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1.0 Executive Summary

Materials Management Group, Inc. (MMG) has completed a Phase I Environmental Site Assessment (PI-ESA) on behalf of the U.S. Army Corps of Engineers (USACE) New Orleans District (NOD) under IQRC (Indefinite Quantity Requirements Contract) contract number DACW29-03-D-0014, Task Order 24. MMG completed the PI-ESA in accordance with the American Society for Testing and Materials (ASTM) “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (E 1527-05).

The environmental site assessment was conducted at the locations of the proposed navigable closure structure (gates) located in the Gulf Intracoastal Waterway (GIWW) and in the Mississippi River Gulf Outlet (MRGO) (near the Chef-Menteur - Bayou Dupre corridor). The property of interest (Property) includes two floodgates and the levee corridor connecting these two gates. The levee corridor is approximately 8.5 miles long and is along the western shoreline of Lake Borgne.

The investigative activities of this Phase I included data reviews of environmental data, site reconnaissance of the Property, and interviews of owners and other related parties. The main objective was to identify possible Recognizable Environmental Conditions that may require a follow-up Phase II Environmental Site Assessment.

The environmental data base review included commercially available EDR report. The review did not produce any significant environmental concern to the Property. The site reconnaissance conducted throughout proposed levee and floodgates area. There was no Recognized Environmental Condition (REC) observed. MMG also conducted interview of owners and other related parties. The interview did not result in any significant environmental concern.

This Phase I ESA did not reveal evidence of Recognized Environmental Conditions (RECs) in connection with the Property. However, MMG recommend that the sediment at the Property be tested for its chemical characteristics so that future sediment management options, including reuse and disposal, during construction phase of the floodgates can be identified.

2.0 Introduction

The U.S. Army Corps of Engineers (USACE) New Orleans District (NOD) has contracted Materials Management Group, Inc. (MMG) under IQRC (Indefinite Quantity Requirements Contract) DACW29-03-D-0014, Task Order 24 to conduct a Phase I Environmental Site Assessment (PI-ESA) at its proposed navigable closure structure (gates) located in the Gulf Intracoastal Waterway (GIWW) and in the Mississippi River Gulf Outlet (MRGO) (near the Chef Menteur-Bayou Dupre corridor). The property of interest (Property) includes two floodgates and the levee corridor connecting these two gates. The levee corridor is approximately 8.5 miles long. Please refer to Figure A1 located in Appendix A.

2.1 Purpose

The purpose of this PI-ESA was to complete an assessment in a good commercial and customary fashion at the Property with respect to the range of hazardous substances, pollutants, or contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and for petroleum product contaminants. The PI-ESA has been completed to determine the potential for contamination by means of appropriate inquiries into previous ownership and into uses of the Property consistent with good commercial or customary practices. It is in compliance with the requirements for conducting “All Appropriate Inquiry” (AAI) under EPA rule.

2.2 Scope of Services

MMG was contracted to identify Recognized Environmental Conditions (RECs) per the ASTM E 1527-05 standard as well as the USACE ER 11165-2-131 Regulation. RECs for the purposes of this report are defined as the presence or likely presence of any hazardous substance or petroleum product on the Property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substance or petroleum product into structures on the Property or into the ground, groundwater, or surface water of the Property.

2.3 Significant Assumptions

As MMG was not provided with a survey map of the Property, MMG has made the assumption that the area of interest at the time of the site investigation (as delineated by the maps and drawings and geographical coordinates provided by the USACE) was in fact the limits of the Property.

2.4 Limitations and Exceptions

At the request of the USACE, MMG conducted records review within a 2-mile radius of the geographic coordinates of the gates at both the GIWW and MRGO

locations. The site reconnaissance activities were conducted throughout the levee corridor that connects the two gates, approximately 8.5 miles. The potential recognized environmental concerns were determined based on the available database and results of site reconnaissance activities. No sampling and analysis of environmental media or environmental modeling were conducted for this PI-ESA.

2.5 Special Terms and Conditions

The findings of this report are confidential. MMG will not release information about the Property without the USACE's permission.

2.6 User Reliance

Materials Management Group, Inc. hereby releases to USACE use and reliance of this Phase I - Environmental Site Assessment Report, subject to any stipulated limitations in the report. Should there be a substantial lapse in time (> 12 months) or if physical changes are made to the Property, this PI-ESA will need to be updated.

3.0 Property Description

3.1 Location and Legal Description

3.1.1 Location

The Property is divided into three parts:

1. Proposed floodgate construction site in the GIWW (Chef Menteur area) (geographic coordinates: longitude = 89°50.14' W and latitude = 30°2.45' N),
2. Proposed floodgate construction site in MRGO (east of Bayou Dupre) (geographic coordinates: longitude = 89°49.94' W and latitude = 29°56.11' N),
3. Approximately 8.5-mile corridor of levee connecting these two floodgates. This corridor will be constructed along the curvature to the western shoreline of Lake Borgne.

Please refer to Figures A1 and A2 in Appendix A for site location maps.

3.1.2 Legal Description

The Property has no municipal street address. However, the Environmental Data Resources, Inc. (EDR) database used for this PI-ESA provided the physical address as Braithwaite, LA 70129 for the GIWW floodgate site and Braithwaite, LA 70092 for the MRGO floodgate site.

3.2 Subject Property and Vicinity General Characteristics

The Property is located between the GIWW and MRGO along the western shoreline of Lake Borgne. The Property and surrounding vicinity are undeveloped.

3.3 Current Use of the Property

At the time of the survey, there was no usage of the Property (see Photographs 1 and 2 in Appendix B).

3.4 Description of Structures, Roads and Other Improvements on the Property

There are no structures, roads, or other improvements at the Property.

3.5 Current Uses of Adjoining Properties**3.5.1 Northern Property**

To the north of the GIWW gate location is Bayou Sauvage National Wildlife Refuge Area. See Photographs 3 and 4 in Appendix B.

3.5.2 Southern Property

To the south of the MRGO gate location is the spoil area for MRGO. See Photographs 5 and 6 in Appendix B.

3.5.3 Western Property

To the west is a saltwater marsh area. See Photographs 7 and 8 in Appendix B.

3.5.4 Eastern Property

To the east is the Lake Borgne. See Photographs 9 and 10 in Appendix B.

4.0 User Provided Information**4.1 Title Records**

There was no title record provided.

4.2 Environmental Liens or Activity and Use Limitations

There were no environmental liens nor activity and use limitations provided.

4.3 Specialized Knowledge

The USACE provided one document related to the Property. This was the analytical results from Michoud Canal and MRGO, conducted by Analytical and Consulting Laboratories, of Houston, Texas, between September 1994 and November 1994. Please refer to Section 7.5 for summary.

4.4 Owner, Property Manager, and Occupant Information

Based on the contact information provided by the USACE, MMG was able to collect the owners' information for the Property from Ms. Lisa Richardson of the Port of New Orleans. The Property is owned by multiple owners. The owners' information from north to south is summarized below:

Property	Owners' Information
Donald J. de Bouchel, et al	Donald J. de Bouchel, Jr. 3501 East St. Bernard Hwy., Meraux, LA 70075 504-271-6091
Joseph M Meraux	The succession of Arlene V. Meraux c/o Becky R. Cieutat The Law Offices of Sidney D. Torres, III 8301 West Judge Perez Drive, Chalmette, LA 70043 504-271-8422
Louis J. Carmadelle, Jr., et al	LAC Real Estate Holdings, LLC – Carolyn LeBlanc P.O. BOX 428, Lafitte LA 70067 504-340-7003 CARMA Holdings, LLC – Gustave Carmadelle 7855 Baratavia Blvd., Crown Point LA 70072 504-689-2373
Lake Borgne Basin Levee District	George Lopez P.O. Box 216, Violet, LA 70092
Hebert McCloskey, et al	Jim & Wayne, Inc. – Wayne Vidrine 4742 Argonne St., Metairie, LA 70001 504-888-1766
Gatien J. Livaudais, et al	Oliver S. Livaudais, Jr. 8301 West Judge Perez Hwy., Suite 300, Chalmette, LA 70032 Evelyn Livaudais Hodges Properties, Inc., Hodges Bonded Warehouse P.O. Box 4977, Montgomery, AL 36103
Borgnemouth Realty Co., Ltd.	Gatien Livaudais, Jr. 4626 St. Bernard Hwy., Meraux, LA 70075 504-271-2837

4.5 Reason for Performing PI-ESA

The USACE is investigating the most effective means to create a line of defense against hurricane-induced storm surge from Lake Borgne and Lake Pontchartrain entering the IHNC that may add strain to the interior levees and floodwalls that protect portions of Orleans and St. Bernard Parishes. Possible design options are based on the central goal of closing off the IHNC during severe storm events to reduce high water and wave action in the canal.

The USACE is proposing to construct two gated structures east of the confluence of the GIWW and MRGO. These gates will be connected by a levee. One gate structure will be built near Chef Menteur on the GIWW and another will be built to the east of the Bayou Dupre on the MRGO. The exact placement of such structures and their ultimate design depends on a number of factors, including construction and mitigation costs as well as environmental/species and cultural impacts. This PI- ESA focused on possible Recognizable Environmental Conditions that may require a follow-up Phase II Environmental Site Assessment.

4.6 Other

No additional information was collected.

5.0 Records Review

The purpose of the records review is to obtain and review records that will help identify RECs in connection with the Property. MMG has accessed reasonably ascertainable sources as described within the ASTM standard, as well as within the time frame and cost allotted by the USACE. Accuracy and completeness of record information varies among information sources, including government sources. MMG has made every effort to compensate for obvious mistakes or insufficiencies in information reviewed based on other information of which the environmental professional has actual knowledge.

5.1 Standard Environmental Record Sources

The Federal and State record sources were reviewed based on a 2-mile search distance from gate locations at GIWW and MRGO that was taken from the provided information from Environmental Data Resources, Inc. (EDR) (See Appendix C). The findings are summarized in the following tables (Tables 1 and 2) with detailed discussion in the following subsections:

Table 1: Federal and State Record Search at the GIWW Gate Location

Records Source	No. of Sites Found at Search Distance (Miles) from Property					
	Property	0-1/8	1/8-1/4	1/4- 1/2	1/2-1	1-2
National Priority List (NPL)	0	0	0	0	0	0
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	0	0	0	0	0	0
Resource Conservation and Recovery Act (RCRA-LQG) – Large Quantity Generators	0	0	0	0	0	0
Resource Conservation and Recovery Act (RCRA-SQG) – Small Quantity Generators	0	0	0	0	0	0
RCRA Treatment, Storage, and Disposal Facilities (TSD)	0	0	0	0	0	0
Corrective Action (CORRACTS) Report	0	0	0	0	0	0
Emergency Response Notification System (ERNS)	0	0	0	0	0	2
Hazardous Materials Incident Reporting System (HMIRS)	0	0	0	0	0	0
Toxic Release Inventory System (TRIS)	0	0	0	0	0	0
FIFRA/TSCA Tracking System	0	0	0	0	0	0
Section 7 Tracking System (SSTS)	0	0	0	0	0	0
RCRA Administrative Action Tracking System (RAATS)	0	0	0	0	0	0
Integrated Compliance Information System (ICIS)	0	0	0	0	0	0
Mines Master Index File (MINES)	0	0	0	0	0	0
Facility Index System (FINDS)	0	0	0	0	0	0
Records of Decision (ROD)	0	0	0	0	0	0
State Hazardous Waste Facilities	0	0	0	0	0	0
Underground Storage Tank (USTs)	0	0	0	0	0	2
Leaking Underground Storage Tanks (LUSTs)	0	0	0	0	0	0
Historical Leaking Underground Storage Tanks (HIST-LUST)	0	0	0	0	0	0
Solid Waste Landfill	0	0	0	0	0	0
Institutional Site Listing (AUL)	0	0	0	0	0	0
Spills	0	0	0	0	0	0
Recyclers Directory	0	0	0	0	0	0
Voluntary Cleanup Program Sites (VCP)	0	0	0	0	0	0
Drycleaners	0	0	0	0	0	0

Table 2: Federal and State Record Search at the MRGO Gate Location

Records Source	No. of Sites Found at Search Distance (Miles) from Property					
	Property	0-1/8	1/8-1/4	1/4- 1/2	1/2-1	1-2
National Priority List (NPL)	0	0	0	0	0	0
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	0	0	0	0	0	0
Resource Conservation and Recovery Act (RCRA-LQG) – Large Quantity Generators	0	0	0	0	0	0
Resource Conservation and Recovery Act (RCRA-SQG) – Small Quantity Generators	0	0	0	0	0	0
RCRA Treatment, Storage, and Disposal Facilities (TSD)	0	0	0	0	0	0
Corrective Action (CORRACTS) Report	0	0	0	0	0	0
Emergency Response Notification System (ERNS)	0	0	0	0	0	0
Hazardous Materials Incident Reporting System (HMIRS)	0	0	0	0	0	0
Toxic Release Inventory System (TRIS)	0	0	0	0	0	0
FIFRA/TSCA Tracking System	0	0	0	0	0	0
Section 7 Tracking System (SSTS)	0	0	0	0	0	0
RCRA Administrative Action Tracking System (RAATS)	0	0	0	0	0	0
Integrated Compliance Information System (ICIS)	0	0	0	0	0	0
Mines Master Index File (MINES)	0	0	0	0	0	0
Facility Index System (FINDS)	0	0	0	0	0	0
Records of Decision (ROD)	0	0	0	0	0	0
State Hazardous Waste Facilities	0	0	0	0	0	0
Underground Storage Tank (USTs)	0	0	0	0	0	0
Leaking Underground Storage Tanks (LUSTs)	0	0	0	0	0	0
Historical Leaking Underground Storage Tanks (HIST-LUST)	0	0	0	0	0	0
Solid Waste Landfill	0	0	0	0	0	0
Institutional Site Listing (AUL)	0	0	0	0	0	0
Spills	0	0	0	0	0	0
Recyclers Directory	0	0	0	0	0	0
Voluntary Cleanup Program Sites (VCP)	0	0	0	0	0	0
Drycleaners	0	0	0	0	0	0

5.1.1 Property

Based on the information provided by EDR, the target property was not listed in any of the databases searched by EDR.

5.1.2 Surrounding Properties

Within the specified search distance, the sites found that suggest potential impact to the Property are summarized below.

1. There are two sites listed in the Emergency Response Notification System for release of oil and hazardous substances. One incident happened at 21000 Chef Menteur Highway (which is 1 – 2 miles N of the GIWW gate location) and the other incident happened at 20264 Old Spanish Trail (which is 1 – 2 miles NNE of the GIWW gate location). No environmental impact to the Property is anticipated.
2. There are two UST sites within the search area. One site is located at 20900 US Highway 90 (which is 1-2 miles N of the GIWW gate location) and the other site is located at 20844 Chef Menteur (which is 1 -2 miles N of the GIWW gate location). The EDR reports showed these sites are either closed or tanks have been removed. No environmental impact to the Property is anticipated.

5.2 Additional Environmental Record Sources

No additional environmental records were available for this site.

5.3 Physical Setting Source(s)**5.3.1 Physical Setting**

Based on the EDR search, the GIWW gate location coordinates are:

Latitude (North): 30.04150 - 30°2'29.4"
Longitude (West); 89.8359 - 89°50'9.2"
Universal Transverse Mercator: Zone 16
UTM X (Meters): 226536.3
UTM Y (Meters): 3326593.5
Elevation: 0 ft. above sea level

The MRGO gate location coordinates are:

Latitude (North): 29.93510 - 29°56'6.4"
Longitude (West); 89.8323 - 89°49'56.3"
Universal Transverse Mercator: Zone 16
UTM X (Meters): 226591.8
UTM Y (Meters): 3314788.0

Elevation: 0 ft. above sea level

Please refer to Map A3 included in Appendix A.

5.3.2 Hydrogeologic Information

The Property is located inside the FEMA flood zone and is on the National Wetlands Inventory. The groundwater flow directions at the site were not reported. The groundwater flow velocity should be very slow due to the silty-clayey types of soils in the general area.

5.3.3 Geologic Information

Based on the Soil Conservation Service STATSGO data, the soil component of the area around the GIWW gate location is classified as muck for 0-36" below ground surface (bgs) and clay for 36-84" bgs. The soil component of the area around the MRGO gate location is classified as water. No additional soil type or classification was reported.

5.3.4 Well Information

Based on the well search distance of one mile, the Federal USGS Well Information revealed no wells are located within the search distance from either gate location.

5.4 Historical Use Information on the Subject Properties

The objective of consulting historical sources is to develop a history of previous uses of the subject property. For the purposes of this report, MMG has reviewed historical USGS Topographic Maps and Aerial Photographs.

5.4.1 USGS Historical Topographic Maps

MMG conducted research of multiple databases and revealed the earliest historical topographic map was dated 1951. There was no map prior to that time. These maps are produced by the U.S. Geological Survey and are divided into various quadrangles. The historic topographic maps reviewed by MMG included the following (see USGS Topographic Maps located in Appendix D.):

Property – GIWW Gate Location (Chef Menteur)		
Year	Quadrangle Map	Comments
1951	Chef Menteur, LA	The Property is located at the GIWW. No development was observed on the Property.
1967	Chef Menteur, LA	GIWW was widened and levee was constructed to the north of the Property.
1972	Chef Menteur, LA	Same as 1967 map.
1979	Chef Menteur, LA	Same as 1972 map, but with additional levee constructed.
1994	Chef Menteur, LA	Same as 1979 map.
1998	Chef Menteur, LA	Same as 1994 map.

Property – MRGO Gate Location (Bayou Dupre)		
Year	Quadrangle Map	Comments
1951	Martello Castle, LA	No development was observed on the Property.
1967	Martello Castle, LA	MRGO was constructed. The Property is located north of the Spoil Area.
1972	Martello Castle, LA	Same as 1967 map.
1979	Martello Castle, LA	Same as 1972 map.
1994	Martello Castle, LA	Same as 1979 map.
1998	Martello Castle, LA	Same as 1994 map.

5.4.2 Aerial Photographs

The EDR research could not find any historical aerial photo coverage for the Property or the surrounding area. USGS aerial photographs (dated 02/23/1998) were reviewed. It confirmed the findings from the topographic maps (Section 5.4.1). Please refer to Appendix A (Figure A3, A4, A5) for these aerial photographs.

5.5 Historical Use Information on Adjoining Properties

The objective of consulting historical sources is to develop a history of the previous use of the adjoining properties. For the purposes of this report, MMG has reviewed USGS Topographic Maps and Aerial Photographs.

5.5.1 USGS Topographic Maps

MMG conducted research of multiple databases and revealed the earliest historical topographic map was dated 1951. There was no map prior to that time. Based on review of a number of historic topographic maps (Appendix D) the following tables summarize MMG's findings:

Northern Property		
Year	Quadrangle Map	Comments
1951	Chef Menteur, LA	No development was observed.
1967	Chef Menteur, LA	Same as 1951 map.
1972	Chef Menteur, LA	Same as 1967 map.
1979	Chef Menteur, LA	Same as 1972 map.
1994	Chef Menteur, LA	Same as 1979 map. A north to south levee was constructed.
1998	Chef Menteur, LA	Same as 1994 map. National Wildlife Refuge (Bayou Sauvage) was established.

Western Property		
Year	Quadrangle Map	Comments
1951	Chef Menteur, LA	Salt water marsh area. No development was observed.
1967	Chef Menteur, LA	Same as 1951 map.
1972	Chef Menteur, LA	Same as 1967 map.
1979	Chef Menteur, LA	Same as 1972 map.
1994	Chef Menteur, LA	Same as 1979 map.
1998	Chef Menteur, LA	Same as 1994 map.

Southern Property		
Year	Quadrangle Map	Comments
1951	Martello Castle, LA	No development was observed to the south of the Property.
1967	Martello Castle, LA	MRGO was constructed. South of the Property is the Spoil Area for MRGO.
1972	Martello Castle, LA	MRGO levee was under construction. The Bayou Dupre control structure was under construction.
1979	Martello Castle, LA	Same as 1972 map.
1994	Martello Castle, LA	MRGO levee was constructed. The Bayou Dupre control structure was constructed.
1998	Martello Castle, LA	A small back levee below spoil area was constructed.

Eastern Property		
Year	Quadrangle Map	Comments
1951	Martello Castle, LA	Lake Borgne. No development was observed.
1967	Martello Castle, LA	Same as 1951 map.
1972	Martello Castle, LA	Same as 1967 map.
1979	Martello Castle, LA	Same as 1972 map.
1994	Martello Castle, LA	Same as 1979 map.
1998	Martello Castle, LA	Same as 1994 map.

5.5.2 Aerial Photographs

The EDR research could not find any historical aerial photo coverage for the Property or the surrounding area. USGS aerial photographs (dated 02/23/1998) were reviewed. It confirmed the findings from the topographic map review (Section 5.5.1). Please refer to Appendix A (Figure A3, A4, A5) for these aerial photographs.

6.0 Subject Properties Reconnaissance

MMG's environmental professional, Dr. C. Paul Lo, conducted the PI-ESA site reconnaissance on October 11 and October 12, 2006.

6.1 Methodology and Limiting Conditions

Site reconnaissance at the Property was made from a boat on the water. When feasible, MMG personnel would beach the boat and inspect the area on land. Please refer to Appendix B for photographs taken throughout the Property.

6.2 General Subject Properties Setting

The Property was inspected to determine if the following listed items were present.

Setting	Present?	Comments
Warehouse	No	
House/Apartment	No	
Office Building(s)	No	
Strip Shopping	No	
Maintenance Facility	No	
Shop/Garage	No	
Lay-down Yard	No	
Undeveloped Lot	No	
Maintained Lot	No	
Slab Only	No	
Other Improvement	No	
Unoccupied	Yes	
Overgrown	No	
Stained Area(s)	No	
Roads	No	
Rail Track(s)	No	
Fence	No	
Lighted	No	
Parking	No	

6.3 Exterior Inspections

The Property was inspected to determine if the following listed items were present.

Observations	Present?	Comments
1. Geologic/Hydrologic		
Pit	No	
Pond/Lagoon	Yes	Marsh and wetland area (Photo 11 – 20)
Canal/Ditches	Yes	Marsh and wetland area (Photo 11 – 20)
River/Streams	Yes	Marsh and wetland area (Photo 11 – 20)
Oil/Water Separator	No	
Waste Water Treatment System	No	
Storm Drain	No	
Sumps	No	
Traps	No	
Wells	No	
Municipal Water	No	
Wetlands	Yes	The Property is located on wetland area
Stressed Vegetation	No	
Standing Water	Yes	Marsh and wetland area (Photo 11 – 20)
2. Storage Tanks		
USTs	No	
ASTs	No	
3. Solid Wastes		
Containers	No	
Dumpster	No	
Roll-off Box	No	
Landfill	No	
Unauthorized Dump	No	
Mounds	No	
Trash	No	
Automotive	No	
Rail ties	No	
Creosote poles	No	
Construction Debris	No	
Biohazards	No	
White Wastes	No	
4. Suspected Hazardous Materials		
Pole Transformer	No	
Ground Transformer	No	
Fluorescent Lights	No	
HVAC (Freon)	No	
Heavy Metals	No	
Lead-based Paint	No	
Asbestos	No	
Other	No	

7.0 Interviews

7.1 Interview with Owner

MMG has made at least two contact attempts to each of the owners listed in Section 4.4. No response was obtained during the study period.

7.2 Interview with Properties Manager

There was no Property Manager available for the Property.

7.3 Interview with Occupants

There was no occupant at the Property.

7.4 Interview with Others

MMG conducted an interview with Ms. Lisa Richardson of the Port of New Orleans (504-528-3319). Ms. Richardson is in charge of the property along MRGO. She indicated that she was not aware of any environmental concerns at the Project site. No contamination was ever been reported to her or record of such provided to her. She did indicate that there was an EIA study conducted eight years ago that showed elevated levels of naturally-occurring manganese in this area. Ms. Richardson also indicated that the Property is owned by several owners; she has provided the ownership information to MMG (see Section 4.4). Please refer to interview record in Appendix E

MMG tried several times to contact Mr. Bob Turner of Lake Borgne Levee District (504- 512-6330). He never returned the calls.

MMG also tried several times to contact Mr. Dugan Sabins, LDEQ representative in charge of the water quality in this area (225-219-3553). He did not return the calls.

7.5 Supplied Environmental Documents

The USACE provided one document related to the Property. This was the analytical results from Michoud Canal and MRGO, conducted by Analytical and Consulting Laboratories, of Houston, Texas, between September 1994 and November 1994.

Based on the map and coordinates provided for this report, the sampling effort at Michoud Canal included sample locations more spread out throughout the GIWW area. The analytical results are summarized in the following table:

Parameter	Range of Concentrations (mg/kg)	
	GIWW	MRGO
Antimony	<1.0	<0.10
Arsenic	<5.0	<5.0
Cadmium	<0.3	<0.3
Chromium	5.4 – 40.34	21.54 – 46.1
Copper	6.16 – 143	16.26 – 32.42
Lead	5.51 -26.29	10.02 – 17.86
Manganese	63.3- 1010	261 – 520
Mercury	<0.06	<0.06
Nickel	7.95 – 38.10	13.4 – 28.93
Selenium	<0.60	<0.60
Silver	<0.16	<0.16
Zinc	22.87 – 202	70.67 – 155
PCB	<0.02	<0.02
Total-CN	<0.01	<0.01
% Solid	26.71 – 65.87	23.45 – 49.13 %

No significantly high concentrations of heavy metals were identified in the report. However, other than PCBs, no other organic data, such as total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), or semivolatile organic compounds (SVOCs), was available in the report.

8.0 Findings

Based on the EDR record search and the site reconnaissance activities, there are no Recognized Environmental Conditions (RECs) for the Property at the time of this investigation.

9.0 Opinions

This Phase I ESA was conducted with the results of limited sediment data collected in the nearby area. Although the sediment data do not reveal high concentrations of heavy metals, there is still a data gap for organic contaminants of concern. Since the sediment sampling and analysis was conducted in 1994, it would be advisable to conduct further sampling to update the current sediment conditions; this investigation should include both inorganic and organic parameters.

Construction of the closure gate at the target or subject location (property) would likely include excavation of the bottom sediment. Excavation may involve either a dry or wet process and disposal of the excavated sediment material may

include on-site re-use around the gates in a dry or wet condition or an off-site re-use or disposal. Any further investigation (e.g. sediment sampling and testing) resulting from this Phase I report are dependent upon engineering decisions on the excavation and disposal processes selected during construction of the closure gate. Excavation and disposal under wet conditions are regulated under the Clean Water Act while on-land disposal/re-use of the excavated sediments should be governed by various Federal and State solid waste guidelines.

10.0 Conclusions

This assessment has revealed no evidence of recognized environmental conditions in connection with the Property following the AAI and ASTM Phase I guidelines. The target property, as located along the Lake Borgne between GIWW and MRGO, is a water body and sediments found at the bottom of this water body may be impacted via historical discharges and sediment translocation. However, the impacts may be at a de minimis condition with confirmation sampling.

11.0 Deviations

Not applicable.

12.0 Additional Services

No additional services were provided.

13.0 Signature(s) of Environmental Professional(s)

This Phase I - Environmental Site Assessment has been conducted by the following MMG environmental professional:

Dr. C. Paul Lo, Sc.D.
Senior Environmental Scientist

14.0 Qualifications of Environmental Professional

Dr. C. Paul Lo

Education

- Doctor of Science in Environmental Health Sciences, Tulane University, 1983.
- Master of Science in Environmental Health Sciences, Tulane University, 1978.
- Bachelor of Science in Public Health, National Taiwan University, 1976

License & Certification

- LDEQ UST Closure License (C-0593)
- Certified Environmental Inspector – Environmental Assessment Association

Experience

Dr. Lo has over twenty-five years of hands-on experience in the environmental field. He is an expert in dealing with abandoned waste sites, particularly site investigations and remediation. His project involvement includes CERCLA, RCRA, UST, RECAP and Brownfields projects.

Appendices

Appendix A Maps

Appendix B Photographs

Appendix C State and Federal Records

Appendix D USGS Historic Topographic Maps

Appendix E Interview and Client Provided Records

Appendix F References

Appendix A: Maps

Appendix B: Subject Properties Photographs

Appendix C: State and Federal Records

Appendix D: USGS Historic Topographic Maps

Appendix E: Interview and Client Provided Records

Appendix F: References

Environmental Data Resources, Inc. "The EDR Radius Map with GeoCheck", September 25, 2006

www.yahoo.com "Site Location Map": October 17, 2006

www.teraserver.microsoft.com "Aerial Photograph", February 23, 2006.

Analytical and Consulting Laboratories, Houston, Texas, "Sampling and Analysis of Sediment Samples from Michoud Canal and Mississippi River Gulf Outlet", November 1994.