

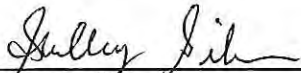
**Project Management Plan –
Revision 1**

Fort Stewart Military Reservation and Hunter
Army Airfield, Georgia

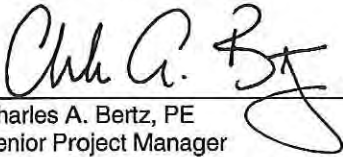
February 2008

Ft. Stewart & Hunter Army Airfield Project Management Plan Revision Log						
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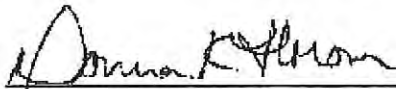
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**Project Management Plan –
Revision 1**

Fort Stewart Military Reservation
and Hunter Army Airfield, Georgia

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List of Acronyms and Abbreviations

ACA	Army Contracting Authority
ACL	Alternative Concentration Limit
AEC	Army Environmental Command
AST	Aboveground Storage Tank
BFF	Bulk Fuel Facility
BTEX	Benzene, toluene, ethylbenzene, xylene
bgs	Below Ground Surface
CAP	Corrective Action Plan
CLIN	Contract Line Item Number
COC	Constituent of Concern
COR	Contracting Officers Representative
CSM	Conceptual Site Model
CSR	Compliance Status Report
CVOC	Chlorinated volatile organic compound
DAACG	Departure and Arrival Control Group
DoD	Department of Defense
ERD	Enhanced reductive dechlorination
FS	Feasibility Study
Ft	Feet
FTA	Fire Training Area
GA EPD	Georgia Environmental Protection Division
HAAF	Hunter Army Airfield
HASP	Health and Safety Plan
HUBZone	Historically Underutilized Business Zone Empowerment
HSRP	Hazardous Site Response Program
HSWA	Hazardous and Solid Waste Amendments
IRP	Installation Restoration Program
IRZ	In situ reactive zones
ISCO	In situ chemical oxidation
LTM	Long Term Monitoring
LUCs	Land Use Controls
µg/L	Micrograms per liter

MBE	Minority Business Enterprise
MNA	Monitored Natural Attenuation
NFA	No Further Action
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PBA	Performance Based Acquisition
PCE	Perchloroethylene
PH	Pump House
PMP	Project Management Plan
POP	Period of Performance
PWS	Performance Work Statement
QA/QC	Quality Assurance/Quality Control
QCP	Quality Control Plan
QMP	Quality Management Plan
QASP	Quality Assurance Surveillance Plan
R & D	Research and Development
RA(O)	Remedial Action (Operations)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RIP	Remedy in Place
RRS	Risk Reduction Standards
SB/SDB	Small business/small disadvantaged business
SSHP	Site Safety and Health Plan
SWMU	Solid Waste Management Units
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethene
US EPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

1.0 Introduction and Background

This Project Management Plan (PMP) describes the project background, site background, general technical strategy, and the project execution plan for the Performance Based Acquisition (PBA) awarded to ARCADIS associated with the environmental restoration program at the Fort Stewart Military Reservation and Hunter Army Airfield (Fort Stewart/HAAF) in Georgia. Work will be conducted under contract W91ZLK-05-D-0015: Task 0003.

The Installation Restoration Program (IRP) activities at Fort Stewart/HAAF are performed in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984. The Georgia Environmental Protection Division (GA EPD) issued the original Hazardous Waste Management Permit No, HW-045(S) in August 1987. The permit was most recently reissued on August 14, 2007. This permit addresses the corrective action requirements for all Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at Fort Stewart with the exception of Site FST-035. Site FST-035 is currently being addressed under the Georgia Underground Storage Tank Management Program (USTMP). Because hazardous wastes generated at HAAF are transferred to the Fort Stewart Defense Reutilization Market Office (DRMO) yard, corrective action activities performed at HAAF are not regulated under RCRA. Corrective action activities performed at HAAF are executed under either the Georgia Hazardous Site Response Program (HSRP) or the Georgia USTMP.

1.1 Project Scope and History

This PMP supports the environmental restoration of Fort Stewart/HAAF sites identified in the PBA. The goal of this PBA is to meet the requirements for all sites, as defined in the contract and summarized by Table 1-1. The full scope of services for this contract is defined in the Contract W91ZLK-05-D-0015: Task 0003, attached as Appendix A. All work performed under this contract will be consistent with all applicable regulatory requirements, and relevant Department of Defense (DoD) and Army policy.

Table 1-1 Performance Requirements Summary

<i>Performance Objective</i>	<i>Performance Standards</i>
Approved Project Management Plan (PMP) and Quality Assurance Surveillance Plan (QASP): - Draft PMP and QASP within 30 days of Task Order award, - Final PMP and QASP within 30 days of receipt of COR comments on the drafts.	Army approval through the Contracting Officer's Representative (COR).
Achieve Remedy in Place (RIP) for the following sites by December 31, 2012: HAA-01: Fire Training Site Upon achievement of RIP, perform Remedial Action (Operations) (RA(O)) at the above sites for the duration of the Task Order or until achievement of Response Complete (RC), whichever comes first. Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval or concurrence (e.g., receipt of documentation confirming RIP/RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
Achieve Remedy in Place (RIP) at the following sites by March 31, 2010: HAA-09: Bulk Fuel Facility (excludes Release #2 within the Active Bulk Fuel Facility) Upon achievement of RIP, perform Remedial Action (Operations) (RA(O)) at the above sites for the duration of the Task Order or until achievement of Response Complete (RC), whichever comes first. Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval or concurrence (e.g., receipt of documentation confirming RIP/RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
Achieve Remedy in Place (RIP) at the following sites by September 30, 2010: HAA-13: Pump Houses #1 and #2 Upon achievement of RIP, perform Remedial Action (Operations) (RA(O)) at the above sites for the duration of the Task Order or until achievement of Response Complete (RC), whichever comes first. Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval or concurrence (e.g., receipt of documentation confirming RIP/RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).

<i>Performance Objective</i>	<i>Performance Standards</i>
Achieve Remedy in Place (RIP) for the following sites by March 31, 2012: HAA-15: MCA Barracks Site Upon achievement of RIP, perform Remedial Action (Operations) (RA(O)) at the above sites for the duration of the Task Order or until achievement of Response Complete (RC), whichever comes first. Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval or concurrence (e.g., receipt of documentation confirming RIP/RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
Achieve an approved Hunter Army Airfield installation-wide Corrective Action Plan (CAP) for groundwater by December 31, 2011. This includes, but is not limited to, the following sites: HAA-17: TCE Groundwater Contamination	Army approval through the COR and Regulator approval and concurrence (e.g., receipt of documentation confirming acceptance of CAP).
Achieve an approved Compliance Status Report (CSR) for the following site by March 31, 2011: HAA-18: HAAF Boundary Investigation (excludes off-post contamination located beyond the fenceline)	Army approval through the COR.
Perform RA(O) at the following sites for the duration of the Task Order or until achievement of RC, whichever comes first: FST-013: Fire Training Area at WAAF (SWMU 13) Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval (e.g., RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
Achieve RC at the following sites by June 30, 2011: FST-024: Old Paint Booth (SWMU 24B) Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval (e.g., receipt of documentation confirming RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).

<i>Performance Objective</i>	<i>Performance Standards</i>
Achieve RC at the following sites by September 30, 2015: FST-026: Former 724th Tanker Purge Station (SWMU 26) Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval (e.g., receipt of documentation confirming RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
Achieve RC at the following sites by March 31, 2012: FST-035: WAAF Bulk Fuel System (SWMU 35) Upon achievement of RC, perform any necessary Long-Term Management (LTM) at the above sites for the duration of the Task Order.	Army approval through the COR and Regulator approval or concurrence (e.g., receipt of documentation confirming RC; RA(O)/LTM exit or ramp down strategy; RA(O)/LTM reports incorporating requirements of the exit or ramp down strategy).
For all remedies, optimize capital and long-term costs.	Acceptance by the COR that the Contractor has demonstrated that the proposed remedy represents the lowest 30-year present worth cost to the Army, and is acceptable to the regulators.
Complete all Remedy reviews required for the sites identified above, for the duration of the Task Order. Correct any deficiencies noted in the Remedy reviews. Consolidate Remedy reviews into a single installation-wide review conducted at the conclusion of the Task Order.	Army approval through the COR and Regulator approval (e.g., formal documentation accepting the reviews and any corrections).

1.2 PMP Revisions

This PMP is intended to be a dynamic project planning and execution document, developed during initial task execution with input from the Army. The PMP will be updated to reflect major contract modifications as needed. The updates will be by section and an update may include only specific affected sections. To facilitate the management of updates, each page includes the date of publication and revision number in the lower right hand corner. Additionally a revision log will be included with each iteration as presented in Table 1-2.

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2.0 Site Background and Environmental Program Status

This section provides a brief overview of the site conditions, the nature and extent of contamination, and the regulatory history and status.

2.1 Site Location and History

Fort Stewart consists of 279,000 acres in the southeastern portion of Georgia near Hinesville. The installation is bisected by GA Highway 119 (N-S) and GA Highway 144 (E-W). Fort Stewart was originally established in June 1940 as an Antiaircraft Artillery Training Center to prepare artillery troops for overseas deployment. The training mission was expanded to include armor training in 1953. Fort Stewart provides training facilities for regular Army, U.S. Army Reserve and National Guard Units.

The HAAF comprises 5,400 acres in southwestern Savannah, GA. The airfield is bounded on the north by lightly populated areas, on the east and south by residential and light commercial areas, and on the west by the Little Ogeechee River. HAAF provides an aircraft support base for Fort Stewart. Fort Stewart became a Flight Training Center in 1966, and HAAF was acquired from the U.S. Air Force in 1967 to support the increased need for helicopter pilot training during the Vietnam Conflict.

The mission of the Fort Stewart/HAAF complex is to sustain a quality of life and installation support at the level necessary for division, non-divisional, tenant and reserve component units to accomplish their training mission.

2.2 Setting

Both Fort Stewart and HAAF share a similar coastal plain physiographic setting. Both installations are heavily wooded with numerous surface water drainages and creeks. HAAF is bounded on the west by the Little Ogeechee River, which receives surface water drainage from the site. At Fort Stewart, the surface drainage feeds both Canoochee River and Canoochee Creek, a tributary to Canoochee River.

2.3 Geology and Hydrogeology

The geology in the Fort Stewart/HAAF area is characterized by beach deposits overlying a regionally extensive confining unit known as the Hawthorne Group. The

Hawthorne Group consists of a pervasive, extensive phosphatic clay layer overlain with a calcareous sandstone, totaling approximately 100-200 ft thick. Beach deposits directly overlie the Hawthorne at both installations to approximately 60 ft bgs. These deposits consist of interbedded sands, silts and clays which become finer with depth. Some topographic relief at the site reflects subsurface dune deposits.

Two principal aquifer units exist at both installations: the surficial aquifer and the Floridian aquifer. The Floridian aquifer first occurs at a depth of approximately 200 ft below ground surface (bgs) at these two installations. The Floridian aquifer provides water for industrial and domestic use for each installation and for the City of Savannah, and data collected to date indicate it has not been impacted by surface activities. The surficial aquifer at Fort Stewart/HAAF typically occurs between 3 to 10 ft bgs, with total thickness approximately 50 feet. The aquifers are separated by the Hawthorne Group which serves as a confining layer at both installations and has prevented migration of contaminants from the surficial aquifer to the Floridian aquifer.

2.4 Conceptual Site Model

A site conceptual model (CSM) provides a critical framework for evaluating contaminated sites in the context of the historical operations and site characteristics that control contaminant distribution and migration. The goal of the CSM process is to establish the relationships between the source(s) of contamination, its current nature and extent, and its potential for future migration. The CSM process is essential for the design of effective investigation work plans, the evaluation of remedial options, and the preparation of detailed remedial system designs.

ARCADIS' experience suggests that the surficial water-bearing interbedded sand units are not aurally continuous, rather pinching off as a result of the original depositional environment. Therefore, because groundwater flows preferentially through these lenses of sand, their morphology and extent will be a controlling factor for contaminant migration and should be well-understood prior to remedy design. Additionally, shallow aquifer flow directions can be affected by large precipitation events due to preferential flow in dune-shaped sand deposits.

Surface water features typically control groundwater flow direction and velocity locally at Fort Stewart/HAAF, and shallow groundwater often discharges to surface water at both facilities. Understanding these local affects is a priority for remedy design, and surface water protection is an integral part of this proposed approach.

To facilitate meeting project objectives, ARCADIS will develop and update the conceptual site model using the results of additional investigations we propose to conduct in support of the Contract Performance Objectives.

2.5 Status of Environmental Restoration Program

The Installation Restoration Program (IRP) was initiated at Fort Stewart in 1980. Initial investigations identified 84 sites for inclusion in the IRP program; four sites are included in this PBA contract. They are primarily contaminated with petroleum hydrocarbons and related compounds due to the operation of motorpool fueling systems required to support unit activities, fire training activities, and fuel tanker purging operations.

The IRP program at HAAF originally identified 18 sites; six sites are covered in this Task Order. The majority of the sites are impacted with petroleum hydrocarbons due to operation of the extensive fueling systems required to support a Strategic Air Command Facility, with additional chlorinated solvent contamination due to historic maintenance practices.

Fort Stewart/HAAF filed a RCRA Part A permit application in July 1980, and a Part B application in 1983. The Georgia Environmental Protection Division (GA EPD) directed HAAF to withdraw their Part B permit application because the hazardous wastes generated at HAAF are transferred for storage at Fort Stewart. Fort Stewart currently operates under a RCRA Part B permit reissued 14 August 2007. HAAF is regulated by the GA EPD, under both HSRP and the USTMP.

3.0 Proposed General Technical Approach

Restoration efforts will utilize an approach that is consistent with the PBA objectives and decision documents for all sites at Fort Stewart/HAAF. The Decision Makers Forum (Section 5.1.1) will work together to implement and complete the contract required activities.

During the execution of these activities, and as part of the PBA for Fort Stewart/HAAF, the following additional requirements shall be followed:

1. Requirements of RCRA Permit No. HW-045(S).
2. Requirements of GA EPD, including HSRP and/or USTMP regulations;
3. Applicable or Relevant and Appropriate Requirements (ARARs);

The following sections describe the general approach anticipated for the remedies at Fort Stewart/HAAF. Specific details will be provided in the required regulatory documents to be prepared under this contract.

3.1 Site Wide Objectives

ARCADIS' contract goal is to achieve the project objectives defined in Table 1-1 for each of the PBA sites encompassed by this contract in a timely, and regulatory acceptable manner. The following sections provide an overview of the specific approaches and strategies to be used in achieving this objective.

3.2 Hunter Army Airfield

3.2.1 Former Fire Training Site (FTS) (HAA-01)

Status as of November 2008: GA EPD HSRP
Compliance Status Report Addendum approved
2005, original 2002

Contract Requirement: Achieve Remedy in Place by 31 December 2012

Background: HAA-01 is comprised of two areas, the Former Fire Training Area (FTA) and the Departure and Arrival Control Group (DAACG) area, originally identified as

HAA-16. The Former FTA encompasses a total area of 80,000 square feet, which formerly contained a 6,400 square-foot concrete fire training pad, 2 ASTs and associated piping. The site is bounded on the northwest and south by a series of drainage ditches, and on the east by airfield pavement. Surface drainage feeds the Springfield Canal, which eventually flows southwest into the Little Ogeechee River floodplain. Non-residential risk reduction standards have been established for this site under HSRP. Remedial activities to date in the immediate fire training area include structure removal, two soil excavations and limited free product recovery in well HMW-7. Groundwater in this area is impacted with benzene and naphthalene, with MNA the accepted remedy in place and COC concentrations attenuating.

The DAACG area, located in the northern portion of HAA-01, has been estimated to be approximately 300,000 square feet in area. The DAACG was identified during ongoing investigation activities at the FTA. A chlorinated solvent plume was identified in this area, to the north of the FTA. Currently, 1,2-DCE and vinyl chloride are the remaining COCs that exceed the risk reduction standards. In addition, asphalt and concrete debris are visible on the ground surface in certain areas of the site.

Approach to Realize Objective: The proposed approach will include an evaluation of site wide data in order to gain further understanding of the current site conditions and to identify areas where additional characterization is necessary to further refine the vertical and horizontal delineation of site COCs. In areas identified, additional delineation activities will be completed, which may include additional soil and groundwater investigations. Past data as well as any new data will be utilized to further refine the CSM to better understand the relationship between groundwater flow paths, surface water interactions, and the potential connections to the suspected former landfill is crucial to the design and implementation of a successful remedy and regulatory acceptance. Data collected will be utilized to prepare a revised CSR Report as well as a Corrective Action Plan. The potential selected remedy will minimize life-cycle costs by reducing hot spot concentrations, potentially through the use of biosparging technologies, thereby cost-effectively accelerating to response complete, while also being protective of the potential receptors (e.g., surface water). Specific activities to support this approach include:

- Evaluation of site wide data
- Potential supplemental investigations of soil and groundwater. Investigations may include vertical aquifer profiling to define potential target zones for biosparging. Activities to include clearing of vegetation for access.

- Pre-design activities, including field injection testing, to define the achievable radius of injection and operational parameters to optimize the design and operation of the full-scale remedy.
- Prepare separate but integrated CSR and CAP documents detailing source reduction through biosparging, followed by MNA for groundwater.
- Risk evaluation and refined site-specific cleanup standards for this combined area.

3.2.2 Bulk Fuel Facility (BFF) (HAA-9)

Status as of November 2008:	GA EPD USTMP Program (transitioning to AST Program)
	No regulatory documentation to date

Contract Requirement: Achieve Remedy in Place by 31 March 2010

Background: The BFF covers an area approximately 16.5 acres and formally contained 5 ASTs, 1 UST, associated piping and six pump houses. The UST and three of the ASTs have been removed. The Lamar Canal located to the south of the BFF locally controls shallow groundwater flow direction in this area. Remedial activities addressing numerous releases of various fuel types have been conducted since 1999. Release #1 (AST 7003) received an NFA from GA EPD in 2003. Release #2 (AST 7009) is excluded from this scope.

Release #3 (ASTs 7003) was recently discovered in 2006 in an inactive portion of the facility. The primary COC for Release #3 is free product in the diesel fuel range of hydrocarbons. Groundwater sampling in this area has not occurred since the NFA was granted for Release #1. No product recovery has occurred since August 2006. The goal of product recovery is to reduce the measured product thickness to less than 1/8".

Approach to Realize Objective: The cost-effective remedial approach for the long-term is continued free product removal and source material removal through soil excavation to the water table. Impacted soil excavation will include removal of the historic smear zone along the water table to remove any potential groundwater source material.

3.2.3 Pump House #1 (PH #1) (HAA-13)

Status as of November 2008: GA EPD USTMP Program
CAP submitted 2000; Addendum 2 approved
September, 2006

Contract Requirement: Achieve Remedy in Place by 30 September 2010

Background: Located along the east-west taxiway of HAAF, PH #1 includes 11 former USTs and associated piping. There is the potential for interconnection between surface water drainage features and groundwater in this area. Storm sewer drainage originates at this site and flows towards HAA-01 (DAACG area). There are two documented releases in this area, with a joint CAP (August, 2000). Release #1 is an area of soil and groundwater contamination (free product) near the DAACG facility and former fuel pits 1A and 1B. This area is covered almost entirely by tarmac, just north of the active taxiway. Vacuum trucks are periodically used to remove free product from wells located on the tarmac. Low levels of dissolved-phase benzene associated with the free product plume have been detected in groundwater at this site.

Release #2 impacted both soil and groundwater and is located near Building 8060 and former fuel pits 1C and 1D, south of the active taxiway. BTEX is associated with the free product plume. Concentrations of COCs have not appreciably declined with time, indicating the potential presence of a continuing source. Impacted groundwater travels south of the suspected source area and appears to be discharging to a surface water drainage feature.

ACLs for site contamination have been proposed for groundwater based on In-Stream Water Quality Standards.

Approach to Realize Objective: Remedy design is complicated by the presence of free product and groundwater plumes that extend under the active tarmac in both release areas. The ARCADIS approach is designed to minimize impacts to operations in this area by utilizing rapid in situ treatment methods to aggressively reduce source mass, followed by non-intrusive MNA. At Release #1, an aerobic IRZ using a dilute hydrogen peroxide solution is proposed for source mass reduction based on the lower level concentrations of COCs. ARCADIS will use a mobile injection system for batch injections into permanently-installed wells in order to greatly reduce the need for above-grade infrastructure at the highly active areas along the flight line. This approach

minimizes potential impacts to site operations while providing a highly-efficient means of delivering excess oxygen to the subsurface in the hot spot area.

At Release#2, ARCADIS will maintain protectiveness of the surface water with a series of biosparge curtains to reduce COCs in groundwater. Due to the size of this plume and the need for hot spot treatment to reduce overall life-cycle costs, the approach at Release #2 assumes installation of more traditional biosparge equipment, a very cost-effective means of supplying oxygen, in the grassy areas away from the tarmac. Furthermore, we may use innovative well installation techniques such as horizontal drilling to advance injection wells under the concrete/tarmac to minimize operational impacts and limit invasive work within the runway itself. The biosparge system will be operated in laterals cutting off the benzene plume until concentrations reach appropriate levels to transition to an MNA approach to minimize RA(O) costs. With the current understanding of groundwater flow in this area, coupled with the selected remedy, we anticipate that the proposed approach will greatly reduce the life-cycle costs through rapid treatment and will accelerate the schedule for eventually achieving RC at this site.

3.2.4 Pump House #2 (PH #2) (HAA-13)

Status as of November 2008: **GA EPD UST Program
CAP approved 2000**

Contract Requirement: Achieve Remedy in Place by 30 September 2010

Background: Former PH#2 is a grassy area between a runway and a taxiway. All structures associated with the pump house (including 10 USTs) have been removed. A plume consisting primarily of benzene and PAHs was identified in previous investigations. Substantial remedial activities have been conducted at Pump House #2 to date, including six-phase heating, which removed approximately 44,000 lbs of VOCs, and ORC injections, which were determined to be "not successful". The source of groundwater impacts has been identified and a soil excavation to remove remaining source material was performed in June 2008. Along with the past remedial activities, the more recent COC concentrations in groundwater may be affected by the current drought conditions.

Approach to Realize Objective: Assuming contributing sources have been removed through the previous and currently planned activities, concentrations of COCs will likely decrease with time due to natural attenuation. Previously unsuccessful attempts at in

situ bioremediation were likely attributed to insufficient delivery of the reagents in the subsurface. Therefore, the proposed approach is to accelerate attenuation if warranted through in situ chemical oxidation (ISCO) via direct injection of an oxidant into the hotspot areas. We will perform pre-design injection tests to confirm the hydrogeologic conditions in the subsurface at this site and to collect the necessary design information to optimize delivery of the oxidant. MNA will be instituted, as necessary, following in situ treatment to minimize lifecycle costs.

3.2.5 MCA Barracks (HAA-15)

Status as of November 2008: GA EPD HSRP (listed on GA EPD Hazardous Site Inventory)
CSR Work plan submitted to GA EPD but rejected

Contract Requirement: Achieve Remedy in Place by 30 March 2012

Background: A TCE plume is present in the surficial aquifer beneath the MCA Barracks area. The highest concentrations of TCE are found in the deeper zones of this aquifer, from approximately 30 to 50 feet bgs. One likely potential source (a grease trap) was partially removed in 2007; however, no surrounding soils were removed or confirmatory samples collected. An enhanced reductive dechlorination (ERD) pilot study was initiated in 2006, with mixed results. TCE concentrations continue to exceed Type 2 RRS and require further remediation. No contaminants have been detected at levels requiring remedial action in the pond to the west based on surface water and sediment results.

The presence of numerous existing buildings and potential active construction areas across this site strongly influence remedy design and implementation considerations. The proposed remedy will work within the existing infrastructure and build upon the existing ERD testing, while refining the current groundwater delineation to address data gaps associated with the vertical extent and distribution of CVOC impacts.

Approach to Realize Objective: Our approach is based on our experience with bioremediation and the development of IRZs (see Section 1.3.1). Although the ERD method used by previous consultants was deemed only marginally successful, ARCADIS believes inadequate reagent and carbon distribution were likely responsible

for the poor results. Additionally, we believe that expensive microbial cultures are not needed in the injection solutions, simply based on the fact that the site data indicate dechlorination was occurring naturally before the ERD testing was initiated. As such, ARCADIS proposes the following specific remedial activities:

- Vertical aquifer profiling above the confining Hawthorne Unit, to define the vertical and horizontal extent of TCE impacts in the deeper zone and allow completion of the CSR. The highest TCE concentrations at this site were observed in deep monitoring wells above the clay interface.
- Submit CAP based on an optimized ERD system to treat groundwater; soil excavation to remove residual source material from the area surrounding the former grease trap; and targeted chemical oxidation, as necessary, in the deep groundwater zone to address the TCE hot spot; and, obtain regulatory approval for proposed approach.
- Design and implement an IRZ to stimulate enhanced reductive dechlorination of TCE and its degradation products.
- Conduct a pre-design pilot testing using a tracer test to determine aquifer-specific hydraulic characteristics which will directly impact substrate distribution and ultimately remedy performance. The remedy will include injection into each distinct depth zone (shallow, intermediate and deep), at appropriate pressures, flows, and volumes to optimize substrate distribution.
- Following IRZ development and source mass removal demonstrated through remedial monitoring, implement a more cost-effective passive remedy such as MNA until standards are met or the end of POP.
- Conduct hot spot ISCO, as necessary, to expedite treatment of TCE in the deep groundwater zone immediately above the Hawthorne Unit.

The proposed controlled IRZ remedy will be implemented to achieve degradation of parent and daughter products to levels below MCLs while minimizing the accumulation of vinyl chloride, which may present vapor intrusion issues. ARCADIS has successfully demonstrated the ability to control in situ dechlorination processes through amendment manipulation. At Fort Stewart/HAAF, this approach will have the added benefit of minimizing the vapor intrusion risk.

3.2.6 TCE Contamination (HAA-17)

Status as of November 2008: GA EPD HSRP
Currently in investigation phase

Contract Requirement: Complete approved site-wide groundwater CAP by 31 December 2011

Background: TCE and other chlorinated constituents have been identified in groundwater both upgradient and in the area of former USTs 25/26. COCs have been detected at varying depths in the saturated shallow aquifer, to approximately 50 feet bgs. Existing data indicate random detections of COCs in the area upgradient of former USTs 25/26 as opposed to a defined plume, therefore the source and extent of impacts is currently under investigation. USTs 25 and 26 have received NFA for petroleum impacts.

Approach to Realize Objective: Complete a site-wide groundwater CAP for the chlorinated solvents plume by performing the following:

- Complete investigation of five potential source areas through additional soils sampling and vertical aquifer profiling.
- Install additional monitor wells at each potential source location to evaluate TCE distribution.
- Submit and obtain regulatory approval of compliance status report, including a robust conceptual site model characterizing the site conditions and transport mechanisms.
- Submit and obtain regulatory approval of CAP. The CAP will consider other remedial activities at HAAF to ensure an integrated remediation approach for the entire facility.

3.2.7 Boundary Investigation (HAA-18)

Status as of November 2008: Regulatory oversight unassigned at this time
Preliminary Investigation completed January 2008

Contract Requirement: Complete approved Compliance Status Report by 31 March 2011

Background: The North Perimeter Road investigation was conducted in a formerly wooded area along Perimeter Road, north of the MCA barracks and just south of the railroad tracks adjacent to HAAF. No specific source areas have been identified based on the three phases of investigation conducted to date. Benzene, naphthalene and other VOCs were detected in groundwater at low levels at two permanent wells and two temporary (DPT) locations. Benzene was only detected at depth (25-39 feet bgs). This area is currently still in the investigation phase and no remedial actions have been completed. Additional on-site groundwater investigation, particularly in the downgradient (off-site) direction, is planned.

Approach to Realize Objective: Specific activities to complete a CSR for HAA-18 include:

- Assist the Army in negotiating for regulatory oversight.
- Complete delineation of benzene/naphthalene in surficial aquifer.
- Install new monitor wells, if warranted, and sampling of new and existing monitor wells.
- Determine groundwater flow gradients.

3.3 Fort Stewart

3.3.1 Fire Training Area (FTA) at WAAF (FST-013)

Status as of November 2008: Regulated under RCRA
Corrective Action Plan approved 2006;
Progress Report submitted 2007; currently in
RA(O)

Contract Requirement: Perform RA(O) until Response Complete or POP

Background: The FTA contained a 5000 square-foot bermed concrete pad, an oil/water separator, sump, a JP-4 AST, and associated underground piping. All structures were removed in 1997, followed by two soil removal actions. MNA was

selected as the groundwater remedy in 2006 to address dissolved constituents, with an estimated 5-year remedy timeframe. The only remaining groundwater contaminant currently above risk-based standard is benzene. Additional activities recommended in the CAP progress report (2007) include soil excavation, possible ORC injections to groundwater, and expansion of the monitoring network. The source of groundwater impacts has been identified and a soil excavation to remove remaining source material was completed May 2008.

Approach to Realize Objective: Since the source of benzene to groundwater was recently removed, achieving response complete is probable at this site. Proposed activities include continued groundwater monitoring to evaluate MNA, followed by a petition for regulatory response complete when benzene levels are consistently below standards. If necessary, in situ chemical oxidation (ISCO) may be implemented as a polishing step to reduce hot spot benzene concentrations in groundwater. Focused hot spot ISCO would greatly reduce the potential risk of rebound, while further reducing the life-cycle costs associated with longer-term monitoring of dissolved benzene concentrations marginally above the cleanup goal by achieving RC for this site.

3.3.2 Old Paint Booth (FST-024B)

Status as of November 2008: Regulated under RCRA
CAP approved 2002; CAP Progress Report
submitted 2005

Contract Requirement: Achieve Response Complete by 30 June 2011

Background: The operational history for the former paint booth building is vague, but it appears the building was recently used for equipment repair and storage until 2005/06, when it was demolished. Surface soils outside the former building are impacted by polynuclear aromatic hydrocarbons (PAHs), and groundwater in the area is impacted with various contaminants below action levels. The CAP Progress report prepared in 2005 recommended capping the impacted soils and discontinuing groundwater monitoring. Soil sampling to evaluate natural degradation of PAHs was to occur in 2008. The site is currently a vehicle parking lot.

Approach to Realize Objective: The ARCADIS approach will include additional sampling (if warranted) to evaluate PAH degradation and risk assessment of PAHs in soil similar to the approach at HAA-12. We will submit a request for site closure with existing LUCs to the GA EPD. If necessary, we will perform a focused soil excavation.

3.3.3 Former 724th Tanker Purge Station (FST-026)

Status as of November 2008: Regulated under RCRA
CAP approved 2000

Contract Requirement: Achieve Response Complete by 30 September 2015

Background: After 14 years of operation, this facility was dismantled, which included the removal of an AST, UST and associated underground infrastructure. Remedial activities to address fuel-related compounds include two impacted soil excavations and bioremediation of groundwater (PHOster II). Additional investigations were required as the plume was determined to be larger than expected after initiating the in situ remedy. Currently, only benzene exceeds remedial levels in groundwater (10 wells); however, concentrations are increasing in source area wells. Although a CAP addendum has been prepared, it has not been submitted and no active remediation is currently being performed. Two plumes (one 25-30 feet bgs, one 0-15 feet bgs) have been delineated. The area downgradient of the identified source area is heavily wooded.

Approach to Realize Objective: ARCADIS will first develop a site-specific conceptual model which explains the presence and movement of benzene in the surficial aquifer system. A better understanding of site hydraulics will lead to a more efficient remedial design that accelerates the site to closure. The remedy will include source removal through soil excavation and aerobic degradation of benzene through biosparging that will be optimized through implementation of an injection test to determine the most efficient means of delivering excess oxygen to the subsurface. We will coordinate installation of the biosparging system at this site with the planned systems at HAAF. Specific activities to support this approach include:

- Segregate clean overburden followed by deeper, focused soil excavation to remove the continuing source, including the smear zone.
- Install biosparging system to include both source and downgradient treatment.

3.3.4 WAAF Bulk Fuel System (FST-035)

Status as of November 2008: GA EPD UST Program (2006)
CAP approved 2002

Contract Requirement: Achieve Response Complete by 31 March 2012

Background: The site contained two USTs which were originally abandoned in place (1988) then later removed (2006). Additionally, two ASTs and associated impacted soil were removed (2000). Groundwater was impacted with free product, BTEX and other associated compounds. Remedial actions have included an ISCO pilot study (1998) and a bioventing pilot study (2001). The pilot studies bifurcated the plume into northern and southern lobes. More recent activities include Petrox™ injections which were not successful in soils due to high clay content, and moderately successful in groundwater (initially reduced concentrations, but rebound occurred). The latest activities involved installation of an injection gallery along the south edge of the north plume to create a "barrier" to plume migration. A system is in place to allow quarterly injections of Petrox™ in the injection gallery.

Approach to Realize Objective: Concentrations of COCs in the southern plume are currently below site-specific remedial levels. Therefore, the remedy will consist of MNA until closure standards are demonstrated. Concentrations of COCs will be expected to naturally attenuate in the northern plume following focused source removal to cost-effectively address residual free product in the aquifer. This approach also minimizes life-cycle costs as it supports a passive groundwater treatment remedy. Specific activities to support this approach may include:

- Deep, focused soil excavation to remove continuing groundwater sources, with application of an extended oxygen source in the excavation along with the backfill to enhance aerobic degradation
- Risk-based analysis to achieve regulatory acceptance of Alternate Concentration Limits (ACLs).
- MNA until clean-up levels are achieved.

3.4 Exit and Ramp-Down Strategy Considerations and Impact on Life-Cycle Savings

ARCADIS is approaching this project by aggressively closing sites or striving to drive them as far as possible toward RC within the contract period. Three sites (FST-24, FST-26, and FST-35) will be closed within the contract period as required by the PWS. An additional site, FST-013, will be closed as discussed in the following paragraph. However, the remediation and regulatory exit strategies presented for each of the remaining sites have been crafted with the ultimate goal of RC in mind, while balancing the minimization of both the Army's cost within the contract period and the overall environmental life-cycle costs over the next 30 years. The cost of more aggressive

treatment is not likely to yield commensurate reduction in time to closure and less treatment would likely not meet the threshold of technical acceptability.

Although the performance goal for FST-013 is RA(O), ARCADIS believes it is entirely possible to drive this site to closure within the POP. The proposed RA(O) activities are therefore designed to achieve response complete. Additionally, although the performance goals for HAA-17 and HAA-18 are not RC but rather regulatory acceptance of a CAP and CSR, respectively, our approach is focused on minimizing the scope of post-contract activities as outlined in the proposed remedies presented herein. By coordinating first with the GA EDP to assure all technical aspects for these investigations are addressed, ARCADIS will maximize the probability of CAP and CSR acceptance. Additionally, where possible, we will collect the characterization information not only necessary to complete delineation, but also to select and evaluate remedial options which will reduce the scope of future activities. For example, the HAA-17 and HAA-18 investigations will be structured to provide sufficient data to support an NFA petition, an MNA remedy or possibly minimal source reduction with LUCs if appropriate. If protection of human health and the environment can be demonstrated, these options limit future activities to routine inspections and biennial certifications where warranted (such as LUC certifications). If active remediation is anticipated, data will be collected to refine the conceptual approaches for these systems to better refine and control overall life-cycle costs.

Following achievement of RIP for the remaining Fort Stewart/HAAF sites, LTM plans will be developed to provide for a ramp-down of activities with time. Specific triggers will be developed which will cause either cessation of certain monitoring activities and/or abandonment of monitor wells. The triggers will be tied to specific COCs and will be negotiated with regulators during initial scoping meetings.

Other examples of anticipated actions to reduce overall life-cycle costs at all sites include:

- Presenting site-specific objectives and exit or ramp-down strategies to the regulators at the initial kick-off/Tier I partnering meeting. Work toward a consensus of these plans and objectives with the partnering team and then monitor progress against such a baseline plan.
- Developing and implementing common and efficient facility-wide work plans to ensure facility-wide compliance with all regulations, commitments and compliance

obligations. Generic and dynamic work plans will be prepared to streamline regulatory approvals where appropriate and expedite field activities.

- Designing additional soil characterization work to qualify as pre-excavation confirmatory sampling, minimizing costs in an effort to limit the need for post-excavation sampling and multiple rounds of excavations.
- Using risk-based screening levels to limit the volume of soils to be addressed through active remediation (excavation). When required, conducting focused soil removal actions, in accordance with risk-based cleanup criteria to reduce long-term care requirements and mitigate any future human health or ecological risk exposures.
- Targeting active remediation for residual source areas to support passive groundwater remedies which limit monitoring to highly-focused, reduced programs that are ultimately geared toward achieving eventual site closure.
- Using LUCs where possible. LUCs are integral to the development of risk-based remediation goals.
- Developing LTM plans which optimize monitoring programs, including sampling frequency and constituents, and include well abandonment and/or replacement.

4.0 Risk Management Plan

Risks associated with the successful completion of the PBA at Fort Stewart/HAAF will be proactively managed by the ARCADIS team, in conjunction with the Decision Makers Forum. Table 4-1 lists the primary risks associated with successful implementation of the remedy at Fort Stewart/HAAF and the planned controlling actions.

Table 4-1 Risk Management Matrix

Risk Identification	Nature of Risk	Mitigation
1. Treatment Technology Selection Numerous technologies and/or containment techniques are potentially applicable to the diverse sites at Fort Stewart/HAAF. Correct technology selection is key to successful outcomes at each of these sites.	Technical The following risks are applicable to this element: • Failure to understand the hydrogeology (fate and transport) at the sites. • Failure to understand the contaminant and natural chemistries • Failure to apply the appropriate remedy suitable to the fate and transport and site chemistries • All activities and selected remedial actions must comply with the mission of Fort Stewart/HAAF.	Technical R&D ARCADIS has the appropriate personnel and resources to assess and control these risks through technical strength. Integrated conceptual site models and numerical models will be used to quantify fate and transport. Chemistries will be fully assessed and remedial designs reviewed by senior experts. ARCADIS will review and abide by all Fort Stewart and HAAF guidelines to insure all activities are compliant with the mission.
2. Source Identification/Plume Delineation At several sites, the sources of contaminants is not fully defined and the extent of plumes is not well understood.	Technical Continuing sources and inadequate plume delineation can negatively affect remedy performance and increase scope of investigations.	Risk Avoidance Perform review of full site database to understand all available data and determine data gaps related to source locations. Perform additional site investigations to identify sources for removal or treatment and understand extent of plume.

Risk Identification	Nature of Risk	Mitigation
3. Site Access	Technical HAAF is an active airfield, with areas requiring remediation located beneath active tarmacs. The MCA Barracks area is undergoing active construction of new barracks, and access is also limited by existing buildings	Risk Acceptance To manage this risk, ARCADIS will - Utilize mobile/temporary remedial infrastructure - Install permanent infrastructure below grade - Schedule remedial activities during low-usage times - Design remedies around existing structures - Utilize innovative techniques such as horizontal drilling to access areas beneath the tarmac
4. Intrusion of VOCs into buildings located above the TCE plume (MCA Barracks, HAA-15)	Technical VOCs formed during the ERD process have the potential to volatilize during treatment and intrude building located above the plume	Risk Control/Risk Acceptance Risk control will include careful management of ERD processes to control the creation of VOC-daughter products below limits which would cause vapor intrusion concern. ARCADIS will also evaluate existing buildings before and during remedial activities to detect issues and mitigate if necessary.
5. Reviews for required sites Review identifies deficiencies	Technical Numerous. Failures of treatment, and/or containment delivery, and other issues may lead to deficiency findings in the reviews.	Technical Research and Development (R&D); Risk Control; Risk Acceptance Monitor system pro-actively relative to review criteria and correct deficiencies in cooperation with the regulatory agencies prior to reviews. Ensure frequent reviews including an evaluation against review standards. Ensure on-going dialogue with GA EPD.

Note 1: Risk Mitigation Tools

Technical R&D ARCADIS to study risk, solutions, and outcome probabilities and select solution that minimizes risk.

Risk Avoidance. Select an alternative primary solution that carries no risk (if available)

Risk Transfer. Transfer risk to another Organization if available

Risk Control. Developing a specific risk reduction plan for that risk, assigning the appropriate resources, and actively managing that risk by following the plan requirements.

Risk Acceptance. Assuming a known risk as part of the project process.

5.0 Project Execution

This section presents the execution plan for the Fort Stewart/HAAF project including the project team; the communications plan; the projected schedule; the Quality Management Plan, an overview of the Health and Safety program, the Quality Assurance Strategy and a brief contract/funding summary. These sections represent the current best estimate for the planning and execution of the work necessary to achieve the performance objectives and requirements outlined in the PWS. As the project proceeds, these sections will be revised as necessary.

5.1 Project Team

This section details the project team structure, both external and internal to ARCADIS. Roles and responsibility are clearly defined and contact information provided.

5.1.1 Decision Makers Forum

It is the ARCADIS philosophy that the key to successful PBA project execution is the development of a central team of decision makers, known as the Decision Makers Forum. These team members, in a manner consistent with existing agreements, work together to facilitate decisions and to integrate all the regulatory, DoD, and technical requirements into those decisions. The core members of this team are outlined in Table 5-1.

Table 5-1: Stewart/HAAF Decision Makers Forum		
Name and Contact Information	Telephone/E-Mail	Project Function
Mr. Alan Freed U.S. Army Environmental Command E4480 Beal Road Attn: Alan Freed APG-EA MD 21010-5401	Office: 410-436-0498 alan.freed@us.army.mil	US Army Environmental Command Restoration Manger
Ms. Ana Vergara USACE Savannah District Attn: PMH 100 W. Oglethorpe Ave. Savannah, GA 31401-0089	Office: 912-652-5835 Fax: 912-652-6012 Ana.delR.Vergara@usace.army.mil	US Army Corps of Engineers Contract Officers Representative

Table 5-1: Stewart/HAAF Decision Makers Forum

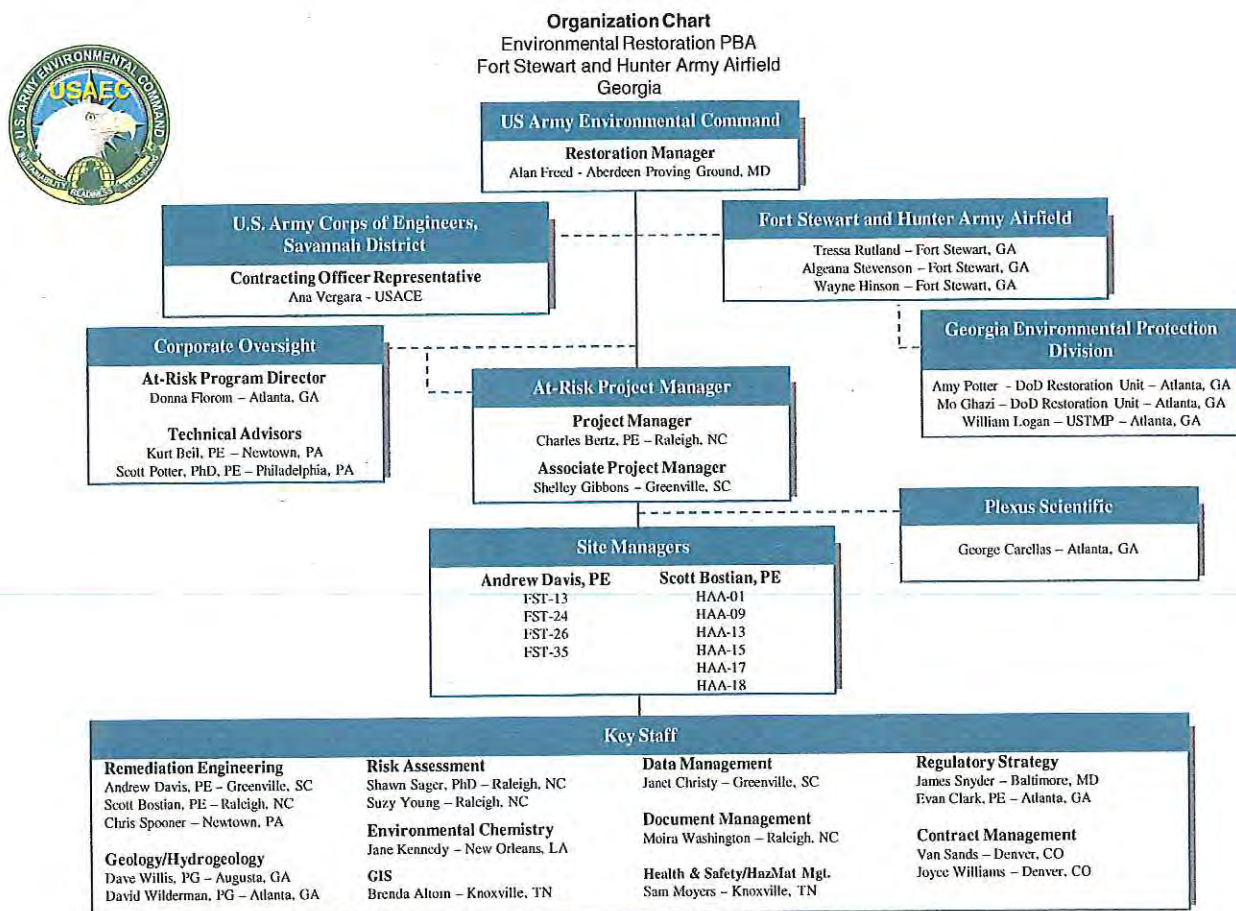
Name and Contact Information	Telephone/E-Mail	Project Function
Ms. Tressa Rutland DPW Prevention and Compliance Branch 106 MacArthur Circle Bldg 615 Savannah, GA 31419	Office: 912-767-7919 Fax: 912-315-5148 Tressa.Rutland@conus.army.mil	Fort Stewart/Hunter Army Airfield Chief, Prevention & Compliance Branch Directorate of Public Works Environmental Division
Ms. Algeana Stevenson DPW Prevention and Compliance Branch 106 MacArthur Circle Bldg 615 Savannah, GA 31419	Office: 912-315-5144 Cell: 912-210-2950 Fax: 912-315-5148 algeana.stevenson@us.army.mil	Fort Stewart/Hunter Army Airfield Installation Program Manager
Mr. Wayne Hinson DPW Prevention and Compliance Branch 106 MacArthur Circle Bldg 615 Savannah, GA 31419	Office: 912-315-4226 Fax: 912-315-5148 wayne.hinson@us.army.mil	Fort Stewart Installation Environmental Manager
Ms. Amy Potter Georgia Department of Natural Resources Environmental Protection Division 2 Martin Luther King Jr. Drive Suite 1152, East Tower Atlanta, GA 30334	Office: 404-463-0080 Fax: 404-463-7669 amy_potter@mail.dnr.state.ga.us	GA EPD DoD Restoration Unit Coordinator
Mr. A. Mohamad Ghazi, Ph. D. Georgia Department of Natural Resources Environmental Protection Division 2 Martin Luther King Jr. Drive Suite 1152, East Tower Atlanta, GA 30334	Office: 404-463-7507 Fax: 404-463-7669 mo_ghazi@dnr.state.ga.us	GA EPD DoD Restoration Unit
Mr. William Logan Georgia Department of Natural Resources Environmental Protection Division 4244 International Parkway Suite 104 Atlanta, GA 30334	Office: 404-362-4529 Fax: 404.362.2654 William.Logan@dnr.state.ga.us	GA EPD USTMP Corrective Action Unit II
Mr. Chuck Bertz, PE ARCADIS 801 Corporate Center Drive Suite 300 Raleigh, NC 27607	Office: 919.854.1282 Cell: 919-607-3498 Fax: 919.854.5448 chuck.bertz@arcadis-us.com	ARCADIS Project Manager

Successful execution of this project requires input and coordination from all members of the Decision Makers Forum members and meetings between these parties will be scheduled regularly as discussed in Section 5.2: Communications Plan. Additional input from other stakeholders will be solicited as required.

5.1.2 ARCADIS Team Organization and Management

ARCADIS has established a project organization to emphasize command and control, with delegation from the Project Manager to individual key technical personnel. ARCADIS' proposed project organization is illustrated in Table 5-2.

Table 5-2: ARCADIS Project Team for Fort Stewart/HAAF PBA



5.1.3 Roles and Responsibilities

The objective of our project organization is to provide a streamlined structure to implement assignments in the most cost effective, timely, and technically sound manner possible. To achieve this objective, ARCADIS has designated four functional elements within this organization: Project Management, Corporate Oversight, Technical Advisors, and Technical Resources. Each position within these groups' carries with it a well defined set of responsibilities and authorities, as described on Table 5-3.

Table 5-3: Project Personnel Roles and Responsibilities

Position		Responsibilities	Authority to
	Project Manager Chuck Bertz, PE	Overall Program Leadership/Direction Overall Program Technical Quality Subcontractor Management Compliance with Project Scope, Schedule, and Budget Project Support, including Reporting	Accept Work Assignments Execute Contract Requirements Approve Program Policies and Procedures Approve Budget and Expenditures
	Associate Project Manager Shelley Gibbons	Fort Stewart/HAAF Project Team coordination Manages all staff, materials and equipment Accomplishment of Client Objectives Assists with Defining Client Objectives	Allocate Resources Approve Project Assignments Stop Unsafe Work
Corporate Oversight	Management Donna Florom	Ensures Program Leadership/Direction Defines Client Objective for Contract Interface with AEC Management & ACA Contracting Personnel Advise Project Manager	Make Executive Level Decisions Engage Breadth of Company Resources Negotiate Contract Requirements
	Health & Safety Michael Thomas, CIH, CHMM, CPEA	Develop, Implement and Monitor Site-Specific Health and Safety Plans (SSHPs) Maintain Health and Safety Assurance Manual Coordinate all Health and Safety Training and Medical Monitoring Ensure Field Activities are in Compliance with Health and Safety Requirements Interface with U.S. Army Personnel	Develop and Enforce Overall Project Health and Safety Standards and Protocols Approve Health and Safety Program and Project Plans Audit Project Activities and Enforce ARCADIS Health And Safety Procedures Remove Untrained/Uncertified Personnel from Work Areas Develop and Implement CAP

Table 5-3: Project Personnel Roles and Responsibilities

Position	Responsibilities	Authority to
Technical Resources	Overall guidance on technologies Specific implementation of technologies Geology/hydrogeology expertise Risk assessment/remediation goals Support the Project Manager on key regulatory issues Implementation of Health and Safety Protocols On-Site Work and Subcontractor QC Compliance/Coordination	Assign Technical Resources to Project Direct Technical Approaches on Sites Approve Final Designs and Documents
Kurt Beil, PE	Review Subcontractor Laboratory Results	
Scott Potter, PhD, PE	Evaluation of Health/Environmental Risks	
James Snyder	Provide Technical Expertise for Work Plans	
Shawn Sager, PhD	Oversee Implementation of Work Plans and Development of Work Products Review key regulatory documents to assure compliance with Federal and State requirements Cost Schedule and Quality Accountability Support the Project Manager	
Project Advisor	Site History- Regulatory and Technical	Assist PM in Accelerating Implementation of Remedies
George Carellas (Plexus)	Coordination of Base permits	

ARCADIS will use its existing offices in Atlanta and Augusta, Georgia, and Greenville, South Carolina, Knoxville, Tennessee, Raleigh, North Carolina and Newtown, Pennsylvania to execute and manage this project. Resources from around the company will be drawn upon as needed.

5.1.4 Subcontractors

ARCADIS will self perform much of the work within this contract, including construction activities through our construction division, to the extent possible. Where needed, subcontractors will be added including services in the following areas:

- Analytical laboratory services,
- Construction and Construction management,

- Drilling services,
- Environmental engineering,
- Long-term monitoring,
- Surveying, and
- Waste hauling and disposal.

In accordance with the contract, Section 5.2a, any laboratory(ies) used will be GA EPD and National Environmental Laboratory Accreditation Program (NELAP) certified or equivalent for each analyzed parameter.

5.1.5 ARCADIS Minority Business Enterprise (MBE) Participation Plan

ARCADIS' small business/small disadvantaged business (SB/SDB) officer, Ms. Lori Dishneau, will assist the project team in meeting the contract goals for SB/SDB utilization. To the extent possible and practical, ARCADIS will use our cadre of subcontractors, including small, small disadvantaged, small women-owned, service disabled veteran-owned, and Historically Underutilized Business Zone Empowerment (HUBZone) businesses.

ARCADIS has MBE goals associated with this contract, which are:

- | | |
|----------------------------------|-------------------------------------|
| • Small business | 50 percent of subcontracted dollars |
| • Small disadvantaged business | 12 percent of subcontracted dollars |
| • Woman Owned Small Business | 12 percent of subcontracted dollars |
| • HUB Zone business | 3 percent of subcontracted dollars |
| • Service Disabled Veteran Owned | 3 percent of subcontracted dollars |

5.2 Communications Plan

This project will require a high level of communication and coordination, recognized and emphasized in the RCRA permit. This section defines the planned communications and progress reporting protocols.

5.2.1 Interactions between ARCADIS and the Army

The ARCADIS project manager, Mr. Chuck Bertz, is the primary point of contact for the Army on this contract for technical and project management communications. He will interface with the COR, and members of the Decision Makers Forum on an as needed basis. Mr. Bertz will be responsible for communicating the technical strategy for each site to the Army. Such communication will occur prior to any discussion with the regulators. All technical strategies (or preliminary discussion thereof) must be acceptable to the Army prior to ARCADIS holding joint discussions with the Army and the regulatory agencies (See Section 5.2.2). The COR will integrate comments from the Army team including the Installation, USACHPPM, AEC legal, USACE, and others as required.

A project of this magnitude and complexity requires a high level of communication and coordination. One of Mr. Bertz's primary focuses will be to develop and maintain an effective partnering relationship with the Fort Stewart/HAAF IRP manager on policy issues, technical analysis and interpretation, procedural issues, and guidance process. The Project Manager will use a team of regulatory and communications experts to ensure that the information products developed convey important messages and meet the needs of the stakeholders. ARCADIS will work cooperatively with the Fort Stewart/HAAF IRP Manager to identify and resolve problems, avoid disputes, and facilitate successful contract performance. ARCADIS will develop a partnering process, building on past success, that:

- Facilitates open and continuous communication, mutual trust, and respect;
- Promotes the creation of a shared plan and vision for success;
- Establishes mutual goals and objectives;
- Reduces paperwork by simultaneous review and approval of information;

- Empowers the staff participating to jointly and expeditiously resolve problems at the lowest level; and
- Preserves the legal and regulatory obligations of Fort Stewart/HAAF and the USACE.

Regularly scheduled, face-to-face meetings will be held to provide comprehensive and concise snapshots of the project's status necessary for making informed decisions. Experience suggests that investments of this type will save appreciable time for all the stakeholders by improving communication, expediting decision making, and fostering trust among the Army, USACE, GA EPD, USEPA (if applicable), and ARCADIS. This approach can include:

- Initial kick-off meeting with installation stakeholders to establish effective lines of communication, define present issues, delineate clean up actions, and plan for possible regulatory issues or changes.
- Early, proactive discussions with the regulatory agencies to gain an understanding of their expectations and concerns; to present ARCADIS' approach and provide technical justifications, and to discuss suggestions for process efficiencies.
- Establishment of methods to store and disseminate technical information.
- Regular on-site meetings to evaluate the project data, share new information, and make timely adjustments to the project implementation. Note as the project winds down, on-site meets may be reduced to an as needed basis.

5.2.2 Interactions with Regulatory Agencies

All regulatory communications shall be approved by the Army COR, Ms. Ana Vergara, and by the IRP managers, Ms. Algeana Stevenson or Mr. Wayne Hinson. ARCADIS will have the responsibility to present all technical strategies, and any negotiations required to achieve those strategies, to the regulators and public following approval by the COR. Therefore, with the direction and approval of the COR, the ARCADIS Project Manager, Mr. Chuck Bertz, will provide all necessary support to present and negotiate approved strategies for the project. He has the responsibility for ensuring that the ARCADIS team fully complies with the RCRA Permit and HSRP requirements and USTMP requirements, for each site at Fort Stewart/HAAF, including the regulatory

interactions specified therein. All formal or informal discussions with the regulatory agencies will involve the appropriate members of the decision makers forum. In no event will ARCADIS enter into direct negotiations with the regulatory agency without the Army's involvement. The Army will be the approval and signature authority for all regulatory agreements and remediation documentation. Submittals to the regulators will be made under the cover letter of the Director of Public Works.

The ARCADIS team will work diligently with the GA EPD to develop a means by which to improve the efficiency of reviews and the incorporation of the state's needs. The ARCADIS team will convene an initial meeting with GA EPD key program managers to:

- Acquaint GA EPD with the project and review the anticipated regulatory needs.
- Schedule follow-up meetings to explore the resource commitments, ARCADIS' regulatory interpretations, program priorities, processing times and potential process improvements.
- Secure the GA EPD commitment and willingness, at all levels, to provide the resources needed to conduct reviews and provide feedback on key questions and issues within the proposed schedule.

5.2.3 Interactions with the Public

To date, there had been insufficient public interest in restoration activities at the installation to warrant formation of a Restoration Advisory Board (RAB). The public was last surveyed for interest in FY08. Should the situation change as a result of future public interest surveys, ARCADIS will participate in RAB meetings and support the installation as needed. Unless otherwise instructed by the COR, ARCADIS will not make any statements to the public on this project.

5.2.4 Progress Meetings

Regular progress meetings, with the Decision Makers Forum will be held via teleconference or face-to-face to review the progress of the work being conducted on-site, report results/status for all primary and secondary documents, to review the status of the project schedule, and to discuss key decision points. The meetings will be a forum for discussing issues and reaching consensus among the Decision Makers Forum members. Additional face-to-face meetings will be held if project issues require

immediate discussion, and informal meetings and conversations will be held as frequently as needed. ARCADIS Project Manager, Mr. Chuck Bertz, will also prepare a monthly status report detailing project progress for distribution to the Decision Makers Forum.

5.2.5 Milestone Presentations

Milestone presentations to the Army will be held, in accordance with the schedule (as discussed in Section 8.0 and presented in Appendix D), as each of the key milestones is achieved.

5.2.6 Document Submittal

All documents will be submitted in internal draft form to the U.S. Army. Four copies will be submitted: two for the COR, Ms. Ana Vergara, and two for the Installation Program Managers, Ms. Algeana Stevenson and Mr. Wayne Hinson. The COR will be responsible for coordinating US Army review and provide ultimate approval. Comments will be submitted as written lists from multiple reviewers in sequence. Once the draft document is deemed acceptable by the COR, a draft document will be submitted to the regulators under the cover letter of Fort Stewart and Hunter Army Airfield signed by the DPW. Following draft document review, ARCADIS will work with the regulators through comment responses, meetings, and presentations or other means necessary to achieve approval of the document. The document distribution list including names and addresses is provided in Appendix B. All periodic reports are to be submitted on a timely basis within a few weeks after completion of analyses such that the regulatory agency will have time to review prior to the next sampling event. Information on wells, delineations, sample points, soil borings, monitoring points/wells, and associated attributes will be included in GIS format in the final report submittal to Fort Stewart and Hunter Army Airfield.

The number of final drafts varies based on regulatory agency as follows:

- For GA USTMP: one hard copy to GA EPD, 3 hard copies to installation with two CDs. COR receives one hard copy and one CD.
- RCRA and HSRP: two hard copies and two CDs to GA EPD. Three hard copies to installation with two CDs. COR receives one hard copy and one CD.

Specific scheduling requirements for internal document review are presented in Table 5-4 below.

Table 5-4: Internal Document Review Protocols

Internal Review	
Army Reviewers	When documents are sent out from the contractor for internal review, the goal for each reviewer is to have their review comments or a negative response sent back via email as quickly as possible, with a goal of completing comments within 20 business days.
Contractors	1. When documents are sent out to the internal review team, an email is to be sent to each Army internal review team member stating comments are due within 20 business days. 2. Two weeks after the documents are sent out the contractor will send another reminder to all Army reviewers, noting which have been completed and which are outstanding. 3. Another reminder will be sent out by the contractor to all Army reviewers two days before comments are due, again noting which have been completed and which are outstanding.
Regular Drafts	
Army Reviewers	When documents are sent out from the contractor for internal review, the goal for each reviewer is to have their review comments or a negative response sent back via email with a goal of completing comments within 20 business days.
Contractors	1. When documents are sent out to the internal review team, an email is to be sent to each Army internal review team member stating comments are due within 20 business days. 2. Two weeks after the documents are sent out the contractor will send another reminder to all Army reviewers, noting which have been completed and which are outstanding. 3. Another reminder will be sent out by the contractor to all Army reviewers 2 days before comments are due, again noting which have been completed and which are outstanding.
Regulators	Contractors will send email reminders (for all outstanding documents) every two weeks to Algeana Stevenson stating when the document was first sent out and what comments have been received. Ana Vergara will coordinate reminders to the Regulators as appropriate.

5.3 Quality Assurance (QA)/Quality Control Program (QC)

All work performed under this contract will adhere to ARCADIS' rigorous QA/QC program. Project work will also comply with any further customer requirements including contract QA Program Plans or project specific Quality Control Plans (QCPs). The ARCADIS QA Manager for this project, Mr. Kurt Beil, has responsibility for implementing and overseeing of the quality system and ensuring project personnel adhere to corporate and contract-specific QA/QC requirements. The ARCADIS QA/QC program is designed to meet the following objectives:

- To continuously and consistently develop, improve, and implement procedures and processes to ensure the highest degree of customer satisfaction.
- To develop an environment in which all team members focus on continuous customer satisfaction.
- To continuously review the processes and operations of the QA/QC program and identify opportunities to improve the value of the company's services to its customers.
- To serve the requirements of the customer through responsive and efficient internal systems.

ARCADIS' QA/QC Program is designed to engage the resources of the firm in support of project specific needs, regardless of where the necessary expertise may exist throughout the country, and the Corporate PBA Program Manager (Ms. Lee Ann Smith), along with the QA Officer will bring those appropriate resources to bear as needed.

5.3.1 Quality Management Plan

The Quality Management Plan (QMP) is a part of the overall project work plan. A QMP will be prepared defining a project-specific set of procedures and activities to assure delivery of products that meet the client's expectations, acceptable scientific and engineering standards, and ARCADIS' project quality objectives. A QMP is included in the work plan for all ARCADIS projects. The project planning team is responsible for

establishing the QMP, assigning responsibilities, budgets, schedules, methods of accountability and documentation before work begins.

The QMP includes the following phases of participation:

- Ongoing QC by the project team: project manager, task managers and assigned project team (engineers/designers/CADD technicians/scientists/field personnel).
- Periodic peer reviews by the program QA Manager, or other technical specialists.
- Confirmation by the project manager that the project conforms to the QMP.
- Assurance by the Corporate Program Manager assigned to the project that proper QA has been applied to the project.

5.3.2 Quality Assurance Surveillance Plan (QASP)

A Quality Assurance Surveillance Plan (QASP) has been prepared and submitted under separate cover concurrently with this PMP.

5.4 Health and Safety

ARCADIS is committed to a detailed and proactive health and safety program that complies with all relevant Occupational Safety and Health Administration (OSHA) requirements. As part of this contract ARCADIS will develop a detailed Health and Safety Plan (HASP) that meets both the requirement of the ARCADIS program, and the requirements of Fort Stewart/HAAF's program.

Prior to initiating any project within ARCADIS, project managers are required to conduct a project hazard analysis in cooperation with the Health and Safety manager. This analysis assists in identifying the Health and Safety needs and requirements so they are properly planned for on the project. The time needed for developing a HASP, budgeting for Health and Safety equipment, understanding client Health and Safety requirements, ensuring all staff on the project have the appropriate Health and Safety training, and proper emergency planning are incorporated into the project from the beginning. Every project where activities may expose our team to chemical, physical, biological, or ergonomic hazards requires a site safety and health plan (SSHP) or specific safety and health procedures. These plans or procedures are written,

reviewed, and managed per the corporate Health and Safety policy and procedures documents for each project site. At a minimum, these SSHPs are:

- Written by a person(s) who is pre-qualified and approved by the corporate Health and Safety manager and corporate Health and Safety director.
- Reviewed and approved by qualified individuals approved by the ARCADIS regional manager, regional Health and Safety manager, the corporate Health and Safety manager and the corporate Health and Safety director.
- Reviewed by all project team members including subcontractors.
- Fully implemented on the project site with frequent periodic reviews of the plan with the project team members.
- Available at all times at the office and on the project site.
- Reinforced by daily toolbox meetings and pre-evolution briefings on every new task.

SSHPs for this contract will include all requirements outlined in the PWS and all ARCADIS health and safety program requirements.

Specific responsibilities are assigned to our project team and management structure as follows:

Project Manager (Mr. Chuck Bertz). The project manager is ultimately responsible for implementing HASPs for the project under his control, and for ensuring that subcontractors comply with all applicable health and safety requirement as specified in their own approved plans. The project manager is responsible for communicating and appropriately managing subcontractors, ensuring that ARCADIS and subcontractor employees have appropriate current training and qualifications. The project manager is responsible for involving the appropriate ARCADIS Health and Safety staff and for ensuring that all subcontractors have been communicated with concerning the health and safety requirements for the project.

Corporate Health and Safety Director (Mr. Mike Thomas). The Corporate Health and Safety Director is responsible for communicating with all offices within ARCADIS and ensuring they are aware of policy and procedure and for ensuring there being

implemented effectively. The Corporate Health and Safety Director and Manager are also responsible for leading and coordinating the efforts of the Corporate Health and Safety Leadership Team.

Project Health and Safety Officer (Mr. Sam Moyers). The project Health and Safety officer reports to both the project manager and the Corporate Health and Safety Director (Mr. Mike Thomas). He will be responsible for preparing and internally approving HASPs, and will work with Fort Stewart/HAAF Safety to ensure compliance with requirements and appropriate approval at the Installation.

6.0 Site Access

A Drivers License and proof of insurance are needed for general access to both Fort Stewart and HAAF. An active temporary pass to one facility will suffice for access to the other. Access to the HAAF airfield will require site specific training for all ARCADIS personnel and subcontractors. Work to be performed on or adjacent to the airfield will need to be scheduled in advance with the Airfield Manager. Prior to entering restricted areas on or adjacent to the runways, ARCADIS personnel will be required to check in with tower personnel and to establish radio contact. All vehicles entering the airfield will be equipped with, or escorted by a vehicle equipped with, a flashing light.

Two sites at Wright Army Airfield (WAAF) are also within the restricted area. There are not currently any requirements for performing work at the WAAF outside of notifying the tower. Due to the ongoing cooperative efforts between Fort Stewart and the City of Hinesville, the airfield may be used in the future for commercial and/or private flights. If any the requirements change for accessing the airfield and sites FST-13 and FST-35, they will be incorporated into the plan.

7.0 Schedule

7.1 Critical Path Analysis

ARCADIS has conducted a critical path analysis on the initial schedule and this review indicates all deadlines and dates are acceptable. The project schedule is provided in Appendix C. We will analyze the schedule critical path routinely during the project, and this analysis will be the primary scheduling tool used to identify the impacts of changes on the project and the actions required to meet contract required dates. In order to fully support our technical approach and support critical path analysis, all key document deliverable dates, review times, and remedial action durations are shown in the schedule. Meeting the contract schedule is also dependent on CLIN funding by the Army.

While the contract required dates of for the specific contract performance objectives are fixed, the completion dates for the support tasks may be modified as the contract proceeds. ARCADIS will continually manage the project to exceed the baseline schedule and will work with the Decision Makers Forum to streamline the project within the requirements of the RCRA permit and HSRP.

The proposed schedule has been developed based on a variety of assumptions in order to meet the contract requirement dates. These assumptions include the following:

- In general the U.S. Army will have 20 working days and the regulatory agencies (GA EPD) will have 60 working days to review a deliverable and provide comment. Where possible, ARCADIS will proceed at risk if formal regulator comments have not been received by key dates.
- In order to meet the contractual dates for RC or other Contract Performance Objectives, the U.S. Army and regulatory agencies will have to review a draft document prior to the finalization of the preceding document (i.e. may have to review a draft Proposed Plan, before/during the finalization of a Feasibility Study). This is a function of the U.S. Army having the opportunity to review documents prior to submission to the regulatory agencies and the aforementioned review times.

The project schedule is presented in Appendix C. Schedule updates will be provided as needed.

8.0 Milestone Billing

8.1 Milestone Billing Schedule

The Milestone Billing Schedule (Appendix D) provides a list of all approved milestones and submilestones organized by CLIN, and also includes the values of the milestones and submilestones on a yearly basis, according to the project schedule in Section 7.

ARCADIS

Appendix A

Contract

ORDER FOR SUPPLIES OR SERVICES										PAGE 1 OF 50			
1. CONTRACT/PURCH. ORDER/ AGREEMENT NO. W91ZLK-05-D-0015			2. DELIVERY ORDER/ CALL NO. 0003		3. DATE OF ORDER/CALL (YYYYMMDD) 2008 Sep 26		4. REQ./ PURCH. REQUEST NO. See Schedule			5. PRIORITY			
6. ISSUED BY ACA ABERDEEN PROVING GROUND - W91ZLK DIRECTORATE OF CONTRACTING 4118 SUSQUEHANNA AVENUE ABERDEEN PROVING GROUND MD 21005-3013				7. ADMINISTERED BY (if other than 6) SEE ITEM 6		8. DELIVERY FOB ☒ DESTINATION ☐ OTHER (See Schedule if other)							
9. CONTRACTOR NAME AND ADDRESS ARCADIS U.S., INC. 630 PLAZA DR STE 200 HIGHLANDS RANCH CO 80129-2379				FACILITY 005Q6		10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) SEE SCHEDULE 12. DISCOUNT TERMS Net 30 Days			11. MARK IF BUSINESS IS ☐ SMALL ☐ SMALL DISADVANTAGED ☐ WOMEN-OWNED				
						13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15							
14. SHIP TO SEE SCHEDULE				15. PAYMENT WILL BE MADE BY DFAS INDIANAPOLIS CENTER - HQ0105 DIRECTORATE OF NETWORK OPS 8899 EAST 56TH STREET INDIANAPOLIS IN 46249-3120				MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.					
16. TYPE OF ORDER		DELIVERY/ CALL ☒		This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.									
		PURCHASE ☐		Reference your quote dated Furnish the following on terms specified herein. REF:									
ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.													
NAME OF CONTRACTOR				SIGNATURE				TYPED NAME AND TITLE				DATE SIGNED (YYYYMMDD)	
☐ If this box is marked, supplier must sign Acceptance and return the following number of copies:													
17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE See Schedule													
18. ITEM NO.		19. SCHEDULE OF SUPPLIES/ SERVICES				20. QUANTITY ORDERED/ ACCEPTED*		21. UNIT		22. UNIT PRICE		23. AMOUNT	
		SEE SCHEDULE											
* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.						24. UNITED STATES OF AMERICA TEL: 410-436-1661 EMAIL: alison.gannon@us.army.mil BY: ALISON W GANNON				25. TOTAL \$5,887,348.00		26. DIFFERENCES	
27a. QUANTITY IN COLUMN 20 HAS BEEN ☐ INSPECTED ☐ RECEIVED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED													
b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE						c. DATE (YYYYMMDD)		d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE					
e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE						28. SHIP NO.		29. DO VOUCHER NO.		30. INITIALS			
f. TELEPHONE NUMBER		g. E-MAIL ADDRESS				☐ PARTIAL ☐ FINAL		32. PAID BY		33. AMOUNT VERIFIED CORRECT FOR			
36. I certify this account is correct and proper for payment.						31. PAYMENT ☐ COMPLETE ☐ PARTIAL ☐ FINAL		34. CHECK NUMBER					
a. DATE (YYYYMMDD)		b. SIGNATURE AND TITLE OF CERTIFYING OFFICER						35. BILL OF LADING NO.					
37. RECEIVED AT		38. RECEIVED BY		39. DATE RECEIVED (YYYYMMDD)		40. TOTAL CONTAINERS		41. S/R ACCOUNT NO		42. S/R VOUCHER NO.			

Section B - Supplies or Services and Prices

TASK ORDER CONTENTS

This task order contains the following sections:

DD Form 1155 Task Order cover page

Section B Overview and CLIN pricing

Section C Performance Work Statement

Attachment A: Reference Documents

Attachment B: List of Acronyms

Attachment C: Definitions

Attachment D: Quality Assurance and Surveillance Plan (QASP) Template

Contractor Manpower Reporting

Section G Accounting Information

Wide Area Workflow (WAWF) Information

SECTION B OVERVIEW

This is a performance-based task order established for environmental remediation services for 11 sites at the following installations: Fort Stewart, located in Liberty County, Georgia, and Hunter Army Airfield (HAAF) located in Savannah, Georgia. Specific objectives of this requirement are set forth in the Performance Work Statement (PWS) herein. In accordance with the PWS, the project term is established as date of task order award through 31 December 2015, at a firm-fixed price of \$12,737,946.00 inclusive of options.

The overall project, contract line item number (CLIN) 2003, is segregated into 33 individual SubClins. Funds will be applied at the SubClin level only. Funds in the amount of \$5,887,348 are provided herein only for SubClins 2003AA, 2003CA, 2003DA, 2003EA, 2003GA, 2003GE, 2003HA, 2003JA, 2003KA, 2003MA, 2003NA and 2003PA.

All other SubClins are considered "options", to be exercised unilaterally at the Government's discretion at the negotiated, firm-fixed line item prices, in accordance with the approved performance schedule.

Milestone payments are only authorized in accordance with an approved Milestone Payment Schedule.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003			Dollars, U.S.		\$0.00

ENVIRONMENTAL REMEDIATION SERVICES

FFP

ENVIRONMENTAL REMEDIATION SERVICES AT HUNTER ARMY
AIRFIELD, GA AND FORT STEWART, GA.

Services in accordance with the performance work statement in Section C.

FOB: Destination

PURCHASE REQUEST NUMBER: MIPR8JDAT48037

NET AMT	\$0.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003AA		1,056,647	Dollars, U.S.	\$1.00	\$1,056,647.00

PMP and QASP

FFP

Project Management Plan (PMP) and Quality Assurance Surveillance Plan
(QASP).

FOB: Destination

PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$1,056,647.00
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ACRN AA

CIN: MIPR8JDAT48042

	\$1,056,647.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003CA		137,624	Dollars, U.S.	\$1.00	\$137,624.00

Site-Wide Plans

FFP

Site-Wide Plans

FOB: Destination

PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$137,624.00
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ACRN AA

CIN: MIPR8JDAT48042

\$137,624.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003DA		781,334	Dollars, U.S.	\$1.00	\$781,334.00

HAA-01 Fire Training Area

FFP

HAA-01 Fire Training Area: Achieve RIP by 30 June 2012.

FOB: Destination

PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$781,334.00
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ACRN AA

CIN: MIPR8JDAT48042

\$781,334.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003DB		668,847	Dollars, U.S.	\$1.00	\$668,847.00

OPTION HAA-01 Fire Training Area Exit
FFP
HAA-01 Fire Training Area: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews.

To be exercised within 60 days of completion of CLIN 2003DA.
FOB: Destination

NET AMT	\$668,847.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003EA		682,936	Dollars, U.S.	\$1.00	\$682,936.00

HAA-09 Bulk Fuel Facility
FFP
HAA-09 Bulk Fuel Facility: Achieve RIP by 30 June 2009.
FOB: Destination
PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$682,936.00
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ACRN AA	\$682,936.00
CIN: MIPR8JDAT48042	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003EB		93,775	Dollars, U.S.	\$1.00	\$93,775.00

OPTION HAA-09 Bulk Fuel Facility: Exit
FFP
HAA-09 Bulk Fuel Facility: Exit/Ramp Down Strategy, Optimization, RAO/LTM
and Five Year Reviews.

To be exercised within 60 days of completion of CLIN 2003EA.
FOB: Destination

NET AMT	\$93,775.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GA		42,779	Dollars, U.S.	\$1.00	\$42,779.00

HAA-13 Pumphouse #1, Release #1: CAP
FFP
HAA-13 Pumphouse #1, Release #1: Corrective Action Plan (CAP).
FOB: Destination
PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$42,779.00
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ACRN AA	\$42,779.00
CIN: MIPR8JDAT48042	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GB		963,466	Dollars, U.S.	\$1.00	\$963,466.00

OPTION HAA-13 Pumphouse #1, RIP
FFP
HAA-13 Pumphouses #1, Release #1: Achieve RIP by 30 June 2010.

To be exercised within 60 days of completion of CLIN 2003GA.
FOB: Destination

NET AMT	\$963,466.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GC		297,677	Dollars, U.S.	\$1.00	\$297,677.00

OPTION HAA-13 Pumphouse #1, Release #1 Phase I
FFP
HAA-13 Pumphouses #1, Release #1: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews Phase I.

To be exercised within 60 days of completion of CLIN 2003GB.
FOB: Destination

NET AMT	\$297,677.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GD		95,486	Dollars, U.S.	\$1.00	\$95,486.00

OPTION HAA-13 Pumphouses #1 Release #1 Phase II
FFP
HAA-13 Pumphouses #1, Release #1: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews - Phase II.

To be exercised within 60 days of completion of CLIN 2003GC.
FOB: Destination

NET AMT	\$95,486.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GE		404,057	Dollars, U.S.	\$1.00	\$404,057.00

HAA-13 Pumphouses #1, Release #2 RIP
FFP
HAA-13 Pumphouses #1, Release #2: Achieve RIP by 30 June 2010.
FOB: Destination
PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$404,057.00
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ACRN AA	\$404,057.00
CIN: MIPR8JDAT48042	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GF		659,899	Dollars, U.S.	\$1.00	\$659,899.00

OPTION HAA-13 Pumphouses #1 Phase I
FFP
HAA-13 Pumphouses #1, Release #2: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews - Phase I.

To be exercised within 60 days of completion of CLIN 2003GE.
FOB: Destination

NET AMT	\$659,899.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GG		184,163	Dollars, U.S.	\$1.00	\$184,163.00

OPTION HAA-13 Pumphouses #1, Phase II
FFP
HAA-13 Pumphouses #1, Release #2: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews - Phase II.

To be exercised within 60 days of completion of CLIN 2003GF.
FOB: Destination

NET AMT	\$184,163.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GH		319,822	Dollars, U.S.	\$1.00	\$319,822.00

OPTION HAA-13 Pumphouse #2: RIP
FFP
HAA-13 Pumphouse #2: Achieve RIP by 30 June 2010.

To be exercised within 60 days of 31 Mar 09.
FOB: Destination

NET AMT	\$319,822.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GJ		105,185	Dollars, U.S.	\$1.00	\$105,185.00

OPTION HAA-13 Pumphouse #2 Phase I
FFP
HAA-13 Pumphouse #2: Exit/Ramp Down Strategy, Optimization, RAO/LTM and
Five Year Reviews - Phase I.

To be exercised within 60 days of completion of CLIN 2003GH.
FOB: Destination

NET AMT	\$105,185.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003GK		69,963	Dollars, U.S.	\$1.00	\$69,963.00

OPTION HAA-13 Pumphouse #2, Phase II
FFP
HAA-13 Pumphouse #2: Exit/Ramp Down Strategy, Optimization, RAO/LTM and
Five Year Reviews - Phase II.

To be exercised within 60 days of completion of CLIN 2003GJ.
FOB: Destination

NET AMT	\$69,963.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003HA		384,070	Dollars, U.S.	\$1.00	\$384,070.00

HAA-15 MCA Barracks Site: CAP
FFP
HAA-15 MCA Barracks Site: Corrective Action Plan (CAP).
FOB: Destination
PURCHASE REQUEST NUMBER: MIPR8JDAT48042

NET AMT	\$384,070.00
---------	--------------

ACRN AA
CIN: MIPR8JDAT48042

\$384,070.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003HB		1,200,837	Dollars, U.S.	\$1.00	\$1,200,837.00

OPTION HAA-15 MCA Barracks Site: RIP
FFP
HAA-15 MCA Barracks Site: Achieve RIP by 30 June 2011.

To be exercised within 60 days of completion of CLIN 2003HA.
FOB: Destination

NET AMT	\$1,200,837.00
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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
2003HC		982,883	Dollars, U.S.	\$1.00	\$982,883.00

OPTION HAA-15 MCA Barracks Site Phase I
FFP
HAA-15 MCA Barracks Site: Exit/Ramp Down Strategy, Optimization,
RAO/LTM and Five Year Reviews - Phase I.

To be exercised within 60 days of completion of CLIN 2003HB.
FOB: Destination

NET AMT	\$982,883.00
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