describe the results of the limited PIIESA/Barge Assessment. The full analytical report is included as Appendix B.

4.1 Subsurface Conditions

The following sections describe the sediment lithology as observed by inspection of sample material collected from the Barge1, Barge2, Barge3, Sunk Barge, and Canal discrete sampling areas.

4.1.1 Geologic Setting

All discrete samples have geology consistent with the deposition of near surface sedimentary deposits associated with fluvial depositional processes (Mississippi River Alluvium). These deposits typically consist of dark grey to gray and brown silty clay and some fine sand with some peat inclusions that are consistent with past and present courses of the Mississippi River and associated tributaries. Sediment depth is variable from 0.5 to 1.5 feet. Underlying rock formations include Quaternary and Tertiary sedimentary deposits.

4.1.2 Hydrogeologic Conditions

The hydrogeologic regime underlying the site consists of a near-surface Gonzales – New Orleans alluvial aquifer. Ground water movement is in a southeastern direction.

4.1.2 Verification of Sampling and Quality Objectives

The sampling objectives included collection of composite sludge and water samples from the barges as well as samples of canal sediment and water. The sampling objectives were met. In addition, the quality objectives included collection of limited quality control samples, including a split sample and blanks. These quality objectives were also met without exception.

4.2 Analytical Data

The analytical results from the barge and canal sampling under the limited PIIESA/Barge Assessment are summarized in Tables 1 and 2. The analytical results (COCs detected) are briefly summarized below for each barge or canal sample. The actual concentrations detected in each sample are listed on the summary tables. Overall, most of the COCs were detected in all of the barge sludge and in the canal sediment, but there were few COCs detected in the water samples. The detected COCs in the sludge/sediment samples included TPH-D, TPH-O, TPH-G (in a few locations), metals (arsenic, barium, cadmium (in two locations), chromium, lead, and mercury), and oil & grease in barge 2. The detected COCs in the water samples included TPH-D (in barge 2), TPH-O, and

lead. TPH-D, TPH-O, barium (barge sludge only), and chromium (barge sludge only) are the only contaminants detected above the limiting RECAP screening standards. The COCs with concentrations above the RECAP standards are in bold in the sections below.

Barge 1

Barge 1 Sample 01: The COCs detected in composite sludge sample 01 from barge 1 were TPH-D, TPH-O, arsenic, **barium**, chromium, lead, and mercury. **TPH-O** was the only COC detected in the water sample.

Barge 1 Sample 02: The COCs detected in composite sludge sample 02 from barge 1 were TPH-D, TPH-O, arsenic, **barium**, **chromium**, lead, and mercury. Lead was the only COC detected in the water sample.

The COCs detected in the split sample of composite sludge sample 02 were **TPH-D**, TPH-O, arsenic, **barium**, cadmium, chromium, lead, and mercury.

Barge 1 Sample 03: The COCs detected in composite sludge sample 03 from barge 1 were TPH-D, TPH-O, arsenic, **barium**, **chromium**, lead, and mercury. **TPH-O** was the only COC detected in the water sample.

Barge 2

Barge 2 Sample 01: The COCs detected in composite sludge sample 01 from barge 2 were **TPH-D**, **TPH-O**, arsenic, **barium**, chromium, lead, mercury, and oil & grease. The COCs detected in the water sample were **TPH-D**, **TPH-O**, and lead.

The COCs detected in the split sample of composite sludge sample 01 were TPH-G, **TPH-D**, **TPH-O**, arsenic, **barium**, chromium, lead, mercury, and oil & grease.

Barge 2 Sample 02: A second sludge sample was not collected from barge 2. The COCs detected in the water sample were **TPH-D**, **TPH-O**, and lead.

Barge 3

Barge 3 Sample 01: The COCs detected in composite sludge sample 01 from barge 3 were TPH-D, arsenic, barium, chromium, and lead. The COCs detected in the water sample were **TPH-O** and lead.

Barge 3 Sample 02: The COCs detected in composite sludge sample 02 from barge 3 were TPH-D, arsenic, barium, chromium, and lead. The COCs detected in the water sample were **TPH-O** and lead.

Sunken Barge

Sunk Barge Sample 01: The COCs detected in composite sludge sample 01 from barge 3 were TPH-G, TPH-D, TPH-O, arsenic, barium, cadmium, chromium, lead, and mercury. **TPH-O** was the only COC detected in the water sample.

Canal Sample

Canal Sample 01: The COCs detected in the canal sediment were TPH-G, TPH-D, TPH-O, arsenic, barium, chromium, and lead. **TPH-O** was the only COC detected in the canal water sample.

The data quality is discussed in Section 5.3.

An evaluation of these data with regard to RECAP screening standards and for the appropriate parameters – LPDES water discharge criteria – is included in Section 5.2; the limiting RECAP screening standards (and LPDES criteria where applicable) are included on Tables 1 and 2.

4.3 Barge Volumes

SPA-MMG measured the dimensions of the barges as well as the depths and area of the water and sludge within each of the barges. This information was used to determine estimates of the volume of water and sludge within the barges. The barge dimensions are included on Figure 2, and Table 3 summarizes the volumes for each of the four barges.

5.0 Discussion of Findings and Conclusions

This limited PIIESA/Barge Assessment was conducted in accordance with the approved work plans (SAP and H&S Plan) and all guidance referenced in those work plans, including ASTM guidance E 1903-97. All activities planned for this site were performed as anticipated.

5.1 Recognized Environmental Conditions

The investigation was conducted to characterize the barge contents for management and disposal (if necessary) and to evaluate the potential for impact to the adjacent canal.

The scope of work under the limited PIIESA/Barge Assessment included hazard categorization and sampling and analysis of barge sludge and water samples from four barges as well as sampling and analysis of canal sediment and water from an adjacent area.

The results of the assessment indicate the following. Recommendations based on the findings are included in Section 6.0.

Hazard Categorization

The hazard categorization results were negative for all samples (sludge and water). The samples did not exhibit ignitability, corrosivity, or reactivity, and the SpilFyter results were negative (no organic solvents, oxidizers, petroleum distillate, iodine, bromine, or chlorine were identified).

Analytical Results

The sample results indicated that TPH-D, TPH-O, barium, and chromium were elevated (above RECAP screening standards) in the barge sludge (chromium in barge 1, TPH-D and TPH-O in barge 2, and barium in both barges 1&2); and TPH-D, TPH-O, and COD were elevated in the barge water (TPH-O and COD were elevated in all barges as well as in the canal sample, and TPH-D was elevated in barge 2 only). In addition, one TSS concentration was elevated in one of the barge 2 samples (Barge2 01).

In summary, the COCs exceeding the RECAP standards are as follows:

Barge 1: Barium, chromium, and TPH-D (in the split sample only, see below) in the sludge, and TPH-O in the water;

Barge 2: TPH-D, TPH-O, and barium in the sludge, and TPH-D and TPH-O in the water;

Barge 3: No COCs exceeded RECAP in the sludge, and TPH-O in the water;

Sunken Barge: No COCs exceeded RECAP in the sludge, and TPH-O in the water;

Canal: No COCs exceeded RECAP in the canal sediment, but TPH-O did exceed RECAP (for groundwater 1) in the canal water.

The COD and TSS concentrations were elevated above LPDES water quality criteria for discharge. It should be noted that while TPH-D was elevated in the split sludge sample collected in barge 1, the primary sample did not indicate an elevated concentration; the elevated concentration (66.1 mg/kg) was just above the RECAP standard and is likely attributed to a hot spot or bit of product in the sample.

5.2 Affected Media

The analytical results from the limited PIIESA/Barge Assessment indicate that the COCs detected in the barge sludge included TPH-G, TPH-D, TPH-O, arsenic, barium, cadmium, chromium, lead, and mercury, while the barge water contained TPH-D, TPH-O, and lead. The canal sediment indicated low concentrations of TPH-G, TPH-D, TPH-O, arsenic, barium, chromium, and lead. The canal water indicated TPH-O only, at a concentration above the RECAP standard. Aside from barium, the metal concentrations are in the range

associated with background levels (and barium is likely associated with industrial activity). The petroleum concentrations are likely the result of petroleum used or stored in the barges.

The concentrations detected in each barge or canal sample are indicated in Tables 1 (sludge/sediment) and 2 (water). These data were reviewed with respect to LDEQ RECAP screening standards and LPDES water discharge criteria where appropriate. The screening standards considered are the most stringent of soil screening non-industrial (SSni) or soil screening protective of groundwater (SSgw). The limiting RECAP screening standards for each contaminant of concern are included on the summary tables.

TPH-D and TPH-O in the barge sludge (specifically barge 2) are the only contaminants that warrant further consideration. Barium and chromium are also elevated, but can be eliminated from consideration in barge 1 (the barge 2 barium concentrations cannot be eliminated). The barium concentrations in barge 1 exceeded the non-industrial standard (550 mg/kg), but not the industrial (14,000 mg/kg) or protective of groundwater (2,000 mg/kg) standards. Discharging to the canal meets the industrial and protective of groundwater exposure scenario. The same is true for the chromium concentrations (SSi = 610 mg/kg and SSgw = 100 mg/kg). In addition, the chromium standards used for evaluation were for hexavalent chromium (Cr(VI)) as standard practice for using the most conservative (and protective) standards. The analytical results are for total chromium and it is more likely that it is trivalent chromium (Cr(III)) that is present in the sediment. The concentrations do not exceed any of the RECAP standards for Cr(III). The water samples from all of the barges had elevated concentrations of TPH-O and COD. However, so did the canal water sample. The TPH-O concentrations are only slightly above the RECAP groundwater screening standard, which is for groundwater 1 or untreated drinking water. The canal water is not classified as groundwater 1. Furthermore, all oil & grease concentrations were non-detect; this is the parameter used for water quality discharge. Likewise, the COD concentrations were elevated in all of the barge water samples, but they were elevated in the canal as well. The results are likely attributed to naturally occurring organics like humic acid and fulvic acid associated with suspended solids in the samples.

5.3 Evaluation of Media Quality

The data quality has been evaluated to ensure the quality supports that data use, e.g. determining whether the barge contents require disposal or can be discharged to the canal and whether it is likely the barges have impacted the canal.

Based on review of the results for the blank samples (all non-detect) and the split samples (as well laboratory quality data), the data are of sufficient quality to

satisfy the objectives of this assessment and the recommendations provided in this report.

5.4 Other Concerns (Adequacy of Assessment)

This investigation was a limited site assessment conducted to characterize the barge contents for management and disposal (if necessary) and to evaluate the potential for impact to the adjacent canal. The findings provide information about potential contamination of the barge contents and the adjacent canal. The sample results indicate that the sludge from barge 2 will require disposal at a permitted facility; the contents of the remaining barges and the bulk of water from barge 2 can be discharged. MMG's recommendations are discussed in Section 6.0.

6.0 Recommendations

The sludge/sediment in barge 2 will require disposal at a permitted disposal facility. Sediment and water from barges 1 and 3 as well as the sunken barge can be discharged to the canal. The majority of the water from barge 2 can likely be discharged to the canal (based on the rationale in Section 5.2 – evaluation of the TPH-O and COD results). Some water can be left in the barge to mix with the sludge and allow for easy removal with a vacuum truck. The vacuum truck can then take the water/sludge mix for disposal.

Tables

Table 1: Summary of Sludge/Sediment Analytical Results

Parameter	RECAP Standard*	Sample Result (mg/kg)										
		Barge 1-01	Barge 1-02	Barge 1-02a	Barge 1-03	Barge 2-01	Barge 2-01a	Barge 3-01	Barge 3-02	Sunk Barge-01	Canal-01	
TPH-G	65	<3.44	<2.64	<2.69	<2.82	<4.25	11	<3.33	<3.69	5.8	3.54	
TPH-D	65	52.7	32.2	66.1	56.1	3020	2950	43.1	28.8	22.3	13.7	
TPH-O	180	75.4	64.0	97.9	65.4	956	948	<50	<50	58	50.9	
Arsenic	12	8.58	6.85	5.33	7.58	3.85	4.48	1.95	1.63	7.03	4.87	
Barium	550	1210	1180	1560	653	4670	4430	51.3	38.8	221	105	
Cadmium	3.9	<0.472	<0.49	0.978	<0.472	<0.5	<0.472	<0.463	<0.463	0.492	<0.455	
Chromium	23	19	24.3	10.5	32.7	19.5	22.5	5.65	5.46	10.8	8.16	
Lead	100	36.3	52.4	47.5	88.1	51.1	51.9	6.63	6.52	12.9	9.35	
Mercury	2.3	0.0601	0.0705	0.1	0.0566	0.0344	0.033	<0.0194	<0.0194	0.343	<0.194	
Selenium	20	<3.3	<3.43	<3.12	<3.3	<3.5	<3.3	<3.24	<3.24	<3.3	<3.18	
Silver	39	<0.943	<0.98	<0.893	<0.943	<1.0	<0.943	<0.926	<0.926	<0.943	<0.909	
Oil & grease	NS	<50	50	<50	<50	1500	1800	<50	<50	<50	<50	
pH	NS	6.48	6.88	6.89	6.96	5.06	5.48	6.71	6.68	5.86	6.21	

*The RECAP screening standards listed are the more stringent of soil screening non-industrial exposure (SSni) and soil screening protective of groundwater (SSgw).

Table 2: Summary of Water Analytical Results

Parameter	Reg Standard ¹	Sample Result (mg/l)											
		Barge 1-01	Barge 1-02	Barge 1-03	Barge 2-01	Barge 2-02	Barge 3-01	Barge 3-02	Sunk Barge-01	Canal-01			
TPH-G	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TPH-D	0.15	<0.15	<0.15	<0.15	0.154	0.169	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
TPH-O	0.15	0.178	<0.15	0.173	0.33	0.281	0.164	0.233	0.209	<0.010	<0.010	<0.010	0.214
Arsenic	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Barium	2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	0.015	<0.005	0.00546	<0.005	0.00709	0.00639	0.00642	0.0086	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Selenium	0.05	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Silver	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Oil & grease	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
pH	6-9	7.41	7.42	7.43	6.63	6.86	7.5	7.44	6.77	7.44	6.77	6.91	6.91
TSS	45	9.0	20	14	47	17	27	37	11	37	11	14	14
COD	45	324	342	349	50	110	342	323	100	342	323	100	70

1. Regulatory Standard is RECAP groundwater screening standard or LPDES water quality discharge standard, where applicable.

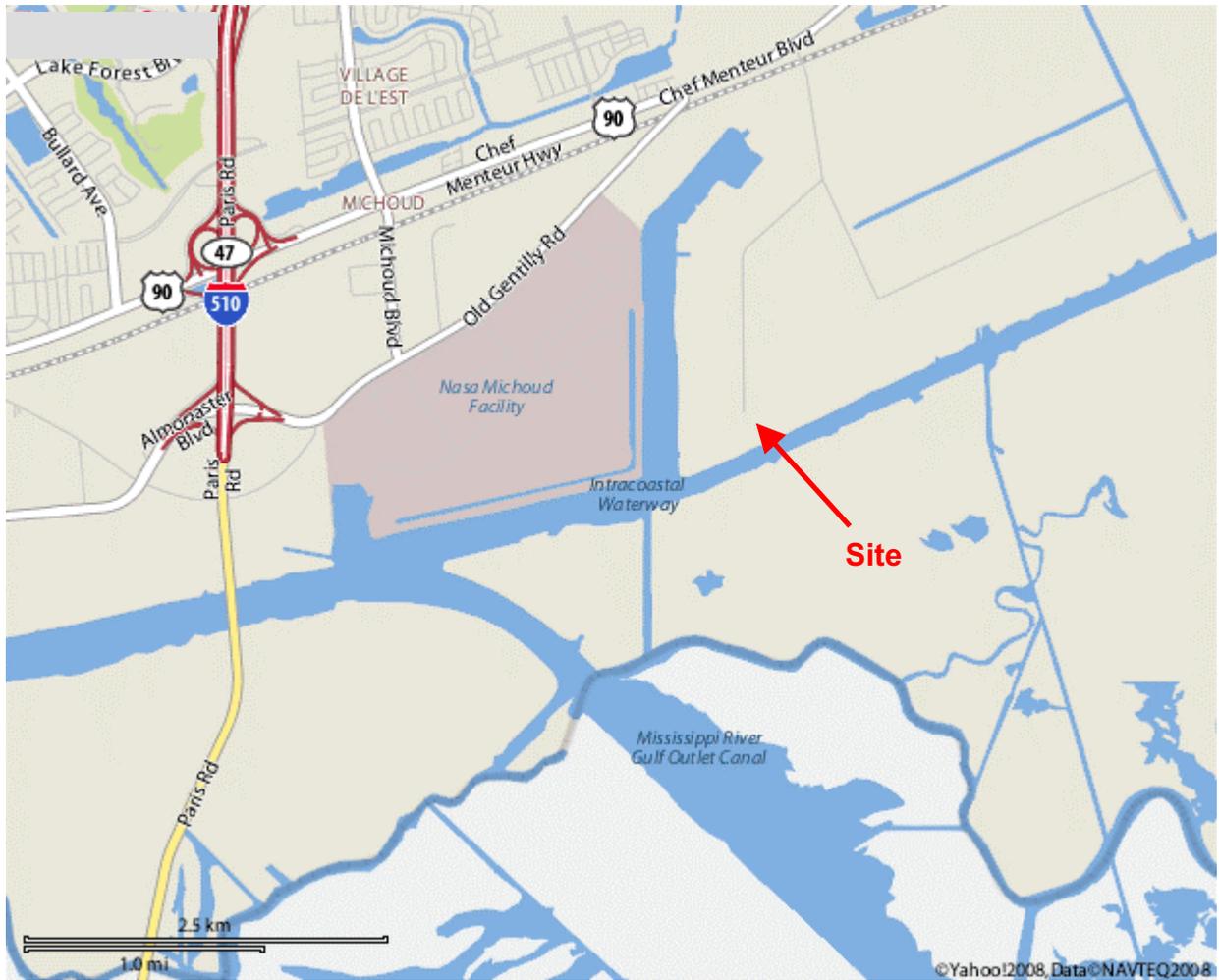
Table 3: Barge Volume Estimates

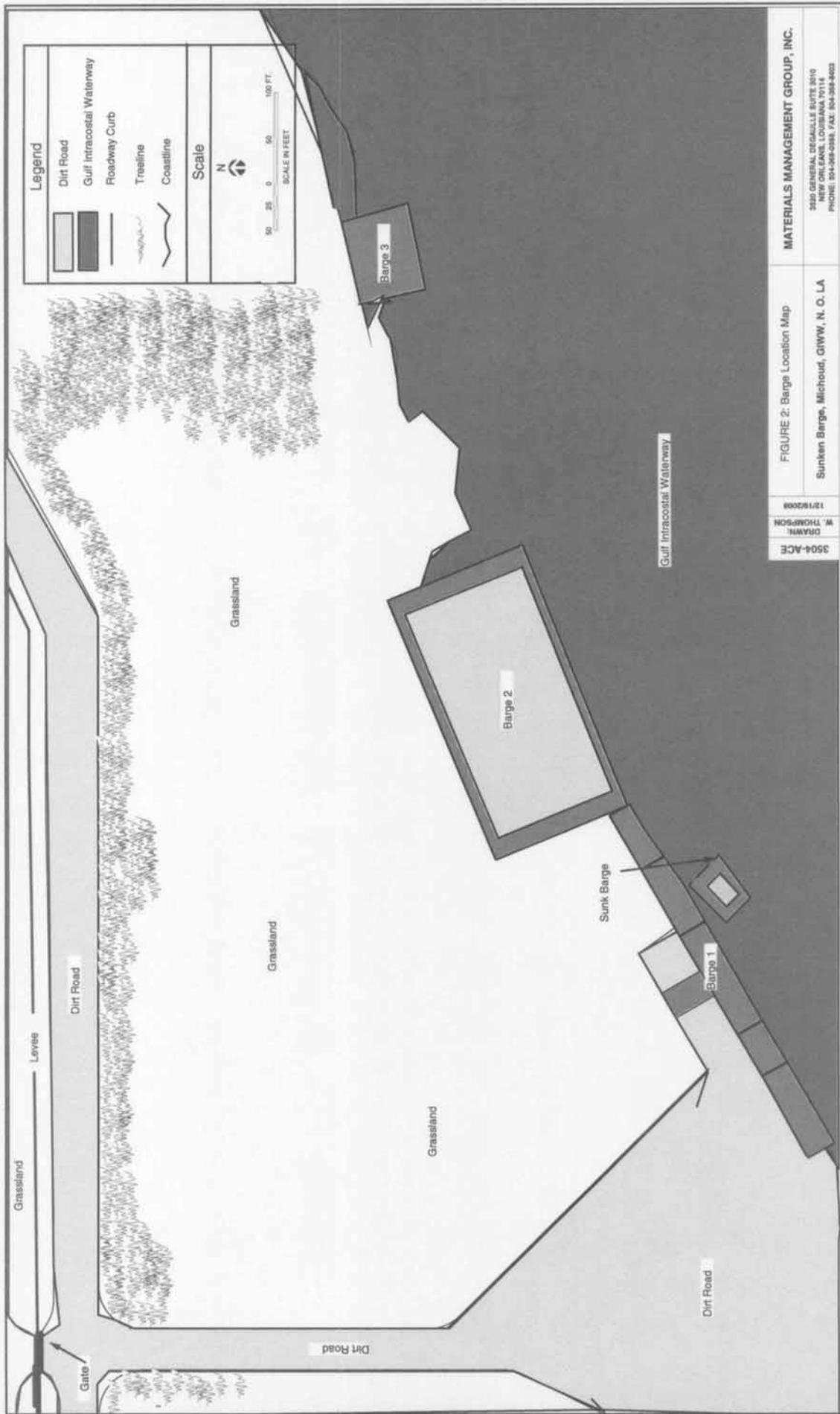
	Depth (feet)	Length (feet)	Width (feet)	Volume (cubic feet)	Volume (cubic yards)	Volume (gallons)
Barge 1						
Sediment	0.75	225.65	18.75	3173.20	117.5260417	23680.62034
Water	0.5	225.65	18.75	2115.47	78.35069444	15787.08022
Barge	7	225.65	18.75	29616.56	1096.909722	221019.1231
Barge 2						
*Sediment	0.1	198.25	75	1486.88	55.06944444	11096.08209
*Water	6	198.25	75	89212.50	3304.166667	665764.9254
*Barge	10	198.25	75	148687.50	5506.944444	1109608.209
Barge 3						
Sediment	0.1	59	48	283.20	10.48888889	2113.432836
Water	3	59	48	8496.00	314.6666667	63402.98507
Barge	12	59	48	33984.00	1258.666667	253611.9403
Sunk Barge						
Sediment	0.5	35.75	25.25	451.34	16.71643519	3368.23694
Water	7	35.75	25.25	6318.81	234.0300926	47155.31716
Barge	12	35.75	25.25	10832.25	401.1944444	80837.68657

*The width of Barge 2 is given as the undamaged portion only.

Figures

Figure 1: Site Location Map





Legend

-  Dirt Road
-  Gulf Intracoastal Waterway
-  Roadway Curb
-  Tree Line
-  Coastline

Scale



3504-ACE
 DRAWN:
 W. THOMPSON
 12/18/2008

FIGURE 2: Barge Location Map

MATERIALS MANAGEMENT GROUP, INC.

2530 GENERAL DEGAULLE SUITE 3010
 NEW ORLEANS, LOUISIANA 70114
 PHONE: 504-368-2585, FAX: 504-368-8602

Sunken Barge, Michoud, GIWW, N. O. LA

Figure 3: Overall Discrete Sample Location Map – Aerial View

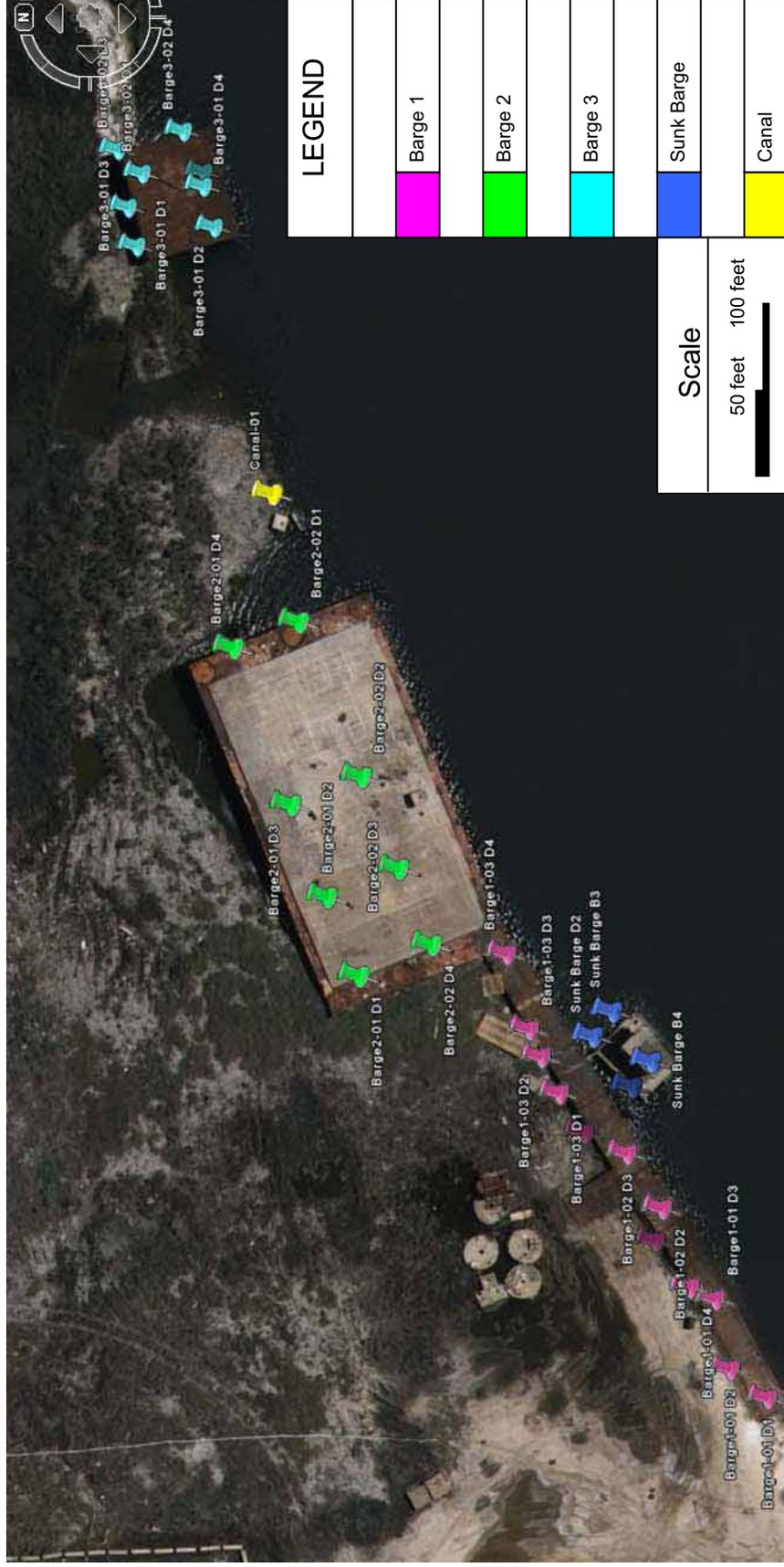


Figure 4: Barge 1 Discrete Sample Location Map – Aerial View

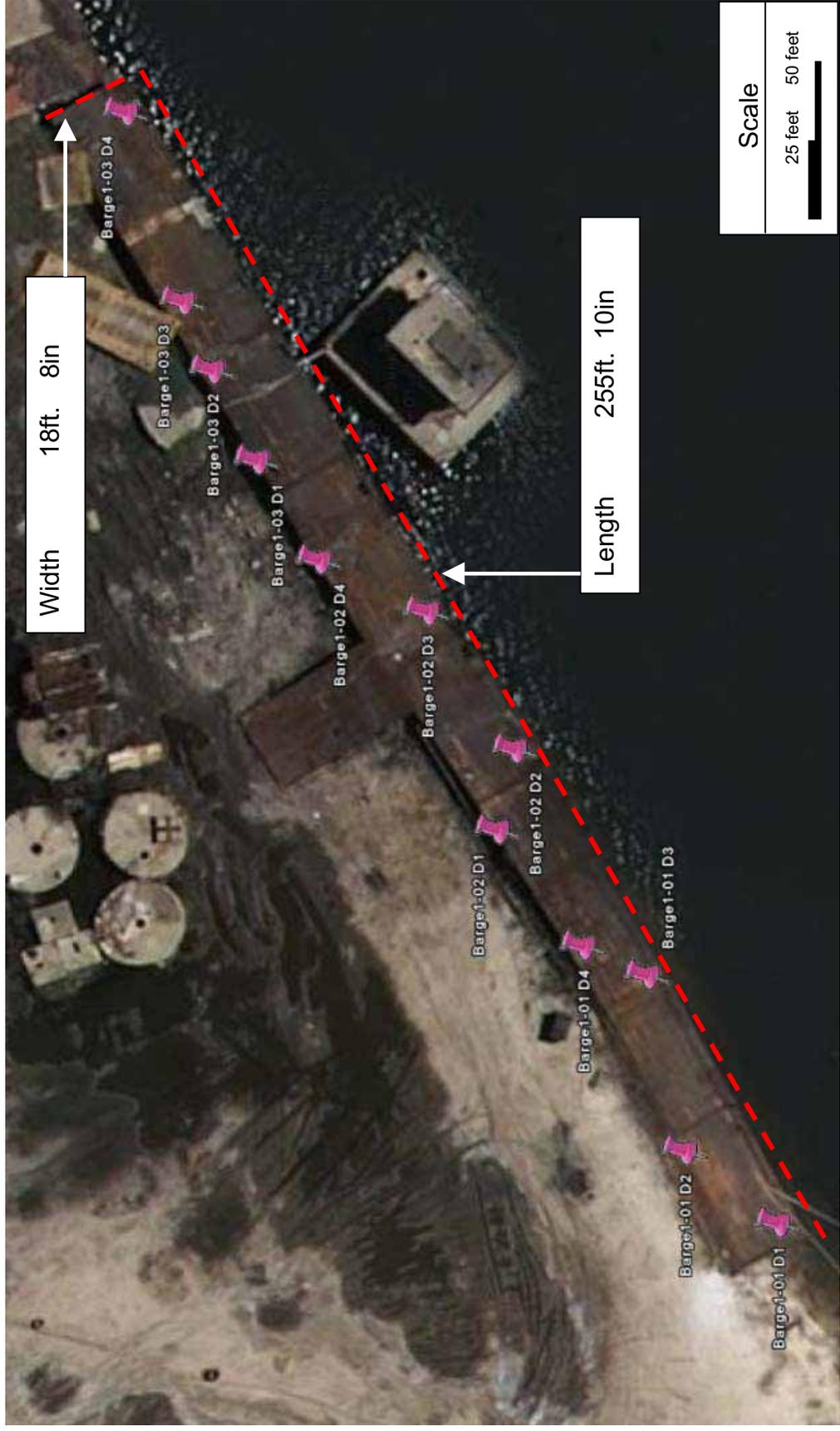


Figure 5: Barge 2 Discrete Sample Location Map – Aerial View

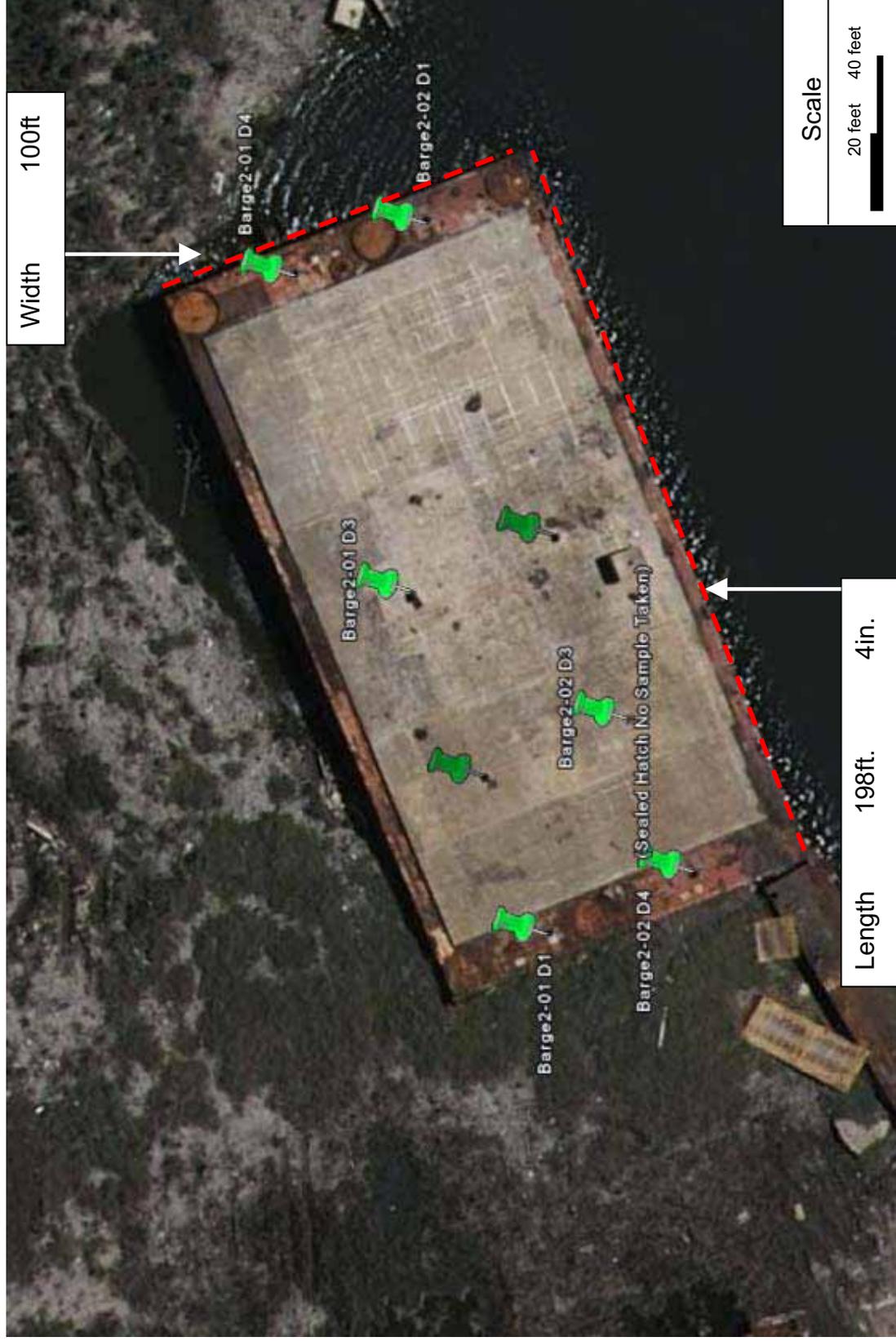


Figure 6: Barge 3 Discrete Sample Location Map – Aerial View



Figure 7: Sunken Barge Discrete Sample Location Map – Aerial View



Appendices

Appendix A: Sampling Logs

Barge 1

SAMPLE COLLECTION LOG

Delivery Order No W912P8-08-D-0029, TO 5	Project: 3504-ACE Site: Michoud Canal/GIWW
Sample I.D.: SD-3504ACE-BARGE 1-01	
Date (YYMMDD):	12-3-08
Time (HHMMSS):	10:18
Top Depth:	0'
Bottom Depth:	1'
Matrix:	Sediment
Sample Qualifier:	QA/QC/RB/CS
Sample Type:	Composite 4 discrete
Sampler:	W.T.
Witness:	P.L.
Contractor:	
Remarks:	Sandy Clay Muck, Dark Grey, Shell Inclusions
Weather:	
Prepared by:	WThompson
Checked by:	

Analytical Request			
Container Type	Sample Volume	Parameter	No. of Cont.
Encore	1.5 gr. Encore	TPH-G	1
4oz	4oz	TPH-D, O	1
4oz	4oz	RCRA 8, PH	1
4oz	4oz	O&G	1
/			

Field Screening Results			
/			

Table 1: Sample Table

Sample Name	Date	Required Analysis (Method)	Containers*	Holding Time/Preservation*	Comments
SD-3504ACE-Barge 1-01	10:18	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	10:51	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 1-02	10:51	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	11:07	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 1-02a	11:07	TPH-G	2 Encores /	48 hrs/Cool to 4°C	Split
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	11:23	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 1-03	11:23	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	13:30	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-2-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 2-01	13:30	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-2-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	13:30	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-2-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge-2-02 Barge 2-01a	13:30	TPH-G	2 Encores /	48 hrs/Cool to 4°C	Split
	12-2-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	13:21	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 3-01	13:21	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	13:48	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	
SD-3504ACE-Barge 3-02	13:48	TPH-G	2 Encores /	48 hrs/Cool to 4°C	
	12-3-08	TPH-D&O	1 X 4 oz jar /	14 d/Cool to 4°C	
	12-3-08	RCRA metals, pH	1 X 4 oz jar /	180 d (Hg 45 d)/Cool to 4°C	
	12-3-08	O&G	1 X 4 oz jar /	14 d/Cool to 4°C	

Sampling and Analysis Plan – Short-form
 Limited PIESA/Barge Assessment – Michoud Canal/GIWW 3504-ACE
 November 26, 2008

Sample Name	Date	Required Analysis (Method)	Containers*	Holding Time/Preservation*	Comments
SD-3504ACE-Sunk Barge-01	11:45	TPH-G	2 Encores	48 hrs/Cool to 4°C	X
	12-2-08	TPH-D&O	1 X 4 oz jar	14 d/Cool to 4°C	
		RCRA metals, pH	1 X 4 oz jar	180 d (Hg 45 d)/Cool to 4°C	
		O&G	1 X 4 oz jar	14 d/Cool to 4°C	
SD-3504ACE-Canal-01	12:30	TPH-G	2 Encores	48 hrs/Cool to 4°C	X
	12-2-08	TPH-D&O	1 X 4 oz jar	14 d/Cool to 4°C	
		RCRA metals, pH	1 X 4 oz jar	180 d (Hg 45 d)/Cool to 4°C	
		O&G	1 X 4 oz jar	14 d/Cool to 4°C	
W-3504ACE-Barge 1-01	10:28	TPH-G	3 X 40 ml VOA vial	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	2 X 1 L amber	7 d/ Cool to 4°C	
		RCRA metals	1 X 250 ml plastic	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
		O&G	1 X 32 oz glass	14 d/ HCl & Cool to 4°C	
	12-3-08	TSS, pH	1 X 250ml-glass- plastic	7 d/ Cool to 4°C	
		COD	1 X 40 ml amber vial	14 d/ H ₂ SO ₄ & Cool to 4°C	
W-3504ACE-Barge 1-02	11:00	TPH-G	3 X 40 ml VOA vial	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	2 X 1 L amber	7 d/ Cool to 4°C	
		RCRA metals	1 X 250 ml plastic	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
		O&G	1 X 32 oz glass	14 d/ HCl & Cool to 4°C	
	12-3-08	TSS, pH	1 X 250ml-glass- Plastic	7 d/ Cool to 4°C	
		COD	1 X 40 ml amber vial	14 d/ H ₂ SO ₄ & Cool to 4°C	
W-3504ACE-Barge 1-03	11:28	TPH-G	3 X 40 ml VOA vial	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	2 X 1 L amber	7 d/ Cool to 4°C	
		RCRA metals	1 X 250 ml plastic	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
		O&G	1 X 32 oz glass	14 d/ HCl & Cool to 4°C	
	12-3-08	TSS, pH	1 X 250ml-glass- Plastic	7 d/ Cool to 4°C	
		COD	1 X 40 ml amber vial	14 d/ H ₂ SO ₄ & Cool to 4°C	
W-3504ACE-Barge 2-01	13:15	TPH-G	3 X 40 ml VOA vial	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	2 X 1 L amber	7 d/ Cool to 4°C	
		RCRA metals	1 X 250 ml plastic	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
	12-2-08	O&G	1 X 32 oz glass	14 d/ HCl & Cool to 4°C	
	TSS, pH	1 X 250ml-glass- plastic	7 d/ Cool to 4°C		
	COD	1 X 40 ml amber vial	14 d/ H ₂ SO ₄ & Cool to 4°C		

Sampling and Analysis Plan – Short-form
 Limited PIIESA/Barge Assessment – Michoud Canal/GIWW 3504-ACE
 November 26, 2008

Sample Name	Date	Required Analysis (Method)	Containers*	Holding Time/Preservation*	Comments
W-3504ACE-Barge 2-02	14:00	TPH-G	3 X 40 ml VOA vial ✓	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	2 X 1 L amber ✓	7 d/ Cool to 4°C	
		RCRA metals	1 X 250 ml plastic ✓	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
	12-2-08	O&G	1 X 32 oz glass ✓	14 d/ HCl & Cool to 4°C	
		TSS, pH	1 X 250ml glass <i>plastic</i> ✓	7 d/ Cool to 4°C	
W-3504ACE-Barge 3-01	13:30	TPH-G	1 X 40 ml amber vial ✓	14 d/ H ₂ SO ₄ & Cool to 4°C	X
		TPH-D&O	3 X 40 ml VOA vial ✓	14 d/ HCl & Cool to 4°C	
		RCRA metals	2 X 1 L amber ✓	7 d/ Cool to 4°C	
	12-3-08	O&G	1 X 250 ml plastic ✓	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
		TSS, pH	1 X 32 oz glass ✓	14 d/ HCl & Cool to 4°C	
W-3504ACE-Barge 3-02	13:53	TPH-G	1 X 250ml glass <i>plastic</i> ✓	7 d/ Cool to 4°C	T
		TPH-D&O	1 X 40 ml amber vial ✓	14 d/ H ₂ SO ₄ & Cool to 4°C	
		RCRA metals	3 X 40 ml VOA vial ✓	14 d/ HCl & Cool to 4°C	
	12-3-08	O&G	2 X 1 L amber ✓	7 d/ Cool to 4°C	
		TSS, pH	1 X 250 ml plastic ✓	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
W-3504ACE-Sunk Barge-01	11:00	TPH-G	1 X 32 oz glass ✓	14 d/ HCl & Cool to 4°C	X
		TPH-D&O	1 X 250ml glass <i>plastic</i> ✓	7 d/ Cool to 4°C	
		RCRA metals	1 X 40 ml amber vial ✓	14 d/ H ₂ SO ₄ & Cool to 4°C	
	12-2-08	O&G	3 X 40 ml VOA vial ✓	14 d/ HCl & Cool to 4°C	
		TSS, pH	2 X 1 L amber ✓	7 d/ Cool to 4°C	
W-3504ACE-Canal-01	12:25	TPH-G	1 X 250 ml plastic ✓	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	X
		TPH-D&O	1 X 32 oz glass ✓	14 d/ HCl & Cool to 4°C	
		RCRA metals	1 X 250ml glass <i>plastic</i> ✓	7 d/ Cool to 4°C	
	12-2-08	O&G	1 X 40 ml amber vial ✓	14 d/ H ₂ SO ₄ & Cool to 4°C	
		TSS, pH	3 X 40 ml VOA vial ✓	14 d/ HCl & Cool to 4°C	
W-3504ACE-TB-date 12-2-08	14:55	TPH-G	2 X 1 L amber ✓	7 d/ Cool to 4°C	/ / / X
		TPH-D&O	1 X 250 ml plastic ✓	180 d (Hg 45 d)/HNO ₃ & Cool to 4°C	
		RCRA metals	1 X 32 oz glass ✓	14 d/ HCl & Cool to 4°C	
	12-2-08	O&G	1 X 250ml glass <i>plastic</i> ✓	7 d/ Cool to 4°C	
		TSS, pH	1 X 40 ml amber vial ✓	14 d/ H ₂ SO ₄ & Cool to 4°C	
W-3504ACE-TB-date 12-3-08	14:49	TPH-G	3 X 40 ml vials	14 d/ HCl & Cool to 4°C	
W-3504ACE-FB-date 12-2-08	15:00	TPH-G	3 X 40 ml vials	14 d/ HCl & Cool to 4°C	
W-3504ACE-FB-date 12-3-08	14:51	TPH-G	3 X 40 ml vials	14 d/ HCl & Cool to 4°C	
SD-3504ACE-Waste	14:45	TCLP	1 X 8 oz jar	NA	

Sampling and Analysis Plan – Short-form November 26, 2008
 Limited PIIESA/Barge Assessment – Michoud Canal/GIWW 3504-ACE

Sample Name	Date	Required Analysis (Method)	Containers*	Holding Time/Preservation*	Comments
W-3504ACE-Waste	14:30 12-3-08	TCLP RCI	2 X 1L amber 1 X 250 ml plastic	NA NaOH NA	X

3-3

HAZARD CATEGORIZATION FORM

Container Number	Description	Ignitability	Corrosivity	Reactivity	pH	SpillFyter Results*					Sample Name
						T1	T2	T3	T4	T5	
D3	water	No	No	No	7.85	N	No	No	No	No	Range 01-03
D4	water	No	No	No	7.95	N	No	No	No	No	Range 01-03
D1	sed/sludge	No	No	No	8.69	N	No	No	No	No	Range 01-03
D2	sed/sludge	No	No	No	7.30	N	No	No	No	No	Range 01-03
D3	sed/sludge	No	No	No	7.79	N	No	No	No	No	Range 01-03
D4	sed/sludge	No	No	No	7.64	N	No	No	No	No	Range 01-03
D1	water	No	No	No	7.93	N	No	No	No	No	Range 03-01
D2	water	NO SAMPLE									Range 03-01
D3	water	NO SAMPLE									Range 03-01
D4	water	No	No	No	7.84	N	No	No	No	No	Range 03-01
D1	sed/sludge	No	No	No	7.35	N	No	No	No	No	Range 03-01
D2	sed/sludge	No	No	No	7.19	N	No	No	No	No	Range 03-01
D3	sed/sludge	No	No	No	6.73	N	No	No	No	No	Range 03-01
D4	sed/sludge	No	No	No	7.63	N	No	No	No	No	Range 03-01
D1	water	No	No	No	7.62	N	No	No	No	No	Range 03-01
D2	water	No	No	No	7.50	N	No	No	No	No	Range 03-02
D3	water	No	No	No	7.65	N	No	No	No	No	Range 03-02
D4	water	No	No	No	7.68	N	No	No	No	No	Range 03-02
D1	sed/sludge	No	No	No	7.55	N	No	No	No	No	Range 03-02
D2	sed/sludge	No	No	No	7.2	N	No	No	No	No	Range 03-02
D3	sed/sludge	No	No	No	6.87	N	No	No	No	No	Range 05-02
D4	sed/sludge	NO SAMPLE									Range 03-02

* This column will be more defined according to the categories on the SpillFyter chemical strip (such as petroleum products, organic solvents, oxidizer, etc.)



12/5/08

1-3

HAZARD CATEGORIZATION FORM

Container Number	Description	Ignitability	Corrosivity	Reactivity	pH	SpillFyter Results*					Sample Name
						T1	T2	T3	T4	T5	
D1	Water	No	No	No	7.94	No	No	No	No	No	Concrete Barge - 01
D2	Water	No	No	No	7.76	No	No	No	No	No	Concrete Barge - 01
D3	Water	No	No	No	7.82	No	No	No	No	No	Concrete Barge - 01
D4	Water	No	No	No	7.41	No	No	No	No	No	Concrete Barge - 01
D1	Sed/Sludge	No	No	No	7.91	No	No	No	No	No	Concrete Barge - 01
D2	Sed/Sludge	No	No	No	7.10	No	No	No	No	No	Concrete Barge - 01
D3	Sed/Sludge	No	Sediment	S/Sludge	7.10	No	No	No	No	No	Concrete Barge - 01
D4	Sed/Sludge	No	No	No.	9.65	No	No	No	No	No	Concrete Barge - 01
D1	Water	No	No	No	6.95	No	No	No	No	No	Canal - 01
D1	Sed/Sludge	No	No	No	7.79	No	No	No	No	No	Canal - 01
D1	Water	No	No	No	7.96	No	No	No	No	No	Barge - 02 - 01
D2	Water	No	No	No	7.51	No	No	No	No	No	Barge - 02 - 01
D3	Water	No	No	No	7.43	No	No	No	No	No	Barge - 02 - 01
D4	Water	No	No	No.	7.48	No	No	No	No	No	Barge - 02 - 01
D1	Sed/Sludge	No	No Sludge	No		No	No	No	No	No	Barge - 02 - 01
D2	Sed/Sludge	No	No	No	6.60	No	No	No	No	No	Barge - 02 - 01
D3	Sed/Sludge	No	Sludge	No		No	No	No	No	No	Barge - 02 - 01
D4	Sed/Sludge	No	Sludge	No		No	No	No	No	No	Barge - 02 - 01
D1	Water	No	No	No	7.08	No	No	No	No	No	Barge - 02 - 02
D2	Water	No	No	No	7.91	No	No	No	No	No	Barge - 02 - 02
D3	Water	No	Water Sample	Hatch closed.		No	No	No	No	No	Barge - 02 - 02
D4	Water	No	No.	No.	7.71	No	No	No	No	No	Barge - 02 - 02

* This column will be more defined according to the categories on the SpillFyter chemical strip (such as petroleum products, organic solvents, oxidizer, etc.)

Feeldo

12-02-08

HAZARD CATEGORIZATION FORM

Container Number	Description	Ignitability	Corrosivity	Reactivity	pH	SpillFyter Results*	Sample Name
D1	sed/sludge	No	Sample				Barge-02-02
D2	sed/sludge	No	Sample				Barge-02-02
D3	sed/sludge	No	Sample				Barge-02-02
D4	sed/sludge	No	Sample				Barge-02-02
D1	water	No	No	No	7.51	No	Barge-01-01
D2	water	No	No	No	7.71	No	Barge-01-01
D3	water	No	No	No	7.73	No	Barge-01-01
D4	water	No	No	No	7.73	No	Barge-01-01
D1	sed/sludge	No	No	No	7.82	No	Barge-01-01
D2	sed/sludge	No	No	No	7.54	No	Barge-01-01
D3	sed/sludge	No	No	No	7.67	No	Barge-01-01
D4	sed/sludge	No	No	No	7.81	No	Barge-01-01
D1	water	No	No	No	8.08	No	Barge-01-02
D2	water	No	No	No	7.22	No	Barge-01-02
D3	water	No	No	No	7.73	No	Barge-01-02
D4	water	No	No	No	7.81	No	Barge-01-02
D1	sed/sludge	No	No	No	8.24	No	Barge-01-02
D2	sed/sludge	No	No	No	7.74	No	Barge-01-02
D3	sed/sludge	No	No	No	7.70	No	Barge-01-02
D4	sed/sludge	No	No	No	7.79	No	Barge-01-02
D1	water	No	No	No	7.80	No	Barge-01-03
D2	water	No	No	No	7.84	No	Barge-01-03

* This column will be more defined according to the categories on the SpillFyter chemical strip (such as petroleum products, organic solvents, oxidizer, etc.)

Chas. J. [Signature] 12/15/08

Appendix B: Final Analytical Report



Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

December 10, 2008

Karly Gibbs
Materials Management Group
3520 General DaGaulle
Suite 3010
New Orleans, LA 70114

RE: Project 2089255
Project ID: LTD. PII ES BARGE/3504ACE

Dear Karly Gibbs:

Enclosed are the analytical results for sample(s) received by the laboratory on December 03, 2008. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Cindy Olavesen".

Cindy Olavesen
cindy.olavesen@pacelabs.com



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



Laboratory Certifications

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Client: Materials Management Group

Project ID: LTD. PII ES BARGE/3504ACE

Louisiana Dept. of Environmental Quality (NELAC/LELAP) 02006

Louisiana Dept. of Health and Hospitals (NELAC) LA080013

Florida Department of Health (NELAC) E87595

Kansas Department of Health and Environment (NELAC) E-10266

Texas Commission on Env. Quality (NELAC) T104704405-08-TX

Pennsylvania Dept. of Env Protection (NELAC) 68-04202

U.S. Dept. of Agriculture Foreign Soil Import S-47270

12/10/2008 15:46:20



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



Sample Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Client: Materials Management Group

Project ID: LTD. PII ES BARGE/3504ACE

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
SD-3504ACE-BARGE1-01	20656760	Soil	03-Dec-08 10:18	03-Dec-08 17:05
SD-3504ACE-BARGE1-02	20656761	Soil	03-Dec-08 10:51	03-Dec-08 17:05
SD-3504ACE-BARGE1-02A	20656762	Soil	03-Dec-08 11:07	03-Dec-08 17:05
SD-3504ACE-BARGE1-03	20656763	Soil	03-Dec-08 11:23	03-Dec-08 17:05
SD-3504ACE-BARGE3-01	20656764	Soil	03-Dec-08 13:21	03-Dec-08 17:05
SD-3504ACE-BARGE3-02	20656765	Soil	03-Dec-08 13:48	03-Dec-08 17:05
W-3504ACE-BARGE1-01	20656766	Water	03-Dec-08 10:28	03-Dec-08 17:05
W-3504ACE-BARGE1-02	20656767	Water	03-Dec-08 11:00	03-Dec-08 17:05
W-3504ACE-BARGE1-03	20656768	Water	03-Dec-08 11:28	03-Dec-08 17:05
W-3504ACE-BARGE3-01	20656769	Water	03-Dec-08 13:30	03-Dec-08 17:05
W-3504ACE-BARGE3-02	20656770	Water	03-Dec-08 13:53	03-Dec-08 17:34
W-3504ACE-TB-12-3-08	20656771	Water	03-Dec-08 14:49	03-Dec-08 17:34
W-3504ACE-FB-12-3-08	20656772	Water	03-Dec-08 14:51	03-Dec-08 17:34



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Narrative detail for GC semi-volatiles analyses:

The TPH LCS associated with batch 111152 was apparently not spiked with the surrogate spiking solution. The LCS diesel recovery was within QC limits so the batch was accepted.

The closing calibration for diesel associated with batch 111090, project 2089255 was slightly high biased (19%) due to the nature of the samples that preceded it. Effect on the data for this project was minimal.



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Sample Receipt Condition:

All samples were received in accordance with EPA protocol.

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogates:

Surrogate recoveries outside of QC limits are qualified in the surrogate results section.

Regulatory, Permit or Client Specified Limits:

Results were found that exceeded regulatory, permit or client specified limits:

Method EPA 8015 Mod Ext sample 20656762 Diesel Range Organics (C10-28) result 66.1mg/kg is greater than 65mg/kg limit

Method EPA 8015 Mod Ext sample 20656766 Oil Range Organics (>C28-40) result .178mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656768 Oil Range Organics (>C28-40) result .173mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656769 Oil Range Organics (>C28-40) result .164mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656770 Oil Range Organics (>C28-40) result .233mg/L is greater than .15mg/L limit



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Analytical Method	Batch	Sample used for QC
EPA 8015 Mod Ext	111090	Batch sample from another client
EPA 8015/8021	111147	Batch sample from another client
EPA 8015/8021	111147	Batch sample from another client
EPA 8015/8021	111199	Batch sample from another client
EPA 6010	111229	Batch sample from another client
EPA 6010	111233	Batch sample from another client
EPA 7470	111234	Project sample W-3504ACE-BARGE1-01
EPA 7471	111238	Project sample SD-3504ACE-BARGE1-01
SM 2540D	111168	Project sample W-3504ACE-BARGE1-01
EPA 9040	111175	Client sample W-3504ACE-WASTE from project 2089266
EPA 9045	111184	Batch sample from another client
SM 5220D	111280	Batch sample from another client

12/10/2008 15:46:47

For the sample used as the original for the DUP or MS/MSD for the batch:

Project sample means a sample from this project was used.

Client sample means a sample from the same client but in a different project was used.

Batch sample means a sample from the a different client was used.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656760

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext

8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		52.7	10.0	65.0	09-Dec-08 15:27 SNP1
	Oil Range Organics (>C28-40)	1		75.4	50.0	180.	09-Dec-08 15:27 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:49
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656760

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	3.44		08-Dec-08 14:04 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:49
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656761

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		32.2	10.0	65.0	09-Dec-08 15:52 SNP1
	Oil Range Organics (>C28-40)	1		64.0	50.0	180.	09-Dec-08 15:52 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:49
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656761

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	2.64		08-Dec-08 14:40 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:49
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02A

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656762

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		66.1	10.0	65.0	09-Dec-08 16:18 SNP1
	Oil Range Organics (>C28-40)	1		97.9	50.0	180.	09-Dec-08 16:18 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:50
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02A

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656762

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	2.69		08-Dec-08 15:04 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:50
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656763

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext

8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		56.1	10.0	65.0	09-Dec-08 16:43 SNP1
	Oil Range Organics (>C28-40)	1		65.4	50.0	180.	09-Dec-08 16:43 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:50
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656763

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	2.82		08-Dec-08 15:29 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:51
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656764

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		43.1	10.0	65.0	09-Dec-08 17:08 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	180.	09-Dec-08 17:08 SNP1
2 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:51
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656764

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	3.33		08-Dec-08 15:54 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:51
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656765

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext

8015 TPH Extractables Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		28.8	10.0	65.0	09-Dec-08 17:34 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	180.	09-Dec-08 17:34 SNP1
2 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:51
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656765

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	3.69		08-Dec-08 16:19 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:52
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656766

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111152

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	09-Dec-08 00:35 SNP1
	Oil Range Organics (>C28-40)	1		0.178	0.150	0.150	09-Dec-08 00:35 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:53
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656766

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 13:13 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:53
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656767

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111152

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	09-Dec-08 01:00 SNP1
	Oil Range Organics (>C28-40)	1		ND	0.150	0.150	09-Dec-08 01:00 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:54
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656767

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 13:38 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:54
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656768

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111152

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	09-Dec-08 01:25 SNP1
	Oil Range Organics (>C28-40)	1		0.173	0.150	0.150	09-Dec-08 01:25 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:55
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656768

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 14:03 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:55
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656769

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111152

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	09-Dec-08 01:50 SNP1
	Oil Range Organics (>C28-40)	1		0.164	0.150	0.150	09-Dec-08 01:50 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:56
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656769

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 14:27 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:57
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656770

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111152

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	09-Dec-08 02:15 SNP1
	Oil Range Organics (>C28-40)	1		0.233	0.150	0.150	09-Dec-08 02:15 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:58
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656770

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 14:52 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:46:59
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-TB-12-3-08

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656771

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 15:17 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:47:00
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-FB-12-3-08

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656772

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111147

Method: EPA 8015/8021
8015/8021 Water

Collected: 03-Dec-08

Received: 03-Dec-08

Prepared: 05-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		05-Dec-08 15:42 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:47:00
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656760

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		8.58	mg/kg	0.943	05-Dec-08	08-Dec-08 12:22	KJR
Barium	EPA 6010	111233	1		1210	mg/kg	18.9	05-Dec-08	08-Dec-08 12:22	KJR
Cadmium	EPA 6010	111233	1		ND	mg/kg	0.472	05-Dec-08	08-Dec-08 12:22	KJR
Chromium	EPA 6010	111233	1		19.0	mg/kg	0.943	05-Dec-08	08-Dec-08 12:22	KJR
Lead	EPA 6010	111233	1		36.3	mg/kg	0.472	05-Dec-08	08-Dec-08 12:22	KJR
Mercury	EPA 7471	111238	1		0.0601	mg/kg	0.0176	08-Dec-08	08-Dec-08 08:08	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.30	05-Dec-08	08-Dec-08 12:22	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.943	05-Dec-08	08-Dec-08 12:22	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:02
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656761

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		6.85	mg/kg	0.980	05-Dec-08	08-Dec-08 12:28	KJR
Barium	EPA 6010	111233	1		1180	mg/kg	19.6	05-Dec-08	08-Dec-08 12:28	KJR
Cadmium	EPA 6010	111233	1		ND	mg/kg	0.490	05-Dec-08	08-Dec-08 12:28	KJR
Chromium	EPA 6010	111233	1		24.3	mg/kg	0.980	05-Dec-08	08-Dec-08 12:28	KJR
Lead	EPA 6010	111233	1		52.4	mg/kg	0.490	05-Dec-08	08-Dec-08 12:28	KJR
Mercury	EPA 7471	111238	1		0.0705	mg/kg	0.0150	08-Dec-08	08-Dec-08 08:14	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.43	05-Dec-08	08-Dec-08 12:28	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.980	05-Dec-08	08-Dec-08 12:28	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:02
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02A
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656762
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		5.33	mg/kg	0.893	05-Dec-08	08-Dec-08 12:33	KJR
Barium	EPA 6010	111233	1		1560	mg/kg	17.9	05-Dec-08	08-Dec-08 12:33	KJR
Cadmium	EPA 6010	111233	1		0.978	mg/kg	0.446	05-Dec-08	08-Dec-08 12:33	KJR
Chromium	EPA 6010	111233	1		10.5	mg/kg	0.893	05-Dec-08	08-Dec-08 12:33	KJR
Lead	EPA 6010	111233	1		47.5	mg/kg	0.446	05-Dec-08	08-Dec-08 12:33	KJR
Mercury	EPA 7471	111238	1		0.100	mg/kg	0.0188	08-Dec-08	08-Dec-08 08:15	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.12	05-Dec-08	08-Dec-08 12:33	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.893	05-Dec-08	08-Dec-08 12:33	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:02
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656763

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		7.58	mg/kg	0.943	05-Dec-08	08-Dec-08 12:38	KJR
Barium	EPA 6010	111233	1		653.	mg/kg	18.9	05-Dec-08	08-Dec-08 12:38	KJR
Cadmium	EPA 6010	111233	1		ND	mg/kg	0.472	05-Dec-08	08-Dec-08 12:38	KJR
Chromium	EPA 6010	111233	1		32.7	mg/kg	0.943	05-Dec-08	08-Dec-08 12:38	KJR
Lead	EPA 6010	111233	1		88.1	mg/kg	0.472	05-Dec-08	08-Dec-08 12:38	KJR
Mercury	EPA 7471	111238	1		0.0566	mg/kg	0.0194	08-Dec-08	08-Dec-08 08:17	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.30	05-Dec-08	08-Dec-08 12:38	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.943	05-Dec-08	08-Dec-08 12:38	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:03
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656764

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		1.95	mg/kg	0.926	05-Dec-08	08-Dec-08 12:43	KJR
Barium	EPA 6010	111233	1		51.3	mg/kg	18.5	05-Dec-08	08-Dec-08 12:43	KJR
Cadmium	EPA 6010	111233	1		ND	mg/kg	0.463	05-Dec-08	08-Dec-08 12:43	KJR
Chromium	EPA 6010	111233	1		5.65	mg/kg	0.926	05-Dec-08	08-Dec-08 12:43	KJR
Lead	EPA 6010	111233	1		6.63	mg/kg	0.463	05-Dec-08	08-Dec-08 12:43	KJR
Mercury	EPA 7471	111238	1		ND	mg/kg	0.0194	08-Dec-08	08-Dec-08 08:19	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.24	05-Dec-08	08-Dec-08 12:43	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.926	05-Dec-08	08-Dec-08 12:43	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:03
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656765

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111233	1		1.63	mg/kg	0.926	05-Dec-08	08-Dec-08 12:48	KJR
Barium	EPA 6010	111233	1		38.8	mg/kg	18.5	05-Dec-08	08-Dec-08 12:48	KJR
Cadmium	EPA 6010	111233	1		ND	mg/kg	0.463	05-Dec-08	08-Dec-08 12:48	KJR
Chromium	EPA 6010	111233	1		5.46	mg/kg	0.926	05-Dec-08	08-Dec-08 12:48	KJR
Lead	EPA 6010	111233	1		6.52	mg/kg	0.463	05-Dec-08	08-Dec-08 12:48	KJR
Mercury	EPA 7471	111238	1		ND	mg/kg	0.0194	08-Dec-08	08-Dec-08 08:21	MHB1
Selenium	EPA 6010	111233	1		ND	mg/kg	3.24	05-Dec-08	08-Dec-08 12:48	KJR
Silver	EPA 6010	111233	1		ND	mg/kg	0.926	05-Dec-08	08-Dec-08 12:48	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:03
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656766

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis		Limit
						Units	Limit				
Arsenic	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:11	KJR
Barium	EPA 6010	111229	1		ND	ug/L	200.	05-Dec-08	08-Dec-08	11:11	KJR
Cadmium	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:11	KJR
Chromium	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:11	KJR
Lead	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:11	KJR
Mercury	EPA 7470	111234	1		ND	ug/L	0.200	08-Dec-08	08-Dec-08	09:58	MHB1
Selenium	EPA 6010	111229	1		ND	ug/L	35.0	05-Dec-08	08-Dec-08	11:11	KJR
Silver	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:11	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:04
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656767

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis		Limit
						Units	Limit				
Arsenic	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:16	KJR
Barium	EPA 6010	111229	1		ND	ug/L	200.	05-Dec-08	08-Dec-08	11:16	KJR
Cadmium	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:16	KJR
Chromium	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:16	KJR
Lead	EPA 6010	111229	1		5.46	ug/L	5.00	05-Dec-08	08-Dec-08	11:16	KJR
Mercury	EPA 7470	111234	1		ND	ug/L	0.200	08-Dec-08	08-Dec-08	10:03	MHB1
Selenium	EPA 6010	111229	1		ND	ug/L	35.0	05-Dec-08	08-Dec-08	11:16	KJR
Silver	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:16	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:04
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656768

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis		Limit
						Units	Limit				
Arsenic	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:23	KJR
Barium	EPA 6010	111229	1		ND	ug/L	200.	05-Dec-08	08-Dec-08	11:23	KJR
Cadmium	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:23	KJR
Chromium	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:23	KJR
Lead	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:23	KJR
Mercury	EPA 7470	111234	1		ND	ug/L	0.200	08-Dec-08	08-Dec-08	10:05	MHB1
Selenium	EPA 6010	111229	1		ND	ug/L	35.0	05-Dec-08	08-Dec-08	11:23	KJR
Silver	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:23	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:04
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656769

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis		Limit
						Units	Limit				
Arsenic	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:27	KJR
Barium	EPA 6010	111229	1		ND	ug/L	200.	05-Dec-08	08-Dec-08	11:27	KJR
Cadmium	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:27	KJR
Chromium	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:27	KJR
Lead	EPA 6010	111229	1		6.42	ug/L	5.00	05-Dec-08	08-Dec-08	11:27	KJR
Mercury	EPA 7470	111234	1		ND	ug/L	0.200	08-Dec-08	08-Dec-08	10:07	MHB1
Selenium	EPA 6010	111229	1		ND	ug/L	35.0	05-Dec-08	08-Dec-08	11:27	KJR
Silver	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:27	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:05
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656770

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis		Limit
						Units	Limit				
Arsenic	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:32	KJR
Barium	EPA 6010	111229	1		ND	ug/L	200.	05-Dec-08	08-Dec-08	11:32	KJR
Cadmium	EPA 6010	111229	1		ND	ug/L	5.00	05-Dec-08	08-Dec-08	11:32	KJR
Chromium	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:32	KJR
Lead	EPA 6010	111229	1		8.60	ug/L	5.00	05-Dec-08	08-Dec-08	11:32	KJR
Mercury	EPA 7470	111234	1		ND	ug/L	0.200	08-Dec-08	08-Dec-08	10:09	MHB1
Selenium	EPA 6010	111229	1		ND	ug/L	35.0	05-Dec-08	08-Dec-08	11:32	KJR
Silver	EPA 6010	111229	1		ND	ug/L	10.0	05-Dec-08	08-Dec-08	11:32	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:05
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656760
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.48	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:06
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656761
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.88	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:06
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-02A
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656762
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.89	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:06
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE1-03
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656763
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.96	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:07
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656764
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.71	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:07
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE3-02
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656765
Description: None

Project: 2089255
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 03-Dec-08 **Received:** 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111184	1		6.68	Std. Units		04-Dec-08	04-Dec-08 14:45	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:07
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656766

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111280	1		324.	mg/L	5.00	05-Dec-08	05-Dec-08 16:30	SMS2
Oil and Grease	EPA 1664A	111232	1		ND	mg/L	5.00	05-Dec-08	05-Dec-08 09:45	LJL
pH	EPA 9040	111175	1		7.41	Std. Units		04-Dec-08	04-Dec-08 12:25	JMA
Total Suspended Solids	SM 2540D	111168	1		9.00	mg/L	4.00	04-Dec-08	04-Dec-08 14:10	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:07
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656767

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111280	1		342.	mg/L	5.00	05-Dec-08	05-Dec-08 16:30	SMS2
Oil and Grease	EPA 1664A	111232	1		ND	mg/L	5.00	05-Dec-08	05-Dec-08 09:45	LJL
pH	EPA 9040	111175	1		7.42	Std. Units		04-Dec-08	04-Dec-08 12:25	JMA
Total Suspended Solids	SM 2540D	111168	1		20.0	mg/L	4.00	04-Dec-08	04-Dec-08 14:10	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:08
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE1-03

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656768

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111280	1		349.	mg/L	5.00	05-Dec-08	05-Dec-08 16:30	SMS2
Oil and Grease	EPA 1664A	111232	1		ND	mg/L	5.00	05-Dec-08	05-Dec-08 09:45	LJL
pH	EPA 9040	111175	1		7.43	Std. Units		04-Dec-08	04-Dec-08 12:25	JMA
Total Suspended Solids	SM 2540D	111168	1		14.0	mg/L	4.00	04-Dec-08	04-Dec-08 14:10	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:08
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-01

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656769

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111280	1		342.	mg/L	5.00	05-Dec-08	05-Dec-08 16:30	SMS2
Oil and Grease	EPA 1664A	111232	1		ND	mg/L	5.00	05-Dec-08	05-Dec-08 09:45	LJL
pH	EPA 9040	111175	1		7.50	Std. Units		04-Dec-08	04-Dec-08 12:25	JMA
Total Suspended Solids	SM 2540D	111168	1		27.0	mg/L	4.00	04-Dec-08	04-Dec-08 14:10	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:09
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: W-3504ACE-BARGE3-02

Project: 2089255

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656770

Matrix: Water

%Moisture: n/a

Description: None

Collected: 03-Dec-08

Received: 03-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111280	1		323.	mg/L	5.00	05-Dec-08	05-Dec-08 16:30	SMS2
Oil and Grease	EPA 1664A	111232	1		ND	mg/L	5.00	05-Dec-08	05-Dec-08 09:45	LJL
pH	EPA 9040	111175	1		7.44	Std. Units		04-Dec-08	04-Dec-08 12:25	JMA
Total Suspended Solids	SM 2540D	111168	1		37.0	mg/L	4.00	04-Dec-08	04-Dec-08 14:10	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:47:09
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111090

Project: 2089255

LCS: 20656774 09-Dec-08 15:02

MS: 20656478 08-Dec-08 18:22

Units: mg/kg

MSD: 20656479 08-Dec-08 18:46

Original for MS: Batch Sample 20656046

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Diesel Range Organics (C10 1 compound(s) reported)	40	36.11	90	40	355.60	108	98.8	0 *	0 *	9	46 - 123	10 - 167	20	1, Q1, Q

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111152

Project: 2089255

LCS: 20656821 08-Dec-08 23:45

MS:

Units: mg/L

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Diesel Range Organics (C10 1 compound(s) reported)	0.4	0.1732	43								13 - 117	-		Q5

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111147

Project: 2089255

LCS: 20656800 05-Dec-08 12:06

MS:

Units: mg/L

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported	0.5	0.4742	95								86 - 136	-		

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111199

Project: 2089255

LCS: 20657037 08-Dec-08 11:36

MS: 20657038 08-Dec-08 21:20

Units: mg/kg

MSD: 20657039 08-Dec-08 21:45

Original for MS: Batch Sample 20657022

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported	25	21.82	87	25	1.76	27.09	20.42	101	75	28 *	86 - 136	40 - 175	20	

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111199

Project: 2089255

LCS:

MS: 20657038 08-Dec-08 21:20

Units: mg/kg

MSD: 20657039 08-Dec-08 21:45

Original for MS: Batch Sample 20657022

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported				25	1.76	27.09	20.42	101	75	28 *	-	40 - 175	20	

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Surrogate Recovery

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111090

Project: 2089255

Method: Soil EPA 8015 Mod Ext

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656476	111090 BLANK 1		70	76						
20656773	111090 BLANK 2		80	81						
20656477	111090 LCS 1		85	94						
20656774	111090 LCS 2		86	90						
20656478	CSB-1/0.5M MS 1	D1	93	101						
20656479	CSB-1/0.5M MSD 1	D1	75	84						
20656760	SD-3504ACE-BARGE1-01		54	64						
20656761	SD-3504ACE-BARGE1-02		70	73						
20656762	SD-3504ACE-BARGE1-02A		80	79						
20656763	SD-3504ACE-BARGE1-03		36	44						
20656764	SD-3504ACE-BARGE3-01		75	74						
20656765	SD-3504ACE-BARGE3-02		55	60						

QC limits: 16-147 16-127

Sur 1: n-Pentacosane (S)

Sur 2: o-Terphenyl (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111147

Project: 2089255

Method: Water EPA 8015/8021

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656799	111147 BLANK 1		91							
20656800	111147 LCS 1		107							
20656766	W-3504ACE-BARGE1-01		96							
20656767	W-3504ACE-BARGE1-02		94							
20656768	W-3504ACE-BARGE1-03		92							
20656769	W-3504ACE-BARGE3-01		91							
20656770	W-3504ACE-BARGE3-02		90							
20656772	W-3504ACE-FB-12-3-08		85							
20656771	W-3504ACE-TB-12-3-08		83							

QC limits: 60-129

Sur 1: 4-Bromofluorobenzene (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111152

Project: 2089255

Method: Water EPA 8015 Mod Ext

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656820	111152 BLANK 1		42	62						
20656821	111152 LCS 1		0 *	0 *						
20656766	W-3504ACE-BARGE1-01		50	62						
20656767	W-3504ACE-BARGE1-02		53	63						
20656768	W-3504ACE-BARGE1-03		65	70						
20656769	W-3504ACE-BARGE3-01		48	51						
20656770	W-3504ACE-BARGE3-02		62	72						

QC limits: 16-137 10-121

Sur 1: n-Pentacosane (S)
Sur 2: o-Terphenyl (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111199

Project: 2089255

Method: Soil EPA 8015/8021

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20657036	111199 BLANK 1		114							
20657037	111199 LCS 1		117							
20657038	SA MS 1		101							
20657039	SA MSD 1		100							
20656760	SD-3504ACE-BARGE1-01		92							
20656761	SD-3504ACE-BARGE1-02		90							
20656762	SD-3504ACE-BARGE1-02A		87							
20656763	SD-3504ACE-BARGE1-03		91							
20656764	SD-3504ACE-BARGE3-01		79							
20656765	SD-3504ACE-BARGE3-02		76							

QC limits: 60-129

Sur 1: 4-Bromofluorobenzene (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111090 BLANK 2

Project: 2089255

Lab ID: 20656773

Prep Level: Soil

Batch: 111090

Method: Soil EPA 8015 Mod Ext
8015 TPH Extractables Soil

Prepared: 04-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/kg</u> Reporting Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	10.0	09-Dec-08 14:37 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	09-Dec-08 14:37 SNP1
2 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111147 BLANK 1

Project: 2089255

Lab ID: 20656799

Prep Level: Water

Batch: 111147

Method: Water EPA 8015/8021
8015/8021 Water Blank

Prepared: 05-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/L</u> Reporting Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500	05-Dec-08 11:38 MHM
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111152 BLANK 1

Project: 2089255

Lab ID: 20656820

Prep Level: Water

Batch: 111152

Method: Water EPA 8015 Mod Ext
TPH Extractables Water BLK LCS

Prepared: 04-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: mg/L	Analysis
					Reporting Limit	
	Diesel Range Organics (C10-28)	1		ND	0.150	09-Dec-08 14:12 SNP1
	Oil Range Organics (>C28-40)	1		ND	0.150	09-Dec-08 14:12 SNP1
2 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111199 BLANK 1

Project: 2089255

Lab ID: 20657036

Prep Level: Soil

Batch: 111199

Method: Soil EPA 8015/8021
8015/8021 Med Soil

Prepared: 05-Dec-08

Units: mg/kg

CAS Numb	Analyte	Dilution	Qu	Result	Reporting Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	2.50	08-Dec-08 10:46 MHM
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Inorganics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Project: 2089255

Parameter	Batch	Blank	ARL	Units	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	MSD RPD	DUP RPD	QC Limits LCS	MS/MSD	Max RPD	Qu
Arsenic	111229			ug/L	1000	1023	102	1000	0.00	1021	1008	102	101	1		86 - 118	62 - 134	20	
Barium	111229			ug/L	1000	1047	105	1000	204.80	1248	1218	104	101	2		87 - 122	55 - 140	20	
Cadmium	111229			ug/L	1000	993.3	99	1000	0.00	985.9	978	99	98	1		86 - 117	62 - 127	20	
Chromium	111229			ug/L	1000	1031	103	1000	449.00	1411	1391	96	94	1		85 - 116	54 - 135	20	
Lead	111229			ug/L	1000	1076	108	1000	63.94	1097	1091	103	103	1		86 - 119	50 - 138	20	
Selenium	111229			ug/L	1000	1051	105	1000	0.00	1039	1021	106	104	2		86 - 119	61 - 134	20	
Silver	111229			ug/L	500	515.8	103	500	0.48	516.8	505.5	103	101	2		72 - 129	10 - 170	20	
Arsenic	111233	ND	1.00	mg/kg	100	101.4	101	96.15	1.77	67.88	67.3	69	80	1		68 - 125	48 - 134	20	
Arsenic	111233			mg/kg				96.15	1.77	67.88	67.3	69	80	1		-	48 - 134	20	
Barium	111233	ND	20.0	mg/kg	100	106	106	96.15	72.97	90.61	78.02	18 *	6 *	15		68 - 130	19 - 180	20	Q1
Barium	111233			mg/kg				96.15	72.97	90.61	78.02	18 *	6 *	15		-	19 - 180	20	Q1
Cadmium	111233			mg/kg				96.15	0.00	86.23	72.02	90	88	18		-	50 - 130	20	
Cadmium	111233	ND	0.500	mg/kg	100	98.81	99	96.15	0.00	86.23	72.02	90	88	18		62 - 131	50 - 130	20	
Chromium	111233			mg/kg				96.15	10.49	92.81	79.36	86	84	16		-	48 - 144	20	
Chromium	111233	ND	1.00	mg/kg	100	104.4	104	96.15	10.49	92.81	79.36	86	84	16		62 - 132	48 - 144	20	
Lead	111233	ND	0.500	mg/kg	100	108.4	108	96.15	0.00	87.51	67.34	97	89	26 *		68 - 128	35 - 149	20	
Lead	111233			mg/kg				96.15	0.00	87.51	67.34	97	89	26 *		-	35 - 149	20	
Selenium	111233			mg/kg				96.15	0.00	55.32	62.2	59	77	12		-	46 - 129	20	
Selenium	111233	ND	3.50	mg/kg	100	102.2	102	96.15	0.00	55.32	62.2	59	77	12		65 - 121	46 - 129	20	
Silver	111233			mg/kg				48.08	0.12	44.7	38.26	93	93	16		-	10 - 162	20	
Silver	111233	ND	1.00	mg/kg	50	50.49	101	48.08	0.12	44.7	38.26	93	93	16		59 - 130	10 - 162	20	
Mercury	111234	ND	0.200	ug/L	1	1.075	107	1	0.01	1.033	1.034	102	102	0		80 - 120	75 - 125	20	
Mercury	111238	ND	0.0200	mg/kg	0.1	0.1082	108	0.09677	0.06	0.1583	0.1477	102	114	7		80 - 120	75 - 125	20	

* denotes recovery outside of QC limits.

ND denotes Not Detected at or above the adjusted reporting limit or PQL.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Inorganics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Project: 2089255

Parameter	Batch	Blank	ARL	Units	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	MSD RPD	DUP RPD	QC Limits	Max RPD	Qu
Total Suspen	111168	ND	4.00	mg/L	100	88	88		9.00						0	80 - 120	-	20
pH	111175			d. Units	6	5.98	100		7.28						0	97 - 103	-	20
pH	111184			d. Units	6	5.97	100		5.70						1	97 - 103	-	20
Oil and Greas	111232	ND	5.00	mg/L	40	37.7	94									78 - 114	-	Q5
Chemical Ox	111280	ND	5.00	mg/L	100	103	103	100	126.00	208		82			1	90 - 110	75 - 125	20

* denotes recovery outside of QC limits.

ND denotes Not Detected at or above the adjusted reporting limit or PQL.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Definitions/Qualifiers

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089255

Value	Description
D1	The analysis was performed at a dilution due to the high analyte concentration.
Q1	The matrix spike recoveries are poor. Acceptable method performance for this analyte has been demonstrated by the laboratory control sample recovery.
Q3	The matrix spike recoveries are poor due to the presence of this analyte in the sample at a concentration greater than 4 times the spiked amount. Acceptable method performance for this analyte has been demonstrated by the laboratory control sample.
Q5	Insufficient sample was provided to perform matrix spike analyses on any sample in this analytical batch. Method performance for this analyte has been demonstrated by the laboratory control sample recovery.
J	This estimated value for the analyte is below the adjusted reporting limit but above the instrument reporting limit.
U	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
B	This analyte was detected in the method blank.
E	The sample concentration is above the linear calibrated range of the analysis.
ND	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
MDL	The adjusted method detection limit.
LCS(D)	Laboratory Control Sample (Duplicate).
MS(D)	Matrix Spike (Duplicate).
DUP	Sample Duplicate.
RPD	Relative Percent Difference.

2089255

JSTODY / Analytical Request Document
 a LEGAL DOCUMENT. All relevant fields must be completed accurately.

2089255 20-MAT - MANG



Page: 1 of 2
 1118997

Section C
 Invoice Information:
 Attention: M. Ni Lo
 Company Name: MMG
 Address: 3520 General DeGaulle
 Pace Quote Reference: 3520 General DeGaulle
 Pace Project Manager: Michael
 Pace Profile #: LA

Section A
 Required Client Information:
 Company: MMG
 Report To: Karly Gibbs
 Copy To:
 Address: 3520 General DeGaulle
 N.O. LA 70114
 Email To: Karly Gibbs@mmgpolk.com
 Phone: 368-0568 Fax: 368-8403
 Project Name: LTP, PILISA Barge Asse
 Project Number: 3504 ACE
 Requested Due Date/TAT: ASAP

Section B
 Regulatory Agency:
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

ITEM #	Matrix Codes MATRIX / CODE Drinking Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Requested Analysis Filtered (Y/N)											Pace Project No./ Lab I.D.					
		COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME		DATE	TIME	Analysis Test ↑	TPH-6	TPH-030	PCRB Metals	TSS	PH	COD	RCLP	TCLP		Residual Chlorine (Y/N)				
1	SD-3504ACE - Barge 1-01				SL G	12-3-08	10:18	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	20616760
2	W-3504ACE - Barge 1-01				W G	12-3-08	10:28	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	766
3	SD-3504ACE - Barge 1-02				SL G	12-3-08	10:51	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	767
4	W-3504ACE - Barge 1-02				W G	12-3-08	11:00	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	762
5	SD-3504ACE - Barge 1-02a				SL G	12-3-08	11:07	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	763
6	SD-3504ACE - Barge 1-03				SL G	12-3-08	11:23	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	768
7	W-3504ACE - Barge 1-03				W G	12-3-08	11:28	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	769
8	SD-3504ACE - Barge 3-01				SL G	12-3-08	13:21	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	765
9	W-3504ACE - Barge 3-01				W G	12-3-08	13:30	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	770
10	SD-3504ACE - Barge 3-02				SL G	12-3-08	13:49	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	W-3504ACE - Barge 3-02				W G	12-3-08	13:53	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	W-3504ACE - Barge 3-02a				W G	12-3-08	14:30	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Section D
 ADDITIONAL COMMENTS:
ASAP
W. Eneclade
R. Eneclade

Section E
 Relinquished by / Affiliation: W. Eneclade DATE: 12-3-08 TIME: 15:00
 Accepted by / Affiliation: D. Eneclade DATE: 12/3/08 TIME: 3:05

Section F
 Received on: 12/3/08 Custody Cooler: Y Sealed Cooler: N Samples Intact: Y

Section G
 Sampler Name and Signature:
 PRINT Name of Sampler: Wendell Thompson
 SIGNATURE of Sampler: Wendell Thompson DATE Signed (MM/DD/YYYY): 12-3-08

LEGAL DOCUMENT. All relevant fields must be completed accurately.

2089255



www.pac

Section A
Required Client Information:

Company: **MMG** Report To: **Karly Gibbs** Copy To: _____
 Address: **3520 General DeGaulle**
 W.O. **LA 70114**
 Email To: **Karly Gibbs @ MMGmola.com**
 Phone: **368-0568** Fax: **368-8403**
 Requested Due Date/TAT: **ASAP**

Section C
Invoice Information:

Attention: **MMG M. Min: LO** Company Name: **MMG**
 Address: **3620 General DeGaulle**
 Pace Quote Reference: _____
 Pace Project Manager: _____
 Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location: **LA** STATE: **LA**

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Sealed Cooler	Samples Intact
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME							
1	SD-3504 ACE - Waste	DW	12-3-08 9:00	12-3-08 14:45	C	SL	12-3-08 14:45	1	X						
2	W-3504 ACE - TB-12-3-08	WT	12-3-08 14:49	12-3-08 14:49	W	W	12-3-08 14:49	2	X						
3	W-3504 ACE - FB-12-3-08	WW	12-3-08 14:51	12-3-08 14:51	W	W	12-3-08 14:51	3	X						
4		P													
5		SL													
6		OL													
7		WP													
8		AR													
9		TS													
10		OT													
11		Other													
12															

ADDITIONAL COMMENTS

ASAP Expedited

RELINQUISHED BY / AFFILIATION: **Wendell Thompson** DATE: **12-3-08 15:00**

ACCEPTED BY / AFFILIATION: **R. Engleberg** DATE: **12/3/08 3:05**

RECEIVED BY / AFFILIATION: **L. Guedes** DATE: **12/3/08 17:05**

SAMPLER NAME AND SIGNATURE: **Wendell Thompson**

PRINT Name of SAMPLER: **Wendell Thompson** DATE Signed (MM/DD/YYYY): **12-3-08**

SIGNATURE of SAMPLER: **Wendell Thompson**

Temp in °C: _____

Received on: _____

Sealed Cooler: _____

Samples Intact: _____

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition

1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

2089255 20-MAT.MANG.



Courier: Pace Courier Hackbarth Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals Intact: Yes No

Thermometer Used: Therm Fisher IR 1
 Therm Fisher IR 2

Type of Ice: Wet Blue None

Samples on Ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-3-08

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
		If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	17
Pace Trip Blank Lot # (if purchased):	<u>N/A</u>	18

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Pace Analytical Services, Inc.

Certificate of Analysis Number:

08120259

Report To: Pace Analytical Services, Inc.
 Cindy Olavesen
 1000 Riverbend Blvd., Ste. F

St. Rose
 LA

70087-
 ph: (504) 469-0333 fax: (504) 469-0555

Fax To:

Project Name: 2089255
Site: St. Rose, LA
Site Address:

PO Number:
State: Louisiana
State Cert. No.: 02029

Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
20656760	08120259-01	Sludge	12/3/2008 10:18:00 AM	12/5/2008 9:30:00 AM		<input type="checkbox"/>
20656761	08120259-02	Sludge	12/3/2008 10:51:00 AM	12/5/2008 9:30:00 AM		<input type="checkbox"/>
20656762	08120259-03	Sludge	12/3/2008 11:07:00 AM	12/5/2008 9:30:00 AM		<input type="checkbox"/>
20656763	08120259-04	Sludge	12/3/2008 11:23:00 AM	12/5/2008 9:30:00 AM		<input type="checkbox"/>
20656764	08120259-05	Sludge	12/3/2008 1:21:00 PM	12/5/2008 9:30:00 AM		<input type="checkbox"/>
20656765	08120259-06	Sludge	12/3/2008 1:48:00 PM	12/5/2008 9:30:00 AM		<input type="checkbox"/>

12/8/2008

Elessa Sommers
 Senior Project Manager

Date

Richard R. Reed
 Laboratory Director

Ted Yen
 Quality Assurance Officer



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656760 Collected: 12/03/2008 10:18 SPL Sample ID: 08120259-01

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806670

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656761 Collected: 12/03/2008 10:51 SPL Sample ID: 08120259-02

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	50		50	1	12/05/08 17:38	LLL	4806671

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656762 Collected: 12/03/2008 11:07 SPL Sample ID: 08120259-03

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806672

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656763 Collected: 12/03/2008 11:23 SPL Sample ID: 08120259-04

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806673

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656764 Collected: 12/03/2008 13:21 SPL Sample ID: 08120259-05

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806674

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656765 Collected: 12/03/2008 13:48 SPL Sample ID: 08120259-06

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806675

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

December 10, 2008

Karly Gibbs
Materials Management Group
3520 General DaGaulle
Suite 3010
New Orleans, LA 70114

RE: Project 2089189
Project ID: LTD. PII ES BARGE/3504ACE

Dear Karly Gibbs:

Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 2008. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Cindy Olavesen". The signature is fluid and cursive, written in a professional style.

Cindy Olavesen
cindy.olavesen@pacelabs.com



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



Laboratory Certifications

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Client: Materials Management Group

Project ID: LTD. PII ES BARGE/3504ACE

Louisiana Dept. of Environmental Quality (NELAC/LELAP) 02006

Louisiana Dept. of Health and Hospitals (NELAC) LA080013

Florida Department of Health (NELAC) E87595

Kansas Department of Health and Environment (NELAC) E-10266

Texas Commission on Env. Quality (NELAC) T104704405-08-TX

Pennsylvania Dept. of Env Protection (NELAC) 68-04202

U.S. Dept. of Agriculture Foreign Soil Import S-47270

12/10/2008 15:51:44



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



Sample Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Client: Materials Management Group

Project ID: LTD. PII ES BARGE/3504ACE

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
SD-3504ACE-BARGE2-01	20656398	Soil	02-Dec-08 13:30	02-Dec-08 16:45
SD-3504ACE-BARGE2-01A	20656399	Soil	02-Dec-08 13:30	02-Dec-08 16:45
SD-3504ACE-SUNK BARGE-01	20656400	Soil	02-Dec-08 11:45	02-Dec-08 16:45
SD-3504ACE-CANAL-01	20656401	Soil	02-Dec-08 12:30	02-Dec-08 16:45
SD-3504ACE-BARGE2-01	20656402	Water	02-Dec-08 13:15	02-Dec-08 16:45
SD-3504ACE-BARGE2-02	20656403	Water	02-Dec-08 14:00	02-Dec-08 16:45
SD-3504ACE-SUNK BARGE-01	20656404	Water	02-Dec-08 11:20	02-Dec-08 16:45
SD-3504ACE-CANAL-01	20656405	Water	02-Dec-08 12:25	02-Dec-08 16:45
SD-3504ACE-TB-12-2-08	20656406	Water	02-Dec-08 14:55	02-Dec-08 16:45
SD-3504ACE-FB-12-2-08	20656407	Water	02-Dec-08 15:00	02-Dec-08 16:45



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Narrative detail for GC semi-volatiles analyses:

The closing calibration for diesel associated with samples 20656400, 20656398, and 20656399 was slightly high biased (19%) due to the nature of the samples that preceded it. Effect on the data for this project was minimal.



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Sample Receipt Condition:

All samples were received in accordance with EPA protocol.

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogates:

All surrogate recoveries were within QC limits.

Regulatory, Permit or Client Specified Limits:

Results were found that exceeded regulatory, permit or client specified limits:

Method EPA 8015 Mod Ext sample 20656398 Diesel Range Organics (C10-28) result 3420mg/kg is greater than 65mg/kg limit

Method EPA 8015 Mod Ext sample 20656399 Diesel Range Organics (C10-28) result 3560mg/kg is greater than 65mg/kg limit

Method EPA 8015 Mod Ext sample 20656402 Diesel Range Organics (C10-28) result .154mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656403 Diesel Range Organics (C10-28) result .169mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656398 Oil Range Organics (>C28-40) result 1220mg/kg is greater than 180mg/kg limit

Method EPA 8015 Mod Ext sample 20656399 Oil Range Organics (>C28-40) result 1220mg/kg is greater than 180mg/kg limit

Method EPA 8015 Mod Ext sample 20656402 Oil Range Organics (>C28-40) result .33mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656403 Oil Range Organics (>C28-40) result .281mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656404 Oil Range Organics (>C28-40) result .209mg/L is greater than .15mg/L limit

Method EPA 8015 Mod Ext sample 20656405 Oil Range Organics (>C28-40) result .214mg/L is greater than .15mg/L limit



Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Analytical Method	Batch	Sample used for QC
EPA 8015 Mod Ext	111090	Batch sample from another client
EPA 8015 Mod Ext	111336	Batch sample from another client
EPA 8015/8021	111199	Batch sample from another client
EPA 6010	111073	Project sample SD-3504ACE-BARGE2-01
EPA 6010	111083	Project sample SD-3504ACE-CANAL-01
EPA 7470	111074	Project sample SD-3504ACE-BARGE2-02
EPA 7471	111085	Project sample SD-3504ACE-CANAL-01
EPA 9045	111096	Batch sample from another client
SM 5220D	111116	Batch sample from another client
SM 2540D	111126	Batch sample from another client
EPA 9040	111133	Project sample SD-3504ACE-BARGE2-01

12/10/2008 15:52:10

For the sample used as the original for the DUP or MS/MSD for the batch:

Project sample means a sample from this project was used.

Client sample means a sample from the same client but in a different project was used.

Batch sample means a sample from the a different client was used.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656398

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	5	D1	3420	50.0	65.0	09-Dec-08 19:13 SNP1
	Oil Range Organics (>C28-40)	5	D1	1220	250.	180.	09-Dec-08 19:13 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656398

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	4.25		08-Dec-08 12:25 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01A

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656399

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	5	D1	3560	50.0	65.0	09-Dec-08 19:38 SNP1
	Oil Range Organics (>C28-40)	5	D1	1220	250.	180.	09-Dec-08 19:38 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01A

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656399

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		11.0	6.35		08-Dec-08 12:50 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656400

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111336

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 09-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		32.4	10.0	65.0	09-Dec-08 18:48 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	180.	09-Dec-08 18:48 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656400

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021
8015/8021 Med Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		5.80	3.28		08-Dec-08 13:15 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:13
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656401

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111090

Method: EPA 8015 Mod Ext
8015 TPH Extractables Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		13.7	10.0	65.0	08-Dec-08 22:05 SNP1
	Oil Range Organics (>C28-40)	1		50.9	50.0	180.	08-Dec-08 22:05 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:14
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656401

Matrix: Soil

% Moisture: 0 Not Corrected

Description: None

Prep Level: Soil

Batch: 111199

Method: EPA 8015/8021

8015/8021 Med Soil

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 05-Dec-08

Units: mg/kg

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		3.54	2.85		08-Dec-08 13:40 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:14
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656402

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111089

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		0.154	0.150	0.150	08-Dec-08 14:38 SNP1
	Oil Range Organics (>C28-40)	1		0.330	0.150	0.150	08-Dec-08 14:38 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:15
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656402

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		03-Dec-08 17:24 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:15
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-02

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656403

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111089

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		0.169	0.150	0.150	08-Dec-08 15:02 SNP1
	Oil Range Organics (>C28-40)	1		0.281	0.150	0.150	08-Dec-08 15:02 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:15
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-02

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656403

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		03-Dec-08 17:49 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:15
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656404

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111089

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	08-Dec-08 15:28 SNP1
	Oil Range Organics (>C28-40)	1		0.209	0.150	0.150	08-Dec-08 15:28 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:16
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656404

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		03-Dec-08 18:14 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:16
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656405

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111089

Method: EPA 8015 Mod Ext

8015 TPH Extractables Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	0.150	0.150	08-Dec-08 15:52 SNP1
	Oil Range Organics (>C28-40)	1		0.214	0.150	0.150	08-Dec-08 15:52 SNP1

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:16
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656405

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 03-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		03-Dec-08 18:39 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:16
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-TB-12-2-08

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656406

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		04-Dec-08 11:48 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:16
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-FB-12-2-08

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656407

Matrix: Water

% Moisture: n/a

Description: None

Prep Level: Water

Batch: 111084

Method: EPA 8015/8021
8015/8021 Water

Collected: 02-Dec-08

Received: 02-Dec-08

Prepared: 04-Dec-08

Units: mg/L

CAS No.	Analyte	Dilution	Qu	Result	Reporting Limit	Reg Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	0.0500		04-Dec-08 12:13 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Protocol 12/10/2008 15:52:17
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656398

Matrix: Soil

%Moisture: 0 Not Corrected

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111083	1		3.85	mg/kg	1.00	03-Dec-08	04-Dec-08 22:52	KJR
Barium	EPA 6010	111083	1		4670	mg/kg	20.0	03-Dec-08	04-Dec-08 22:52	KJR
Cadmium	EPA 6010	111083	1		ND	mg/kg	0.500	03-Dec-08	04-Dec-08 22:52	KJR
Chromium	EPA 6010	111083	1		19.5	mg/kg	1.00	03-Dec-08	04-Dec-08 22:52	KJR
Lead	EPA 6010	111083	1		51.1	mg/kg	0.500	03-Dec-08	04-Dec-08 22:52	KJR
Mercury	EPA 7471	111085	1		0.0344	mg/kg	0.0158	04-Dec-08	04-Dec-08 12:00	MHB1
Selenium	EPA 6010	111083	1		ND	mg/kg	3.50	03-Dec-08	04-Dec-08 22:52	KJR
Silver	EPA 6010	111083	1		ND	mg/kg	1.00	03-Dec-08	04-Dec-08 22:52	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01A
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656399
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111083	1		4.48	mg/kg	0.943	03-Dec-08	04-Dec-08 22:57	KJR
Barium	EPA 6010	111083	1		4430	mg/kg	18.9	03-Dec-08	04-Dec-08 22:57	KJR
Cadmium	EPA 6010	111083	1		ND	mg/kg	0.472	03-Dec-08	04-Dec-08 22:57	KJR
Chromium	EPA 6010	111083	1		22.5	mg/kg	0.943	03-Dec-08	04-Dec-08 22:57	KJR
Lead	EPA 6010	111083	1		51.9	mg/kg	0.472	03-Dec-08	04-Dec-08 22:57	KJR
Mercury	EPA 7471	111085	1		0.0330	mg/kg	0.0171	04-Dec-08	04-Dec-08 12:01	MHB1
Selenium	EPA 6010	111083	1		ND	mg/kg	3.30	03-Dec-08	04-Dec-08 22:57	KJR
Silver	EPA 6010	111083	1		ND	mg/kg	0.943	03-Dec-08	04-Dec-08 22:57	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01
 Project ID: LTD. PII ES BARGE/3504ACE
 Lab ID: 20656400
 Description: None

Project: 2089189
 Site: None
 Matrix: Soil %Moisture: 0 Not Corrected
 Collected: 02-Dec-08 Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111083	1		7.03	mg/kg	0.943	03-Dec-08	04-Dec-08 23:02	KJR
Barium	EPA 6010	111083	1		221.	mg/kg	18.9	03-Dec-08	04-Dec-08 23:02	KJR
Cadmium	EPA 6010	111083	1		0.492	mg/kg	0.472	03-Dec-08	04-Dec-08 23:02	KJR
Chromium	EPA 6010	111083	1		10.8	mg/kg	0.943	03-Dec-08	04-Dec-08 23:02	KJR
Lead	EPA 6010	111083	1		12.9	mg/kg	0.472	03-Dec-08	04-Dec-08 23:02	KJR
Mercury	EPA 7471	111085	1		0.0343	mg/kg	0.0182	04-Dec-08	04-Dec-08 12:03	MHB1
Selenium	EPA 6010	111083	1		ND	mg/kg	3.30	03-Dec-08	04-Dec-08 23:02	KJR
Silver	EPA 6010	111083	1		ND	mg/kg	0.943	03-Dec-08	04-Dec-08 23:02	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656401
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111083	1		4.87	mg/kg	0.909	03-Dec-08	04-Dec-08 22:32	KJR
Barium	EPA 6010	111083	1		105.	mg/kg	18.2	03-Dec-08	04-Dec-08 22:32	KJR
Cadmium	EPA 6010	111083	1		ND	mg/kg	0.455	03-Dec-08	04-Dec-08 22:32	KJR
Chromium	EPA 6010	111083	1		8.16	mg/kg	0.909	03-Dec-08	04-Dec-08 22:32	KJR
Lead	EPA 6010	111083	1		9.35	mg/kg	0.455	03-Dec-08	04-Dec-08 22:32	KJR
Mercury	EPA 7471	111085	1		ND	mg/kg	0.0194	04-Dec-08	04-Dec-08 11:37	MHB1
Selenium	EPA 6010	111083	1		ND	mg/kg	3.18	03-Dec-08	04-Dec-08 22:32	KJR
Silver	EPA 6010	111083	1		ND	mg/kg	0.909	03-Dec-08	04-Dec-08 22:32	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656402

Matrix: Water

%Moisture: n/a

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:29	KJR
Barium	EPA 6010	111073	1		ND	ug/L	200.	03-Dec-08	04-Dec-08 15:29	KJR
Cadmium	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 15:29	KJR
Chromium	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:29	KJR
Lead	EPA 6010	111073	1		7.09	ug/L	5.00	03-Dec-08	04-Dec-08 15:29	KJR
Mercury	EPA 7470	111074	1		ND	ug/L	0.200	04-Dec-08	04-Dec-08 10:11	MHB1
Selenium	EPA 6010	111073	1		ND	ug/L	35.0	03-Dec-08	04-Dec-08 15:29	KJR
Silver	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:29	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-02

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656403

Matrix: Water

%Moisture: n/a

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:59	KJR
Barium	EPA 6010	111073	1		ND	ug/L	200.	03-Dec-08	04-Dec-08 15:59	KJR
Cadmium	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 15:59	KJR
Chromium	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:59	KJR
Lead	EPA 6010	111073	1		6.39	ug/L	5.00	03-Dec-08	04-Dec-08 15:59	KJR
Mercury	EPA 7470	111074	1		ND	ug/L	0.200	04-Dec-08	04-Dec-08 10:04	MHB1
Selenium	EPA 6010	111073	1		ND	ug/L	35.0	03-Dec-08	04-Dec-08 15:59	KJR
Silver	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 15:59	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:18
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656404

Matrix: Water

%Moisture: n/a

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:04	KJR
Barium	EPA 6010	111073	1		ND	ug/L	200.	03-Dec-08	04-Dec-08 16:04	KJR
Cadmium	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 16:04	KJR
Chromium	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:04	KJR
Lead	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 16:04	KJR
Mercury	EPA 7470	111074	1		ND	ug/L	0.200	04-Dec-08	04-Dec-08 10:13	MHB1
Selenium	EPA 6010	111073	1		ND	ug/L	35.0	03-Dec-08	04-Dec-08 16:04	KJR
Silver	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:04	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:19
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656405
Description: None

Project: 2089189
Site: None
Matrix: Water **%Moisture:** n/a
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Arsenic	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:09	KJR
Barium	EPA 6010	111073	1		ND	ug/L	200.	03-Dec-08	04-Dec-08 16:09	KJR
Cadmium	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 16:09	KJR
Chromium	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:09	KJR
Lead	EPA 6010	111073	1		ND	ug/L	5.00	03-Dec-08	04-Dec-08 16:09	KJR
Mercury	EPA 7470	111074	1		ND	ug/L	0.200	04-Dec-08	04-Dec-08 10:14	MHB1
Selenium	EPA 6010	111073	1		ND	ug/L	35.0	03-Dec-08	04-Dec-08 16:09	KJR
Silver	EPA 6010	111073	1		ND	ug/L	10.0	03-Dec-08	04-Dec-08 16:09	KJR

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:19
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656398
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111096	1		5.06	Std. Units		03-Dec-08	03-Dec-08 10:55	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:20
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01A
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656399
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111096	1		5.48	Std. Units		03-Dec-08	03-Dec-08 10:55	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656400
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111096	1		5.86	Std. Units		03-Dec-08	03-Dec-08 10:55	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656401
Description: None

Project: 2089189
Site: None
Matrix: Soil **%Moisture:** 0 Not Corrected
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
pH	EPA 9045	111096	1		6.21	Std. Units		03-Dec-08	03-Dec-08 10:55	SMS2

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-01

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656402

Matrix: Water

%Moisture: n/a

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111116	1	D2	50.0	mg/L	50.0	03-Dec-08	03-Dec-08 15:00	TAE
Oil and Grease	EPA 1664A	111162	1		ND	mg/L	5.00	04-Dec-08	04-Dec-08 11:00	TAE
pH	EPA 9040	111133	1		6.63	Std. Units		03-Dec-08	03-Dec-08 16:35	SMS2
Total Suspended Solids	SM 2540D	111126	1		47.0	mg/L	4.00	03-Dec-08	03-Dec-08 16:30	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-BARGE2-02

Project: 2089189

Project ID: LTD. PII ES BARGE/3504ACE

Site: None

Lab ID: 20656403

Matrix: Water

%Moisture: n/a

Description: None

Collected: 02-Dec-08

Received: 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111116	1	D2	110.	mg/L	50.0	03-Dec-08	03-Dec-08 15:00	TAE
Oil and Grease	EPA 1664A	111162	1		ND	mg/L	5.00	04-Dec-08	04-Dec-08 11:00	TAE
pH	EPA 9040	111133	1		6.86	Std. Units		03-Dec-08	03-Dec-08 16:35	SMS2
Total Suspended Solids	SM 2540D	111126	1		17.0	mg/L	4.00	03-Dec-08	03-Dec-08 16:30	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-SUNK BARGE-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656404
Description: None

Project: 2089189
Site: None
Matrix: Water **%Moisture:** n/a
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111116	1	D2	100.	mg/L	50.0	03-Dec-08	03-Dec-08 15:00	TAE
Oil and Grease	EPA 1664A	111162	1		ND	mg/L	5.00	04-Dec-08	04-Dec-08 11:00	TAE
pH	EPA 9040	111133	1		6.77	Std. Units		03-Dec-08	03-Dec-08 16:35	SMS2
Total Suspended Solids	SM 2540D	111126	1		11.0	mg/L	4.00	03-Dec-08	03-Dec-08 16:30	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Sample Results

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Client: Materials Management Group

Client ID: SD-3504ACE-CANAL-01
Project ID: LTD. PII ES BARGE/3504ACE
Lab ID: 20656405
Description: None

Project: 2089189
Site: None
Matrix: Water **%Moisture:** n/a
Collected: 02-Dec-08 **Received:** 02-Dec-08

Analyte	Method	Batch	DF	Qu	Result	Reporting		Prep.	Analysis	Limit
						Units	Limit			
Chemical Oxygen Deman	SM 5220D	111116	1	D2	70.0	mg/L	50.0	03-Dec-08	03-Dec-08 15:00	TAE
Oil and Grease	EPA 1664A	111162	1		ND	mg/L	5.00	04-Dec-08	04-Dec-08 11:00	TAE
pH	EPA 9040	111133	1		6.91	Std. Units		03-Dec-08	03-Dec-08 16:35	SMS2
Total Suspended Solids	SM 2540D	111126	1		14.0	mg/L	4.00	03-Dec-08	03-Dec-08 16:30	JMA

4 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Inorganics 12/10/2008 15:52:21
 Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111089

Project: 2089189

LCS: 20656467 08-Dec-08 13:48

MS:

Units: mg/L

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Diesel Range Organics (C10 1 compound(s) reported)	0.4	0.2219	56								13 - 117	-		Q5

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111090

Project: 2089189

LCS: 20656477 08-Dec-08 16:42

MS: 20656478 08-Dec-08 18:22

Units: mg/kg

MSD: 20656479 08-Dec-08 18:46

Original for MS: Batch Sample 20656046

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Diesel Range Organics (C10 1 compound(s) reported)	40	34.97	87	40	355.60	108	98.8	0 *	0 *	9	46 - 123	10 - 167	20	1, Q1, Q

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111336

Project: 2089189

LCS: 20657837 09-Dec-08 18:24

MS:

Units: mg/kg

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Diesel Range Organics (C10 1 compound(s) reported)	40	44.46	111								46 - 123	-		

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111084

Project: 2089189

LCS: 20656451 03-Dec-08 10:55

MS:

Units: mg/L

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported	0.5	0.4889	98								86 - 136	-		Q5

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111084

Project: 2089189

LCS: 20657149 04-Dec-08 10:59

MS:

Units: mg/L

MSD:

Original for MS:

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported	0.5	0.5154	103								86 - 136	-		Q5

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111199

Project: 2089189

LCS: 20657037 08-Dec-08 11:36

MS: 20657038 08-Dec-08 21:20

Units: mg/kg

MSD: 20657039 08-Dec-08 21:45

Original for MS: Batch Sample 20657022

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported	25	21.82	87	25	1.76	27.09	20.42	101	75	28 *	86 - 136	40 - 175	20	

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Organics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Batch: 111199

Project: 2089189

LCS:

MS: 20657038 08-Dec-08 21:20

Units: mg/kg

MSD: 20657039 08-Dec-08 21:45

Original for MS: Batch Sample 20657022

Parameter Name	LCS	LCS	LCS	MS	Sample	MS	MSD	MS	MSD	MSD	QC Limits		Max	Qu
	Spike	Found	%Rec	Spike	Found	Found	Found	%Rec	%Rec	RPD	LCS	MS/MSD	RPD	
Gasoline Range Organics(C) 1 compound(s) reported				25	1.76	27.09	20.42	101	75	28 *	-	40 - 175	20	

* denotes recovery outside of QC limits.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111084

Project: 2089189

Method: Water EPA 8015/8021

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656450	111084 BLANK 1		88							
20657148	111084 BLANK 2		91							
20656451	111084 LCS 1		98							
20657149	111084 LCS 2		99							
20656402	SD-3504ACE-BARGE2-01		91							
20656403	SD-3504ACE-BARGE2-02		88							
20656405	SD-3504ACE-CANAL-01		92							
20656407	SD-3504ACE-FB-12-2-08		90							
20656404	SD-3504ACE-SUNK BARGE-01		88							
20656406	SD-3504ACE-TB-12-2-08		88							
QC limits:			60-129							

Sur 1: 4-Bromofluorobenzene (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111089

Project: 2089189

Method: Water EPA 8015 Mod Ext

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656466	111089 BLANK 1		47	75						
20656467	111089 LCS 1		43	74						
20656402	SD-3504ACE-BARGE2-01		70	85						
20656403	SD-3504ACE-BARGE2-02		69	79						
20656405	SD-3504ACE-CANAL-01		85	84						
20656404	SD-3504ACE-SUNK BARGE-01		61	74						

QC limits: 16-137 10-121

Sur 1: n-Pentacosane (S)

Sur 2: o-Terphenyl (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111090

Project: 2089189

Method: Soil EPA 8015 Mod Ext

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20656476	111090 BLANK 1		70	76						
20656773	111090 BLANK 2		80	81						
20656477	111090 LCS 1		85	94						
20656774	111090 LCS 2		86	90						
20656478	CSB-1/0.5M MS 1	D1	93	101						
20656479	CSB-1/0.5M MSD 1	D1	75	84						
20656398	SD-3504ACE-BARGE2-01	D1	76	102						
20656399	SD-3504ACE-BARGE2-01A	D1	68	93						
20656401	SD-3504ACE-CANAL-01		72	74						

QC limits: 16-147 16-127

Sur 1: n-Pentacosane (S)
Sur 2: o-Terphenyl (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111199

Project: 2089189

Method: Soil EPA 8015/8021

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20657036	111199 BLANK 1		114							
20657037	111199 LCS 1		117							
20657038	SA MS 1		101							
20657039	SA MSD 1		100							
20656398	SD-3504ACE-BARGE2-01		77							
20656399	SD-3504ACE-BARGE2-01A		93							
20656401	SD-3504ACE-CANAL-01		91							
20656400	SD-3504ACE-SUNK BARGE-01		89							

QC limits: 60-129

Sur 1: 4-Bromofluorobenzene (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 111336

Project: 2089189

Method: Soil EPA 8015 Mod Ext

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
20657836	111336 BLANK 2		103	101						
20657837	111336 LCS 2		106	112						
20656400	SD-3504ACE-SUNK BARGE-01		35	48						
QC limits:			16-147	16-127						
Sur 1: n-Pentacosane (S)										
Sur 2: o-Terphenyl (S)										

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111084 BLANK 1

Project: 2089189

Lab ID: 20656450

Prep Level: Water

Batch: 111084

Method: Water EPA 8015/8021
8015/8021 Water Blank

Prepared: 03-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/L</u>		Analysis
					Reporting Limit		
	Gasoline Range Organics(C6-10)	1		0.0363J	0.0500		03-Dec-08 10:30 MHM
1 compound(s) reported							

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111084 BLANK 2

Project: 2089189

Lab ID: 20657148

Prep Level: Water

Batch: 111084

Method: Water EPA 8015/8021
8015/8021 Water Blank

Prepared: 04-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/L</u> Reporting Limit	Analysis
	Gasoline Range Organics(C6-10)	1		0.0487J	0.0500	04-Dec-08 10:06 MHM
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111089 BLANK 1

Project: 2089189

Lab ID: 20656466

Prep Level: Water

Batch: 111089

Method: Water EPA 8015 Mod Ext
TPH Extractables Water BLK LCS

Prepared: 03-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/L</u>	Analysis
					Reporting Limit	
	Diesel Range Organics (C10-28)	1		ND	0.150	08-Dec-08 13:23 SNP1
	Oil Range Organics (>C28-40)	1		ND	0.150	08-Dec-08 13:23 SNP1
2 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Blank ID: 111090 BLANK 1

Project: 2089189

Lab ID: 20656476

Prep Level: Soil

Batch: 111090

Method: Soil EPA 8015 Mod Ext
8015 TPH Extractables Soil

Prepared: 03-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/kg</u>	Analysis
					Reporting Limit	
	Diesel Range Organics (C10-28)	1		ND	10.0	08-Dec-08 16:17 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	08-Dec-08 16:17 SNP1
2 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
 MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
 Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111199 BLANK 1

Project: 2089189

Lab ID: 20657036

Prep Level: Soil

Batch: 111199

Method: Soil EPA 8015/8021
8015/8021 Med Soil

Prepared: 05-Dec-08

Units: mg/kg

CAS Numb	Analyte	Dilution	Qu	Result	Reporting Limit	Analysis
	Gasoline Range Organics(C6-10)	1		ND	2.50	08-Dec-08 10:46 MHM
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Organics Method Blank

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 111336 BLANK 2

Project: 2089189

Lab ID: 20657836

Prep Level: Soil

Batch: 111336

Method: Soil EPA 8015 Mod Ext
8015 TPH Extractables Soil

Prepared: 09-Dec-08

CAS Numb	Analyte	Dilution	Qu	Result	Units: <u>mg/kg</u> Reporting Limit	Analysis
	Diesel Range Organics (C10-28)	1		ND	10.0	09-Dec-08 17:59 SNP1
	Oil Range Organics (>C28-40)	1		ND	50.0	09-Dec-08 17:59 SNP1
2 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit or PQL.
MDL denotes method detection limit

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.



Inorganics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Project: 2089189

Parameter	Batch	Blank	ARL	Units	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	MSD RPD	DUP RPD	QC Limits LCS	MS/MSD	Max RPD	Qu
Arsenic	111073	ND	10.0	ug/L	1000	992.9	99	1000	0.00	855.5	856	87	87	0		86 - 118	62 - 134	20	
Barium	111073	ND	100	ug/L	1000	1037	104	1000	85.20	890.8	889.8	81	81	0		87 - 122	55 - 140	20	
Cadmium	111073	ND	5.00	ug/L	1000	987.2	99	1000	0.06	769.6	774.7	77	78	1		86 - 117	62 - 127	20	
Chromium	111073	ND	10.0	ug/L	1000	1028	103	1000	0.00	782.2	780.1	78	78	0		85 - 116	54 - 135	20	
Lead	111073	ND	5.00	ug/L	1000	1051	105	1000	7.09	789.9	797	78	79	1		86 - 119	50 - 138	20	
Selenium	111073	ND	35.0	ug/L	1000	1018	102	1000	4.83	881.3	882.2	88	88	0		86 - 119	61 - 134	20	
Silver	111073	ND	10.0	ug/L	500	512.4	102	500	2.40	457.3	454.5	91	90	1		72 - 129	10 - 170	20	
Mercury	111074	ND	0.200	ug/L	1	1.036	104	1	0.00	0.9998	0.9963	101	100	0		80 - 120	75 - 125	20	
Arsenic	111083	ND	1.00	mg/kg	100	101.1	101	84.75	4.87	86.81	89.96	97	99	4		68 - 125	48 - 134	20	
Barium	111083	ND	20.0	mg/kg	100	107.9	108	84.75	105.40	204.2	196	117	105	4		68 - 130	19 - 180	20	
Cadmium	111083	ND	0.500	mg/kg	100	101.1	101	84.75	0.14	79.72	83.11	94	96	4		62 - 131	50 - 130	20	
Chromium	111083	ND	1.00	mg/kg	100	106.7	107	84.75	8.17	94.55	111.2	102	120	16		62 - 132	48 - 144	20	
Lead	111083	ND	0.500	mg/kg	100	107	107	84.75	9.35	90.58	94.28	96	99	4		68 - 128	35 - 149	20	
Selenium	111083	ND	3.50	mg/kg	100	101.5	102	84.75	0.57	78.63	81.18	92	94	3		65 - 121	46 - 129	20	
Silver	111083	ND	1.00	mg/kg	50	51.62	103	42.37	0.00	41.36	42.15	98	98	2		59 - 130	10 - 162	20	
Mercury	111085	ND	0.0200	mg/kg	0.1	0.1083	108	0.09677	0.02	0.123	0.1142	107	111	7		80 - 120	75 - 125	20	

* denotes recovery outside of QC limits.

ND denotes Not Detected at or above the adjusted reporting limit or PQL.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Inorganics Quality Control

Pace Analytical Services, Inc.
 1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

Project: 2089189

Parameter	Batch	Blank	ARL	Units	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	MSD RPD	DUP RPD	QC Limits	Max RPD	Qu
pH	111096			d. Units	6	5.99	100		5.33						0	97 - 103	-	20
Chemical Ox	111116	ND	5.00	mg/L	100	99	99	100	74.00	152		78			13	90 - 110	75 - 125	20
Total Suspen	111126	ND	4.00	mg/L	100	92	92		4.00						0	80 - 120	-	20
pH	111133			d. Units	6	6.03	101		6.63						0	97 - 103	-	20
Oil and Greas	111162	ND	5.00	mg/L	40	33.8	85									78 - 114	-	Q5

* denotes recovery outside of QC limits.

ND denotes Not Detected at or above the adjusted reporting limit or PQL.

MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.



Definitions/Qualifiers

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 2089189

Value	Description
D1	The analysis was performed at a dilution due to the high analyte concentration.
D2	The analysis was performed at a dilution due to the presence of matrix interferences.
Q1	The matrix spike recoveries are poor. Acceptable method performance for this analyte has been demonstrated by the laboratory control sample recovery.
Q3	The matrix spike recoveries are poor due to the presence of this analyte in the sample at a concentration greater than 4 times the spiked amount. Acceptable method performance for this analyte has been demonstrated by the laboratory control sample.
Q5	Insufficient sample was provided to perform matrix spike analyses on any sample in this analytical batch. Method performance for this analyte has been demonstrated by the laboratory control sample recovery.
J	This estimated value for the analyte is below the adjusted reporting limit but above the instrument reporting limit.
U	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
B	This analyte was detected in the method blank.
E	The sample concentration is above the linear calibrated range of the analysis.
ND	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
MDL	The adjusted method detection limit.
LCS(D)	Laboratory Control Sample (Duplicate).
MS(D)	Matrix Spike (Duplicate).
DUP	Sample Duplicate.
RPD	Relative Percent Difference.



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

2089189 20-MAT. MANG.



Project No. 20

Courier: Pace Courier Hackbarth Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals Intact: Yes No

Thermometer Used: Therm Fisher IR 1
 Therm Fisher IR 2

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and initials of person examining contents: 12-3-08 [Signature]

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing preservation have been checked (except VOA, coliform, & O&G).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13
		If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	17
Pace Trip Blank Lot # (if purchased):	N/A	18

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Pace Analytical Services, Inc.

Certificate of Analysis Number:

08120180

<p><u>Report To:</u></p> <p>Pace Analytical Services, Inc. Cindy Olavesen 1000 Riverbend Blvd., Ste. F</p> <p>St. Rose LA 70087- ph: (504) 469-0333 fax:</p>	<p><u>Project Name:</u> 2089189</p> <p><u>Site:</u> St. Rose, LA</p> <p><u>Site Address:</u></p> <p><u>PO Number:</u></p> <p><u>State:</u> Louisiana</p> <p><u>State Cert. No.:</u> 02029</p> <p><u>Date Reported:</u> 12/8/2008</p>
--	---

This Report Contains A Total Of 10 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

12/8/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Case Narrative for:
Pace Analytical Services, Inc.

Certificate of Analysis Number:
08120180

<p>Report To:</p> <p>Pace Analytical Services, Inc. Cindy Olavesen 1000 Riverbend Blvd., Ste. F</p> <p>St. Rose LA 70087- ph: (504) 469-0333 fax:</p>	<p>Project Name: 2089189</p> <p>Site: St. Rose, LA</p> <p>Site Address:</p> <p>PO Number:</p> <p>State: Louisiana</p> <p>State Cert. No.: 02029</p> <p>Date Reported: 12/8/2008</p>
--	---

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg/kg-dry " or " ug/kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

08120180 Page 1
 12/8/2008

Elessa Sommers
 Senior Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

Date



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Pace Analytical Services, Inc.

Certificate of Analysis Number:

08120180

Report To: Pace Analytical Services, Inc.
 Cindy Olavesen
 1000 Riverbend Blvd., Ste. F

St. Rose
 LA

70087-
 ph: (504) 469-0333 fax: (504) 469-0555

Fax To:

Project Name: 2089189
Site: St. Rose, LA
Site Address:

PO Number:
State: Louisiana
State Cert. No.: 02029

Date Reported: 12/8/2008

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
20656398	08120180-01	Sludge	12/2/2008 1:30:00 PM	12/4/2008 9:30:00 AM		<input type="checkbox"/>
20656399	08120180-02	Sludge	12/2/2008 1:30:00 PM	12/4/2008 9:30:00 AM		<input type="checkbox"/>
20656400	08120180-03	Sludge	12/2/2008 11:45:00 AM	12/4/2008 9:30:00 AM		<input type="checkbox"/>
20656401	08120180-04	Sludge	12/2/2008 12:30:00 PM	12/4/2008 9:30:00 AM		<input type="checkbox"/>

12/8/2008

Elessa Sommers
 Senior Project Manager

Date

Richard R. Reed
 Laboratory Director

Ted Yen
 Quality Assurance Officer



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656398 Collected: 12/02/2008 13:30 SPL Sample ID: 08120180-01

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	1500		50	1	12/05/08 17:38	LLL	4806666

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656399 Collected: 12/02/2008 13:30 SPL Sample ID: 08120180-02

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	1800		50	1	12/05/08 17:38	LLL	4806667

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit >MCL - Result Over Maximum Contamination Limit(MCL)
 B/V - Analyte detected in the associated Method Blank D - Surrogate Recovery Unreportable due to Dilution
 * - Surrogate Recovery Outside Advisable QC Limits MI - Matrix Interference
 J - Estimated Value between MDL and PQL
 E - Estimated Value exceeds calibration curve
 TNTC - Too numerous to count



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656400 Collected: 12/02/2008 11:45 SPL Sample ID: 08120180-03

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806668

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit	>MCL - Result Over Maximum Contamination Limit(MCL)
B/V - Analyte detected in the associated Method Blank	D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits	MI - Matrix Interference
J - Estimated Value between MDL and PQL	
E - Estimated Value exceeds calibration curve	
TNTC - Too numerous to count	



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Client Sample ID:20656401 Collected: 12/02/2008 12:30 SPL Sample ID: 08120180-04

Site: St. Rose, LA

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
N-HEXANE EXTRACTABLE MATERIAL (HEM)				MCL	SW9071B	Units: mg/kg	
Oil & Grease	ND		50	1	12/05/08 17:38	LLL	4806669

Prep Method	Prep Date	Prep Initials	Prep Factor
	12/05/2008 13:15		1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit >MCL - Result Over Maximum Contamination Limit(MCL)
 B/V - Analyte detected in the associated Method Blank D - Surrogate Recovery Unreportable due to Dilution
 * - Surrogate Recovery Outside Advisable QC Limits MI - Matrix Interference
 J - Estimated Value between MDL and PQL
 E - Estimated Value exceeds calibration curve
 TNTC - Too numerous to count

Quality Control Documentation



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pace Analytical Services, Inc.

2089189

Analysis: N-Hexane Extractable Material (HEM)
Method: SW9071B

WorkOrder: 08120180
Lab Batch ID: R259140

Method Blank

Samples in Analytical Batch:

RunID: EX_081205D-4806663 Units: mg/kg
Analysis Date: 12/05/2008 17:38 Analyst: LLL
Preparation Date: 12/05/2008 13:15 Prep By: Method:

Table with 2 columns: Lab Sample ID, Client Sample ID. Rows include 08120180-01A through 08120180-04A.

Table with 3 columns: Analyte, Result, Rep Limit. Row: Oil & Grease, ND, 50

Laboratory Control Sample (LCS)

RunID: EX_081205D-4806664 Units: mg/kg
Analysis Date: 12/05/2008 17:38 Analyst: LLL
Preparation Date: 12/05/2008 13:15 Prep By: Method:

Table with 6 columns: Analyte, Spike Added, Result, Percent Recovery, Lower Limit, Upper Limit. Row: Oil & Grease, 2000, 1960, 97.8, 80, 120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08120259-01
RunID: EX_081205D-4806676 Units: mg/kg
Analysis Date: 12/05/2008 17:38 Analyst: LLL
Preparation Date: 12/05/2008 13:15 Prep By: Method:

Table with 12 columns: Analyte, Sample Result, MS Spike Added, MS Result, MS % Recovery, MSD Spike Added, MSD Result, MSD % Recovery, RPD, RPD Limit, Low Limit, High Limit. Row: Oil & Grease, ND, 2000, 1940, 96.8, 2000, 2060, 103, 6.50, 20, 70, 130

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

*Sample Receipt Checklist
And
Chain of Custody*



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Sample Receipt Checklist

Workorder:	08120180	Received By:	L_C
Date and Time Received:	12/4/2008 9:30:00 AM	Carrier name:	Fedex-Standard Overnight
Temperature:	3.5°C	Chilled by:	Water Ice

- 1. Shipping container/cooler in good condition? Yes No Not Present
- 2. Custody seals intact on shipping container/cooler? Yes No Not Present
- 3. Custody seals intact on sample bottles? Yes No Not Present
- 4. Chain of custody present? Yes No
- 5. Chain of custody signed when relinquished and received? Yes No
- 6. Chain of custody agrees with sample labels? Yes No
- 7. Samples in proper container/bottle? Yes No
- 8. Sample containers intact? Yes No
- 9. Sufficient sample volume for indicated test? Yes No
- 10. All samples received within holding time? Yes No
- 11. Container/Temp Blank temperature in compliance? Yes No
- 12. Water - VOA vials have zero headspace? Yes No VOA Vials Not Present
- 13. Water - Preservation checked upon receipt (except VOA*)? Yes No Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative:	<input type="text"/>	Contact Date & Time:	<input type="text"/>
Client Name Contacted:	<input type="text"/>		
Non Conformance Issues:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

Appendix C: Field Logs

Location Michoud Canal / G.W.D. Date 12/02/08 ³⁷

Project / Client 3504 ACE

Sediment Sampling

Field Hazcat

10:00 AM

1) Concrete Barge

D1 - Temp. °C -

mV mV -

pH (su) -

Acid T1 Acid/base

T2 oxidizers

T3 Fluoride

T4 Organic solvent

T5 Iodine, Br, Cl₂

See next page

Location _____ Date 12/02/08
Project / Client _____

1. Concrete Barge	- / sample.	(10,000M)
Water	D21	D4
Temperature °C	14.7	14.6
ORP mV	-78	-72
PH (su)	7.94	7.82
T1 Acv/bisc	Neutral	Neutral
T2 oxidizer	NO	NO
T3 Fluoride	NO	NO
T4 Petroleum	NO	NO
T5 1,2,Pr,il ₂	NO	NO
Ignitability	NO	NO
Reactivity	NO	NO
Solid Temp °C	12.4	14.7
ORP mV	-75	-159
PH su	7.91	9.65
T1	Neutral	MB
T2	NO	NO
T3	NO	NO
T4	NO	NO
T5	NO	NO
Ignitability	NO	NO
Reactivity	NO	NO

Location _____ Date _____
Project / Client _____

12-5814	Canal	Sample
Temperature °C	15.3°C	14.7
ORP mV	-22	-72
PH (su)	6.95	7.79
T1	Neutral	
T2	NO	
T3	NO	
T4	NO	
T5	NO	
Ignitability	NO	
Reactivity	NO	
Paul Brannan 713-888-2470		
Shaw P. Project Engineer		

Location _____

Project / Client _____

Date _____

Barge O2 Sample 01 (North side)		D1	D2	D3	D4
Water		14.7	14.7	14.9	14.7
Temperature °C		-5.0	-5.6	-5.5	-5.3
ORP mv		7.46	7.51	7.43	7.48
PH (Su)		N	N	N	N
T1		No	No	No	No
T2		No	No	No	No
T3		No	No	No	No
T4		No	No	No	No
T5		No	No	No	No
Ignitability		No	No	No	No
Reactivity		No	No	No	No
Sediment		DP	D2	D3	D4
Temp °C		11.0	-7		
ORP mv		6.60			
PH (Su)		No	No	No	No
T1		No	No	No	No
T2		No	No	No	No
T3		No	No	No	No
T4		No	No	No	No
T5		No	No	No	No
Ignitability		CVO			
Reactivity		No			
		No Sludge		No Sediment	No Sediment

Location _____

Project / Client _____

Date _____

Barge O2 Sample 02 (South side)		D1	D2	D3	D4
Water		13.6	13.7		13.5
Temperature °C		-3.1	-7.3		-6.4
ORP mv		7.08	7.91		7.71
PH (Su)		N	N		N
T1		No	No		No
T2		No	No		No
T3		No	No		No
T4		No	No		No
T5		No	No		No
Ignitability		No	No		No
Reactivity		No	No		No
Sediment		D1	D2	D3	D4
Temp °C					
ORP mv					
PH (Su)					
T1					
T2					
T3					
T4					
T5					
Ignitability					
Reactivity					
		No Sediment	No Sediment	No Sample - Hatch closed	No Sediment

Read: rdy

Location Michael Canal (BANK) Date 12/03/08
 Project / Client Sed / Sludge / Water Sampling

0700 Sampling. Clear Sky. Cool

	D1	D2	D3	D4
Barge 01 - 01 - ^{water}				
Temperature °C	14.2	14.0	14.0	13.9
ORP mv	-52	-65	-66	-67
PH su	7.51	7.71	7.73	7.73
T1	N	N	N	N
T2	No	No	No	No
T3	No	No	No	No
T4	No	No	No	No
T5	No	No	No	No
Ignitability	No	No	No	No
Reactivity	No	No	No	No
Barge 01 - 01 - ^{sediment}	D1	D2	D3	D4
Temperature °C	16.8	16.8	16.8	16.8
ORP mv	-71	-56	-65	-73
PH su	7.82	7.54	7.69	7.85
T1	N	N	N	N
T2	No	No	No	No
T3	No	No	No	No
T4	No	No	No	No
T5	No	No	No	No
Ignitability	No	No	No	No
Reactivity	No	No	No	No

Location _____ Date _____
 Project / Client _____

	D1	D2	D3	D4
Barge 01 - 02 (Water)				
Temperature °C	14.6	14.6	14.5	14.5
ORP mv	-85	-36	-67	-71
PH su	8.08	7.22	7.23	7.81
T1	N	N	N	N
T2	No	No	No	No
T3	No	No	No	No
T4	No	No	No	No
T5	No	No	No	No
Ignitability	No	No	No	No
Reactivity	No	No	No	No
Barge 01 - 02 - ^{sediment}	D1	D2	D3	D4
Temperature °C	17.5	17.0	16.2	17.5
ORP mv	-94	-67	-62	-68
PH su	8.29	7.79	7.70	7.79
T1	N	N	N	N
T2	No	No	No	No
T3	No	No	No	No
T4	No	No	No	No
T5	No	No	No	No
Ignitability	No	No	No	No
Reactivity	No	No	No	No

Location _____ Date _____
 Project / Client _____

	Apr. / Barge 03-DI	May / 03-DI	June / 03-DI	July / 03-DI	Aug. / 03-DI	Sept. / 03-DI	Oct. / 03-DI	Nov. / 03-DI	Dec. / 03-DI	USACE DB	USACE DB
Temp °C	17.7	17.7	N	N	N	N	N	N	N	17.0	17.9
ORP mv	-7.7	-7.7	N	N	N	N	N	N	N	-41	-14
PH	7.93	7.93	N	N	N	N	N	N	N	7.19	6.73
T1	N	N	N	N	N	N	N	N	N	N	N
T2	N	N	N	N	N	N	N	N	N	N	N
T3	N	N	N	N	N	N	N	N	N	N	N
T4	N	N	N	N	N	N	N	N	N	N	N
T5	N	N	N	N	N	N	N	N	N	N	N
Ignitability	N	N	N	N	N	N	N	N	N	N	N
Reactivity	N	N	N	N	N	N	N	N	N	N	N
Barge 3-01	18.2	-49	7.35	N	N	N	N	N	N	18.0	17.9
Temp °C	N	N	N	N	N	N	N	N	N	N	N
ORP mv	N	N	N	N	N	N	N	N	N	N	N
PH	N	N	N	N	N	N	N	N	N	N	N
T1	N	N	N	N	N	N	N	N	N	N	N
T2	N	N	N	N	N	N	N	N	N	N	N
T3	N	N	N	N	N	N	N	N	N	N	N
T4	N	N	N	N	N	N	N	N	N	N	N
T5	N	N	N	N	N	N	N	N	N	N	N
Ignitability	N	N	N	N	N	N	N	N	N	N	N
Reactivity	N	N	N	N	N	N	N	N	N	N	N

Location _____ Date _____
 Project / Client _____

	DI	D2	D3	D4
Barge 01-03	15.2	15.3	14.9	14.8
Temp °C	-7.4	-7.2	-7.3	-7.9
ORP mv	7.86	7.84	7.85	7.95
PH	N	N	N	N
T1	N	N	N	N
T2	N	N	N	N
T3	N	N	N	N
T4	N	N	N	N
T5	N	N	N	N
Ignitability	N	N	N	N
Reactivity	N	N	N	N
Barge 01-03	17.5	17.1	16.7	16.8
Temp °C	-114	-48	-69	-58
ORP mv	8.69	7.30	7.79	7.64
PH	N	N	N	N
T1	N	N	N	N
T2	N	N	N	N
T3	N	N	N	N
T4	N	N	N	N
T5	N	N	N	N
Ignitability	N	N	N	N
Reactivity	N	N	N	N

CONTAINER REQUEST FORM
ONE-TIME WEEKLY MONTHLY SEMI-ANNUALLY ANNUALLY

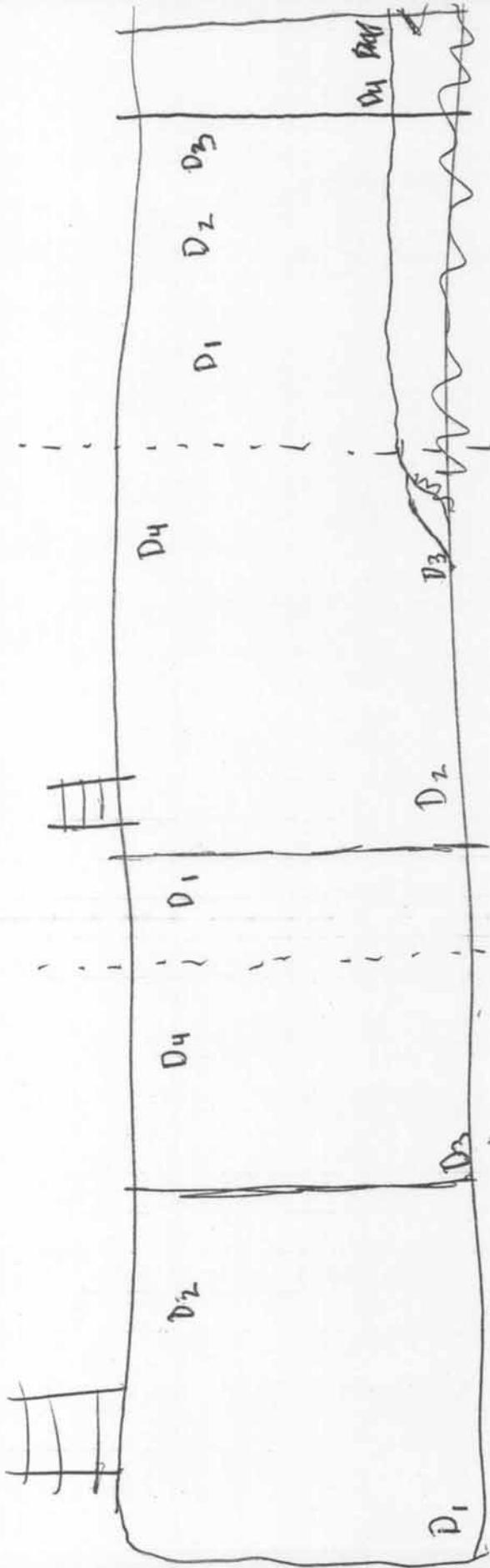
Ship to:	MMG	Mark on COC:	10 WD	5 WD	Other:
Attention:	Wendall	Submitted by/date:	CINDY		
Phone #:	368-0568	Completed by/date:	11/26/11-05-08		
E-mail:		Deliver:	11/26		
		Project/Quote #:	3504-ACE		
		VIA:	FedEX	Courier	

QTY	SETS	CONTAINER TYPE	PRESERVATIVE	MATRIX	ANALYSIS
3	9	40 mL VOA Vial Glass	HCL	W	TPH-GAS
		40 mL VOA Vial Glass	NONE	W	
		40 mL VOA Vial Glass -6 PER SAMPLE	HCL/None/Amber	W	Low Con/ 25 mL purge
		40 mL VOA Vial Glass	NA Thiosulfate	W	
		40 mL VOA Vial Glass	MeOH	S	
10	encores	EnCore - 3 per sample (need field T-handle)	None	S	5035 / 8260 VOA
		EnCore - 1 per sample (need field T-handle)	None	S	5035 / 8015 METHANOL
		EnCore - MS/MSD = 2 BTEX 2 TPH-Gas	None	S	5035 / 8021 BTEX 5035 / 8015 TPH-G
		1L Amber Glass w/m	None	W	
2	9	1L Amber Glass w/m	None	W	TPH-D/O
2	1	1L Amber Glass w/m	None	W	FULL TCLP
		1250 mL amber glass w/m	None	W	
		8 oz. Clear Glass	None	S	
1	10	4 oz. Clear Glass	None	S	TPH-D/O
	1	8 oz. Clear Glass	None	S	FULL TCLP
1	1	4 oz. Clear Glass	None	S	RCI
1	10	4 oz. Clear S/S Glass	None	S	RCRA 8, pH
1	9	32 oz. Clear Boston Round Glass	HCL	S	O/G
		32 oz. Clear Boston Round Glass	H2SO4	S	
		8 oz. Clear S/S Glass	None	S	
1	10	4 oz. Clear S/S Glass	None	S	O/G
		Coliform Bottles (Sterile)	Na Thiosulfate	W	
		1L WM Plastic	None	W	
		64 oz wide-mouth Plastic	None	W	
1	9	250 mL WM Plastic	None	W	TSS, pH
		BOD BOTTLE	None	W	
1	1	250 mL WM Plastic	None	W	RCI
		250 mL WM Plastic	NaOH pH > 12	W	Cyanide
		250 mL WM Plastic	ZnAc-NaOH pH > 9	W	Sulfide
1	9	250 mL WM Plastic	NITRIC	W	RCRA 8
		250 mL WM Plastic	NITRIC IN BOTTLE	W	
		125 mL WM Plastic	H2SO4	W	
1	9	40 mL Amber Glass Vial	H2SO4	W	COD
		20 mL crimp vials (need crimp tool)	HCL-separate vial	W	Methane, Ethane, Ethene
		Terra Core Kits	as packaged	S	8260 8021 (BTEX) 8015-GRO

Trip Blank Required:	Yes / <u>No</u>	(# _____ / set) * _____ sets = _____	Vol. Org. Free H ₂ O Required:	Yes / <u>No</u>
Ice Packs Required:	Yes / <u>No</u>		Temp. Blank Required:	Yes / <u>No</u>
Extra Coolers Required:	Yes / <u>No</u>		Extra COCs Requested:	Yes / <u>No</u>

Special Instructions/Comments: _____

255' 10"



"L, B1"



01

Barge

02

Barge

03

Barge

Canal 01 ✓

30 00 86.3

89 54.00.9

Sunk Barge

✓D1

30.00. 54.4

N1

W

089.54.04.3

✓D2

30.00. 54.6

089.54.04.0

✓D3

30.00. 54.5

089.54.03.8

✓D4

30.00. 54.2

089.54.04.3

Barge 2-01

✓D1

30.00.55.9

089 54 03.7

✓D2

30.00 56.1

089 54 03.2

✓D3

30 00 56.3

089 54 02.7

✓D4

30 00 56.6

089 54 01.7

Barge 2-02

✓D1

30 00 56.3

089 54 01.5

✓D2

30 00 55.9

089 54 02.5

✓D3

30 00 55.7

089 54 03.1

✓D4

30 00 55.6

089 54 03.5

N

W

Barge 1-01

✓ D1	30	00	53.6
✓ P ₂ DW	30	00	53.8
	30	00	53.6
✓ P ₃ DW	30	00	53.9
	30	00	53.7
✓ D4 DW	30	00	54.1
	30	00	53.8

89	54	06.1
89	54	05.9
89	54	06.0
89	54	05.3
89	54	05.8
89	54	05.5
89	54	05.7

Barge 1-02

✓ P ₁ DW	30	00	54.3
	30	00	54.2
✓ D2	30	00	54.2
✓ P3	30	00	54.3
✓ D4 DW	30	00	54.6
	30	00	54.5

89	54	05.4
89	54	05.3
89	54	05.2
89	54	05.1
89	54	04.6
89	54	04.6

Barge 1-03

✓ D1	30	00	54.7
✓ D2	30	00	55.0
✓ D3	30	00	55.0
✓ D4	30	00	55.0

89	51	04.6
89	54	04.1
89	54	04.1
		03.9
89	54	03.8

Barge 3-01

D1	30	00	57.0
D2	30	00	56.6
D3	30	00	57.0

89	53	59.3
89	53	59.2
89	53	59.0
00	52	50.0

Barge 3-02

N				W		
D ₁	30	00	57.0	89	53 ¹⁰	59.6
D ₂	30	00	56.6	89	53	58.8
D ₃	30 ⁰	0'	57.1	89 ⁰	53'	58.7
D ₄	30	0	56.7	89	53	58.6

12-2-08

①

⑦ 7:00 Limited Phase II ESA
Barge Assessment of
Michoud Canal / GIWW.
Performed For: United
States Army Corps of
Engineers. (USACE)
By: Materials Management
Group (MMG)
Job # 3504 ACE.

These notes should
be combined with
notes taken by P. Lo.
MMG Sampling Team
Departs From Warehouse
Wendell Thompson
Paul Lo
Randy Puvilia
"Rite in the Rain"

12.2.09

(2)

Gary Brooks

Richard Enclarde

08:30 Water samples will be collected using bailers. Sediment samples will be collected using a Wilco sampler. All sampling methods and quantity of discrete sample per composite sample will follow descriptions outlined in the ~~Ballical~~ Work plan.

MMG # 3504 ALE

Task Order 005 - Limited

PII/ESA / Barge Assessment,

Michoud Canal / G-IWW, NDPA

08:37 Tailgate safety meeting conducted by P. Lo

12-2-09

(3)

08:49 P. Cloudy, 5 mph N wind, 65°F

09:00 Work begins at site

10:37 Sunk Barge

D1 N 30 00 54.4

W 89 54 04.3

D2 N 30 00 54.6

W 89 54 04.0

D3 N 30 00 54.5

W 89 54 03.8

D4 N 30 00 54.2

W 89 54 04.3

D1 Depth to Water 2'9"

D1 Depth to Bottom 12'6"

D4 Depth to Water 3'6"

D4 Depth to Bottom 12'4"

D3 Depth to Water 1'11"

D3 Depth to Bottom 10'9"

"hit in the rain"

12.2.09

(4)

WT.

~~D1~~

D2 Depth to Water 1'9"

Depth to Bottom 12'

11:03 Water samples collected
at D1, D2, D3, and D4

Sediment samples collected
at D1, D2, and D4.

No soil available at D3

11:20 W-3504ACE - Sunk Barge - D1

Composite sample collected
and stored in cooler

1 32oz O&G

2 1L TPH D&D

1 250ml RCRA 8

1 250ml TSS, PH

1 40ml COD

3 40ml TPH-G

12-2-08

⑤

11:45 SD-3504ACE - Sunk Barge - 01

Composite sample collected
and stored in cooler.

1.4oz TPH P&D

1.4oz RCRA metals

1.4oz O&G

1. Encore TPH G

12:01 MMG team takes lunch

12:15 MMG returns from lunch

12:20 Canal

N 30.00 86.3

W 89.54 00.9

Depth to Water At Shore

Depth to Bottom 1'

12:25 W-3504ACE - Canal - 01

One discrete sample collected
and stored in cooler

"hit in the rain"

12.2.09

1 32oz ^{O&G} ~~TPH-DEO~~
2 1L TPH-DEO
1 250ml RCRA 8
1 250ml TSS, PH
1 40ml COD
3 40ml TPH-G

12:30 5D-3504ACE-Canal-01

One discrete sample collected
and stored in cooler

1 40z TPH DEO
1 40z RCRA metals
1 40z O&G
1 Encore TPH-G

13:00 Barge 2-01

D1 N	30	00	55.9
W	89	54	03.7
D2 N	30	00	56.1

12-2-08

⑦

D2 W 89 54 03.2

D3 N 30 00 56.3

W 89 54 02.7

D4 N 30 00 56.6

W 89 54 01.7

D1 Depth to water 9' 0"

Depth to bottom 12' 5"

D2 Depth to water 9' 0"

Depth to bottom 12' 5"

D3 Depth to water 9' 0"

Depth to bottom 12' 5"

D4 Depth to water 9' 0"

Depth to bottom 12' 5"

13:03 Water samples collected
at D1, D2, D3, & D4.

Sediment samples collected
at D2 & D3.

"Rite in the Rain"

12.2.08

(19)

No sediment available
at D1 & D4

13:15 W-3504ACE - Barge 2 - 01

- 1 3202 O & G
- 2 1L TPH D&D
- 1 250ml RLRA 8
- 1 250ml TSS, PH
- 1 40ml COD
- 3 40ml TPH-G

Composite sample collected
and stored in cooler

13:30 SD-3504ACE - Barge 2 - 01

- 1 40z TPH D&D
- 1 40z REIRA metals
- 1 40z O & G
- 1 Encore TPH-G

Composite sample collected

12-2-08

(9)

and stored in cooler.

13:45 Barge 2-02

D1 N 30 00 56.3

W 89 54 01.5

D2 N 30 00 55.9

W 89 54 02.5

D3 N 30 00 55.7

W 89 54 03.1

D4 N 30 00 55.6

W 89 54 03.5

D1 Depth to water 9' 0"

1 Depth to bottom 12' 5"

D2 Depth to water 9' 0"

Depth to bottom 12' 5"

D3 N/A Sealed Hatch

N/A Sealed Hatch

D4 Depth to water 9' 0"

Depth to bottom 12' 5"

12.2.09

10

13:50 Water samples collected
at D1, D2, ~~D3~~ & D4
No sediment samples
collected. No material
available.

mt.
14:00

14:00 W-3504ACE-Barge 2-02

1 32 oz D & G

2 1 L TPH-D & O

1 250ml RCRA 8

1 250ml TSS, PH

1 40ml COD

3 40ml TPH-G

14:15 Decision made to
split sample from

SD-3504ACE-Barge 2-01

14:20 SD-3504ACE-Barge 2-01a

12-2-08

(1)

1 4oz TPH D&G
1 4oz RCRA metals
1 4oz D&G
1 Encore TPH-G

14:55 W-3504ACE^{TB}-12-2-08

2 40ml TPH-G

~~14:55~~

15:00 W-3504ACE-FB-12-2-08

3 40ml TPH-G

15:16 Material Description:

The material found at all sample locations is consistent.

The Dark Grey sandy clay, with decaying plant material, shell inclusions, methane ~~odor~~ sulphur odor.

"Rice in the Rain"

12-8-08

(12)

15:20 Chain of Custody

#1118998 was checked
by G. Brooks, R. Pumilia,
and W. Thompson.

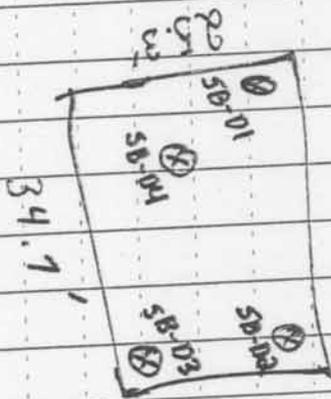
All samples were
placed into two coolers
and transported by
P. Lo to Pace Labs.

15:42 All MMLG personnel depart
site.

~~W. Thompson~~

13

12-2-08



Sunk Barge
Discrete Sample Locations

"kiss in the rain"

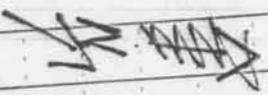
12.2.09

(12)

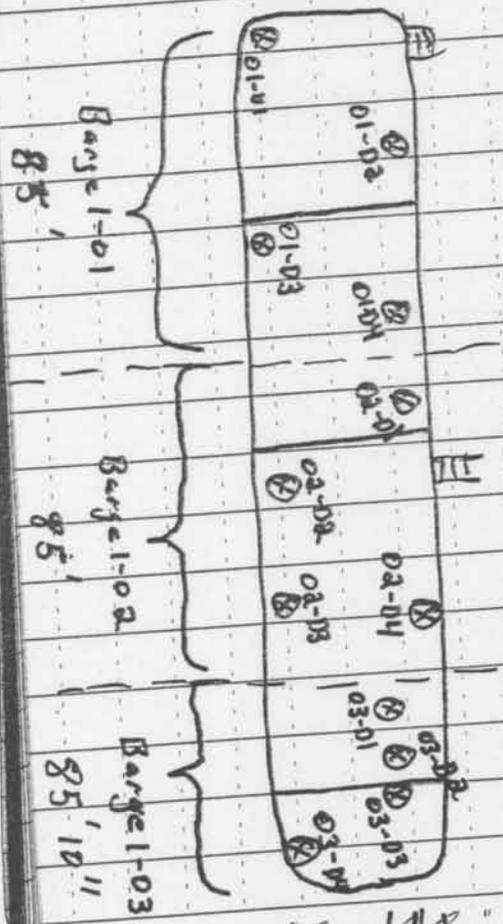
Barse 2 Discrete Sample Locations



12-3-08



Barse /
Discrete Sample Locations

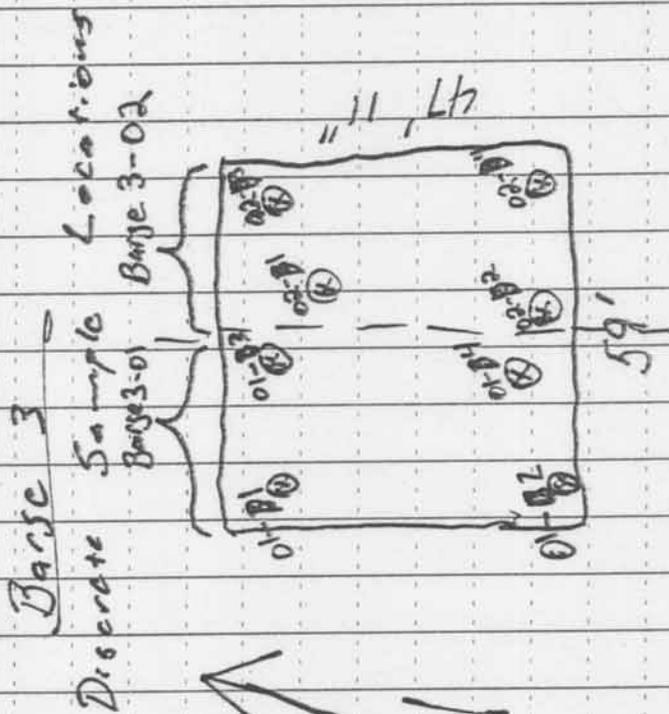


12-3-08

12.3.08

12

(16)



12-3-09

(17)

07:00 MMG Sampling Team

Wendell Thompson

Paul Lo

Randy Pumilia

Gary Brooks

Richard Enclade

Departs from MMG
Warehouse.

Job # 3504ACE

These notes should
be combined with
notes taken by
Paul Lo.

08:45 Tailgate safety meeting
conducted by P. Lo

08:53 Work Begins at site

09:00 P. Cloudy, 10 mph W wind, 65°F
"Rite in the Rain"

12.3.09

(18)

9:30 Barge 1-01

D1 H 30 00 53.6

W 89 54 06.1

D2 N 30 00 53.9

W 89 54 05.9

D3 N 30 00 53.9

W 89 54 05.5

D4 N 30 00 54.1

W 89 54 05.5

D1 Depth to Water 8'6"

D1 Depth to Bottom 10'

D2 Depth to Water N/A

D2 Depth to Bottom 10'

D3 Depth to Water N/A

D3 Depth to Bottom 10'

D4 Depth to Water N/A

D4 Depth to Bottom 10'

12.29.09

(19)

10:15 Sediment Samples
collected at D₁, D₂, D₃
and D₄.

Water samples collected
at D₁, D₂, D₃, & D₄.
Samples moved to edge
of barge when no
water was available.

~~10:18 Barge #1~~

10:18 SD 3504ACE Barge 1-01
Composite sample
collected and stored
in cooler.

1. 40E TPH D&O

1. 40E PH, RCRA Metals

1. 40E O&G

1. Encore TPH-G

"Hit in the Rain"

12-3-09

(20)

10:28 W-3504 ACE-Barge 1-01

Composite sample
collected and stored
in cooler.

3 x 40ml TPH-6

2 x 1L TPH-D&D

1 250ml RCRA metals

1 32oz O&G

1 250ml TSS, PH

1 400ml COD

~~Amey~~

12-3-09

(21)

10:30 Barge 1-02

D₁ N 30 00 54.3

W 89 54 05.4

D₂ N 30 00 54.8

W 89 54 05.2

D₃ N 30 00 54.3

W 89 54 05.1

D₄ N 30 00 54.6

W 89 54 04.6

D₁ Depth to Water N/A

D₁ Depth to Bottom 10'

D₂ Depth to Water 8'6"

D₂ Depth to Bottom 10'

D₃ Depth to Water 8'6"

D₃ Depth to Bottom 10'

D₄ Depth to Water N/A

D₄ Depth to Bottom 10'

"Rite in the Rain"

12.3.08

(22)

10:42 Sediment Samples

Collected at D₁, D₂, D₃
& D₄

Water samples collected
at D₁, D₂, D₃, D₄.

Samples moved to the
edge of the barge
when no water was
available.

~~10:51 SD-Barge 1-02 V.P.~~

10:51 SD-3504ACE-Barge 1-02

Composite samples collected
and stored in cooler.

1. 4oz TPH D&O

1. 4oz PAH, RCRA metals

1. 4oz ODG

1. Encore TPH-G

12-3-08

(23)

11:00 W-3504ACE-Barge 1-02

Composite sample collected
and stored in cooler.

3 X 40ml TPH-G

2 X 1L TPH-D&D

1 250ml RLRA metals

1 32oz O&G

1 250ml TSS, PH

1 40ml COD

11:07 SD-3504ACE-Barge 1-02a

Split composite sample
of SD-3504ACE-Barge-1-02a
collected and stored in cooler

1 4oz TPH D&D

1 4oz PH, RLRA metals

1 4oz O&G

1 Evapor TPH G

"left in the rain"

12.3.09

(24)

11:15 Barge 1-03

D1 N 30 00 54.7

W 89 51 04.6

D2 N 30 00 55.0

W 89 54 04.1

D3 N 30 00 55.0

W 89 54 03.9

D4 N 30 00 55.0

W 89 54 03.8

D1 Depth to Water 8'6"

D1 Depth to Bottom 10'

D2 Depth to Water 8'6"

D2 Depth to Bottom 10'

D3 Depth to Water 8'6"

D3 Depth to Bottom 10'

D4 Depth to Water 8'6"

D4 Depth to Bottom 10'

12-7-08

(25)

11:18 Sediment Samples
collected at D₁, D₂, D₃,
and D₄

Water Samples Collected
at D₁, D₂, D₃, D₄.

Samples moved to edge
of barge when no water
was available.

11:23 SD-3504ACE-Barge # 93

Composite sample collected
and stored in cooler.

1 4oz TPH D&D

1 4oz PH, RCRA 8

1 4oz D&G

1 Encore TPH-6

~~W. J. [Signature]~~

"Rite in the Rain"

12-3-08

26

11:28 W-3504ACE-Barge 1-03

3 x 40ml TPH G

2 x 1L TPH D&D

1 250ml RCRA metals

1 32oz O&G

1 250ml TSS, PH

1 40ml COD

Composite sample
collected and stored
in cooler.

~~W-3504ACE~~

12-3-08

(27)

13:00 Barge 3-01

D₁ N 30 00 57.0

W 89 53 59.2

D₂ NW 30 00 56.6

W 89 53 59.2

D₃ N 30 00 57.0

W 89 53 59.0

D₄ N 30 00 56.6

W 89 53 59.0

D₁ Depth to Water 10' 2"

D₁ Depth to Bottom 10' 6"

D₂ Depth to Water 10' 2"

D₂ Depth to Bottom 10' 6"

D₃ Depth to Water 10' 2"

D₃ Depth to Bottom 10' 6"

D₄ Depth to Water 10' 2"

D₄ Depth to Bottom 10' 6"

"kites in the rain"

12-3-09

(29)

13:13 Sediment Samples
collected at D₁, D₂,
D₃, & D₄. Very little
sample available.

Water samples collected
at D₁ & D₄. No
water at D₂ & D₃

13:21 5D-3504ACE-Barge 3-01

Composite sample collected
and stored in cooler

1 4oz TPH-D&O

1 4oz PH, RCRA metals

1 4oz O & G

1 Encore TPH-G

13:30 W-3504ACE-Barge 3-01

Composite sample
collected & stored in cooler

12-3-09

(29)

3 x 40ml TPH-6

2 x 1L TPH-D-O

1 x 250ml RCRA metals

1 x 32oz D&G

1 x 250ml TSS, PH

1 x 40ml COD

~~Wm. J. [Signature]~~

"Att in the Rain"

12.31.09

30

~~Wendy~~

12.3.08

(31)

13:36 Barge 3-D2

D₁ N 30 00 57.0

W 89 53 58.8

D₂ N 30 00 56.9

W 89 53 58.8

D₃ N 30 00 57.0

W 89 53 58.7

D₄ N 30 00 56.7

W 89 53 58.6

D₁ Depth to Water 10' 2"

D₁ Depth to Bottom 10' 6"

D₂ Depth to Water 10' 2"

D₂ Depth to Bottom 10' 6"

D₃ Depth to Water 10' 2"

D₃ Depth to Bottom 10' 6"

D₄ Depth to Water 10' 2"

D₄ Depth to Bottom 10' 6"

"hit in the rain"

12-3-08

(32)

13:42 Sediment Samples
collected at D1, D2,
& D3. No sample
material at D4.

Water Samples collected
at D1, D2, D3, & D4.

13:48 SD-3504ACE-Barge 3-02
Composite sample
collected and placed
in cooler.

1 4oz TPH-D&D

1 4oz PH, RLCRA metal

1 4oz O&G

1 Encore TPH-G

13:53 W-3504ACE-Barge 3-01
Composite sample
collected & stored in cooler

12.3.09

(33)

3 X 40ml TPH-G
2 X 1L TPH-D40
1 250ml RLPA metals
1 32oz O&G
1 250ml TSS, PH
1 40ml COD

13:59 Material Description

The material found at
all sample locations
is consistent:

Dark Grey sandy
clay with deceaying
plant material, shell
inclusions, methane
sulphur odor, very
moist, and some
biologicals.

"Rite in the Rain"

12-7-08

(34)

14:30 W-3504ACE-Waste

1 250 ml RCI

2 12 TCLP

14:45 SD-3504ACE-Waste

1 802 TCLP

14:49 W-3504ACE-TB-12-3-08

2 40ml TPH-G

14:51 W-3504ACE-FB-12-3-08

3 40ml TPH-G

15:05 Chain of Custody

#1118996 and

#1118997 was checked

by W. Thompson and

G. Brooks. All samples

were placed in 3 coolers

and transported to

Pacc Labs by

12.2.08

(35)

R. Enslende

15:30 MMG departs site

15:31 Field Work completed

~~W
m
T
m
d~~

"Rite in the Rain"

PROJECT P11 ESA Barges @ FIWW REPORT NO. _____

JOB NO 3504 ACE DATE 12-2-08

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate
Q Rac 11
Mini Rac 11

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D
Life Vest when needed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

BY W. Thompson TITLE Geologist

PROJECT P11 ESA Barges @ GIWW

REPORT NO. _____

JOB NO 3504 ACE

DATE 12-3-08
~~12-30-~~

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Q Rae 11
Min: Rae

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D
Life Vest when needed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Level

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

BY W. Ford TITLE Geologist

Appendix D: Photographs



Photograph #1
Barge 1 western section
Camera facing west



Photograph #2
Barge 1 middle section
Camera facing north



Photograph #3
Barge 1 eastern section
Camera facing northeast



Photograph #4
Barge 1
Camera facing west



Photograph #5
Barge 1
Camera facing west



Photograph #6
Sampling at Barge 1.
Camera facing west



Photograph #7
Sediment sampling at Barge 1
Camera facing east



Photograph # 8
Sediment sampling at Barge 1
Camera facing west



Photograph #9
Water sampling at Barge 1
Camera facing northeast



Photograph #10
Water sampling at Barge 1
Camera facing northeast



Photograph #11
Barge 2 east side
Camera facing south



Photograph # 12
Barge 2 west side
Camera facing southwest



Photograph # 13
Barge 2 – north half
Camera facing west



Photograph # 14
Barge 2 southwest corner.
Camera facing east



Photograph #15
Barge 2 south half
Camera facing east



Photograph # 16
Barge 2.
Camera facing northeast



Photograph #17
Sediment sampling at Barge 2
Camera facing southeast



Photograph #18
Sediment sampling at Barge 2
Camera facing east



Photograph #19
Sediment sampling at Barge 2
Camera facing west



Photograph #20
Sediment sampling at Barge 2
Camera facing northeast



Photograph #21
Barge 3
Camera facing west



Photograph # 22
Barge 3
Camera facing northeast



Photograph #23
Barge 3
Camera facing east



Photograph # 24
Opening at Barge 3
Camera facing southeast



Photograph #25
Water sampling at Barge 3
Camera facing southeast



Photograph # 26
Water sampling at Barge 3
Camera facing southeast



Photograph #27
Sediment sampling at Barge 3
Camera facing southwest



Photograph #28
Sediment sampling at Barge 3
Camera facing west



Photograph #29
Sunken Barge
Camera facing southeast



Photograph # 30
Sunken Barge
Camera facing south



Photograph #31
Sunken Barge
Camera facing southwest



Photograph #32
Sunken Barge
Camera facing east



Photograph #33
Sampling at Sunken Barge
Camera facing southeast



Photograph # 34
Sampling at Sunken Barge
Camera facing southeast



Photograph #35
Sampling at Sunken Barge
Camera facing west



Photograph #36
Sampling at Sunken Barge
Camera facing south



Photograph #37
Sampling equipment decontamination
Camera facing west



Photograph # 38
Sampling equipment decontamination
Camera facing west



Photograph #39
Sampling equipment decontamination
Camera facing west



Photograph #40
Field Hazcat testing station
Camera facing southwest



Photograph #41
Field Hazcat testing station
Camera facing south



Photograph # 42
Field Hazcat testing station
Camera facing southeast



Photograph #43
Sample preparation station
Camera facing east



Photograph #44
Vent hood and field blanks
Camera facing southeast

Appendix E: Final Safety Report

SAFETY INSPECTION FORM

SPA-MMG Joint Venture, LLC

SUBJECT: INSTRUCTIONS, PROCEDURES &
DRAWINGS: HEALTH & SAFETY

Page: 1 of 1

Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 3504-ACE

DATE: 12-2-08

CUSTOMER: USACE

TIME FROM: 08:45 TO: 16:00

JOB LOCATION: Michoud Canal/GIWW, New Orleans, Louisiana

SUPERVISOR: Paul Lo

FOREMAN/LEADMAN: W. Thompson

GENERAL JOB DESCRIPTION: Limited PIIESA/Barge Assessment

EMPLOYEES:	<u>R. Purnell</u>	<u>Sample Tech</u>
	<u>P. Lo</u>	<u>Supervisor / Health & Safety</u>
	<u>W. Thompson</u>	<u>Geologist</u>
	<u>G. Brooks</u>	<u>Sample Tech</u>
	<u>R. Enclade</u>	<u>Sample Tech</u>
	_____	_____
	_____	_____

SAFETY CONDITIONS: Barges Rusting, Leaking, Broken

WEATHER: Clear, Smp N Wind, 60-65°F

MONITORING & SAMPLING (attach results) LEL/O2 P.d

INSTRUMENTATION USED: Q Rae II Mini-rac 2000

LEVEL OF PROTECTION (special conditions) D with life vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: W. Thompson
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

Tailgate Safety Meeting

Date: 12/2/08 Time: 8:45 File #: 3104 ALB
Site Location: Michael Canal G/W/W
Type of Work: Sampling of sediment/sludge water
Site Manager: [Signature] Site Phone: 227-5172

Safety Topics:

- Emergency Shut-Off Exclusion Zone Smoking Area
 Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress Biological Electrical
 Lifting Acoustical Severe Weather Radiological
 Shearing Metal Rotating Equipment Crushing or Pinching
 Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space*

Chemical Exposure

- From site: TPH
 From work procedures: _____
 Absorption Inhalation Ingestion MSDS located in field files
 Other: _____

PPE: Level A B C D

- Full Face 1/2 Face Combination: _____
 Hepa Organic Air Pump
 Cascade Air SCBA
 Steel Toe Rubber Steel Toe Leather Gloves Cotton Dot
 Ear Plugs Hard Hat Face Shield/Goggles/Glasses
 Surgical Gloves Nitrile PVC Gloves
 Tyvek Saranex Other: vest

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility:

Map Attached

Name: Tulane Medical Facility Phone: 911
Address: Tulane Ave

Attendees Signature required on other side of this form

* Permit Required

Meeting Conducted By: [Signature]

C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blk.doc

Plan of the Day:

Empty rectangular box for the Plan of the Day.

Printed Name

Signature

Wendell Thompson

Randy Pumilia

GARY BROOKS

Richard Escalade

Paul Lo

Wendell Thompson

Randy Pumilia

Gary Brooks

L. Escalade

Paul B.

EMERGENCY TELEPHONE NUMBERS:

Five horizontal lines for emergency telephone numbers.

Job #: 3504 ACE

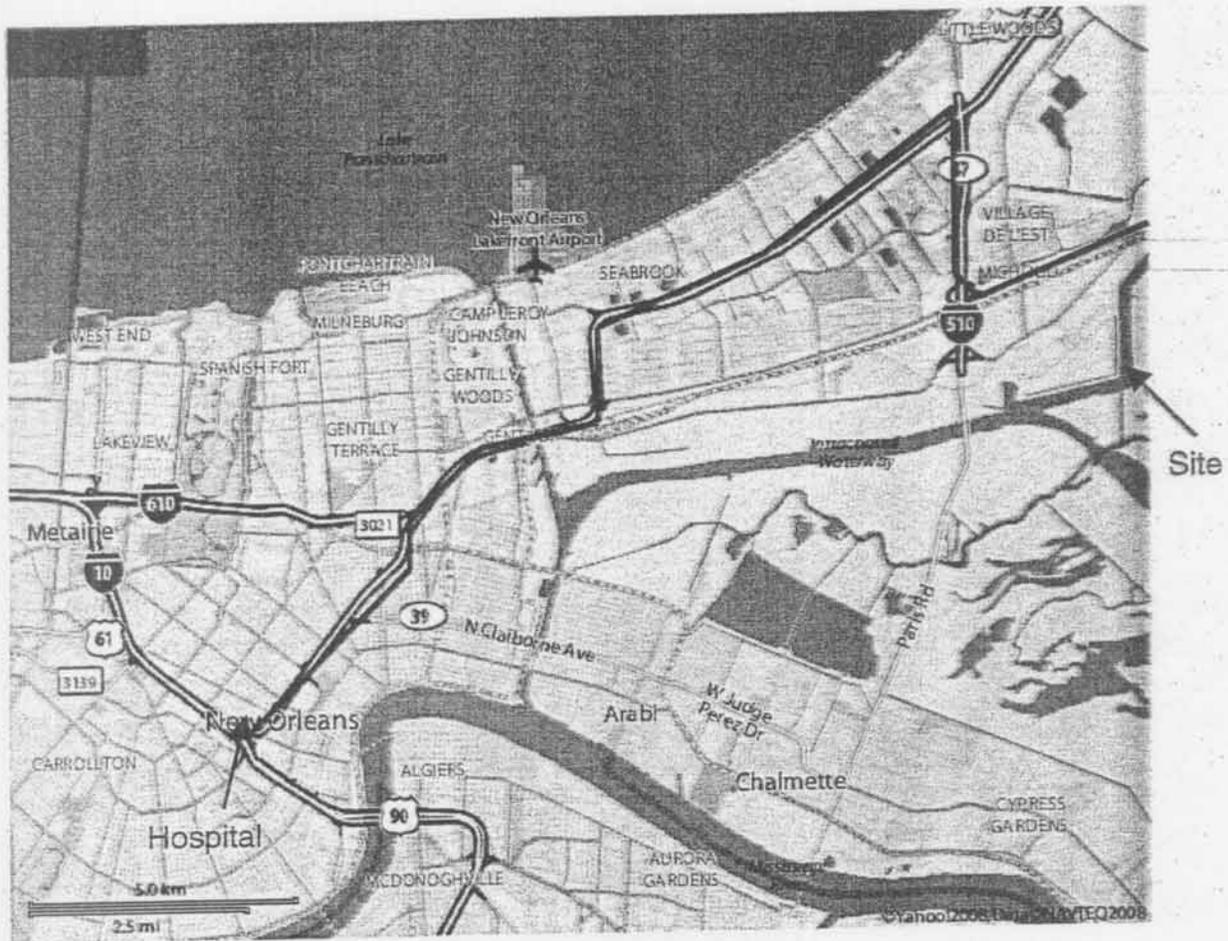
Location: _____

Date: 12/2/09

Supervisor's Initials: WTS

Medical Center of Louisiana
2021 Perdido St.
New Orleans, Louisiana
(504) 903-3000

————— Hospital Route



SAFETY INSPECTION FORM

SPA-MMG Joint Venture, LLC	
SUBJECT: INSTRUCTIONS, PROCEDURES & DRAWINGS: HEALTH & SAFETY	Page: 1 of 1 Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 3504-ACE DATE: 12-3-08

CUSTOMER: USACE TIME FROM: 8:00 TO: 15:30

JOB LOCATION: Michoud Canal/GIWW, New Orleans, Louisiana

SUPERVISOR: Paul Lo FOREMAN/LEADMAN: W. Thayer

GENERAL JOB DESCRIPTION: Limited PIIESA/Barge Assessment

EMPLOYEES: R. Penitola
P. Lo
W. Thayer
G. Brooks
R. Enclade

SAFETY CONDITIONS: Barges Rusting, Leaking, Broken

WEATHER: Cloudy, 10 MPH NW, 60°F

MONITORING & SAMPLING (attach results) LEL/O₂ PID

INSTRUMENTATION USED: QRAE III Mira 2000

LEVEL OF PROTECTION (special conditions) D with life vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: [Signature]
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

Tailgate Safety Meeting

Date: 12/3/08 Time: 0800 File #: 3104 A12
Site Location: Michoud Canal / GIWW
Type of Work: Sampling of silt / sludge - water
Site Manager: Paul G Site Phone: 237-0172

Safety Topics:

- Emergency Shut-Off Exclusion Zone Smoking Area
 Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress Biological Electrical
 Lifting Acoustical Severe Weather Radiological
 Shearing Metal Rotating Equipment Crushing or Pinching
 Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space*
 Chemical Exposure
 From site: TPT = D at
 From work procedures: _____
 Absorption Inhalation Ingestion MSDS located in field files
 Other: _____

PPE: Level A B C D

- Full Face 1/2 Face Combination: _____
 Hepa Organic Air Pump
 Cascade Air SCBA
 Steel Toe Rubber Steel Toe Leather Gloves Cotton Dot
 Ear Plugs Hard Hat Face Shield/Goggles/Glasses
 Surgical Gloves Nitrile PVC Gloves
 Tyvek Saranex Other: _____

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility:

Map Attached

Name: Tulare Medical Phone: 911
Address: Tulare Ave

Attendees Signature required on other side of this form

* Permit Required

Meeting Conducted By: Paul G

C:\My Documents\FORMS\Drilling Permits\Drilling Tailgate.bink.doc

Plan of the Day:

[Empty box for Plan of the Day]

Printed Name

Signature

Paul Lo
Wendell Thompson
Randy Punilia
Richard Encabade
GARY BROOKS

[Handwritten signatures corresponding to the names above]

EMERGENCY TELEPHONE NUMBERS:

[Empty lines for emergency telephone numbers]

Job #: _____
Location: _____

Date: _____
Supervisor's Initials: _____

Medical Center of Louisiana
2021 Perdido St.
New Orleans, Louisiana
(504) 903-3000

———— Hospital Route

