Hazardous Waste Section

File Room Document Transmittal Sheet

17

Your Name:	Adam Ulishney
EPA ID:	NCD057451270
Facility Name:	AAF-McQuay (Former Heatcraft Remediation Site)
Document Group:	Permit (P)
Document Type:	Permitting Information (PI)
Description:	Personnel Training Program
Date of Doc:	10/19/2012
Author of Doc:	Ray Robin - CORR Environmental

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Hazardous Waste Section

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AAF·McQuay Incorporated

OCT 2012

Personnel Training
Records Retention Policy
Hazardous Waste Management Plan
Health and Safety Plan
Emergency Response Contingency Plan
Training and Documentation

Ground Water Extraction and Treatment System
Pulse Air Sparging System
Former HeatCraft Facility
602 Sunnyvale Drive
Wilmington, North Carolina
NCD #057 451 270

October 2012

Prepared by:

CORR **Environmental Resources Inc.**

Project Number ARN # ARN # 3069 (12)

CORR Environmental Resources, Inc.

October 19, 2012

Mr. Paul Heim
Senior Vice President, Legal
AAF-McQuay Inc.
13600 Industrial Park Blvd
Minneapolis, MN 55441

Re: Groundwater Treatment and Pulse Air Sparging Systems
Personnel Training, Responsibilities, Hazardous Waste Management
Contingency Plan, Emergency Response, Health and Safety Plan
Former Heatcraft Facility, Wilmington, North Carolina
AAF-McQuay Inc.
CORR Project ARN 3069 (12)
NCD #057 451 270

Mr. Heim:

CORR Environmental Resources, Inc., (CORR) is submitting the attached Manual as required by the Agreed to Order of Consent, signed August 17, 2012. The Order states within 60 calendar days upon effective date of order AMI is required to submit a personnel training manual (et al) per Paragraph IX.A referencing 40 CFR 264.16.

The enclosed manual provides the necessary information to conduct and monitor the groundwater treatment system and the pulse air sparging system. This manual includes information concerning personnel training, a discussion of the remedial systems, the records retention policy, the general health and safety plan, the emergency response contingency plan, the hazardous waste management plan and the training and documentation requirements.

If there are any questions regarding the enclosed report or other issues related to the former Heatcraft site, please contact me at 972-303-1039.

Cordially,

CORR Environmental Resources, Inc.

Raymond Roblin, P.G.
Principal

Cc: Mr. Adam Ulishney – NCDENR
Site File

Enclosure

4609 Candlestick • Garland, Texas 75043 • **Phone (972) 303-1039** • Fax (972) 534-1725
Email: correri@verizon.net

WASHINGTON

AAF·McQuay Incorporated

Personnel Training
Records Retention Policy
Hazardous Waste Management Plan
Health and Safety Plan
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Training and Documentation

Ground Water Extraction and Treatment System
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602 Sunnyvale Drive
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October 2012

Prepared by:

CORR Environmental Resources Inc.

Project Number ARN # ARN # 3069 (12)

File Memorandum

Former Heatcraft Site
NCD #051 451 270
October 2012

From: Raymond Roblin PG; CORR Environmental Resources Inc.
Environmental Project Manager

Re: Personnel Training
Job Duties and Responsibilities
Hazardous Waste Management Contingency Plan
Emergency Response

CORR Environmental Resources Inc. (CORR) on behalf of AAF-McQuay Inc (AMI) provides overall Project Management services for the former Heatcraft remediation property. The purpose of this document is to provide an outline for personnel training requirements, job duties and responsibilities of the various subcontractors assigned to operate the remediation systems at the site. This includes identifying the properly trained subcontractors to conduct and maintain the remediation systems.

A secondary component of this document is to provide a hazardous waste contingency and emergency response plan for the site. Since no hazardous wastes are generated as a process waste at the site, the contingency and emergency response plans are truncated to focus solely on the need for these plans to remain compliant with the regulations.

The following text presents the elements contained in 40 CFR 264.16 in reference to activities necessary to operate and manage the remedial systems at the site. The full text of CFR 264.16 is provided for review.

§ 264.16 Personnel training. Regulatory Citation

(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

(2) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(3) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;(ii) Key parameters for automatic waste feed cut-off systems;(iii) Communications or alarm systems;(iv) Response to fires or explosions;(v) Response to ground-water contamination incidents; and(vi) Shutdown of operations.

(4) For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the requirements of this section.(b) Facility personnel must successfully

complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.(c) Facility personnel must take part in an annual review of the initial training required in paragraph (a) of this section.(d) The owner or operator must maintain the following documents and records at the facility:

(1) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(2) A written job description for each position listed under paragraph (d)(1) of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.(e) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

Contents

Personnel Training

Remedial Systems

- Groundwater Treatment System
- Pulse Air Sparging System

Records Retention Policy

Health and Safety Plan

Contingency Plan

Hazardous Waste Management Plan

Training and Documentation

Personnel Training

AMI has retained CORR to provide overall project management services at the former Heatcraft remediation site. Neither AMI nor CORR directly employ individuals to perform various operations and maintenance tasks. These subcontract vendors provide the qualified staff for routine matters in the operations of the remedial systems at the site. These include licensed water treatment plant operators and licensed electricians. CORR maintains appropriate training for health and safety related issues (per OSHA 1910.120) as well as licenses for professional geology.

CORR has subcontracted with two primary operations and maintenance (O&M) vendors in the Wilmington area. Eastern Integration (EI) provides services associated with the Operator Responsible in Charge (ORC) licensing in reference to the NPDES discharge permit. EI also provides licensed electrical contracting services in reference to the electric service panels and control mechanisms for the groundwater treatment system. The second primary O&M subcontract work is associated with the Pulse Air Sparging (PAS) system. CORR has subcontracted with A&T Services (A&T) of Wilmington to provide oversight and operations services for this remediation system. Both subcontractors report directly to CORR concerning all facets of the two remediation systems.

Emergency response duties are subcontracted to qualified vendors which provide fully trained and experienced staffing for whatever emergency or routine operations and maintenance circumstances may arise.

The following list of individuals and entities provide a listing of site management and ownership for the former Heatcraft site:

- Responsible Party for the Corrective Action – Paul M. Heim, Sr. Vice-President, Legal, AAF-McQuay Inc.
- Overall Project Management - Raymond Roblin PG, CORR Env Res Inc.; Designated as the Authorized Agent in reference to the NPDES discharge permit and signature authority for transportation manifesting of hazardous wastes (if any).
- NCDENR, Hazardous Waste Section – Project Manager, Adam Ulishney
- Property Owner, S&R Packing and Crating, Steve Thompson

The following subcontractors have been qualified to conduct specific job tasks for the maintenance and operations of the remedial systems at the site. This includes the groundwater treatment system and the pulse air sparging system in addition to routine weekly, monthly and annual inspections.

- **Eastern Integration Inc.** – Licensed Electrician; John Hardin NC # 29458-L. Eastern Integration also provides Licensed Operator Responsible in Charge (ORC) services for the water treatment system discharge monitoring and sampling. Primary ORC, Randall Reeves [#986462]. Back up ORC, Dean Krause [#987064]. The electrical services are performed when system faults indicate a need for troubleshooting and repair. The ORC duties are as required by the NPDES permit and the classification for the chemical-physical treatment system (Class 1). Continuing education for the ORC license is as required by the DWQ. Electrician training is also as required by the State Electric licensing authority.

- **A&T Services, LLC**. Steve Tyler, LG #2721. Pulse Air Sparging System (PAS) – A&T is responsible for the operations or the air sparging system including soil vapor screening and groundwater geo-chemical testing. A&T also provides subcontract support for groundwater sampling and monitoring services. A&T maintains required health and safety training per OSHA 1910.120 regulations. The NC State geologist board does not require annual continuing education for the LG license.

- **SR&R Environmental Services, Inc.** Rick Miles, General Manager; Emergency Response and Hazardous Materials operator. SR&R provides as needed on site services as it relates to waste handling, specific cleaning and housekeeping tasks. This can include well bore and sump cleaning of the shallow recovery wells and the secondary containment systems associated with the water treatment. SR&R has also provided qualified and trained HAZWOPPER personnel for single work tasks as with the soil excavation and materials handling associated with former SWMU #7. SR&R also have personnel trained for confined space entry if needed. SR&R also provides as needed emergency response services on a 24-hr basis in the Wilmington region.

- **Applied Plastic Services Inc.** – Monroe Jacobs, Manager. APS provides as needed repair and replacement services specific to the lift station and accumulation storage tanks as well as repair of HDPE water piping between the various recovery wells and the water treatment plant. APS provides qualified personnel for plastic fabrication, welding and general repairs to the piping systems. APS also has qualified personnel for confined space entry.

- **Shamrock Environmental Services** – Hazardous and non-hazardous waste transportation and disposal vendor.

Remedial Systems

Groundwater Treatment System

The groundwater recovery and treatment system operates as an automated assembly of extraction wells, piping and receiving lift station and accumulation tanks. The extracted groundwater is transported through a network of dual-walled HDPE piping to the water treatment system. The water treatment system utilized two powered air stripping vessels which treat and discharge (under permit) groundwater to an adjacent ditch on the south side of the property. The full range of the extraction and treatment remediation program has been engineered to operate as a fully automated and integrated system. The various extraction wells have down hole conductivity probes which regulate the operation of the well pumps to the lift station tank. Flow from the various extraction wells is gauged by the used of in-line flow meters prior to discharge to the lift station tank. The lift station tank has numerous level controllers which regulate the influent from the extraction wells so as to not overflow the lift station tank. Flow from the lift station to the accumulation tank is regulated by a series of level controls in the tank as well as within the air stripping vessels.

All water treatment influent piping is dual-walled HDPE materials from the well bores to the accumulation tank. The lift station tank has a secondary containment vault for potential overflow or leaks. The extraction well bores are contained in oversized man-way vaults where any potential leaks are either contained in sumps or allowed to self-drain back into the well bore. All sumps have electric pumps with level controls and are connected to the lift station via dual-walled piping. The water treatment plant is located within a fully surrounding secondary containment foundation with a sump for leaks and rainwater collection. This sump is fitted with an electric pump with a level control and discharges directly to the accumulation tank.

All electric panels are interconnected to the primary service controls which relay operational outputs to a remote telemetry system. The telemetry system uses telephone service to the ORC to notify if the case of system faults. These faults can then be serviced by the licensed electrician or instrument technician. The fail-safe basis of the extraction and water treatment plant is designed to shut down the various recovery wells in a descending order based on water levels both within the well bores and the lift station and accumulation tanks. In addition to the automated telemetry system, the ORC conducts routine site visits and inspections approximately every three work days.

These various level controllers and sensors act to prevent accidental discharge of untreated influent groundwater. These systems provide for waste or influent cut off mechanisms in the case of high liquid levels in the lift and accumulation tanks as well as within the air stripping vessels. The dual-walled piping runs also prevent accidental discharge of untreated groundwater to the ground surface where any leaks flow as return to the lift station, the well bores or the secondary containment units.

The lift station and the water treatment plant are secured with perimeter fencing and are placarded with 'No Trespassing' signage as well as emergency and general information telephone numbers. The various well bore man way boxes are secured with heavy duty bolt on lids and are also placarded with similar signage. All but one of the extraction wells is located within the fenced perimeter of the plant facility which is only open during regular business hours. CORR and our subcontractors have 24-hour access to the facility gates/locks for emergency purposes and for as needed site visits.

In the event of an accidental release of untreated groundwater, the local ORC is required to first determine the source of the release and mitigate further discharge. Dependent upon the severity of the accidental release, the ORC may contact local emergency services; however they will then be required to notify CORR and the appropriate regulatory agency. Primary release notification is made to the regional office of the NCDENR Division of Water Quality (DWQ). The local DWQ office will then direct the ORC to conduct a review of operations to determine the cause of the release. This can also include sampling of various media as directed by the DWQ. A formal report of finding is then prepared by CORR in counsel with the ORC and AMI. Any remedial or corrective action in reference to the release to the ground

surface will be directed by the NCDENR, Hazardous Waste Section in conjunction with the DWQ requirements. As of the date of this Plan, no emergency response has ever been required at the remediation facility.

In reference to potential fire or explosion issues, the primary constituents of concern are dissolved chlorinated solvents trichloroethene (TCE) and trichloroethane (TCA) and their degradation by-products. These two primary solvent constituents are non-flammable with high boiling points and vapor pressures. Trace accumulations of petroleum hydrocarbons are present at two groundwater recovery wells, EW-7 and EW-8. Any accumulated hydrocarbon liquids are typically skimmed or collected by absorbent material. The hydrocarbons have been tested for reactivity, corrosively and ignitability and the sample results did not indicate these parameters are of concern from a temporary storage and disposal perspective. Only minimal volumes of hydrocarbon liquids are collected from the two recovery wells and are stored in a DOT approved 55-gallon closed top drum. The drum is staged within the groundwater treatment plant secondary containment area.

Fire extinguishers are located within the fenced perimeter of the water treatment plant. Emergency phone service is available at the plant as well as from the use of wireless telephones. The plant is located within the City limits of Wilmington and fire and emergency services can be contacted using 911 service.

Pulse Air Sparging System

The Pulse Air Sparging (PAS) system is a stand-alone ambient air injection structure which uses a series of shallow wells connected to an air compressor system. The PAS unit operates as an automated fully independent remediation system consisting of underground piping and solenoid valves which provide ambient air into the shallow groundwater aquifer for in-situ treatment of dissolved phase chlorinated solvents.

Electric service is provided via overhead power lines routed to an industrial grade electric panel box. The electrical panel then routes power to the air compressor and the automated controls. The system currently operates four (4) cycles per 24-hour period, with each injection well operated for approximately 15-minutes per cycle. The system operator visits the site on a weekly basis to review operations and maintenance issues, if any. The operator reports directly to CORR project manager. System performance is summarized on a semiannual basis in routine groundwater monitoring reports to the NCDENR, Hazardous Waste Section.

The PAS system does not generate any hazardous wastes or materials. No hazardous materials are utilized for operations. No permits or special operations training are necessary to operate and maintain the PAS system. Steve Tyler of A&T Services manages the PAS under subcontract to CORR.

Records Retention Policy

Since there are no direct employee's to CORR, the various licenses and training documents are provided as proof of qualification as a subcontractor. These documents and records will be maintained within the on-site files during the period of subcontract or sublet work or for a period of no greater than three (3) years upon termination of the subcontract agreement.

Health and safety certifications for CORR project manager and for A&T Services will be updated annually as required and retained in the site files during the full term of the contracting services (to AMI and to CORR). Copies of health and safety certifications, including confined space entry and emergency response, will be provided to CORR by the subcontractor prior to any sublet site work or on an annual basis as those certifications are renewed. These records will be maintained on an annual basis by CORR and documentation by the subcontractor of their qualifications is an element of the sublet agreement(s).

Health and Safety Plan

The general Health and Safety Plan (HASP) is appended to this document along with an annual review of health and safety procedures sign off sheet. The HASP is provided as a general safety protocol document to be used by site subcontractors. The HASP outlines physical and chemical hazards as well as work related issues for operations and maintenance tasks. The HASP provides emergency contact information along with identifying the nearest emergency medical facility. The HASP requires annual review and signature for subcontract vendors. For subcontractors which provide emergency response or services associated with potential contact with contaminated media, they are required to provide copies of safety certifications for site record files on an annual basis or when requested prior to a mobilization task.

Contingency Plan

The Contingency Plan has been prepared to allow for effective management of the remedial operations at the former Heatcraft site. The focus of the Plan is to identify or define the necessary time periods and triggers which would require actions to minimize any system disruptions and maintain operations absent emergency situations. The Plan will identify the responsible persons who will determine faults for system disruptions and implementation of corrective actions as needed.

Emergency coordinators for the remedial system are listed below and are authorized to act as on-scene coordinators and to commit the necessary resources during an emergency. The primary or alternate must be familiar with all aspects of this contingency plan, all operations and activities at the remediation system. This includes understanding the characteristics of the water treatment plant and the air sparging system. The emergency coordinator will take all reasonable measures to mitigate a release of untreated groundwater and/or other regulated materials to the environment. These measures will include but not be limited to where applicable stopping the processes and operations, collecting and containing any release.

The coordinators are as follows:

Primary Coordinator:

Name: John Hardin

Title: Primary Coordinator

Address: 2632 Borough Road, Currie, NC 28435

Phone #: 910-471-8754

Alternate Coordinator:

Name: Steve Tyler

Title: Licensed Geologist

Address: 804 Porters Neck Road

Phone #: 910-508-8833

Emergency Procedures

During an emergency, the coordinator shall perform the necessary actions to insure a timely and appropriate response. The coordinator shall choose the order and applicability of the following actions, based upon the situation and the hazards involved.

1. Identify and assess the situation (source, health and environmental impact).
2. Activate or notify all on site personnel by contacting S&R Packing and Crating.
3. Evacuate, if necessary.
4. Determine actions to be taken (e.g. containment, absorption etc.).
5. Oversee any clean up through its entirety.
6. Notify CORR Project Management.
7. Provide a written account of the emergency, including all steps taken to mitigate the hazards to CORR for submittal to the appropriate North Carolina regulatory agency within 15 days of the emergency.

Emergency Equipment

Fire Extinguisher
Eye Wash Station
First Aid Kit
Personnel Protection Equipment
Storage Drum
Decontamination Equipment
Health and Safety Plan
Emergency Route to Hospital

Facility Site Diagram

See attached Figure 1.

Evacuation Route from Facility

See attached Figure 2.

Arrangements

The following is a list of emergency, facility and management contacts:

Police and Fire: City of Wilmington 911

Hospital: New Hanover County Medical Center

Response Contractor: SR&R Environmental 1-800-310-6757

Property Owner: S&R Packing and Crating, Steve Thompson 910-792-1515

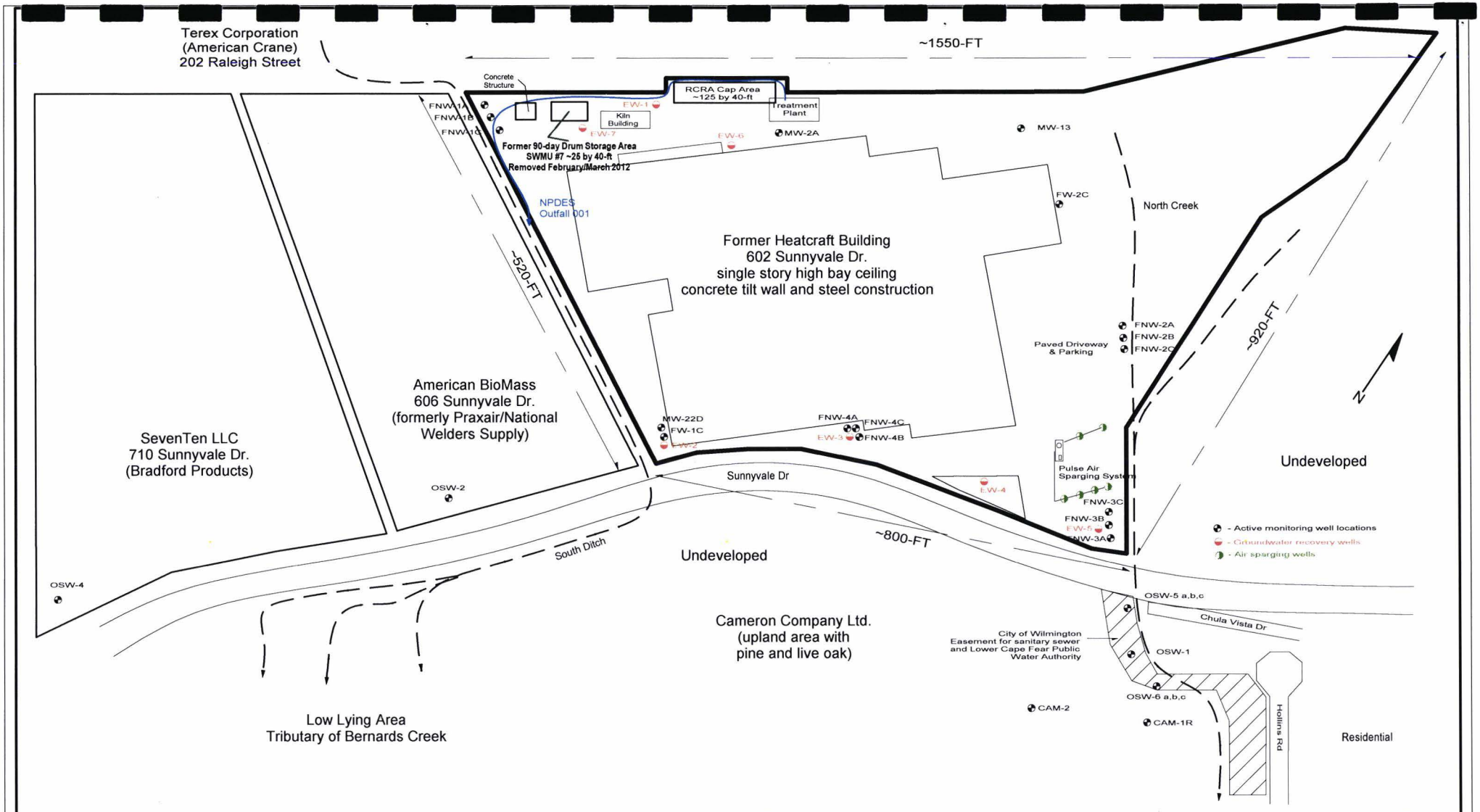
CORR Environmental: Raymond Roblin, 972-523-0487

McQuay International (RP): Paul Heim, 763-551-5671

Operator Responsible in Charge (ORC for treatment plant): Randall Reeves 910-231-4669

Primary Response Coordinator: John Hardin, 910-471-8754

Alternate Response Coordinator: Steve Tyler, 910-508-8833



CORR ENVIRONMENTAL RESOURCES, INC.

4609 Candlestick, Garland, Tx 75043

APPROVED BY: RAYMOND W ROBLIN PG

DATE:	August 27, 2012
DESIGNED BY:	RWR
CHECKED BY:	RWR
DRAWING NO.:	SPC 3062-10
PROJECT:	ARN 003069(12)

REV. NO	DATE	COMMENT
0	09-05-05	Initial drawing
1	03-26-10	Base map update; add SWMU #7
2	08-27-12	Base map update; Part A submittal

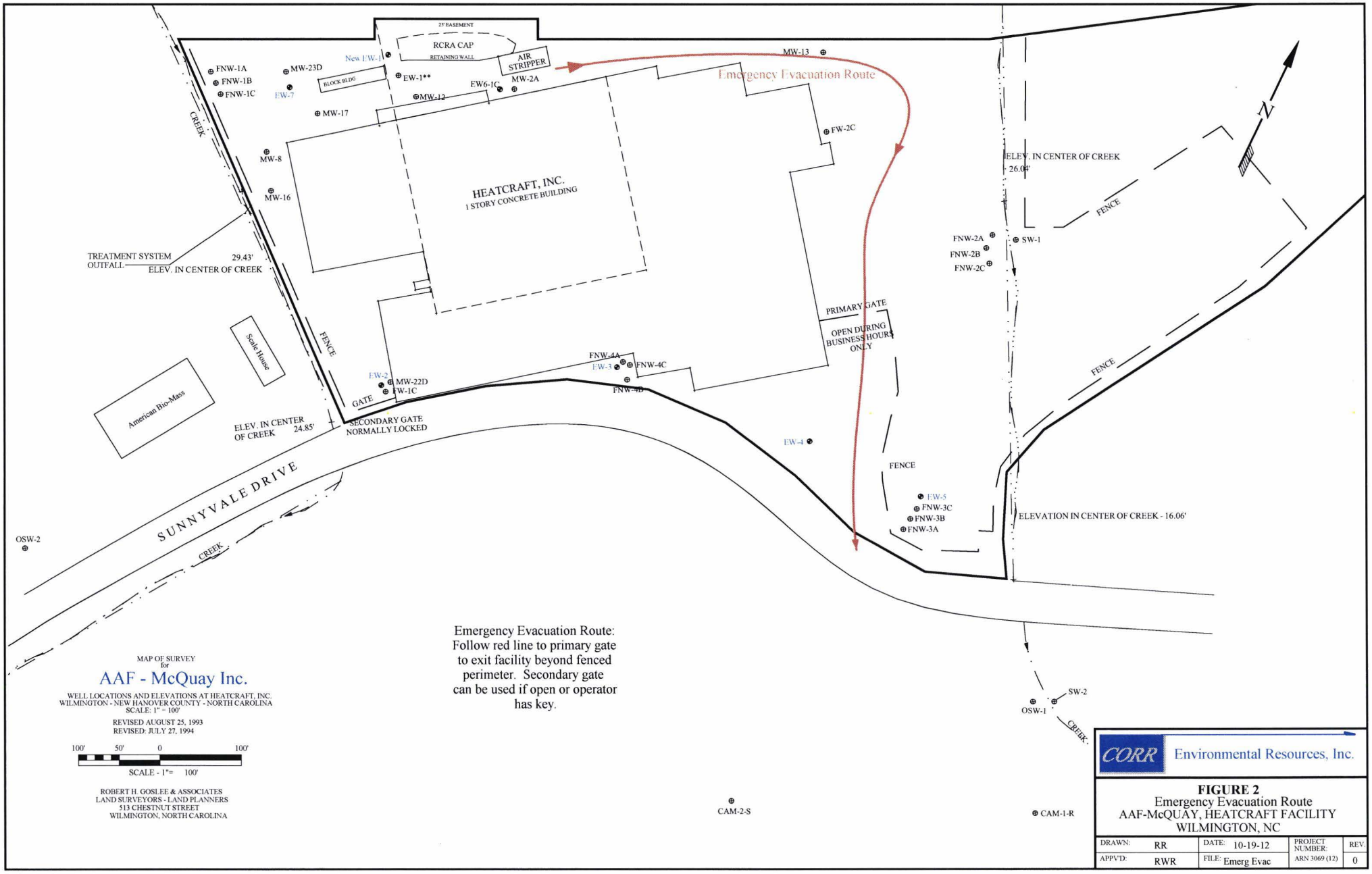
VERIFY SCALES:

SCALES AS SHOWN

FIGURE 1
EXPANDED SITE PLAN MAP

Former HeatCraft Facility
Wilmington, North Carolina

FILE: C:\CORR\McQUAY\WILMCADD\2011\screxp-3-2011.map


25' EASEMENT
RCRA CAP
RETAINING WALL
AIR STRIPPER
New EW-1
EW-1**
EW6-1C
MW-2A
MW-12
BLOCK BLDG
MW-23D
FNW-1A
FNW-1B
FNW-1C
EW-7
MW-17
MW-8
MW-16
CREEK
HEATCRAFT, INC.
1 STORY CONCRETE BUILDING
Emergency Evacuation Route
MW-13
FW-2C
ELEV. IN CENTER OF CREEK
26.04'
FENCE
FNW-2A
FNW-2B
FNW-2C
SW-1
TREATMENT SYSTEM
OUTFALL
29.43'
ELEV. IN CENTER OF CREEK
PRIMARY GATE
OPEN DURING
BUSINESS HOURS
ONLY
Scale House
American Bio-Mass
FENCE
FNW-4A
EW-3
FNW-4C
FNW-4B
EW-2
MW-22D
W-1C
GATE
ELEV. IN CENTER
OF CREEK
24.85'
SECONDARY GATE
NORMALLY LOCKED
EW-4
FENCE
EW-5
FNW-3C
FNW-3B
FNW-3A
ELEVATION IN CENTER OF CREEK - 16.06'
SUNNYVALE DRIVE
OSW-2
CREEK
SW-2
OSW-1
CREEK
CAM-2-S
CAM-1-R
N
MAP OF SURVEY
for
AAF - McQuay Inc.
WELL LOCATIONS AND ELEVATIONS AT HEATCRAFT, INC.
WILMINGTON - NEW HANOVER COUNTY - NORTH CAROLINA
SCALE: 1" = 100'
REVISED AUGUST 25, 1993
REVISED: JULY 27, 1994
100' 50' 0 100'
SCALE - 1"= 100'
ROBERT H. GOSLEE & ASSOCIATES
LAND SURVEYORS - LAND PLANNERS
513 CHESTNUT STREET
WILMINGTON, NORTH CAROLINA
Emergency Evacuation Route:
Follow red line to primary gate
to exit facility beyond fenced
perimeter. Secondary gate
can be used if open or operator
has key.
CORR
Environmental Resources, Inc.
FIGURE 2
Emergency Evacuation Route
AAF-McQUAY, HEATCRAFT FACILITY
WILMINGTON, NC
DRAWN: RR
DATE: 10-19-12
PROJECT NUMBER: ARN 3069 (12)
REV. 0
APPV'D: RWR
FILE: Emerg Evac

Hazardous Waste Management Plan

Hazardous wastes are not routinely generated or stored at the remediation facility. The primary source of potential hazardous wastes is the latent hydrocarbon product skimmed from two of seven extraction wells. The volume of removed hydrocarbons is generally less than 1 to 3 gallons per month if any. A secondary source is accumulated sediments within the lift station and accumulation tanks as well as the secondary containment sumps for these tanks. Sediment removal from the lift and accumulation tanks is only conducted as needed to facilitate pump maintenance. Sediment removal from the secondary containment vaults is only removed on an as needed basis. No other hazardous material or wastes are generated or stored at the remediation facility. The RCRA cap area of the property, also known at SWMU #4 is inspected by site operators on a monthly and annual basis. This disposal unit was created as a result of a release of solvent constituents and was closed in the late 1980's. There are no designated waste storage areas for the remediation systems, any drummed sediments or hydrocarbon liquids are staged within the secondary containment area of the water treatment plant.

All generated hydrocarbon and/or sediments are drummed in DOT approved containers of an appropriate size for the volume generated. All generated hazardous wastes are properly manifested and transported to permitted disposal facilities off site. All paperwork and disposal certifications are provided in routine monitoring reports to the NCDENR and filed on site.

Training and Documentation

The following list of job titles for each position in management and operations of the remediation systems at the former Heatcraft site.

Project Management – Raymond Roblin PG; Overall site management and interface between responsible party, regulatory agencies and subcontract personnel. 40-hour HAZWOPPER training, with annual 8-hour refreshers. Professional geologist continuing education units (CEU) and profession development hours (PDH). Approximately 15 PDH or 1.9 CEU per year.

PAS system operations and groundwater monitoring services – Steve Tyler LG; Provide subcontract oversight and operations management of the air sparging system in addition to groundwater monitoring and hydrocarbon liquid gauging services. 40-hour HAZWOPPER training, with annual 8-hour refreshers.

Operator Responsible in Charge (ORC); Primary ORC, Randall Reeves [#986462]. Back up ORC, Dean Krause [#987064]. The electrical services are also performed when system faults indicate a need for troubleshooting and repair. The ORC duties are as required by the NPDES permit and the classification for the chemical-physical treatment system (Class 1). Continuing education for the ORC license require annual 8-hour refresher as directed by the Division of Water Quality (DWQ).

Electrical Services – Eastern Integration; John Hardin, Licensed electrician NC # 29458-L. Continuing education as required by State.

Emergency Response – SR&R Environmental Services provide subcontract emergency response services along with site specific work tasks which require specific environmental health and safety training. SR&R also has confined space entry trained personnel. SR&R provides proof of continuing training for OSHA required work with potentially hazardous materials.

Health and Safety Plan
Groundwater Treatment System
For AAF-McQuay Inc/Heatcraft Site

Health and Safety Plan
Groundwater Treatment System
For AAF-McQuay Inc/Heatcraft Site
Annual Review of Health and Safety Procedures

Introduction:
This document is for the purpose of on-site personnel, subcontractors and visitors to document awareness of the health and safety guidelines while working at the Heatcraft remediation site. The HASP has been prepared to provide information concerning potential chemical and physical hazards in working around the water recovery and treatment system along with the air sparging system. By signing this document the individual(s) are recognizing the hazards present on-site and understand the methods to prevent or minimize possible exposure to the site related hazards.

Safety Addressed with Each Site Visit
Each individual will be aware of site conditions and operating procedures with the understanding that personal protective equipment is being used correctly and to address worker health and safety concerns with each site visit.

Project Overview and Site Descriptions
The site is operated for the recovery and treatment of groundwater impacted with chlorinated solvents from previous spills and former site operations. The system has seven groundwater recovery wells connected to collection tanks and piped to air scrubbing units for treatment and ultimate discharge under permit. The air scrubbing systems are contained within a fenced perimeter with the recovery wells connected via both above ground and subsurface dual-walled piping. All recovered groundwater has secondary containment within the piping and the two collection tanks. The primary site safety officer is Mr. Raymond Roblin of CORR Environmental Resources Inc. (972-303-1039 office; 972-523-0487 cell). The primary onsite operator duties are shared between the designated Operator Responsible in Charge (ORC) for the treatment system discharge permit (Mr. Randall Reeves) and for the Pulse Air Sparging system (Mr. Steve Tyler). Other subcontract vendors provide services as required for electrical systems and system maintenance.

Scope of Work/Level of Protection/Hazards
The normal hazards are associated with the general operations activities, electrical systems, a groundwater treatment system with a containment area and wells are the primary hazards at the site. Individuals are to wear appropriate safety gear to provide protection from chemical and physical hazards as warranted based on the work task. At a minimum hard toed shoes and safety glasses should be worn at all times while working with the system.

Site Safety Plan Acceptance Acknowledgment

The following individual(s) have read and understand the site specific HASP or have their company safety and health plan in effect with each site visit.

_____

Name/Signature Date

HEALTH AND SAFETY PLAN
Former HeatCraft Facility
Wilmington, NC

Prepared by: _____ Date: _____

Approved by:_____ Date: _____

This Health and Safety Plan (HASP) has been written and reviewed by the CORR Project Team. A final copy of the completed HASP will be forwarded to each contractor upon completion. After review of the HASP, the contractor will ensure that each field member has read, signed and understands the requirements of the site-specific HASP. The contractor must return the completed sign-off sheet included in the plan to the health and safety officer prior to beginning on-site activities. A copy of the HASP with all signature pages will be retained on site for the duration of the project. The project manager will retain the original copies in the project file.

The importance of documenting that both CORR employees and subcontractors to CORR have read and understand the H&SP should not be underestimated and should be treated as a vital part of an executed contract.

HEALTH AND SAFETY PLAN (HASP) SIGNOFF SHEET
FOR THE FORMER HEATCRAFT FACILITY

Wilmington, NC

_____ (Company Name) has received a copy of the Health and Safety Plan prepared for the former HeatCraft site. Staff have read and understand its contents and agree that we will abide by its requirements.

_____ Name (print)

_____ Company (print)

_____ Signature

_____ Date

_____ Title

EMPLOYEE HISTORY AND EMERGENCY MEDICAL INFORMATION SHEET

NAME (PRINT) & SIGNATURE	PHYSICAL DATE	40 HR OSHA DATE	CURRENT MEDICATIONS	ALLERGIES OR CONDITIONS	EMERGENCY NOTIFICATION (NAME AND PHONE #)

Note: The proceeding information is requested for each employee in the event of an emergency:

PURPOSE

This site-specific Health and Safety Plan (HASP) has been prepared to inform CORR and CORR subcontractor personnel of the health and safety hazards associated with the scope of work. This HASP also specifies the health and safety procedures and equipment required to help minimize potential hazards to CORR and contractor personnel. The provisions of this HASP apply to all personnel who will potentially be exposed to safety and health hazards related to activities described in Section 3.0. This HASP has been developed based on current knowledge regarding the specific chemical and physical hazards, which are known or anticipated for the proposed field activities.

All activities and operations by CORR Environmental Resources, Inc. (CORR) or subcontractor personnel must be performed in compliance with applicable Occupational Safety and Health Administration (OSHA) standards and this site-specific HASP (an approved subcontractor developed HASP may be used with written approval by CORR).

CORR subcontractors involved in this activity may develop their own site-specific HASP (a copy must be submitted to CORR for approval prior to the commencement of field activities). At a minimum, the contractor developed HASP shall be as protective as CORR's HASP for this activity. In the absence of an adequate contractor-developed HASP, compliance with the requirements of OSHA standards and this HASP is mandatory. CORR and contractor personnel who cannot or will not comply with these requirements will be excluded from site activities.

BACKGROUND

Climate Control, a former division of McQuay International and the former owner of the HeatCraft facility, recorded two separate incidents that resulted in spills of 1,1,1-trichloroethane in the 1980's. Though contaminated soils were removed from the site in both instances, groundwater contamination occurred due to the highly permeable surficial soils and water table conditions. CORR has been retained to evaluate the extent of the contamination, execute the plan for remediation, and oversee the operations and maintenance required to effectively recovery and treat impacted groundwater.

SCOPE WORK

The scope of work for the operation and maintenance of the groundwater recovery and treatment system is described below. System operations typically include the following tasks:

- Maintain surface and subsurface conditions for optimimum performance of the groundwater recovery wells;
- Maintain groundwater pumps and associated subsurface piping;
- Maintain and operate above ground accumlation and transfer tanks and pumps;
- Conduct weekly site visits to measure various flow rates from groundwater and transfer pumps;
- Respond to automated telemetry faults as needed;
- Conduct as needed or required system sampling;
- Report to NCDENR to maintain regulatory compliance.

CORR PERSONNEL EMERGENCY CONTACTS

NAME	EMERGENCY CONTACT	RELATION	TELEPHONE
Ray Roblin	Barbra Roblin	Spouse	(972) 303-1039 (O) 972-523-0487 (cell)

MEDICAL SURVEILLANCE

Each individual will have completed an annual surveillance examination and/or an initial baseline examination within the last year prior to performing any work on this site covered by this HASP.

TRAINING REQUIREMENTS

For those vendors who provide services which do not deal directly with hazardous chemicals or wastes, no formal health and safety training is required; however those individuals should read and acknowledge review of this HASP and understand its implementation. Direct CORR employees and emergency response subcontractors will have completed relevant Hazardous Waste Site Health and Safety Training as required by OSHA (29 CFR 1910.120 (f)). A record of completion of the OSHA training will be maintained in company files for CORR employees and retained in the project files for contract workers.

Emergency response subcontractors to CORR must provide written documentation that each individual assigned to this project has completed the medical monitoring and training requirements specified above. This information shall be provided prior to a contract employee performing any work on site.

Ray Roblin, CORR, will serve as the designated Site Safety Officer. The appointed alternate if he cannot be present during fieldwork is Steve Tyler of A&T Services. The Site Safety Officer must confirm that all field team members working on the project have received and read a copy of the health and safety plan. A cover sheet is included in this health and safety plan, which the employee must sign and will be retained in the project file. Daily safety meetings will also be held at the site at the beginning of each day of fieldwork, and documented on the form located at the end of this health and safety plan.

POTENTIAL HAZARDS

Chemical Hazards

Based on site history and accumulated analytical data reports, the chemicals of concern which may be encountered during operations and maintenance activities will be associated with contact with impacted groundwater. Potential exposures to the chemicals listed below may occur. The Time Weighted Averages for Personal Exposure Limits are provided.

CHEMICAL COUPOUNDS VOLATILE ORGANICS	TIME WEIGHTED AVERAGE (TWA) PERMISSABLE EXPOSURE LIMIT (PEL)
Vinyl Chloride	1 Part Per Million (ppm)
Chloroethane	N/A ppm
1,1-Dichlorethene	200 ppm
1,1-Dichlorethane	100 ppm
Total 1,2-Dichloroethene	200 ppm
1,1,1-Trichloroethane	350 ppm
Trichloroethene	50 ppm
1,1,2-Trichloroethane	10 ppm
Toluene	100 ppm
Total Xylene	100 ppm
Carbon Tetrachloride	2 ppm
Methylene Chloride	100 ppm
Chloroform	2 ppm
Carbon Disulfide	4 ppm
Trans-1,3-Dichloropropene	1 ppm
Ethylbenzene	100 ppm

Maintenance Task Activities

Chemical hazards are not expected until contact with groundwater during maintenance activities. There are no known shallow soil impacts onsite. Routine maintenance activities provide risk of exposure by chemical vapor inhalation during removal of recovery pumps, collection of various samples and well gauging/monitoring activities. Care must be taken to assure that all personnel are in an upwind area from the activities taking place. Measures taken to assure safety will be determined and enforced by the on-site health and safety officer.

Physical Hazards

Physical hazards include all objects or sources that may induce injury. All equipment and materials that will be utilized during maintenance activities will be evaluated on a case by case basis. Physical hazards can include overhead obstructions, boom and winch use, heavy lifting, climbing ladders and contact with any electrical equipment.

Maintenance Activities

Power lines pose an electrocution hazard and will be checked for before raising any overhead booms, winch lines or derrick rigging. Underground utilities should not pose a threat unless subsurface drilling is required. Any drilling or boring activities will be addressed using a seperate task specific HASP

All loose clothing will be restrained prior to operating mechanical equipment. All personnel should keep a safe distance from operating machinery.

Heat or Cold Stress

Heat reactions are brought about by both internal and external factors. Harmful effects occur when the body becomes overheated and cannot eliminate the excess heat. Reactions usually occur when large amounts of water, salt, or both are lost through profuse sweating following strenuous exercise or manual labor in an extremely hot atmosphere. Because of normal and extreme weather conditions in the project area, the following conditions must be anticipated and protected against:

- Heat cramps
- Heat exhaustion
- Heat stroke

To help prevent heat related injuries, a series of workday protocols will be followed. All attempts will be made to assure that activities are scheduled for the cool hours of the work day (this may require early starting time to the work day). Scheduled work breaks will be followed, and the on-site health and safety officer will monitor all site personnel for signs of heat injury during these breaks (Drinking fluids will be provided by contractors for all related personnel).

Cold weather injuries are not addressed due to the fact that field activities are to be performed during the summer season. If field activities extend into the winter months, the HASP will be adjusted according to address local winter conditions.

Severe Weather

Potentially hazardous weather conditions such as electrical storms should be avoided by seeking cover in automobiles or other suitable shelter. All activities (construction, drilling and sampling) will cease until a time that is considered appropriately safe by the on-site health and safety officer.

PERSONAL PROTECTION

Work Zones

Formal work zones are not required for this project. An addendum to the HASP will be provided if site conditions change, and designated work zones are required.

Personal Protective Equipment (PPE) Requirements

Hard hats, ear plugs, safety glasses and steel toed shoes will be required for all personnel working with or in the vicinity of the drilling or construction activities (PPE will be Level "D" modified). In addition to equipment listed above, all personnel will be required to wear appropriate protective gloves when there is a potential chemical contact. PPE will be upgraded if the site conditions change. PPE will be adjusted according to time of day work is performed, in order to minimize heat related injuries (See Potential Physical Hazards).

Health and Safety Equipment Requirements

A first aid kit and a fire extinguisher will be available to the subcontractor at all times project activity is being undertaken. A hospital route map and emergency numbers is posted in the remediation system office in the case of an emergency.

Field Personnel Safety Rules

When performing activities that may include the risk of falling, slipping or entrapment working alone constitutes an additional hazard. This is of particular concern when working alone or when working when S&R Packing and Crating is closed.

The following work rules have been developed to ensure that each individual will be able to fulfill their responsibility to protect their own health and safety and the health and safety of their coworkers.

- On site activities, will be performed by subcontract personnel with the correct training and certification for the work to be performed.
- The 'Buddy System' (i.e., at least two people on site at all times) should be used while conducting any work on a site where physical hazards exist. This does not include effluent sampling for the NPDES permit, but does include other work where a second person can assist in an emergency.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. When possible, do not kneel or place equipment on the bare ground. If it is necessary to kneel, place a protective liner beneath your knees. Protect equipment from contact with contaminants by wrapping or bagging.
- Eating, chewing gum or tobacco, smoking, or any other practices which increase the probability of hand-to-mouth transfer and ingestion of materials is prohibited in all work areas on site.
- Subcontractor will provide drinking water or other suitable liquid for its personnel in the work areas to prevent heat stress. The drinking water cooler is to be handled with clean hands only.
- Hands and face must be thoroughly washed as soon as practicable upon leaving the work area and before eating, drinking, or any other activities.
- The use of alcohol and/or illegal or controlled substances is prohibited at any site in which CORR is employed.
- Appropriate protective clothing is required when working with potentially hazardous compounds.
- When required use appropriate respiratory protection while on site.
- When required, use the appropriate air monitoring equipment.
- In situations where protective equipment prevents verbal communication, hand signals must be established before starting work.
- Be aware of weather conditions. Seek shelter if weather conditions deteriorate.

Emergency Communication

- The general contractor is responsible for administering first aid and arranging transportation to medical facilities, as required for its employees and its subcontractors. As soon as practical the subcontractor will communicate the emergency situation to CORR.
- **Any injury, potential for injury (such as tripping etc) or unusual health effect to a field team member must immediately be reported to the Site Safety**

Officer. All injuries/unusual health effects must be documented via an accident report.

- **Any injury, potential for in jury (such as tripping etc) or unusual health effect to a subcontractor team member** must be immediately reported to the individual's supervisor and the Site Safety Officer. All injuries/unusual health effects must be documented via an accident report.

HAZARD CONTROL PROCEDURES

Maintenance equipment poses possible hazards such as contacting above ground or below ground utilities, pinch points and impact injuries to the hands.

Control of these hazards may be accomplished by following these procedures:

(See Potential Physical Hazards).

All rotating equipment or energized parts in which workers could become entangled of injured shall be covered or guarded to the extent feasible. Barriers, work procedures, or other protective means shall be used where guards are not feasible.

- Employees should not remain near heavy equipment longer than necessary. Only trained staff operating the heavy equipment shall remain in its proximity, except during essential work activities.
- Exposure to generated dusts or vapors during any activity should be avoided and/or minimized. Water should be used for this purpose to the extent feasible.
- Hearing protection shall be worn as necessary.
- Maintenance operations will cease in the event of lightening or a storm. (See Severe Weather)
- Only equipment which has been approved by the manufacturer may be used in conjunction with site equipment.

EMERGENCY ACTION PLAN

Emergency First Aid Procedures

Eye Contact: Rinse eyes with clear water for 15 minutes and seek medical attention immediately.

Skin Contact: Wash affected area with soap and water. If irritation occurs, seek medical attention.

Inhalation: Remove employee from work area. Start CPR If necessary and seek medical attention.

Ingestion: Do not induce or prevent vomiting. Seek medical attention immediately.

EMERGENCY REFERENCE

These emergency telephone numbers must be posted conspicuously onsite.

AMBULANCE:	911
POLICE:	911
FIRE:	911
HOSPITAL	NEW HANOVER MEMORIAL HOSPITAL
LOCATION:	2131 SOUTH 17TH STREET WILMINGTON, NC 28401 (910) 343 7799

DIRECTIONS TO HOSPITAL

WHEN LEAVING THE SITE. TURN LEFT ON SUNNYVALE ROAD (TRAVEL 0.6 MILES, TURN LEFT ON CAROLINA BEACH ROAD (GO 0.9 MILES), TURN RIGHT ON SHIPYARD BOULEVARD (GO 0.8 MILES), TURN LEFT ON 17TH STREET (GO 0.8 MILES TO HOSPITAL).

To report toxic chemical and oil spills.
NATIONAL RESPONSE CENTER: 1 (800) 424-8802

CORR REPRESENTATIVES

Ray Roblin (972) 303-1039 (W), (972) 240-5322 (H), (972) 523-0487 (Cell)

CLIENT REPRESENTATIVE

Mr. Paul Heim: (763) 551-5671 (W)

CORR **ENVIRONMENTAL RESOURCES, INC.**

ACCIDENT INVESTIGATION REPORT

Injured Employee _____ Job Title _____

Home Office _____ Division/Department _____

Date/Time of Accident _____ Location of Accident _____

Witness to the Accident _____

Nature of Injury _____

Engaged in What Task when Injured? _____

_____

Will Lost Time Occur? _____How Long?_____ Date Lost Time Began _____

List Others Involved _____

How Did the Accident Occur?_____

_____

_____

_____

What Could Be Done to Prevent Recurrence of the Accident?_____

_____

_____

_____

What Actions Have You Taken Thus Far to Prevent Recurrence of the Accident? _____

_____

_____

_____

Supervisor's Signature _____Title _____ Date _____

Reviewer's Signature _____Title _____ Date _____

Note: If the space provided on this form is insufficient, provide additional information on separate paper and attach. The completed Accident Investigation. Report must be submitted to Ray Roblin within five days of the occurrence of the accident.

PRE-JOB SAFETY MEETING FORM
HeatCraft Facility

Date:_____

Attended by:

Name	Signature

Topic(s) covered:_____

_____

_____

_____

_____

Conducted by:_____