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WORK PLAN FOR MONITORING CONSTRUCTION ACTIVITIES FOR NEW BALDWIN
COMMUNITY PARK AT FORMER GRINDER LANDFILL NTC ORLANDO FL

NORDARSE & ASSOCIATES



Geotechnical, Environmental Consulting & Materials Engineering

BUREAU OF WASTE CLEANUP

AUG 12 2002

TECHNICAL REVIEW SECTION

**Work Plan for the Grinder Landfill Located
at the Former Orlando Naval Training Center
Orlando, Orange County, Florida**

BUILD ON OUR EXPERIENCE

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August 7, 2002
Project No. W02-E-005

BUREAU OF WASTE CLEANUP

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TECHNICAL REVIEW SECTION

Mr. Dave Grabka

Florida Department of Environmental Protection

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**Work Plan for Monitoring of Construction Activities
New Baldwin Community Park - Former Orlando Naval Training Center
Orlando, Orange County, Florida**

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Dear Mr. Grabka:

In accordance with the conditions outlined for the deed in Parcel No. 4 at the former Orlando Naval Training Center (NTC), please find attached a Work Plan for the monitoring of construction activities for the new Baldwin Community Park located at the site of the former Grinder Landfill. The attached Work Plan was prepared in accordance with the terms and conditions outlined under the deed for Parcel No. 4. This includes monitoring activities, waste discovery contingencies and the production of a Work Plan Completion Report.

Upon completion of your review, should you have any questions regarding the information attached, please do not hesitate to contact us.

Sincerely,

NODARSE & ASSOCIATES, INC.

David B. Twedell
Vice President/Principal Scientist

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1.0 INTRODUCTION

Nodarse & Associates, Inc. (N&A) under contract with the City of Orlando, has been tasked with the preparation of this Work Plan to monitor and observe construction activities associated with the development of Baldwin Community Park located at the former Orlando Naval Training Center (NTC). The preparation and ultimate submittal of this Work Plan to the Florida Department of Environmental Protection (FDEP) is required as a specific condition within the deed for Parcel No. 4 (former Grinder Landfill area) dated October 2, 1999 between the City of Orlando and Orlando NTC Partners. A copy of the execution version of the deed for Parcel No. 4 may be found in **Appendix A**.

As specified within the deed, "prior to undertaking any excavation, demolition and redevelopment activities in the landfill or landfill buffer areas, a Work Plan is to be prepared detailing such activities and including all appropriate soil borings and other testing." This Work Plan is to be submitted to the FDEP for review and approval regarding compliance with all applicable landfill requirements. Once construction activities have been completed within the landfill areas, a Work Plan Completion Report is to be submitted to the FDEP for review and approval documenting the compliance with all applicable landfill requirements.

This Work Plan contains the elements necessary for the monitoring of construction activities within the landfill area, while assuring maintenance of the integrity of the 24-inch cap currently documented over the landfill area. The plan covers the monitoring activities planned during construction including probing for waste materials that may be located outside the current delineated limits of the Grinder Landfill. The elements of this plan included a limited subsurface investigation, description of the construction activities to take place, and plans for the monitoring of the landfill cap integrity during construction activities.

1.1 Landfill Site History

According to Navy documents, the NTC was previously owned and operated by the U.S. Army Air Corp., which completed construction of the NTC as the Orlando Air Base in 1940. The U.S. Air Force assumed command of the NTC in 1947. The Navy commenced certain operations at the NTC in 1965, and was commissioned as the Naval Training Center in 1968. Historical information indicates that filling operations at the landfill commenced sometime after 1939, but before 1947. The landfill eventually encompassed an approximately 15-acre area that was closed in 1967, prior to the construction of barrack buildings within the area.

The volume of waste included in the landfill was estimated to be approximately 194,000 cubic yards. Documentation indicates that the types of wastes which were disposed of in the landfill are not known with certainty. However, based on historical information, it is suspected that the waste included film and photographic chemicals, paint thinners, garbage from mess hall activities, cardboard boxes, paper and plastic, biological wastes from hospital operations, landscaping and construction materials, and perchloroethylene still bottoms or residues from laundry operations at the NTC. In addition, there is information that historical practices at the landfill included open burning of waste doused with petroleum or other combustibles for training of the fire brigade, and a spraying of portions of the landfill with oils which contain PCBs for dust suppression. During Naval Training Center operations, portions of the landfill were also used as a parade ground. The approximate landfill boundary as defined by the Navy may be found in Exhibit E attached to the deed for Parcel No. 4 in **Appendix A**.

The Navy has not performed any drilling or excavation activities into the landfill to determine the nature or chemical composition or to estimate the volume of waste remaining on-site. In addition, the existing boundaries of the landfill are unclear. Navy documentation indicates that approximately one-third of the waste volumes originally disposed of within the landfill were excavated in order to permit the construction of barrack buildings in 1967. However, these documents do not make it clear whether any wastes were left in place beneath these structures.

2.0 LIMITED SUBSURFACE INVESTIGATION

In order to confirm the presence or absence of landfill waste material within the Grinder Landfill area, a series of 89 hand auger borings were completed around the perimeter of the landfill. The hand auger borings were installed around the perimeter of the Grinder Landfill as it was originally estimated by the U.S. Navy in previously issued reports. Each hand auger boring was advanced from land surface to a depth of approximately 10 feet below land surface. If waste was encountered, the hole was backfilled with clean fill and an additional boring performed moving outward from the central portion of the landfill. Once clean material was obtained with no waste, the borings were marked and the delineation continued. Generally, a dark brown to light brown fine sand was the predominate soil type encountered in most borings.

Where encountered, waste material including primarily consisted of pieces of metal, glass, plastic straws, cloth and other miscellaneous debris. In all cases, waste material was found to have a minimum of 24 inches of clean fill, and in most cases, up to 4 feet of clean fill above the waste material. Some of the fill material encountered above the waste had recently been deposited as part of previous landfill capping activities. The approximate locations of the borings installed maybe found on **Figure 1** in **Appendix B**. Also included is an estimated boundary of the landfill based upon the results of the boring activities.

Based upon the borings installed and previous historical documentation including review of historical aerial photographs and Navy documentation, it appears the waste material boundaries are considerably less than the overall boundaries of the Grinder Landfill Parcel No. 4 area. In addition, it appears that waste material migrated approximately 50 to 100 feet north of the Grinder Landfill boundary in areas previously undocumented. These areas have been better defined in the delineation shown on **Figure 1** in **Appendix B**.

3.0 PLANNED CONSTRUCTION ACTIVITIES

3.1 Introduction

The City of Orlando intends to redevelop the area within Parcel No. 4 including areas occupied by landfill debris material with a regional community park. Park facilities planned included:

- A "cornerstone" fountain
- Soccer fields
- Baseball fields
- Track and field facility
- Nature trail and walkways
- Restroom/concession facilities
- Other support facilities including maintenance

The area primarily underlined by the Grinder Landfill debris will be an area designated as a great common green. This area will be filled with some additional clean fill over the already 3 to 4 feet of clean fill on top of landfill debris material. A basic diagram of the planned facilities within Parcel No. 4 may be found in **Appendix C**.

3.2 Planned Subsurface Excavation Activities

As the construction plans currently indicate, no subsurface penetration of the original landfill cap will take place in areas where debris has currently been delineated. It is anticipated that this area will have a total of 3 to 4 feet of additional fill above and beyond the original 2 feet of landfill cap installed at the time the landfill was closed. Any subsurface penetrations in the area where waste is disposed, will take place in the additional fill above the original 2 foot cap. This will assure that no waste material will be penetrated at the time of construction activities within the area where landfill debris is known to exist. The penetrations planned for these areas will be shallow penetrations for landscape irrigation and shallow footers for lighting fixtures. All penetrations undertaken within the area of the landfill will be observed and documented as part of the final Work Plan Completion Report.

3.3 Excavations Outside Landfilled Areas

Because of the potential for other isolated areas of waste to exist within Parcel No. 4 outside of the known area of the Grinder Landfill, additional precautions will be utilized within these areas. Any excavation undertaken that penetrates original ground surface in areas outside of the Grinder Landfill area will be closely monitored. This monitoring

will include subsurface borings during construction activities to assure that no buried material outside the known boundaries of the Grinder Landfill exist in areas where excavation activities are to occur. Photographic documentation of construction activities, especially those involving subsurface excavation and penetration will be provided. All of the documentation will be summarized and provided in the Work Plan Completion Report to be generated once construction activities are completed.

3.4 Disposition of Subsurface Waste Material

If, during construction activities waste material is encountered outside the known areas of the Grinder Landfill, these materials will be covered and stockpiled, and a determination made as to the appropriate waste disposition. If less than 2 feet of cap material is found within these wastes, the Navy will be notified for potential disposition of the waste encountered. By performing a series of boring logs along anticipated excavation areas as outlined above, these areas may be avoided depending upon the extent and location of the waste encountered.

3.5 Restoration

During all construction activities as outlined above, restoration of any breach in the 24 inch cap in areas where waste is known to exist will be undertaken. This will include, if necessary, importing clean fill material to assure the 24 inch cap is maintained after post-demolition activities. These activities will be monitored and reported in the Work Plan Completion Report. However, it is not anticipated that this original 24 inch cap will be compromised.

4.0 MONITORING OF LANDFILL CAP INTEGRITY

4.1 Construction Monitoring

As previously discussed, all construction activities where penetration of natural ground surface is anticipated will be closely monitored. Borings will be performed along proposed subsurface penetrations for stormwater, wastewater and water utility trenches to assure that waste material does not exist along these areas. This action is taken due to the possibility of waste material outside the known limits of the Grinder Landfill existing. If waste material is encountered, alternative locations for subsurface utilities will be considered. If excavation of waste material to replace utilities is necessary, the waste will be stored and disposition determined based on the composition of the waste material. In all cases, a 24 inch soil material cap will be maintained over areas where waste is encountered. Photographic documentation of construction activities where subsurface penetrations are undertaken, will be provided. All of this documentation will be summarized and provided in the Work Plan Completion Report generated once construction activities are completed.

5.0 HEALTH AND SAFETY

As required under the deed for Parcel No. 4, site workers will adhere to requirements for hazardous waste site working under 29 CFR Part 1910 during all excavation activities where waste materials are known to exist at a depth of 12 inches or greater below grade.

As required under 29 CFR Part 1910, a Site Specific Health and Safety Plan will be developed prior to site excavation activities. This plan will outline emergency procedures for site workers to follow during construction activities. It should be noted that during construction activities where subsurface excavation of waste material may be necessary, ambient air monitoring for organic vapors will be undertaken as part of the worker safety program.

APPENDIX A

EXECUTED VERSION OF DEED FOR PARCEL NO. 4