

Health and Safety Plan

(Red)

103688

Blosenski Landfill West Caln Township Chester County, PA



Department of the Army
Corps of Engineers
Omaha District

1989



O'BRIEN & GERE

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HEALTH AND SAFETY PLAN

Section #	Item #	Response
<hr/> COMMENTS BY G. NESS, CIH <hr/>		
Section 1.01	1	During the site investigation, on-site workers will collect any material thought to contain asbestos. If asbestos like material is observed on-site, personnel will don respirators in the area as a precautionary measure. This substance will then be collected for analysis following wetting of the area to inhibit airborne releases.
Section 4.02	2	A review of past site documentation has provided specific maximum concentrations of metals in soil. These numbers have been incorporated into Section 4.02. In addition, calculations of metal concentrations in dust are described in Section 8.02.4 which indicate that dust will not be a health hazard.
Section 4.02	3	Given the current site conditions, including dense vegetative ground cover, it is not anticipated that dusts bearing metals and PCB's will be encountered. However, in instances where dusts may be generated, as in the action of heavy machinery, ground surfaces will be wetted thus decreasing the potential for inhalation exposure.
Section 8.02.4	4	Section 8.02.4 describes a number of calculation which estimate maximum metal concentration in dust. At the OSHA permissible level for total dust (15 mg/M ³), metal concentrations are not expected to exceed safety values.

COMMENTS BY CHERYL DAVIS

Section 4.02	1	The table contained in Section 4.02 will be revised to include maximum metal concentrations found in surface soils.
Section 5.02	2	The safety factor for Level C protection will be changed to 50 ppm organic vapor.
Section 5.03.3	3	Section 5.03.3 will be revised to read that employees needing corrective lenses for accurate vision will not wear contact lenses on site. These employees will be issued a

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full face respirator that can have corrective glasses clipped inside.

- Section 8.02.1 4 Section 8.02.1 of the document will be modified to read that during drilling activities, an HNu or OVA will be used continuously to sample the atmosphere at the breathing zone.
- Section 8.02.4 5 Section 8.02.4 will state that the HSO will consider any visible dust emanating from site operations to constitute a hazard. The HSO will then take protective actions including wetting of the ground and donning respirators equipped with hepar filters.
- Section 12.02 6 The USACE Project Manager's name and telephone number will be included in the list of contacts.

COMMENTS BY C. WIEHL

- Section 4.02 1 The maximum concentrations of contaminants found in soil will be detailed in Section 4.02.
- Section 8.02.1 2 The wording in Section 8.02.1 will be modified to read that the Corps of Engineers "approves continuing site activities".
- Section 8.02.3 3 Section 8.02.3 will be modified to read "20% of the Lower Explosive Limit (LEL)".
- Section 10.02 4 As stated in the Scope of Work, water used to decontaminate personnel and machinery will be discharged to the ground on site. Protective clothing and any non aqueous fluids will be contained for disposal at an approved facility.
- Section 12.02 5 The Corps of Engineers will be placed on the Table of page 28 under "Resources".
- Section 8.02.1 6 The paragraph will be changed to read "HNu and OVA readings in the breathing zone".

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SECTION 1 - HEALTH AND SAFETY PLAN

1.01 Introduction

This document serves as the Health and Safety Plan for all site activities conducted under the additional investigation and remedial action of the Blosenski Landfill site, West Cain Township, Chester county, Pennsylvania. Based on previous investigations (Remedial Investigation), the Site is known to contain industrial and municipal wastes including drums, possibly still containing contaminants, as well as construction and demolition wastes and abandoned vehicles. Therefore, any activities, which involve disturbance of or contact with soil and structures located onsite, ie. drilling and sampling programs, must be addressed by proper safety precautions.

Consistent with NIOSH, OSHA, USCG, and EPA regulations and policies, this plan provides the minimum health and safety requirements and general procedures to be met by O'Brien & Gere employees and contractors during the investigation. In accordance with contract obligations, the Health and Safety Officer for any contractor, as well as contractor personnel, is required to review this plan. An independent safety plan including logistical details and considerations is to be prepared by the contractor and reviewed by O'Brien & Gere Engineers Inc. and the US Corps of Engineers prior to commencement of any contractor on-site activities.

This plan includes information on the Site, potential hazards, and appropriate safety equipment and procedures for each work stage in order to clearly define the steps necessary to provide adequate personal protection during onsite activities. Employees of the Environmental

Protection Agency, US Army Corps of Engineers, Chester county Board of Health, Pennsylvania Department of Environmental Resources O'Brien and Gere, subcontractors, visitors, etc. are required to adhere to the training requirements, protocols and procedures in this plan while in specific project areas.

1.02 Project Work Plan Summary

The field work will involve the following activities:

1. Initial site topographic survey
2. Magnetometer and electromagnetic surveys and soil gas survey
3. Installation of ground water monitoring wells
4. A sampling program to further define the extent of on-site and offsite contamination in ground water, soil, sediment, and residential wells
5. Aquifer pump test
6. Well abandonment

Items 1 and 2 above were addressed and carried out under the "Health and Safety Plan, Non-invasive field activities - Blusenski Landfill, September 1988" and the "Work Plan, Non-invasive field activities - Blusenski Landfill, September 1988".

The remaining field activities will be addressed under this Health and Safety Plan.

SECTION 2 - SITE DESCRIPTION

2.01 Site Location and Description

The Blosenski Landfill Site is an inactive landfill located on 13.6 acres in the West Caln Township, Chester County, Pennsylvania. The Site is in a rural area surrounded primarily by forests and cropland with interspersed homes to the south, north and northeast. Surface waters nearby include an unnamed tributary of Indian Spring Run which passes approximately 500 feet to the north.

Population within one quarter mile around the Site includes approximately 30 residents. Within one mile, there are 467 residents including residents of a trailer park. The trailer park, which represents a more densely populated zone, relative to the interspersed homes in the area, is located three quarters of a mile to the north. Two schools in the area are Sandy Hill Church and School and Kings Highway Elementary School, both located two miles to the southeast and east respectively.

The Site lies on the Piedmont physiographic province. It has been interpreted that the site is located between two faults, both running in an east-west direction. Data generated by the geologic investigation reveals fractures and schistosity with preferred orientations. The result is a degree of unpredictability in ground water movement. Due to extensive landscaping, the thickness of soil above bedrock is inconsistent, ranging from 6 to 20 feet.

2.02 Site History

Based on information contained in the Remedial Investigation report, landfill activities began at the Site between 1951 and 1957 although no detailed information is available until 1971 when Mr. Joseph M. Blosenski, Jr. purchased the Site. From 1971 to 1980's, wastes including solvents, paints, sludge, and construction materials were directly discharged onto the surface of the landfill. Area photography from 1957 to 1983 showed various forms of disposal procedures. In a 1969 photograph, a truck can be seen discharging a dark liquid directly onto the Site surface. Trenches were dug along the perimeter of the property either to retain liquid waste or inhibit the migration of leachate. The majority of the wastes were landfilled as evident from the site mounding observed during the previous remedial investigation.

2.03 Climate

The climate for the area of the Blosenski Landfill is influenced by both the continental air masses of the midwest and the tropical storms of the south which yields a humid, continental type of climate for most of the Pennsylvania area. Mean temperatures range from 31.4 degrees F in January to 74.9 degrees F in July. Temperatures above 90 degrees F occur about 19 days per year while frost may be present approximately 156 days per year. Annual precipitation is 45 inches and is fairly evenly distributed throughout the year. Snowfall averages 30 inches and produces a springtime runoff. The prevailing winds are usually from the west-southwest direction.

SECTION 3 - DESIGNATED SITE SPECIFIC WORK ZONES

The Site will be split into distinct work zones as discussed below. These zones will at minimum consist of: a support zone, a decontamination zone, and a work zone. Each zone is discussed below for requirements and location.

3.01 Work Zone

The work zone is the area of actual site activities. A number of work zones will be periodically established at and around the Blosenski landfill site.

Figure 1 shows on-site zone delineation. During on-site activities, the property lines of the site will act as the border for the work zone. A 25 foot wide buffer zone will be delineated directly within the site boundaries. No work will be permitted in this buffer zone. The buffer zone will encompass the two residential buildings inside the site. A conspicuous "Hotline"; a line which identifies a potentially hazardous area; will be marked by flags or boundary tape around specific work areas within the site. The purpose of the buffer zone is to control access of residents and personnel into the work zone as well as decrease contaminant migration.

The scope of work also includes a sampling program off-site in the nearby residential areas east and northeast of the site. During these sampling and drilling activities, specific work zones will be established (see figure 2). A 150 feet square work zone will be delineated at sampling and drilling locations off- site. A fifty foot buffer zone will be located around each work zone increasing the actual area to 250 feet

squared. As in the on-site work zone, these off-site work and buffer zones will be clearly marked with boundary tape. Off-site work areas should be as far away from residential homes as possible. The primary use of these zones is in protecting residents and personnel from injuries associated with the use of heavy equipment. Full decontamination and restoration of the work areas will be completed following work termination.

3.02 Decontamination Zone

A decontamination zone will be established at the southern entrance to the on-site work zone and will be located in the buffer zone. This zone will include a number of stations (see section 10.0) at which employees shall decontaminate their equipment as well as personal safety devices. During off-site activities, the decontamination zone will be placed up-wind of the work area in the buffer zone. It will include the necessary stations for decontamination and disposal of protective clothing and equipment necessary for the decontamination of heavy machinery ie. drilling rigs.

3.03 Support Zone

The support zone is the center of administrative and support functions. This zone will be located at the entrance to each work zone. It will consist of a trailer (if weather conditions require), support vehicles, emergency communication stations, first aid supplies, and other necessary field equipment. Support zone personnel have the

responsibility for alerting the proper agencies in the event of an emergency. The specific positioning of each support zone is dependent on work site location and wind direction. In general, the support zone will be positioned at the perimeter of the decontamination area up-wind of the work zone.

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SECTION 4 - WORK SITE HAZARDS

4.01 Physical Hazards

During field activities scheduled to be conducted at the Blosenski Landfill Site, physical hazards present may be related to the operation of field equipment (back hoes, drilling rigs, etc.) as well as objects which are already present including: abandoned vehicles, tanks and drums (possibly leaking contaminants), and construction and demolition wastes. Field equipment will consist of back-hoes and drilling rigs. All personnel shall be informed of the use and dangers associated with the equipment during the training course and briefing sessions. Caution should be exercised during all activities which involve the movement of waste or abandoned refuse. In general, safety equipment consisting of safety boots, work gloves, safety glasses, hard hats and hearing protection will minimize the potential for injuries during site work.

4.02 Chemical Hazards

An analysis of the ground water and soil samples indicate a wide variety of chemical compounds may be present at the Blosenski Site. A partial list of volatile organic compounds (VOC's) found in ground water and soil include (Remedial Investigation):

	Max. Concentration (ppb [*])	
	<u>Ground Water</u>	<u>Soil</u>
- Benzene	11,000	12
- Toluene	600	4,000
- Total Xylene	78	1,100
- Ethylbenzene	54	500
- 1,1,1-trichloroethane	430	390
- 1,1-dichloroethane	74	20
- tetrachloroethene	5	110

	Max. Concentration (ppb*)	
	<u>Ground Water</u>	<u>Soil</u>
- trichloroethene	260	8
- 1,2-dichloroethene	890	29
- Methylene Chloride	2,000	1,300
- Acetone	43,000	850
- 2-butanone	350	1,000
- 4-methyl-2-pentanone	7	110

* parts per billion

Along with the VOC's are semi-volatile compounds including the PCB's Aroclors 1260 and 1242 (53,000ppb and 10,000ppb respectively) and heavy metals including arsenic (23 ppm), cadmium (280 ppm), chromium (71 ppm) and lead (1720 ppm). The most probable route of personal exposure would be through inhalation of VOC's and contact of soil containing heavy metals and/or PCBs (See Table 1).

Specific protection levels will be implemented to reduce potential exposure to benzene below OSHA permissible exposure Limit (PEL) of 1 ppm. HNU and/or OVA monitors, calibrated for benzene, will be in routine use while personnel are active on site. Due to the documented health hazards posed by benzene, most notably a plastic anemia and leukemia, this compound will provide the basis for protective measures instituted at the Blosenski Landfill. All other contaminants will be adequately addressed by the safety plan, as implemented for benzene. Although highly unlikely, it is therefore assumed for provisions of a conservative margin of safety and in absence of contradicting information, that all organic vapor detected is equivalent to benzene. Therefore, the level of personal protection will be based on intermittent reading of atmospheric organic vapor concentrations which are assumed to be as potent toxicologically as benzene.

No documentation exists to suggest that asbestos like material was accepted as fill material at the site. However, due to the use of the site as a landfill, workers will be aware of the possibility that asbestos may be present. Any asbestos like material found on-site will be sampled for laboratory analysis. This sample will be collected under Level C protection. In addition, measures will be taken to inhibit the migration of airborne asbestos through wetting of any suspect materials.

4.03 Explosion

An additional hazard may be present on-site due to chemical compounds with low flash points (i.e. acetone and ethylbenzene). Explosion and fire may result in areas with high levels of acetone, ethylbenzene and xylene. No area of exposed flammable solvents have been encountered on site during the RI. However, it is possible that buried barrels contain these solvents. The primary monitoring device deployed for explosive vapor detection will be the explosimeter. Because of the absence of exposed waste solutions, the explosimeter will not be necessary for non-invasive site activities. However, it will be in operation during any site activity which may disturb soil or buried and exposed tanks and under which vapors have been detected by HNU monitors.

4.04 Noise

When working around heavy equipment, as in the case of excavation and drilling, hearing protection should be worn. OSHA regulation 29 CFR Part 1910.95 requires that employers initiate an effective hearing conservation program when an eight hour average sound level of 85 dBA is present. In general, employees will be required to wear

hearing protection while heavy equipment is in operation. The site Health and Safety Officer will make the decision as to appropriate protection, if any, for a given sound level.

4.05 Heat and Cold Stress

The use of protective clothing, as in Level D or C protection, may cause an additional hazard due to heat or cold stress. As such, personnel wearing protective clothing will be monitored for body temperature, heart rate and loss of body water (See section 7.1 Personal Monitoring).

SECTION 5 - PROTECTIVE MEASURES

5.01 Modified Level D Protection

For most site activities a modified Level D protection is indicated. The criterion for this level of protection is an organic vapor reading below 1 ppm by the HNU. Modified Level D protection consists of:

1. Coveralls
2. Outer Tyvek suit
3. Inner work boots (Steel toe and shank)
4. Outer Boot (Neoprene)
5. Inner gloves (Latex)
6. Outer work gloves
7. Safety Glasses
8. Hearing Protection (During use of heavy equipment)
9. Hard hat with optional face shield

In addition, a full/half face air-purifying respirator equipped with appropriate combination organic vapor and high efficiency particulate cartridges must be available for immediate use.

5.02 Level C Protection

Level C protection is indicated when total organic vapor readings of over 1 ppm above background are detected by the HNU. In the event that a reading of 1 ppm or higher organic vapor is observed, Level C protection will be adopted and, consistent with the scope of services, the activities will be cease and the site will be reassessed before continuing work. Level C protection consists of:

1. Full-face, air-purifying respirator with combination organic vapor and high efficiency particulate cartridges (MSHA/NIOSH approved)
2. Hooded one or two piece chemical resistant suit, Saranex coated Tyvek or equivalent
3. Outer work gloves
4. Inner gloves (Latex)
5. Long underwear (Depending on site temperature)
6. Hard hat (Optional face shield)
7. Outer boots (Neoprene)
8. Inner work boots (Steel toe and shank)
9. Two-way communication (If available)
10. Escape air mask
11. Hearing Protection (During use of Heavy Equipment)

Level C Protection can be worn up to 50 ppm organic vapor which is the limitation of the respiratory protection device, using benzene as the indicator compound.

5.03 Additional Safety Measures

5.03.1 Buddy System

While in the work zone, all personnel will employ the buddy system. No person will be allowed on-site alone. The intent of the buddy system is to:

1. Provide assistance during site activities
2. Observe for signs of chemical or heat stress
3. Periodically check integrity of partner's suit
4. Notify others in cases of emergency

This system is to be strictly enforced by the Health and Safety Officer.

5.03.2 Communication

An essential component of the site safety program is open and effective communication between all members of the staff and public. Both internal and external communications will be used between personnel. The methods of internal communication are to be decided at the beginning of each work period and may consist of noisemakers and/or visual signals. These will be used to communicate such activities as alerting team members, passing safety information, communicating changes in work and maintaining site control. The primary means of external communications are telephone or radio. External communication will be involved in the coordination of emergency responses, reporting site status and communicating with essential offsite personnel.

5.03.3 Specific Safety Considerations

If an employee requires eyeglasses or contact lenses for corrective vision, a full face respirator which can have glasses clipped inside will be issued. Contact lenses are not to be worn on-site. A full face respirator is also required for any person wearing contact lenses on site. Facial hair which inhibits the correct fit of a respirator is prohibited. In addition, smoking, gum chewing, eating and drinking are strictly prohibited while on site.

SECTION 6 - CHAIN OF COMMAND

In order to maximize the efficiency of site activities and project a strong visible commitment to worker safety, an organizational structure that supports the overall objectives of the project needs to be developed. A chain of command has been established in order to identify key personnel responsible for the site work and personnel safety. Included in the list of personnel essential for a sound organizational structure are the Project Team Leader (Project Director), Company Health and Safety Supervisor, Health and Safety Officer, and Safety Designees. The specific duties of each officer are addressed below.

Project Director:	John J. Keegan (315) 451-4700
Project Manager:	Richard D. Jones (315) 451-4700
Company Health and Safety Supervisor:	Swiatoslav W. Kaczmar Ph.D., C.I.H. (315) 451-4700
Health and Safety Officer:	Chris R. Young (215) 628-9100

6.01 Project Director

As Project Direct, Mr. John J. Keegan assumes responsibility over all site activities. A few of the responsibilities of the project Director are to act as liaison with public officials, prepare the work plan and site safety plan, monitor safety requirements and that work is completed on time, and to prepare the final reports. The Project Director will use the safety supervisors and officers to ensure the safety of the site.

6.02 Company Health and Safety Supervisor (CHSS)

Dr. Swiatoslav W. Kaczmar C.I.H., acting as CHSS, has overall responsibility for development and implementation of the Health and Safety Plan. All changes and modifications of the procedures must be approved by the CHSS. In addition, the CHSS is responsible for creation of new company safety protocols and revisions of existing protocols during field operations. Authorization for personnel to perform work onsite, (i.e, medical applicability or training) must be approved by the CHSS.

6.03 On-site Health and Safety Personnel

A Health and Safety Officer (HSO) will be present at all times at the site to enforce the Health and Safety Plan. The HSO may direct or participate in site activities, if appropriate, in so much as it does not interfere with his health and safety responsibilities. The HSO has the authorization to stop site activities upon his determination of a dangerous situation i.e, adverse weather conditions. Authorization to proceed with work must come from the CHSS. The HSO will initiate all contact with support facilities and personnel under the appropriate conditions described.

The HSO may assign a health and safety designee to the work site. This designee is under the direction of and will report to the HSO. In the case of a potentially hazardous activities, a number of qualified personnel may be appointed as designees to aid the HSO in down-range activities. The designee will be responsible for personnel decontamination, monitoring for operator heat or cold stress, dis-

tribution of safety equipment, and conformity with the procedures outlined in the Health and Safety Plan.

6.04 Subcontractor Responsibilities

Subcontractors performing work at the Site will demonstrate conformance of Federal, State, and local statutes, ordinances and regulations. The contractor will identify an individual responsible for enforcement of health and safety regulations for each of their personnel, lower-tiered subcontractors, and consultants. This person will report to the Health and Safety Officer.

In accordance with the Department of Labor and OSHA Hazardous Waste Operations, the subcontractor is responsible for monitoring that each employee participates in a medical program and is in acceptable health. Employees of the contractors must also be trained as necessary for appropriate site duties. Information on each individual proposed for site activities must be submitted to the HSO and will consist of:

1. Name
2. Training program attended, number of hours of training
3. Written statement of participation in medical monitoring program by certified occupational physician
4. Confirmation of successful respirator "fit testing"
5. Summary of hazardous waste site field experience

SECTION 7 - TRAINING PROGRAM

As a Superfund Site, the Blosenski Landfill falls under the jurisdiction of OSHA standard contained in 29 CFR 1910.120, regarding the health and safety of onsite workers.

All on-site project personnel must participate in a 40-hour training program, which includes use of respiratory protective equipment and protective clothing, decontamination, on-site procedures, and emergency response measures. In addition, a briefing before each work period will inform personnel of possible hazards present at the site and equipment which will be in use during that stage of work.

SECTION 8 - MONITORING PROGRAM

A comprehensive monitoring program including personnel and site monitoring will be initiated prior to and continue throughout site activities.

8.01 Personnel Monitoring

8.01.1 Heat Stress

All personnel using protective equipment must be monitored for heat stress. This will consist of periodic measurements of oral temperature, body weight, and/or heart rate.

The following criteria will be used:

- If the heart rate exceeds 110 beats per minute at beginning of the rest period, shorten the next work cycle by one-third.
- If the oral temperature exceeds 99.6 degrees Fahrenheit, shorten the next work cycle by one-third.
- If the oral temperature exceeds 100.6 degrees Fahrenheit, the worker should not continue to wear protective clothing.
- Body water loss should not exceed 1.5% total body weight loss in one work day.

8.01.2 Cold Stress

Under environmental conditions which may produce hypothermia, on-site personnel will wear appropriate clothing, i.e. long underwear under work cloths. In general, the use of the buddy system will aid in the observation of signs indicating hypothermia including shivering and cyanosis. If the body

temperature of an employee drops 2 degrees during the work cycle, the employee should not continue field work. The employee will be decontaminated, retire to a shelter and consume a warm non-stimulant, non-alcoholic beverage. During severe environmental conditions, the Health and Safety Officer will determine whether field operations can continue.

8.02 Atmospheric Monitoring

8.02.1 Monitoring Protocols

To provide a safe environment in which to work and to evaluate potential exposure to volatile organic compounds, an air monitoring program will be initiated. This program will consist of the HNU monitors or OVA monitors calibrated for detection of benzene and an explosimeter such as an MSA Portable Gas and Oxygen Alarm Model 260.

Baseline measurement will be taken with an organic vapor monitor at the site perimeter prior to the start of any activities. During initial activities, monitoring will take place every fifteen (15) minutes for non-invasive work and continuously for invasive work. Following three readings of less than 1 ppm organic vapor, the frequency of monitoring can be reduced to once every half-hour for non-invasive work, however, continuous monitoring will be maintained for invasive activities.

If at any time, the HNU or OVA readings in the breathing zone are greater than 1 ppm, an upgrade to Level C protection will be initiated. This Level of respiratory protection will continue

up to 50 ppm, the maximum limitation of an air-purifying mask in the presents of benzene. However, should level C protection be adopted, the Corps of Engineers will be contacted.

In the event that the Corps of Engineers approves continuing site activities, a Level C decontamination zone will be established and atmospheric monitoring will continue as before under Level D.

8.02.2 Monitoring Documentation

A daily log of the monitoring data will be kept by the On-site Health and Safety Officer and consist of the following information:

1. Date and time of monitoring
2. Location of air monitoring
3. Present site activities
4. Instrument, model number, serial number
5. Calibration, background levels
6. Results of monitoring
7. Safety Officer/ Hygienist signature
8. Interpretation/ recommendations

This data will be relayed verbally to the Contracting Officer's Representative, following each scan that indicates volatile organic compounds above the action level, and documented by the end of each work day.

8.02.3 Explosimeter

Specific contaminants thought to be present on the site, including acetone, toluene and xylene, exhibit low flash points (-16, 4.4 & 25 ° C respectively) and could result in explosion or

fire. Therefore, an explosimeter, such as an MSA Portable Gas and Oxygen Alarm Model 260, will be in operation during all site activities which involve soil disturbance and under which HNU monitoring detects the presence of organic vapor. This device will be placed as close as possible to potential sources of vapor (eg. boreholes). If at any time the explosimeter reads 20% of the Lower Explosive limit (LEL) on any single reading, all activities will cease and the site will be evacuated pending immediate investigation.

8.02.4 Dust Monitoring

Due to a dense vegetative cover over the work site, it is unlikely that fugitive dust will be created. However, under severe conditions, dusts created on-site may carry metals and organic compounds to sensitive environments. As such, visible observation for dust will be maintained by the HSO. In the event that strong winds could possibly disturb surface soil, all on-site workers will don respirators equipped with high efficiency particulate cartridges until such time that a hazard no longer exists (i.e., no visible dust). In addition, dust levels will be kept to a minimum during site activities through wetting of the work area if necessary.

Experience dictates that the OSHA exposure limit of 15 mg/M^3 total airborne dust would constitute a visible hazard to on-site workers. Therefore, this concentration was used as the maximum level for dust which would be achieved prior to on-site employees donning respirators. Under such a scenario, the maximum concentrations of metals found in the Blosenski landfill surface soil

were used to calculate the intake of metals by workers for comparison against OSHA inhalation standards. As noted in Section 4.02 of this document, arsenic (23 ppm), cadmium (280 ppm), chromium (71 ppm), and lead (1720 ppm) were observed in surface soil.

Assuming that the maximum percentage of metals in airborne soil would be equivalent to those observed in surface soil, these metals would be present at concentrations of:

<u>Metal</u>	<u>Theoretical Conc. of Metals in Dust</u>	<u>OSHA Standard</u>
Arsenic	0.0003 mg/M ³	0.01 mg/M ³
Cadmium	0.0042 mg/M ³	0.2 mg/M ³
Chromium	0.001 mg/M ³	1.0 mg/M ³
Lead	0.026 mg/M ³	0.05 mg/M ³

In comparison with the occupational air standard set by OSHA, no metal exceeds the permissible level for airborne exposure.

The exposure levels noted above are thought to be conservative. For instance, maximum soil-metal concentrations were used in the calculation of the airborne metal concentration although these elevated levels are not thought to exist throughout the site. In addition, it is stated above that workers will don respirators at the first signs of visible dust and that dust levels will be kept to a minimum through soil wetting. Therefore, actual exposures to contaminants are expected to be well below the calculated exposures.

8.02.5 Noise

Noise levels will not be monitored during the site activities. However, personnel shall wear hearing protection while any equipment with the potential to create excess noise levels is in operation. Special consideration must be applied to drilling activities. Recommendations will be made by the site Health and Safety officer as to whether protection is needed. In general, hearing protection is indicated for equipment which creates noise above that of human speech.

SECTION 9 - ENTRY AND EXIT PROCEDURES

In order to prevent the spread of contamination, personnel must follow strict procedures for entering and exiting the work site.

Entry procedure as follows:

1. All personnel must be dressed in the correct safety clothing before being allowed to enter the work site.
2. The Health and Safety Officer must be advised of all intended work before any operations may begin.
3. The Health and Safety Officer will review team personnel for appropriate personal protective equipment and clothing.
4. Personnel entering the work site must log in name and time.
5. Personnel are permitted to enter and exit through specified points.

Exit procedure will be as follows:

1. All personnel must exit through designated entry and exit points.
2. All personnel must go through appropriate decontamination procedures, as specified in section 9.2
3. All personnel must log out and record time of exit.
4. At no time will anyone be allowed on the site alone.

SECTION 10 - CONTAMINATION REDUCTION

A strict decontamination process will be initiated before site activities begin. This process shall include decontamination of all field equipment in addition to personnel. A total of seven decontamination stations will be set up for personal decontamination. Unless otherwise specified, the wash solution will be a mixture of detergent (brand to be chosen depending on availability) in water.

10.01 Equipment

All pieces of wettable field equipment will be steam-cleaned with a high pressure washer and brush if necessary.

10.02 Personnel

Personnel who wear protective clothing must use the decontamination procedure upon exiting the site. A sample of the waste solution may be kept for later analysis to aid in determining the effectiveness of the decontamination process. (See diagram 3 for decontamination layout)

Station 1: Equipment Drop

A plastic drop cloth will be positioned onto which all equipment used on-site (tools, containers, clipboards, etc.) will be placed.

Station 2: Outer Garments, Boots, Gloves - Wash & Rinse

Outer boots and gloves are to be washed in detergent water contained in a tub or small wading pool. Rinse clothing with copious amounts of water in another tub or pool.

Station 3: Outer Boot and Glove Removal

Remove tape, boots and gloves and place in a container fitted with a plastic liner.

Station 4: Cartridge of Mask Change

At this station, a worker who has left the site to change the respiratory cartridge, may tape new outer boots and gloves and return to duty.

Station 5: Outer Garment Removal

At this station, tyveks are removed and deposited in a plastic lined container.

Station 6: Respirator Removal

The respirator is removed while avoiding touching the face with fingers. The respirator is to be cleaned with soap and water.

Station 7: Inner Glove Removal

A container with a plastic liner will be positioned so that inner gloves can be removed and disposed of in this area.

Following decontamination procedures, aqueous based decon fluids will be discharge to the site grounds. Non aqueous fluids will be contained for disposal at an approved facility. Protective clothing (i.e. tyveks and gloves) will be contained using 2 ply trash bags, with twist tie closures, for disposal at an approved facility.

10.03 Off-site Contamination Concerns

In addition to the health and safety of personnel working on or near the Site, it is important to provide a safe atmosphere for residents

within the immediate area. Many people reside within a quarter mile of the site. Therefore, it is important to keep the migration of contaminants to a minimum through wetting the area if necessary.

1/20/89

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AR000189

SECTION 11 - MEDICAL PROGRAM

All personnel working on-site must participate in a medical examination six (6) months prior to the start of onsite activities. A follow-up examination will be completed within six (6) months of terminating the work. These examinations will include pulmonary and cardiac function tests, as well as blood tests screening for liver and kidney function. (See appendix A for examples of medical evaluation forms)

SECTION 12 - EMERGENCY MEASURES

12.01 Local Resources

The following list contains local resources which can be contacted for immediate response to emergency situations resulting from field activities:

Police (Local):	West Caln:	(215) 383-7000
Fire Department (Local):	West Caln:	(215) 436-4700
Ambulance (Name):	Martin's Corner:	(215) 436-4700
Hospital (Name):	Brandywine Hospital:	(215) 383-8000

12.02 Office Resources

The following list of office resources can and should be contacted in the event of an emergency situation or when further information or direction in field activities is required:

O'Brien and Gere (Syracuse):	(315) 451-4700
O'Brien and Gere (Blue Bell):	(215) 628-9100
COE - Omaha (John P. Barrett)	(402) 221-7811
US EPA - PA	(215) 597-9800
EPA Emergency Response Team - PA	(215) 597-9898
TOSCA Hotline	(800) 424-9065
RCRA Hotline	(800) 424-9346
Poison Information Center - PA	(215) 386-2100
Poison Information Center - NY	(212) 926-8005

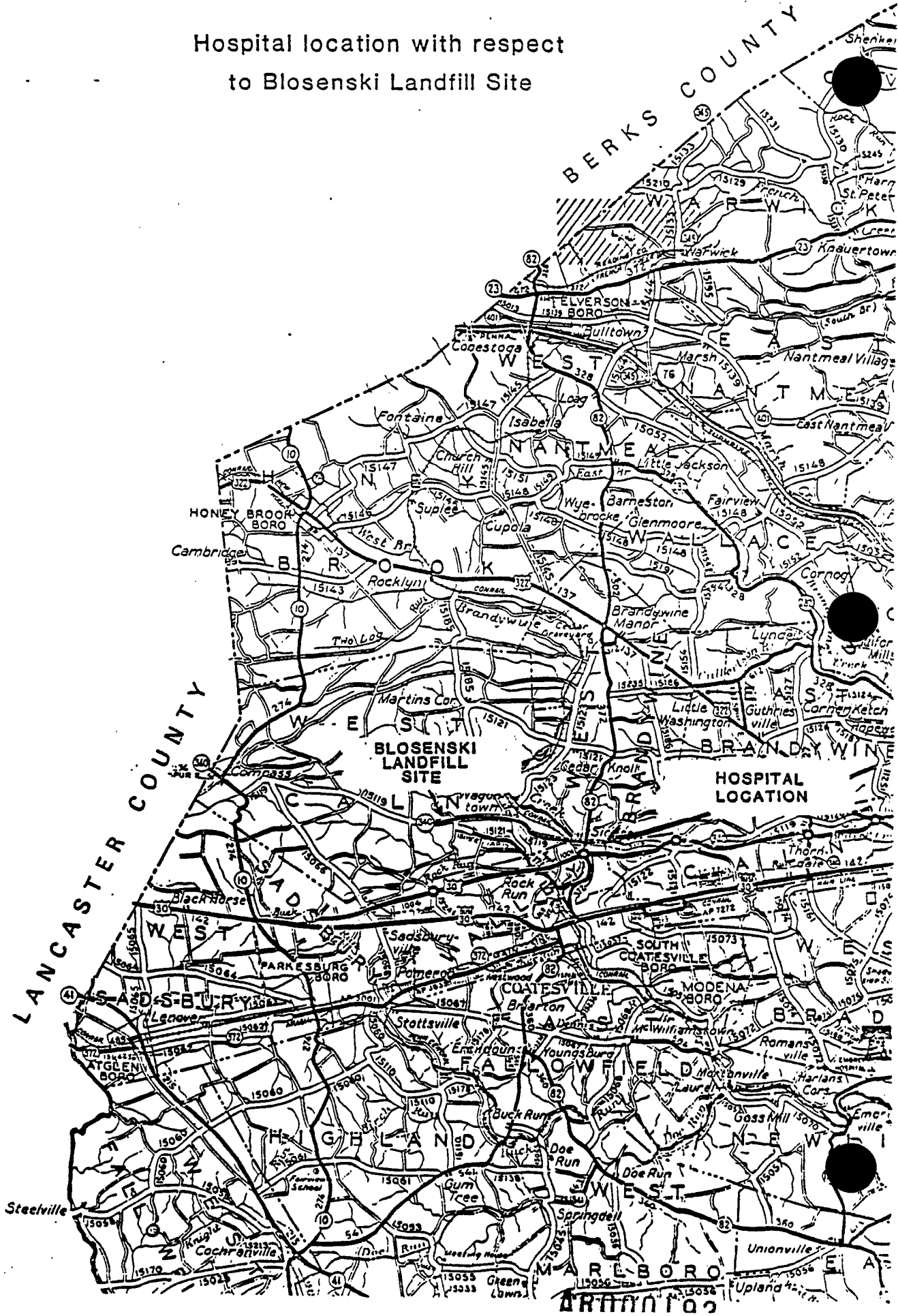
12.03 Directions to nearest hospital from site:

Travel east on Highway 340 to the exit for Reeceville Road (Exit has Arco gas station on corner). Proceed left onto Reeceville road for approximately one-half of a mile. Brandywine Hospital is located at 201, Reeceville Road. Mailing address for the hospital is:

201 Reeceville Road

Coatesville, PA 19320

Hospital location with respect
to Blosenski Landfill Site



SECTION 13 - RESPONSE TO INCIDENTS

In the event of a major incident, follow the steps explained below.

13.01 Major Exposure (i.e. chemical spill)

Notify the Health & Safety Officer, Project Director and Project Manager. Decontaminate victim to the greatest extent possible. Remove victim from the area using a stretcher if necessary. Administer preliminary first aid, if trained in such. Victim will be transported to a treatment facility at the direction of the Health & Safety Officer and the Project Director. Small amounts of contaminants may be contained with chemical absorbent or sand. Do not touch contaminants. Keep fire and sparks away. Large spills are to be contained within a dike. Call emergency response team.

13.02 Medical Crisis

Follow procedure as in #1 above.

13.03 Fire and/or Explosion

Evacuate area.

Contact Fire Department

Follow procedure as described in #1 above.

13.04 Accident Involving Equipment

Follow procedure as described in #1 above.

13.05 Overt Personal Injuries

13.05.1 Skin Contact

Use copious amounts of soap and water. Rinse affected areas thoroughly, then provide appropriate medical attention. An Eye Wash Station will be provided in case of emergency. Eyes should be washed for 15 minutes upon chemical contamination.

13.05.2 Inhalation

Decontaminate and move victim to fresh air; if necessary transport to hospital.

13.05.3 Ingestion

Decontaminate victim and immediately transport to emergency medical facility.

13.05.4 Laceration or Puncture Wound

Decontaminate victim and transport to emergency medical facility.

13.06 Documentation

To aid in understanding an incident and to avoid repetition of the incident in the future, documentation is important. A report must be submitted with the Project Manager for all incidents of worker injury or illness. (See Appendix B).

13.07 Restore to Order

Following an incident/accident, work will not resume until all equipment has been brought to readiness. Only the Company Health and Safety Supervisor and Corps of Engineers can initiate a return of personnel to work.

SECTION 14 - SUMMARY

As a landfill and waste disposal site, the Blosenski site has come under investigation into possible site contamination by a variety of chemical compounds. Due to the disposal practices evident in areal photography, there is a possibility of ground water, surface and sub-surface contamination. The purpose of this plan is to provide the necessary health and safety protocols to adequately address the hazards possible during investigation of site characteristics and usage. All employees of O'Brien & Gere Engineers Inc. and subcontractors are required to read this plan before entering the site and must comply with all protocols during on-site activities.

ORIGINAL
(Red)

Tables

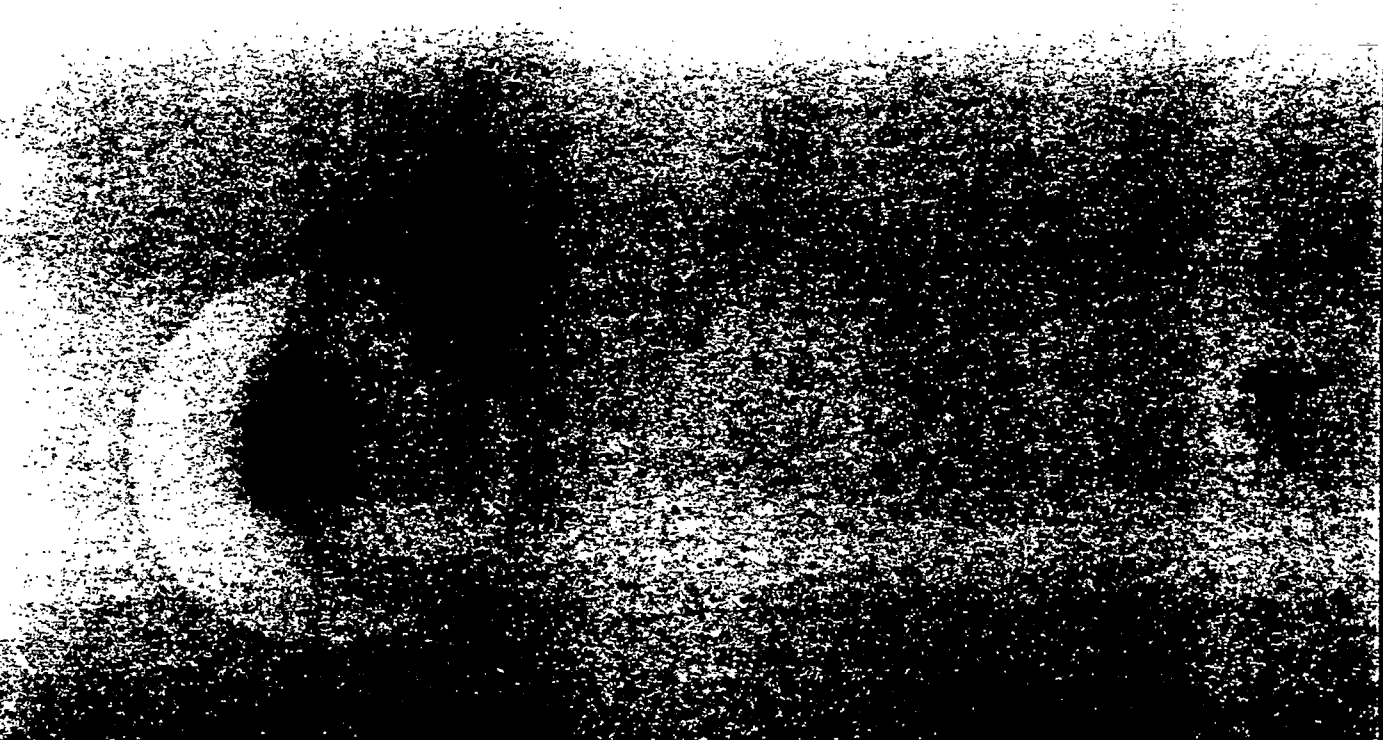
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Figures



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STANLEY & SONS

ON-SITE WORK ZONES

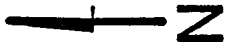
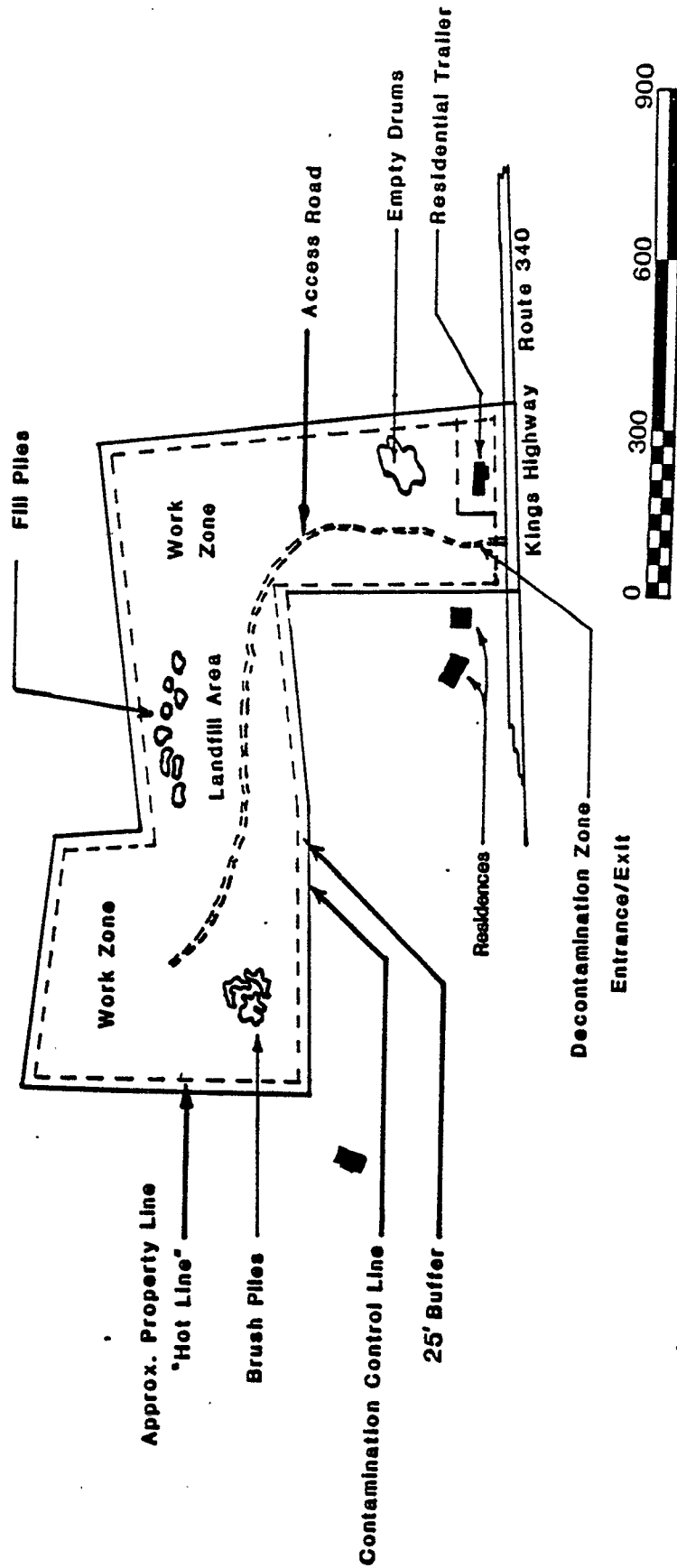


Figure 1



O'BRIEN & GERE
ENGINEERS, INC.
Syracuse, New York

AR000200

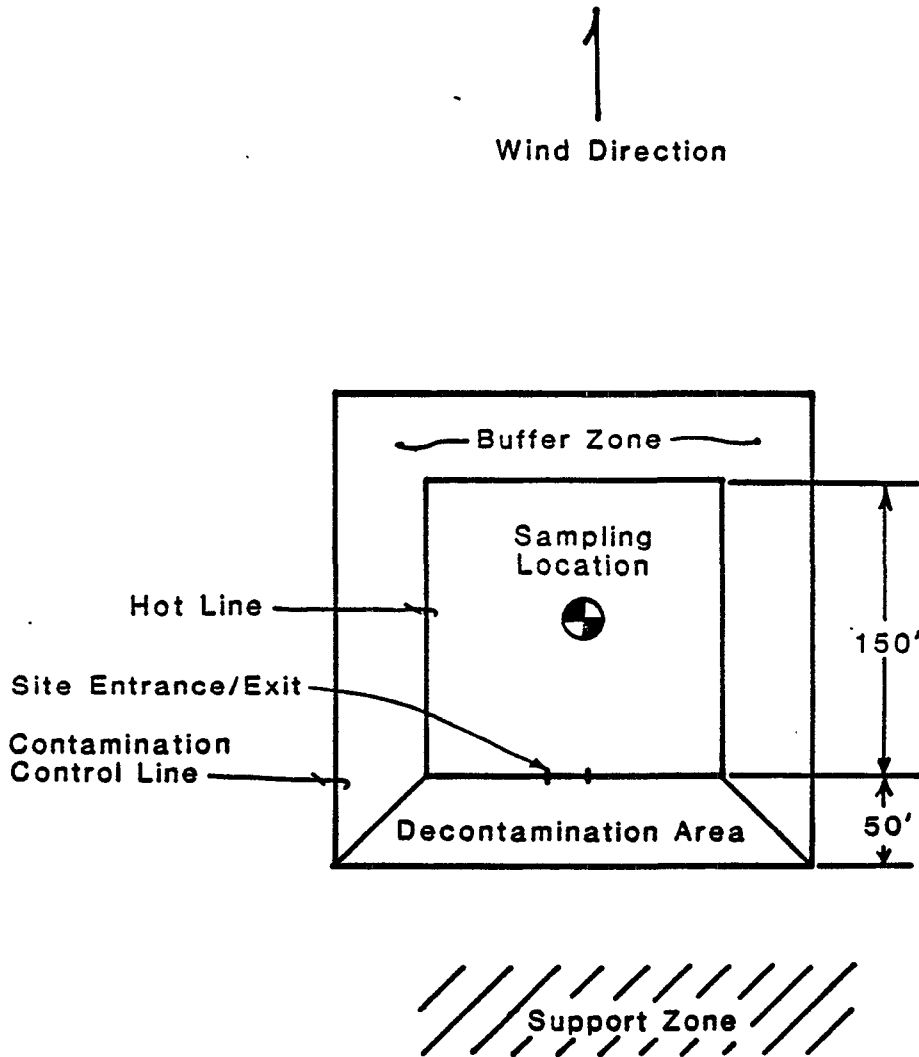
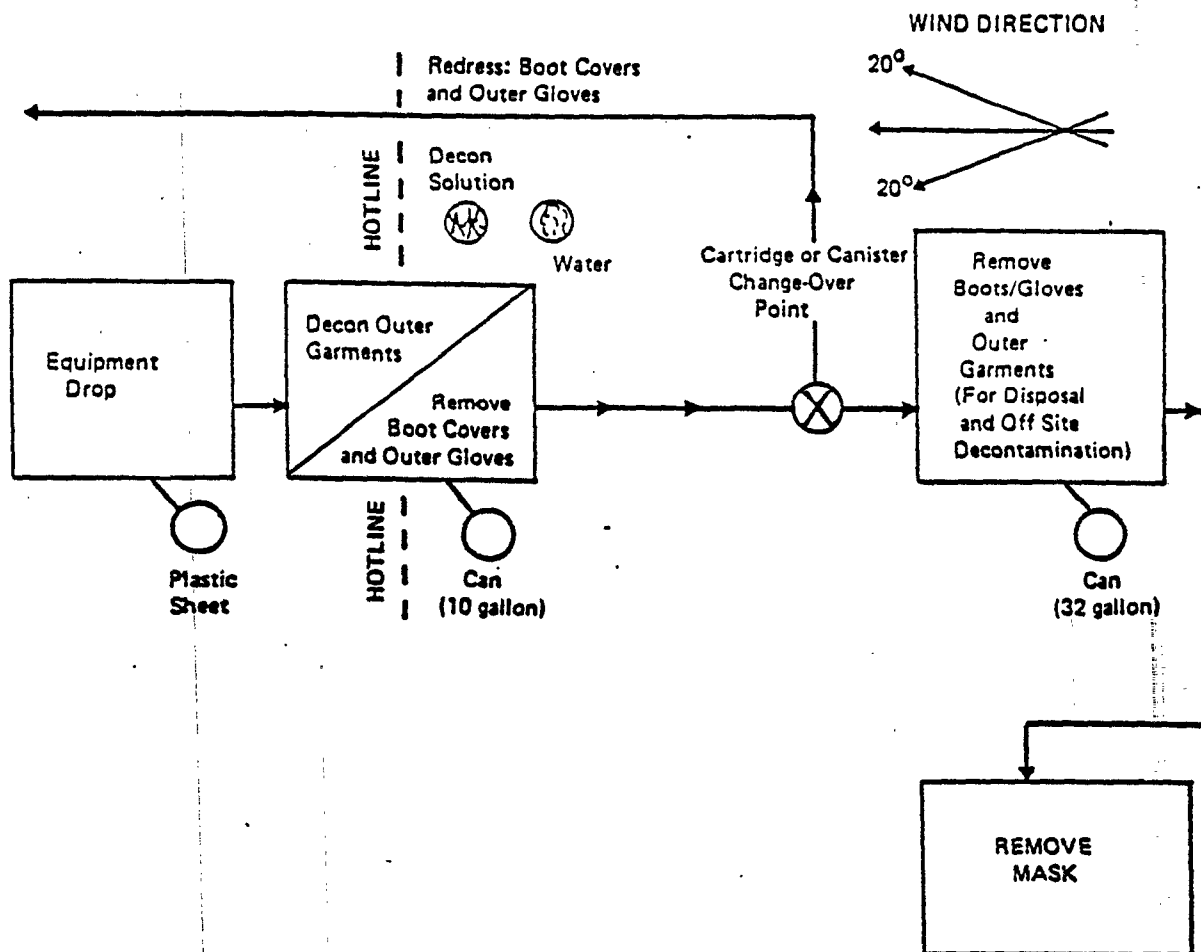


Figure 2
OFF-SITE WORK ZONE DIAGRAM

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Figure 3

LEVEL C DECONTAMINATION STATIONS



AR000202

Appendices



O'BRIEN & GERE

ARD 10203

Appendix A

AR000204



APPENDIX A
HEALTH EVALUATION FORMS

AR000205

APPENDIX A
HEALTH EVALUATION FORMS

The following documents have been provided by the Industrial Medical Associates of Syracuse, New York. These forms should be used as examples in evaluating employee health and fitness for on-sit duties.

Included in these documents are:

1. Employee and Employer Letters
2. Hazardous Substance Medical Surveillance Employer Information
3. Respirator Suitability
4. Medical History
5. Health Questionnaire
6. Physical Examination Data Base

AR000206



Industrial Medical Associates, P.C.

961 Canal Street, Syracuse, New York 13210-1287 (315) 478-1977

COPY

Re: _____

Dear Ms. or Mr. _____

A Hazardous Waste Medical Surveillance examination was performed on _____ on _____.

He/She feels well.

Family history and past-medical history were non-contributory.

The physical examination was within normal limits (except for _____).

The extensive laboratory and technical data were within normal limits (except for _____).

He/She is capable of working for your company with no medical limitations.

He/She is qualified for respirator use.

He/She has been informed of the results of this examination and, if indicated, recommendations regarding his/her health have been made.

All medical data will be on file in this office.

Sincerely,

Mark Barasz, M.D.
Paul A. Day, M.D.

Russell Greenhalgh, M.D.
E. James Heitzman, M.D.

David J. Seeley, M.D.
Kevin M. Walsh, M.D.

DR000207



Industrial Medical Associates, P.C.

961 Canal Street, Syracuse, New York 13210-1287 (315) 478-1977

COPY

Dear Mr./Mrs. _____

The reports of your medical examination on _____ have been completed.

The data indicate that you are medically capable of performing the job for which you were examined.

Incidental findings include _____.

If you have any questions, please feel free to contact me.

Sincerely,

Mark Barasz, M.D.
Paul A. Day, M.D.

Russell Greenhalgh, M.D.
E. James Heitzman, M.D.

David J. Seeley, M.D.
Kevin M. Walsh, M.D.

AR000208



Industrial Medical Associates, P.C.

961 Canal Street, Syracuse, New York 13210-1287 (315) 478-1977

HAZARDOUS SUBSTANCE MEDICAL SURVEILLANCE
EMPLOYER INFORMATION

COPY

TO BE COMPLETED BY EMPLOYER ONLY.

EMPLOYER _____

EMPLOYEE _____

S.S. # _____

DATE _____

TYPE OF EXAM (PLEASE CIRCLE)

- 1) *Prior to Assignment*
- 2) *Termination of employment*
- 3) *Periodic*
- 4) *Exposure in Emergency Situation*

PLEASE COMPLETE THE FOLLOWING:

1) Description of employee's duties as they relate to the employee's exposure. _____

2) Employee's representative exposure level or anticipated exposure level. _____

3) Type of personal protective equipment used or to be used (i.e. type of respirator, clothing). _____

OSHA mandates that any information from previous medical examinations of the employee that is not otherwise available to the examining physician be forwarded to the examining physician.



Industrial Medical Associates, P.C.

961 Canal Street, Syracuse, New York 13210-1287 (315) 478-1977

Respirator Suitability

TO BE COMPLETED BY EMPLOYER ONLY

Employee: _____

SSN: _____

Employer: _____

Respirator History

- A) Respirator type (i.e. full face, 1/2 face, self contained) _____
- B) Average hours use per day _____
- C) Date of last respirator fitting _____
- D) Has employee worn a respirator previously _____

Exposures

- A) Identification of contaminant (i.e. asbestos, lead, acid, fumes) _____
- B) Concentration of the breathing zone _____
- C) Employee's previous occupational exposures _____

TO BE COMPLETELY BY EMPLOYEE ONLY

Employee Health & Respiratory History

- Occupation: _____
- A) number of yrs. at present occupation _____
 - B) previous occupation _____

Do you have or have you ever had? (Y for Yes, N for No)

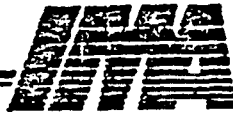
Hypertension	Y N	Diabetes	Y N
Heart disease	Y N	Anemia	Y N
Sinus or lung disease	Y N	Punctured eardrum	Y N
Cough or shortness of breath	Y N	Claustrophobia or anxiety	
Seizures (epilepsy)	Y N	When wearing a respirator	Y N
Do you wear glasses?	Y N		
Do you wear contact lens?	Y N		
Do you wear dentures?	Y N		
Do you wear Skull cap?	Y N		
Do you grow a beard?	Y N		

Mark Barast, M.D.
Paul A. Day, M.D.

Russell Greenhalgh, M.D.
E. James Heitzman, M.D.

David J. Seeley, M.D.
Kevin M. Walsh, M.D.

AR000210



Industrial Medical Associates, P.C.

961 Canal Street, Syracuse, New York 13210-1287 (315) 478-1977

Smoking History

- 1) Have you ever smoked? Y N
- 2) Do you smoke now? Y N
- 3) How many packs of cigarettes do/did you
 Smoke per day? _____
 Cigars per day? _____
 Pipe bowls per day? _____
- 4) How many years ago did you stop smoking? _____
- 5) How many years have you been smoking? _____

The above named individual's suitability for respirator use is as classified below:

_____ Class 1 - No restriction on respirator use.

_____ Class 2 - Respirator use restricted as outlined below:

Restrictions: _____

_____ Class 3 - No respirator use under any circumstances.

REMARKS: _____

Physician: _____

Date: _____

Mark Barasz, M.D.
Paul A. Day, M.D.

Russell Greenhalgh, M.D.
E. James Heitzman, M.D.

David J. Seeley, M.D.
Kevin M. Walsh, M.D.

AR000211

IDENTIFICATION DATA

NAME		SOCIAL SECURITY NUMBER			HOME PHONE #	WORK PHONE #
STREET ADDRESS		CITY	STATE	ZIP CODE	FATHERS' LAST NAME	THIS AREA FOR OFFICE USE ONLY
BIRTH PLACE		AGE	SEX	RACE		
				<input type="checkbox"/> WHITE	<input type="checkbox"/> BLACK	<input type="checkbox"/> HAWAIIAN (INCLUDING PARTS)
				<input type="checkbox"/> CHINESE	<input type="checkbox"/> JAPANESE	<input type="checkbox"/> OTHER
<input type="checkbox"/> MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/> SINGLE		PERSONAL PHYSICIANS NAME				TODAY'S DATE

FAMILY HEALTH HISTORY

	IF LIVING		IF DECEASED	
	AGE	HEALTH/LIST MEDICAL PROBLEMS	AGE AT DEATH	CAUSE
FATHER				
MOTHER				
SIBLINGS				
HUSBAND OR WIFE				
CHILDREN				

DIABETES CANCER BIRTH DEFECTS BLOOD DISORDER
 TB HEART DISEASE NERVOUS BREAKDOWN ANAEMIA/LEUKAEMIA **DETAILS** _____
 HIGH BLOOD PRESSURE ALCOHOLISM ULCERS _____

YOUR PAST MEDICAL HISTORY

Please list all serious medical conditions/illnesses, surgery, hospitalizations and injuries

Hospitalizations	Month/Year	Nature of illness	Hospital	Physician
		Month/Year	Nature of illness	Hospital
Injuries <small>Include work related auto accidents, sports, and other injuries.</small>	Month/Year	Nature of injury	Resulting Disability, if any	
	Month/Year	Nature of injury	Resulting Disability, if any	
Other Medical Conditions	Month/Year	Nature of Medical Condition		
	Month/Year	Nature of Medical Condition		

Have you ever been turned down for life insurance, military service or employment because of health problems? Yes No If yes give details _____
 Do you consider yourself to be in good health at this time? Yes No If no give details _____

Tests and Immunizations: Mark an X next to those that you have had. Enter the year when you last were given the tests or "shots."

Year	Year	Year	Year
<input type="checkbox"/> 19__ chest x-ray	<input type="checkbox"/> 19__ gallbladder x-ray	<input type="checkbox"/> 19__ tetanus "shots"	<input type="checkbox"/> 19__ mumps "shots"
<input type="checkbox"/> 19__ kidney x-ray	<input type="checkbox"/> 19__ electrocardiogram	<input type="checkbox"/> 19__ polio "shots"	<input type="checkbox"/> 19__ measles "shots"
<input type="checkbox"/> 19__ G.I. series	<input type="checkbox"/> 19__ TB test	<input type="checkbox"/> 19__ typhoid "shots"	<input type="checkbox"/> 19__ Pneumovax
<input type="checkbox"/> 19__ colon x-ray	<input type="checkbox"/> 19__ sigmoidoscopy	<input type="checkbox"/> 19__ flu injections	<input type="checkbox"/> 19__ _____

Medicines: Do you take any medicine frequently or regularly? Yes No If "Yes," Mark an X next to those medications below.

<input type="checkbox"/> Antibiotics	<input type="checkbox"/> Pain Killers	<input type="checkbox"/> Diuretics (water pills)	<input type="checkbox"/> Aspirin	<input type="checkbox"/> Blood pressure med.	<input type="checkbox"/> Blood Thinner
<input type="checkbox"/> Penicillin	<input type="checkbox"/> Hormones	<input type="checkbox"/> Heart medications	<input type="checkbox"/> Birth Control Pills	<input type="checkbox"/> Epilepsy med.	<input type="checkbox"/> Sedatives

List by name all medications you are currently taking

Allergies: Do you have any allergies? Yes No If "Yes," Mark an X next to the items you are allergic to below.

<input type="checkbox"/> Penicillin	<input type="checkbox"/> Tetanus Vaccine	<input type="checkbox"/> Animals	Other foods (list below)
<input type="checkbox"/> Aspirin	other Medications (list below)		<input type="checkbox"/> _____
<input type="checkbox"/> Sulfa	<input type="checkbox"/> _____	<input type="checkbox"/> Pollens, ragweed	<input type="checkbox"/> _____
<input type="checkbox"/> Demerol	<input type="checkbox"/> _____	<input type="checkbox"/> Bee Stings	<input type="checkbox"/> _____
		<input type="checkbox"/> Eggs	<input type="checkbox"/> _____

LIST OTHER MEDICAL CONDITIONS (ADDITIONAL SPACE ON BACK OF FORM)

To list Additional Details of Past Medical History, and Family History, use Back of Form

CONFIDENTIAL 12

HEALTH QUESTIONNAIRE

Please answer the following questions by writing an X on the line of the word Yes or No, except where you are asked for specific information. If a question does not apply, skip it and go on to the next one.

	<u>YES</u>	<u>NO</u>
1. ARE YOU TROUBLED WITH STIFF OR PAINFUL MUSCLES OR JOINTS?	1. _____	_____
2. ARE YOUR JOINTS EVER SWOLLEN?	2. _____	_____
3. ARE YOU TROUBLED BY PAIN IN THE BACK OR SHOULDER?	3. _____	_____
4. ARE YOUR FEET OFTEN PAINFUL?	4. _____	_____
5. ARE YOU HANDICAPPED IN ANY WAY?	5. _____	_____
6. DO YOU HAVE ANY SKIN PROBLEMS?	6. _____	_____
7. DOES YOUR SKIN ITCH OR BURN?	7. _____	_____
8. DO YOU HAVE TROUBLE STOPPING EVEN A SMALL CUT FROM BLEEDING?	8. _____	_____
9. DO YOU BRUISE EASILY?	9. _____	_____
10. DO YOU EVER FAINT OR FEEL FAINT?	10. _____	_____
11. IS ANY PART OF YOUR BODY EVER NUMB?	11. _____	_____
12. HAVE YOU EVER HAD SEIZURES OR CONVULSIONS?	12. _____	_____
13. HAS YOUR HANDWRITING CHANGED LATELY?	13. _____	_____
14. DO YOU HAVE A TENDENCY TO SHAKE OR TREMBLE?	14. _____	_____
15. HAVE YOU GAINED OR LOST MUCH WEIGHT RECENTLY?	15. _____	_____
16. DO YOU HAVE A TENDENCY TO BE TOO HOT OR TOO COLD?	16. _____	_____
17. HAVE YOU LOST YOUR INTEREST IN EATING LATELY?	17. _____	_____
18. DO YOU ALWAYS SEEM TO BE HUNGRY?	18. _____	_____
19. ARE YOU MORE THIRSTY THAN USUAL LATELY?	19. _____	_____
20. ARE THERE ANY SWELLINGS IN YOUR ARMPITS OR GROIN?	20. _____	_____
21. DO YOU SEEM TO FEEL EXHAUSTED OR FATIGUED MOST OF THE TIME?	21. _____	_____
22. DO YOU HAVE DIFFICULTY EITHER FALLING ASLEEP OR STAYING AWAKE?	22. _____	_____

AR000213

HEALTH QUESTIONNAIRE

-2-

		YES	NO
23.	DO YOU PARTICIPATE IN PHYSICAL ACTIVITY OR EXERCISE LESS THAN 3 TIMES A WEEK?	23. _____	_____
24.	DO YOU DRINK MORE THAN SIX CUPS OF COFFEE A DAY?	24. _____	_____
25.	ARE YOU A REGULAR USER OF SLEEPING PILLS, MARIJUANA, TRANQUILIZERS, PAIN KILLERS, ETC.?	25. _____	_____
26.	HAVE YOU EVER USED HEROIN, COCAINE, LSD, PCP, ETC?	26. _____	_____
27.	DO YOU DRIVE A MOTOR VEHICLE MORE THAN 25,000 MILES A YEAR?	27. _____	_____
28.	HOW OFTEN DO YOU USE SEAT BELT WHEN RIDING IN CARS?	28. _____	_____
		NEVER	ALWAYS
		SOMETIMES	
29.	HAVE YOU EVER TRAVELED OUTSIDE THE NORTH AMERICAN CONTINENT?	29. _____	_____
30.	ARE YOU TROUBLED BY HEARTBURN?	30. _____	_____
31.	DO YOU FEEL BLOATED AFTER EATING?	31. _____	_____
32.	ARE YOU TROUBLED BY BELCHING?	32. _____	_____
33.	DO YOU SUFFER DISCOMFORT IN THE PIT OF YOUR STOMACH?	33. _____	_____
34.	DO YOU EASILY BECOME NAUSEATED (FEEL LIKE VOMITTING)?	34. _____	_____
35.	HAVE YOU EVER VOMITED BLOOD?	35. _____	_____
36.	IS IT DIFFICULT OR PAINFUL FOR YOU TO SWALLOW?	36. _____	_____
37.	ARE YOU CONSTIPATED MORE THAN TWICE A MONTH?	37. _____	_____
38.	ARE YOUR BOWEL MOVEMENTS EVER LOOSE OR MORE THAN ONCE A DAY?	38. _____	_____
39.	ARE YOUR BOWEL MOVEMENTS EVER BLACK OR BLOODY?	39. _____	_____
40.	ARE YOUR BOWEL MOVEMENTS EVER GREY IN COLOR?	40. _____	_____
41.	DO YOU SUFFER PAINS WHEN YOU MOVE YOUR BOWELS?	41. _____	_____
42.	HAVE YOU HAD ANY BLEEDING FROM YOUR RECTUM?	42. _____	_____
43.	DO YOU FREQUENTLY GET UP AT NIGHT TO URINATE?	43. _____	_____
44.	DO YOU URINATE MORE THAN FIVE OR SIX TIMES A DAY?	44. _____	_____
45.	DO YOU WET YOUR PANTS OR WET YOUR BED?	45. _____	_____

AR000214

HEALTH QUESTIONNAIRE

		YES	NO
46.	HAVE YOU EVER HAD BURNING OR PAINS WHEN YOU URINATE?	46. _____	_____
47.	HAS YOUR URINE EVER BEEN BROWN, BLACK OR BLOODY?	47. _____	_____
48.	DO YOU HAVE ANY DIFFICULTY STARTING YOUR URINE FLOW?	48. _____	_____
49.	DO YOU HAVE CONSTANT FEELING THAT YOU HAVE TO URINATE?	49. _____	_____
50.	HAVE YOU EVER HAD A CHILD WITH BIRTH DEFECTS?	50. _____	_____
51.	DO YOU, YOURSELF, HAVE A BIRTH DEFECT?	51. _____	_____
52.	DO YOU HAVE HEADACHES MORE THAN ONCE A WEEK?	52. _____	_____
53.	DOES TWISTING YOUR NECK QUICKLY CAUSE PAIN?	53. _____	_____
54.	HAVE YOU EVER HAD LUMPS OR SWELLING IN YOUR NECK?	54. _____	_____
55.	DO YOU WEAR GLASSES?	55. _____	_____
56.	DOES YOUR EYESIGHT EVER BLUR?	56. _____	_____
57.	IS YOUR EYESIGHT GETTING WORSE?	57. _____	_____
58.	DO YOU EVER SEE DOUBLE?	58. _____	_____
59.	DO YOU EVER SEE COLORED HALOS AROUND LIGHTS?	59. _____	_____
60.	DO YOU EVER HAVE PAINS OR ITCHING IN OR AROUND YOUR EYES?	60. _____	_____
61.	DO YOUR EYES BLINK OR WATER MOST OF THE TIME?	61. _____	_____
62.	HAVE YOU HAD ANY TROUBLE WITH YOUR EYES IN THE PAST TWO YEARS?	62. _____	_____
63.	DO YOU HAVE DIFFICULTY HEARING?	63. _____	_____
64.	HAVE YOU HAD ANY EARACHES LATELY?	64. _____	_____
65.	HAVE YOU BEEN TROUBLED BY RUNNING EARS LATELY?	65. _____	_____
66.	DO YOU HAVE A REPEATED BUZZING OR OTHER NOISES IN YOUR EARS?	66. _____	_____
67.	DO YOU GET MOTION SICKNESS RIDING IN A CAR OR PLANE?	67. _____	_____
68.	DO YOU HAVE ANY PROBLEMS WITH YOUR TEETH?	68. _____	_____
69.	HAVE YOU HAD A DENTAL EXAM IN THE LAST TWELVE MONTHS?	69. _____	_____
70.	IS YOUR NOSE STUFFED UP WHEN YOU DON'T HAVE A COLD?	70. _____	_____

AR000215

HEALTH QUESTIONNAIRE

	YES	NO
71. DOES YOUR NOSE RUN WHEN YOU DON'T HAVE A COLD?	71. _____	_____
72. DO YOU EVER HAVE SNEEZING SPELLS?	72. _____	_____
73. DO YOU EVER HAVE HEAD COLDS TWO OR MORE MONTHS IN A ROW?	73. _____	_____
74. DOES YOUR NOSE EVER BLEED FOR NO REASON AT ALL?	74. _____	_____
75. IS YOUR THROAT EVER SORE WHEN YOU DON'T HAVE A COLD?	75. _____	_____
76. HAS A DOCTOR TOLD YOU THAT YOUR TONSILS HAVE BEEN ENLARGED?	76. _____	_____
77. HAS YOUR VOICE EVER BEEN HOARSE WHEN YOU DIDN'T HAVE A COLD?	77. _____	_____
78. DO YOU WHEEZE OR HAVE TO GASP TO BREATHE?	78. _____	_____
79. ARE YOU BOTHERED BY COUGHING SPELLS?	79. _____	_____
80. DO YOU COUGH UP A LOT OF PHLEGM (THICK SPIT)?	80. _____	_____
81. HAVE YOU EVER COUGHED UP BLOOD?	81. _____	_____
82. DO YOU GET CHEST COLDS MORE THAN ONCE A MONTH?	82. _____	_____
83. ARE YOU SWEATING MORE THAN USUAL OR HAVING NIGHT SWEATS?	83. _____	_____
84. HAVE YOU EVER BEEN TOLD THAT YOU HAD HIGH BLOOD PRESSURE?	84. _____	_____
85. HAVE YOU BEEN BOTHERED BY A THUMPING OR RACING HEART?	85. _____	_____
86. DO YOU EVER GET PAINS OR TIGHTNESS IN YOUR CHEST?	86. _____	_____
87. DO YOU HAVE TROUBLE WITH DIZZINESS OR LIGHTEADEDNESS?	87. _____	_____
88. DOES EVERY LITTLE EFFORT LEAVE YOU SHORT OF BREATH?	88. _____	_____
89. DO YOU WAKE UP AT NIGHT SHORT OF BREATH?	89. _____	_____
90. ARE YOU USING MORE PILLOWS TO HELP YOU BREATHE AT NIGHT?	90. _____	_____
91. DO YOU HAVE TROUBLE WITH SWOLLEN FEET OR ANKLES?	91. _____	_____
92. ARE YOU GETTING CRAMPS IN YOUR LEGS AT NIGHT OR UPON WALKING?	92. _____	_____
93. HAVE YOU EVER BEEN TOLD THAT YOU HAVE A HEART MURMUR?	93. _____	_____

AR000216

HEALTH QUESTIONNAIRE

-5-

(FOR MEN ONLY)

- | | | YES | NO |
|------|--|------------|-------|
| 94. | IS YOUR URINE STREAM VERY WEAK AND SLOW? | 94. _____ | _____ |
| 95. | HAS A DOCTOR EVER TOLD YOU THAT YOU HAVE PROSTATE TROUBLE? | 95. _____ | _____ |
| 96. | HAVE YOU HAD BURNING OR DISCHARGE FROM YOUR PENIS? | 96. _____ | _____ |
| 97. | ARE THERE ANY SWELLINGS OR LUMPS ON YOUR TESTICLES? | 97. _____ | _____ |
| 98. | DO YOUR TESTICLES GET PAINFUL? | 98. _____ | _____ |
| 99. | HAVE YOU HAD A VASECTOMY? | 99. _____ | _____ |
| 100. | HAS YOUR WIFE EVER HAD ANY MISCARRIAGES? | 100. _____ | _____ |
| 101. | HAS YOUR WIFE EVER HAD ANY STILLBIRTHS? | 101. _____ | _____ |

(FOR WOMEN ONLY)

- | | | | |
|------|---|------------|-------|
| 102. | WHAT IS THE DATE OF YOUR LAST MENSTRUAL PERIOD? | 102. _____ | _____ |
| 103. | ARE YOU PAST YOUR MENOPAUSE, OR HAVE YOU HAD A HYSTERECTOMY? IF YES: HAVE YOU NOTICED ANY VAGINAL BLEEDING SINCE? | 103. _____ | _____ |

(PLEASE NOW SKIP TO QUESTION 108)

- | | | | |
|------|---|------------|-------|
| 104. | WAS YOUR LAST MENSTRUAL PERIOD ABNORMAL? | 104. _____ | _____ |
| 105. | DO YOU HAVE HEAVY BLEEDING WITH YOUR PERIODS? | 105. _____ | _____ |
| 106. | HAVE YOU HAD BLEEDING BETWEEN YOUR PERIODS? | 106. _____ | _____ |
| 107. | DO YOU EVER HAVE BLEEDING AFTER INTERCOURSE? | 107. _____ | _____ |

AR000217

HEALTH QUESTIONNAIRE

-6-

		YES	NO
108.	HAVE YOU HAD ANY RECENT VAGINAL ITCHING OR DISCHARGE?	108. _____	_____
109.	DO YOU NEGLECT OR EXAMINE YOUR BREASTS MONTHLY?	109. _____	_____
110.	HAVE YOU EVER NOTICED ANY LUMPS OR PAIN IN YOUR BREASTS?	110. _____	_____
111.	AT WHAT AGE DID YOUR MENSTRUAL PERIODS START?	111. _____	_____
112.	ARE YOUR PERIODS IRREGULAR?	112. _____	_____
113.	ARE YOU PREGNANT NOW?	113. _____	_____
114.	ARE YOU CURRENTLY TAKING BIRTH CONTROL PILLS?	114. _____	_____
115.	DO YOU CURRENTLY HAVE AN INTRAUTERINE CONTRACEPTIVE DEVICE (IUD) IN PLACE?	115. _____	_____
116.	HAVE YOU HAD COMPLICATIONS WITH ANY TYPE OF BIRTH CONTROL?	116. _____	_____
117.	WRITE IN THE MONTH AND YEAR OF YOUR LAST PAP TEST	117. _____ / _____	_____

PRINT THE FOLLOWING INFORMATION IN THE SPACES AT THE RIGHT:

118.	NUMBERS OF PREGNANCIES	118.	_____	
119.	NUMBER OF CHILDREN BORN ALIVE	119.	_____	
120.	NUMBER OF PREMATURE BIRTHS	120.	_____	
121.	NUMBER OF MISCARRIAGES	121.	_____	
122.	NUMBER OF STILLBIRTHS	122.	_____	
123.	HAVE YOU EVER HAD AN ABORTION?	123.	_____ YES	_____ NO
124.	DID YOUR MOTHER TAKE D.E.S. WHILE PREGNANT?	124.	_____ YES	_____ NO

(FOR MEN AND WOMEN)

125. NOW IN THE BLANK LINES BELOW PLEASE DESCRIBE ANY SPECIAL PROBLEMS OR SYMPTOMS YOU WISH TO DISCUSS WITH THE DOCTOR.

AR000218

HEALTH QUESTIONNAIRE

TOBACCO

HAVE YOU EVER SMOKED CIGARETTES?
DO YOU SMOKE NOW?

YES [] NO []
YES [] NO []

HOW MANY CIGARETTES PER DAY? LESS THAN 15 [] 15-24 [] 25-34 [] 35+ []
MOST YOU EVER SMOKED PER DAY? LESS THAN 15 [] 15-24 [] 25-34 [] 35+ []
TOTAL YEARS YOU HAVE SMOKED? 5 [] 10 [] 15 [] 20 [] 25 [] 30 [] 35 []
IF YOU QUIT HOW MANY YEARS AGO? _____
AT WHAT AGE DID YOU START SMOKING? _____
AT WHAT AGE DID YOU STOP SMOKING? _____
DO YOU SMOKE PIPES OR CIGARS? _____
HOW MANY PER DAY? _____
DO YOU INHALE PIPE OR CIGAR SMOKE? _____

ALCOHOL

WHAT IS YOUR APPROPRIATE DAILY INTAKE OF ALCOHOL?

NONE OCCASIONAL LESS THAN 2 3-5 OVER 5

BEER (SPECIFY (BOTTLE-CAN-GLASSES))					
WINE (SPECIFY IN OZ.)					
LIQUOR (SPECIFY IN OZ.)					

ACTIVITY

DO YOU ENGAGE IN REGULAR PHYSICAL ACTIVITY?

SUMMER YES _____ NO _____ WINTER YES _____ NO _____

AR000219

EMPLOYMENT HISTORY

PLACE OF EMPLOYMENT (include military)

(dates) FROM-TO

JOB DESCRIPTION

1.		
2.		
3.		
4.		
5.		

IN DECEMBER 1986, OSHA ISSUED AN INTERUM STANDARD EMPHASIZING THE MEDICAL SURVEILLANCE OF WORKERS EXPOSED TO HAZARDOUS WASTES. IF YOU SUSPECT OR KNOW OF RECENT OR REMOTE EXPOSURES TO THE FOLLOWING, PLEASE CHECK THE APPROPRIATE BOX:

	YES	NO
1. HAZARDOUS WASTES	[]	[]
2. NOISE	[]	[]
3. ASBESTOS	[]	[]
4. RADIOACTIVITY	[]	[]
5. FUMES OR DUST	[]	[]
6. OTHERS (PLEASE SPECIFY)	[]	[]

CURRENT JOB DESCRIPTION

	YES	NO
A. DO YOU USE RESPIRATORS AT ANY TIME DURING THE PERFORMANCE OF YOUR JOB?	_____	_____
B. DO YOU HANDLE ASBESTOS-CONTAINING MATERIALS?	_____	_____
C. DO YOU HANDLE RADIOACTIVE MATERIALS OR OPERATE RADIATION-PRODUCING EQUIPMENT.	_____	_____
1. HAVE YOU EVER PERFORMED THESE OPERATIONS?	_____	_____

AR000220

(TO BE COMPLETED BY THE PHYSICIAN)

PHYSICAL EXAMINATION DATA BASE				DATE OF EXAM _____		NURSE'S SIGNATURE _____	
Height _____	Weight _____	Build	<input type="checkbox"/> SLENDER <input type="checkbox"/> MED. <input type="checkbox"/> OBESE	Pulse _____	Resp. _____	Temp. _____	
BLOOD PRESSURE <small>Sitting</small> R / : L /				Standing R / : L /			
VISION		UNCORRECTED FAR R ^W / L ^W / NEAR R / L /		CORRECTED FAR R ^W / L ^W / NEAR R / L /		Tonometry R _____ L _____ Colorvision <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Peripheral Fields R _____ L _____	

Use the following codes to indicate findings for those categories reviewed during this examination.
 WNL = All category items are within normal limits. POS = An item with positive findings
 X = Mark X across names of categories not examined

GENERAL <input type="checkbox"/> WNL a. Posture _____ b. Gait _____ c. Speech _____ d. Appearance _____ e. Emotion _____	HEAD <input type="checkbox"/> WNL a. Hair _____ b. Bruits _____ c. Tenderness _____ d. Sinus _____	EYES <input type="checkbox"/> WNL a. Lids R _____ L _____ b. Sclera R _____ L _____ c. Conjunctiva R _____ L _____ d. Muscles R _____ L _____ e. Cornea R _____ L _____ Accommodation R _____ L _____	EARS <input type="checkbox"/> WNL a. Canal R _____ L _____ b. Drum R _____ L _____
NOSE <input type="checkbox"/> WNL a. Septum _____ b. Mucosa R _____ L _____ c. Obstruction _____	MOUTH/THROAT <input type="checkbox"/> WNL a. Lips _____ b. Breath _____ c. Tongue _____ d. Pharynx _____ e. Tonsils _____	NECK <input type="checkbox"/> WNL a. Thyroid _____ b. Trachea _____ c. Veins _____ d. Spine _____	LUNGS <input type="checkbox"/> WNL a. Chest Symmetry _____ b. Barrel Shape _____ c. Bronchospasm _____ d. Raies _____ e. Rub _____
HEART <input type="checkbox"/> WNL a. PMI _____ b. Rate _____ c. Rhythm _____ d. Thrill _____	BREASTS <input type="checkbox"/> WNL a. Nodules R _____ L _____ b. Discharge R _____ L _____ c. Nipple R _____ L _____ d. Areolas R _____ L _____ e. Symmetry R _____ L _____ f. Consistency R _____ L _____ g. Scars R _____ L _____	ABDOMEN <input type="checkbox"/> WNL a. Contour _____ b. Tenderness _____ c. Organs _____ d. Masses _____	BACK <input type="checkbox"/> WNL a. Inguinal Hernia R _____ L _____ b. Bruit R _____ L _____ c. Femoral pulse R _____ L _____ d. Ing nodes R _____ L _____ e. Other Hernia R _____ L _____
FEMALE GENITALS <input type="checkbox"/> WNL a. Labia _____ b. Bartholin's gland _____ c. Urethra _____ d. Vagina _____	MALE GENITALS <input type="checkbox"/> WNL a. Penis _____ b. Scrotum _____ c. Testicles _____ d. Discharge _____	RECTAL <input type="checkbox"/> WNL a. Scars _____ b. Meatus _____ c. Epididymis _____ d. Vagococle _____	PROCTO <input type="checkbox"/> WNL a. Anus _____ b. Sphincter _____ c. Fissure _____ d. Prostate _____
SKIN <input type="checkbox"/> WNL a. Scars _____ b. Birthmarks _____ c. Other marks _____ d. Skin lesions _____	NEUROLOGIC <input type="checkbox"/> WNL Strength a. Knee R _____ L _____ b. Ankle R _____ L _____ c. Romberg _____ d. Babinski _____ e. Cranial N _____ f. Sensory _____	Reflexes a. Coordination _____ b. Tremor _____ c. Vibratory _____	EXTREMITIES <input type="checkbox"/> WNL a. Shoulder R _____ L _____ b. Arm R _____ L _____ c. Elbow R _____ L _____ d. Radial pulse R _____ L _____ e. Wrist R _____ L _____ f. Hand R _____ L _____ g. Fingers R _____ L _____ h. Nails R _____ L _____

*When testing strength use grades: Weak (W), Normal (N), Strong (S)
 **When testing reflexes use: Absent (A), Present (P), Brisk (B)

AR000221

ORIGINAL
(Red)

Appendix B

AR000223



APPENDIX B
ACCIDENT REPORT FORMS

AR000224

APPENDIX B
ACCIDENT REPORT FORMS

The following document has been provided by the US Army Corps of Engineers as an example of the Accident Investigation Report. This form must be completed after the occurrence of any accident involving the public, personnel, and machinery. A copy of the completed document must be sent to the Company Health and Safety Officer and the US Army Corps of Engineers within 48 hours of the accident.

AR000225

ORIGINAL

UNITED STATES ARMY CORPS OF ENGINEERS
ACCIDENT INVESTIGATION REPORT
(USACE SUPPL 1 to AR 385-40)

REQUIREMENTS
CONTROL
SYMBOL
(DAEN-SO-8 (R2))

NOTE: SPACES, BELOW, DEFINED BY HEAVY LINES ARE FOR "SAFETY CENTER USE ONLY."

1. UNIT IDENTIFICATION		2. TIME AND DATE OF ACCIDENT				3. TIME OF DAY (Circle one)	4. LOCATION
4. UIC	5. DESCRIPTION	6. YEAR	7. MONTH	8. DAY	9. HOUR	<input type="checkbox"/> a. DAWN <input type="checkbox"/> b. DAY <input type="checkbox"/> c. DUSK <input type="checkbox"/> d. NIGHT	<input type="checkbox"/> e. ON-POST <input type="checkbox"/> f. OFF-POST
5. EXACT LOCATION OF ACCIDENT							

SECTION A - PERSONNEL INVOLVED

6. NAME (Last - First - MI)				7. ADDRESS (Use official address for all Government personnel)				8. SOCIAL SECURITY NUMBER			
9. GRADE	10. AGE	11. SEX <input type="checkbox"/> a. MALE <input type="checkbox"/> b. FEMALE	12. MOS OR CIVILIAN JOB SERIES	13. FLIGHT STATUS <input type="checkbox"/> a. YES <input type="checkbox"/> b. NO	14. DUTY STATUS <input type="checkbox"/> a. ON DUTY <input type="checkbox"/> b. OFF DUTY	15. NO. OF HOURS ON CONTINUOUS DUTY BEFORE ACCIDENT	16. NO. OF HOURS SLEEP IN LAST 24 HOURS (if hours or duty more than 2)				
17. CLASSIFICATION AT TIME OF ACCIDENT (Check appropriate box)											
<input type="checkbox"/> a. ACTIVE ARMY <input type="checkbox"/> b. ARMY CIVILIAN <input type="checkbox"/> c. ARMY CONTRACTOR <input type="checkbox"/> d. NONAPPROPRIATED FUND				<input type="checkbox"/> e. OTHER US MILITARY <input type="checkbox"/> f. ROTC <input type="checkbox"/> g. DEPENDENT				NATIONAL GUARD: <input type="checkbox"/> a. TECH <input type="checkbox"/> b. IDT <input type="checkbox"/> c. AT <input type="checkbox"/> d. ATTO <input type="checkbox"/> e. LPTM <input type="checkbox"/> f. ADT ARMY RESERVE: <input type="checkbox"/> a. IDT <input type="checkbox"/> b. AT <input type="checkbox"/> c. ADT <input type="checkbox"/> d. ATM FOREIGN NATIONAL: <input type="checkbox"/> a. DIRECT HIRE <input type="checkbox"/> b. CONTRACT HIRE <input type="checkbox"/> c. KATUSA <input type="checkbox"/> d. OTHER (Specify)			
18. THIS PERSON'S ACTIVITY/TASK AT TIME OF ACCIDENT						19. IF THIS PERSON'S ACTIVITY WAS NECESSARY PART OF TRAINING, GIVE TYPE					
						<input type="checkbox"/> a. BASIC (Schools) <input type="checkbox"/> b. ADVANCED (Schools) <input type="checkbox"/> c. OJT (Unit) <input type="checkbox"/> d. PROFICIENCY (Unit) <input type="checkbox"/> e. OTHER (Specify)					
20. WAS THIS PERSON'S ACTIVITY PART OF FIELD EXERCISE?				21. WAS THIS PERSON'S ACTIVITY PART OF TACTICAL TRAINING?				22. OPERATIONAL CATEGORY (Identify operational category that best describes the overall mission at time of accident.)			
<input type="checkbox"/> a. YES <input type="checkbox"/> b. NO				<input type="checkbox"/> a. YES <input type="checkbox"/> b. NO							
23. SEVERITY OF INJURY TO THIS PERSON (Check only one)											
<input type="checkbox"/> a. FATAL <input type="checkbox"/> b. PERMANENT TOTAL DISABILITY <input type="checkbox"/> c. PERMANENT PARTIAL DISABILITY <input type="checkbox"/> d. LOST WORKDAY CASE - DAYS AWAY FROM WORK <input type="checkbox"/> e. LOST WORKDAY CASE - RESTRICTED WORK ACTIVITY <input type="checkbox"/> f. NONFATAL CASE WITHOUT LOST WORKDAYS <input type="checkbox"/> g. NO INJURY <input type="checkbox"/> h. MISSING AND PRESUMED DEAD <input type="checkbox"/> i. FIRST AID ONLY											
24. WORKDAYS LOST (estimate)	25. WORKDAYS RESTRICTED (estimate)	26. TYPE/NATURE OF INJURY/OCCUPATIONAL ILLNESS				27. BODY PART AFFECTED					
28. CAUSE OF INJURY/OCCUPATIONAL ILLNESS						29. VEHICLE RESTRAINT SYSTEM					
						<input type="checkbox"/> a. USED <input type="checkbox"/> b. NOT AVAILABLE <input type="checkbox"/> c. NOT APPLICABLE <input type="checkbox"/> d. AVAILABLE BUT NOT USED					
30. THIS PERSON'S ERRORS WHICH CAUSED OR CONTRIBUTED TO THE ACCIDENT (Use one row number and the results)											

ENG FORM 3394, MAY 81
Exception to DA Form 289
and 289-1 approved by HQDA,
May 81.

EDITION OF JAN 78 IS OBSOLETE. REPLACES ENG FORM
3394-1, JAN 78 WHICH IS OBSOLETE.

(Proponent: DAEN-SO)

AR000226

SECTION B – PROPERTY AND/OR MATERIEL INVOLVED

31. LIST ALL PROPERTY INVOLVED IN THE ACCIDENT WHETHER DAMAGED OR NOT. IF ACCIDENT INVOLVED ARMY OPERATIONS SHOW COST OF ANY DAMAGE.

NO.	A. NAME OF ITEM (Company identification is item 11 of SF 3001)	B. OWNERSHIP	C. AMOUNT OF DAMAGE
1			
2			
3			

32. MATERIEL FAILURE(S)/MALFUNCTION(S) WHICH CAUSED OR CONTRIBUTED TO THE ACCIDENT (Tell what failed and how it failed)

33. CONTROL NUMBER FOR THE EIR COVERING EACH FAILURE MALFUNCTION - Block 3 of SF 3001

SECTION C – ENVIRONMENTAL CONDITIONS INVOLVED

34. ENVIRONMENTAL CONDITION(S) WHICH CAUSED OR CONTRIBUTED TO THE ACCIDENT

SECTION D – DESCRIPTION AND CORRECTIVE ACTION

35. FULLY DESCRIBE THE ACCIDENT (When materiel is listed in item 31, tell how involved personnel are related to it.)

36. ACTION TAKEN, ANTICIPATED, OR RECOMMENDED TO CORRECT THE CAUSE(S) OF THIS ACCIDENT

37. SIGNATURE OF COMMAND REPRESENTATIVE

38.

COMMAND REVIEW

SAFETY STAFF USE ONLY

39. REPORT SUBMISSION

40. MACOM

41. LOCAL REPORT NUMBER

42. ACCIDENT TYPE

43. TYPE OF VEHICLE COLLISION

INITIAL CHANGE

44. SAFETY STAFF POINT OF CONTACT
(Include grade name and phone)

45. SPECIAL REQUIREMENTS

46. DATE REPORT COMPLETED
(Yr. Mo. Day)

AR000227

SECTION E - SUPPLEMENTAL DATA

47. TRAINING COMPLETED (Government personnel only)

48. PHASE OF CONSTRUCTION (Construction activities only)

- | | | |
|--|--|--|
| 1. <input type="checkbox"/> MOBILIZATION | 8. <input type="checkbox"/> STEEL ERECTION | 15. <input type="checkbox"/> UTILITIES |
| 2. <input type="checkbox"/> SITE PREPARATION | 9. <input type="checkbox"/> SCAFFOLDING | 16. <input type="checkbox"/> MECHANICAL |
| 3. <input type="checkbox"/> EXCAVATION AND EARTHWORK | 10. <input type="checkbox"/> ROOFING | 17. <input type="checkbox"/> TUNNELING |
| 4. <input type="checkbox"/> FOUNDATION | 11. <input type="checkbox"/> CARPENTRY, EXTERIOR | 18. <input type="checkbox"/> DEMOLITION |
| 5. <input type="checkbox"/> FORMING | 12. <input type="checkbox"/> CARPENTRY, INTERIOR | 19. <input type="checkbox"/> WAREHOUSING |
| 6. <input type="checkbox"/> FRAMING | 13. <input type="checkbox"/> TRIM, EXTERIOR | 20. <input type="checkbox"/> OTHER |
| 7. <input type="checkbox"/> CONCRETE PLACEMENT | 14. <input type="checkbox"/> TRIM, INTERIOR | |

49. SAFETY REQUIREMENT VIOLATED (See EM 385-1-1)

SECTION F - NAVIGATION MISHAPS

50. COAST GUARD LICENSE

1. YES 2. NO

51. NUMBER OF BARGES

- LOADED LIGHT

52. H.P. OF TOW

1. UP TO 1000
 2. 1001-3000
 3. 3001-5000
 4. 5001-7500
 5. 7501 AND UP

53. GROSS TONNAGE OF TOW

1. UP TO 6000 TONS
 2. 6001-9000 TONS
 3. 9001-12000 TONS
 4. 12001-15000 TONS
 5. 15001 AND OVER

54. COLLISION/MISHAP

- | | |
|-----------------------------|----------------------|
| 1. COLLISION W/OTHER VESSEL | 7. TOW BREAK UP |
| 2. UPPER GUIDE WALL | 8. SWEEP DOWN ON DAM |
| 3. UPPER LOCK GATES | 9. BUOY OR DOLPHIN |
| 4. LOCK WALL | 10. WHARFS & DOCKS |
| 5. LOWER LOCK GATES | 11. OTHER |
| 6. LOWER GUIDE WALL | |

- PRIMARY SECONDARY

55. NAVIGATION AIDS

1. SUPERVISED
 2. NOT SUPERVISED

56. APPROACH

- | | |
|-------------------------------------|-------------------------------------|
| DOWN RIVER | UP RIVER |
| 1. <input type="checkbox"/> WAY ON | 3. <input type="checkbox"/> WAY ON |
| 2. <input type="checkbox"/> WAITING | 4. <input type="checkbox"/> WAITING |

SECTION G - CORPS OF ENGINEERS SPECIAL REQUIREMENTS

57. OFFICE ASSIGNED (Government personnel only)

DIVISION

BRANCH

58. RECORDABILITY

DA ACCOUNTABLE

- YES
 NO

CE INTEREST ONLY (Not included in FOIA statistical data)

- YES

AR000228

SECTION H - DETAILED ACCIDENT ANALYSIS

<p>59. LOCAL REPORT NUMBER</p>	<p>60. TIME AND DATE OF ACCIDENT</p> <table border="1"><tr><td>a. YEAR</td><td>b. MONTH</td><td>c. DAY</td><td>d. HOUR</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	a. YEAR	b. MONTH	c. DAY	d. HOUR					<p>61. UNIT UIC</p>
a. YEAR	b. MONTH	c. DAY	d. HOUR							
<p>62. TELL WHAT HAPPENED</p>	<p>63. TELL WHAT CAUSED/ALLOWED IT TO HAPPEN</p>	<p>64. TELL WHAT TO DO ABOUT IT</p>								