
**HEALTH AND SAFETY PLAN
OPERABLE UNIT 04, SITE 15
PESTICIDE RINSATE
DISPOSAL AREA
NAVAL AIR STATION PENSACOLA
PENSACOLA, FLORIDA**

CTO NUMBER N62467-03-G-0110/000

**PREPARED FOR:
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
2155 EAGLE DRIVE
N. CHARLESTON, SC 29406**

**PREPARED BY:
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DECEMBER 19, 2003

**AEROSTAR ENVIRONMENTAL SERVICES, INC.
SITE AND HEALTH SAFETY PLAN**

SITE NAME: Operable Unit 04, Site 15
Pesticide Rinsate
Disposal Area
NAS Pensacola, Florida

Site Contact: Mr. Greg Campbell
MAILING 190 Radford Blvd, Bldg 624
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AND COUNTY: Escambia County

Drilling/Sampling/Gauging	X	January

CTO NUMBER: N62467-03-G-0110/000
EFFECTIVE DATE: October 2003
AEROSTAR JOB #: 0403-423-07

Original Plan Date: 10/1/2003 Work Order No. _____ Work Order Date _____/_____/_____

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Revised Plan Date: _____ Work Order No. _____ Work Order Date _____/_____/_____

PLAN PREPARATION:

Prepared by: Tiffany H. Whitson Date: 10/1/2003

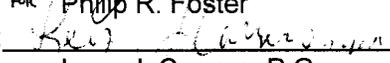
REVIEWED BY: (Please print your name under your signature)

Hydrogeologist: Leon J. Carrero, P.G. Date: 12/19/03

Project Manager: Tiffany H. Whitson Date: 17/19/03

APPROVALS:

Site Safety Officer:  Date: 12/19/03

Principal Hydrogeologist:  Date: 12/19/03
Leon J. Carrero, P.G.

NAVAL AIR STATION PENSACOLA

SITE-SPECIFIC HEALTH AND SAFETY PLAN

The safety and security of response and support personnel and others involved in an emergency response incident is the primary concern. This Health and Safety Plan (HSP) provides a general framework for the protection of spill response, worker's health and safety, as well as complying with the requirements of state and federal laws.

The information contained in the HSP is intended to be used as a guide by the Safety Officer for preparing and implementing worker health and safety protection measures in order to maximize safety and allow critical spill response activities to proceed. Specific site control and emergency response procedures will need to be developed using forms provided in this outline or other forms developed by the activity. Other procedures for activities such as confined space entry or hot work will require additional controls in order to fulfill the regulatory requirements. These and other health and safety and regulatory matters must be identified by the Safety Officer. Once identified, the Safety Officer will then need to take appropriate action to address those safety issues or regulatory requirements.

This HSP will be kept on the site during field activities and will be reviewed as necessary. The plan will be amended or revised as project activities or conditions change or when supplemental information becomes available.

A. SITE DESCRIPTION: Operable Unit (OU) 4, Site 15, is located in the northern portion of NAS Pensacola. The site, which includes the golf course maintenance facilities, is accessible from the west by an unpaved road; and consists of portions of the golf course, maintenance buildings, equipment storage buildings, and concrete wash-down areas. The site is surrounded by the golf course on its southern and western sides and Bayou Grande approximately 600 feet to the north.

B. SITE HISTORY: From 1963 to the present, fertilizer, pesticide, and herbicide materials for application at the golf course have been stored and mixed at the golf course maintenance facility. Application equipment also is rinsed at the facility's wash-down pads. Prior to the construction of the wash racks, cleaning of the equipment at the asphalt wash-down pad released diluted rinsate solutions directly onto the surrounding ground surface, where the materials infiltrated the soil. In addition, during the removal of the underground storage tank (UST) in approximately 1993, the contents of the tank were spread across the ground surface (Geraghty and Miller, 1984).

C. SUMMARY OF HAZARDS: This section provides safe work practices and control measures used to reduce or eliminate potential hazards. These practices and controls are to be implemented by the party in control of either the site or the particular hazard. The health and safety hazards posed by field activities have been identified in this section. As the site is located at a golf course facility, hazards include potential for spills and/or releases of fertilizer, pesticide and herbicide materials, fire hazards, and traffic safety. In addition, potential contaminants include gasoline, diesel and used oil.

Diesel Fuel

Aspiration of liquid into the lungs may cause extensive pulmonary edema (dry land drowning). Prolonged or repeated skin contact will remove skin oils leading to irritation and/or dermatitis. High vapor concentrations are irritating to the eyes and lungs, and may cause headaches, dizziness, and unconsciousness.

Gasoline (unleaded)

Gasoline is a mixture of hydrocarbons, including aliphatic hydrocarbons, aromatic hydrocarbons, a variety of branched and unsaturated hydrocarbons, and additives. Extremely high levels of exposure could produce conditions such as dizziness, coma, collapse, and death. Exposure to non-lethal doses is usually followed by complete recovery, although cases of permanent brain damage following massive exposure have been reported.

Secondary Chemical Hazard Identification

Oil and hazardous substance spill responses require the use of a wide variety of chemicals and materials which may singularly or in conjunction with the site work conditions create various hazards to site workers. Several of these hazards are identified in the following table.

TABLE FRP C.1
SECONDARY CHEMICAL HAZARDS

Hazard Description	RECOMMENDED PROTECTIVE EQUIPMENT	CONDITIONS UNDER WHICH EXPOSURE MAY OCCUR
Diesel and Gasoline Engine - Exhaust Exposure to diesel or engine exhaust may promote inhalation of hydrocarbons, carbon monoxide and particulates. Exposure may irritate eyes and mucous membranes.	Monitor CO and O ₂ levels, ventilate area, and use half-mask respirator with organic and particulate filters.	Diesel and gasoline exhaust exposure may occur in poorly ventilated areas in the vicinity of diesel equipment. It may also occur in sheltered outdoor areas on calm days or during temperature inversion conditions.
Low Oxygen Levels - Confined or restricted space atmospheres may be dangerous to life and health if O ₂ levels are below 19.5% (oxygen deficient) or greater than 25% (oxygen enriched)	Monitor O ₂ levels and ventilate area. Do not enter O ₂ deficient atmosphere without a confined space entry permit and supervision from the Safety Officer. Supplied air Personal Protective Equipment (PPE) is required. <u>Safe O₂ levels 19.5%-23%.</u>	Poorly ventilated areas in the vicinity of oxygen consuming materials or equipment. This includes waste undergoing biological degradation or fuel powered equipment and confined or restricted spaces (e.g., tanks).
High Carbon Monoxide Levels - Carbon monoxide is a colorless and odorless gas, slightly less dense than air and is toxic by inhalation. Carbon monoxide is also highly flammable (Lower Explosive Limit (LEL) = 12%; Upper Explosive Limit (UEL) = 75% by volume in air)	Monitor CO, and ventilate area. Use of supplied air PPE is required. Do Not enter high CO atmosphere without a confined space entry permit and supervision from Safety Officer. Safe CO levels are less than 50 ppm TWA.	Poorly ventilated areas in the vicinity of internal combustion engines. Acetylene welding, industrial heating equipment and processes involving incomplete combustion may also create this hazard.

<p>Other Spill Response Specialty Agents - Due to the varied nature of oil spill cleanup operations, numerous specialty chemicals in solid, liquid, and gaseous phases may be used or stored in work areas.</p>	<p>Obtain and review MSDSs for all products. Verify safety precautions and PPE needs. Obtain any required respirator, skin, eye, and splash protection.</p>	<p>Exposure to these materials in poorly ventilated areas or in open areas may occur if workers are unaware of the chemicals' toxic or physical properties.</p>
<p>Particulates - Particulates may cause irritation to lungs, eyes, and mucous membranes. Particulates may also have toxic effects (e.g., lead, asbestos, cadmium, and silica).</p>	<p>Use half-mask respirator with particulate filter and appropriate cartridges. Use other PPE for eye and skin protection as needed.</p>	<p>Use of powdered or granular oil absorbent (vermiculite, diatomaceous earth, etc.) or other specialty products where particles become airborne and enter the breathing zone of personnel. Wind carried silts, and other dusts may also be a factor.</p>
<p>Biological Nutrients - Inhalation of vapors, mists, and particulates or skin contact with nutrients used for biological treatment may result in irritation to lungs, eyes, and mucous membranes. Dermal absorption is also possible.</p>	<p>Obtain and review MSDS for the specific product. Verify safety precautions and PPE needs. Obtain required respirator, skin, eye, and splash protection.</p>	<p>Use of nutrients (fertilizers) in a spill cleanup effort may create potential exposures during spray application or other distribution and mixing process.</p>
<p>Dispersant - Inhalation of vapors or mists or skin contact may result in irritation to lungs, eyes, and mucous membranes. Dermal absorption is also possible.</p>	<p>Obtain and review MSDS for specific product. Personnel involved in handling or applying dispersant will be provided specific training.</p>	<p>Application of dispersant during the initial spill event may expose workers to respiratory and dermal hazards.</p>

TABLE C.2
SECONDARY CHEMICAL HAZARDS

HAZARD DESCRIPTION	RECOMMENDED PROTECTIVE EQUIPMENT	CONDITIONS UNDER WHICH EXPOSURE MAY OCCUR
<p>Confined Spaces - Inadequate ventilation coupled with limited egress creates potentially hazardous situations for workers. Oxygen deficient, toxic or flammable atmospheres may exist in these areas. All OSHA procedures regarding confined space entry will be followed.</p>	<p>Monitor CO, O₂, toxic, and flammable gas levels, and ventilate area. Do not enter a confined space without a confined space entry permit and supervision from the Safety Officer. Safe O₂ levels = 19.5% to 23%; flammable gas limits less than 10% LEL; toxic limits less than ½ PEL or Threshold Limit Value (TLV) which ever is the lower value.</p>	<p>Confined spaces may be encountered on vessels, inside tanks, inside buildings, on drill rigs, in sumps, in ditches, etc. Product vapors or other emissions resulting from response operations may intensify this hazard.</p>

<p>Flammable Atmosphere - A flammable gas, vapor, mist, or dust when mixed with air may create a flammable or explosive condition. Volatile vapors or gases will generally be of a sufficient quantity during the initial few hours of a spill to cause a flammable atmosphere.</p>	<p>Conduct flammable gas and oxygen monitoring prior to starting any work. Purge or inert atmospheres when possible. Obtain hot work permits prior to starting any cutting or welding. Safe flammable limits are less than 10% of the Lower Explosive Limit.</p>	<p>Flammable conditions may exist during the initial phase of a spill or at any time in areas where flammable dusts or vapors may concentrate. Holds of vessels and fueling areas are prime locations to find flammable atmospheres.</p>
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Subjecting response personnel to the hazards identified above can be avoided through the use of the proper personal protective equipment (PPE) and through proper monitoring and supervision by health and safety personnel. The following paragraphs briefly discuss proper procedures associated with some of the secondary hazards.

Hazardous Conditions

The hazards associated with the contaminants listed in above table are best controlled through early detection, use of PPE, implementation of engineering controls, or by avoiding the hazard. Early detection can be accomplished by using common sense and understanding the Health and Safety Plan.

Confined Space Entry

Confined space entry is prohibited at all times while on the site.

Physical Hazards

Physical hazards associated with oil spill cleanup operations are varied and the associated hazards depend upon the site-specific conditions, cleanup operations, and the type of equipment being used. Severe environmental and weather conditions, complex transportation and logistical requirements, long work hours, and intensive labor needs contribute to the high susceptibility of oil spill workers to physical hazards. The following table summarizes some of the physical hazards associated with spill cleanup operations.

TABLE FRP C.3
GENERAL PHYSICAL HAZARDS

Hazard Description	Hazard Treatment Guidance	Hazard Abatement Technique
Slip, Trip, Fall - Oil spill responders work in places where poor footing and lighting creates slip, trip, fall hazards.	Survey responders for possible unknown injuries. If injured, treat with first aid and seek medical attention.	Provide proper illumination in work areas. Keep work areas free of excess clutter. Move cautiously in work areas and use non-slip soles on footwear. Attempt to recognize and avoid or control hazards in the work area. Conduct hazard awareness briefings.
Back Injuries - The requirement to mobilize and use great quantities of equipment during the oil spill response creates high probability of back injuries. Slips, trips, and falls contribute to back injuries.	Remove worker from the work area to prevent further stress on the worker's back. If necessary, stabilize the victim in a pron position with a backboard to prevent additional injury. Seek medical attention.	Lift objects correctly. Obtain assistance from co-workers. Use mechanical devices to reduce lifting effort. Do back and stretching exercises prior to lifting objects. Bend the legs when lifting instead of bending from the waist.
Eye Injuries - An oil spill response may expose workers to numerous eye hazards, including those resulting from chemical exposure, equipment hazards, open flames, and impacts from particulates or other foreign bodies.	If chemicals have contacted a worker's eye, flush eye with water immediately. If particulate is in the eye, flush eye with water. If an object is imbedded in the eye, do not attempt to remove it. Cover the affected eye to prevent further irritation and seek medical assistance.	Use appropriate eye protection such as safety glasses, goggles, and face shields. Avoid exposure to vapors, mists, fumes, and dusts.

<p>Handling of Hand Tools and Spill Response Equipment - Tools used in cleanup operations such as shovels, picks, axes, etc. can inflict injury to adjacent workers if adequate distance is not maintained. Improper use of tools may also cause back injuries. Sorbents, containment booms, and waste materials can be heavy and awkward and handling and moving them may cause back injuries.</p>	<p>If injured, treat with first aid and seek medical assistance.</p>	<p>Team leaders must provide orientation for workers to familiarize them with the equipment that is being used. Use hand tools in a manner that will limit physical stress. Take frequent breaks to limit fatigue. Allow water to drain or remove ice from equipment prior to moving it. Use mechanical devices to handle heavy materials.</p>
<p>In Situ Burning - In situ burning will present physical fire hazards as well as particulate hazards, visibility problems and heated gas hazards resulting from the combustion of oil and oily debris.</p>	<p>Determine weather conditions and select escape route from plume of burn area. Contact other vessels for assistance and exit burn area as rapidly as possible.</p>	<p>Adhere to burn safety plans, obtain frequent weather forecasts, stay upwind. Refer to tide and current predictions to assist in burn area avoidance.</p>
<p>Hypothermia - Hypothermia is the lowering of the body temperature resulting from exposure to the elements. Hypothermia will induce death if not treated properly. Symptoms include shivering, loss of lucidity, loss of coordination, confusion, and cold skin temperature. Hypothermia will occur rapidly when immersed in cold water.</p>	<p>Prevent additional heat loss and warm victim by any means available. Remove any wet clothing, add heat by placing warm items next to the victim's body. Do not give alcoholic beverages to victim. Seek medical assistance.</p>	<p>Hypothermia can be avoided by dressing appropriately for weather conditions and regulating body temperature during work activities. Establishing a system to visually monitor workers for hypothermia warning signs will assist early detection. Avoid situation where clothes become wet such as from rain or ocean spray. Avoid excess heat loss through wind exposure.</p>
<p>Frostbite - Frostbite may occur when workers are exposed to subfreezing weather conditions and improperly protected from the cold. Frostbite may affect exposed flesh or non-exposed body parts which transfer heat at rates sufficient to cause freezing.</p>	<p>Seek medical attention at once. Frostbit skin will appear white or light colored and may feel cold and solid. Thaw out body parts with warm water or by application of firm steady pressure with a warm body part. Do not thaw body parts unless they can be maintained at a warm temperature after thawing.</p>	<p>Carefully monitor weather conditions to allow time for work crews to prepare for forecasted cold weather. Workers should eat high energy foods, keep clothing dry, bring extra dry clothing, and test for extremity circulation on a regular basis.</p>
<p>Noise Injuries - Sound sources that generate noise greater than 85 decibels include aircraft, outboard engines, generators, compressors, heaters, and heavy equipment. Noises that are greater than 85 decibels may cause permanent damage to hearing.</p>	<p>Monitor noise levels. Remove affected worker from duties that have high noise exposure potential. Provide worker with additional hearing protection equipment. Seek medical assistance as necessary.</p>	<p>Workers should use ear protection equipment or avoid high noise areas.</p>

<p>Site Illumination - Response operations during conditions of poor visibility or darkness may create dangerous or unhealthy conditions for response workers.</p>	<p>Provide substantial amounts of lighting and generator equipment. Personal head lamps and vehicle lighting may be used as supplemental lighting.</p>	<p>Provide adequate lighting. Use head lamps, portable lighting, and equipment lights to illuminate work sites.</p>
<p>Specialty or Heavy Equipment - Mechanical equipment may have exposed moving parts, generate heat capable of causing burns, or generate high pressure liquids or gases which may injure workers. Movement of heavy equipment may cause injuries to personnel.</p>	<p>Perform first aid; seek medical attention immediately.</p>	<p>Read all operating guide manuals. Be aware of any moving parts which may cause injury. Avoid direct exposure to heat or pressure generated by equipment. Wear appropriate PPE to limit possible injury. Install backup alarms on heavy equipment. Ensure all guards are in place.</p>
<p>Vehicle, Aircraft, or Vessel Accidents - Response efforts will in many cases require response personnel to travel by various modes of transportation. The emergency nature of the response may expose worker to marginally safe traveling conditions. The potential severity of Alaskan weather may exacerbate the consequences of a minor accident.</p>	<p>Be aware of you position at all times and know the locations of safe refuges along your intended travel route. Notify the Incident Command Post if an accident occurs and what assistance is required.</p>	<p>During all vehicle, aircraft, or vessel travel, workers will adhere to all established travel safety procedures. This includes fastening seat belts, maintaining communications, and wearing or having easy access to safety equipment such as Arctic clothing, life vest, and survival gear.</p>
<p>Heat Stress - Heat stress may occur when a worker is exposed to elevated temperature conditions. Examples of when this may occur include worker suited in protective clothing which limits cooling of the individual and worker subjected to high ambient temperatures.</p>	<p>Move victim to cool, shaded location. Cool victim quickly by wrapping in wet towels. Treat victim for shock. Seek medical assistance immediately.</p>	<p>Heat stress may be avoided by taking frequent breaks to cool down and consuming large amounts of liquids. PPE can be fitted with cooling equipment. Ventilation may be used to assist with cooling. New site workers must acclimate themselves to the site conditions.</p>
<p>Worker Exhaustion - Spill response activities often involve strenuous tasks and long work hours. Symptoms of exhaustion include loss of concentration, increased frequency of trips, falls, and slips, and worker complaints of cramping and pain. Work exhaustion often manifests itself in other hazards such as accidents and back injuries.</p>	<p>Supervisors must closely observe workers for signs of exhaustion. Once an exhausted worker is identified, he shall be assigned to a less stressful task or removed from labor duties entirely until recovered. Seek medical assistance as necessary.</p>	<p>Close observation by supervisors and use of the buddy system will be used to detect and prevent worker exhaustion. Frequent breaks along with consumption of high energy foods and liquids will also decrease the likelihood of exhaustion.</p>

<p>Wildlife - Spill workers may encounter a wide variety of wildlife during response activities. Some of the wildlife may be capable of inflicting injuries to or killing response personnel. Bears present the primary wildlife hazard.</p>	<p>Treat injuries with standard first aid methods. Treat victim for shock. Seek medical assistance as necessary.</p>	<p>Wildlife protection procedures will be established for each specific spill event. These procedures may include the procurement of firearms or a "bear watch" for each group.</p>
<p>Weather - Sudden changes in weather conditions may jeopardize the safety of responders. Blizzards, ocean storm, high winds, dramatic temperature changes, or fog can all pose a serious threat.</p>	<p>If caught in severe weather, consider options carefully. Evacuation of work site may be necessary.</p>	<p>Obtain daily weather forecasts and updates as available. Preplan work site evacuation plans for worst case scenarios. Workers should bring extra clothing and emergency survival gear. Communications with the Incident Command Center must be maintained in order to coordinate evacuation or to receive support.</p>
<p>Electric Shock - Electric equipment operated at greater than 120 volts, used in wet or conductive areas, or damaged equipment can produce a severe electrical shock.</p>	<p>Remove victim from contact with energized parts. Administer CPR and first aid as necessary. Obtain medical assistance.</p>	<p>Use intrinsically safe equipment or ground fault interrupter circuits to prevent shock.</p>

D. INITIAL RESPONSE ACTIONS

Initial Site Assessment

An Initial Site Assessment Form, such as Table D-1, should be used by the Initial Incident Commander to determine the hazards at the spill site. This assessment must be made before any response effort can be undertaken. When the response effort is to be initiated, an Initial Site Safety Plan, should be used to identify the spilled substance, the level of personal protective equipment (PPE) needed, type of monitoring to be used, and other pertinent response information.

Site Security

The Initial Incident Commander must evaluate the seriousness of the situation and determine the level of a health or safety risk to response personnel or the public in general and notify the Incident Commander as soon as possible. If the situation requires security, local military police should be contacted. Local law enforcement officials should also be contacted for evacuations, establishing road blocks, and limiting access to response areas.

Surface Terrain and Meteorology

The direction and velocity of prevailing winds and the proximity of the spill to possible sources of ignition, such as running equipment, must be immediately addressed. All potential ignition sources

must be kept upwind of the spill or secured immediately. Some flammable vapors may be heavier than air and travel for long distances along the surface or settle in low lying areas.

Atmospheric Testing

A hazard evaluation procedure must be established and implemented by a trained individual in order to establish safe work practices, level of personal protective equipment, and other control procedures before any personnel are committed to spill response activities. At a minimum, the flammability of the vapors and the oxygen levels must be evaluated throughout the spill site. These levels should continue to be evaluated periodically throughout the work shift to detect changes in airborne hazards that may result from response activities or changing weather conditions.

TABLE D-1
 INITIAL SITE ASSESSMENT FORM
 [to be completed by the Initial Incident Commander prior to initiating response]

DATE	_____
	DD MM YY
Initial Incident Commander	
1. Wind Direction	Toward Your Position ___ Away From Your Position ___
2. Are people injured/endangered?	___ YES ___ NO
3. Are non-Navy persons observing the incident?	___ YES ___ NO
4. Are persons involved in rescue attempts?	___ YES ___ NO
5. Are there any signs of potential hazards from:	Electrical lines down or overhead ___ YES ___ NO Unidentified Liquids or solids ___ YES ___ NO Visible vapors ___ YES ___ NO Unusual smells or odors ___ YES ___ NO Fire or sparks from nearby ignition sources ___ YES ___ NO Holes, caverns. Deep ditches, fast moving water or cliffs nearby ___ YES ___ NO local vehicular or pedestrian traffic ___ YES ___ NO Warning placards, color coded placards, or danger signs ___ YES ___ NO Is the ground dry ___ YES ___ NO Is the ground wet ___ YES ___ NO Is the ground icy ___ YES ___ NO Other
6. Make an initial assessment of the flammability of vapors and the level of oxygen present	%LEL- %O2-
7. Approach the spill site from the upwind side and observe any change in the status of any of the above items	<u>Item number</u> <u>Change Observed</u> _____ : _____
8. Is the incident scene secure?	___ YES ___ NO

<p>9. Is there a need for the additional support/equipment:</p>	<p>Security _____</p>
	<p>Personal Protective Equipment _____</p>
	<p>Hazardous Materials Technician/ Specialists [identification/ monitoring/source control] _____</p>
	<p>Sites for Command Center & Decontamination Station _____</p>
	<p>Equipment needed to control spill _____</p>
	<p>Other _____</p>

E. AREA VICINITY DESCRIPTION: The site is located within NAS Pensacola in Escambia County and approximately five miles west of the city limits of Pensacola, Florida. Operable Unit 4, Site 15 is located in the northern portion of NAS Pensacola. The site is surrounded by the golf course on its southern and western sides and Bayou Grande approximately 600 feet to the north. There are no residential areas in the vicinity of the subject site.

F. TOPOGRAPHY AND SITE ACCESS: The site is accessible from the west by an unpaved road. The approximate elevation of the subject site is 10 feet above mean sea level. Based upon review of the USGS "Fort Barrancas, Florida" topographic map, regional groundwater flow in the vicinity of the subject property appears to be towards the north towards Bayou Grande.

G. ADDITIONAL INFORMATION: _____

1. **PROJECT OBJECTIVES** - THE OBJECTIVE OF THIS PROJECT IS TO: (DESCRIBE TASK(S) TO BE PERFORMED, I.E., DRILL, INSTALL MONITOR WELLS, MONITOR/GAUGE WELLS, COLLECT SAMPLES, INSTALLATION/MAINTENANCE OF RECOVERY SYSTEMS, ETC.)

1) Properly abandon nineteen groundwater monitor wells (three permanent wells and sixteen temporary wells).

2) Installation of eleven new flush mounted groundwater monitor wells to be located with the assistance of the golf course manager.

3) Survey all newly installed monitor wells.

4) Collect groundwater samples from the newly installed monitor wells.

2. **ON-SITE ORGANIZATION AND COORDINATION** - THE FOLLOWING ARE DESIGNATED TO CARRY OUT STATED JOB FUNCTIONS ON SITE.

The employees listed meet state and federal hazardous waste operations requirements 29 CFR1910.120(b)(4)(II)(b) and 20 CFR1910.120(e) for HAZWOPER 40-hour initial training, 3-day on-the-job experience, and 8-hour annual refresher training. Employees designated Site Safety Officer has completed a 12-hour site safety coordinator course, and have documented requisite field experience. The employees listed below are currently active in a medical surveillance program that meets state and federal regulatory requirements for hazardous waste operations.

(NOTE: ONE PERSON MAY CARRY OUT MORE THAN ONE JOB FUNCTION.)

RESPONSIBILITY

PROJECT MANAGER:

HYDROGEOLOGIST:

FIELD TEAM LEADER

SITE SAFETY OFFICER:

PRINT FULL NAME

Tiffany H. Whitson

Leon J. Carrero, P.G.

Philip R. Foster

Philip R. Foster

ALL ACTIVITIES ON-SITE MUST BE CLEARED BY THE HYDROGEOLOGIST.

The Project Manager is responsible for providing adequate resources (budget and staff) for project-specific implementation of the management process. The Project Manager has overall management responsibility for the tasks listed below. The Project Manager may explicitly delegate specific tasks to other staff. The Hydrogeologist is responsible for providing technical assistance for the Field Team Leader. The Site Safety Officer is responsible for verifying that the project is conducted in a safe manner.

3. **ON-SITE CONTROL**

A SAFE PERIMETER HAS BEEN ESTABLISHED WITH CONTROL BOUNDARIES IDENTIFIED AND MARKED OFF WITH - (BOUNDARY TAPE, TRAFFIC CONES, BARRICADES).

4. PHYSICAL HAZARDS

THE FOLLOWING PHYSICAL HAZARDS ARE EXPECTED ON-SITE:

(i.e., overhead wire, utilities, substation power, mark out dates, slip, trip and fall, confined space, heavy traffic, etc.).

Traffic safety from vehicles in and around the golf course. Overhead wires and utilities located within the subject site. Fire safety and potential spills or releases from diesel, gasoline and used oil.

FIRST AID SUGGESTED FOR THE OBSERVED PHYSICAL HAZARDS IS:

Place traffic cones around sampling areas and wear traffic vests during sampling activities. The hazards associated with the contaminants listed above are best controlled through early detection, use of PPE, implementation of engineering controls, or by avoiding the hazard. Early detection can be accomplished by using common sense and understanding the Health and Safety Plan.

5. PERSONAL PROTECTIVE EQUIPMENT

BASED ON EVALUATION OF POTENTIAL HAZARDS, THE FOLLOWING LEVELS OF PERSONAL PROTECTION HAVE BEEN DESIGNATED FOR THE APPLICABLE WORK AREAS OR TASKS:

<u>JOB FUNCTION</u>	<u>LEVEL OF PROTECTION</u>
Monitor well Installation	A B C D OTHER
Monitor well abandonment	A B C D OTHER
Surveying	A B C D OTHER
Groundwater Sampling	A B C D OTHER

SPECIFIC PROTECTIVE EQUIPMENT MODIFICATION FOR EACH LEVEL OF PROTECTION IS AS FOLLOWS:

Steel-toed boots, hard- hats (when necessary), safety glasses, ear protection, and gloves.

IF AIR PURIFYING RESPIRATORS ARE AUTHORIZED, _____ (FILTERING MEDIUM) IS THE APPROPRIATE CANISTER FOR USE WITH THE INVOLVED SUBSTANCES AND CONCENTRATIONS.

*Activated charcoal suitable for organic vapors and acid gases with dust/particle pre-filters if required.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE FIELD SAFETY COORDINATOR AND HYDROGEOLOGIST.

6. DECONTAMINATION PROCEDURES -

Personnel and equipment leaving an identified Exclusion Zone, (indicated in Section F), shall be thoroughly decontaminated. The standard level "C" decontamination protocol shall be used with the following decontamination approach:

- (1) Wash gloves & boots using Decon solution and tap water rinse.
- (2) Remove securing tape from wrists and ankles.
- (3) Remove disposable tyvek (without boots).
- (4) Remove boot covers and boots.
- (5) Remove gloves.
- (6) Remove face mask respirator.

For level "D" dress-down, follow steps 1, 3, 4, and 5.

7. ENVIRONMENTAL MONITORING

THE FOLLOWING MONITORING INSTRUMENTS SHALL BE USED AT SPECIFIED INTERVALS.

OXYGEN MONITOR	- CONTINUOUS/HOURLY/DAILY/OTHER _____
LEL INDICATOR	- CONTINUOUS/HOURLY/DAILY/OTHER _____
HNU	- CONTINUOUS/HOURLY/DAILY/OTHER _____
OVA	- CONTINUOUS/HOURLY/DAILY/OTHER _____
CARBON MONOXIDE INDICATOR	- CONTINUOUS/HOURLY/DAILY/OTHER _____
HYDROGEN SULFIDE	- CONTINUOUS/HOURLY/DAILY/OTHER _____
COLOIMETRIC TUBES (TYPE)	- CONTINUOUS/HOURLY/DAILY/OTHER _____ - _____
RADIATION DETECTOR	- CONTINUOUS/HOURLY/DAILY/OTHER _____
	OTHER _____ - CONTINUOUS/HOURLY/DAILY/OTHER _____

GUIDELINES FOR AIR MONITORING GASOLINE HAZARDS ¹

Monitoring Instrument	Hazard	Measured Level	Action
CGI-Combustible Gas indicator (% Lower Explosive Limit of combustible Gases)	Explosive Atmosphere in immediate work area	< 10% LEL	Evacuate
CGI-Combustible Gas Indicator (Oxygen %)	Oxygen concentration	< 19.5%	Monitor while wearing SCBA. NOTE: combustible gas readings are not valid in atmospheres with < 19.5% Oxygen
		19.5 - 23.5%	Continue investigation with caution
		> 23.5%	Discontinue investigation monitoring. Fire Hazard Potential. Consult Specialist
Photoionization (Hnu)/ Flame Ionization (OVA) Meters ACTIONS TAKEN ARE BASED ON SUSTAINED OR FREQUENT READINGS.	Volatile Contaminants	Breathing Zone Background to 200 ppm 200 to 300 ppm over background. 300 to 500 ppm over background. Over 500 ppm over background.	Level D protection ² Level C Protection ² Level B Protection ² EVALUATE EXPOSURE SOURCE

¹ - Gasoline is used for this guideline based on it's higher volatility.

² - Meter readings are not the sole criteria for selecting the level of protection. These are only generalized guidelines.

GUIDELINES FOR MONITORING IONIZATION RADIATION

MEASURED RADIATION LEVELS	ACTION TAKEN BY FIELD CREW
1 Milli-rem/hour 2 Milli-rem/hour	Proceed with caution Discontinue work and consult a health physicist

7.1 Air Monitoring Specifications

<u>Instrument</u>	<u>Tasks</u>	<u>Action Levels</u>	<u>Frequency</u>	<u>Calibration</u>
PID	Sampling barometric wells	<10 ppm >10-25 ppm	Level D suspend operation and allow vapors to dissipate to <10 before continuing in Level D	Initially and periodically during task Daily

7.2 Calibration Specifications

<u>Instrument</u>	<u>Gas</u>	<u>Span</u>	<u>Reading</u>	<u>Method</u>
PID:OVM	100 ppm isobutylene	RF=1.0	100ppm	1.5 lpm reg T-tubing
PID:TVA 1000	100 ppm isobutylene	CF=1.0	100ppm	1.5 lpm reg T-tubing
PID:OVA	100 ppm methane	3.0 +/- 1.5	100ppm	1.5 lpm reg T-tubing

8. EMERGENCY RESPONSE PLAN

8.1 Pre-Emergency Planning

The Site Safety Officer performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with onsite parties, the facility, and local emergency-service providers as appropriate.

- Review the facility emergency and contingency plans where applicable.
- Determine what onsite communication equipment is available.
- Determine what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Where appropriate and acceptable to the client, inform emergency room and ambulance and emergency response teams of anticipated types of site emergencies.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, supplies, and potable water.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.

- Rehearse the emergency response plan before site activities begin, including driving route to hospital.
- Brief new workers on the emergency response plan.

8.2 Emergency Equipment and Supplies

The Site Safety Officer should mark the locations of emergency equipment on the site map and post the map.

Emergency Equipment and Supplies

20 LB (or two 10-LB) fire extinguisher (A, B, and C classes)

First Aid Kit

Eye Wash

Potable Water

Blood-borne-pathogen kit

Location

Support Zone/Heavy Equipment

Support Zone/Field Vehicle

Support & Decon Zone/Field Vehicle

Support & Decon Zone/Field Vehicle

Support Zone/Field Vehicle

8.3 Evacuation

- Evacuation routes and assembly areas are specified on the site map
- Evacuation routes and assembly areas will be designated by the Site Safety Officer before work begins.
- Personnel will assemble at the assembly area upon hearing the emergency signal for evacuation.
- The Site Safety Officer and a “buddy” will remain on the site after the site has been evacuated (if safe) to assist local responders and advise them of the nature and location of the incident.
- The Site Safety Officer will account for all personnel in the onsite assembly area.
- A designated person will account for personnel at alternate assembly areas.
- The Site Safety Officer will write up the incident as soon as possible after it occurs and submit a report to the Corporate Director of Health and Safety.

8.4 Evacuation Signals

Signal

Grasping throat with hand

Thumbs up

Grasping buddy's wrist

Continuous sounding of horn

Meaning

Emergency-help me.

OK; understood

Leave area now.

Emergency; leave site now.

8.5 Emergency Phone Numbers

LOCAL POLICE 911

LOCAL FIRE 911

LOCAL RESCUE 911

LOCAL HOSPITAL (850) 452-5242 ext. 131

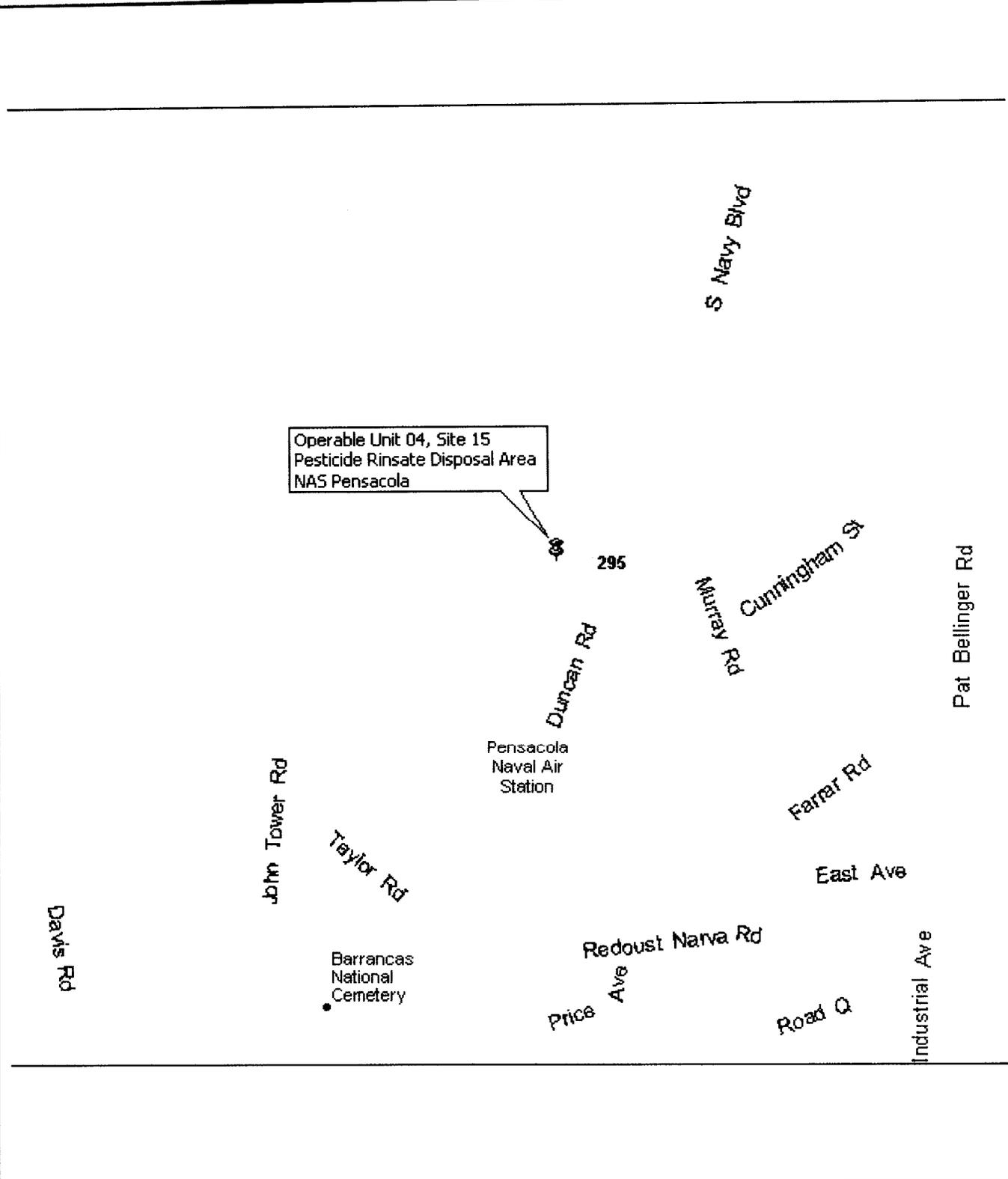
LOCAL HOSPITAL: ADDRESS -
Branch Medical Clinic - NAS Pensacola
450 Turner Street
Pensacola, FL 32508

ROUTE FROM SITE: Depart Operable Unit 04, Site 15 to the east. Turn RIGHT (South) onto SR-295 [Duncan Rd]. Bear LEFT (South) onto Duncan Rd. Turn LEFT (East) onto Turner St. and travel for 0.2 miles. The Branch Medical Clinic is on the left in Building 3600, Suite B.

KEY PERSONNEL: Office Resources

Aerostar Environmental Services, Inc.
(251) 776-7344 - (251) 776-1758 Fax
7856 Westside Park Drive Suite G
Mobile, Alabama 36695

<u>Dawn Blackledge, P.G.</u>	-	President
<u>Tiffany H. Whitson</u>	-	Project Manager
<u>Leon J. Carrero, P.G.</u>	-	Project Hydrogeologist
<u>Philip R. Foster</u>	-	Project Geologist



Operable Unit 04, Site 15
 Pesticide Rinsate Disposal Area
 NAS Pensacola

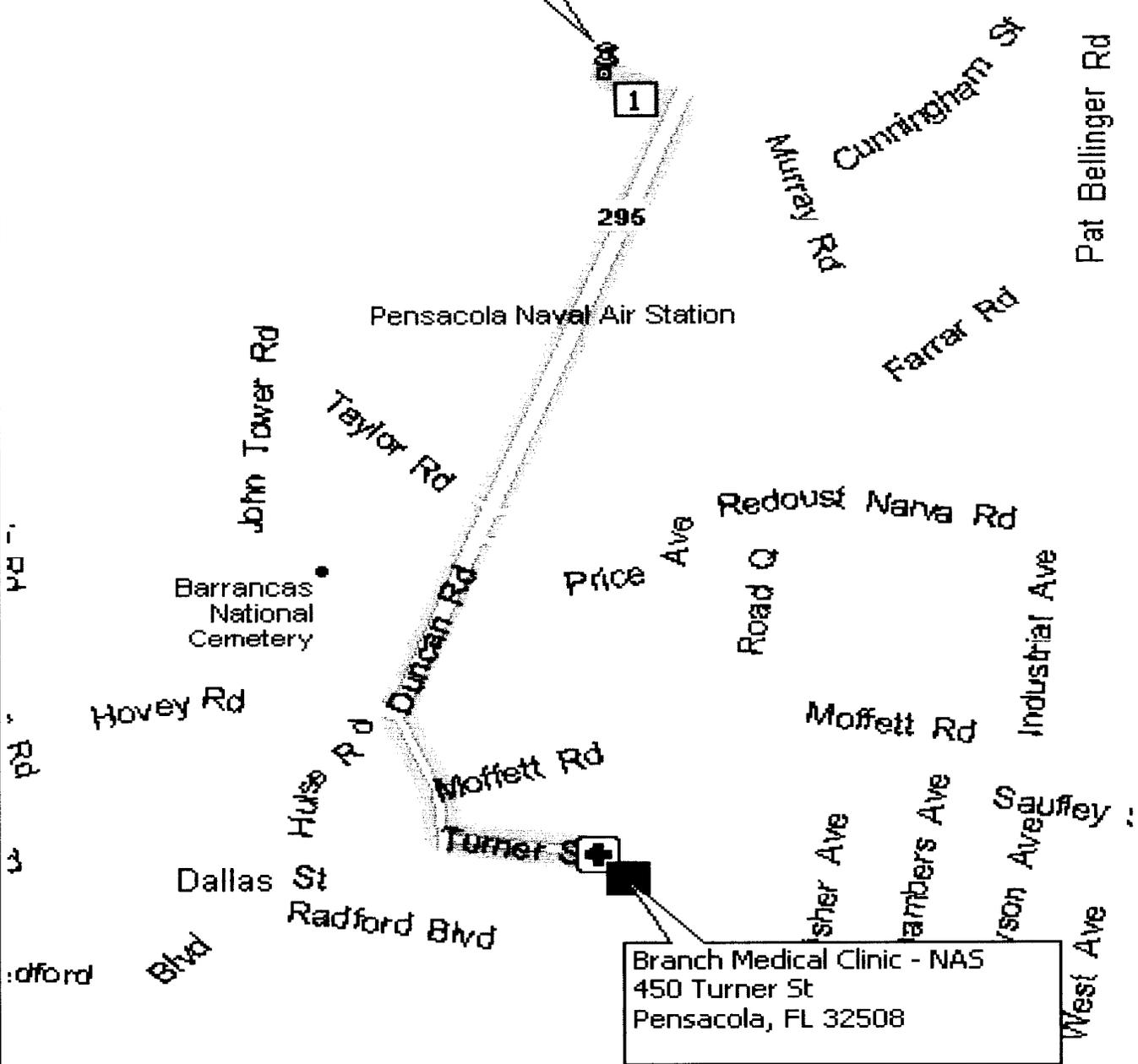
SITE LOCATION MAP



OPERABLE UNIT 04, SITE 15
 PESTICIDE RINSATE DISPOSAL AREA
 NAS PENSACOLA, ESCAMBIA COUNTY,
 FLORIDA

DRAWN BY: PRF
 REFERENCE: MAP OF
 TALLAHASSEE, FLORIDA
 PREPARED BY: THE
 MICROSOFT CORP.

Operable Unit 04, Site 15
Pesticide Rinsate Disposal Area
NAS Pensacola



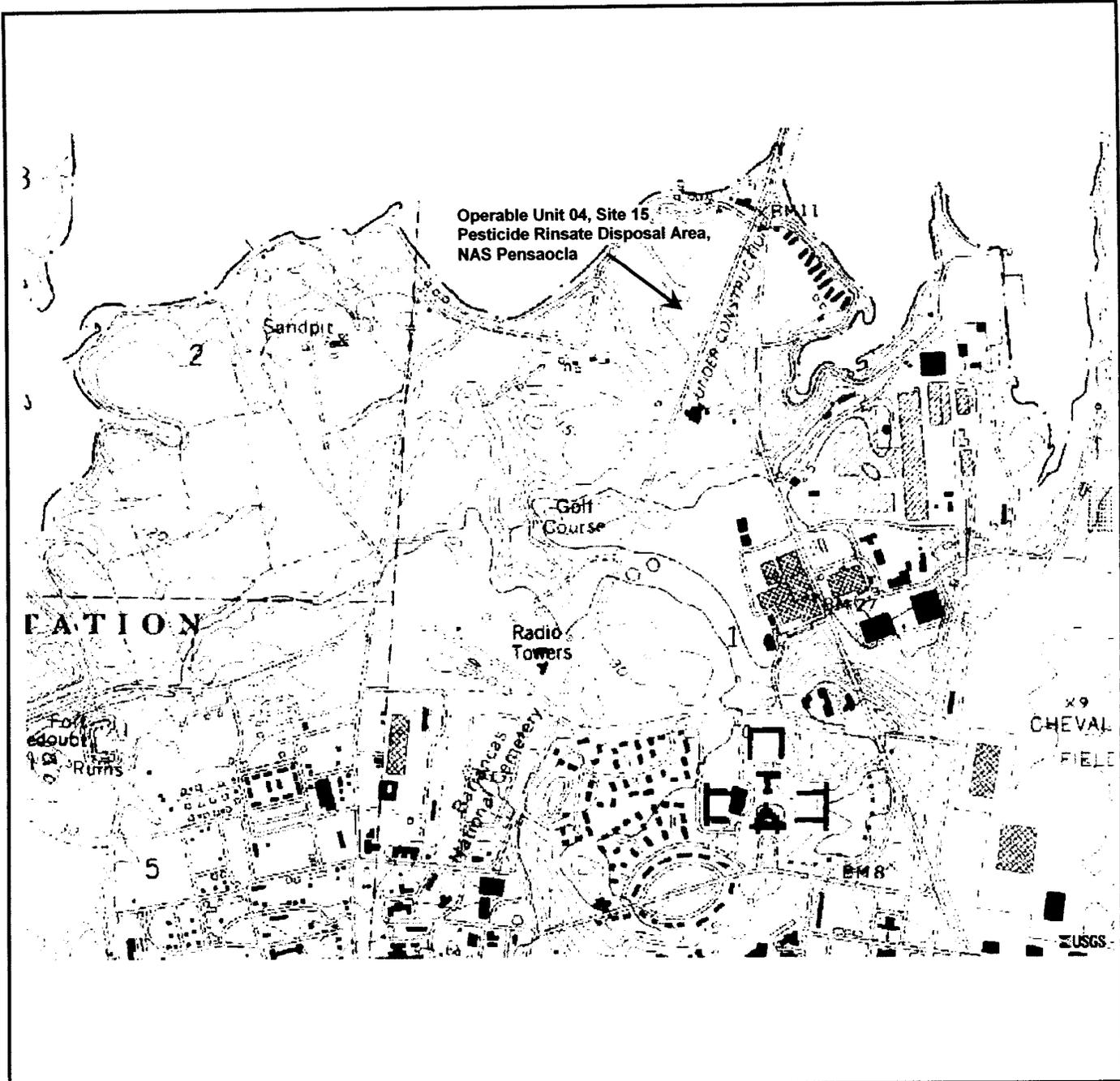
Corp. All rights reserved.

HOSPITAL LOCATION MAP



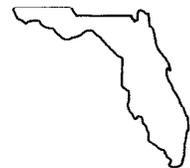
OPERABLE UNIT 04, SITE 15
PESTICIDE RINSATE DISPOSAL AREA
NAS PENSACOLA, ESCAMBIA COUNTY,
FLORIDA

DRAWN BY: PRF
REFERENCE: MAP OF TALLAHASSEE, FLORIDA
PREPARED BY: THE MICROSOFT CORP.



FORT BARRANCAS, FLORIDA
QUADRANGLE

7.5 MINUTE SERIES
(TOPOGRAPHIC)
CONTOUR INTERVAL 10 FEET



SCALE:
1:24,000

ISSUED 1992

QUADRANGLE LOCATION

TOPOGRAPHIC SITE LOCATION MAP



OPERABLE UNIT 04, SITE 15
PESTICIDE RINSATE DISPOSAL AREA
NAS PENSACOLA, ESCAMBIA COUNTY,
FLORIDA

DRAWN BY: PRF

REFERENCE: MAP OF
NAS PENSACOLA, FLORIDA
PREPARED BY: U. S.
GEOLOGICAL SURVEY