PARTIAL REMEDIAL ACTION PLAN

C. J. PEETE I, LLC
MCCORMACK BARON SALAZAR, INC.
HOUSING AUTHORITY OF NEW ORLEANS

C. J. PEETE REDEVELOPMENT
WASHINGTON/LASALLE STREETS
NEW ORLEANS, LOUISIANA
ORLEANS PARISH

AGENCY INTEREST NO. 155767

PPM PROJECT NO. 296701-PRAP

DECEMBER 17, 2008

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LDEQ AGENCY INTEREST NO. 155767

C. J. PEETE I, LLC
MCCORMACK BARON SALAZAR, INC.
MR. MIKE SAUNDERS
1415 OLIVE STREET, SUITE 310
ST. LOUIS, MISSOURI 63103
(314) 335-2884

HOUSING AUTHORITY OF NEW ORLEANS
MR. LEN HENRY
4100 TOURO STREET
NEW ORLEANS, LOUISIANA 70122
(504) 670-3437

PPM CONSULTANTS, INC.
2508 TICHELI ROAD
MONROE, LOUISIANA 71202
(318) 323-7270

PREPARED BY:

LEE RODGERS, P.E.
PROJECT DIRECTOR

REVIEWED BY:

SHAWN P. IVEY, P.G.
PRINCIPAL/SENIOR GEOLOGIST

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1.0 INTRODUCTION

1.1 PURPOSE

This Partial Remedial Action Plan (PRAP) was prepared for the C. J. Peete redevelopment (Site) in New Orleans, Louisiana. The Site is owned by the Housing Authority of New Orleans (HANO). HANO and McCormack Baron Salazar (MBS) have partnered to redevelop the Site and provide New Orleans with critically-needed housing. With approval by HANO this PRAP has been prepared on behalf of MBS, who is a non-responsible party for the Site.

This PRAP presents, as required by Louisiana Department of Environmental Quality (LDEQ) regulations found in Louisiana's Administrative Code (LAC) Section 911 B, Voluntary Remediation Applications:

- A copy of the C.J. Peete Site Investigation Report and the Risk Evaluation/Corrective Action Program (RECAP) Report.
- A Work Plan;
- A Sampling and Analysis Plan (SAP);
- A Quality Assurance/Quality Control (QA/QC) Plan;
- A Site-specific Health and Safety Plan (HASP);
- A Project Implementation Schedule;
- A commitment to complete a post-construction Operation and Maintenance (O&M) Plan; and
- Additional requirements for Partial Voluntary Remedial Actions as required per LAC 33 § 915.

1.2 DEFINITIONS

SS_{ni} – This stands for Soil Screening Standards non-industrial. LDEQ has published these standards under the RECAP program to protect human health and the environment in residential settings. If Constituents of Concern (COC) are measured in the soil above the SS_{ni} further assessment and/or remediation are necessary. Soils with concentrations of COCs less than the SS_{ni} are not considered by LDEQ to pose a significant risk to human health or the environment.

LS_{ni} – This stands for Limiting Standards non-industrial. These standards are developed for a specific site based upon site specific conditions. Detailed information on a site must be provided to LDEQ to ensure that the LS_{ni} are protective of public health and the environment in a residential setting. LDEQ has approved the LS_{ni} used in this PRAP as protective of public health and the environment under the conditions of this redevelopment. As with the $SS_{ni,}$ if COCs are measured in the soil above the LS_{ni} further assessment and/or remediation are necessary. Soils with concentrations of COCs less than the LS_{ni} are not considered by LDEQ to pose a significant risk to human health or the environment.

2.0 REMEDIAL INVESTIGATION REPORT

This section summarizes the Site's development history and recent remedial investigations.

2.1 SITE LOCATION AND DESCRIPTION

The Site is owned by HANO and is located in a historically urbanized area within the City of New Orleans. HANO and MBS have partnered to redevelop the Site and provide New Orleans with critically-needed housing.

The C. J. Peete redevelopment Site is composed of two adjacent parcels. The approximately 13.8-acres northern area (a portion of LA001010) is bounded by Magnolia Street on the south, Washington Avenue on the east, and Louisiana Avenue on the west and is approximately 150 feet south of Willow Street on the north. The approximately 11.9-acres southern area (a portion LA001002) is bounded by LaSalle Street on the south, Louisiana Avenue on the west, Washington Avenue on the east, and Magnolia Street on the north. Geographically, the Site is located at the approximate Longitude 90° 05' 36" and Latitude 29° 56' 23". The Site location is shown in the attached **Figure 1, Site Location Map**, **Appendix A, Figures**.

The HANO housing complex, of which the C. J. Peete redevelopment is a part, formerly consisted of 110 apartment-type two- and three-story brick buildings. Fifty-five buildings located on the northern LA001010 parcel were demolished in the early 2000s, before Hurricane Katrina. The 55 buildings on the southern LA001002 parcel experienced heavy damage from Hurricane Katrina. Subsequent vandalism damaged many of the buildings' roofs, allowing rainwater to infiltrate and cause further damage. Almost all of these buildings were demolished in 2008. With the exception of two historic buildings, a recently-constructed and renovated community center and some large legacy live oaks, both the northern and southern parts of the Site are currently cleared vacant land.

Thomy Lafon School is located at 2601 Seventh Street, and is entirely enclosed by the Site; however, it is not part of this PRAP. The school is bordered by Magnolia Street to the north, the easement of the former Sixth Street to the east, Freret Street to the south, and Seventh Street to the west. Site features are shown in **Figure 2, Site Map Areas of Greenscape and Hardscape, Appendix A**.

Underground and overhead utilities located at the Site included water, natural gas, sewer, and power lines. With the exception of storm water, all were removed as part of the recent demolition.

This PRAP addresses those areas that will be redeveloped by MBS. The following three areas are excluded from this PRAP:

- Five acres on the northernmost part of HANO's C. J. Peete property are excluded from the current redevelopment plan even though soil and groundwater data were collected during an April 2008 Phase II ESA. This sub-parcel is nearest South Claiborne Avenue, extending to a boundary that is approximately 150 feet south of and parallel to Willow Street. As there are no current redevelopment plans for this

property, it will remain as-is until future land use is decided.

- Street rights-of-way utility trenches, which were designated as Area of Interest No. 8 in the October 9, 2008 C. J. Peete RECAP Report, and whose title is currently held by the City of New Orleans. Any soils excavated from street rights-of-way utility trenches during redevelopment will be shipped off Site for disposal in accordance with regulatory requirements.
- An approximate 1.5 acres tract of land will be separated from the redevelopment by the extension of Toledano Street north of Freret Street. This tract was excluded from the July 2008 Site Investigation. As there are no current redevelopment plans for this tract, it will remain as-is until future land use is decided.

These three tracts are not part of the Voluntary Remediation Program (VRP) application or this PRAP. Further consideration of soil and groundwater impacts, and remediation of any impacts in these three tracts, is not part of the current redevelopment.

With these exclusions, the approximate 25.7 acres redevelopment Site consists of approximately 13.8 acres north and 11.9 acres south of Magnolia Street. The area of redevelopment addressed by this PRAP is shown in **Figure 3, Site Development Plan, Appendix A**.

2.2 SITE HISTORY

Previously, the Site was developed as a multi-family, low income, housing community that has been unoccupied since Hurricane Katrina in August 2005. Almost all of the structures have been demolished from the Site in preparation for construction of the new mixed-income housing. Only three structures currently remain on the Site. The Site will continue to be utilized as residential following the redevelopment. The redevelopment consists of 12 city blocks.

2.3 ADJACENT PROPERTIES

Single-family homes, schools, churches, and small retail businesses such as small grocery stores and a medical clinic typical of an urban residential community surround the Site. Many businesses are currently closed or abandoned following Hurricane Katrina, and many homes are damaged or vacant. Adjacent properties include:

- The currently abandoned Thomy Lafon School, which is bordered by Magnolia Street to the north, Freret Street to the south, and Seventh Street to the west;
- The Flint Goodridge Hospital adjacent to the southwest corner of the Site;
- Ace Washateria is at 2623/2625 Washington Avenue, across Washington Street from Building A5 at the east/central portion of the Site; and
- Ray’s Deluxe Cleaners across Washington Street from the southeast corner of the Site.

Adjacent and surrounding properties are shown in **Figure 4, Regional Site Map, Appendix A**.

2.4 ENVIRONMENTAL HISTORY

Post-Katrina environmental Site assessments were performed to determine whether flooding had introduced contaminated sediments. The first post-Katrina Phase II ESA was performed in March 2006 by W.D. Scott. The ESA identified the following parameters in excess of the RECAP SS_{ni}: benzo(a)pyrene, indeno(1,2,3,cd)pyrene, lead, dieldrin and polychlorinated biphenyls (PCBs).

PPM conducted a post-Katrina Phase I ESA in June 2006 of the portion of the Site within LA001002 for the United States Department of Housing and Urban Development (HUD). The ESA identified the following Recognized Environmental Conditions (REC): four historical dry cleaners and one historical auto station that appear to have been located adjacent to the Site in the past and a state hazardous waste site within one mile.

A post-Katrina Phase II ESA was performed in September 2006, when PPM sampled the portion of the Site within LA001002 for HUD. A total of nine soil samples were collected. Parameters detected above RECAP SS_{ni} in this study included benzo(a)pyrene, benzo(b)fluoranthene, arsenic, and lead. All lead concentrations were below the (direct contact) SS_{ni} of 400 milligrams per kilogram (mg/kg) or parts per million (ppm), but five samples exceeded the groundwater-protection soil standard (GW_{SS}) of 100 ppm. In addition, the pesticides beta-BHC, heptachlor, and toxaphene had detection limits that exceeded RECAP standards.

To assess the Site for redevelopment, in September 2007 PPM conducted a Phase I ESA of the entire Site for MBS. The inclusion of the northern portion of the Site in this assessment (which was not addressed in the June 2006 Phase I report) resulted in the identification of off Site dry cleaners, auto shops, and gas stations as RECs.

On December 28, 2007, on behalf of HANO, PPM issued an Unauthorized Discharge Notification Letter to the LDEQ Emergency and Radiological Services Division stating that several COCs had been detected above the LDEQ RECAP SS_{ni} during soil sampling events conducted on the LA001002 portion of the Site. This letter summarized all COCs identified above the RECAP SS_{ni} in all previous studies, as follows: benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, beta-BHC, heptachlor, toxaphene, dieldrin, total arsenic, total lead, and PCBs.

In preparation for redevelopment, in April 2008 PPM initiated Phase II ESA activities on the previously unsampled northern part of the Site (LA001010). Discussions were held with LDEQ prior to sampling, and their recommendations were included in the project scope. A total of 41 soil borings were advanced at the Site with an approximate sampling frequency of one per 0.5-acre. Soil samples were sequentially analyzed foot by foot until all parameters were either delineated vertically against RECAP Screening Standards to the maximum boring depth of eight feet below ground surface (BGS) or hold times expired. A total of 101 soil samples were analyzed for at least one parameter by this method.

Groundwater samples were also collected from four semi-permanent monitoring wells installed to address the off Site RECs to the north and east of the Site. A report of these activities has been submitted to LDEQ and serves as the Site Investigation for that portion of the Site.

Upon LDEQ's approval of the Site Investigation workplan for the southern part of the Site (LA001002), PPM mobilized to the southern part of the Site on July 10, 2008, to initiate field activities. This Site mobilization occurred once demolition activities on Site had been completed, providing safe access to PPM's crew and drill rig. A total of 63 probe borings were advanced at the Site using a Geoprobe® track-mounted rig. Of those, 38 shallow probe borings were advanced at an approximate frequency on one boring per 0.5-acre. The probe borings were placed in "greenspaces" where soils will not be covered by building slabs, parking lots, or sidewalks of the planned redevelopment. An additional 13 shallow probe borings were advanced at the four earlier sample locations reported by W.D. Scott in their 2006 study. The purpose of this sampling was to determine whether elevated COC concentrations reported by Scott could be replicated at the generalized locations described for their samples. These probe borings were advanced to an approximate depth of 2.0 feet BGS. An additional 12 probe borings were advanced on both the northern and southern parts of the Site to assess soil conditions at the proposed future locations of underground utility trenches. These 12 borings were advanced to an approximate depth of 8.0 feet BGS. PPM also installed four soil borings that were converted to temporary monitoring wells. These temporary monitoring wells (MW-5 through MW-8) were installed on the south and east boundaries of the Site.

To address the potential for PCB contamination derived from site transformers, PPM sampled site soils in the vicinity of the site's transformers and concluded that PCBs were not present in site soils above LDEQ's SS_{ni}.

The Phase II, and RECAP Site Investigation Reports that have been prepared for the Site are included in **Appendix B, Prior Reports.**

2.5 SUMMARY OF ENVIRONMENTAL CONDITIONS

As required by RECAP, PPM submitted to LDEQ a RECAP Report dated October 9, 2008. The RECAP report summarized Site conditions, identified COCs above the LDEQ RECAP SS_{ni}, and proposed LS_{ni} for the Site.

On November 14, 2008, LDEQ deemed the October 9, 2008 RECAP Report adequate in identifying the nature and extent of contamination at the Site and approved the report using standards and expectations developed by LDEQ under its VRP. Through its approval of this report, LDEQ approved the LS_{ni} for the Site. The LDEQ-approved LS_{ni} are listed in Tables 1 and 2 on Page 11.

An electronic copy of the October 9, 2008 RECAP Report and is included in the attached CD, **Appendix B**. For ease of reference, a copy of the October 14, 2008 LDEQ approval follows below.

BOBBY JINDAL
GOVERNOR

HAROLD LEGGETT, PH.D
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL ASSESSMENT

NOV 14 2008

Mr. Len Henry
Housing Authority of New Orleans
4100 Touro Street
New Orleans, Louisiana 70122

Re: Site Investigation Report Approval
C.J. Peete Redevelopment; **AI Number 155767**
Washington/Lasalle Streets
New Orleans, La, Orleans Parish

Dear Mr. Henry:

The Department of Environmental Quality (DEQ) Remediation Services Division (RSD) has completed review of the referenced report and the Risk Evaluation/Corrective Action Program Report dated October 9, 2008 and submitted on your behalf by Deborah L. Rowan of PPM Consultants, Inc. Based on the information provided, the investigation has been deemed adequate in identifying the nature and extent of contamination at the property as required for the VRP and is hereby approved.

The investigation has confirmed the presence of contamination that will require corrective action based on the RECAP evaluation. If you intend to receive a Certificate of Completion for the identified property, the next steps in the Voluntary Remediation Program include submittal of the Voluntary Remediation Application Form VCP002, a Remedial Action Plan and the Remedial Action Plan Review Fee. The Remedial Action Plan must include the Remedial Investigation Report (referenced above), a Remedial Design and a Remedial Project Plan as required in LAC 33:VI.911.B. In addition, you must request a waiver of the requirement for submission and approval of a voluntary remedial investigation work plan.

If the Voluntary Remediation will be a partial remediation, you must submit a Partial Voluntary Remedial Action Supplemental Application form (Form VCP003). If you are eligible for a partial remediation, you will be required to remediate the site to levels protective of the use of the property. The Partial Remediation Plan must include use restrictions to be placed on the property. In addition, a written Partial Voluntary Remediation Agreement as provided in LAC 33.VI.915(A) and (E) must be submitted.

All remediation plans should include conceptual plans for implementation utilizing site diagrams in plan view and cross section, with projections for the time required to complete remediation

Post Office Box 4314 • Baton Rouge, Louisiana 70821-4314 • Phone 225-219-3236 • Fax 225-219-3239
www.deq.louisiana.gov

Please contact Wanda Ballou of this office at (225) 219-3223 with any questions. All correspondence must include the AI number and be submitted in triplicate to:

Keith L. Casanova, Administrator
Remediation Services Division
P.O. Box 4314
Baton Rouge, LA 70821-4314.

Thank you for your cooperation.

Sincerely,

Paul Miller, P.E.
Assistant Secretary
Office of Environmental Assessment

c: Imaging Operations – Solid Waste

Deborah L. Rowan
PPM Consultants, Inc.
Post Office Box 2478
Daphne, AL 36526

2.5.1 Site Ranking and Justification for the Ranking

The Site was ranked based on the following factors:

- There are no volatile COCs present that could cause either explosive levels of vapors or acute health effects;
- Shallow contaminated surface soils (less than 3 feet BGS) are present in significant quantities;
- Shallow non-potable groundwater with no existing local use is or may be impacted;
- Current potential for human contact with surface soils or sub-surface soils is minimal because the Site is currently unoccupied and public access is limited by a surrounding fence; and
- Future potential for human contact with surface soils or sub-surface soils is minimal because Site engineering controls will be implemented to limit exposure.

Based on RECAP guidelines, PPM ranked the Site as Class 4. A Class 4 ranking demonstrates no long-term (greater than two years) threat to human health, safety, or environmental receptors.

2.5.2 Ecological Checklist

The ecological conditions of the Site and surrounding area were evaluated based on a walking survey of the area and through a literature review. The area of impacted soil was determined to be more than one acre in size, and there were no releases or potential for releases of COCs from the area of investigation to a surface water body. There were no recreational, commercial, threatened, or endangered species, and their habitats were not impacted or expected to be impacted in the future by COCs from the Site. Following a thorough investigation, no obvious impacts to ecological receptors or their habitats were observed and no future impacts were expected.

Therefore, based on the results of the ecological evaluation, no further ecological assessment was deemed necessary for the Site.

2.5.3 Contaminant Sources

There is no known primary source for the COCs detected at the Site. The Site has been used for residential purposes since at least the 1880s. It has been well documented by studies conducted by the United State Environmental Protection Agency (USEPA) and others that there is a high urban background in New Orleans for almost all of the COCs at the Site, including poly-aromatic hydrocarbons (PAHs), lead, and arsenic. The presence of pesticides on Site is readily attributed to on Site pest management activities and did not originate from industrial storage or disposal practices.

2.5.4 Areas of Investigation

The Area of Investigation (AOI) is defined in the RECAP Guidance Document as "a zone contiguous to and including impacted media defined vertically and horizontally by the presence of one or more constituents in concentrations exceeding the appropriate screening standards."

Seven AOIs were identified at the Site, based on the planned land use and distribution of COCs with concentrations potentially above the LDEQ RECAP SS_{ni}, as follows:

Area of Investigation	Rationale
AOI No. 1	Areas Beneath Future Greenscape 0-2 Feet BGS – Future Conditions
AOI No. 2	Areas Beneath Future Greenscape >2 Feet BGS – Future Conditions
AOI No. 3	Areas Beneath Future Hardscape – Future Conditions
AOI No. 4	Area of Legacy Trees #1
AOI No. 5	Area of Legacy Tree #2
AOI No. 6	Area of Legacy Tree #3
AOI No. 7	Groundwater

AOIs Numbers 1 through 6 are shown in **Figure 2, Appendix A**, attached.

2.5.4.1 Area of Investigation No. 1

AOI No. 1 is identified as the areas of soil from 0 to 2 feet BGS that following redevelopment will be beneath greenscape (e.g., grass) or otherwise unpaved. However, this AOI excludes the areas around legacy trees.

During the Site redevelopment, buildings will be elevated above the 500-year floodplain, necessitating approximately 3 feet 9 inches of fill beneath the buildings' concrete slabs. To facilitate storm-water flow on Site and reduce the amount of Site relief, the greenspace areas will be built up with at least 18 inches of fill material. To achieve a 2 foot cap thickness, a minimum 6 inch cut and removal of current surface soils will be made so that at least 2 feet of fill will be placed to achieve the necessary greenspace elevation. The fill soil used for the 0 to 2 feet horizon will be obtained from a verified clean off Site source.

Fill material will be screened for a full list of analytes and analytical results will be evaluated using the RECAP SS_{ni}. Fill material with any analyte concentrations above RECAP SS_{ni} will not be used on Site.

Because, following redevelopment, AOI No. 1 will not contain COCs above the RECAP SS_{ni}, AOI No. 1 does not require further action.

2.5.4.2 Area of Investigation No. 2

AOI No. 2 is identified as areas that will be beneath greenscape after the planned Site development, but will be present at depths greater than 2 feet BGS after the fill material is placed on Site. These soils are currently at approximately 0 to 6 inches BGS.

The October 9, 2008 RECAP Report identified exceedances of the Site LS_{ni}. The table below presents these exceedances, with both the measured concentration maxima as well as the 95% Upper Confidence Limit (UCL) for the mean concentration of contaminants exceeding LS_{ni}. All 95% UCL determinations were made using LDEQ algorithms. The 95% UCL is commonly used as a robust estimator for determining risk to human health and the environment.

TABLE 1 – FUTURE SITE CONDITIONS AND LIMITING STANDARDS FOR AOI NO.2

Constituents of Concern	RECAP Soil LS_{ni} Standard (mg/kg)	Soil Concentrations (mg/kg)		Point of Highest Concentration
		Maximum	95% UCL	
Benzo(a)anthracene	0.620	4.76	1.825	B-60
Benzo(a)pyrene	0.330	4.47	1.082	B-60
Indeno(1,2,3-cd)pyrene	0.620	5.23	1.009	B-60
Lead	400	5,600	1,674	B-11-1

mg/kg – milligrams per kilograms

2.5.4.3 Area of Investigation No. 3

AOI No. 3 is identified as the areas the will be beneath the hardscape (i.e., building slabs, sidewalks, and parking areas) after redevelopment. The table below presents exceedances of the Site's LS_{ni}, with both the measured concentration maxima as well as the 95% UCL for the mean concentration of contaminants exceeding LS_{ni}.

TABLE 2 – FUTURE SITE CONDITIONS AND LIMITING STANDARDS FOR AOI NO. 3

Constituents of Concern	RECAP Soil LS_{ni} Standard (mg/kg)	Soil Concentrations (mg/kg)		Point of Highest Concentration
		Maximum	95% UCL	
Benzo(a)anthracene	0.620	8.85	1.068	B-24-3
Benzo(a)pyrene	0.330	6.80	0.803	B-24-3
Benzo(b)fluoranthene	0.620	10.7	1.247	B-24-3
Dibenz(a, h)anthracene	0.330	1.23	0.574	B-24-3
Indeno(1,2,3-cd)pyrene	0.620	2.71	1.25	B-24-3
Lead	400	717	260.4	B-15-1

mg/kg – milligrams per kilograms

2.5.4.4 Areas of Investigation Nos. 4, 5, and 6

AOI Numbers 4, 5, and 6 are identified as the areas beneath the canopy of large legacy trees that will remain on the Site after redevelopment. The legacy tree areas are illustrated by the purple shading in **Figure 2, Appendix A**. Due to the extensive and shallow root systems of these live oaks, soil cannot be deposited in this area to cover the existing soil.

PPM's October 9, 2008 RECAP Report determined that soils within the root zone of the legacy trees do not exceed the LDEQ-approved LS_{ni}, therefore, because AOI Nos. 4, 5, and 6 do not contain COCs above the LS_{ni}, these AOIs do not require further action.

2.5.4.5 Area of Investigation No. 7

AOI No. 7 is identified as groundwater. PPM's October 9, 2008 RCAP Report determined that the groundwater does not contain COCs in excess of the LDEQ Groundwater-3 Non-Drinking Water Limiting Standards. Because AOI No. 7 does not contain COCs above these standards, AOI No. 7 does not require further action.

3.0 REMEDIAL DESIGN

This PRAP sets forth the actions that will be taken to ensure protection of public health and the environment in redevelopment of the Site with modern multi-family housing. On November 14, 2008 LDEQ approved soil standards (LS_{ni}) that are protective of public health and the environment. This PRAP demonstrates compliance with those standards by preventing future residents' exposure to soils exceeding the standards. Future residents' exposure to soils exceeding the standards is prevented by capping all soils exceeding the standards with either hardscape or at least two feet of clean soil (meeting SS_{ni}). Use restrictions and an operations and maintenance plan will prevent actions that could result in residents' exposure to soil beneath the cap and ensure that the cap remains intact.

During implementation of the PRAP, worker exposures will be controlled in compliance with requirements of the U.S. Occupational Safety and Health Administration (OSHA) through the **Site Specific Health and Safety Plan** included in **Appendix G**.

The Remedial Design for The Site is integrated with the mass grading and redevelopment plan. The mass grading and development plan should be completed within approximately 24 months from the start of construction.

The mass grading and development plan includes the following elements:

- Finished building slabs will be above the 500-year floodplain. In this fashion, the development will be afforded a heightened level of protection from future flooding. It is estimated that approximately 3 feet 9 inches of fill will be required to meet this standard.
- Given the 3 feet 9 inch elevation increase of the finished building slabs, the Site will be graded to facilitate surface water drainage. It is estimated that much of the final grade will need to be elevated up to 18 inches above current grade. Less than 18 inches of grade increase will be required as the grade tapers down to adjacent streets. Areas to be graded include parking areas and open spaces.

Available data establish that the volume of soils that exceed the Site LS_{ni} may be more than 111,840 excavated cubic yards.

This Remedial Design includes the seven following elements:

1. All soils that exceed the LS_{ni} in greenspace areas will be covered with an engineered barrier (a minimum 2 foot thick clean soil cap) meeting SS_{ni}. Greenspace areas are shown in **Figure 2, Appendix A**.

2. A witness barrier will be placed above all greenspace soils exceeding LS_{ni}. This witness barrier will separate the minimum 2 foot thick clean soil cap meeting SS_{ni} from the underlying soils.

3. For soils exceeding LS_{ni} that are not located in greenspace areas, an engineered barrier (hardscape) will be installed to prevent human contact. Hardscape areas are shown in **Figure 2, Appendix A**.

4. To meet hardscape and grading elevation requirements of the grading plan, and to meet the minimum 2 foot thick clean soil cap requirement in greenspace areas, soils currently in greenspace areas may be moved to areas of future hardscape.

5. Soil currently present in areas that will be covered with hardscape will remain in-place, unless removal is required by the mass grading plan.

6. All soils will be removed from drinking water line utility trenches (approximately 2 feet wide by 2 feet deep) extending from street rights-of-way to the new buildings. These utility trenches will be backfilled with soils pre-qualified to meet the SS_{ni}.

7. An O&M plan to assure integrity of both engineered barriers (minimum two foot thick clean soil cap and hardscape) will be prepared.

8. As required by the LDEQ regulatory code (LAC Title 33, Part VI, § 915 (C) (3)), use restrictions (PRAP Section 5) will be recorded with the clerk of court in Orleans Parish.

4.0 REMEDIAL DESIGN WORKPLAN

As required by LDEQ regulation, the Remedial Project Plan detailed below provides tasks, specifications, and subplans necessary for the implementation of the Remedial Design presented in Section 3.0. The following discussion meets the requirements found in LAC Title 33§911 Paragraph B.

4.1 GENERAL DESCRIPTION OF THE WORK AND SUMMARY OF ENGINEERING DESIGN CRITERIA

The Remedial Design will be implemented in two stages, as follows:

1. Mass grading and removal of materials exceeding the LS_{ni} from greenspace areas to areas that will be covered by building slabs in the redevelopment. It is expected that approximately six inches of soils will be removed at a minimum, so that the final grade allows a minimum 2 foot thick clean soil cap. **Figure 5, Proposed Areas for Excavation/Capping, Appendix A** presents the areas intended for mass grading activities. The greenspace areas from which soils will be relocated in shown in **Figure 2, Appendix A**. These areas were identified using the following criterion:

- Areas of greenscape defined by straight-line demarcation connecting measurement points from the Site investigation that did not exceed the LDEQ-approved LS_{ni}. To facilitate use of heavy equipment and allow a controllable project schedule, the limits of the soil excavation are defined by straight lines that connect points that are known to not exceed the LS_{ni}. By extending the excavation to areas that are known not to exceed the LS_{ni}, confirmation of removal samples during the mass grading operation are not necessary.
- Areas that will be beneath hardscape constructed in the redevelopment were excluded.

2. Placement of a witness barrier with a minimum 2 foot thick clean soil cap or hardscape (concrete slabs, roadways, and parking lots) over soils that exceed the LS_{ni}.

Figure 6, Areas of Soil Impacted Above LDEQ's LS_{ni}, Appendix A shows areas of surficial (within the 2 feet of current grade) and deep (up to 8 feet below the current grade) soil that exceed the $LS_{ni.}$

4.2 MAPS AND EXISTING CONDITIONS

Figures 1 and **5** in **Appendix A** show the general location and current conditions of the Site (defined as areas of soils impacted above LS_{ni}). The total estimated volume of soils that exceed the LS_{ni} is at least 111,840 cubic yards. The estimated volume of soil to be excavated and placed under hardscape is 7,160 cubic yards.

4.3 PERMITTING AND PRE-MOBILIZATION ACTIVITIES

The New Orleans City Council recently approved a Land Disposition Ordinance for the Site, allowing designated rights-of-way to be vacated and additional rights-of-way properly designated to match the proposed development plan. Necessary permits, notifications, and approvals will be obtained prior to the initiation of a particular work item. Receipt of general construction and building permits is anticipated by mid-December, 2008.

4.4 DETAILED PLANS AND PROCEDURAL MATERIAL SPECIFICATIONS

The mass grading operation will be conducted concurrent with site preparation and construction. Section 4.4.1 through 4.4.2.3 below presents detailed plans and material specifications for the mass grading operation.

4.4.1 Mass Grading Operation

This phase of work will involve the use of a bottom loading pan, bulldozer, grader, or similar equipment to remove approximately 6 inches of soils so that the final cap is at least 2 feet in thickness. These soils will be placed under the hardscape that will be constructed in the redevelopment.

Locations of the softscape areas exceeding the LS_{ni} in surface soils and requiring mass grading are shown in **Figure 5, Appendix A**.

These areas were demarcated using straight lines connecting areas that are known to not exceed the LS_{ni}. By excavating to these straight lines, there is assurance that all near-surface greenspace areas that exceed the LS_{ni} will be remediated without the need for additional confirmation-of-removal sampling.

Site operational controls to be used during mass grading removal are specified below.

4.4.2 Site Operational Controls

4.4.2.1 Security

The primary means of security control will be the security fencing that currently surrounds the Site. On Site crews will report any trespassers observed on the Site to either on Site security personnel or New Orleans police.

A daily log will be prepared by the on Site environmental oversight contractor, identifying on Site personnel and their affiliation, visitors, and trucks used to transport. Sign-in and sign-out requirements will be imposed at all times during the remedial activities.

The work area itself will be demarcated, using barrier tape, into an exclusion zone, a transition zone, and a support zone. Everyone will be required (without exceptions) to read and sign the HASP and receive a Health and Safety briefing before entering an exclusion zone.

4.4.2.2 Traffic Control

The off Site transportation of soils will require the movement of trucks to and from surrounding streets. On Site vehicular traffic will be limited to the current access roads and additional satellite access roads. The vehicular access roads connecting the Site to the neighborhood will be gated and with traffic control devices. The satellite access roads will be demarcated from the nearest current road to the removal area. On Site personnel will determine the optimum satellite access road location prior to work start-up.

4.4.2.3 Environmental Controls

To minimize the potential for the release of COCs to the environment via air emissions or surface water discharge, environmental controls will be implemented.

The Contractor will maintain a supply of dust control material on Site. Dust control materials may include water spraying or application of materials like wood chips, but will not include oil-spraying, application of salt-based materials, or use of other materials not approved in advance by PPM or MBS. The primary engineering mechanism to be employed as an environmental control during excavation activities or other soil disturbance activities will be the use of water sprays. A miniature real-time aerosol monitor (MINIRAM) will by used to monitor respirable air concentrations. A Site-specific action level of 5 milligrams per cubic meter (mg/m^3) (the OSHA respirable nuisance dust action level) will be used as an indicator of the need for additional mitigation. Stockpiles will be covered if exposed for more than 24 hours. It is anticipated that water sprays will be sufficient to keep airborne dusts to a manageable level.

In the event that a dust action level is exceeded, it will likely be exceeded first in the work zone before being exceeded at the Site's perimeter or community fence line, the latter two boundaries being located at increasing radial distances from the main work area. Ongoing monitoring within the work zone and, if necessary, immediate mitigation of potential impacts as action levels are approached will therefore serve to prevent action levels being exceeded at the Site perimeter or community fence line.

The speed limit for on Site traffic will be 15 kilometers per hour. Trucks transporting wastes off Site will be covered prior to their departure.

If unusual or extreme odors are observed, the on Site Health and Safety Officer will issue a stop-work order, and the services of a Certified Industrial Hygienist will be obtained to assess the potential health risk. A stop-work order will be issued if extreme or nuisance odors occur during times of the day when there is a higher public presence near the Site (such as commuting rush hours, lunch hour, and mobilizations to and from schools).

Decontamination stations for equipment will be established at designated areas identified as those points where equipment will leave impacted areas and access either paved roads or known clean areas. Decontamination of truck wheels and (as necessary) truck underbodies and boxes will be performed using a power wash. Decontamination waters will be collected and used for dust controls during excavation. Waters not consumed for dust

control will be collected and subjected to testing and analysis prior to determining the appropriate disposal option. Possible options include: discharge to a sanitary sewer, or transporting off Site for waste water treatment and disposal.

All equipment that accesses either exclusion zone(s) or areas known to be impacted above the LS_{ni} will be decontaminated prior to exiting the work areas or accessing either paved roads or known clean areas. More frequent decontamination will be performed, if necessary, to protect health and safety and to minimize dust generation. Only in the event of an emergency will any equipment be allowed to exit the work area and enter a previously remediated area prior to being decontaminated.

Immediately upon confirmation that mass grading removal has proceeded to the specified depth, approximately twelve inches of backfill certified to meet RECAP's SS_{ni} will be placed over the area.

Surface water controls will be employed as required by the project's Storm Water Pollution Prevention Plan (SWPPP), whose elements include:

- Cessation of grading activities during periods of heavy precipitation, and
- Silt fences, both around the project perimeter as well as around the areas of mass grading removal, and
- Placement of straw bales to serve as filters wherever surface water runoff can drain into the site's storm sewers.

Documentation will be performed to maintain a record of Site activities. Field inspectors will be responsible for keeping a field book of all activities related to the Site work, and for completing a daily report summarizing the daily activities. Field forms will be provided for specific activities that require documentation on a regular basis. The use of the field forms will ensure a precise recording of the required information in a consistent format.

Field forms to be completed, at a minimum, are as follow and are presented in **Appendices C, E and G** of this PRAP:

- Daily Field Observation Report;
- Daily Volume Record;
- Equipment Move-in/Move-out;
- Air Sampling Worksheet;
- Air Monitor Calibration Log;
- Field Sampling Log (SAP);
- Analysis Request/Chain of Custody (SAP);
- Underground Utilities Location Form (HASP);
- Subsurface Clearance Protocol Checklist (HASP);
- Health and Safety Incident Report Form (HASP);

- Trench Excavation Safety Checklist (HASP);
- Health and Safety Plan Acknowledgement Form (HASP); and
- Health and Safety Incident Log (HASP).

Monthly written progress reports will be prepared and submitted to the LDEQ and MBS. These reports shall, at a minimum:

- Describe all data gathering and planning
- Contain a status report on all field activities
- Include all results from sampling and analysis and all other data pertinent to any work performed at the Site

4.5 SPECIFIC QUALITY CONTROL TESTS

The attached surveying specification defines the type and frequency of measurements necessary to document that the following objectives are met:

- Surface soils between 0' and 2' bgs do not exceed the LS_{ni}
- Soils exceeding the site's LS_{ni} that have been removed from greenspace areas have been placed beneath hardscape

4.6 STARTUP PROCEDURES AND CRITERIA

Performance requirements and activities relevant for the mass grading operations (such as installation of silt fences) are specified elsewhere in this PRAP.

The PRAP does not require post-construction system operation (e.g., with an active groundwater remediation system). Thus, start-up procedures and criteria are not required for implementation of this PRAP.

4.6.1 Additional Information to Address ARARs

Applicable or Relevant and Appropriate Requirements (ARARs) are defined by LDEQ in RECAP as "clean-up standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Site." Similarly, LAC Title 33 defines Applicable Requirements as "cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental laws, state environmental laws, or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a site."

The ARARs for the Site are the LS_{ni} and OSHA requirements, including the PELs. No additional ARARS are necessary because this PRAP requires capping of soils that exceed the LDEQ-approved LS_{ni} for the Site.

4.7 COMPLETION REPORT

At the completion of the remedial activities, a report will be prepared and distributed in accordance with this PRAP. This report will present the following information:

- Tabulation of confirmation of removal results;
- MINIRAM air monitoring results;
- Narrative of mass grading;
- Summary of any work scope changes;
- Quality control and health and safety performance data;
- As-built drawings if different from the figures enclosed in this PRAP;
- Laboratory data reports;
- Site photographs;
- Review of survey results showing adequate cut and fill;
- A review of the survey results showing two feet of cap and a certification that cut depth and cap placement met specifications; and
- Copies of terminated shipping papers and manifests, if any.

4.8 SAMPLING AND ANALYSIS PLAN

A SAP has been prepared and is provided in **Appendix E**. If soil testing is performed, the SAP outlines the protocols to be followed, the constituents to be tested, the approved USEPA SW-846 test methods to be used, as well as the quality assurance/quality control (QA/QC) procedures to be implemented during the sampling activities. The protocols set forth in the SAP are consistent with those required by LDEQ.

4.9 QUALITY ASSURANCE AND QUALITY CONTROL PLAN

A QA/QC Plan has been prepared and is provided in **Appendix F**. The QA/QC Plan outlines the systematic process that will control the validity of the analytical results by measuring the accuracy and precision of the analytical method and sample matrix.

4.10 SITE SPECIFIC HEALTH AND SAFETY PLAN

Health and safety requirements for activities associated with the mass grading at the Site are contained in the HASP included in **Appendix G**. The HASP describes the minimum health and safety guidelines to protect on Site personnel and visitors from physical harm and exposure to materials at the Site as required by OSHA. The HASP contains information on standard health and safety procedures, engineering controls and safe work practices, personal protective equipment, control zones, personnel and equipment decontamination, exposure monitoring, training, medical surveillance, and mitigation of accidental spills and discharges.

The contractor will have the responsibility for all health and safety activities during the completion of remedial activities. The HASP will be adopted and implemented by the selected contractor or the contractor will develop their own HASP that at a minimum meets the requirements of the HASP provided in **Appendix G** and all appropriate OSHA regulations.

4.11 PROJECT IMPLEMENTATION SCHEDULE

A project implementation schedule, expressed as a GANTT chart, is presented in **Appendix H**.

4.12 OPERATIONS AND MAINTENANCE PLAN FOR POST-REMEDIAL MANAGEMENT

Prior to occupancy, MBS and HANO will prepare an O&M plan to maintain the cap and to ensure that future activities that penetrate the cap do not result in exposure to workers or residents.

4.13 MONITORING PLAN FOR POST-REMEDIAL MANAGEMENT

The need for a post-remedial management monitoring plan will be assessed concurrent with preparation of the O&M plan for the Site. At this time, except for air-monitoring in the event that the soil cap is breached, it is anticipated that post-construction monitoring will not be necessary.

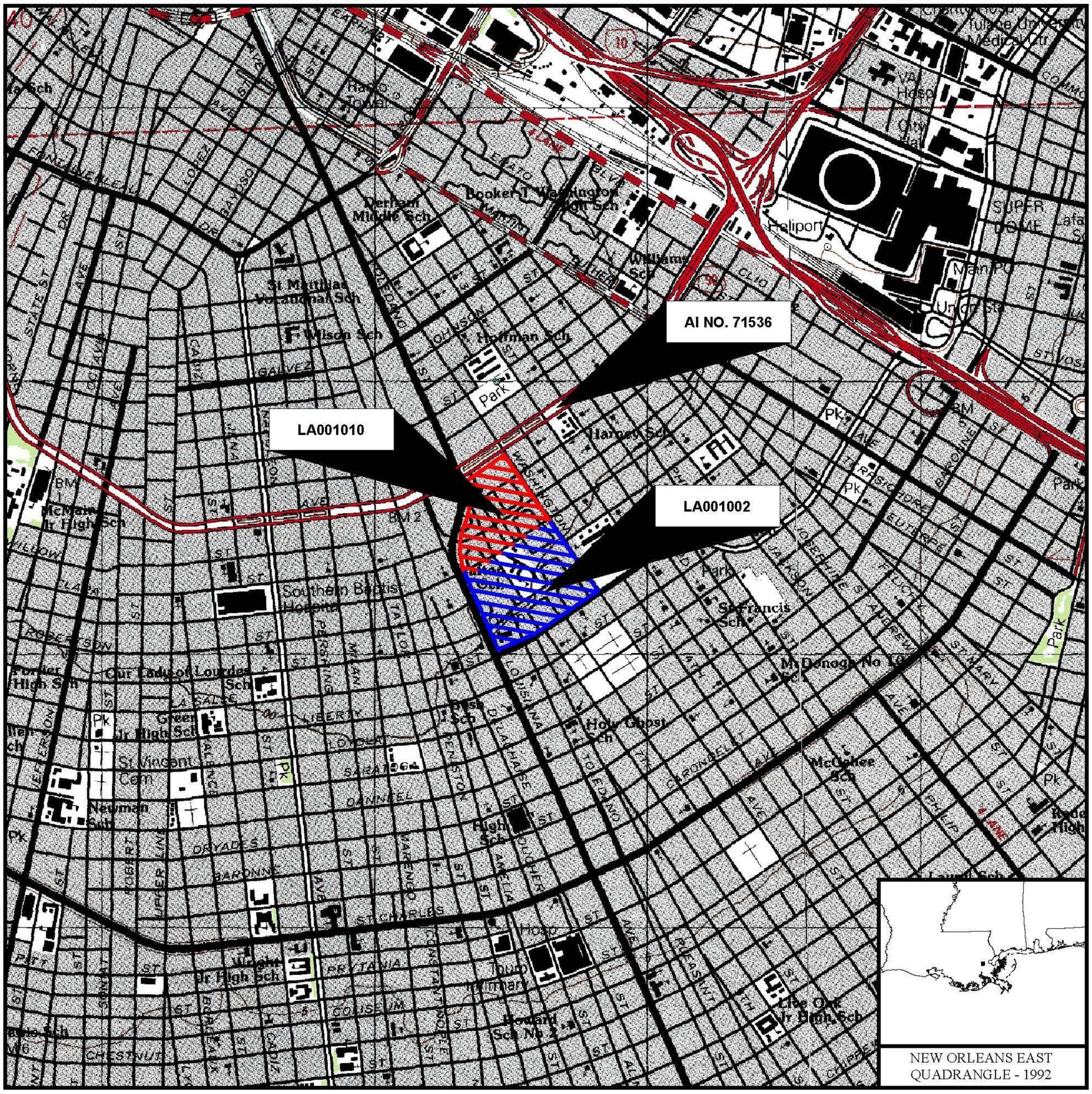
5.0 USE RESTRICTIONS

In conformance with LAC Title 33§915, the following use restrictions and their recordation are proposed:

1. The production or use of groundwater on the Site will be prohibited.
2. Digging and gardening of any type by the residents will be prohibited.
3. Landscaping activities will be performed by a licensed contractor that operates under the requirements of the C. J. Peete soil O&M.
4. The hardscape and softscape cap and witness barrier will be maintained in accordance with the soil O&M.
5. Activities that will extend below the hardscape or through the softscape witness barrier will be prohibited except as conducted pursuant to the soil O&M. Post-development installation and maintenance of subsurface utilities will occur only in accordance with the soil O&M. If new utility corridors are constructed they will be placed in backfill meeting the SS_{ni}.
6. The onsite use of any soil removed from below the witness barrier or the hardscape will be prohibited.
7. The soil O&M will include, at a minimum, the following operational controls:
    a. A work permit system from on-site management to control activities having the potential to encounter soils exceeding the LS_{ni}
    b. Health and safety requirements to protect works and residents from potential exposure to COCs in soil
    c. Any soils that are removed from beneath the cap will be characterized and disposed off-site
    d. Stormwater controls for prevention of impacted run-off into city streets and/or storm sewers
    e. Inspection of the cap every twelve months to confirm that it is intact.

The final use restrictions that are approved by LDEQ will be recorded with the clerk of court in the official records of Orleans Parish.

APPENDIX A – FIGURES



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1 .5 0 1
MILES

1000 0 1000 5000 10,000
FEET

1 0 KILOMETER 1 2
1000 0 METER 1000 2000

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PPM CONSULTANTS, INC.		HOUSING AUTHORITY OF NEW ORLEANS **C.J. PEETE REDEVELOPMENT** NEW ORLEANS, LOUISIANA	SITE LOCATION MAP
DRAWN BY: BWH	DRAWN DATE: 11/24/08		FIGURE NUMBER 1
PROJECT NUMBER: 296701	BILLING GROUP: PRAP		

LEGEND:

- TEMPORARY WELL LOCATION
- SOIL BORING LOCATION (PHASE II ESA)
- SOIL BORING LOCATION (PHASE II ESA REUSED TO ASSESS UTILITIES)
- SOIL BORING LOCATION
- SOIL BORING LOCATION (SITE INVESTIGATION TO ASSESS UTILITIES)
- WATER LINE
- SEWER LINE
- GAS LINE
- DRAINAGE
- AREA BENEATH GREENSCAPE (AOI NO. 1 AND NO. 2)
- AREA BENEATH HARDSCAPE (AOI NO. 3 AND NO. 8)
- AREA NEAR TREES (AOI NO. 4)
- AREA NEAR TREES (AOI NO. 5)
- AREA NEAR TREES (AOI NO. 6)

PPM CONSULTANTS, INC.		HOUSING AUTHORITY OF NEW ORLEANS **C.J. PEETE REDEVELOPMENT** NEW ORLEANS, LOUISIANA	SITE MAP	FIGURE NUMBER
DRAWN BY: BWH	DRAWN DATE: 11/24/08			2
PROJECT NUMBER: 296701	BILLING GROUP: PRAP			

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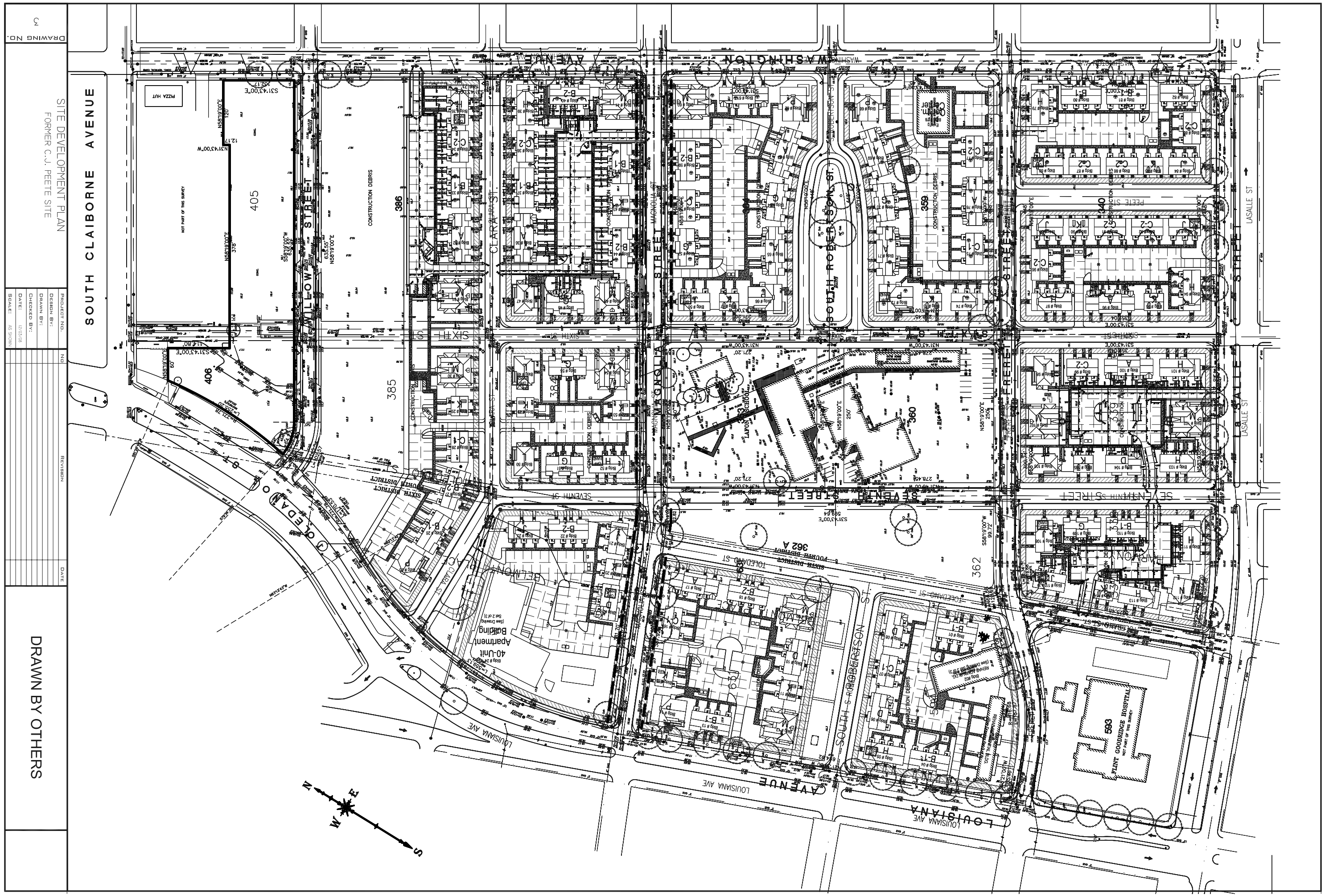
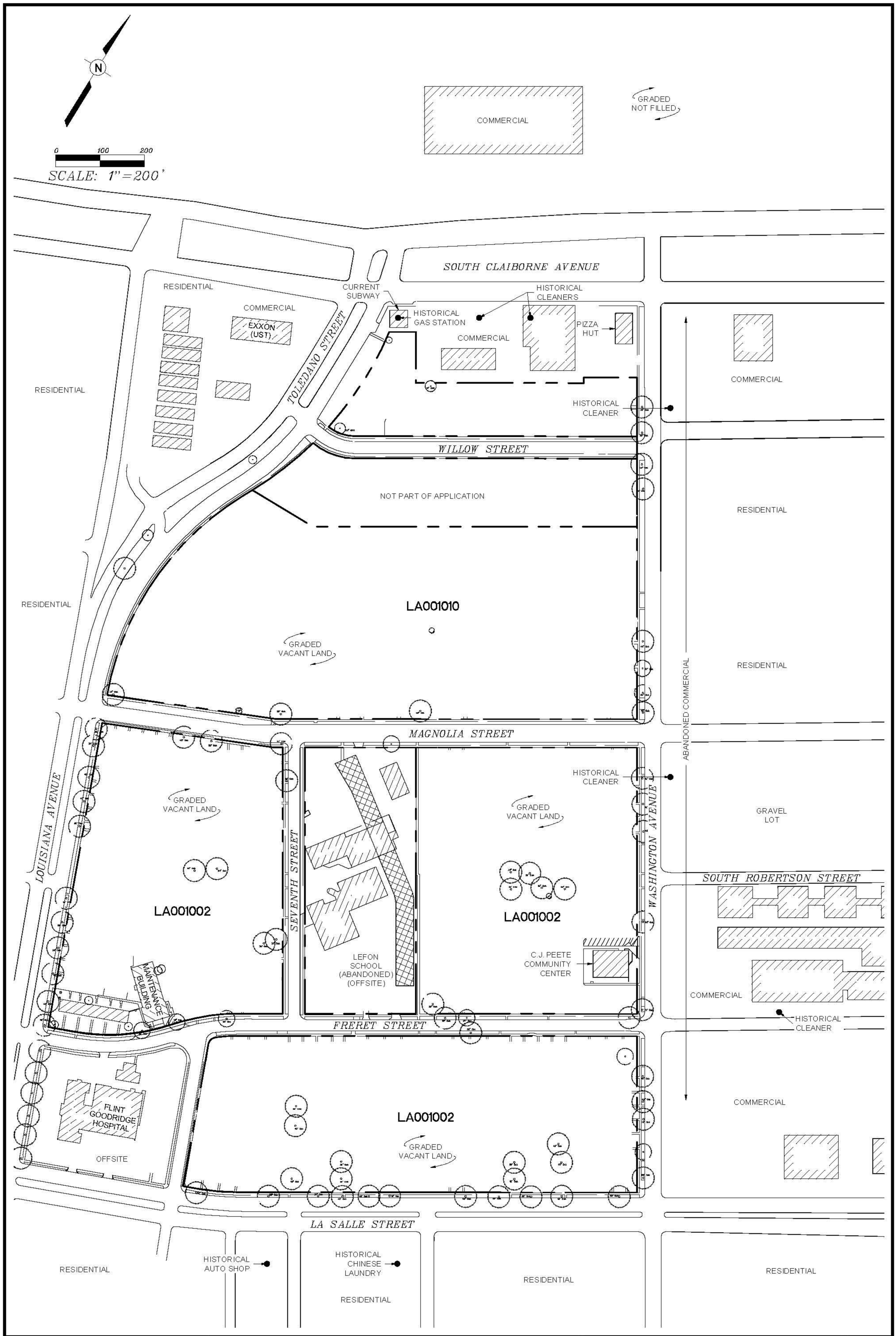

SOUTH CLAIBORNE AVENUE
SITE DEVELOPMENT PLAN
FORMER C.J. PEETE SITE
DRAWING NO.
PROJECT NO.
DESIGN BY:
DRAWN BY:
CHECKED BY:
DATE:
SCALE:
AS SHOWN
REVISION
DATE
DRAWN BY OTHERS
WASHINGTON AVENUE
WILLOW STREET
CLARA ST
MAGNOLIA STREET
SOUTH ROBERTSON ST.
FREEMAN STREET
LASALLE STREET
PEETE STREET
SIXTH ST
SEVENTH STREET
TOLEDANO ST
LOUISIANA AVE
BELMONT PLACE
HARRISON AVE
PIZZA HUT
NOT PART OF THIS SURVEY
CONSTRUCTION DEBRIS
405
406
385
386
362 A
363
360
359
340
593
FLINT GOODRIDGE HOSPITAL
Apartment Building
40-Unit
Center
N
W
E
S



PPM CONSULTANTS, INC.

DRAWN BY:	DRAWN DATE:
BWH	11/24/08
PROJECT NUMBER:	BILLING GROUP:
296701	PRAP

HOUSING AUTHORITY OF NEW ORLEANS
C.J. PEETE REDEVELOPMENT
NEW ORLEANS, LOUISIANA

REGIONAL SITE MAP

FIGURE NUMBER
4

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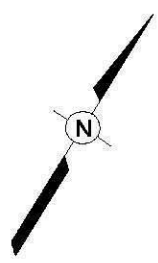

0 75 150

SCALE: 1"=150'

LEGEND:

- TEMPORARY WELL LOCATION
- SOIL BORING LOCATION (PHASE II ESA)
- SOIL BORING LOCATION (PHASE II ESA REUSED TO ASSESS UTILITIES)
- SOIL BORING LOCATION
- SOIL BORING LOCATION (SITE INVESTIGATION TO ASSESS UTILITIES)
- W — WATER LINE
- S — SEWER LINE
- G — GAS LINE
- D — DRAINAGE
- AREA BENEATH GREENSCAPE (AOI NO. 1 AND NO. 2)
- AREA BENEATH HARDSCAPE (AOI NO. 3 AND NO. 8)
- AREA NEAR TREES (AOI NO. 4)
- AREA NEAR TREES (AOI NO. 5)
- AREA NEAR TREES (AOI NO. 6)
- AREAS TO BE MOVED VIA MASS GRADING

PPM CONSULTANTS, INC.

DRAWN BY:	DRAWN DATE:
BWH	11/24/08
PROJECT NUMBER:	BILL NG GROUP:
296701	PRAP

HOUSING AUTHORITY OF NEW ORLEANS
C.J. PEETE REDEVELOPMENT
NEW ORLEANS, LOUISIANA

PROPOSED AREAS FOR EXCAVATION / CAPPING

FIGURE NUMBER 5

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NOT PART OF APPLICATION

WASHINGTON AVENUE

LOUISIANA AVENUE

MAGNOLIA STREET

SIXTH STREET

NOT PART OF DEVELOPMENT

NOT PART OF DEVELOPMENT

LAFON SCHOOL

FRERET STREET

TOLEDANO STREET

FLINT GOODRICH HOSPITAL

NOT PART OF DEVELOPMENT

WASHINGTON AVENUE

LA SALLE STREET

MW-4

MW-8

MW-7

MW-5

MW-6

N

0 75 150

SCALE: 1"=150'

LEGEND:

- TEMPORARY WELL LOCATION
- SOIL BORING LOCATION (PHASE II ESA)
- SOIL BORING LOCATION (PHASE II ESA REUSED TO ASSESS UTILITIES)
- SOIL BORING LOCATION
- SOIL BORING LOCATION (SITE INVESTIGATION TO ASSESS UTILITIES)
- AREA WITH AT LEAST ONE COC ABOVE RECAP STANDARD (0'-3' BGS)
- LEAD GREATER THAN RECAP SCREENING STANDARD (>3' BGS)

PPM CONSULTANTS, INC.

DRAWN BY:	DRAWN DATE:
BWH	11/24/08
PROJECT NUMBER:	BILL NG GROUP:
296701	PRAP

HOUSING AUTHORITY OF NEW ORLEANS
C.J. PEETE REDEVELOPMENT
NEW ORLEANS, LOUISIANA

AREAS OF SOIL IMPACTED ABOVE LDEQ's LSni

FIGURE NUMBER 6

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APPENDIX B – PRIOR REPORTS

APPENDIX C – FIELD FORMS

DAILY FIELD OBSERVATION REPORT

Project Number _____

Project Title _____

Contractor _____

Report Number _____ Date _____ Time _____

Weather			Site Conditions		Day	
❑ Clear	❑ Snow	❑ Warm	❑ Clear	❑ Dusty	❑ Monday	❑ Thursday
❑ Overcast	❑ Foggy	❑ Hot	❑ Muddy	❑ _____	❑ Tuesday	❑ Friday
❑ Rain	❑ Cold	❑ Temperature Range _____			❑ Wednesday	❑ _____

Persons Contacted:

Work Observed:

Items Discussed:

Materials Delivered:

Requested Revisions or Interpretations:

Nonconforming Work Reported This Date To Contractor:

Remarks:

❑ Attachments

Signed by: Date:

Distribution:
- ❑ Owner
- ❑ Contractor
- ❑ Construction Manager
- ❑ Design Professional
- ❑ Consultant _____
- ❑ Other _____

DAILY VOLUME RECORD

PPM

PROJECT: _____

ITEM NO.: _____

SOURCE NO.: _____

DATE _____

SHEET NO. ____ OF ____

LOAD NO.	TRUCK NO.	TIME	GROSS VOLUME	LOAD NO.	TRUCK NO.	TIME	GROSS VOLUME	LOAD NO.	TRUCK NO.	TIME	GROSS VOLUME

EQUIPMENT MOVE-IN/MOVE-OUT

EQUIPMENT: DATE:

TYPE:	MAKE:	MODEL/SIZE:	IN:	OUT:

REMARKS:

ACCIDENTS	PRODUCTION SUMMARY (Loads, Tons, Cu. Yd. Lin. Ft., etc.)		
YES ☐ NO ☐	ITEM NO.	STATION TO STATION	QUANTITY
UNSAFE OPERATIONS			
YES ☐ NO ☐			
PPM			

AIR SAMPLING WORKSHEET

1. Reporting ID	2. Inspection Number	3. Sampling Number:
4. Project Name	5. Sampling Date:	6. Shipping Date:
7. Person Performing Sampling (Signature)	8. Print Last Name	9. Print First Name
10. Weather Conditions:		11. Photo(s):
12. PPE (Type and effectiveness):	13. Pump Checks and Adjustments:	
14. Job Description, Operation, Work Location(s), Ventilation, and Controls		
15. Pump Number:		Cont'd

Sampling Data

16. Lab Sample Number						
17. Sample Submission Number						
18. Sample Type						
19. Sample Media						
20.Filter/Tube Number						
21. Time On/Off						
22. Total Time *(in minutes)*						
23. Flow Rate ☐ l/min ☐ cc/min						
24. Volume *(in liters)*						
25. Net Sample Weight *(in mg)*						

AIR SAMPLING WORKSHEET

PPM

26. Analyze Samples for:						

27. Interferences and IH Comments to Lab	28. Supporting Samples	29. Chain of Custody	Initials	Date
	a. Blanks	a. Seals Intact?	Y N	
		b. Rec'd in Lab		
	b. Bulks	c. Rec'd by Anal.		
		d. Anal. Completed		
		e. Calc. Checked		
		f. Supr. OK'd		

Pre-sampling Calibration Records

pre	30. Pump Mfg. & SN	33. Flow Rate Calculations:			
	31. Voltage Checked? ☐ Yes ☐ No	34. Flow rate:	35. Method ☐ Bubble ☐ PR	36. Initials:	37. Date/Time:
	32. Location/T & Alt.				

Post-Sampling Calibration Records

post	38. Location/T & Alt.	39. Flow Rate Calculations:	
		41. Initials:	42. Date/Time:
	40. Flow Rate:		

AIR SAMPLING WORKSHEET

Sample Weight Calculations:

43. Filter No.						
44. Final Weight (*mg*)						
50. Initial Weight (*mg*)						
51. Weight Gained (*mg*)						
52. Blank Adjustment						
53. Net Sample Weight (*mg*)						

54. Calculations and Notes:

PPM

Air Monitor Calibration Log

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

Pump Identifier	Pre-exposure			Post- exposure		
	Date	10 Reading Set Average		Date	10 Reading Set Average	
		1	2		1	2
		3	Avg		3	Avg

APPENDIX D – SURVEYOR'S SPECIFICATION

SECTION 312100 – SURVEYING AT POINTS OF COMPLIANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the following:

1. Specifies total accuracy
2. Designates survey points where environmentally impacted soils will be removed
3. Designates survey points where environmentally impacted soils will be placed
4. Designates survey points where a two foot cap of verified clean pumped river sand will cover environmentally impacted soils
5. Designates survey points where concrete slabs will cover environmentally impacted soils

1.3 DEFINITIONS

A. Environmentally impacted soils: on-site soils that are impacted above Louisiana Department of Environmental Quality's (LDEQ)'s Limiting Standards non-industrial (LS_{ni}) for C. J. Peete.

B. Pumped river sand: off-site derived backfill that has been pre-qualified to show that the sands are not impacted above Louisiana Department of Environmental Quality's (LDEQ)'s Screening Standards non-industrial (SS_{ni})

1.4 PROJECT CONDITIONS

A. A. Survey points must be determined and presented to the project's environmental contractor within 24 hours of request-for-survey.

PART 2 - PRODUCTS

2.1 SURVEYING EQUIPMENT

A. A. The surveyor shall use a Leica Geosystems AG Global Positioning System (GPS) system or equivalent, yielding accuracy of the survey point to within 1 centimeter horizontal and vertical.

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PART 3 - PART 3 – EXECUTION

3.1 PREPARATION

A. All transmitters and receivers should be on-site within two weeks of notice-to-proceed.

3.2 SURVEY

A. Establish excavation perimeter around 'hotspot' excavations (total five) at 25' spacings, but no less than eight points per 'hotspot'.

B. Establish excavation perimeter at 50' spacings around all mass-grading removals of environmentally impacted soils plus all vertices wherever impacted soils have been removed.

C. Establish excavation depth at a frequency on a grid of spacing of no more than 25 feet (evenly spaced, but may vary) of excavated area, using a randomly originated evenly spaced measurement grid.

D. Establish placement perimeter at 20' spacings and all vertices wherever impacted soils have been placed.

E. Establish elevation of areas to receive impacted soils prior to any placement, at a frequency of one point for every 400 square feet of placement area, using a randomly originated evenly spaced measurement grid.

F. Establish elevation of areas that have received impacted soils, at a frequency of one point for every 400 square feet of placement area, using a randomly originated evenly spaced measurement grid.

G. Establish pumped river sand cap perimeter at 50' spacings and all vertices.

H. Establish pumped river sand cap elevation at a frequency of one point for every 2,500 square feet of excavated area, using a randomly originated evenly spaced measurement grid.

I. Establish elevation of concrete slabs that cover impacted soils, at a frequency of one point per slab.

3.3 QUALITY CONTROL

A. All survey points will be certified to a total accuracy of one centimeter by a surveyor registered in the State of Louisiana.

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3.4 REPORT DELIVERABLES

A. All measured points will be plotted in AUTOCAD, contoured, and readily legible on a D scale print.

B. Deliverables to the environmental contractor, the general contractor and environmental engineer will be in both hard copy and an electronic AUTOCAD file.

END OF SECTION 312100

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APPENDIX E – SAMPLING AND ANALYSIS PLAN

SITE SPECIFIC
SAMPLING AND ANALYSIS PLAN

C.J. PEETE I, LLC
MCCORMACK BARON SALAZAR, INC.
WASHINGTON / LASALLE STREETS
NEW ORLEANS, LOUISIANA
ORLEANS PARISH

AGENCY INTEREST NO. 155767

PPM PROJECT NO. 296701-PRAP

DECEMBER 17, 2008

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SAMPLING AND ANALYSIS PLAN

This Sampling and Analysis Plan (SAP) describes the sampling and analysis activities that will be conducted in the event that anomalous or unexpected site conditions warrant additional sampling and analysis.

1.0 SAMPLING RATIONALE

In the event that anomalous or unexpected site conditions are encountered during site activities, additional samples will be taken as follows:

- To confirm that borrow materials to be placed on the site does not exceed LDEQ's SS_{ni}
- To confirm that additional COCs are not present on the site.
- As appropriate, to comply with characterization requirements for materials shipped for off-site disposal.

2.0 FIELD SAMPLING PROCEDURES

2.1 SAMPLE COLLECTION

Soil samples will be obtained using hand auger, shovel, or excavation equipment bucket. All soil sampling equipment that may come in contact with the soil will be decontaminated prior to sampling following the procedures presented in Section 3.2. If samples are obtained using the equipment bucket, enough soil will be removed along with the sample (no less than half full) to insure that the current sample does not come in contact with soil from previous sampling locations. Samples will only be obtained with the equipment bucket if access to the excavation becomes limited or presents a safety hazard. In addition, the following sampling procedures will be followed by field personnel during the sampling activities:

- Field personnel will wear disposable nitrile gloves during the handling of all sampling equipment and during sampling;
- Sampling equipment will not be placed directly on the ground or other potentially contaminated surfaces prior to sampling activities;
- Soil samples collected for volatile organic compound (VOC) analysis will be field-preserved with methanol and analyzed in accordance with U.S. Environmetal Protection Agency (EPA) Method 5021;
- Soil samples collected for poly-aromatic hydrocarbon (PAH) analysis will be analyzed in accordance with U.S. Environmental Protection Agency (EPA) Method 8270;
- Soil samples collected for polychlorinated biphenyl (PCB) analysis will be analyzed in accordance with U.S. Environmental Protection Agency (EPA) Method 8082A;
- Soil samples collected for organochlorine pesticide analysis will be analyzed in accordance with U.S. Environmental Protection Agency (EPA) Method 8081B;

- Soil samples collected for heavy metals will be analyzed in accordance with EPA Method 6010/7000;
- Soil samples for semi-volatile organic, PCB, or Organochlorine pesticide analysis will be placed in a 4-ounce jar or larger and preserved with wet or blue ice in the field;
- Soil samples for metal analysis will be placed in a 4-ounce jar or larger and preserved with wet or blue ice in the field;
- Except for soils obtained for VOC analysis, soil obtained from the sampling device will be thoroughly mixed in a clean stainless steel bowl to insure homogeneous samples and subsequently placed in laboratory supplied containers;
- All samples collected will be shipped via overnight courier.

2.2 DECONTAMINATION

All non-disposable sampling and other field equipment will be decontaminated prior to being used. Decontamination of field equipment will proceed under the following decontamination steps:

- If necessary, power washed or steam cleaned;
- Scrubbed with a biodegradable solution (e.g. low phosphorous alconox or liquinox equivalents and water);
- Re-rinsed with DI water; and
- Wrapped in plastic or aluminum foil, if not used immediately.

2.3 SAMPLE IDENTIFICATION

Samples will be adequately marked for identification from the time of collection and packaging through shipping and analysis. Marking will generally be on a tag or label attached to each sample or container. The variable fields used in the sample identification (ID) scheme are project specific and have been selected to allow a rapid ID of the sample location and type. The sample naming scheme and example sample names are presented below:

- Sample Type
- Area of Sample Collection
- Sample Location
- Sample Matrix and Interval
- Sample QA/QC
- Sample Number

The variable fields used in the sample identification (ID) code are specific to this program and are presented as follows:

STAAYM/X.XQNN						
ST **Sample Type**	**AA** **Area**	**Y** **Sample Location**	**M** **Sample Matrix**	**X** **Sample Interval**	**Q** **Quality (if applicable)**	**NN** **Sample Number**
CS - Confirmation Sample RS - Routine Sample GT - Geotechnical Sample CHS – Characterization Sample IPS – Initial Profiling Sample	MGx - Mass Grading x	B - Bottom S - Sidewall G - Ground Surface	SO - Soil SD - Sediment SW - Surface Water GW - Ground Water	X.x - X.x Soil Depth Interval	TB - Trip Blank RB - Rinse Blank FB - Field Blank FD - Field Duplicate MS - Matrix Spike MSD - Matrix Spike Duplicate	01 - 1st Sample 02 - 2nd Sample 03 -3rd Sample etc…

2.4 FIELD DOCUMENTATION OF SAMPLING ACTIVITIES

To provide evidence of satisfactory work performance and the basis for subsequent activities, data collection, data reduction, and results of field investigations and sampling will be completely documented. Information will be recorded on standardized form in indelible ink. Documentation will include a daily log of field activities and chain-of-custody forms. Field Supervisors of the PPM staff will each keep a Daily Log of their activities. Each page of the logs will be signed and dated by the person preparing the record. Items to be included, as appropriate, will be:

- Date of activities;
- Field activity subject;
- General work activity;
- Unusual events;
- Changes to plans and specifications;
- Visitors;
- Communication with LDEQ, EPA, or others;
- Weather conditions; and
- Personnel on Site.

Field records will be collected and maintained by the Field Supervisor until completion of the field phase, or until they are submitted to the project central file.

2.5 SAMPLE CONTAINERS AND HOLDING-TIME REQUIREMENTS

Clean sample containers will be provided by the contract laboratory prior to the sampling activities. Sample containers will be nested in a cushioning material to prevent breakage.

The USEPA's SW-846 places holding time limits as follow:

- For VOCs, analysis within 14 days
- For heavy metals, digestion and analysis within six months
- For semi-volatile organics, PCBs, and Organochlorine pesticides, extraction within 14 days and analysis within 40 days.

It is anticipated that sample results will be generated in approximately three days so that decisions can be made in a timely fashion

2.6 CHAIN OF CUSTODY REQUIREMENTS

Custody seals will be affixed to every sample shuttle and shall not be broken until received by the laboratory. Documentation will be accomplished through an Analysis Request/Chain-of-Custody (AR/COC) form that lists each sample, the individuals performing the sample collection, analysis requested, shipment method, and a receipt. A sample is considered in custody if one of the following conditions is met:

- In a person's actual possession
- In view, after being in physical possession
- Locked so that no one can tamper with the sample, after having been in physical possession
- In a secured area, restricted to authorized personnel

The laboratory must not accept samples for analysis without a correctly prepared AR/COC record. The AR/COC will be signed by each individual who has the sample(s) in their possession. The AR/COC field copy will be retained on Site, and later transferred to the project central file.

2.7 LABORATORY ANALYSIS

Laboratory analysis will be performed on soil samples in accordance with the methodologies specified in EPA SW-846.

Laboratory analysis will be performed in accordance with documented and approved work instructions by trained personnel using calibrated equipment. The quality, accuracy, and precision of laboratory analytical results and reports will be performed in accordance with the procedure established by the respective method.

APPENDIX F – QUALITY ASSURANCE/QUALITY CONTROL PLAN

SITE SPECIFIC
QUALITY ASSURANCE/
QUALITY CONTROL

C.J. PEETE I, LLC
MCCORMACK BARON SALAZAR, INC.
WASHINGTON / LASALLE STREETS
NEW ORLEANS, LOUISIANA
ORLEANS PARISH

AGENCY INTEREST NO. 155767

PPM PROJECT NO. 296701-PRAP

DECEMBER 17, 2008

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1.0 QUALITY ASSURANCE/QUALITY CONTROL PLAN

A Quality Assurance Quality Control (QA/QC) sampling program will be implemented as a systematic process that controls the validity of the analytical results by measuring the accuracy and precision of the analytical method and sample matrix. The QA/QC program also develops expected control limits and uses these limits to detect anomalous events. Subsequently, corrective action techniques are implemented to prevent or minimize the recurrence of the events. The accuracy and precision of sample analyses are assessed by the analysis of both field and laboratory samples. Laboratory samples are those associated with sample preparation and analysis and generally include method blanks, laboratory control samples (blank spike), matrix spike/matrix spike duplicates (MS/MSD), and surrogate spikes. Field QA/QC samples are collected in the field to assess sample collection and shipment procedures, and include equipment reinstates, field blanks, field duplicates, and trip blanks.

2.0 SAMPLE DELIVERY GROUPS AND SAMPLE FREQUENCY

A sample delivery group (SDG) is defined as a group of samples that are batched together to streamline analyzing, validating, and reporting. A sample delivery group will consist of no more than 20 samples per batch that are to be analyzed using the same U.S. EPA SW-846 method. When possible, the SDGs will be batched in the field by the PPM Sample Coordinator. If entire SDGs are not delivered to the laboratory, by the field sampling team, the laboratory may temporarily store the samples and the SDG will be batched at the laboratory. If a group of 20 samples cannot be batched within holding times, the laboratory will analyze the samples in a batch of less than 20. Homogenized QA/QC samples will be collected at the following frequency:

- Rinsate SVOC and Metals one per 20 field samples
- Duplicate SVOC, Metals one per 20 field samples
- MS/MSD, SVOC, Metals one per 20 field samples

3.0 FIELD QUALITY CONTROL SAMPLES

Field QA/QC samples will be collected by the field sampling team during the performance of the sampling activities to insure QA/QC standards are attained. The field QA/QC samples are not included as part of the laboratory's internal QA/QC program and will be handled by the laboratory as a routine environmental sample. The field team will, to the extent practical, schedule sample collection and shipment of SDGs to minimize the number of QA/QC samples requiring analysis.

3.1 FIELD DUPLICATE SAMPLES

Each duplicate is defined as a second sample taken in the field at a given location. A duplicate soil sample will be collected from the same aliquot of soil used to collect the associated routine sample. The field duplicate will not be identified as a duplicate to the laboratory. Field duplicate samples will be analyzed using the same analyses performed on its associated routine sample.

3.2 EQUIPMENT RINSATE BLANKS

Equipment rinsate blanks will be collected during the field program to assess the effectiveness of the equipment decontamination methods. An equipment rinsate blank will consist of analyte-free water, which is poured over the decontaminated sampling equipment and subsequently collected in laboratory prepared sample bottles. Equipment rinsate samples will be analyzed for all analytes of interest for the media that the equipment is being used, i.e., metals, and/or PAHs.

3.3 FIELD BLANKS

Field blanks will be included in this program to evaluate the possible introduction of PAHs into samples from external sources. This sample is created by pouring analyte-free water used in the field into a randomly selected sample container at the sampling Site. Each field blank will be analyzed for PAHs only.

4.0 LABORATORY QA/QC SAMPLES

Laboratory QA/QC samples are samples generated by the laboratory and are used to monitor the day-to-day performance of routine analytical methods. The laboratory QA/QC samples provided by the laboratory are method blanks, surrogate spikes, and matrix spike/matrix spike duplicates. All laboratory QA/QC samples will be analyzed at a frequency which meets the requirements of the specific EPA SW-846 Method used.

4.1 METHOD BLANKS

Method blanks are analyzed to assess the level of background interference or contamination which exists in the analytical system and which might lead to the reporting of elevated concentration levels or false positive data. A method blank is analyzed with every batch of samples processed. A method blank consists of analyte-free water carried through every aspect of the procedure including preparation, clean-up, and analysis. The results of the method blank analysis are evaluated, in conjunction with other QA/QC information, to determine the acceptability of the data generated for that batch of samples. The appropriate acceptance criteria are established by the laboratories in accordance with the contract laboratory program.

4.2 SURROGATE SPIKE

Surrogates spikes are organic compounds which are similar to the analytes of interest in chemical behavior, but which are not normally found in environmental samples. Surrogates are added to monitor the effect of the matrix on the accuracy of the analysis. Results are reported in terms of percent recovery. The appropriate surrogate compounds and acceptance criteria are established by the laboratories in accordance with the contract laboratory program.

4.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

To evaluate the effect of the sample matrix upon the analytical methodology, the EPA has developed standard mixes to be used for matrix spike (MS) and matrix spike duplicate (MSD) analyses. The recoveries are determined and compared as a measure of accuracy and precision. The sample to which an MS/MSD analysis will be performed will be determined by the laboratory when an MS/MSD is not provided from a specific Site.

4.4 LABORATORY CONTROL SAMPLES

Laboratory control samples (LCS) are solid or water samples of known and controlled matrix, spiked with known amounts of analyte from a source different from that used for the calibration standards. The LCS results, together with matrix spike results, can establish the presence of any matrix effect.

APPENDIX G – HEALTH AND SAFETY PLAN

SITE SPECIFIC
HEALTH AND SAFETY PLAN

C.J. PEETE I, LLC
MCCORMACK BARON SALAZAR, INC.
WASHINGTON / LASALLE STREETS
NEW ORLEANS, LOUISIANA
ORLEANS PARISH

AGENCY INTEREST NO. 155767

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DECEMBER 17, 2008

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EMERGENCY SUMMARY INFORMATION
MEDICAL FACILITY

In the event medical assistance is necessary, the nearest available hospital information has been provided. PPM requires field personnel to contact 911 to come to them unless the situation is life-threatening and warrants immediate medical attention. This information is to be determined and reviewed with all field personnel and subcontractors prior to field activities. **In cases of accidents or near-misses, the Corporate Health & Safety Officer (CHSO) must be verbally contacted within 2 hours of the situation. Life-threatening situations should be immediately reported to the CHSO.**

Name of Hospital: ***Touro Infirmary***

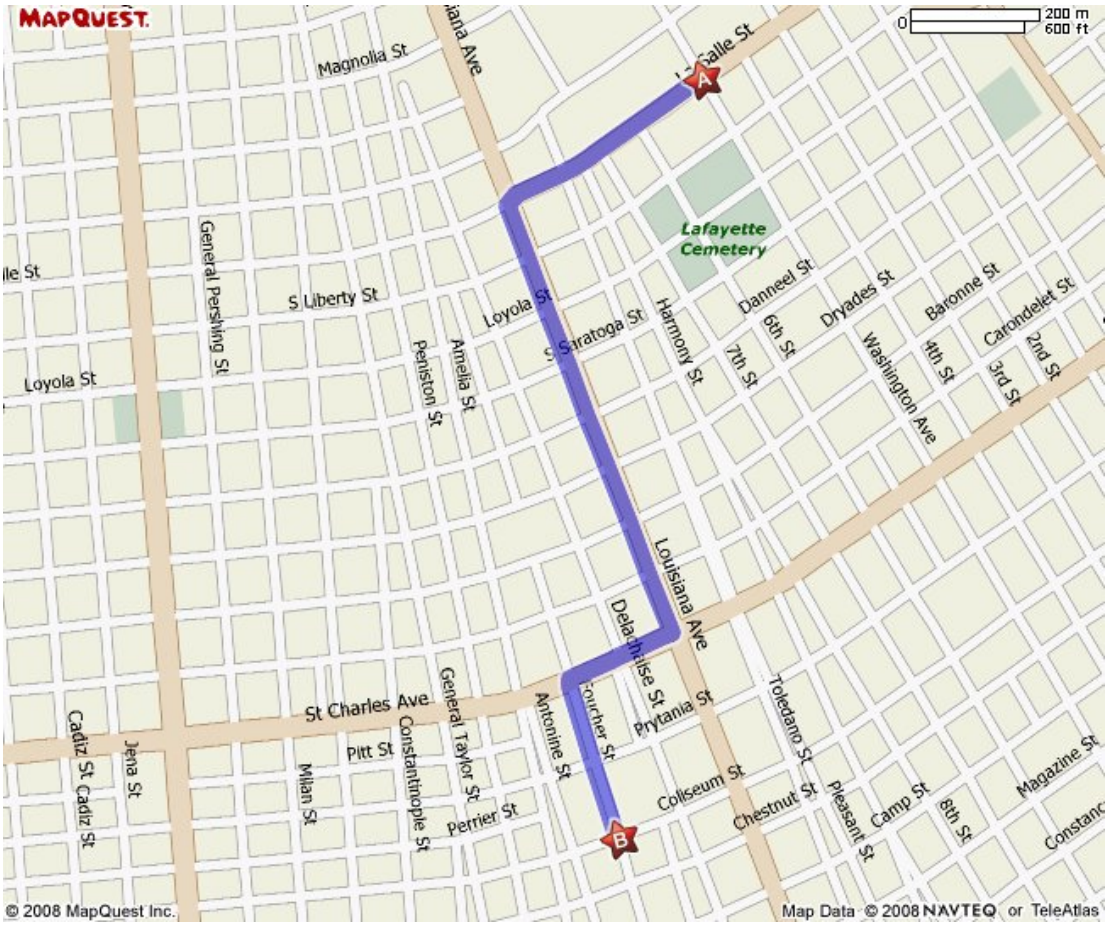
Address: ***1401 Foucher Street***
New Orleans, Louisiana 70115

Telephone No: ***504-897-7011***

START	1. Start out going Southwest on LaSalle St/Simon Bolivar Ave toward 6th St Parkway. Continue to follow LaSalle St.	0.3 mi
	2. Turn left onto Louisiana Avenue.	0.5 mi
	3. Turn right onto St. Charles Avenue.	0.1 mi
	4. Turn left onto Foucher Street.	0.2 mi
END	5. End at Touro Infirmary.	

Estimated Time: 3 minutes

Estimated Distance: 1.16 miles



SITE SPECIFIC
HEALTH AND SAFETY PLAN

1.0 PURPOSE

This Health and Safety Plan (HASP) has been prepared specifically for field activities to be conducted by PPM Consultants, Inc. during the course of this project. The document describes the personal protection and safety procedures to be followed by PPM personnel and subcontractors. This HASP has been prepared in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. This HASP has been developed for typical conditions encountered during field activities of this nature. Should any unexpected conditions arise, work will cease immediately, and the HASP will be amended to accommodate site-specific conditions. Work will not continue until an additional safety briefing has occurred to notify all field personnel and subcontractors of the additional hazards.

2.0 PERSONNEL TRAINING AND RESPONSIBILITIES

PPM field personnel associated with this project have received an initial 40-Hour HAZWOPER certification, which is updated annually through an 8-Hour refresher course. This training course meets the requirements of the OSHA 29 CFR 1910.120 standards. In addition, personnel have been medically tested in accordance with PPM's Corporate Safety Policies to ensure they are fit to conduct the duties associated with this project. Medical examinations are conducted annually to ensure that the health of field employees is not impacted due to PPM-related field work. PPM personnel assigned to this project include:

TABLE 2-1
PPM PERSONNEL IDENTIFICATION

NAME	TITLE	RESPONSIBILITIES
Lee Rodgers, P.E.	District Manager	Manages PPM branch offices and should be contacted in the event of emergencies or in the absence of the Project Manager.
Debbie Rowan	Project Manager	Manages all aspects of the project and is the contact person for issues associated with work at this site.
Jeri F. Thrasher	Corporate Health & Safety Officer (CHSO)	Manages all aspects of PPM Safety Program. Ensures company-wide governance of safety policies and standard safety procedures set forth by PPM.
Kay Williams	Mobile Safety Supervisor	Ensures office compliance in regards to PPM safety policies and procedures.

NAME	TITLE	RESPONSIBILITIES
Anthony Younce	Site Safety Officer (SSO)	Oversees field duties conducted during the course of the project. Ensures safety protocol is implemented, documented, and enforced.
Sandro Tillman	Alternate SSO	Conducts technical field work applicable to the site. Assists the SSO as needed and serves as the Alternate SSO in the absence of the SSO.
Josh Walz	Alternate SSO	Conducts technical field work applicable to the site. Assists the SSO as needed and serves as the Alternate SSO in the absence of the SSO.
Jonathan Goodrich	Alternate SSO	Conducts technical field work applicable to the site. Assists the SSO as needed and serves as the Alternate SSO in the absence of the SSO.
Stefan Minter	Alternate SSO	Conducts technical field work applicable to the site. Assists the SSO as needed and serves as the Alternate SSO in the absence of the SSO.
Greg Stover, P.G.	QA/QC	Project oversight and quality assurance checks.
Lori Dombrowski, CIH	Safety	Certified safety input of safety procedures.

Chain of Command for reporting injuries/illnesses and/or incidents:

Corporate HSO	Reports to owners of the company
Office Manager	Reports to the CHSO
Project Manager	Reports to the OM
Safety Supervisor	Reports to the Project Manager
SSO/Alternate SSO	Reports to the SSO or reports immediately to the CHSO for injuries
Field Personnel	Reports to the SSO or Alternate SSO
Subcontractors	Reports to the SSO or Alternate SSO

3.0 HAZARD EVALUATION

3.1 CHEMICAL HAZARDS

Based on a previous risk assessment conducted for the site, it has been determined that PAHs (associated with diesel), arsenic and lead levels remain in excess of state regulatory closure limits. Therefore, the primary constituents of concern expected as the result of onsite activities involve these three materials. The following table outlines the hazards, symptoms, prevention, and first aid measures associated with exposure to routine substances encountered with these materials:

TABLE 3-1
CHEMICAL HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
Petroleum (PAHs)) • Irritate or burn skin on contact. • Toxic if absorbed through skin. • Several PAH components are considered carcinogenic.	• Nausea, dizziness, lack of coordination, headaches, irregular or rapid breathing, vomiting, loss of consciousness, impaired vision, rash, skin irritation, stomach cramps.	• Keep soils moist by wetting them down prior to disturbances. • No hand to mouth contact. • Avoid gum chewing, tobacco use, snacking, etc. while working. • Thoroughly washing skin with soap and water solution upon completion of work, when overexposed or contaminated, and prior to any hand-to-mouth contact such as eating, etc. • Use required personal protective equipment as outlined within this plan. • Be prepared to upgrade level of PPE if action limits triggered. • Keep eyewash and first aid kit in company vehicle.	• Bring victim to fresh air. • If victim vomits, is dizzy or groggy, seek medical attention. • Monitor for 48 hours. • Rinse eyes or throat with plenty of water, if irritated. • Flush all affected areas immediately with soap and water. • Drink plenty of water if ingested. • Do NOT induce vomiting.
Arsenic • **Poison – severe health effects.** • Combustible and produces toxic gases. • Human carcinogen.	• Redness, pain, diarrhea, nausea, vomiting, sore throat, irritated lungs, sensation of "pins and needles" in hands and feet, darkening of skin, unconsciousness, shortness of breath, and death.		• Bring victim to fresh air. • If not breathing, give artificial respiration, if certified. • Induce vomiting if swallowed and victim is conscious. • Flush irritated skin with soap and water for at least 15 minutes. • Flush eyes with water for at least 15 minutes. • Seek immediate medical attention.
Lead • Poison – severe health effects. • Combustible in powder form and produces toxic gases. • Suspected human carcinogen.	• Abdominal pain, spasms, nausea, vomiting, headache, muscle weakness, metallic taste, loss of appetite, anemia, insomnia, dizziness, visual disturbances, gray facial color, weakness in hands, wrists, and ankles, possible memory loss, damage to male reproductive system, hypertension, coma, death.		

Additional information is provided in Material Safety Data Sheets (MSDS) for each material as provided in **HASP Appendix A, Material Safety Data Sheets**. The MSDS should be referenced and included in the safety briefing prior to field activities.

3.2 EQUIPMENT/OPERATIONAL HAZARDS

This section addresses the hazards, prevention, and first aid procedures associated with the operation of heavy equipment used during field activities. The following hazards, while not intended to be all-inclusive, should represent the general hazards potentially existing during field activities.

TABLE 3-2
EQUIPMENT HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
• Organic vapors are incompatible with diesel-operated engines and can cause fire or explosion hazards.	• Effect of exposure to these hazards will be significant and immediate. • Examples include: loss of limbs, broken bones, fire, explosion, unconsciousness, coma or death, electrocution, significant or severe burns, etc.	• Monitor onsite ambient conditions to ensure concentrations are below action limits. • Avoid using volatile solvents as cleaning agents on or around ignition sources.	• Depending on the degree of exposure, medical assistance may be required. • Severe injuries (head injuries, unconsciousness, damage to limbs, extreme blood loss, etc.) require immediate medical attention. • For cases requiring medical assistance, reference Emergency Summary Information for location of nearest medical facility. • **If the need for medical assistance is questionable, contact the Office Manager, SS, or the CHSO prior to seeking medical attention.**
• Machinery parts are extremely hot during and following operation.		• Avoid contact with hot equipment parts. • Shut down equip. and remove keys when repairing, maintenancing or when equipment is at rest • Know the location of emergency shut off switches for all equipment.	
• Hydraulic, drilling fluid, and air systems operate under extreme pressures.			
• Moving or rotating equipment parts can cause severe bodily injuries.		• Block wheels/set hand brakes to prevent equip. from moving when at rest. • Know the location of equip. and maintain a min. distance of 25 ft from operational equip. • Do not wear loose clothing or jewelry. • Wear required PPE. • Use equip. in accordance with guidelines.	
• Contact with overhead or underground lines can cause electrocution, fires, etc.		• Contact State One Call and local utility companies to locatesubsurface lines. • Speak with clients, managers, etc. to request as-built drawings. • Be aware of all overhead or underground utilities and point out location to all equipment operators.	

3.3 TRENCH/EXCAVATION HAZARDS

Soil is an extremely heavy material, and may weigh more than 100 pounds per cubic foot (pcf). The human body cannot support such heavy loads without being injured. The primary hazard associated with a trench or excavation is a cave-in. For this reason, any trench/excavation at or greater than 4 feet in depth is required to have, at a minimum, one ladder present onsite to serve as a precautionary measure in the event of an emergency or cave-in. Ladders must be provided by subcontractors performing the field work. An additional significant hazard associated with excavations or horizontal trenches deals with contacting subsurface utility or product lines during digging. To better determine the location of existing subsurface structures, PPM requires that field personnel conduct the following steps:

Step 1: Complete the Subsurface Clearance Protocol Checklist in its entirety.

Step 2: Contact State One Call service and local utility companies as required prior to soil disturbances of any kind.

Step 3: Contact client and request as-built drawings.

Step 4: Ensure that all suspected underground utilities have been marked prior to start of project. Perform a complete visual site inspection of the entire facility noting any evidence of underground utility lines from facility to poles, potential service lines not routinely marked by local utility companies, etc.

Step 5: If suspected lines/utilities are not marked, contact State One Call and local companies again. No excavating/trenching should be conducted unless this agency and local companies are contacted a minimum of two times. Activities should be postponed.

Step 6: Upon second notification, if lines are still not marked, contact Office Manager and provide update.

Step 7: Office Manager must contact the client, store manager or someone with knowledge of site history. Efforts must be made to get person onsite during drilling. If this cannot be achieved, provide him/her with a copy of the site map and have him/her draw a map of existing or suspected underground structures.

Step 8: Once all efforts have been exhausted and documented, seek approval from Office Manager to continue if information was not obtained. If lines are marked and information was obtained, proceed with field work. If in doubt, contact the SS or CHSO for further guidance.

No trenching/excavating is permitted within three feet of suspected or known tanks, dispensers, product lines, and/or other subsurface utilities unless a PPM-approved instrument is utilized to remove all soil to a minimum depth of four feet in the area of the proposed trench/excavation.

OSHA requires that any trench or excavation with a depth of 4 feet or greater utilize engineering controls to prevent cave-ins. In addition, OSHA also requires that any trench or excavation with a depth of 20 feet or greater, utilize a qualified engineer to determine the appropriate engineering control. **When PPM does not incorporate these**

engineering controls, under no circumstances must any individual enter a trench/excavation with a depth of 4 feet or greater. In addition, no equipment requiring an individual to be placed on or inside the equipment during its operation will be permitted inside the trenched/excavated area. Soil packing and obtaining samples will be conducted through alternative methods.

The following hazards, while not intended to be all-inclusive, should represent the general hazards potentially existing when trenching/excavating.

TABLE 3-3
TRENCH/EXCAVATION HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
• Open excavations or trenches can be the source of slips and falls.	• Symptoms are generally not applicable to hazards associated with trenching and/or excavating activities. • Effect of exposure to these hazards will be significant and immediate. • Examples include: sprained muscles or broken bones, loss of limbs, fire, explosion, unconsciousness, coma or death.	• Cover all open trenches with plywood or barricade open trenches. • Provide method of ingress and egress to excavated area in the event of an emergency. • Inspect trench/ excav. daily to determine potential hazards resulting from changes in the structural integrity. • Keep all personnel and/or materials at least 2 feet from the edge of the excavation.	• Medical assistance may be required. • Severe injuries (head injuries, unconsciousness, damage to limbs, extreme blood loss, etc.) require immediate medical attention. • For cases requiring medical assistance, reference Emergency Summary Information for location of nearest medical facility. • **If the need for medical assistance is questionable, contact the Office Manager, SS, or the CHSO prior to seeking medical attention.**
• Open excavations can cave in if unsupported.			
• Water accumulation in the excavation is dangerous to the stability of the excavation walls.			
• Potential for flammable/ explosive or toxic environments due to the presence of hazardous substances.		• Provide air monitoring to determine unsafe working conditions. • Inspect trench/exc. daily to determine potential hazards.	
• Beware of falling loads of soil during loading and/or unloading operations.		• Prohibit personnel under loads handled by lifting/digging equip. • Know location of equip. at all times. • Maintain a min. distance of 25 ft from equip. during operation.	

Note: PPM requires the subcontractor performing the excavation to provide the cones, barricades, and/or caution tape necessary to identify the excavation and prevent public access to the area. In addition, the subcontractor is responsible for providing ladders or other means of egress in accordance with OSHA 29 CFR 1926.651(2)(c) as well as the plywood necessary to cover any open trenches during after-work hours.

3.4 ELECTRICAL HAZARDS

Overhead and underground utilities are primary sources of electrical hazards involving the operation of heavy equipment/machinery. Due to the nature of these hazards, PPM must contact the nearest One Call system or the local utility companies to have all underground utilities marked prior to field work. In addition, push probes and/or post-hole diggers must be utilized as a secondary means of determining underground utilities. PPM employees and subcontractors are instructed to identify all sources of overhead utility lines and maintain a distance of greater than 10 feet from any overhead electrical utility line or alternate source of power/electrical energy. The following hazards are associated with contact with exposed overhead or subsurface electrical lines:

TABLE 3-4
ELECTRICAL HAZARDS, PREVENTION AND CONTROL

<table>
<tr><th>HAZARDS</th><th>SYMPTOMS</th><th>PREVENTION</th><th>FIRST AID PROCEDURES</th></tr>
<tr><td>Falls</td><td>• Disorientation, unconsciousness, death.</td><td rowspan="4">• Contact appropriate State One Call system and local utility companies to determine underground utility lines.
• Utilize push probes and/or post-hole diggers in accordance with provisions in Section 3.4.
• Do not attempt to repair any electrical components if unfamiliar.
• Contact Project Manager with any hazards identified.</td><td>• Do not move victim, unless victim is in eminent danger.
• Administer CPR if necessary and certified.
• Seek medical attention immediately.</td></tr>
<tr><td>Burns</td><td rowspan="3">• Disorientation, arrhythmias (irregular heartbeat), pain and skin discoloration, severe burns (flash or flame burns), unconsciousness, death.</td><td rowspan="3">• Do not move victim, unless victim is in eminent danger.
• Attempt to put out any clothing on fire by rolling on grass or fire extinguisher.
• Remove burnt clothing as soon as possible.
• If skin appears charred black with dry white patched, do NOT remove clothing – you may be removing skin along with the clothing.
• Administer CPR if necessary and certified.
• Seek medical attention immediately.</td></tr>
<tr><td>Electric shock</td></tr>
<tr><td>Electrocution</td></tr>
</table>

Note: Proper Lockout/Tagout (LOTO) procedures should be referenced in PPM's written LOTO safety guidelines. Contact the CHSO if you are unfamiliar with these guidelines.

3.5 EXPLOSION HAZARDS

In addition to electrical lines, other utilities are located in the subsurface of the ground. For instance, subsurface gas lines present a major problem when digging. Due to the nature of these hazards, PPM must contact the nearest One Call system or the local utility companies to have all underground utilities marked prior to field work. In addition, push probes and/or post-hole diggers must be utilized as a secondary means of determining underground utilities. Gas contained in subsurface utility lines exists under pressure and can produce flammable environments. During a release, all field personnel should remain away from the release until the release has been eliminated.

TABLE 3-5
EXPLOSION HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
Explosion	• Severe burns (flash or flame burns), unconsciousness, death.	• Contact appropriate State One Call system and local utility companies to determine underground utility lines. • Utilize push probes and/or post-hole diggers in accordance with provisions in **Section 3.4**. • Do not attempt to repair any leaks from subsurface gas lines. • Contact Project Manager or local utility company with any hazards identified. • Contact local utility company to report leaks.	• Do not move victim, unless victim is in eminent danger. • Attempt to put out any clothing on fire by rolling on grass or fire extinguisher. • Remove burnt clothing as soon as possible. • If skin appears charred black with dry white patches, do NOT remove clothing – you may be removing skin along with the clothing. • Administer CPR if necessary and certified • Seek medical attention immediately.
Gas under pressure	• Cuts, abrasions, limb amputations.		• Do not move victim, unless victim is in eminent danger. • Administer CPR if necessary and certified. • Seek medical attention immediately.

3.6 TEMPERATURE HAZARDS

Heat stress is a major hazard, especially for workers wearing protective clothing. Depending on the ambient conditions and the work being performed, heat stress can occur very rapidly. Winters are generally mild in the south-southeast; however, on occasion, temperatures have been known to drop tremendously. The key to preventing excessive temperature stress is through education and regular monitoring. The following are hazards associated with exposure to heat or cold:

TABLE 3-6A
HEAT HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
Heat fatigue	• Impaired performance of skilled sensorimotor, mental or vigilance jobs.	• Schedule work for early morning or late evening avoiding the hottest times of the day. • Drink plenty of fluids throughout the day. • Take several breaks to cool off. • Adhere to acclimatization process (process of getting used to working in extreme temperatures). • Prepare water and/or Gatorade solutions prior to leaving the office to conduct field activities.	• Victim should be cooled until body core temperature lowers.
Heat rash	• Rash due to plugged sweat ducts, generally where clothing is restrictive.		• Use towels to dry skin – rash generally disappears with cool, dry skin.
Heat cramps	• Uncontrollable muscle spasms.		• Apply warm, moist heat and pressure to reduce pain. • Give electrolyte drinks and water by mouth, if conscious.
Heat exhaustion	• Pale, clammy skin, profuse perspiration, weakness, headache, and nausea.		• Move victim to cooler area. • Remove excess clothing. • Drink fluids. • Rest with feet raised. • If vomiting occurs, transport to hospital.
Heat stroke	• Pale, dry skin due to lack of perspiration, weakness, unconsciousness, coma.		• Decrease body temp with cool water until temp is stabilized. • Once temperature is stable, dry person off and seek medical attention immediately. • Do not leave victim unattended.

Caution: *Individuals with heart problems or on a "low sodium" diet who work in hot environments should consult a physician about what to do under these conditions. PPM provides coolers and chests for water and/or electrolytes (Gatorade), as well as Gatorade packets.*

TABLE 3-6B
COLD HAZARDS, PREVENTION AND CONTROL

HAZARDS	SYMPTOMS	PREVENTION	FIRST AID PROCEDURES
Frost nip	• Skin becomes very white and painful.	• Work in shifts limiting exposure time. • Wear layered clothing to hold in body heat. • Drink plenty of warm fluids. • Prepare warm liquids prior to leaving office to conduct field activities. • Remove any wet clothing as soon as possible and replace with warm, dry clothing.	• Remove to warmer environment. • Replenish body fluids with warm liquids. • Wrap victim with blankets until body core temperature begins to rise and stabilize.
Trenchfoot	• Damp, moistened skin begins swelling, tingling, and itching. • Blisters and ulcerations form on the feet and cause tissue death.		• Remove to warmer environment. • Keep skin dry by removing all moistened clothing. • Wrap victim with blankets until body core temperature begins to rise and stabilize. • Replenish body fluids with warm liquids. • Seek medical attention immediately.
Frostbite	• Point at which white, exposed skin begins to freeze.		• Remove to warmer environment. • Wrap victim with blankets until body core temperature begins to rise and stabilize. • **Replenish body fluids with warm liquids.** • Seek medical attention immediately.
Hypothermia	• Extreme frostbite. • Body core temperature drops to 85°F or lower. • Decreased blood pressure, pulse, and respiration, potential loss of consciousness and death.		

3.7 HIGH TRAFFIC AREAS

PPM has recognized high traffic areas as a hazard source. PPM defines a high traffic area as being any area in which an employee is exposed to moving vehicles. Areas surrounded by woods or surrounded by a fence will not be considered a high traffic area. PPM requires all employees to implement the following safety precautions in every situation whereby employees are exposed to moving vehicles.

- Wear reflective safety vests or reflective t-shirts.
- Utilize two people for every job, when allowable. One person will stand guard while the other performs the physical labor. When utilizing the "buddy system", at no time must one employee be left unprotected.
- Whenever the "buddy system" cannot be incorporated, utilization of a vehicle will serve as the primary form of protection against moving vehicles. Vehicles, regardless of company or personal vehicles, must be moved from location to location and strategically placed so as to form a barrier between worker and moving vehicles.
- Cones must be used in conjunction with the vehicle. Cones are to be placed around the immediate area surrounding the employee while performing any work-related task. Cones should be placed several feet away to provide some notice to employees should a moving vehicle hit them.
- For areas that are exposed to traffic but cannot accommodate a vehicle, cones will be placed surrounding the area in which the employee is working. Under no circumstance must cones not be utilized when exposed to traffic. Exceptions include grassy lots behind buildings and away from moving vehicles or fenced areas.

4.0 AIR MONITORING

PAHs associated with diesel fuels are not OSHA regulated and do not have assigned exposure limits. Arsenic and lead are heavy metals. Primary exposure to these metals would be through inhalation of dusts. To eliminate inhalation exposures, all soils must be wet prior to disturbance. Use of the wetting method will reduce the likelihood of dusty environments and potential for inhalation of these metals. PPM proposes onsite background and personnel monitoring to ensure worker exposures do not meet or exceed regulatory limits associated with arsenic (0.010 mg/m^3 TWA) and lead (0.05 mg/m^3 TWA).

5.0 PERSONAL PROTECTIVE EQUIPMENT

Wetting of soils does not eliminate the hazards posed by PAHs, arsenic and lead, but it does reduce the likelihood of exposure to acceptable means. However, as additional precautions, the following PPE is required:

- Regular clothing
- Steel-toed boots
- Hard hat
- Safety glasses
- Nitrile gloves (contact with soils)
- Ear plugs

PPE is mandatory at all times during the course of the project. Each project will be assigned, by PPM, a designated "break area". The break area must be located in a location in accordance with the following provisions:

- Break area must be located a minimum of 50 feet away from the work zone (even if this means the break area is on another property).
- Break area must be located in an area where ambient air concentrations are no greater than 0 ppm.
- Break area must be located out of the way of vehicular traffic and must not hinder any functions of other companies.

The break area can be identified by posting cones/barricades around a small, isolated area as well as identifying this area as the break area during the pre-work safety briefing. Only when inside the break area may PPE be downgraded or completely taken off. For projects that have a clearly defined work zone as indicated through the use of cones, barricades and caution tape, the same procedures still apply. Field workers found anywhere outside of the designated break area without the proper PPE will be subject to disciplinary action. Subcontractors found anywhere outside of the designated break area without the proper PPE will be asked to leave the site immediately. The break area for this project is defined as _____.

6.0 EMERGENCY CONTINGENCY PLAN

6.1 NOTIFICATION/REPORTING PROCEDURES

In the event of an emergency, the CHSO must be notified. All incidents must be verbally reported to the CHSO within 2 hours of the incident. In addition, the CHSO must be notified prior to seeking medical attention unless the situation is life-threatening.

6.2 EVACUATION PLAN

In accordance with this plan, the SSO must first identify a designated emergency meeting location prior to all field activities. This location should be determined based on its safety from the existing hazard verifying that it is upwind of any hazard source. Based on site conditions, PPM has selected _____ as the meeting area. Should conditions arise that warrant an evacuation, all field personnel and subcontractors will meet at this designated area for a preliminary head count to be conducted by the SSO. Further provisions will be discussed at that time. The following procedures will be implemented in the event of an evacuation:

- A signal consisting of one continuous blast of vehicle or air horn will be used.
- All personnel will immediately evacuate the area and report to the designated emergency meeting location for further instruction.

6.3 DECONTAMINATION

Once field personnel have relocated to the evacuation area designated in the previous section, the situation should be assessed to determine any further danger to employee health and safety. Once everyone is secure and safe, personnel exposed to any hazardous materials should be immediately decontaminated. This can be achieved by removing any contaminated clothing, washing all affected areas with soap and water. Anyone overexposed to inhalation hazards should be removed to fresh air immediately. Any overexposures should be immediately reported to the CHSO whereby medical assistance can be sought.

7.0 PRE-ENTRY SAFETY BRIEFING

This safety plan will be outlined during a pre-entry safety briefing. The safety briefing is held prior to the start of any field work associated with the course of this project. The SSO will review the provisions of this safety plan with all PPM personnel as well as subcontractors assigned to this project. Subcontractors are required to abide by PPM safety policies or else they will be asked to leave the premises until the procedures as outlined in this plan are implemented. Anyone receiving the safety briefing will be required to sign an acknowledgement form.

8.0 CONFINED SPACE

Confined space is defined by OSHA as any space that is “large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy.” In accordance with this definition, PPM will not be conducting any field-related task that can be defined as confined space entry. PPM personnel have not been adequately trained for confined space entry; therefore, in the event site conditions warrant this type of work, the project will be halted so that a qualified contractor can be used to perform this type of work.

HASP
APPENDIX A

MATERIAL SAFETY DATA SHEETS

HASP
APPENDIX B

UNDERGROUND UTILITIES LOCATION FORM

PPM CONSULTANTS, INC.
UNDERGROUND UTILITIES LOCATION FORM

STATE ONE CALL

AL (STATE-WIDE): 1-800-292-8525
AL (BIRMINGHAM): 1-800-252-4444
AR: 1-800-482-8998
FL: 1-800-432-4770
LA: 1-800-272-3020; ID # 29890
MS: 1-800-227-6477

CLIENT:_____

DATE CALLED:_____ **TIME CALLED:**_____

SITE:_____ **PROJECT #:**_____

PARISH/COUNTY:_____

ADDRESS:_____

_____

NEAREST INTERSECTION:_____

DATE TO BE MARKED:_____

COMPANIES CONTACTED:_____

_____

_____

_____

CALL MADE BY:_____

TICKET #:_____

TICKET EXPIRATION DATE:_____

ONE CALL STATE:_____

ONE CALL CONTACT:_____

HASP
APPENDIX C

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

Sections: 1. Safety / 2. Preparation Tasks / 3. Mark-Outs (Page 1 of 4)

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Manager and field worker meeting held to discuss site objectives and establish procedures.	☐	☐	☐	(Note : This is required for trenching/excavations and system installations – no exceptions!)
Worker and subcontractor preliminary safety briefing conducted (PPM conference room).	☐	☐	☐	
HASP is available and all contractors and subcontractors are familiar with it.	☐	☐	☐	
All applicable local, state and federal permits have been obtained.	☐	☐	☐	
Site access / permission has been secured.	☐	☐	☐	
Most recent as-built drawings and/or site plans requested from client/owner.	☐	☐	☐	
Most recent as-built drawings and/or site plans received from client/owner.	☐	☐	☐	
Reviewed site information to identify subsurface structures relevant to planned site activities.	☐	☐	☐	
State One Call notified within 48-hour reporting requirement.	☐	☐	☐	
Private utility companies not subscribing to One Call have been notified within 48-hour requirement.	☐	☐	☐	

Sections: 4. Initial Site Visit / 5. Selecting Ground Disturbance Locations

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Location of all aboveground indicators of subsurface utilities/services that may be leading to or from buildings within the work area has been identified.	☐	☐	☐	
Location of utility mark-outs by all utility companies previously contacted has been identified within required time period.	☐	☐	☐	
Location of all subsurface structure mark-outs by private mark-out company has been identified within required time period.	☐	☐	☐	
Location of area lights/signs and associated subsurface lines (electrical poles, etc.) identified.	☐	☐	☐	
Location of all phones and associated subsurface lines identified.	☐	☐	☐	
Location of all drains and associated interconnecting lines (sewer lines, etc.) identified.	☐	☐	☐	
Location of all electrical junction boxes and associated interconnecting lines identified.	☐	☐	☐	
Location of all natural gas meters or connections and all interconnecting lines identified.	☐	☐	☐	

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

Sections: 4. Initial Site Visit / 5. Selecting Ground Disturbance Locations (Page 2 of 4)

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Location of all other utilities/services (including fire hydrants, on/below grade electrical transformers, splice cages, sewer lines, pipeline markers, cable markers, valve box covers, clean-outs / traps, sprinkler systems, steam lines (including insulated tanks that may indicate steam lines), and cathodic protection on lines/tanks) identified.	☐	☐	☐	
Location of tank field, observation wells, dispensers, vent stacks, UST fill points, and emergency shutoff switch has been identified.	☐	☐	☐	
Orientation, arrangement, location, sizes, of tanks, STP and extractor covers identified. Burial depth of tank determined if relevant.	☐	☐	☐	
Location of paving scars indicative of product lines or other subsurface structures identified.	☐	☐	☐	
Presence of underground pipelines associated with pumps and pump galleries, manifolds, tank fields, compressors, production wells, loading racks and equipment identified.	☐	☐	☐	
Presence of underground instrumentation cable runs, PLCs, remote instrumentation (process analyzers, CEMs), lines leading from/to MOVs etc inspected / identified.	☐	☐	☐	
Presence and tracing of process/storm sewers identified / understood.	☐	☐	☐	
Location of other pertinent features that may be of relevance to work scope has been identified.	☐	☐	☐	
Existing remediation systems (above-ground components, well covers, new pavement/asphalt that may indicate subsurface piping, etc.) have been identified.	☐	☐	☐	
Clearance methods approved by Project Manager prior to start of the project.	☐	☐	☐	(Note: Provide name of Project Manager of this site.)

6. Subsurface Structure Delineation Activities

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
HASP has been reviewed with all site personnel and subcontractors involved with this project.	☐	☐	☐	
Subsurface Clearance Protocols have been reviewed with all site personnel and subcontractors involved with this project.	☐	☐	☐	
Site work permits have been obtained.	☐	☐	☐	
Work area is isolated using cones, barricades, caution tape, etc.	☐	☐	☐	

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

6. Subsurface Structure Delineation Activities

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Warning signs and other safety equipment is present onsite.	☐	☐	☐	
All emergency shut-off switches (product dispensers, utilities, etc.) have been located.	☐	☐	☐	

7. Additional Precautions for Trenches/Excavations

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
If conducting trenching/excavation activities at or greater than 4 feet in depth, Trench/Excavation Safety Checklist in the HASP has been completed daily prior to conducting field activities.	☐	☐	☐	
If conducting trenching/excavation activities at or greater than 4 feet in depth, field personnel **WERE NOT** permitted inside the trench/excavation.	☐	☐	☐	
If conducting trenching/excavation activities at or greater than 4 feet in depth, at least one ladder was present onsite for emergency purposes.	☐	☐	☐	
If conducting trenching/excavation activities at or greater than 4 feet in depth, tools/materials were stored and personnel remained at least 2 feet away from edge of excavation.	☐	☐	☐	
If conducting trenching/excavation activities at or greater than 4 feet, proper barriers were utilized. **Note methods used in Comments.**	☐	☐	☐	
If subsurface structures exposed, extra precautions have been taken to ensure structural integrity.	☐	☐	☐	

Other Comments / Findings:

Completed by: _____

Print Name

Signature: _____ _____

Name Date

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

8. Probing/Drilling Visual Inspection and Documentation

GEOPROBING	DRILLING	BOREHOLE ID	SECONDARY SUBSURFACE STRUCTURE LOCATION		VISUALLY WITNESSED			QUESTIONS	YES	NO	COMMENTS / EXPLANATIONS
			PUSH PROBE	POST-HOLE DIGGER	YES (INITIAL)	NO (INITIAL)	TIME				
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

8. Probing/Drilling Visual Inspection and Documentation (page _ of _)

GEOPROBING	DRILLING	BOREHOLE ID	SECONDARY SUBSURFACE STRUCTURE LOCATION		VISUALLY WITNESSED			QUESTIONS	YES	NO	COMMENTS / EXPLANATIONS
			PUSH PROBE	POST-HOLE DIGGER	YES (INITIAL)	NO (INITIAL)	TIME				
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	

PPM CONSULTANTS, INC.

SUBSURFACE CLEARANCE PROTOCOL CHECKLIST

Site Identification: _____

Project Number: _____

8. Probing/Drilling Visual Inspection and Documentation (page _ of _)

GEOPROBING	DRILLING	BOREHOLE ID	SECONDARY SUBSURFACE STRUCTURE LOCATION		VISUALLY WITNESSED			QUESTIONS	YES	NO	COMMENTS / EXPLANATIONS
			PUSH PROBE	POST-HOLE DIGGER	YES (INITIAL)	NO (INITIAL)	TIME				
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
☐	☐	_____	☐	☐	__	__	__	1. Is soil hard? 2. Was push probe or post-hole digger pounded into ground? 3. Was water applied? 4. Was water effective? 5. If no, what methods were used to get probe or post-hole digger through soil?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	

HASP
APPENDIX D

INCIDENT REPORT FORM

PPM CONSULTANTS, INC.
INCIDENT REPORT FORM

Date Reported: _____ Time Reported: _____

Spill Incident Release ☐ Citizen Complaint ☐ Emergency? ☐ Yes ☐ No Drill? ☐ Yes ☐ No

CALLER INFORMATION: Citizen ☐ Industry ☐ Anonymous Complaint ☐

Name/Company: _____ Title: _____

Address: _____

Is caller requesting a follow-up call? Yes ☐ No ☐ Date of Caller Contact: _____

Telephone No. _____ Parish (of occurrence): _____

SITE INFORMATION:

Facility ID No: _____

Alleged Violator (Company Name): _____ Agency Interest No: _____

Location Address: _____

Date of discharge if different from report: _____ Time discharge noticed: Began _____ Ended _____

Media Affected: Air ☐ Land ☐ Surface Water ☐ Ground Water ☐ Other ☐

If water affected, name of nearest water body (Basin/Subsegment): _____

If air affected, note wind direction and weather conditions (if provided): _____

DESCRIPTION OF RELEASE/SPILL/COMPLAINT:

Product/material released and quantity (reported): _____

Product/material released and quantity (actual): _____

Description of release/complaint: _____

How was spill contained? Offsite impact? _____

How was spill cleaned/remediated? _____

DIRECTIONS FOR REACHING THE SITE: _____

INVESTIGATOR'S COMMENTS: _____

HASP
APPENDIX E

INCIDENT LOG FORM

PPM CONSULTANTS, INC.
INCIDENT LOG

PPM Project #: _____ Page: _____
Client: _____
Site Name: _____
Site Address: _____
_____

Date of Incident: _____
Time of Incident: _____ ☐ A.M. ☐ P.M.
Time Work Started: _____ ☐ A.M. ☐ P.M. (Note: Time arrived at work on this day.)

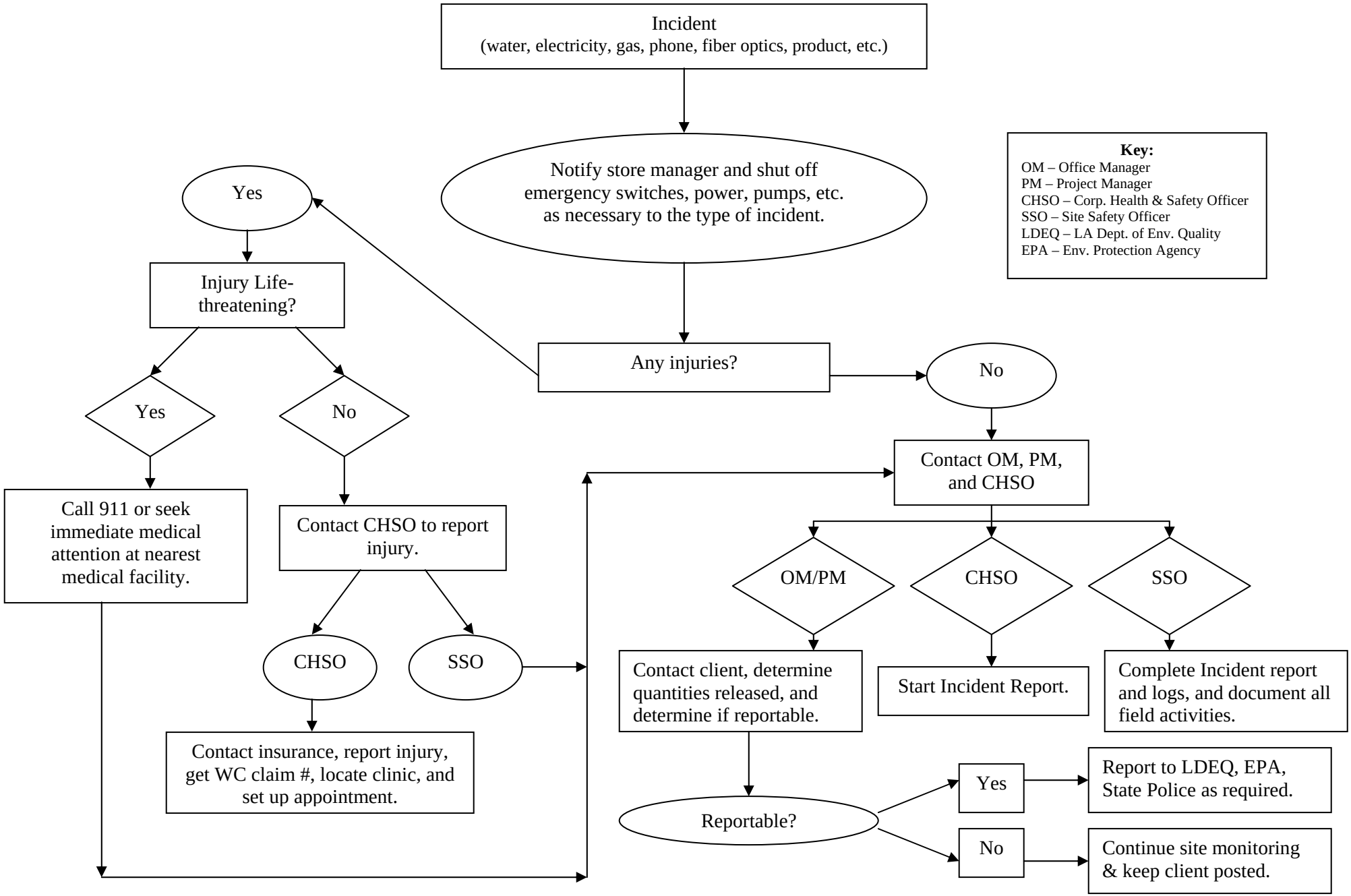
Time (Military)	Person Contacted (Name & Title/Position)	Description of Action Taken (Describe in detail what was said, observed, actions taken, etc.)

(Note: If more space is warranted, use another page of the Incident Log. Be sure to re-complete the top portion of the form providing client and site information and label as page 2, etc. as needed.)

HASP
APPENDIX F

INCIDENT REPORTING REQUIREMENTS

INCIDENT REPORTING REQUIREMENTS



HASP
APPENDIX G

TRENCH/EXCAVATION SAFETY CHECKLIST

PPM CONSULTANTS, INC.

TRENCH/EXCAVATION SAFETY CHECKLIST

Project #: _____
Client Name: _____
Site Name: _____
Date:

Weather Conditions: ☐ Raining ☐ Sunny ☐ Overcast
Excavation Depth: ☐ 0 – 3' ☐ 4 – 8' ☐ >8'
Soil Type: ☐ Sand ☐ Silt ☐ Clay ☐ Other
If other, specify:

General Inspection of the Job Site

Yes	No	N/A	
☐	☐	☐	Trenches/excavations, adjacent areas, and protective systems inspected by Competent Person daily, prior to work.
☐	☐	☐	Competent Person has the authority to remove workers from the trench/excavation immediately.
☐	☐	☐	Surface encumbrances supported or removed.
☐	☐	☐	Employees protected from loose rock or soil that could possibly be a hazard by falling or rolling into trench/excavation.
☐	☐	☐	Hard hats, steel-toed boots, reflective vests, safety glasses worn by all employees.
☐	☐	☐	Hard hats, steel-toed boots, reflective vests, safety glasses worn by all subcontractors.
☐	☐	☐	Materials and equipment set back a minimum of 2' from edge of trench/excavation.
☐	☐	☐	Barriers provided at all remote excavations or trenches.
☐	☐	☐	Employees prohibited from working or walking under suspended loads.
☐	☐	☐	Employees and contractors maintain 10' distance from operating equipment.

Utilities

Yes	No	N/A	
☐	☐	☐	State One Call contacted 48 hours prior to excavating/trenching.
☐	☐	☐	Local utility companies not contacted by One Call have been contacted by PPM field personnel.
☐	☐	☐	Evidence that utilities have been marked.
☐	☐	☐	If no, local utilities have been contacted again or authorization to proceed has been approved by Office Manager.
☐	☐	☐	Underground installations protected, supported, or removed while excavation/trench is open.

Means of Access and Egress

Yes	No	N/A	
☐	☐	☐	At least one ladder present onsite in case of a fall into the excavation/trench.
☐	☐	☐	Field personnel, contractors and regulatory officials kept a minimum of 2' from the edge of the trench/excavation.
☐	☐	☐	Equipment, tools or other objects kept a minimum of 2' from the edge of the trench/excavation.
☐	☐	☐	Work zone barricaded and coned to keep unauthorized personnel from entering the area.

****No one is permitted inside a trench or excavation 4' in depth or greater without the use of engineering controls. At this time, PPM Does not implement engineering controls; therefore, no person or equipment in which a person must be positioned on or inside the Equipment to operate it, is allowed inside the trench or excavation when at 4' or greater.**

Wet Conditions

Yes	No	N/A	
☐	☐	☐	Precautions taken to protect employees from accumulation of water.
☐	☐	☐	Precautions taken to protect employees and contractors from potential for cave-in.
☐	☐	☐	Inspection made after each rainstorm and prior to the continuation of work.
☐	☐	☐	Water removal equipment monitored by a Competent Person.
☐	☐	☐	Surface water controlled or diverted.
☐	☐	☐	Existing excavation/trench determined to be stable after the rainstorm or other inclement weather conditions.
☐	☐	☐	If no, work is ceased and site evacuated until structures are stabilized.
☐	☐	☐	Adjacent structures determined to be stable after the rainstorm or other inclement weather conditions.
☐	☐	☐	If no, work is ceased and site evacuated until structures are stabilized.

Hazardous Atmosphere

Yes	No	N/A	
☐	☐	☐	Atmosphere tested when there is a reasonable possibility of deficiency or build up of other hazardous gases that may expose an employee, contractor, or the general public to a hazard.
☐	☐	☐	Oxygen content is between 19.5% and 21%.
☐	☐	☐	Ventilation provided to prevent flammable gas from building >10% of the LEL of the gas.
☐	☐	☐	Routine ambient air monitoring is conducted to ensure that atmosphere remains safe.
☐	☐	☐	Employees and contractors have been informed of warning signals and evacuation location in the event the site becomes unsafe
☐	☐	☐	Employees trained on the use of PPE and emergency response equipment.

Print Name	Signature	Corporate HSO	Review Date

HASP
APPENDIX H

HEALTH AND SAFETY PLAN ACKNOWLEDGEMENT FORM

PPM CONSULTANTS, INC.
HEALTH AND SAFETY PLAN ACKNOWLEDGEMENT FORM

This HASP was derived specifically for the _____ facility and addresses hazards and procedures specific only to the above referenced site. I have read, understood, and agree to perform all field activities according to this HASP as discussed in the Personnel Health and Safety briefing.

Personnel Safety and Health Briefing Conducted By:

_____	_____	_____
_____	Signature	Date
Print Name and Title		

_____	_____	_____
Print Name	Signature	Date
_____	_____	_____
Print Name	Signature	Date
_____	_____	_____
Print Name	Signature	Date
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Print Name	Signature	Date
_____	_____	_____
Print Name	Signature	Date
_____	_____	_____
Print Name	Signature	Date
_____	_____	_____
Print Name	Signature	Date

This HASP was derived specifically for the _____ facility and addresses hazards and procedures specific only to the above referenced site. I have read, understood, and agree to perform all field activities according to this HASP as discussed in the Personnel Health and Safety briefing.

Print Name	Signature	Date
Print Name	Signature	Date
Print Name	Signature	Date
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Print Name	Signature	Date
Print Name	Signature	Date
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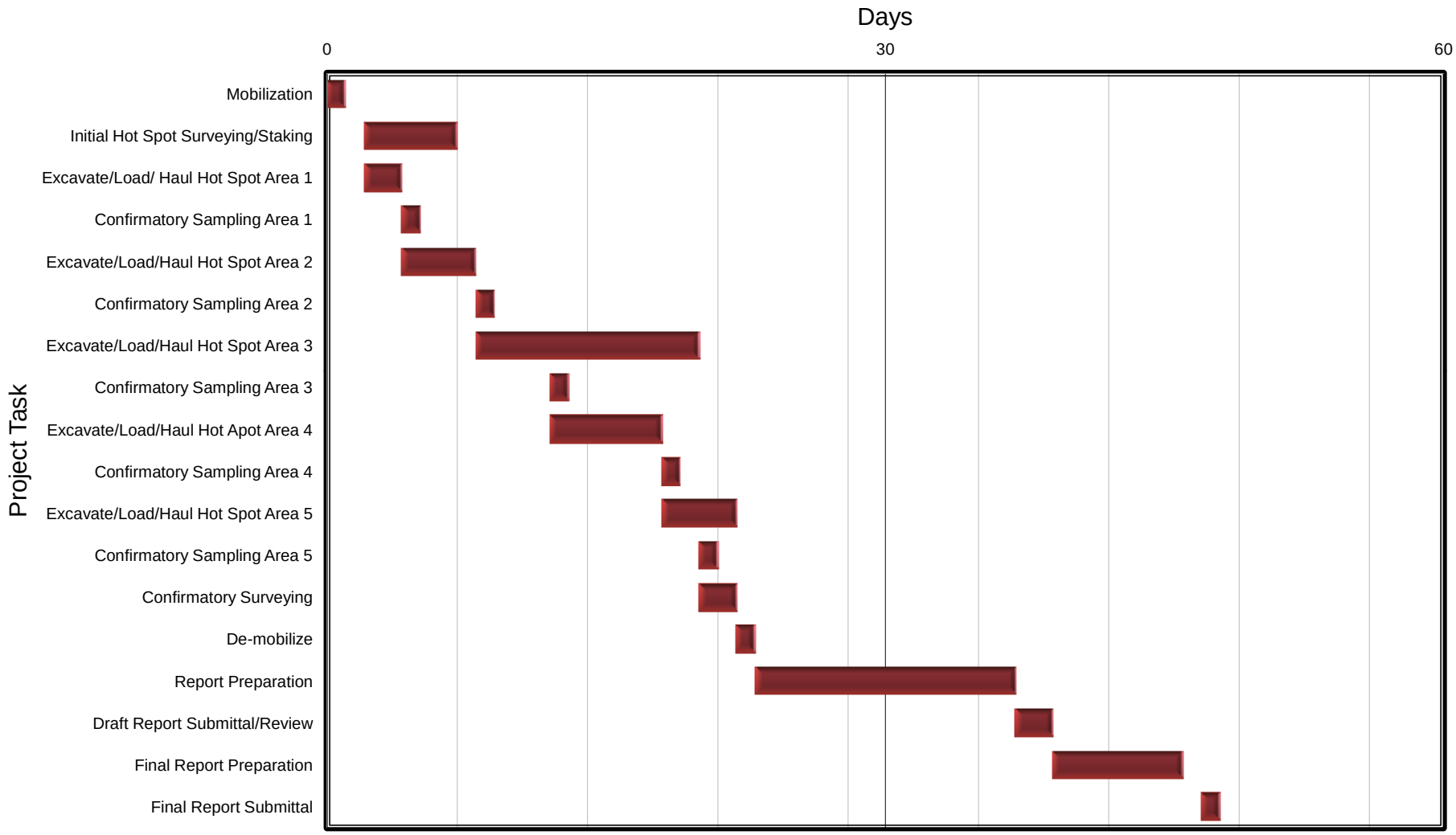
APPENDIX H – PROJECT IMPLEMENTATION SCHEDULE

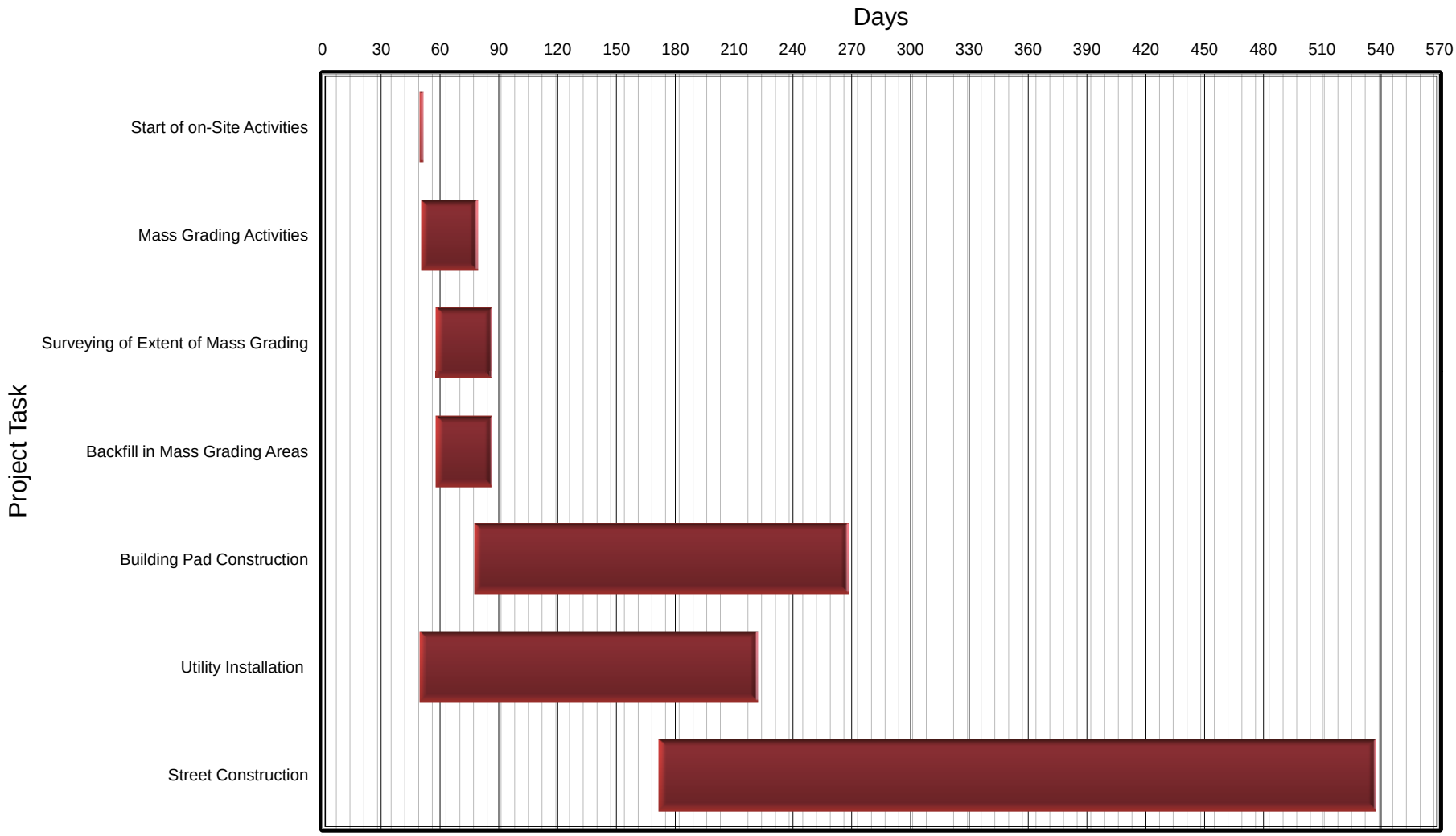
Proposed Project Schedule

'Hot Spot' Removal Phase
C.J. Peete Redevelopment
New Orleans, Louisiana



Proposed Project Schedule

'Mass Grading' Removal Phase

C.J. Peete Redevelopment

New Orleans, Louisiana