Site Operations and Excavation Plan

Prepared for:

Town of Oyster Bay
Soil Remediation at Bethpage Community Park

Contract No. DP06-931

Submittal No.: 01912.01-3

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1.0 PLAN OBJECTIVE

The purpose of this plan is to outline how Blue Water Environmental (BWE) will implement the Site Operations and Excavations at the site, with an overall explanation of how the work is intended to accomplish. The plan includes a Schedule, a listing of required permits, the expected personnel and equipment; general layout of the site including the location for site access, support and staging areas, exclusion zones and equipment decontamination areas.

The plan also includes the following related plans and establishes this plan along with the contract documents and specifications, as a master plan for accomplishing the work: Environmental Pollution Control Plan, Site Specific Health and Safety Plan, Decontamination Plan, Air Monitoring Plan, Dust Control Plan, Spill and Discharge Control Plan, Transportation and Disposal Plan.

2.0 BLUE WATER ENVIRONMENTAL - PROJECT TEAM

AND EMERGENCY CONTACT LIST

Project Superintendent	Martin Schellenback	Cell: 516-790-0048
Field Engineer	Eric Eldora	Office: n/a
General Superintendent	Angelo Occhiogrosso	Cell: 516-315-1053
Area Manager	Anthony Schneider	Office: 631-249-1872 Cell: 516-807-1008
Health and Safety Director	Robert Franco	Office: 631-249-1872 Cell: 516-315-3467

3.0 EMERGENCY CONTACT NUMBERS

HOSPITAL

NAME:	**New Island Hospital**
PHONE #:	**(516) 579-6829**
ADDRESS:	**4295 Hempstead Tpk Bethpage NY**

POLICE DEPARTMENT

PRECINCT:	**Nassau County Police 8th Precinct**
PHONE #:	**911**
NON-EMERGENCY:	**(516) 573-6800**

FIRE DEPARTMENT:

NAME:	**Bethpage Fire Department**
PHONE #:	**911**
	(516) 931-0666
NON-EMERGENCY:	**(516) 931-2660**
ADDRESS:	**225 Broadway Bethpage NY 11714**

Utility and Municipality Emergency List

NAME:	**Verizon**
PHONE #:	**1 800 272-4480**
NAME:	**KeySpan**
PHONE #:	**1 800 962-7962**
NAME:	**Town of Oyster Bay**
	Matthew Russo
PHONE #:	**(516) 677-5719**
NAME:	**Bethpage Water District**
PHONE #:	**(516) 931-0093**

Engineering

NAME:	**Holzmacher, McLendon & Murrell, P.C.** **Paul Lageraaen, P.E.**
PHONE:	**(631) 756-8000**

4.0 EQUIPMENT

The following is a listing of the types of equipment expected to be utilized to complete the work at the site:

Excavator
Concrete Breaker
Payloader
Dozer
Compactor
10 Wheel Trucks
Tractor Trailers
Truck Scale
Truck Wash
Hoses, sprinklers and other water distribution supplies
Mechanical Tampers
Aerosol Monitor for Health and Safety dust monitoring

Community Air Monitoring Program
- 3-air monitoring stations with
  - TSI DustTRAK aerosol monitor and,
  - MiniRAE 2000 Portable Ionization Detector (PID)
- Independent weather station (DavisPro Weather Station).

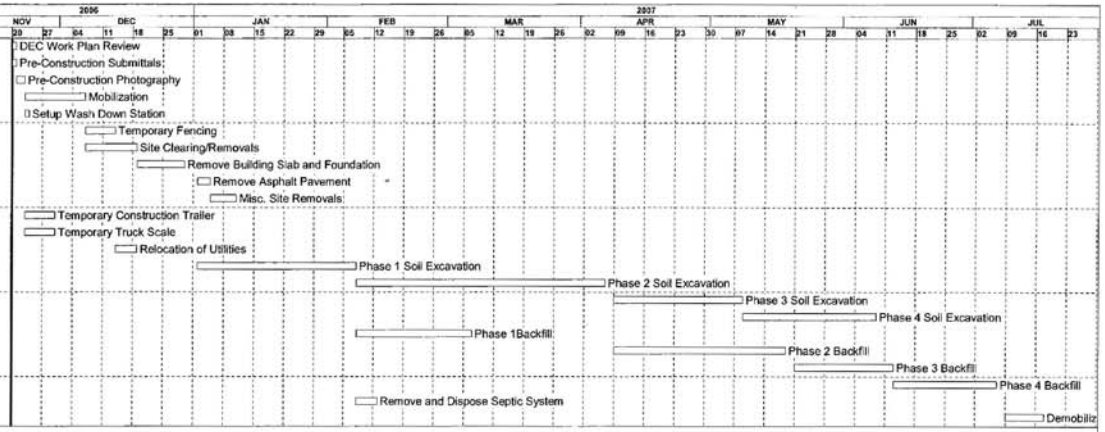
The procedures for equipment safety, training and operation are outlined in the Health and Safety Plan in section 14.12. This information includes the use of spotters, the operation of equipment, instructions for personnel working near and with the equipment, mark-out concerns and company policy on company trucks and automobiles.

5.0 REMEDIAL EXCAVATION AND CONSTRUCTION SCHEDULE

The Project CPM Schedule includes all excavation and related activity with the projected time for remedial excavation, load out and off-site transportation.

This Schedule including excavation activity will be updated monthly and submitted along with the Contractor's Monthly Invoice.

Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish
900	DEC Work Plan Review	1	1	20NOV06	20NOV06
1000	Pre-Construction Submittals	1	1	20NOV06	20NOV06
1050	Pre-Construction Photography	2	2	21NOV06	22NOV06
1100	Mobilization	10	10	23NOV06	06DEC06
1120	Setup Wash Down Station	1	1	23NOV06	23NOV06
1130	Temporary Fencing	5	5	07DEC06	13DEC06
1200	Site Clearing/Removals	8	8	07DEC06	18DEC06
1210	Remove Building Slab and Foundation	8	8	19DEC06	29DEC06
1220	Remove Asphalt Pavement	3	3	02JAN07	04JAN07
1230	Misc. Site Removals	4	4	05JAN07	10JAN07
1300	Temporary Construction Trailer	5	5	23NOV06	29NOV06
1400	Temporary Truck Scale	5	5	23NOV06	29NOV06
1500	Relocation of Utilities	3	3	14DEC06	18DEC06
1600	Phase 1 Soil Excavation	27	27	02JAN07	07FEB07
1610	Phase 2 Soil Excavation	42	42	08FEB07	06APR07
1620	Phase 3 Soil Excavation	22	22	09APR07	08MAY07
1630	Phase 4 Soil Excavation	23	23	09MAY07	08JUN07
1700	Phase 1Backfill	19	19	08FEB07	08MAR07
1710	Phase 2 Backfill	30	30	09APR07	18MAY07
1720	Phase 3 Backfill	17	17	21MAY07	12JUN07
1730	Phase 4 Backfill	17	17	13JUN07	06JUL07
1800	Remove and Dispose Septic System	3	3	08FEB07	12FEB07
1900	Demobilize	7	7	09JUL07	17JUL07



Start date	20NOV06
Finish date	17JUL07
Data date	20NOV06
Run date	03NOV06
Page number	1A

Blue Water Environmental
TOBY Bethpage Community Park

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

6.0 REMEDIAL EXCAVATION MEANS & METHODS

The excavation activities at the site will follow the sequencing depicted in the Critical Path Method (CMP) Schedule included in this plan. Generally, upon approval of required work plans, the site will be mobilized with required facilities, fencing, and equipment. Underground utilities will be marked out and verified as needed before excavation activities proceed.

At the request of the Town of Oyster Bay, the work site is divided into four sections referred to in the contract documents and specifications as phases. These phases were established by the Town as a means to expedite the construction of a new building at the site ahead of the final completion of the remediation process. This plan allows for the coordination with other contractors to facilitate the Town's request.

The work at the site will follow the phases established by the Town. Activities will start with site clearing: removal and disposal of surface debris pavement, slabs and foundations, then proceeding through excavation and disposal, and finally backfilling. Work in any one of the Town's established phases will be considered completed when the area is backfilled to 9" below original grade or other specified elevation, and the Town and Engineer accept the required documentation.

To complete the work BWE will prepare the excavation area with the necessary fixtures and equipment needed for the work. Each excavation area will be evaluated for it's specific requirements. Typically we will secure the area, protect the adjacent areas, review obstructions and utilities, and coordinate the proper equipment to complete the excavation. As outlined in our Health and Safety Plan, personnel working at the site will meet regularly to evaluate and address the needs of the ongoing work.

Protection of Underground Utilities

The Contract drawings show known subsurface utilities, sanitary sewer lines and water lines. Utility mark-outs of all utilities at the site prior to any excavation work will be performed and updated as required during the contract period.

Subsurface utility lines shown on the drawings are estimated from utility as built drawings, and a geophysical survey performed previously to trace known buried utilities. All utility locations are estimated, and will be verified and protected as required during the excavation and backfilling operations.

Any utility line that is discovered or damaged, that is not marked-out will be reported to the Engineer immediately.

Site Clearing: Removal and Disposal of Surface Debris Pavement, Slabs and Foundations

The site clearing process will proceed ahead of the excavation. It is expected that all site clearing debris is considered to be disposable at local landfills according to applicable local codes for the disposal of debris.

The site clearing will conform to applicable local codes for the disposal of debris, and all pest and rodent control measures. No materials will be burnt or buried at the site. All clearing work will be coordinated with Town of Oyster Bay and the utility companies.

Prior to site clearing, existing trees and plant life that is designated to remain will be identified and tagged with orange surveyors tape. See the Environmental Pollution Control Plan for details on protecting trees and plant life.

Excavation of Impacted Soil

Prior to the mobilization and construction of the planned Containment and Clear zones established in the Phase-1 area at the construction entrance, remedial soils will be excavated and stockpiled to allow for the construction of these areas. Construction of the Containment and Clear zones include the mobilization of a truck wash and portable scale. Stockpiling will be performed in the manner depicted in these plans and by contract specifications. During Phase-1 excavation, the soils will be excavated from the southern portions of the Phase moving in a northwest direction into Phase-2. The balance of the excavation will continue from Phase-2 through the balance of the site.

During all excavation activities, the OSHA Standard Excavation Final Rule 29 CFR Part 1926 will be followed. Excavations are expected to be open-cut excavations with side slopes of 1V:1H. Sheeting and shoring is not expected to be required throughout the site. The side-slopes of the excavation will be protected with procedures listed in the Environmental Pollution Control Plan.

The expected depth of excavation at the site ranges from two feet below grade to 20 feet below grade surface. The excavation will proceed to the grades depicted in the contract documents and drawings unless instructed to excavate additional soils by the Town or the Engineer.

The excavation of Non-Hazardous RCRA soils will proceed from high elevations through low elevations throughout each Phase. It is anticipated that the excavation of RCRA-Non-Hazardous soils will proceed to an elevation of 10 feet below grade surface before the excavation of the TSCA-regulated, Non-TSCA regulated and RCRA-Hazardous soils begins. In the eight area locations containing TSCA-regulated, Non-TSCA regulated and RCRA-Hazardous soils, excavation of Non-Hazardous RCRA soils will proceed only to the elevations depicted in the table on drawing C-1 showing the soil depths and waste classifications in the eight area locations. The balance of the soils in these areas will be excavated based the waste stream and scheduling with the accepted waste facility. The remaining excavation will follow in sequence to depths depicted on the contract drawings.

The staging of excavated soils will be kept to a minimum at the site. Staged soils will be placed on 6 mil, minimum, poly sheeting according to contract specifications and provisions outlined in the Construction Water Management & Disposal Plan.

Loading Excavated Soils

All excavated material will be loaded into vehicles and transported directly to the off-site disposal facility. Vehicles will be loaded in a manner that will not allow excavated material to be spilled.

All vehicles that have entered the excavation area, and have been subjected to contamination, will be directed to the decontamination facility prior to departure from the site or entry to a "clean" area. There it will be inspected and decontaminated or allowed to proceed to clean area if decontamination is deemed unnecessary.

Excavation Equipment and Personnel

Excavations are to be completed by means of a Caterpillar 345 track excavator, an operating engineer and two laborers. Soils will be direct loaded onto tractor-trailers. Trailers will be loaded then proceed to the wash station and truck scale before transporting soils to the appropriate waste facility.

All personnel will have completed a 40-hour HAZWOPER course of instruction with the appropriate 8-hour refresher courses included as required.

All personnel working within an Exclusion Zone will be outfitted in Personnel Protective Equipment (PPE) that will properly reduce any personnel impact that may occur. Chauffeurs operating vehicles in an Exclusion Zone will be forbidden from exiting their vehicles until they safely enter a “clean” area.

Backfilling

Backfilling will take place following the completion of soil excavation activities. When excavation activities are completed, the Engineer will inspect the excavation and give approval to backfill.

Only certified clean fill will be used for this purpose. Backfill soil will be placed in lifts, graded and compacted in accordance with the contract plans and specifications. Backfilling will be completed to the lines and grades depicted on the contract drawings.

Excavation Preparations

Identify required line levels, contours and datum.

Identify known underground, above ground and aerial utilities with stakes, flags and/or test holes.

Select appropriate personal protective equipment.

All mark-out will be maintained until their use is no longer required.

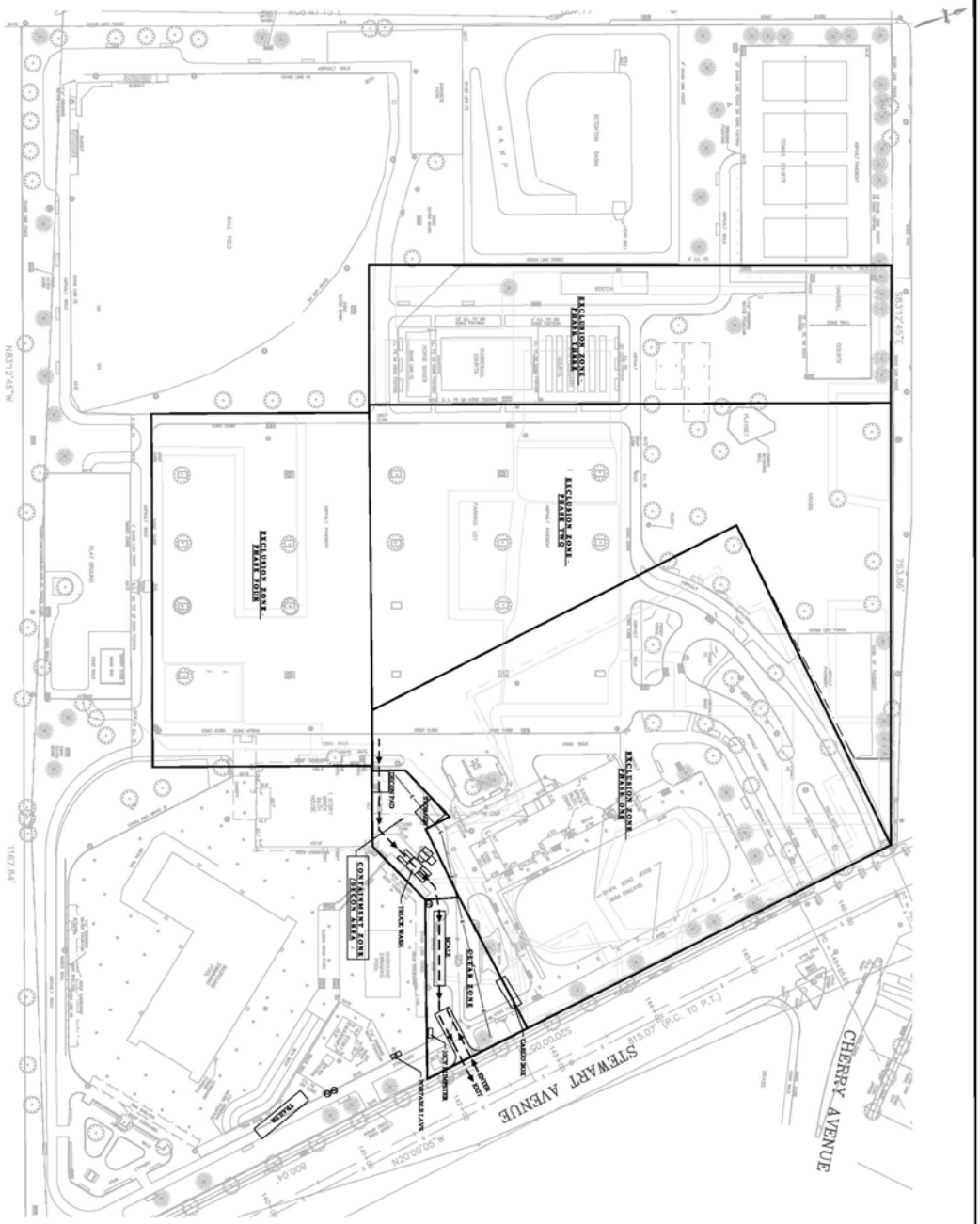
Provide protection for above and below grade utilities that are to remain.

Protect plant life, lawns and other features remaining.

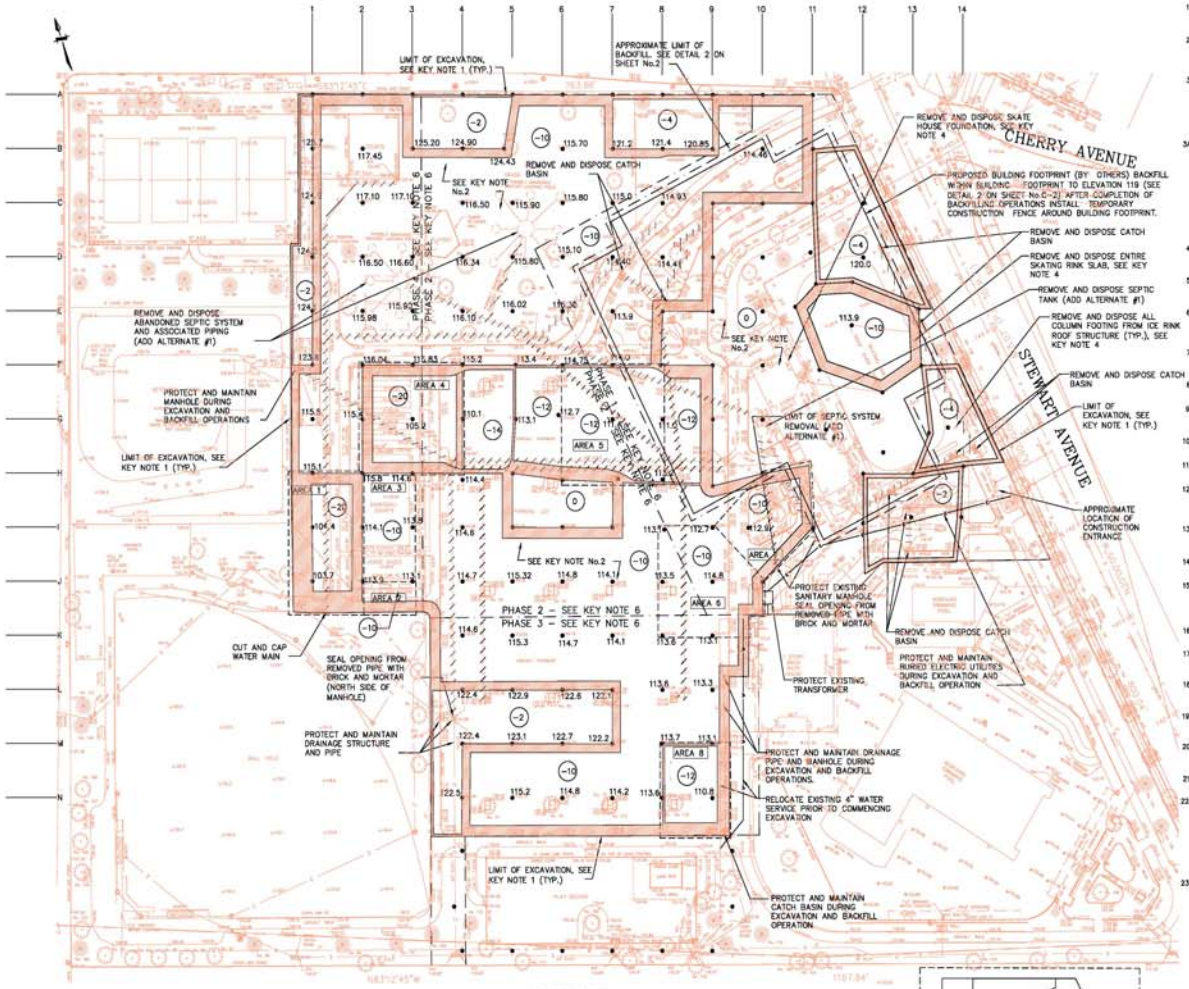
Protect benchmarks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

Notify the Engineer prior to commencement of excavation.

SITE OPERATIONS LAYOUT PLAN



PAGE 1 of 1		TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK CONTRACT NO. DP06-931	BLUE WATER ENVIRONMENTAL, INC 1610 NEW HIGHWAY FARMINGDALE, NEW YORK 11735 631.249.1872



SITE PLAN
SCALE: 1"=50'-0"

PHASING PLAN
NO SCALE

LEGEND

- SLOPE TRANSITION AREA (SEE KEY NOTE 3 AND DETAIL ON SHEET C2)
- REMOVE AND DISPOSE UTILITY
- EXISTING SOIL BORING LOCATION
- (-10) APPROXIMATE EXCAVATION DEPTH
- 114.1 ELEVATION OF BOTTOM OF EXCAVATION AT BORING LOCATION
- AREA 1 SEE KEY NOTE 5

TABLE 1

AREA	DEPTH OF SOIL TO BE SEGREGATED	WASTE CLASSIFICATION
1	-5 TO -20	TSCA REGULATED (PCB > 50 mg/kg)
2	-1 TO -5	RORA HAZARDOUS*
3	-5 TO -7	TSCA REGULATED (PCB > 50 mg/kg)
4	-7 TO -11	RORA HAZARDOUS*
5	-7 TO -11	TSCA REGULATED (PCB > 50 mg/kg)
6	-7 TO -10	RORA HAZARDOUS*
7	-5 TO -9	RORA HAZARDOUS*
8	-0 TO -12	NON-TSCA REGULATED (5 mg/kg < PCB < 50 mg/kg)*

* ANTICIPATED CLASSIFICATION

SITE PLAN NOTES

1. CONTRACTOR SHALL INSPECT PROJECT SITE PRIOR TO SUBMISSION OF BIDS AND SHALL MAKE NO ADDITIONAL CLAIMS REGARDING SITE CONDITIONS THEREAFTER.
2. THE CONTRACTOR SHALL NOTIFY THE OWNER AND H2M (TELEPHONE (631) 756-8000) AT LEAST 24 HOURS PRIOR TO THE COMMENCEMENT OF THE WORK. THE SAME NOTICE SHALL BE REQUIRED WHEN RESUMING WORK AFTER ANY STOPPAGE OR DELAY.
3. LOCATION OF ALL UNDERGROUND UTILITIES, ELECTRIC AND TELEPHONE CONDUITS, STORM DRAINS AND UNDERGROUND PIPING SHALL BE MARKED OUT BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF UNDERGROUND UTILITIES, GAS MAINS, ELECTRIC AND TELEPHONE CONDUITS. NO EXCAVATION SHALL COMMENCE UNTIL COMPLETE MARK-OUT HAS BEEN PERFORMED.

3A. LOCATION OF ALL UNDERGROUND UTILITIES BOTH PUBLIC AND CUSTOMER OWNED, WERE OBTAINED FROM EITHER OLD MAPS, SURVEYS, DRAWINGS AND RECORDS SUPPLIED BY OTHERS. THE OWNER AND ENGINEER DO NOT GUARANTEE OR ACCEPT RESPONSIBILITY FOR ANY DAMAGE TO SUCH FACILITIES DUE TO DISCREPANCIES IN LOCATION AND SIZE SHOWN ON THE PLANS OR THOSE UTILITIES NOT SHOWN, NOR WILL ANY COMPENSATION BE MADE TO THE CONTRACTOR FOR ANY INCONVENIENCE CAUSED HIM BY ENCOUNTERING THE AFOREMENTIONED UTILITIES OR FOR THOSE UTILITIES WHICH ARE NOT SHOWN, OR ARE INCORRECTLY SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES.

4. CONTRACTOR SHALL HAND DIG TO LOCATE AND EXPOSE EXISTING UTILITIES. ANY DAMAGE TO EXISTING UTILITIES MUST BE REPAIRED IMMEDIATELY BY CONTRACTOR AT NO COST TO OWNER.
5. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE ALL SURVEY, LAYOUT, LINES, GRADES, AS REQ'D. TO PROPERLY COMPLETE THE WORK. NEITHER H2M OR THE OWNER SHALL PERFORM ANY LAYOUT.
6. THE CONTRACTOR SHALL PERFORM DAILY CLEANUP OPERATIONS WHICH INCLUDE REMOVAL OF DEBRIS AND EXCESS CONSTRUCTION MATERIAL, AND DRIVEWAY/ STREET CLEANING TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.
7. DURING ALL NON-WORKING HOURS, THE CONTRACTOR WILL BE REQUIRED TO STORE ALL EQUIPMENT AND MATERIALS WITHIN THE AREA DESIGNATED BY THE ENGINEER AT THE PROJECT SITE.
8. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO REVISION.
9. WORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODE REQUIREMENTS. THE CONTRACT AND SUBJECT TO THE APPROVAL OF THE ENGINEER.
10. CONTRACTOR SHALL SECURE PROJECT SITE IN ACCORDANCE WITH APPLICABLE SAFETY STANDARDS.
11. CONTRACTOR SHALL COORDINATE ACTIVITIES WITH OWNER/ENGINEER SO AS TO MINIMIZE INTERRUPTION TO THE OWNERS OPERATIONS.
12. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF SURROUNDING AREAS DAMAGED DURING COMPLETION OF THIS PROJECT. ALL AREAS DISTURBED BY WORK SHALL BE RESTORED TO PRE-EXISTING OR SPECIFIED NEW CONDITIONS.
13. REPLACE ANY CURBS, DRIVEWAY, ETC., SCHEDULED TO REMAIN WHICH ARE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO COST TO OWNER.
14. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AROUND ENTIRE WORK AREA. FENCE IS TO REMAIN AT COMPLETION OF WORK.
15. SURVEY FINAL EXCAVATED DEPTHS AND FINAL BACKFILLED ELEVATIONS. SUBMIT SIX (6) SIGNED AND SEALED COPIES OF BOTH SURVEYS TO THE ENGINEER. SURVEYOR IS TO BE LICENSED IN NEW YORK STATE. THESE SURVEYS WILL BE SUBMITTED TO NYSDEC AS A RECORD OF REMEDIATION.
16. DO NOT STOCK PILE ANY MATERIAL ON PAVED SURFACES TO PREVENT CONTAMINATION OF EXISTING DRAINAGE SYSTEMS.
17. PROVIDE TRUCK SCALE TO WEIGH LOADED TRUCKS DEPARTING SITE. WEIGHT OF LOAD ON TRUCK MEASURED WITH THIS SCALE WILL BE UTILIZED AS A BASIS OF PAYMENT.
18. CONTRACTOR SHALL PROVIDE A DECONTAMINATION STATION FOR DECONTAMINATION OF TRUCKS LEAVING THE SITE IN ACCORDANCE WITH SPECIFICATION SECTION 01915.
19. THE CONTRACTOR IS TO MAKE EVERY EFFORT SO AS NOT TO INTERFERE WITH LOCAL SCHOOL BUS TRAFFIC AND SCHOOL OPERATIONS.
20. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT LOCATION DESIGNATED BY OWNER, SEE DETAIL 4 ON SHEET No. C-2. RESTRICT ALL VEHICULAR ACCESS TO THIS ENTRANCE.
21. BASE MAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408862, SEPT. 2004
22. THE TOWN OF OYSTER BAY POSSESSES APPROXIMATELY 60,000 CUBIC YARDS OF POTENTIAL BACKFILL MATERIAL AT THEIR PUBLIC WORKS FACILITY AT 150 MILLER PLACE SYOSSET, ADD – ALTERNATE #2 FOR THIS PROJECT WILL INCLUDE LOADING AND TRANSPORTING THIS MATERIAL TO THE PROJECT SITE, BLENDING IT WITH ACCEPTABLE FILL MATERIAL ON SITE AND PLACING THE MATERIAL AS BACKFILL. THIS STOCKPILED MATERIAL IS CURRENTLY BEING TESTED BY THE TOWN FOR SUITABILITY AS BACKFILL ON PROJECT. THE RESULTS OF THIS TESTING AND FURTHER DIRECTION WILL BE PROVIDED VIA AN ADDENDUM.
23. HORIZONTAL AND VERTICAL SURVEY CONTROL POINTS WILL BE PROVIDED TO THE CONTRACTOR UPON AWARD OF THE CONTRACT. ALL CONTROL POINTS WILL BE LOCATED ON THE SITE.

KEY NOTES:

1. EXCAVATE AND DISPOSE SOIL WITHIN LIMITS SHOWN. BACKFILL TO 9 INCHES BELOW ORIGINAL ELEVATIONS WITH FILL MATERIAL SPECIFIED IN SECTION 02316.
2. REMOVE AND DISPOSE ALL SURFACE FEATURES WITHIN LIMIT OF EXCAVATION AND NEW BUILDING FOOTPRINT. THIS INCLUDES BUT IS NOT LIMITED TO PAVING, CURBS, TREES, LIGHT POLES, FENCING, WALLS, BENCHES, PLAYGROUND EQUIPMENT.
3. ALL SLOPE TRANSITION AREAS ARE TO BE SLOPED AT 1:1.
4. DEMOLITION AND REMOVAL OF ICE RINK ROOF STRUCTURE AND SKATE HOUSE WILL BE PERFORMED BY OTHERS. REMOVAL OF THE FOUNDATIONS AND ALL OTHER BELOW GRADE STRUCTURES WITHIN THE LIMIT OF EXCAVATION ARE TO BE INCLUDED IN THIS CONTRACT. THIS INCLUDES, BUT IS NOT LIMITED TO ON-GRADE ICE RINK SLABS, COLUMN FOOTINGS, SKATE HOUSE FOUNDATION, FOUNDATIONS, PIPE HEADER TRENCH ENCLOSURES, SLABS, UTILITIES, ETC.
5. IN AREAS DELINEATED BY THIS BORDER ALL SOIL WITHIN THE DEPTHS INDICATED IN TABLE 1 ARE TO BE STOCKPILED SEPARATELY FROM ALL OTHER EXCAVATED SOIL AND FROM EACH OTHER. EACH STOCKPILE IS TO BE TESTED INDIVIDUALLY PRIOR TO DISPOSAL.
6. COMPLETE WORK IN PHASES AS DESIGNATED. COMPLETE EACH PHASE IN ITS ENTIRETY BEFORE COMMENCING THE NEXT PHASE.

PROPOSED EXCAVATION

SITE PLAN

C-1

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Protection of Trees and Shrubs:

Prior to construction activities, all trees, shrubs, vines, grasses, land forms, and other landscape features outside the remedial excavation limits will be marked and protected. As the work progresses, the Engineer may determine that these trees and/or shrubs may possibly become defaced, bruised, injured, or otherwise damaged by the Construction equipment or by other operations, at this time, the Contractor will be directed to provide temporary protection of such trees/shrubs by placing boards, planks, or poles around the areas of concern.

Any tree and/or shrub scarred or damaged in this area by the Construction equipment or operations will be restored as nearly as possible to its original condition. Trees/shrubs that are to remain that are damaged beyond saving, in the opinion of the Engineer, will be removed and replaced with a nursery-grown tree/shrub of the same species and related size. All damaged limbs will be pruned and removed from the site.

Protection of Water Resources:

Construction activities will be monitored, managed, and controlled to avoid pollution of surface waters and sewer systems. Management techniques to control water pollution by site disturbance and construction activities included in this Contract will be used for the protection of water resources.

Fuels, oils, bitumens, calcium chloride, acids or other potentially harmful construction-related materials, both on and off the site premises will be properly disposed of. All disposals will comply with applicable Federal, State, county and municipal laws concerning pollution of rivers and streams while performing work under the Contract. Measures taken to prevent such materials from entering public waters include protecting catch basins with filter fabric and hay bales, grading and placing silt fence and hay bale barriers that prevent the travel of pollutants or other means acceptable to the Controlling Agency or the Engineer in Charge.

Trash and Debris Disposal:

All trash and debris will be transported off the site and disposed of in compliance with Federal, State and local requirements. Trash container/s of suitable size will be utilized for the purpose of collecting and temporarily storing any site created trash and debris. These containers will be collected on a regular basis and emptied into a suitable dumpster. A collection service will be established with a reputable company to pick up and dispose of all collected trash and debris. The size and locations of dumpster/s and trash receptacles are provided on the attached plan. Trash and debris referred to here include only trash and debris created from site operations and does not include any construction debris expected to be included in the site demolition activities.

The Site layout plan included with this document indicates the expected placement of trashcans and dumpsters needed to keep the site free of debris.

Dust Control:

Measures to control dust resulting from the work of this contract are included in the referenced Dust Control Plan. The plan includes but is not limited to controlling dust at locations and in such quantities and frequencies as required to prevent dust from becoming a nuisance to the surrounding area.

All excavations, backfill areas, stockpiles, haul roads, and all other work areas within or outside the project boundaries created by the remedial activities will be maintained to be free from excess dust to avoid causing a hazard or nuisance to others.

Temporary methods of control include sprinkling, approved chemical treatment, or similar methods. Dust control shall be performed as the Work proceeds and whenever a dust nuisance or hazard occurs as specified in the Air Monitoring and Dust Control Plans.

The Engineer will administer a Community Air Monitoring Program (CAMP) for this site. Dust Control measures will be applied as required to meet the standards of the CAMP.

Noise Control:

Noise will be minimized using every means available. Noise-producing work will be scheduled during less sensitive hours of the day or week as directed by the Town or Engineer. Noise-producing work will be conducted at or below decibel levels specified by OSHA and local ordinances.

The following guidelines will be administered to control noise levels when applicable:

Construction activities involving repetitive, high-level impact noise will be performed Mondays through Fridays between the hours of, 7:00 a.m. and 7:30 p.m. unless otherwise permitted by local ordinance or by the Engineer.

Truck loading, unloading, and hauling operations will be conducted to keep noise levels to a minimum.

Additional measures of controlling noise, if required, will be evaluated as the need arises.

Post-Construction Clean up:

BWE will leave the site free of all temporary construction facilities, construction debris, garbage, structures, foundations of temporary structures, stockpiles of excess materials, and other indications of construction activity upon completion of the contract work.

8.0 DUST CONTROL PLAN

PLAN OBJECTIVE

This plan is to ensure that the production of dust is controlled or minimized during the earthmoving and related operations of this project. The plan includes but is not limited to controlling dust at locations and in such quantities and frequencies as required to prevent dust from becoming a nuisance to the surrounding area. The dust content of the site air shall be conducted in accordance with the Community Air Monitoring Plan (CAMP) as administered by the Engineer.

PLAN PROVISIONS

Anticipated Requirements

The soils excavated from this site, may be contaminated with metals including arsenic, chromium, mercury, and PCB's and VOC's. The creation of dust produced during the earthmoving and related operations of this project are to be minimized. All excavations, backfill areas, stockpiles, haul roads, and all other work areas within or outside the project boundaries are to be free from excess dust or odor to avoid causing a hazard or nuisance to others. Temporary measures to suppress dust such as sprinkling, approved chemical treatment or similar method, are to be implemented as necessary to minimize the potential for dust generation and migration. As work proceeds, and whenever a dust nuisance or hazard occurs, dust control procedures will be implemented.

Controlling Dust

When the dust concentration exceeds the action level of the CAMP, changing the operations to control or minimize the production of dust will be employed to reduce concentrations. The dust may be controlled by water or non-toxic chemical spray, or similar means. If the dust content of the site air is unable to be controlled through the outline methods, additional methods can be employed at the request of the Engineer.

As site soils are exposed after site excavation has commenced, dust may be lifted and carried by the wind. In this event, exposed soils will be covered or coated to reduce the hazard.

Controlling Dust (continued)

When additional dust control operations are necessary, equipment and supplies necessary to control the dust will be made available for use at the site.

To avoid the potential for an off-site hazard, the short-term action level is to minimize dust concentrations at the perimeter of the site as specified in the CAMP.

Methods and Equipment

It is anticipated that measures to control dust can be properly addressed by means of sprinkling. Available at the site will be the proper sprinkling supplies to correctly administer this control. Supplies include but are not limited to hoses, sprinkler heads, and back-flow prevention devices.

Additionally, a water distribution vehicle will be available for secondary measures if sprinkling cannot control dust.

During excavation operations dust within the work zone will be monitored by the use of an aerosol monitor (Dust Trak Environmental enclosure) or similar device. Readings will be recorded with copies of these results going to Project engineers.

9.0 SPILL AND DISCHARGE CONTROL PLAN

PLAN SUMMARY

This scope of work outlines a comprehensive plan to respond to, store and report spills or releases to the environment. The purpose of this plan is to list the procedures for containing dry and liquid spills, for staging or storage of spilled materials, decontamination, response and reports to spill incidents and notification of spills or discharges.

SECTION INCLUDES

Requirements for Spill and Discharge Control Plan

Equipment and personnel decontamination

PLAN PROVISIONS

Anticipated Requirements

A listing of minimum procedures to develop, implement, maintain, and supervise are listed in the Spill and Discharge Control Plan. This plan provides measures for potential accidental spills and/or discharges including, but not limited to spills during remediation activities such as diesel fuel or contaminated soil/sediment from a contaminated area onto a non-contaminated area during transport.

In the case of any spill or discharge, the proper equipment and personnel are required to cleanup the area that has become contaminated as a result of the accidental spill or discharge, as well as the proper removal and disposal of all spilled or discharged materials. Some spills or discharges may require decontamination measures, which will require the proper equipment and personnel. A listing of equipment used on site that pose potential spill risks are contained in section ”Excavation Equipment and Personnel”.

PROCEDURES

Procedures for containing dry and liquid spills identifies the types of secondary containment or diversionary structures that will be used to handle each spill.
An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill pad placed beneath potential leak sources. An undetected leak from parked equipment will be contained within the equipment staging area by a temporary berm. All catch basins in this area will be sealed with drain seals. A spill during fueling operations will be contained within a spill pallet for small container handling, or secondary containment berms in the bulk fuel storage areas. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump, and a spill pad used to absorb any incidental spills/drips. A leak of a drum will be repaired with a patch kit. A spill from containers or drums in the material staging area will be contained within the hooded spill pallets.

A spill response kit will be located near the fueling area for easy access. The spill response kit will include plastic sheeting, tarps, overpack drums, kitty litter, and shovels to address accidental spills or discharges. Staging or storage of spilled materials prior to off-site disposal is to be located within a secure project work area selected by the Engineer.

The refueling of equipment will be conducted as necessary based on the fuel usage of the equipment in use. Fuel will be dispensed through a fuel truck. Fueling will take place at the interface between the exclusion zone the equipment is working in and the containment zone where a spill response kit will be accessible for use if required. In the event equipment needs to be fueled at any alternate location, provisions will be made to have ready a spill response kit. Should this event require additional controls unrelated to refueling, such conditions will be addressed according to these work plans and the contract specifications.

Potential spill sources include: equipment staging and maintenance areas (fuel, lubricating oil, and hydraulic oil from backhoes, cranes, water trucks, pickup trucks, support truck equipment, pumps, and generators), fuel staging areas and hazardous material for storage (containers of lubricants, fuels, and hydraulic oil).

Decontamination procedures may be required after cleanup to eliminate traces of the substance spilled or reduce it to an acceptable level. Acceptable level shall be determined by the NYSDEC. Complete cleanup may require removal of contaminated soils. Personnel decontamination shall include showers and cleansing or disposing of clothing and equipment. All contaminated materials such as soil and wood that cannot be decontaminated must be properly containerized, labeled, and properly disposed of as soon as possible. See “Decontamination Plan” sections for further detail procedures.

PROCEDURES (CONTINUED)

Response of a spill incident in the first ten to fifteen minutes is critical to minimize the impacts to human health and the environment and to minimize property damage and cleanup costs. A written report detailing the spill or discharge includes, at a minimum, the cause and resolution of the incident, outside agencies involved, and date the incident occurred. The report will be submitted to the Town (Owner) and the Engineer within 48 hours of the incident. The locations of all the spills will be documented on the site Drawings.

Blue Water Environmental will notify the following agencies of a spill or discharge that meets the minimum reportable requirements (5 gallons on a permeable surface not immediately cleaned up):

NYSDEC Region 1 Spill Response Unit (631) 444-0204

NYSDEC Spill Hot Line (after hours) 1-(800) 457-7362

New York State 24-hour Oil and Hazardous Material Notification (518-457-7362)
Nassau County Department of Health
USEPA Region I Environmental Emergency Response Center

SPILL PREVENTION AND CONTAINMENT

This section describes spill prevention methods that will be used for spill sources identified in the Project Site Description section.

Equipment Staging and Maintenance

• Store and maintain equipment in a designated area.
• Reduce the amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials.
• Use secondary containment (drain pan) to catch spills when removing or changing fluids.
• Use proper equipment (pumps, funnels) to transfer fluids.
• Keep spill kits readily accessible.
• Check incoming vehicles for leaking oil and fluids.
• Transfer used fluids and oil filters to waste or recycling drums.
• Inspect equipment routinely for leaks and spills.
• Repair equipment immediately, if necessary.

• Implement a preventative maintenance schedule for equipment and vehicles.

Fueling Area

• Perform fueling in designated fueling area.
• Do not “top-off” tanks
• Use secondary containment (drain pan) to catch spills.
• Use proper equipment (pumps, funnels) to transfer fluids.
• Keep spill kits readily accessible.
• Inspect fueling areas routinely for leaks and spills.

Hazardous Material Staging Area

• Reduce the amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials.
• Minimize the quantity of hazardous materials brought on-site.
• Store hazardous materials in a designated area away from storm drains.
• Store hazardous materials in covered containers.

Hazardous Waste Storage Area

• Use all products before disposing of the container.
• Retain the original product label or MSDS.
• Recycle any useful material (used oil, water-based paint)
• Segregate wastes by waste type.
• Minimize the quantity of hazardous waste generated and stored onsite.
• Arrange for waste disposal before containers are full.
• Dispose of hazardous waste at an approved waste disposal facility.
• Train employees in proper hazardous material and waste management.

SPILL AND INCIDENT REPORT FORM

Instructions: Complete for any type of petroleum product or hazardous materials/waste spill or incident.
Provide a copy of this report to management.

1. Person Reporting Spill or Incident: _____

Name Address : _____

Organization : _____

Title: _____

Telephone: _____

2. Type of Spill: _____

Common Name of
Spilled Substance : _____

Quantity Spilled (Estimate): _____

Concentration (Estimate) : _____

Date of Spill ____/____/____

Time Spill Started ___ AM __ PM

Time Spill Ended ___ AM __ PM

3. Location of Spill:

SPILL TO LAND SPILL TO WATER BODY
Name of Site: Name of Water Body:

Street Address: Location of Discharge with Reference to Fixed Point: _____

City/Town County: Description of Area from which spilled material may reach: _____
4. If no spill, describe incident: _____

5. Actions taken: _____

To contain spill or impact of incident: _____

To clean up spill or recover from incident: _____

To remove cleanup material: _____

To prevent reoccurrence: _____

6. Person responsible for managing termination/ closure of incident or spill:

Name: _____ Phone: _____ Fax: _____

10.0 DECONTAMINATION PLAN

PLAN SUMMARY

The characteristics of the remedial soils anticipated to be encountered throughout this contract requires that decontamination efforts be made and controlled during all site activities. This plan addresses Decontamination Guidelines to be utilized at the site for the protection of health and the environment. The guidelines include the level of decontamination effort to be used for decontaminating personnel and equipment. The plan also includes the set-up and operation of the decontamination facilities and a layout of typical Exclusion and Contaminant and Reductions Zones to be utilized at the site.

PLAN PROVISIONS

Anticipated Requirements

The soils excavated from this site, for disposal purposes have the following designations of TSCA regulated waste, Non-TSCA regulated, RCRA hazardous and RCRA Non-hazardous. Decontamination practices are required for vehicles hauling the excavated soils, heavy equipment used during excavation activities and personnel working in the exclusion zones. All equipment requiring a decontamination effort will be decontaminated at an established location/s depicted on the plan sheet included in this document.

The furnishing of all labor, equipment, materials, supplies, power, water and incidentals required for decontamination are included in this plan.

Hauling Vehicle Decontamination

All vehicles hauling excavated soils from the site will be inspected for decontamination requirements before leaving the site. Vehicles that exhibit dust and soil collected after entering the site will require decontamination before exiting the site. Any vehicle that enters an exclusion zone will require decontamination regardless of any inspection. A Drive-through truck wash station manufactured by Wheelwash Group or equipment that can perform the similar function will be set-up to facilitate the decontamination effort for vehicles.

Heavy Equipment Decontamination

A temporary decontamination pad will be constructed on-site to facilitate the decontamination effort of all equipment. The pad will be constructed with an HDPE 20 mil liner and protected with a cushion geo-textile and compacted gravel or equivalent will be employed. The pad will handle on- and off-site vehicles without loss of integrity and be constructed with a sump for collection of decontamination water and be removed upon completion of contract work. All equipment that requires maintenance will be decontaminated prior to maintenance work commencing.

All parts of heavy equipment which contacted potentially contaminated materials will be cleaned of all foreign matter and steam cleaned with a pressure washer/steam generator at a temperature of 212°F prior to departure from the site. If required for removal of product from equipment, a non-phosphate detergent and heavy-duty scrub brush will be used.

Visitors to/Workers at the Site Decontamination

The expected contaminants at the site are considered to have a low risk to workers at the site. Therefore it is not expected that any worker or visitor will require decontamination due to conditions at the site. The site will be sectioned off into Exclusion, Contaminant and Reductions Zones where only those donning the appropriate Personal Protective Equipment, (PPE) will be allowed entry to the assigned zones. Only personnel absolutely necessary to complete the work will be allowed entry to the Exclusion Zone. A portable decontamination shower will be set-up for use in the unlikely event that personnel will require decontamination. A washing facility will be set-up for all PPE that can be decontaminated by means of washing and scrubbing. All waste water accumulated for this purpose will be disposed of according to the Construction Water Management and disposal Plan. PPE that cannot be reused will be disposed in receptacles established to contain the doffed PPE.

Decontamination Waste Water

Wastewater generated from decontamination will be containerized in DOT approved 55-gallon drums or other suitable container that has been approved by the Town and Engineer. Filled containers shall be placed on pallets and staged at an on-site location to be approved by the Engineer prior to off-site disposal. All wastewater will be removed from the decontamination pad at the end of each workday.

Contaminated and possibly uncontaminated liquids are anticipated to result from decontamination of equipment and personnel working on-site. All wastewater resulting from these activities will be dispose of in accordance with the Construction Water Management and Disposal Plan.

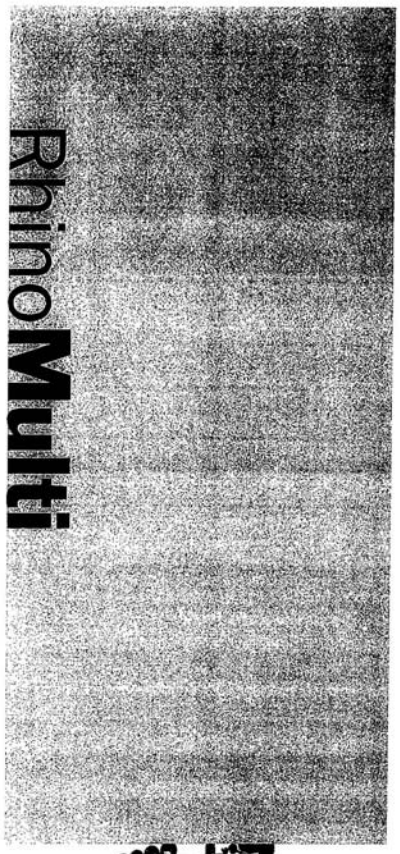
→ RHINO**MULTI**

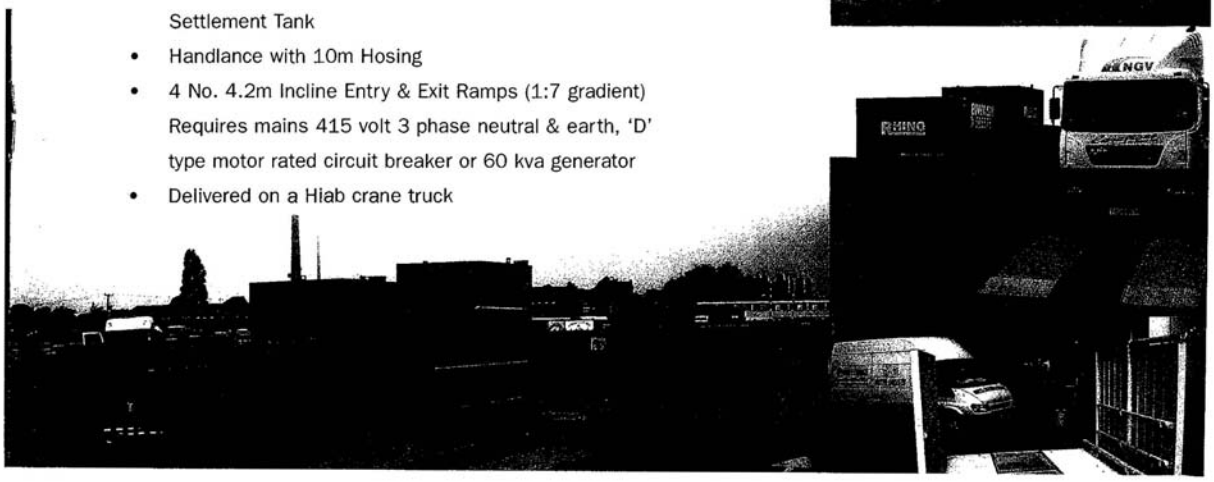
- Comprehensive modular water recycling system
- Easily relocated yet robust
- Effective spray pattern to sides and underchassis
- Inset or above ground configurations

Suitable for **most** traffic volumes

SPECIFICATION

- 3.7m x 3.5m Wash Platform,460mm platform depth and 2.835m internal width
- 2m high side screens to prevent overspray and for maximum water retention
- 4 removable steel grid sections to vibrate the debris from the wheels
- Up to 80 brass 60:40 nozzles with 6mm aperture
- 22kw Centrifugal Wash Pump, 1550 litres per minute at a pump pressure of 5 Bar (72.6psi) & 3kw Waste Return Pump
- Fully programmable PLC Control Panel compliant to BS EN 60439
- Pumphouse with single door access & padlock fitting, lighting & thermostatically controlled heater
- Water Tanks - 9,000 litre Header Tank, 13,500 litre Primary Settlement Tank, 6,500 litre Secondary Settlement Tank
- Handlance with 10m Hosing
- 4 No. 4.2m Incline Entry & Exit Ramps (1:7 gradient) Requires mains 415 volt 3 phase neutral & earth, 'D' type motor rated circuit breaker or 60 kva generator
- Delivered on a Hiab crane truck





11.0 CONSTRUCTION WATER MANAGEMENT AND DISPOSAL PLAN

PLAN OBJECTIVE

The purpose of this plan is to set forth the methods and means for Construction Water Management and Disposal. Included in this plan are provisions the collection and disposal of water used and collected during the remedial process. This includes water collected through decontamination activities, stockpiled soils and runoff water in contact with contaminated areas.

GENERAL PROVISIONS

The Construction Water Management and Disposal Plan provides for the management of water collected from and relating to remedial activities at the Bethpage Community Park (Site). This plan in conjunction with the related plans and specifications will be employed to manage contaminated and non-contaminated water collected from decontamination activities for off-site disposal.

MANAGEMENT OF CONSTRUCTION WATER

Construction water consists of contaminated water from decontamination activities, collected water from stockpiled soils and runoff water in contact with contaminated site areas.

Measures to prevent water run-off from the site and water run-on from adjacent areas to the site will be employed during remedial site activities. Separation of excavation activities from adjacent areas, particularly during storm conditions, will be maintained to reduce or eliminate the need to collect water.

It is anticipated that water will be removed only when necessary. Water ponding in a clean area, which has not contacted contaminated soil, is expected to be clean. No action will be taken with regard to this condition.

Construction Water Collected from Decontamination Activities

Water collected from decontamination activities include waters from the decontamination pad, the wheel wash system and the wash down station used for various decontamination activities. Upon completion of decontamination activities, the water used for these purposes will be sampled and disposed of according to the various applicable work plans listed above.

A self-contained vehicle wheel wash system will be used at the site for decontaminating the construction vehicles. The wheel wash system is a self-contained system that employs recycled water to clean soils from vehicles used at the site. The water cycles through a settling tank and reused to wash vehicles continuously.

A decontamination pad will be constructed at the site to decontaminate various pieces of equipment. The decontamination pad will be constructed to collect water for sampling and disposing. The specifications for the construction of the decontamination pad are outlined in the Decontamination Plan.

A wash down station will be erected adjacent to the decontamination pad to facilitate the decontamination of small items used during remedial activities. Water from the site wash down station will be collected with the water from the decontamination pad. The wash down station is intended to decontaminate small items of various personal protective equipment, tools and equipment that does not require the used of power washing and steam cleaning as outlined in the Decontamination Plan. All water collected form this activity will be stored in appropriate containers, sampled and disposed of according to the related plans.

Collected Water from Stockpiled Soils

It is not anticipated that stockpiled soils will produce the need to collect water. The soil excavated for stockpiling will be placed on poly sheeting according to section 02315-Excavation sub-section 1.06 E of the contract specifications, covered in poly sheeting and be separated from adjacent areas by means of silt fencing and hay bales as stipulated in the Environmental Pollution Control Plan. With this level of protection, it is expected that water collection will not be required. In the unlikely event that water does need to be collected from these areas, provisions will be made to have available the required equipment to perform water collection and storage by means of typical sumping operations.

Run-off Water in Contact with Contaminated Areas

It is not anticipated that there will be water run-off in contact with contaminated areas. Slopes, berms, and/or silt fence and hay bales will separate excavation areas that progress from one elevation to another. In the unlikely event that water does need to be collected from these areas, provisions will be made to have available the required equipment to perform water collection and storage by means of typical sumping operations.

Disposal of Waste Water

All water collected on the site will be sampled according to provisions in the contract specifications and the Field Sampling Plan (FSP) and disposed of according to the waste criteria of the collected sample results. During site operations, wastewater will be stored in approved containers in locations approved by the Engineer according to the Environmental Pollution Control Plan and the contract specifications.

EQUIPMENT-MATERIALS

The expected items to be employed for the purpose of managing site water are: trash pumps, suction and discharge hose, 6 mil poly sheeting, silt fence and hay bales, steel drum or other suitable containers. All items for this work are based on an as-needed basis for the work at the site.

12.0 FIELD SAMPLING PLAN

PLAN OBJECTIVE

This plan outlines the protocol for Field Sampling for the purposes of waste characterization. The plan specifies the analytical protocols to be used in classifying the waste streams for disposal purposes. It includes such wastes as water, soil, and construction debris. This plan encompasses the Quality Assurance methods for sampling and a listing of New York State ELAP approved and ASP Certified laboratories to be considered to perform the work.

GENERAL PROVISIONS

The contract provides that Post-excavation sampling will not be required from areas where soil removal is being performed. All soil is to be removed to the lines and grades stipulated in the contract documents and drawings.

Waste characterization samples will be taken for soils to be excavated for disposal at a licensed disposal facility. The Town and Engineer are to approve the disposal facility. The Transportation Plan lists the Disposal Facilities under consideration for the excavated soils.

SAMPLING FOR OFF-SITE DISPOSAL

Sampling is required to perform proper and complete characterization of water and soils for proper classification and approval as required by the recycling or disposal facility. Existing soil characterization data obtained by the Town and Engineer including analytical data for metals, volatile organic compounds, semi-volatile organics, PCBs and cyanide that were provided in the Contract Documents were forwarded to all prospective disposal facilities. Specific sampling requirements will be stipulated by the disposal facility to meet their acceptance criteria.

In the event we are directed to excavate to depths greater than those proposed in the Contract documents (drawing C1), the engineer will take confirmatory end point samples as needed to confirm the additional excavation work has reached its objective.

Confirmatory endpoint samples from select locations where additional excavation is performed due to observed field conditions, will be collected and analyzed in accordance with a NYSDEC Category B data package and in conformance with the procedures identified in the site Work Plan and followed during the site investigation. Quality assurance requirements for additional waste characterization samples will be in conformance with the acceptance criteria specified by the disposal facility.

QUALITY ASSURANCE

All of the soil samples collected will be evaluated for the presence of contamination by visual and olfactory inspection. Additionally, the samples will be screened with a Photoionization Detector (PID). The soil samples will be collected by methods acceptable to the disposal facility, the Town and the Engineer. It is expected that the Engineer be present for all sample collection that will impact the disposal acceptance criteria.

All of the samples collected as for this contract will be analyzed by a New York State Department of Health (NYSDOH) ELAP-certified laboratory (with appropriate chain-of-custody). The soil samples will be analyzed for NYSDEC Target Compound List (TCL) volatile organic compounds (VOCs) plus MTBE by EPA Method 8260, NYSDEC semi-volatile organic compounds (SVOCs) by EPA Method 8270, 8 RCRA metals by the EPA 6010/7471 Series and Total Petroleum Hydrocarbons (TPH) by the EPA Method 8015 as specified in the contract documents.

CHAIN OF CUSTODY DOCUMENT

ETL
nvironmental Testing Laboratories, Inc.
08 Route 109 • Farmingdale • New York 11735
31-249-1456 • Fax: 631-249-8344

N 09249

Project Name:	Project Manager:	Sampler (Signature):	(Print):
Project Address:			
Client	J/N:	❑ Rush by / /	

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank; Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

Relinquished by **(Signature)**:	Date / Time	Printed Name & Agent:	Received by **(Signature)**:	Date / Time	Printed Name & Agent
Relinquished by **(Signature)**:	Date / Time	Printed Name & Agent:	Received for Lab by **(Signature)**:	Date / Time	Printed Name
Comments & Special Instructions		QA/QC Type:	Number & Type of Containers:	Preservatives:	Temp:

OFFICE COPY
CLIENT COPY
SHIPPING COPY
LAB COPY

13.0 TRANSPORTATION AND DISPOSAL PLAN

PLAN SUMMARY

This plan covers the procedures for transporting, documenting and disposing of hazardous and non-hazardous wastes for the site.

APPLICABLE PUBLICATIONS

40 CFR 268 - Land Disposal Regulations

RCRA Section 3004(d) - Prohibitions on Land Disposal of Specified Wastes.

All project work that concerns the transport of hazardous waste will comply with the appropriate EPA and DOT regulations governing the Generator and Transporter of hazardous waste.

GENERAL PROVISIONS

All excavated material and demolition wastes will be transported to an approved off-site waste disposal facility(ies). The transporter will comply with all pertinent Federal, State, and local regulations regarding transport of the waste.

All roadway vehicles carrying TSCA Regulated, TSCA Non-regulated, and RCRA Hazardous waste material for off-site disposal or recycling will be decontaminated, and then covered to eliminate wind-blown dust during transport.

The loaded vehicle will travel directly to the approved disposal facility. At the facility, the loaded transport vehicle will be initially weighed on a certified truck scale, and the load discharged. The transport vehicle will then be reweighed to determine its empty weight. All weight tickets and verification documentation will be forwarded to the Engineer within two (2) business days after the vehicle is weighed.

General Provisions (Continued)

All carriers will provide a copy of their NYSDEC Part 364 permit and other State transporter permits (if applicable) to be used on this project. The carrier shall also meet any additional USDOT requirements.

All waste will be transported according to the waste classification contained on contract drawing C1.

EXECUTION

Loading And Transportation

Care will be taken when loading transport vehicles to insure there is no spillage.

Excavated materials in a liquid state, or exhibiting any free water, will not be placed in hauling equipment. Excavated materials exhibiting a liquid state or releasing free water will be dewatered to an acceptable level prior to transport off-site.

Prior to off-site transport, vehicles carrying RCRA hazardous or TSCA regulated waste will be decontaminated. After the decontamination is completed, the vehicle be inspected and covered before exiting the decontamination pad.

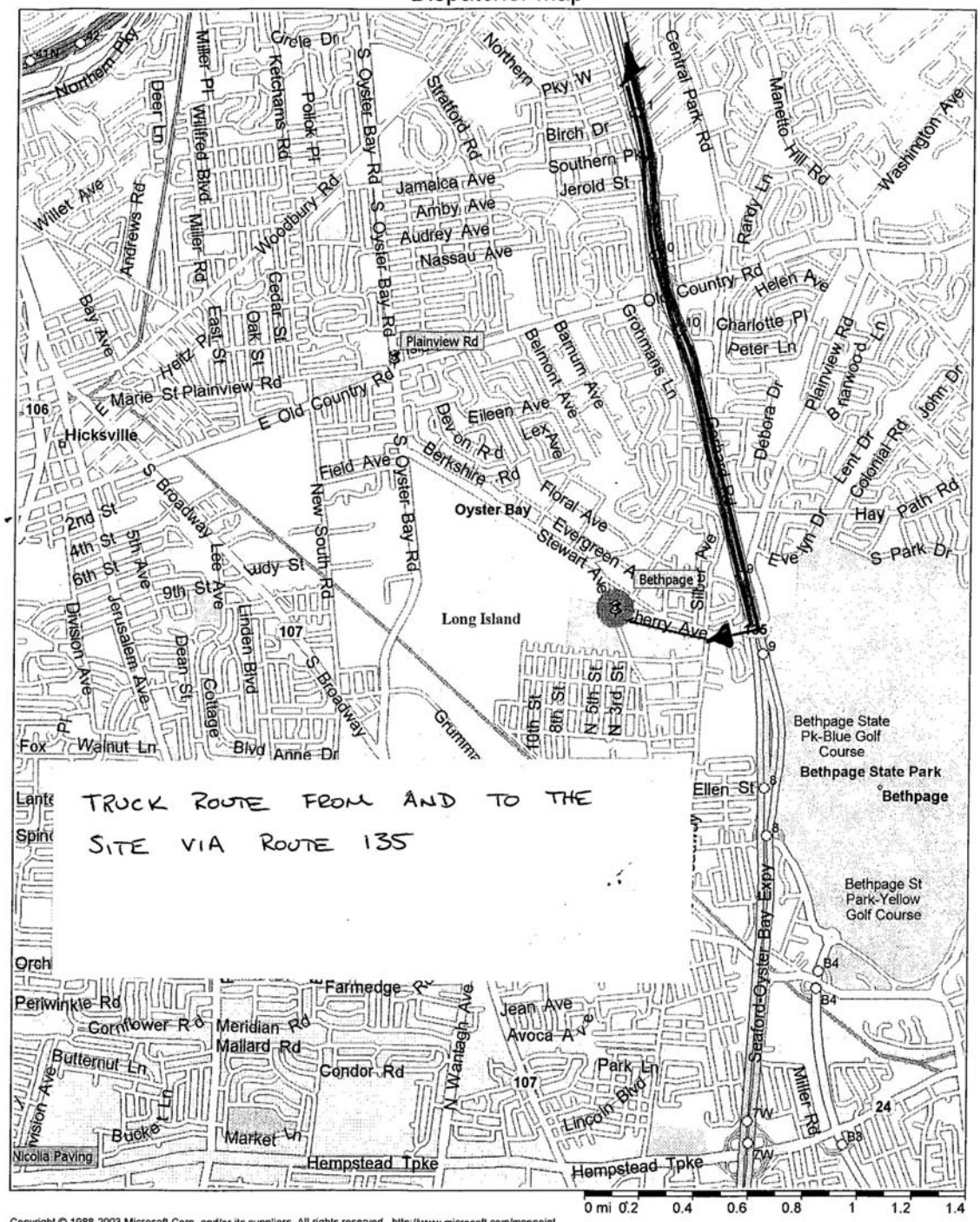
All vehicles hauling wastes from the site will be inspected before leaving the site. Vehicles that show signs of dripping or leaking any quantity of material will be held at the site until the proper corrections are made to prevent the spilling of materials. Vehicles with excess soils adhered to its wheels or undercarriage will have excess soil and waste material removed at the decontamination area.

Only appropriate vehicles and operating practices to prevent spillage or contamination from occurring en route to the disposal facility will be used to transport materials.

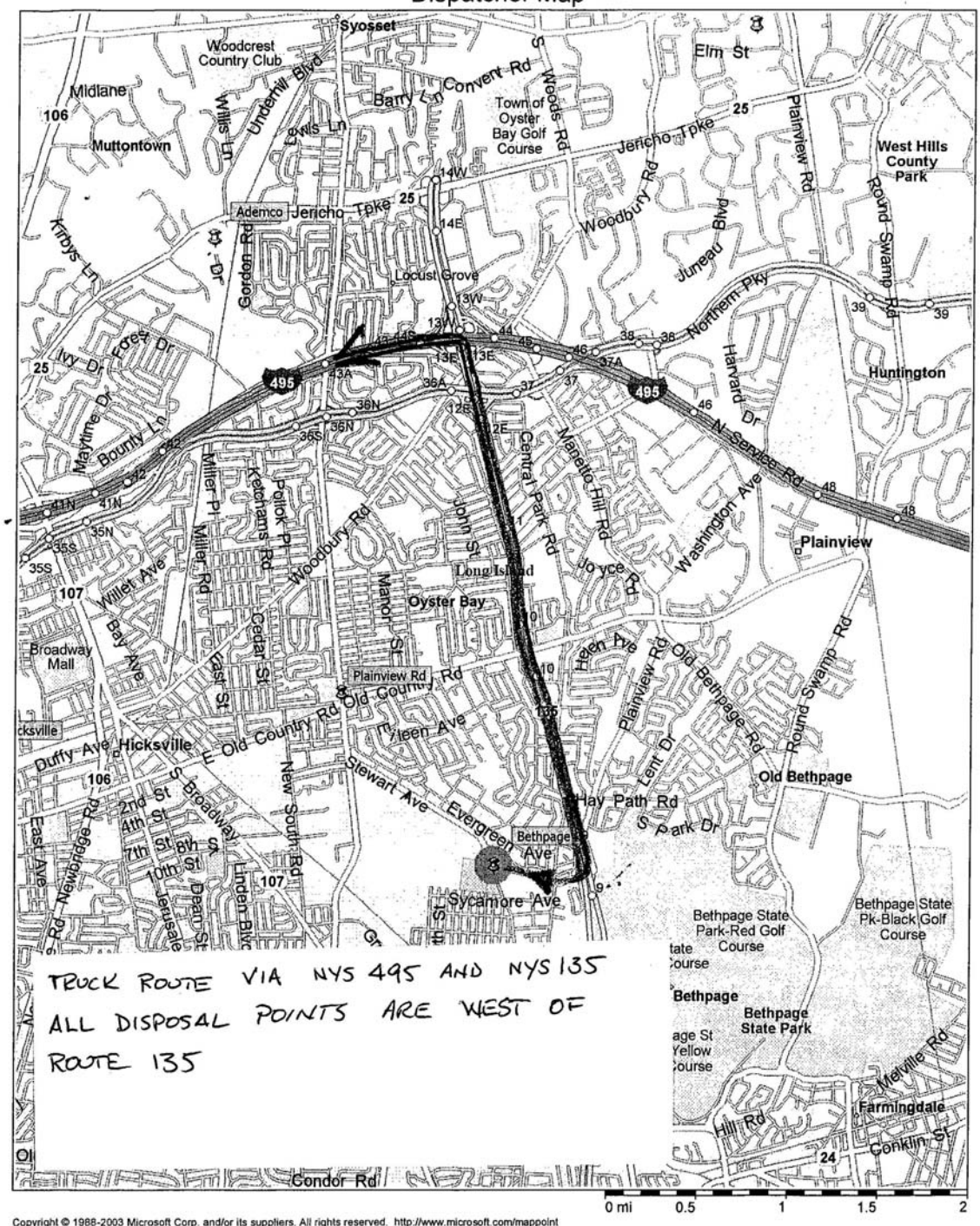
Transportation Route

The intended route of all Waste Haulers is from the site heading east along Cherry Avenue to NY Route 135 north. Then from NY Route 135 north to NY Route 495 west.

Dispatcher Map



Dispatcher Map



Permitted Facilities and Haulers

The following list identifies the permitted disposal facility(ies) accepting the subject waste, and the name(s) of the licensed haulers transporting the waste. Additional facilities and haulers are expected to be included in this list. All additional facilities and haulers will conform to the contract specifications for approval. Copies of appropriate licenses and permits demonstrating that the hauler is licensed to operate within the State of New York and all states through which the load may pass is provided as a separate attachment to this plan. Additional facilities and haulers will be added based on the facilities ability to accept the waste steam and its conformance to the contract requirements.
Permitted Facilities:

RCRA Non-Hazardous (SVOC Impacted) Soils

Allied Environmental Group, Inc.
Environmental Resources Management
Old Allied Signal Site
Elizabeth, NJ 08618

Transmine , Inc.
P.O. Box 540
Westhampton Brach, NY 11978

American Waste Management Services, Inc.
One American Way
Warren, OH 44484-5555
EnCap Meadowlands, NJ

RCRA Hazardous Soils

EQ Northeast, Inc.
185 Industrial Road
Wrentham, MA 02093
Wayne Disposal of Belleville, MI

PCB Contaminated TSCA Regulated Soils

Waste Management of New York
CWM Chemical Services, LLC
1550 Balmer Road
Model City, NY 14107

American Waste Management Services, Inc.
One American Way
Warren, OH 44484-5555
Heritage Indianapolis, IN Treatment Facility

PCB Contaminated TSCA Regulated Soils

EQ Northeast, Inc.
185 Industrial Road
Wrentham, MA 02093
Wayne Disposal of Belleville, MI

PCB Contaminated TSCA Non-Regulated Soils

Solid Waste Services, Inc
2650 Audubon Road
Audubon, PA 19403
White Pines Landfill Millville, PA

Available Hauler Part 364 Permits

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

FILE

PART 364
WASTE TRANSPORTER PERMIT NO. NJ-561

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

A. B. RECYCLING, LLC
190 POMPTON PLAINS CROSSROADS
WAYNE, NJ 07470

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

CONTACT NAME: ALLAN ROMBOUGH
COUNTY: OUT OF STATE
TELEPHONE NO: (973)835-9434

EFFECTIVE DATE: 08/23/2006
EXPIRATION DATE: **08/22/2007**
US EPA ID NUMBER:

AUTHORIZED VEHICLES:

The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:
(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

122 (One Hundred and Twenty Two) Permitted Vehicle(s)

NJ AE619X
NJ AF611A
NJ AF776Z
NJ AF944K
NJ AG309J
NJ AG510F
NJ AG578P
NJ AG791C
NJ AG837Y
NJ AG887Z
NJ AG936P
NJ AH166S
NJ AH183R
NJ AH249D
NJ AH275N
NJ AH364F
NJ AH408P
NJ AH427Z
NJ AH501N
NJ AH502Z
NJ AH565W
NJ AH566W
NJ AH592F
NJ AH593F
NJ AH606W
NJ AH661R
NJ AH725J
NJ AH736T
NJ AH821H
NJ AJ105D
NJ AJ121V
NJ AJ126X
NJ AJ136F
NJ AJ151Y
NJ AJ176X
NJ AJ179X
NJ AJ213A
NJ AJ230J
NJ AJ239U
NJ AJ330Y
NJ AJ354Y
NJ AJ375X
NJ AJ393F
NJ AJ393T
NJ AJ397Y
NJ AJ398Y
NJ AJ403V
NJ AJ405R
NJ AJ417P
NJ AJ437K
NJ AJ460T
NJ AJ480Z
NJ AJ491J
NJ AJ525N
NJ AJ528D
NJ AJ538A
NJ AJ539A
NJ AJ540R
NJ AJ549S
NJ AJ568N
NJ AJ569N
NJ AJ570N
NJ AJ571N
NJ AJ585R
NJ AJ599X
NJ AJ640G
NJ AJ641B
NJ AJ669Y
NJ AJ677X
NJ AJ726N
NJ AJ728B
NJ AJ731S
NJ AJ7442
NJ AJ757U
NJ AJ758U
NJ AJ759P
NJ AJ760C
NJ AJ766P
NJ AJ769D
NJ AJ775H
NJ AJ776H
NJ AJ779X
NJ AJ784X
NJ AJ795P
NJ AJ796P
NJ AJ816U
NJ AJ829M
NJ AJ839W
NJ AJ845M
NJ AJ852Z
NJ AJ871N
NJ AJ875V
NJ AJ877S
NJ AJ883W
NJ AJ907A
NJ AJ919P
NJ AJ965S
NJ AJ974W
NJ AJ983H
NJ AJ986R
NJ AJ990L
NJ AJ991L
NJ AK100C
NJ AK176A
NJ AK209A
NJ AK230E
NJ AK384F
NJ AK426C
NJ AK452A
NJ AK455G
NJ AK541A
NJ AK542A
NJ AK682D
NJ AK724D
NJ AK725D
NJ AK762C
NJ AK769D
NJ AK798F
NJ AK840F
NJ AK841F
NY 74672PA
NY 78529PA
End of List

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

PART 364
WASTE TRANSPORTER PERMIT NO. PA-231

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SOLID WASTE SERVICES, INC.
2650 AUDUBON ROAD
AUDUBON, PA 19403

CONTACT NAME: DENNIS MCVEIGH
COUNTY: OUT OF STATE
TELEPHONE NO: (484)398-6500

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

EFFECTIVE DATE: 08/01/2006
EXPIRATION DATE: **07/31/2007**
US EPA ID NUMBER:

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)
		Non-Hazardous Industrial/Commercial
		Asbestos
		Petroleum Contaminated Soil
		Non-Residential Raw Sewage or Sewage-Contaminated Wastes
		Sludge from Sewage or Water Supply Treatment Plant
A&M COMPOSTING	MANHEIM , PA	Sludge from Sewage or Water Supply Treatment Plant
AMERICAN LANDFILL, INC.	WAYNESBURG , OH	Sludge from Sewage or Water Supply Treatment Plant
PIONEER CROSSING LANDFILL	BIRDSBORO , PA	Sludge from Sewage or Water Supply Treatment Plant
WETZEL COUNTY LANDFILL	NEW MARTINSVILLE , WV	Sludge from Sewage or Water Supply Treatment Plant
WHITE PINES LANDFILL	MILLVILLE , PA	Non-Hazardous Industrial/Commercial

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS: New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7253

AUTHORIZED SIGNATURE: _____ Date: 6 / 30 / 06

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

PART 364
WASTE TRANSPORTER PERMIT NO. PA-231

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

SOLID WASTE SERVICES, INC.
2650 AUDUBON ROAD
AUDUBON, PA 19403

PERMIT TYPE:

☐ NEW
■ RENEWAL
☐ MODIFICATION

CONTACT NAME: DENNIS MCVEIGH
COUNTY: OUT OF STATE
TELEPHONE NO: (484)398-6500

EFFECTIVE DATE: 08/01/2006
EXPIRATION DATE: **07/31/2007**
US EPA ID NUMBER:

AUTHORIZED VEHICLES:

The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:
(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

41 (Forty One) Permitted Vehicle(s)

PA AE11200
PA AE51605
PA AE51635
PA AE51636
PA AE51660
PA AE68673
PA AE71866
PA AE80670
PA AE80671
PA AE84803
PA AF12715
PA AF12716
PA PT0680G
PA PT22529
PA PT3440F
PA PT3441F
PA PT3442F
PA PT3443F
PA PT3444F
PA PT3445F
PA PT3446F
PA PT3447F
PA PT3448F
PA PT4004H
PA PT9463F
PA XL19355
PA XL67203
PA XL72659
PA XL72661
PA XL72662
PA XL72663
PA XL72665
PA XL72666
PA XL72667
PA XL72670
PA XR32731
PA XR32732
PA XR32736
PA XR32737
PA XS21350
PA Y5X9051
End of List

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

PART 364
WASTE TRANSPORTER PERMIT NO. NJ-593

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

LETICIA, INC.
640 IRVINGTON AVENUE
HILLSIDE, NJ 07205

CONTACT NAME: LETICIA ROJAS
COUNTY: OUT OF STATE
TELEPHONE NO: (908)355-4768

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 06/22/2006
EXPIRATION DATE: **09/26/2006**
US EPA ID NUMBER: NJ0000363820

AUTHORIZED WASTE TYPES

The Permittee is Authorized to Transport the Following Waste Type(s) :

Destination Facility	Location	Waste Type(s)
		Non-Hazardous Industrial/Commercial
		Petroleum Contaminated Soil
		Residential Raw Sewage including Portable Toilet Waste
		Non-Residential Raw Sewage or Sewage-Contaminated Wastes
		Sludge from Sewage or Water Supply Treatment Plant
		Hazardous Industrial/Commercial

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS: New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7253

AUTHORIZED SIGNATURE: _____ Date: 6 / 20 / 06

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

PART 364
WASTE TRANSPORTER PERMIT NO. NJ-593

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

LETICIA, INC.
640 IRVINGTON AVENUE
HILLSIDE, NJ 07205

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

CONTACT NAME: LETICIA ROJAS
COUNTY: OUT OF STATE
TELEPHONE NO: (908)355-4768

EFFECTIVE DATE: 06/22/2006
EXPIRATION DATE: **09/26/2006**
US EPA ID NUMBER: NJ0000363820

AUTHORIZED VEHICLES:

The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

109 (One Hundred and Nine) Permitted Vehicle(s)

NJ AE619X	NJ AJ103N	NJ AK335F
NJ AE771L	NJ AJ105D	NJ AK454D
NJ AF476Y	NJ AJ115H	NJ AK455D
NJ AF667Z	NJ AJ186F	NJ AK456D
NJ AF706H	NJ AJ207J	NJ AK457D
NJ AF944K	NJ AJ213A	NJ AK458D
NJ AG265Z	NJ AJ234J	NJ AK459D
NJ AG578P	NJ AJ292F	NJ AK485D
NJ AG731B	NJ AJ304G	NJ AK490C
NJ AG754N	NJ AJ344L	NJ AK720G
NJ AG791C	NJ AJ348D	NJ AK765D
NJ AG837Y	NJ AJ393F	NJ AK899G
NJ AG846S	NJ AJ405R	NJ AK971D
NJ AG887Z	NJ AJ462E	NJ T10V9W
NJ AG974U	NJ AJ493H	NJ T11V9W
NJ AH106W	NJ AJ494H	NJ T12V9W
NJ AH213W	NJ AJ505B	NJ T99V9V
NJ AH233B	NJ AJ525N	PA AE82166
NJ AH238F	NJ AJ528D	PA AF04214
NJ AH249D	NJ AJ538A	End of List
NJ AH364F	NJ AJ539A	
NJ AH408P	NJ AJ587S	
NJ AH427Z	NJ AJ588M	
NJ AH500M	NJ AJ588S	
NJ AH501N	NJ AJ589S	
NJ AH542T	NJ AJ590S	
NJ AH544C	NJ AJ603S	
NJ AH545C	NJ AJ604S	
NJ AH546C	NJ AJ626A	
NJ AH547C	NJ AJ640G	
NJ AH606W	NJ AJ728B	
NJ AH667H	NJ AJ731S	
NJ AH681R	NJ AJ759P	
NJ AH711W	NJ AJ760C	
NJ AH725J	NJ AJ766P	
NJ AH736T	NJ AJ769B	
NJ AH781M	NJ AJ841R	
NJ AH821H	NJ AJ852N	
NJ AH825E	NJ AJ857J	
NJ AH847A	NJ AJ871N	
NJ AH847Y	NJ AJ880C	
NJ AH863B	NJ AJ907A	
NJ AH875W	NJ AJ965S	
NJ AH926W	NJ AJ983H	
NJ AH945J	NJ AJ984C	

Leticia, Inc.

640 Irvington Avenue
Hillside, NJ 07205
Tel: 908-355-4768; Fax: 908-354-1604
E-Mail Address: leticia@leticiainc.com
www.leticiainc.com

MBE/WBE

A Fully Licensed Refuse Removal Company

FAX COVER SHEET

Company: Blue Water Environmental

To: Anthony Schnyder

Fax: 631-249-8124

From: Carolina Pizarro

Pages: 3

Date: 08/10/06

Message: Please find attached, if you have any question feel free to call me at (908) 355-4768. Thank you!

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

Fw A

PART 364
WASTE TRANSPORTER PERMIT NO. 1A-875

Pursuant to Article 27,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

HORAN SAND & GRAVEL CORP.
85 OAK DRIVE
SYOSSET, NY 11791

CONTACT NAME: LUANNE RISI
COUNTY: NASSAU
TELEPHONE NO: (516)364-2972

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 07/28/2006
EXPIRATION DATE: **02/14/2007**
US EPA ID NUMBER:

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:

The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)
POSILLICO BROTHERS ASPHALT COMPANY	FARMINGDALE , NY	Petroleum Contaminated Soil
TRANSMINE INC.	WEST HAMPTON , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS:
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7253

AUTHORIZED SIGNATURE: Alan G. Wood Date: JUL 27 2006

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

PART 364
WASTE TRANSPORTER PERMIT NO. 1A-875

Pursuant to Article 27, Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

HORAN SAND & GRAVEL CORP.
85 OAK DRIVE
SYOSSET, NY 11791

CONTACT NAME: LUANNE RISI
COUNTY: NASSAU
TELEPHONE NO: (516)364-2972

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 07/28/2006
EXPIRATION DATE: **02/14/2007**
US EPA ID NUMBER:

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:
(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

31 (Thirty One) Permitted Vehicle(s)

NY AB93234
NY AB98494
NY AC65363
NY AF20338
NY AF20347
NY AF20354
NY AF20372
NY AF20382
NY AF20408
NY AF20412
NY AF20418
NY AF20423
NY AF20450
NY AH44289
NY AH47553
NY AH48025
NY AH48026
NY AJ92448
NY AJ92633
NY AK59726
NY AK64803
NY AK64811
NY AK65774
NY AL39294
NY AL39921
NY AL94319
NY AN21966
NY AP25080
NY AP25092
NY AP27593
NY AP85394
End of List

Waste Manifests

Blue Water Environmental will prepare a waste manifest for all contaminated soil and/or waste material taken off-site. The manifest will track the waste shipment as required by the NYSDEC, RCRA and the state where the treatment/disposal facility is located. All manifests will be properly completed and signed by the Engineer before leaving the site. A Certificate of Disposal will be forwarded with the completed manifest once the material has been properly treated and disposed.

The manifest form will contain the waste code numbers, and be completed as required by the appropriate regulatory agencies for verifying the waste type (Code No.) and quantity of each load transported off-site. Soil and debris will be referenced in units of weight. Three (3) copies of each manifest will be given to the Engineer for signing before the shipment leaves the site. Any manifest discrepancies will be reported and corrected immediately.

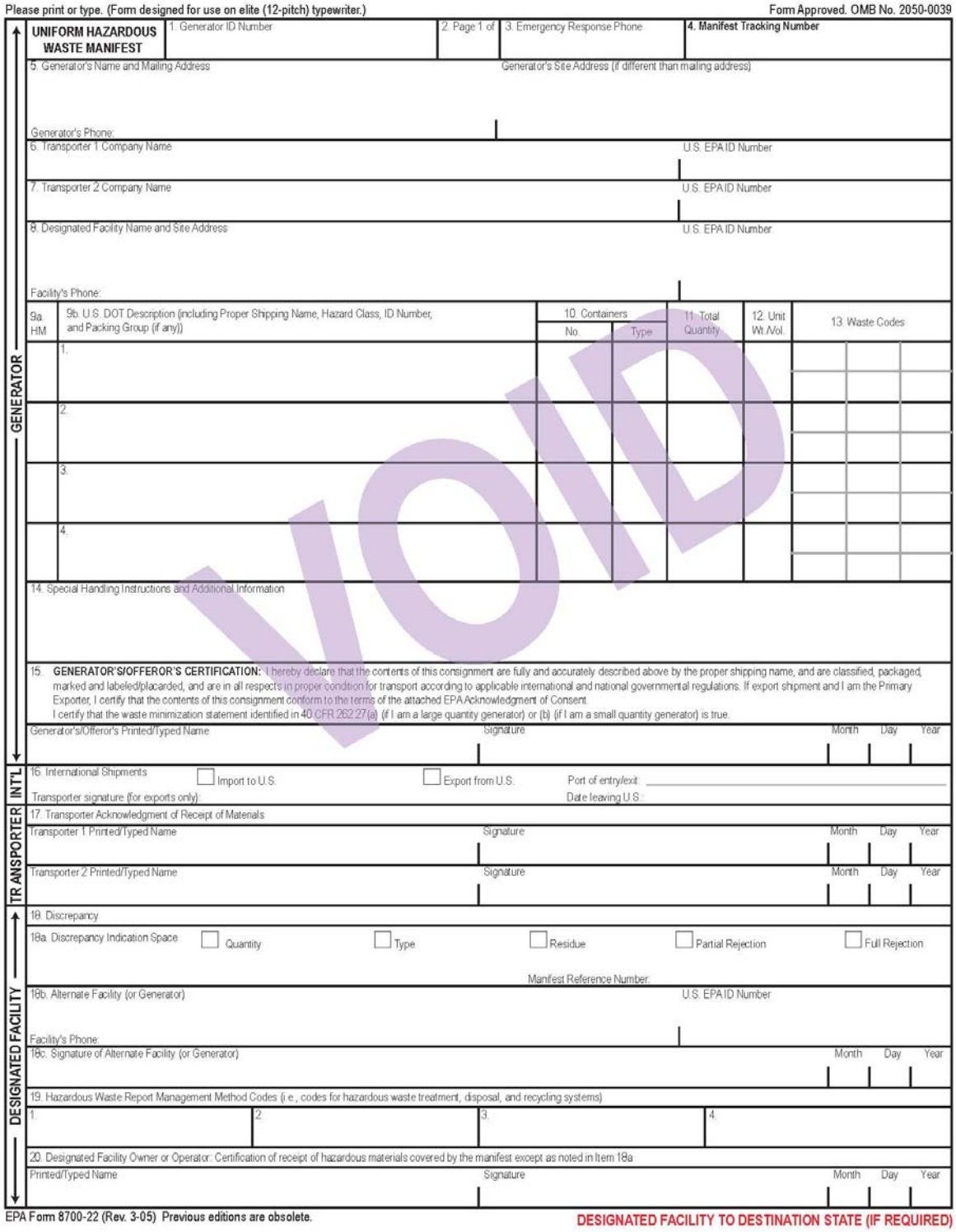
Load receipts for each waste load taken off-site will provide, the empty weight of the truck, the loaded weight of each truck upon leaving the site, and the loaded weight of the truck upon arrival at the off-site facility.

Labeling and Placarding for proper RCRA/DOT labeling and identification of waste for shipment will be completed. All placarding will be properly placed on each truck carrying hazardous materials.

DISPOSAL FACILITY RECORDS

Each truck will be weighed once it arrives at the disposal facility. After removal of the waste material, the empty truck will again be weighed at the disposal facility. The disposal facility will complete the manifest or bill of lading and mail all copies to the appropriate regulatory agencies. A copy of the completed manifest or bill of lading, with the truck weights taken at the disposal facility's scale will be mailed and faxed directly to the Town and Engineer. A Certificate of Disposal will be mailed to the Engineer once the disposal records are completed.

Sample Waste Manifest



Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | **4. Manifest Tracking Number**

5. Generator's Name and Mailing Address — Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

14.0 BLUE WATER ENVIRONMENTAL INC.

SITE SPECIFIC HEALTH AND SAFETY PLAN

FOR
Bethpage Community Park Soil Remediation Project

Contract No. DP06-931

SAFETY & HEALTH REGULATIONS
TABLE OF CONTENTS

Addendums

1.0 Hazardous Communication Program

14.1 POLICY

The Site Specific Safety Plan identifies specific work activities that are to be performed at Bethpage State Park.

Blue Water Environmental, Inc. has developed a Site Specific Health and Safety Plan (SSHP) that incorporates the corporate program with the work activities of this contract. This policy ensures that the requirements of the Occupational Safety and Health Administration (OSHA) regulations Parts 1910 and 1926 are applied at the site by our employees and our subcontractors.

This plan is also intended to provide the superintendent and foremen with the basic knowledge needed to carry out the safety responsibilities inherent in their work duties.

Robert Franco, Project Safety Officer, shall ensure each supervisor clearly understands his responsibilities as outlined in this SSHP. A portion of each supervisor's appraisal will be based upon how effectively the supervisor has implemented the SSHP.

Blue Water Environmental, Inc. shall review and evaluate this Health and Safety Program at least every 6 months or when changes occur to 29 CFR 1926 that prompt revision of this document, or when facility or site operational changes occur that require a revision of this document. All changes to the program will be submitted to the appropriate parties as written amendments.

Effective implementation of this program requires support from all levels of management within this company. This written program shall be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives. A notice will be posted in Blue Water Environmental mobile field office that this plan is available for review by all employees.

Martin Schellenbach is assigned the responsibility of site specific health and safety officer. He will be on-site full time and has the authority to shut down operations if necessary. The Health and Safety Director, Robert Franco will complete all other health and safety administration duties.

Note: All employees will sign an acknowledgement statement about this program.

14.2 CORPORATE STATEMENT

Employees of Blue Water Environmental, Inc. are considered valuable assets; their safety is of vital concern. Recognizing its need and responsibility for the safety of its employees, the company considers accident prevention an important and integral part of every operation undertaken.

Safety will be given primary importance in planning and operating all company activities in order to protect employees against occupational injuries and illnesses, and to protect the company against unnecessary financial burden and reduced efficiency.

Members of management are responsible for the safety, well being, and safe work conduct of all persons who report to or are assigned to them.

To carry out this policy, the company will:

A. Maintain safe and healthful working conditions.

B. Furnish, within reason, the best available mechanical safeguards and personal protective equipment, where they are needed.

C. Maintain an active and aggressive program in which all members of management will participate to promote safety awareness among all its employees.

D. Provide adequate medical and first aid facilities for work-caused injuries and illnesses.

E. Maintain a continuous educational program in safe operating procedures combined with any additional training required to safely perform work duties.

F. Insist that all employees observe established OSHA safety regulations and practices and use the safety equipment provided.

G. Maintain a Medical Program.

H. Maintain a Hazardous Communications Program

.

_____

Anthony Schneider
Area Manager

14.3 SAFETY PROGRAM

For many years, Blue Water Environmental, Inc., has had excellent safety records. Nevertheless, we must keep in mind that we work in one of the most hazardous of professions. Accordingly, we must be always on the alert to progress our work in the safest way possible. We will expect every employee, regardless of rank or trade, to correct any known hazardous condition or to report such condition to a supervisor immediately. Always keep in mind that, beyond a long list of safety rules and regulations, common sense can prevent most accidents. A clean job site will in many instances prevent an accident.

All supervisory personnel should be familiar with all pertinent OSHA and regulations. We realize that there are many volumes of OSHA rules and regulations and we do keep an extensive library of OSHA information in our main office. If anyone at any time is in doubt about a particular situation on any project site, they should ask the project manager for aid and consultation.

Blue Water Environmental, Inc.'s commitment to safety and leadership includes training and update of its program. Corporate management, including Superintendents, will be educated in our Safety and Health Program as well as OSHA and regulations. Blue Water Environmental will make time available for personnel to receive training and update (i.e., 10 hour Occupational Safety and Health training programs given by certified instructors.)

We have prepared this corporate outline as a guide to the Safety and Health Regulations of OSHA . This outline provides a quick reference to the OSHA Federal Register; however, it is not intended to replace it or to be used in lieu of it. Where more detailed information is needed, please contact our main office for further reference.

Incorporated as part of this Safety Program is the OSHA Hazard Communication Standard Guide, which is separately bound. This guide contained informational and specific training for employees in the recognition and safe handling of materials that are physical and health hazards. It shall be a corporate policy that the complete safety program be kept on each project site and shall be made available to all employees. All supervisory personnel shall become familiar with the safety program.

14.4 RESPONSIBILITIES OF HEALTH & SAFETY OFFICERS

Project ***Health & Safety Officers*** will conduct weekly safety meetings at the job site with all key supervisors.

At these meetings they shall discuss any accidents, unsafe conditions, and unsafe acts that occurred on the project during the period following the previous meeting. In addition they will discuss the work planned for the next work period and any particular areas of safety that must be watched.

Subcontractors, when working on the job site, will be included in these meetings.

Minutes for these meetings will be written into the project records.

Project Health & Safety Officers will:

1) Be completely responsible for on site safety.

2) Make available all necessary personal protective equipment, job safety materials, and first aid equipment.

3) Instruct the foreman that safe practices are to be followed and safe conditions maintained throughout the job.

4) Inform the foreman that they are **not to require or permit** their workers to take chances, but rather that they instruct the workers in proper and safe procedures.

5) Instruct foreman individually regarding their safety responsibilities.

6) Require all subcontractors to adhere to all safety regulations.

7) Review all accidents with foreman; file full reports; and see that corrective action is taken immediately.

8) Appoint where needed a competent safety person with authority to protect the job.

9) Be familiar with the laws pertaining to safety and their basic requirements.

10) All accidents, injuries, near misses, work related illness, and utility contacts, will be reported to the project manager and turner construction immediately.

11) Discuss safety on this project at weekly progress meetings.

It is mandatory that supervisors set safety examples for all the workers.

Project ***Health& Safety Officer*** will perform, as a minimum, the following safety tasks:

1) He shall instruct all employees working for him of the need for safety and that our corporate Safety Policy is available to them at all times.

2) He must coordinate their work activities such that the safety of any worker or crew is not jeopardized.

3) Train and motivate employees in good safety practice.

4) If unsafe conditions exist he must take immediate corrective actions.

5) He must check his crew and make sure they have suitable personal protective equipment and the equipment is properly used.

6) Investigate every accident, which occurs under his supervision, and make a prompt report. Investigation is for the purpose of taking corrective action in order to prevent any further occurrence.

7) Participate in Safety Meetings.

8) Competent Person: Will have the authority and knowledge to make safety decisions.

9) Competent Person and/or safety director must conduct toolbox talks. He must conduct a toolbox safety meeting with his crew on a daily basis for approximately (5) minutes in duration. This meeting will take place before starting work, and the following as a minimum, will be discussed:

   (a) Unsafe work practices by workers and methods for eliminating them.
   (b) Discuss work that will be taking place during the work shift and bring to the attention of the crew any possible hazards they may encounter while performing this work.
   (c) Encourage employees to make safety suggestions at these meetings.
   (d) Submit a report to project manger and Turner Construction of each toolbox meeting
   (e) Subcontractors will be required to attend.

10) A copy of the toolbox report and a list of attendees will be transmitted to the Client weekly.

A supervisor's greatest contribution to the success of an accident prevention and Safety Program is to display enthusiasm for the program and a desire for accident free production. It is necessary that supervisors set personal examples for the workers.

14.5 EMPLOYEE INSTRUCTIONS AND SIGNATURE FORM

DATE: _____

NAME: _____

TRADE: _____

.

JOB LOCATION: _____

I have been trained by the Blue Water Environmental, Inc.'s Project Supervisory Personnel as to the following safety requirements which I must follow or risk the loss of my job:

1) I will wear a hard hat and safety glasses at all times.

2) I will wear ear and respiratory protection when needed.

3) I will wear safety vests at all times and high visibility apparel when required.

4) I will not ride on equipment unless an appropriate seat with a seatbelt available for me.

5) When working in man lifts and aerial lifts, I will wear a body harness and lifeline.

6) I have been instructed in the proper procedures for controlling traffic and have received hand-signaling procedures for flagging traffic.

7) I will wear seat belts when in all project vehicles that require seat belts.

8) When requested I will attend job site meetings.

9) I understand that I could be exposed to fall hazards while employed by Blue Water Environmental Inc.'s. Blue Water Environmental Has a six-foot fall protection policy, which complies with OSHA and is provided on all our projects at all times. A training program is required for all employees.

10) I have been instructed on my rights, duties and responsibilities under the Hazard Communication Standard.

11) A copy of the Company's Safety Program and Material Safety Data Sheets are at the project mobile field office or with each foreman and will be made available to all employees upon request.

12) Safety precautions outlined on Material Safety Data Sheets are to be followed.

13) During the workday if you are unfamiliar with any operation you are asked to perform inform your supervisor and you will be properly instructed.

14) Safe construction sites depend on all of us using good common sense and a workforce committed to sound work practices.

15) Blue Water Environmental has a Sexual Harassment Policy in effect; a copy is available upon request.

Copies of these signed documents will be kept on file at the main office.

Employee Signature: _____

IF I AM FOUND TO BE IN VIOLATION OF Blue Water Environmental, Inc.'s **HEALTH AND SAFETY STANDARDS, I COULD BE <u>RELIEVED OF MY DUTIES</u>**.

14.6 SUBCONTRACTORS

COMPLIANCE

Subcontractors will comply with the provisions of Blue Water Environmental Inc.'s Plan to the same extent as Blue Water Environmental employees. This compliance specifically includes, but is not limited to, provisions of Blue Water Environmental Inc.'s Safe Work Practices. If the subcontractors have their own safety program, it must be more stringent than the Blue Water Environmental, Inc.'s Plan. If not, the Blue Water Environmental Plan must be followed. Subcontractor's Plans will include the following at a minimum:

a) Indoctrination and ongoing training, such as toolbox talks
b) Job Hazard Analysis
c) Accident record keeping and reporting
d) Competent Person Designee

Subcontractors will submit their company's Job Specific Safety Plan to Blue Water Environmental prior to their work. Blue Water Environmental Inc.'s acceptance of the plan will not relieve the Subcontractor's responsibility for preventing accidents among his workers.

Subcontractors will submit hazard analysis as directed for his operations and stand behind them as their commitment to guarding against the hazards described in the Plan. acceptance of the analysis by Blue Water Environmental will not constitute a finding by Blue Water Environmental that any analysis is a complete or accurate description of the hazards of the operation, or that the safety measures described are adequate.

The project Manager is responsible to have subcontractors comply with all safety requirements.

Subcontractors shall provide a Job Hazard Analysis and Personnel Protective Equipment Analysis specific to their work operations prior to the beginning of their starting on-site.

Appendix 001

SAFETY MEMORANDUM

Subcontract Name: _____ Date: _____

Safety Violation Description:

General Contractor Signature: _____ Date: _____

Subcontractor Signature: _____ Date:_____

SAMPLE LETTER TO SUBCONTRATORS

Gentlemen/Ladies:

The personal safety and health of each employee and worker on our projects is of primary importance. The prevention of occupationally induced injuries and illnesses is of such consequences that it should be given precedence over operating productivity whenever possible. To the greatest degree possible, Company Management should provide all mechanical and physical facilities required for personal safety and health.

Therefore, if your Company does not comply with our Field Management concerning safety, the following will occur:

First Violation:	Written Notice
Second Violation:	We will withhold your monthly payments until infraction is corrected and your work operations will be terminated until compliance.
Third Violation:	Your Company will jeopardize possible future subcontracts with our company.

If you have any questions and/or comments, please contact the undersigned

Very truly yours,

Safety Director

14.8 SAFETY SITE INSPECTION CHECKLIST

The Safety Inspection Checklist will be performed by Blue Water Health and Safety Officers, Competent Person, or the project manager on a daily basis and kept on file at the jobsite.

Jobsite Safety Checklist

Job Location: _____ Job # _____ *A = Acceptable*

Signed by: _____ *U = Unacceptable*

Date: _____ Performed by _____ *NA = Not Applicable*

I understand that falsification of this document may be a violation of federal, state, and local laws.

The completed form should be turned into the home office by the end of each week.

		Date
Description	*Status*	*Abated*
Administrative		
1. Jobsite Safety & Health Poster displayed		
2. OSHA Log maintained		
3. Emergency Phone List posted		

Employee Training

1. ***All employees received Hazard Identification Training***
2. ***All employees trained in Hazard Communication***
3. ***All employees trained in appropriate Fire Fighting Response***
4. ***All employees trained in evacuation Procedures***
5. ***Lockout/Tagout Procedures for appropriate employees***
6. ***Stairway and Ladder training***
7. ***Lead training***
8. ***Equipment Operator training***
9. ***Hazard Specific Training***

Safety Meetings

1. ***Held daily***
2. ***Signed by all in attendance***
3. ***Cover topics pertaining to the job***

Date

Description *Status* *Abated*

Hazard Communication

1. ***Written program on site***
2. ***Chemical inventory list posted***
3. ***MSDS sheets on file***
4. ***All drums and containers labeled***
5. ***Employees trained***

Electrical

1. ***GFCI in place***
2. ***Electric cords inspected – no splices in cord***
3. ***Electric power tools inspected***

Personal Protective Equipment

1. ***Hard hats***
2. ***Work area protection, signage, and reflective vests***
3. ***Eye protection – chipping, burning, concrete***
4. ***Ear protection***
5. ***Gloves used***
6. ***Proper work shoes (no sneakers or open toped shoes)***

Tools

1. ***Tool casings in safe condition***
2. ***Wiring for all power tools in safe condition***
3. ***Electric tools grounded***
4. ***Extension cords grounded and in safe condition***
5. ***Hand tools in safe condition***
6. ***Tools stored in designated location***
7. ***Ladders free of cracks and damage***

		Date
Description	*Status*	*Abated*

Trenching & Excavation

1. ***Sheeting or proper shoring over 5 feet***
2. ***Ladder every 25 feet***
3. ***Utility company notified if necessary***
4. ***Air monitored in trench***
5. ***Excavated materials stored min. 2 feet from trench***

Ladders

1. ***Extended 3 feet above landing***
2. ***Secured – tied off***
3. ***Solid rungs – no cracks in rungs***
4. ***Proper angle – ¼ working length of ladder***
5. ***Provided at brakes in elevations 19' or more***

Machinery

1. ***Point of operation guards in place***
2. ***Pulley belts assemblies guarded***
3. ***Gear assemblies guarded***
4. ***Shafts guarded***
5. ***Are there any oil leaks***
6. ***Two hand controls working properly***
7. ***Electric wiring in safe condition***
8. ***Lockout policy and tag procedures used***

Fire Protection

1. ***Extinguishers charged and accessible***
2. ***Stairs clear and in safe condition***
3. ***Exits and exit paths clearly marked***
4. ***Flammables properly stored***
5. ***Evacuation Plan as required by OSHA available***

Housekeeping

1. ***Aisles, stairs and floors free of obstructions***
2. ***Material supplies stored and piled in designated areas***
3. ***Regular removal of trash and debris***
4. ***All work areas lighted***
5. ***Work areas neat and orderly***

Fall Protection

1. ***Perimeter protection***
2. ***Top rail, mid rail and toeboard, nets or static lines***
3. ***Full arrest systems (harness) on all exposed to falls***
4. ***Floor openings properly protected***

Date

Description *Status* *Abated*

Material Handling Equipment

1. ***Carts in safe condition***
2. ***Cart wheels free and rolling smoothly***
3. ***Hoist opening equipped with removable railing***
4. ***Hoist cables and hooks inspected***
5. ***Materials secured/stacked***
6. ***Employees trained or certified to operate equipment***

Respiratory Protection

1. ***Respirators selected on basis of hazard exposed to***
2. ***Exposure assessment performed***
3. ***Employees instructed and trained in proper use***
4. ***Respirators regularly cleaned and disinfected***
5. ***Respirators stored in a clean and sanitary location***
6. ***Respirators inspected during cleaning***
7. ***Fit testing of employees***

14.9 GENERAL DESCRIPTION OF WORK / JOB HAZARD ANALYSIS / PERSONAL PROTECTIVE EQUIPMENT

The scope of work includes Removal and disposal of contaminated soil, and backfilling to sub grades in accordance with the contract documents.

Each individual subcontractor prior to the start of work will provide additional Job Hazard Analysis related to their operations to Bob Franco for approval.

Job Hazard Analysis

Work Operation/Function	Potential Hazards	Action To Be Taken
Earthwork		
Clearing Utilities	Water, Gas, Electric	Utilities to be marked out
Trenching / Excavation	Hazardous soil Crush by Caught in between Falls Electrocution/Utilities	Proper boxes/sheeting. All soil Type C PPE Utilized: Hard Hats Vests Hearing Protection Toe Guards Goggles Gloves Respirators (if req.)

The One Call procedures will be followed prior to excavation work beginning.

Evaluation of Potential Contaminants of Concern

Material	Exposure Limit	Routes of Exposure	Symptoms of Overexposure	Target Organ and System	Carcinogen
Arsenic	TWA: 500ppm Stel:750 ppm	IH, Ig, Con	Irritation to eyes, nose throat.	eyes, skin, respiratory,central nervous	yes
Barium	TWA: 0.5 mg/m3ppm	IH, Ig, Con	Irritation eyes,skin, mucous. cramps	skin, eyes	yes
Cadmium	TLV: 0.01 mg/m3 respirable: 0.002 mg/m3 Pel: 5 ug/m3	IH, Ig,	Pulmonary edema,dyspnea, cough, chest pain,headache,nausea,muscle ache.	Respiratory system,kidneys, CN System	yes
Chromium	TWA: 0.05 mg/m3	IH, Ig, Con	irritation of eyes	eyes, skin	yes
Mercury	TWA: 0.025 mg/m3	Ih, Ig, Con	Irritation of eyes, skin, cough, chest pain,	Eyes, skin, respiratory system,CN system, kidneys	Yes
Nickel	TWA: 1.5 Mg/M3	Ih, Ig, Con	Sensitization Dermatitis	Nasal, lungs, skin	Yes
Ih=inhalation					
Ig= Ingestion					
Con= contact					

PERSONAL PROTECTIVE EQUIPMENT

Items will be added to the attached chart when site conditions demand. Individual subcontractors will include their items prior to the beginning of their work at the site.

A All potential contaminants in the chart above that exceed the TWA will have the appropriate PPE to controls possible hazards.

B. Sanitary facilities are located throughout the project. And relocated with the approval of the project manager.

C. Drinking water will be provided at all work locations on a daily basis.

D. First Aid Kits will be provided at the field office and in foreman's vehicles marker with safety stickers.

E. Fire extinguishers will be provided in all trucks.

F. Health & Safety Plan and MSDS are located in the project Field Office and each foreman's vehicle.

G. Hard hats to be worn at all times

H. Additional protective clothing and booties will be worn when working conditions on site require such use.

The Personal Protective Equipment selected for this site is based on protecting the employee from potential hazards that can infect the body through inhalation, ingestion and touch.

Persons entering the Posted Exclusion Zone will wear clothing, gloves and boots and other garments as protection against ingestion and skin absorption.

To guard against infection through inhalation, the excavation will be controlled and monitored for dust as outlined in these plans. When and if dust becomes a danger to the health and safety of the employee, the proper respiratory equipment will be used.

All Personal Protective Equipment must be either decontaminated in the Containment Zone or discarded.

14.10 NEW EMPLOYEE AND SUBCONTRACTOR TRAINING

All new employees and subcontractor will be trained by the superintendent prior to starting work. The "New Employee Safety Orientation Checklist" shall be used by trainers (managers, superintendents, foremen, safety directors) as a reminder of the items that must be reviewed with the employee. All items must be initialed or identified as not applicable. The checklist must be signed by the employee and the management representative after the orientation is complete.

This form will be given to the Project Manager or home office and kept in the employee's personnel file.

All employees may be required to attend a safety orientation conducted by contractor responsible for operations.

14.11 DISCIPLINARY POLICY PROCEDURES

All employees are expected to comply with job site rules and regulations, and to follow established operating procedures set forth by this company. Violations will not be tolerated and superintendent/foreman will be held accountable for the conduct of their employees.

Suppliers coming into the jobsite will be included the disciplinary policy procedure. They will be informed of site requirements prior to unloading materials.

Superintendents and foremen are required to take action when a violation is observed. Immediate action to control or eliminate a hazard is required.

In the event a violation is observed, the following procedures have been established to place an employee on notice.

Notice*	**Action**
First Offense	A written warning addressed to the employee and a copy placed in the employee's file referencing the violation and warning, including date and time.
Second Offense	A written warning addressed to the employee with reference to the violation including date and time of the occurrence. A copy of this warning will be given to the employee, the union shop steward, and another copy will be placed in the employee's file. The employee will be sent home for the day.
Third Offense	A written warning similar to the second notice will be prepared and distributed in the same manner. A meeting will follow this warning with the employee, union shop steward, foreman and/or project manager and senior management. Employee will then be removed from the project.

* Within any consecutive 12 month period.
* This policy is in effect unless there is a policy in our labor/management agreement.

a. This program can be effectively implemented by discussing the procedures of the program in a safety toolbox meeting.

b. Any operator found in violation of the equipment safety procedures noted in this plan will be removed from Hazmat projects for a minimum of one year.

The above procedure has been prepared so that there is no question about how violations of rules, regulations, and procedures will be handled by management and so that employees will know what to expect if they do not comply with the established rules, regulations, and procedures. Management knowledge of unsafe behavior and lack or appropriate documented discipline may be a violation of federal, state laws and regulations.

EMPLOYEE DISCIPLINARY ACTION

Project: _____ Shop: _____

Employee Name: _____ Date: _____

Superintendent: _____ Day: _____

Foreman: _____ Time: _____

1st Violation

Description : _____
_____
_____.

Employee Signature: _____

2nd Violation

Description : _____
_____
_____.

Employee Signature: _____

3rd Violation

Description : _____
_____
_____.

Employee Signature: _____

WITHIN A 12 MONTH PERIOD

14.12 SITE EQUIPMENT AND EQUIPMENT OPERATIONS

We will be utilizing the following equipment at a minimum:

1. Cat m318
2. Generator
3. Cat 345 exe
4. Cat 980 Pay Loader
5. Work zone air monitors
6. Small hand tools
7. Truck wash

EQUIPMENT SAFETY PROCEDURES

The following provisions shall apply to all work on the project, including but not limited to, the activities of all subcontractors, manufacturers, fabricators, material suppliers, independent truckers and owner-operators. The following safety points will be used with the information noted in the Construction Equipment Section.

1. A spotter shall guide the backing of any vehicle or equipment with restricted visibility to the rear. This rule applies in any location where workers on foot, pedestrians, private vehicles or similar hazards may be present.

2. If the operator loses visual contact, the vehicle shall immediately be brought to a full stop until visual contact with the spotter is reestablished.

3. Dump truck boxes may be raised only under the control of a spotter, unless the vehicle is in an area clearly marked to be free of overhead wires and safe for dumping.

4. Dump truck boxes shall be lowered prior to moving, except when dumping into a paver or similar operations, under the control of a spotter.

5. All excavating, lifting and similar equipment shall comply with electrical safety requirements, and shall operate under the control of a spotter whenever working within 5m of an overhead line. The distance shall be measured as a slope distance perpendicular from the conductor to the nearest point of the vehicle.

6. Any operator found in violation of the above rules by the Engineer or his/her representative will be removed from the project immediately, and will not be allowed to work on any Department project for a minimum of one (1) year.

7. All employees working around or near equipment shall wear a high visibility vest.

CONSTRUCTION EQUIPMENT

Construction equipment is a very large and important part of Blue Water Environmental, Inc.'s daily work. Equipment, whether it be a pick-up truck or a 150-tone crane, if not used properly will become a safety problem. Operating vehicles on a project site often creates hazards not normally associated with operating equipment elsewhere. Listed below are a few important tips for safe equipment operation:

1. Equipment must be in good repair.

2. Use seat belts.

3. Back-up alarms must work.

4. Do not stand where an operator or driver cannot see you.

5. Have knowledge of the equipment's work ability.

6. When operating back-hoes and other earth-moving equipment, make sure all utilities and agencies have been contacted and that the location of all existing underground lines have been obtained prior to excavation. You must use Code 753.

7. Do not permit anyone to ride on the outside of the equipment.

8. Crane operators will be licensed.

9. Make sure load is centered under the hook and use tag lines and hand signals while working with cranes. Do not swing loads over workers.

10. Cell phone use not permitted while operating equipment.

Company trucks and automobiles

You are prohibited from operating any company vehicle unless specifically authorized to do so by your supervisor. Also, you should have a valid and appropriate valid driver's license in your possession while operating such vehicles.

Before operating any truck or automobile, you will check to see that all of the necessary equipment, such as tail lights, head lamps, signal lights, seat belts, mirrors, windshield wipers, back-up alarms and lights, etc., are in good working order and adjusted properly. Also, check oil, water, fuel levels, and tires. A copy of the equipment checklist must be on the vehicle. A copy of this daily updated checklist will be kept on the equipment for review by project manager or safety officer.

Any motor vehicle that is known to be in seriously defective condition shall not be operated. All defective items, such as broken or missing parts, excessive wear or faulty conditions, shall be promptly reported to your supervisor and adequately noted on standard ***Danger-Do Not Operate*** tag and placed in a conspicuous place either on the steering wheel or near the ignition.

The driver shall not move any vehicle until all riders comply with appropriate safety precautions and all loads are well secured. *Every employee* will wear a seat belt in company vehicles.

Employees are not allowed to ride outside of the cab of any truck where there is a danger of rolling over or being struck by other vehicles. Arms or legs shall not be dangled over the sides and workers shall not ever ride on running boards, tailgates, fenders or loads.

Do not back up any vehicle or heavy equipment when the view to the rear is obstructed, unless it is equipped with an operable automatic back-up alarm device which will sound immediately when the transmission is shifted to reverse. Where needed, we will utilize a spotter.

The driver will be sure that any towed trailer, air compressor or other construction equipment is securely attached to the towing device. The safety chain shall be secured to both the truck and equipment being towed. Also, it shall be determined that the brake and signal lights are properly connected, when required. Air compressors will not be towed on the highway by a ½ ton pick-up truck. Never operate a truck or heavy equipment in dangerous areas such as near edges of deep fills, banks or steep slopes, because of the possibility of them overturning.

Drivers shall not be allowed in or around a trench while excavating equipment is operating or heavy equipment is backfilling, unless they are in full view of the operator and positioned so that there is no danger of falling into or otherwise contacting the excavator or trench machine or being struck by the backfill material.

The parking brake shall be set and the ignition turned off when a vehicle is parked. Vehicles shall not be left unattended until after the motor has been shut off, parking brakes set and gears engaged in park, low, or reverse. On hills, curb tires of vehicles.

All vehicles shall be operated, maintained and inspected in accordance with all federal and state regulations.

All slow moving vehicles will be accompanied by a chase vehicle equipped with rotating beacon and 4-way flashers.

14.13 HAZARD COMMUNICATION PLAN

Blue Water Environmental Inc. HAS WRITTEN HAZARD COMMUNICATION PROGRAM IN COMPLIANCE WITH OSHA 1926.59

In accordance with the standard, the following items are available to all employees on request:

- Copy of the company *Written Hazard Communication Program*
- Copy of the OSHA *Hazard Communication Standard*
- Copy of the company's List of *Hazardous Chemicals for your Workplace*
- Copies of *Material Safety Data Sheets* for any covered chemicals to which you are exposed

TO OBTAIN ANY OR ALL OF THIS INFORMATION CONTACT

Marty Schnellenbach

_____

Blue Water Environmental Jobsite Competent Person

MUST BE POSTED IN FIELD OFFICE

COMPETENT PERSON DESIGNATION

Blue Water Environmental, Inc has a Safety Program that complies with OSHA (29 CFR Part 1926). A copy of the written program is on this jobsite for all to review.

ALL FOREMEN ARE ALSO DESIGNATED THE COMPETENT PERSON FOR THE PROJECT, TRAINED IN HAZMAT

He/she has the authority to correct all hazards or to remove workers from the hazardous exposure if the hazard cannot be immediately corrected.

MUST BE POSTED IN FIELD OFFICE

14.14 FIRST AID - BLOODBORNE PATHOGENS

Our company will provide first aid supplies at each work operation. Each foreman and all personnel are to know procedures to follow in case of an emergency.

1. Report all injuries immediately, no matter how minor, to your foreman, jobsite office and Turner Construction.

2. Emergency phone numbers and evacuation map for fire, police, and ambulance will be posted.

   Police Call 911

3. Please note that if any employee renders first aid or uses a first aid kit to assist a co-worker (although such action is not required by anyone's duties) we would view this activity as a "Good Samaritan" act.

4. All team members will receive training for emergency and evacuation in the new employees orientation.

5. All accidents and job related illnesses requiring medical attention will be reported to the Engineer In Charge (EIC) immediately.

6. The Project Manager will notify and review with the EIC the following:

   a. Inspection or visit by regulatory agency.
   b. Identify competent persons for all subcontractors

c. Worker access to the project.

14.15 HEARING CONSERVATION PROGRAM

It is a noisy world we live in today – at work and at play. Unfortunately, some of that noise may damage your ears and prevent you from hearing important sounds tomorrow. To help prevent hearing loss, we have established a hearing conservation program. It will include the following five phases:

1. Sound Surveys
2. Noise Controls
3. Hearing Evaluations
4. Hearing Protection
5. Education

1. Sound Surveys

Sound surveys are used to identify work locations where hazardous noise levels exist. Employee exposures to noise will be monitored periodically with a noise dosimeter that we may ask our employees to wear.

2. Noise Controls

When possible and feasible, noise will be reduced or eliminated by trying to modify existing machinery.

3. Hearing Evaluations

We will require hearing protection when working around equipment and small tools like jackhammers and tampers. If the need to perform hearing evaluations becomes necessary testing will be done by a certified person assigned by Blue water environmental inc. with documentation given to Turner construction

Hearing is measured with an audiometer, which sends tones to each ear through headphones. You listen carefully and respond each time you hear a tone. The levels at which you can barely hear the tones are your hearing threshold levels.

The audiogram chart records your thresholds (measured in decibels) for tones at different pitches or frequencies (measured in Hertz).

A baseline audiogram shows your initial hearing status, for comparison to future audiograms. Periodic audiograms provide an update to determine if your hearing conservation program is doing its job and if non-noise factors are affecting your hearing. A recheck audiogram or a professional referral may be needed if a significant haring change occurs.

Periodic hearing evaluations show how your hearing compares to normal for your age. They are the only means to determine whether your hearing is being conserved. Unusual changes alert you to look for noise-related or medical caused before it's too late.

4. Hearing Protection

Hearing protectors can be very effective, but only if they fit properly and are used correctly. Although labeled Noise Reduction Ratings (NRRs) typically range from 20-30 decibels, in practice the protection that normally can be achieved is about 10-20 decibels. The more carefully you select and wear hearing protectors, the higher your protection will be. Hearing protectors may feel uncomfortable at first, but give yourself a chance to get accustomed to them, just as you do with a new pair of shoes or glasses. Training will be enforced through on site toolbox talks.

Initially, you may be concerned that you'll be unable to hear conversation, machinery sounds, and warning signals while wearing hearing protection. However, unless you already have a significant hearing loss, you'll be surprised how well you can hear while in noise. When you properly wear hearing protection, you'll be able to hear as well at day's end as when you started in the morning. People with hearing loss also benefit since without protection, noise will continue to damage their hearing until it is difficult to distinguish sounds under even the best of conditions.

Formable Plugs – OSHA Approved Only

Formable plugs are compressed or shaped prior to insertion. The most popular variety is made of expandable, slow-recovery foam. On size fits most everyone. Once in the ear, foam plugs gently expand to provide a nig and secure custom fit.

How To Use – Slowly roll and compress foam plugs into a very thin cylinder. While compressed, insert plug well into the ear canal. Fitting is easier if you reach around the head to pull the ear outward and upward during insertion.

Keep the plugs clean and free from material that can irritate the ear canal. They may be washed in mild liquid detergent and warm water. Squeeze excess water from plugs and air dry. Washing may be repeated several times. Discard plugs if they harden or do not re-expand to their original size and shape.

5. Education

How We Hear

Healthy inner-ear hair cells are the key to good hearing. Although some die off naturally as you age, many more are killed early if your ears aren't protected from harmful noise.

The outer ear collects and funnels sound waves along the ear canal to the eardrum.

The middle ear contains three tiny bones, called ossicles. When sound waves strike the eardrum, the ossicles conduct the vibrations to the cochlea in the inner ear.

Hair cells within the inner ear respond to vibrations by generating nerve impulses. The brain interprets this as sound.

Effects of Age and Noise on Hearing

Hearing loss from the natural aging process causes a gradual hearing decline. It affects mainly the ability to clearly hear high-pitched sounds such as children's voices, rustling leaves, and some musical instruments.

Although age-affected hearing loss up through age 60 does not usually impair one's ability to hear and understand speech, problems occur when noise-induced loss is added to age loss. With noise damage, even a 30-year old can have trouble listening when background sound is present, such as in restaurants and other social situations.

Permissible Noise Exposures

The following shows the acceptable noise levels for various durations of time. This is a guideline for determining whether a potential noise hazard exists, and whether steps should be taken to either lower level of noise, reduce the period of exposure, or require hearing protection.

Duration (Hours)	Sound Level dBA (Decibels)
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
¾	107
½	110
¼	115

No exposure in excess of 115 dBA.

Certain operations, or operation of some equipment produce noise beyond the acceptable level. In such cases, employees are required to wear hearing protection – disposable earplugs or earmuffs. Supervisors are required to provide ear protection and insure that employees wear it.

OSHA standards require that hearing protection be made available when the time-weighted-average noise level for an 8-hour period exceeds 85 decibels. Hearing protection is mandatory when noise exceeds levels and time periods specified in the chart.

In circumstances where there is loud noise, but the decibel level is within an acceptable range for the period of exposure, employees may request hearing protection. In such cases, supervision will make protection available.

14.16 HEAT EXHAUSTION

Working in hot areas is nothing new. Remember no one is immune to heat illness. To prevent heat illness, wear light, loose fitting clothing and a hard hat. Your body perspires to keep cool, drink plenty of water, fruit and vegetable juices; and avoid alcohol or caffeine.

Heat Exhaustion

Symptoms: Heavy sweating, nausea, headache, weakness, vomiting, fast pulse, tiredness.

First Aid: Move to a cooler area. Cool down by wetting clothing and fanning, drink water, lie down, follow u with a medical check up.

Heat Stroke

Symptoms: High temperature and dry skin, rapid breathing and pulse. The victim may appear disorganized and confused, with headache, nausea, vomiting, diarrhea, seizures, and/or the possibility of coma.

First Aid: This is serious, so move fast to a cooler area, call an ambulance, remove outer clothing and apply cool water to the entire body, fan the victim to increase cooling until professional help arrives.

14.17 INCLEMENT WEATHER

Inclement weather will be discussed at toolbox talks to inform and educate employees of the potential dangers and concerns of working in adverse weather conditions.

The need to adjust working conditions for the presence of inclement weather will be addressed on a daily basis when pending conditions warrant such discussions. Any decision to halt work due to weather conditions will be discussed between the EIC and the Blue Water Environmental superintendent and be mutually agreed on between the parties.

14.18 TOOLBOX TALKS

A. Forms for recording job safety meetings and Tool Box Talks

B. List of suggested Tool Box Talks

C. Keep copy on jobsite and send one to main office safety program

D. Use handouts during meetings and talks to help keep people focused while getting your point across.

Copies of all attendance sheets will be provided to the EIC on a weekly basis.

GIVING A CONSTRUCTION SAFETY TALK




WHERE?

Before the meeting, visit the place where you want to have the talk and make sure:

- it will be free from as many distractions as possible,
- it has enough room for everyone, and
- that you can easily be seen and heard

WHEN AND HOW LONG?

"When" depends on what time of day is best for you and your crew. (Maybe lunch or break time.)

- *"How Long" depends on:*
- if the topic is a "hot" one for the crew
- your ability to keep the discussion on track (making sure everyone has a chance to talk about any major safety items they are concerned about)
- your decision to use photos, diagrams or tools (if you use handouts, make sure you have enough)

WHAT SHOULD I SAY?

When deciding on which safety talk to use, think about:

- What the crew is doing now or will be doing in the near future (you won't have much time so it's better to concentrate on one specific safety point)

- What accidents or near accidents have involved the crew or any that they know of, including safety questions coming out of them.

- Potential safety hazards in the current job or in the near future.

MOTIVATION TIPS:

- Give the crew a chance to say what's on their minds.

- Safety is everybody's responsibility.

REMEMBER:

- Start the meeting on time.

- *Prepare* the subject so that it's easier to talk about. (It also builds your confidence!)

- TALK! DON'T READ!

- Use the "show and tell" section.

- Keep a list of who came to the meeting in the space provided.

- If your crew has a good safety record, tell them they're doing a good job.

- Ask for any ideas that will help solve safety problems.

Follow up what you talked about *after* the meeting.

TOOL BOX SUBJECTS

Giving a Construction Safety Talk

Review of Safety Guidelines

Employee Responsibilities

Are You Safety Minded?

What Can I Do?

Safety is Common Sense

Horseplay at Work

Accidents Don't "Just Happen"

Good Housekeeping

Flagging Procedures

Who Wants to Wear a Hard Hat?

Hard Hats

Eyes - Only One Pair to a Customer

Respirators

Oxygen and Acetylene Tanks

Excavation/Trenching

BLUE WATER ENVIRONMENTAL, INC OF _____
Job Name

WEEKLY FOREMAN TOOLBOX MEETING REPORT

CONTRACT No. _____

DATE:
TIME: _____

LOCATION OF MEETING:

_____
____

CRAFT AND NUMBER IN ATTENDANCE:

_____

SUBJECT DISCUSSED:

_____
_____

_____
_____

_____
_____

SUGGESTIONS:

_____
_____

_____

_____
_____

NAMES OF VISITORS:

_____
_____

_____
_____

Ladders

Scaffolds - General Requirements

Scaffolds are for Safety

Safety Nets

Openings

Aerial Lifts/Work Platforms

Proper Grounding of Auxiliary Generators and Portable Welding Machines

Electrical

Electric Portable Tools

Overhead Utility Safety

Lead in Construction

Crane Safety Standards

Safe Operation of Job Site Vehicles

13 Tips for Equipment Operator Safety

Hazard Communication Standard

Concrete and Masonry Construction

MEETING CONDUCTED BY: _____
Foreman's Name

GENERAL REMARKS:
_____

BLUE WATER ENVIRONMENTAL, INC
REPORT OF SAFETY MEETING

CONTRACT NO. _____

DATE:_____

TRADES ATTENDING: _____

_____

NUMBER OF PEOPLE ATTENDING: ☐

TOPIC(S) DISCUSSED: _____

_____

SUGGESTIONS FOR IMPROVEMENT:

_____

_____

_____

cc: Main Office Safety File

_____
SAFETY SUPERVISOR

14.19 ACCIDENT REPORTING/INVESTIGATION

Accident Investigation

All traffic accidents, employee accidents, injuries, work-related illnesses, near-misses and utility contacts must be reported to the EIC immediately.

Each Superintendent and Foreman will make a report within twenty-four (24) hours of the occurrence. Reports are to be completed as soon as possible to avoid changes in physical conditions and witness reports. Take photos, if necessary.

Note*:** Any accident that causes ***fatality or ***three or more employees to be hospitalized*** must be reported to ***OSHA*** within ***eight*** (8) hours of the incident.

Through the use of good reports, accident patterns can be detected and resources directed toward prevention.

The cause and effect of accidents should be reviewed at safety meetings and tool box talks.

Accident Investigation Techniques

1. Accident reports must be executed at the Superintendent/Foreman level.
2 Never allow employees to fill out their own accident investigation report.
3. Focus must be fact finding ***not*** fault finding.
4. Identify the unsafe act or unsafe condition.
5. Provide recommendations for ***corrective action***.

In the event an accident causes a fatality or two or more employees are hospitalized, the following procedures must be followed:

1. Notify the main office.
2. Notify OSHA within eight hours.
3. If possible, take photos/label same.
4. Complete the Workers' Compensation Accident Report, copy attached.
5. Ask employees to give their complete version.
6. Ask questions to fill gaps.
7. Interview witnesses promptly and separately.
8. Summarize your understanding of what the witness related.
9. Direct specific questions to clarify and fill in.
10. Don't badger the witness or give him/her a bad time.
~~11.~~1. Write a report based on the above information.

14.20 REGULATORY AGENCY INSPECTION/INVESTIGATIONS

The Project manager and the Safety and Health manager shall continually require and support the execution of work in compliance with Blue Water Environmental, Inc. Safe Work Procedures, OSHA, and other applicable state and local requirements.

The Safety and Health Manager shall provide technical support to ensure Supervisors are provided necessary information to comply with required standards.
The understanding and maintaining consistent application of the regulatory standards will be enhanced by training and education sessions described in the Safety Plan.

The Safety and Health Manager shall be notified immediately by the Project Manager of any visit or inspection by a regulatory agency.

If concerns are registered or citations are issued, all communications with the regulatory agency will be coordinated by the Safety and Health Manager.

OSHA citations/violations will be reported to the NYSDOT EIC.

14.21 PROJECT WORK RULES

JOBSITE WORK RULES

A. Hours of Work

The normal week work start on Monday and conclude on Sunday. NOTE: Hours of work listed are by mutual consent.

Day Shift	7:00 AM
Start Lunch	12:00 PM
Restart Work	12:30 PM
Quitting	3:30 PM

The project policy shall be a "fair day's work for a fair day's pay", therefore, all employees will be at their assigned reporting place or work location (toolbox or physical location or work task) at the start of their shift and will work until the authorized quitting time at the end of their shift, per the above schedule.

Loitering in the change house or other late starting and early quitting habits will be subject to disciplinary action.

B. Entering or Leaving Project

Whenever an employee enters or leaves the project at other than normal starting or quitting time, the employee will be responsible for notifying their immediate supervisor (Foreman, General Foreman, or Superintendent).
Late starts and early quits will be docked and habitual offenders discharged. Employees shall be paid in 30 minute increments.

C. Absentee Notification Procedures

It is understood that absenteeism /poor and/or irregular attendance is not in the best interest of the project. In the event an employee is going to be absent from work for whatever reason, the employee is to call and notify the company of their absence. Notification shall be prior to the start of the scheduled shift. The employee shall state name, craft and badge number, foreman's name and reason for absence. The absentee notification phone number is: 631-249-1872 ext. 250

D. Coffee Policy

Employees will be allowed to consume coffee (beverage) at their assigned work location during work hours, as time permits, provided they do not interfere with the progress of the work. There shall be no organized coffee breaks, rest periods or other non-working time during the work day.

E. Hard Hat and Eye Protection

Company issued hard hats with the name and employee number properly labeled on the hat shall be worn on the work site. Only approved decals or stickers are allowed on hard hats. Eye protection shall be required at all times.

F. Items for Sale or Solicitations

Employees shall not bring on the project items for sale or raffle to other employees. Any solicitation for donations must have prior approval from the Project Manager.

G. Project Security Inspections

All employees must comply with the project and owners applicable security inspections. Items subject to inspections will be all articles carried through the gate, such as lunch boxes, briefcases, purses, hand carried containers, backpacks, etc. Personal tools are to be checked in and must be accompanied by a Material Removal Slip.

H. Proper Reporting of Injuries and Illness

The following procedures are to be followed for reporting of injuries/illnesses on the project:

- Report all injuries/illnesses immediately to your supervisor and designated Safety and Health Representative.

- You must notify your supervisor and Safety Representative prior to leaving the project to obtain medical treatment off-project for a work-related injury or illness.

  Note: It is mandatory any off-site treatment for a work-related injury or illness be performed by a medical care facility or provider that is authorized by Blue Water Environmental, Inc and the Workers' Compensation carrier.

- If you are unable to notify your supervisor or the Safety Representative, and obtain outside medical treatment for a work-related injury or illness, you must notify your supervisor and the Safety Representative at the start of the next scheduled workday. You must also present a medical clearance, or if unable to return to work, report your treatment by telephoning your supervisor no later than the start of your next scheduled work day. Failure to do so may result in denial of your claim and/or disciplinary action.

- If you receive medical treatment off-site for personal illness or injury and you have been given special work restrictions or have been given a prescription medication you must report to your supervisor and Safety/First Aid with a medial clearance prior to returning to work.

- Prior to returning to work after an injury or illness, you must present a medical clearance (return to work slip) from the attending physician to your supervisor. Failure to do so may result in your losing time to obtain the proper medical clearance.

  If the doctor return you to work with restrictions of any kind (modified duty), each case will be evaluated by the designated Safety Representative and your supervisor to see if there is a regular work task you can perform.

I. Employee Vehicles

Employees are asked to park their vehicles in a designated area by the field office or where directed by the EIC. These facilities are provided as a convenience to the employees. The employer will not be responsible for theft or damage to employee vehicles.

J. Work Rules and Discipline Procedures

Violation of the following Work Rules will result in the stated disciplinary action. This Work Rules list is not intended to be an all inclusive list, as it represents only the basic project work rules. Other reasons for disciplinary action are at Management's discretion.
Horseplay is also grounds for immediate dismissal.

K. Unsafe Conditions

If unsafe work conditions are encountered, the competent person will be notified, and it will be corrected before work continues.

14.22 RESPIRATORY/ SILICA PLAN

SILICA EXPOSURE CONTROL PLAN

INTRODUCTION

It is OSHA's position that occupational exposure to silica, at or above acceptable levels, is a significant hazard to America's workforce, even though there are only very few reported cases of silicosis nationwide. Their position is that a much larger number of silicosis cases are now being misreported as allergies, asthma, and other respiratory ailments, especially within the construction workforce.

Specific Concerns

Neither OSHA nor NIOSH can agree on what a contractor should do to comply with the SEP, or how to measure an employee's exposure to silica. Their current position appears to be ***put everyone in a respirator.***

OSHA has indicated that when a Compliance Safety and Health Officer sees a dust cloud on a jobsite, they are authorized to stop and conduct a silica inspection, even though they have previously acknowledged that the respirable silica dust they are concerned about are invisible to the naked eye (less than 50 microns in size).

Under the Multi-Employer Work Site Enforcement Program, OSHA can impose penalties on every employer that exposes their employees to a hazard, even if they have no control over the hazard itself. This means that a prime contractor or on-site consultant can be cited if their workers were exposed to the dust generated by a subcontractor.

If OSHA conducts an SEP inspection, and the contractor does not have air monitoring data which shows that the employees are not overexposed to silica, the OSHA inspector will conduct their own 8-hour sampling. This means that the OSHA inspector will be on site for the full day during which anything they observe can and most likely will be cited.

OSHA has indicated that there are some twenty plus standards that can be cited during a silica SEP inspection. Typical 8-hour inspections can result in serious citations, with proposed penalties of at least $1,000 from each item cited, up to $70,000 for a willful citation.

The employer must recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Initial monitoring will assist in the determination of silica exposure.

This exposure control manual is to assist your organization in reducing the exposure or the potential exposure to silica dust.

SITE SPECIFIC

Tasks

Soil remediation

Controls
sloping

Personal Protective Equipment

Eye protection
Hearing protection
Gloves
Tyvecks
Respirators

Hygiene

Decon facilities will be available to all employees on this project

BACKGROUND

What is Crystalline Silica (Quartz)?

The term, crystalline silica and quartz refer to the same thing. Crystalline silica is a natural constituent of the earth's crust and is a basic component of sand and granite. Crystalline silica may be of several distinct types. Quartz, a form of silica in the most common mineral in the earth's crust, is associated with many types of rocks. Other types of silica include crystobalite and tridymite.

What is Silicosis?

Silicosis is a disease of the lungs due to breathing of dust containing crystalline silica particles. This dust can cause fibrosis or sear tissue formations in the lungs that reduce the lung's ability to work to extract oxygen from the air***. There is no cure for this disease; thus prevention is the only answer.***

POTENTIAL FOR EXPOSURE DURING CONSTRUCTION

Concrete and masonry products contain silica sand and rock containing silica. Since these products are primary materials for construction, construction may be easily exposed to respirable crystalline silica during activities such as:

1. Chipping, hammering and drilling of rock.
2. Crushing, loading, hauling and dumping of concrete.
3. Abrasive blasting using silica sand as the abrasive.
4. Abrasive blasting of concrete (regardless of abrasive used).
5. Sawing, hammering, drilling, grinding, and chipping of concrete or masonry.
6. Demolition of concrete and masonry structures.
7. Dry sweeping or pressurized air blowing of concrete, rock or sand dust.
8. Mixing of concrete.
9. Mixing of mortar (drainage operations and architectural treatments).

Even materials containing small amounts of crystalline silica may be hazardous if they are used in ways that produce high dust concentrations.

SILICA STATISTICS

Total US Deaths, 1968 – 1990

- Silicosis reported on death certificate – 13,744
- Deaths where silicosis reported as underlying cause of death – 6, 322
- 68% of silica related deaths reported in 12 states
- 10% of silica related deaths reported from construction industry

Number of Exposed Workers

- NIOSH has estimated greater than 1 million workers at risk.
- Greater than 100,000 are sandblasters.

PERMISSIBLE EXPOSURE LIMIT

OSHA has established a PEL for crystalline silica, which is based on the percentage of quartz in an airborne dust sample.

$$\frac{\text{PEL} = 10\text{g/M}^3}{(\%\ \text{Quartz} + 2)}$$

The PEL must be calculated as an 8-hour time weighted average.

The current OSHA permissible exposure limit PEL for respirable dust containing crystalline silica for the construction industry is measured by millions of particles per cubic foot (MPPCF) and is calculated using the following formula:

$$\frac{\text{PEL} = 250\ \text{MPPCF}}{(\%\ \text{Silica} + 5)}$$

The NIOSH recommended exposure limit (REL) for crystalline silica is 0.05 mg/M^3 (50 g/M^3) as a TWA for up to 10 hours per day during a 40-hour workweek.

Initial Exposure Assessment

OSHA dictates that we must initially assume exposure above the PEL, until exposure monitoring has been conducted.

HEALTH EFFECTS

Description of Silicosis

Silicosis is the disease of the lungs due to breathing of dust containing crystalline silica particles. The dust can cause fibrosis or scar tissue formations in the lungs that reduce the lung's ability to work to extract oxygen from the air. There is no cure for this disease; thus prevention is the only answer.

When workers inhale crystalline silica, the lung tissue reacts by developing fibrotic nodules and scarring around the trapped silica particles. This condition of the lungs is called silicosis. If the nodules grow too large, breathing becomes difficult and death may result. Silicosis victims are also at high risk of developing active tuberculosis.

A worker's lung may react more severely to silica sand that has been freshly fractures, sawed, hammered or treated in a way that produces airborne dust. This factor may contribute to the development of acute and accelerated forms of silicosis.

Types of Silicosis

A worker may develop any of three types of silicosis, depending on the airborne concentration of the crystalline silica. Chronic silicosis, which usually occurs after 10 or more years of exposure to crystalline silica at relatively low concentrations. Accelerated silicosis, which results from exposure to high concentrations of crystalline silica and develops 5 to 10 years after the initial exposure. Acute silicosis, which occurs where exposure concentrations are the highest and can cause symptoms to develop within a few weeks to 4 or 5 years after the initial exposure.

These types of silicosis indicate that there are several stages of silicosis. Early stages may go completely unnoticed. Continued exposure may result in the exposed person noticing a shortness of breath upon exercising, possible fever and occasional bluish skin at the earl lobes or lips. Silicosis makes a person more susceptible to infectious diseases of the lungs like tuberculosis. Progression of the disease leads to fatigue, extreme shortness of breath, loss of appetite, pain in the chest and respiratory failure, which all may lead eventually to death.

Silicosis may develop after short periods of exposure. Chronic silicosis is usually caused after 10 or more years of exposure to low levels of quartz.

To summarize, a variety of conditions in the United States Construction industry today can lead to various stages of developmental silicosis.

1. Lack of awareness about the sources of silica exposure, the nature of silicosis, and the causes of the disease.

2. Failure to substitute abrasive blasting materials, less toxic than those containing silica.

3. Inadequate engineering controls and work practices.

4. Inadequate respiratory protection programs for workers.

5. Failure to conduct adequate surveillance programs including exposure and medical monitoring.

Actual Exposure Control Plan

NIOSH recommends the following measures to reduce exposures to respirable crystalline silica in the workplace and to prevent silicosis and deaths in construction worker:

1. Recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source.

2. Awareness and planning are keys to prevention of silicosis.

    a. This can be easily established with preplanning during the bidding stages of your projects and then reinforced at the pre-job meeting before the project begins.

    b. Do not use silica sand or other abrasive containing more than 1% crystalline silica as abrasive blasting materials. Substitute less hazardous materials.

3. Use engineering controls and containment methods such as blast cleaning machines and cabinets, wet drilling or wet sawing of silica containing materials to control the hazards and protect adjacent workers from exposures.

    a. When performing the typical construction activities such as chipping, hammering, or sawing of concrete, the use of water to wet down the dust is an excellent engineering control.

4. Routinely maintain dust control system and keep them in good working order.

5. Practice good personal hygiene to avoid unnecessary exposure to other work site contaminants such as lead.

6. Wear disposable or washable protective clothes at the work site.

7. Shower if possible, and change into clean clothes before leaving the work site to prevent contamination of cars, homes, and other work areas.

8. Conduct air monitoring to measure worker exposures and ensure that controls are providing adequate protection for workers.

    a. This is the most critical aspect of a preventive maintenance program. The initial monitoring will indicate the levels for the contractor and will begin historical or objective data that can be used for future projects.

9. Use adequate respiratory protection when source controls cannot keep silica exposure below the NIOSH recommended level.

10. Provide periodic medical examination for all workers who may be exposed to respirable crystalline silica.

11. Report all cases of silicosis to State Health departments and OSHA.

DUST CONTROL

The key to preventing silicosis is to keep dust out of the air. Dust controls can be as simple as a water hose to wet the dust before it becomes airborne.

- Use the dust collection systems available for most dust generating equipment. When purchasing equipment, look for dust controls.

- During rock drilling, use water through the drill stem to reduce the amount of dust in the air or use a drill with a dust collection system.

- When sawing concrete or masonry, use saws that provide water to the blade.

- Use good work practices to minimize exposures and prevent nearby workers from being exposed. For example, remove dust from equipment with a water hose rather than with compressed air.

- Use abrasive containing less than 1% crystalline silica during abrasive blasting to prevent quartz dust from being released in the air.

- Use contaminant methods such as glass cleaning machine and cabinets to prevent dust from being released into the air.

PERSONAL HYGIENE

As with lead, asbestos and many of the other occupational hazards in construction, personal hygiene practices are essential to protecting workers from respirable crystalline silica.

1. Do not eat, drink, or use tobacco products in dusty areas.

2. Wash hands and face before eating, drinking or smoking outside dusty areas.

3. Park cars where they will not be contaminated with silica and other substances such as lead.

4. Protective Clothing –

~~a.~~Change into disposable or washable work clothes at the work site.

~~b.~~Shower and change into clean clothes before leaving the work site if possible.

Blue Water Environmental, Inc will provide the following:

- Training
- Provide hand washing stations
- Provide change areas and tyvek suits
- Provide Respiratory protection Program

EXPOSURE MONITORING

Exposure monitoring is needed to measure worker exposures to respirable crystalline silica and to select appropriate engineering controls and respiratory protection.

Exposure monitoring will be performed for each work task.

Copies of results will be sent to EIC.

After results are received, PPE and engineering/administrative controls will be adjusted accordingly.

RESPIRATORY PROTECTION

Use of Respirators

Do not use respirators as the primary means of preventing or minimizing exposures to airborne contaminants. Instead, use effective source controls such as substitution, automation, enclosed systems, exhaust, wet methods, and good work practices. Such methods should be the primary means of protecting workers. However, when source controls cannot keep the exposures below the NIOSH recommended exposure limit, controls will be supplemented with the use of N95 respirators.

Respiratory Protection

When respirators are used, the employer must establish a comprehensive respiratory protection program. Important elements of this standard are:

- Periodic exposure monitoring
- Regular training of personnel
- Selection of proper NIOSH approved respirators
- Evaluation of the worker's liability to perform the work well wearing a respirator
- Respirator fit testing and maintenance inspection cleaning and storage of respiratory protection equipment

Medical Monitoring

Medical examinations should be available to all workers who may be exposed to respirable crystalline silica. However, examinations should always supplement effective engineering controls. Never substitute for them. Such examinations should occur before job placement or upon entering a trade and at least every three years thereafter. The examination should include at least the following:

a. A medical and occupational history to collect data and crystalline exposure and sings and symptoms of respiratory disease.

b. A chest x-ray classified according to the chest x-ray.

c. Pulmonary function testing, spirometer.

d. An annual evaluation for tuberculosis.

Warning Signs

Warning signs should be posted to mark the boundaries of the work areas contaminated with crystalline silica. These signs should warn workers about the hazards and specify any protective equipment required. The sign should read as follows:

WARNING!
CRYSTALLINE SILICA WORK AREA

NO SMOKING, EATING OR DRINKING

IMPROPER HANDLING AND EXPOSURE
TO THE DUST MAY CAUSE SILICOSIS

RESPIRATOR REQUIRED

Training

Workers should receive safety training and education that includes the following:

a. Information about the potential health effects of exposure to silica

b. Material safety data sheets for silica masonry products alternate abrasive and other hazards.

c. Instruction about the purpose and set up of regulated areas marking the boundaries of work areas containing silica.

d. Information about safe handling, labeling and storage of toxic materials.

e. Discussion about the importance of substitution, engineering controls, work practices, and personal hygiene in reducing crystalline silica exposure.

f. Instructions about the use and care of appropriate protective equipment including protective clothing and respiratory protection.

CERTIFICATION OF TRAINING

SILICOSIS

Name: _____

Date: _____

Trained By: _____

Respiratory Protection Program

TABLE OF CONTENTS

WHAT IS A RESPIRATOR?

A respirator is an enclosure that covers the nose and mouth of the entire face or head. Respirators can have two general types of fit:

1. Tight-fitting – that is, quarter masks which cover the mouth and nose, and half-masks which cover the face from the hairline to below the chin;

   and

2. Loose fitting – such as hoods, helmets, blouses or full suits that cover the head completely.

There are two major classes of respirators:

1. Air purifying to remove contaminants from the air; and
2. Atmosphere supplying to provide clean, breathable air from an uncontaminated source.

As a general rule, the latter-type respirator is used for more hazardous exposures.

Respirator Basics

The purpose of wearing a respirator is to protect the worker from inhaling harmful contaminants.

To protect you from contaminants, the respirator you wear must be the right one for the situation and it must fit properly.

Medical screening is required before you can wear a respirator. This screening will test the way your heart and lungs function. The test will determine whether you can withstand the added stress caused by wearing certain types of respirators.

WHY DO EMPLOYEES NEED RESPIRATORS?

Some of the most common hazards to employee's lungs are the lack of oxygen and the presence of harmful dusts, fogs, smokes, mists, fumes, gases, vapors or sprays including substances that may cause cancer, lung impairment, other diseases, or death.

There are many workplace situations that involve toxic substances and for which engineering controls may be inadequate to control exposures, and respirators are used in these situations as a back-up method of protection. Respirators can also protect against oxygen-deficient atmospheres. Increased breathing rates, accelerated heartbeat, and impaired thinking or coordination occur more quickly in an oxygen-deficient atmosphere. Even a momentary loss of coordination may be devastating to a worker if it occurs while the worker is performing a potentially dangerous activity, such as climbing a ladder.

All employees who need to wear a respirator are required to have a fit for duty physical and must be fit tested. All certificates of fitness by a doctor (JFK Medical Center) will be kept on file.

III. WHEN DO EMPLOYEES NEED TO WEAR RESPIRATORS?

Respirators are to be used when effective engineering controls are not feasible, or when engineering controls are being installed. We will use the following steps to address respirators:

1st Substitution
2nd Engineering/Ventilation Dilution
3rd Isolation
4th Work Practices
5th Personal Protective Equipment (PPE) (Respirators) will be supplied when contaminants exceed exposure limits as stated in JHA in section 14.9.

Voluntary Use of Respirators

If employees are voluntarily using "dust mask" respirators, the employee must be provided with a copy of this program. However, if employees are voluntarily using other types of respirators. They will be subject to full compliance with an implementation of this written Respirator Program.

IV. ASSESSMENT OF HAZARDS

Known hazards expected during excavation operations are transmitted through resipable dust by means of inhalation and ingestion as stated in section 14.9 of the Hazardous Analysis chart contained herein.

During excavation operations dust within the work zone will be monitored by the use of an aerosol monitor (Dust Trak Environmental enclosure) or similar device. Readings will be recorded with copies of these results going to Project engineers.

This equipment will monitor for potential respiratory hazards in the work place. Monitoring will be done initially at the start of excavation and increased as meter readings indicate.

This monitoring will be administered in conjunction with Dust Suppression measures outlined in this plan.

V. PROGRAM ADMINISTRATOR

According to the new OSHA Standard 1910.134, BWE must designate a Respiratory Protection Administrator who is required to oversee and evaluate the Respirator Program.

Robert Franco is the Head Program Administrator, while each division head and each foreman will be his assistants.

VI. RESPIRATORY HAZARDS

Before we implement this program, it is important to first understand the types of Respiratory Hazards inherent to our projects.

The three normally recognized ways toxic materials can enter the body are:

1. Through the gastrointestinal tract
2. Skin
3. Lungs

The respiratory system presents the quickest and most direct avenue of entry.

There are three basic classifications of respiratory hazards:

1. Oxygen-deficient air
2. Particulate contaminants
3. Gas and vapor contaminants

YOUR BREATHING APPARATUS

HAS NOT

CHANGED IN NEARLY

ONE MILLION YEARS.

UNFORTUNATELY,

YOUR ENVIRONMENT HAS.

Breathing Basics

Toxic substances can cause both short and long term health problems. You may need to use a respirator when the air you breathe becomes contaminated.

We breathe oxygen in through the nose and mouth and down into the lungs.

If your lungs are contaminated, they may not work properly. Contaminants such as dust, mists, fumes and vapors can enter the lungs and block your gas exchange system (oxygen in, carbon dioxide out).

Contaminants can be ***Particles*** or ***Vapors***.

Particles that you breathe can remain in the lungs and cause scar tissue.

Vapors that you breathe in can damage the lungs, or be absorbed by the blood and travel throughout the body. They can cause damage to organs such as the kidneys or liver.

Oxygen Deficiency

Normal ambient air contains an oxygen concentration of 20.8% by volume. When the oxygen level dips below 19.5%, the air is considered oxygen-deficient. Oxygen concentrations below 16% are considered unsafe for human exposure because of harmful effects on bodily functions, mental processes and coordination.

It is important to note that life-supporting oxygen can be further displaced by other gases, such as carbon dioxide. When this occurs, the result is often an atmosphere that can be dangerous or fatal when inhaled. Oxygen deficiency also can be caused by rust, corrosion, fermentation or other forms of oxidation which consume oxygen. The impact of oxygen-deficiency can be gradual or sudden.

Particulate Contaminants

Particulate contaminants can be classified according to their physical and chemical characteristics and their physiological effect on the body. The particle diameter in microns (1 micron = 1/25,400 inch) is of utmost importance. Particulates below 10 microns in diameter have a greater chance to enter the respiratory system, and particles below 5 microns in diameter are more apt to reach the deep lung or alveolar spaces.

In healthy lungs, particles from 5 to 10 microns in diameter are generally removed by the respiratory system by a constant cleansing action that takes place in the upper respiratory tract. However, with excessive "dust" exposures or a diseased respiratory system, the efficiency of the cleansing action can be significantly reduced.

The various types of airborne particulate contaminants can be classified as follows:

Fumes – An aerosol created when solid material is vaporized at high temperatures and then cooled. As it cools, it condenses into extremely small particles – generally less than 1micron in diameter. Fumes can result from operations such as welding, cutting, smelting, or casting molten metals.

Dusts – An aerosol consisting of mechanically produced solid particles derived from the breaking up of larger particles. Dusts generally have a larger particle size when compared to fumes. Operations such as sanding, grinding, crushing, drilling, machining or sand blasting are the worst dust producers. Dust particles are often found in the harmful size range of 0.5 to 10 microns.

Mists – An aerosol formed by liquids, which are atomized and/or condensed. Mists can be created by such operations as spraying, plating or boiling, and by mixing or cleaning jobs. Particles are usually found in the size range of 4 to 100 microns.

Gas and Vapor Contaminants

Gas and vapor contaminants can be classified according to their chemical characteristics. True gaseous contaminants are similar to air in that they possess the same ability to diffuse freely within an area or container. Nitrogen, chlorine, carbon monoxide, carbon dioxide and sulfur dioxide are examples.

Vapors are the gaseous state of substances that are liquids or solids at room temperature. They are formed when the solid or liquid evaporates. Gasoline, solvents and paint thinners are examples of liquids that evaporate easily, producing vapors.

In terms of chemical characteristics, gaseous contaminants may be classified as follows:

Inert Gases – These include such true gases as helium, argon, neon, etc. Although they do not metabolize in the body, these gases represent a hazard because they can produce an oxygen deficiency by displacement of air.

Acidic Gases – Often highly toxic, acidic gases exist as acids or produce acids by reaction with water. Sulfur dioxide, hydrogen sulfide and hydrogen chloride are examples.

Alkaline Gases – These gases exist as alkalis or produce alkalis by reaction with water. Ammonia and phosphine are two examples.

In terms of chemical characteristics, vaporous contaminants may be classified as follows:

Organic Compounds – Contaminants in this category can exist as true gases or vapors produced from organic liquids. Gasoline, solvents and paint thinners are examples.

Organometallic Compounds – These are generally comprised of metals attached to organic groups. Tetrethyllead and organic phosphates are examples.

VII. RESPIRATOR SELECTION

Exposure monitoring plays a critical role in the respirator selection process. The results from such tests will help you determine whether respiratory protection is needed and if it is the type of respirator required.

A. The results of your atmospheric monitoring or sampling program.

B. The accepted ACGIH, OSHA or NIOSH exposure limits for the substances present.

C. The maximum use concentration (of a substance) for which a respirator can be used.

Fit Testing

Full face pieces, half masks, quarter masks and event he different brands of the same type of respirator marketed, have different characteristics. No one respirator will fit everyone. Employers need to have sufficient sizes and models available to achieve proper fit.

Corrective eyeglasses worn by employees also present a problem when fitting respirators. Special mountings are available to hold corrective lenses inside full face pieces. If corrective lenses are needed, the facepiece and lenses must be fitted by a qualified individual to provide good vision, comfort and proper seating.

The user must receive fitting instructions including demonstrations and practice in how to wear the respirator, how to adjust it, and how to determine if it fits properly.

Although respirators are designated for maximum efficiency, they cannot provide protection without a fight seal between the face piece and the face of the wearer. Consequently, beards and other facial hair can substantially reduce the effectiveness of a respirator. The absence of dentures can seriously affect the fit of a face piece. To ensure proper respiratory protection, a face piece must be checked each time that the respirator is worn.

This can be accomplished by performing either a positive-pressure or negative-pressure user seal check.

The effectiveness of the fit of the face piece can be tested two ways: qualitatively and quantitatively. Qualitative fit testing involves the introduction of a harmless odoriferous or irritation substance into the breathing zone around the respirator being worn. If no odor or irritation is detected by the wearer, a proper fit is indicated.

Quantitative fit testing offers more accurate, detailed information on respirator fit. It can involve introducing a harmless aerosol to the wearer while he or she is in a test chamber, the measurement of the ambient particulates in the air, or taking controlled negative-pressure measurements. While the wearer performs exercises that could induce face piece leakage, the air inside and outside the face piece is then measured for the presence of an aerosol, ambient particulates, or pressure change, to determine any leakage into the respirator.

Fit testing must be performed at least annually after initial tests.

Table 1 **Acceptable Fit-Testing Methods**	**QLFT**	**QNFT**
Half-face, Negative Pressure, APR (<100 fit factor)	Yes	Yes
Full-face, Negative Pressure, APR (<100 fit factor) used in atmospheres up to 10 times the PEL	Yes	Yes
Full-face Negative Pressure, APR (>100 fit factor)	No	Yes
PAPR	Yes	Yes
Supplied Air Respirators (SAR) or SCBA used in Negative Pressure (demand mode) (>100 fit factor)	No	Yes
Supplied Air Respirators (SAR) or SCBA used in Positive Pressure (demand mode) (>100 fit factor)	Yes	Yes
SCBA – Structural Fire Fighting, Positive Pressure	Yes	Yes
SCBA / SAR – EDLH, Positive Pressure	Yes	Yes
Mouth bit Respirators	Yes	Yes
Loose Fitting Respirators (e.g. hoods, helmets)	Fit testing not required.	

Fit Test Result:

The fit test procedure was conducted in fulfillment of She's fit testing requirement of employees wearing half-face air purifying respirators (Code of Federal Regulations 29 CFR 1910.134(O)(5) and in accordance with American National Standards Institute Practices for Respiratory Protection ANSI Z88.2 – 1992).

Fit Test Type:

Qualitative _____ Agent _____

Quantitative _____ Device _____

Size: Pass _____ Fail _____

Employee's Acknowledgement of the Test Result:

Employee's Signature: _____ Date: _____

Test Conductor's Signature: _____ Date: _____

Rasp. Protection Mgr.'s Signature _____ Date: _____

Types of Respiratory Protection

There are two broad classes of respiratory protection equipment: air purifying respirator (APRs) and supplied air respirators (Sirs).

~~1~~.2. Air Purifying Respirators (APRs)

Air purifying respirators with the proper cartridges and/or filters protect workers from gases, vapors, particulates, and bio-aerosols. This type of respirator should only be used if:

- The airborne concentration of the contaminant has not exceeded the maximum use concentration recommended for the respirator;
- Oxygen is present in amounts 10.5% or greater; and
- The atmosphere is not immediately dangerous to life and health.

In general, air purifying respirators can be used if:

- The air contaminant is known;
- The airborne concentration of the contaminant is known;
- The air purifying element provides adequate protection from the air contaminant based on manufacturer's literature; and
- The air contaminant has good warning properties.

Air purifying respirators are manufactured in a variety of styles:

a. **Single use respirator (disposable)** – In this case, the entire respirator is discarded after a single use or throughout the day depending upon the type and degree of exposure. A mechanical filter element provides protection against particulate matter such as dust, mist, metal fumes, and bioaerosols. This type of element filters particulates by physically trapping them in the fibers. In addition, the wool/felt filters possess an electrostatic charge that increases filter efficiency by electro statically attracting the particles to the filters. Although mechanical filters become more efficient as they are used, they should be changed when breathing through the respirator becomes difficult or labored. Additionally, some single use respirators are impregnated with chemical absorbents which trap specific chemical vapors or gases.

b. **Full and Half Face piece Air Purifying Respirators (APRS)** – A full or half face piece respirator with single or double cartridges contains a filtering media that traps and/or reacts with airborne contaminants to remove them from the air. The cartridges are discarded after a single use or several uses depending upon the type and concentration of the airborne contaminant. Cartridge types available include organic vapor, combination organic vapor/acid gases, formaldehyde or ammonia. Check with your respirator manufacturer to determine the airborne contaminants the cartridges are approved for.

These respirator cartridges also may be combined with prefilters such as dust/mist, must/mist/fume, and HEPA.

The service life of a cartridge is usually based on an individual's ability to detect the contaminant within the respirator's face piece. This is a subjective guideline and may expose the respirator user to considerable risks. The basis of the subjective detection principle is the assumption that he gas or vapor has good warning properties. Often, information about a contaminant's warning properties is difficult to obtain or may not exist. Some workers have only a moderately developed sense of smell. Olfactory fatigue (loss of the sense of smell) may occur to workers acclimatized to the odor.

Some gaseous contaminants will migrate across the adsorbent or absorbent bed while the respirator is not in use, e.g., overnight storage of organic vapor cartridges. As a minimum, gas/vapor cartridges shall be disposed of after each day's activities, no matter how short those activities were. A day's activities begins when the cartridge is removed from the plastic wrap or bag allowing airborne substances to be adsorbed by the cartridge. Even if these cartridges are not exposed to a Contaminated atmosphere, they must be discarded at the end of a work shift.

Since odor thresholds and olfactory fatigue vary among different individuals, the use of chemical cartridge respirators for airborne substances with poor warning properties is not permitted unless approval by NIOSH/MSHA and the manufacturer.

c. **Type N or Gas Mask –** A type N gas mask is a full face APR with a canister to provide a longer duration of protection because of the increased size of the canister. The canister contains a filter media which either traps and/or reacts with contaminants to remove them from the inhaled air. All of the limitations of canisters are similar to those of the cartridges.

d. **Powered Air Purifying Respirators (PAPR) –** A powered air purifying respirator is a full or half facepiece respirator connected to a belt mounted battery pack which drives a fan motor that forces air through a disposable cartridge to a mask or helmet. The canister contains a filtering media which either traps and/or reacts with airborne contaminants to remove them from the air. The types of canisters available for PAPRs include organic vapor, combination organic vapor/acid gas, HEPA, formaldehyde, and ammonia/methylamine.

~~2~~.3. Supplied Air Respirators (SAR)

Supplied air respirators consist of a face piece connected to a device that provides a separate supply of breathable air. SARs are generally used for comfort or when the maximum use concentration (MUC) of an APR is exceeded. Air supplied to SARs must meet the Compressed Gas Association's standard for Grade D air. Pure oxygen is not to be used as breathing air for SARs. In those situations where entry must be made into oxygen deficient environments, atmospheres which are immediately dangerous to life or health or unknown atmospheres, a full face SAR with a five minute escape bottle or a self contained breathing apparatus (SCBA) must be used. Some situations that may require the use of an SAR are:

- Entry into confined spaces
- Entry into an area where the airborne contaminant concentration may exceed the MUC of APRs
- Hazardous waste sites
- Hazardous substance spills or releases
- Employer requirement for specific atmospheric supplying respiratory protection, e.g., walk-in paint spray booth
- Entry into potentially IDLH or unknown atmospheres

Three types of SARS are:

Type A – A face piece attached to a hose and blower.
Type B – A face piece attached to a hose.
Type C – A face piece attached to compressed breathing air cylinders or air compressor by a hose.

There are three methods of supplying breathable air:

Demand – Delivers air only when wearer inhales.
Continuous Flow – Delivers air continuously,
Pressure/Demand – Delivers increased air upon demand, but maintains a permanent positive pressure inside the facepiece.

a. Self Contained Breathing Apparatus (SCBA)

SCBAs are SARs with a back mounted compressed breathing air cylinder supplying air. Generally, the cylinder supplies no more than 30 or 60 minutes of breathable air. Some SCBAs are oxygen rebreathers, devices that recycle exhaled air. These units can provide breathing air for up to four hours.

An SCBA may be used in an IDLH environment or atmosphere provided a second or stand by person is present and also is equipped with an SCBA.

Learning and "hands on" experience with an SCBA must be ongoing and continuous. Individuals designated to use SCBAs are to be trained in accordance with the manufacturer's instructions on SCBA operation and use, and are to follow this facility's respiratory protection program. The training is to be on a regular basis (annually) and is to include wearing and using the SCBA.

To maintain proficiency, the facility may consider quarterly refresher training of employees who are expected to use SCBAs during an emergency.

b. Air Line Respirators

The breathing air is supplied to the facepiece through a long hose connected to one or more cylinders or a specifically designed air compressor. Generally, the use of an outside air source provides the worker with cooler air and offers greater protection than air purifying respirators. However, the air line respirators are not for use in IDLH situations or where oxygen concentration is less than 19.5% unless a five minute belt-mounted escape bottle is connected to the worker's regulator.

c. Emergency Escape Respirator

The breathable air is supplied to a facepiece or head cover from a small cylinder carried by the wearer. The cylinder provides no more than 5 to 10 minutes of breathable air. This type of respirator is not designed for use when performing work, but is intended only for emergency escape from a contaminated atmosphere. Depending upon the manufacturer of device, it may be capable of being connected to an air line and quickly disconnected in case of an emergency.

These devices shall not be used for entry into hazardous atmospheres, even if the entry is for rescue purposes. Escape respirators are to be provided and carried by all individuals when there is a potential for exposure to toxic material at IDLH levels during emergency egress from the work area.

All emergency escape devices have limitations that must be taken into account. When entering a work area where there is a potential IDLH atmosphere during the emergency egress, the worker shall assess the egress route to assure the emergency escape egress time does not exceed the capacity of the escape respirator.

The following list presents a simplified version of characteristics and factors used for respirator selection. It does not specify the contaminant concentrations or particle size. Some OSHA substance-specific standards include more detailed information on respirator selection.

Hazard	**Respirator**
Oxygen Deficiency –	
Immediately dangerous to life or health.	Any positive-pressure SCBA. Combination positive-pressure with auxiliary self-contained air supply.
Not immediately dangerous to life or health	Any positive pressure SCBA or supplied-air respirator.
Gas and Vapor Contaminants –	
Immediately dangerous to life or health	Positive-pressure SCBA. Combination positive pressure SAR with auxiliary self-contained air supply respirator.
Not immediately dangerous to life or health	Any positive-pressure SAR. Gas mask. Chemical cartridge respirator.

Particulate Contaminants –	Any positive –pressure SAR including abrasive blasting respirator. Powered air-purifying respirator equipped with high-efficiency filters. Any air purifying respirator with a specific particulate filter.
Gaseous and Particulate Contaminants – Immediately dangerous to life or health	Positive-pressure SCBA. Combination positive-pressure SAR with auxiliary self-contained air supply.
Not immediately dangerous to life or health	Any positive-pressure supplied air respirator. Gas mask. Chemical-cartridge respirator.
Escape from contaminated atmosphere – That may be immediately dangerous	

to life or health	Any positive-pressure SCBA. Gas mask. Combination positive-pressure SAR with escape SCBA.
Firefighting –	Any positive-pressure SCBA

VIII. HAZARD CONTROL

In all cases, consideration should be given to the use of effective engineering controls to eliminate and/or reduce exposure to respiratory hazards.

Toxic substances can harm various parts of the body, including the respiratory system. Five methods for controlling exposure to toxic substances which can be used are:

1st ***Substitution*** – using a less harmful substance instead of a toxic substance. This is the first choice and substitution should be used whenever possible.

2nd ***Engineering/Ventilation*** – using an exhaust system to remove contaminated air before it is breathed.

3rd ***Dilution/Isolation*** – separating you from the toxic substances you are working with.

4th ***Personal Protective Equipment (PPE)*** – wearing gloves, other protective clothing, and respirators to protect yourself from toxic substances.

IX. INSPECTION

All equipment must be inspected periodically, before and after each use:

INSPECTION RECORD

Date **Time** **Results**

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

X. CLEANING YOUR RESPIRATOR

All respiratory protective equipment shall be cleaned and decontaminated after each use.

Wash

Respirators should be washed with detergent in warm water using a brush. If possible, detergents containing a bactericide should be used. Organic solvents should not be used, as they deteriorate the rubber facepiece. If bactericide detergent is not available, the detergent wash should be followed with a disinfecting rinse. Two types of disinfectants may be made from readily available household solutions. A hypochlorite solution (50 ppm) can be made by adding two tablespoons of chlorine beach to one gallon of water. An aqueous solution to iodine (50 ppm) can be made by adding one teaspoon tincture of iodine to one gallon of water. A two minute immersion of the respirator into either solution would be sufficient for disinfection.

Rinse & Dry

Respirators should be thoroughly rinsed in warm clean water to remove all traces of detergent. The respirator should be allowed to air dry on a clean surface. Respirators should not be hung from their head straps since hanging may distort the facepiece.

Storage

When not in use, respirators should be sealed in plastic bags and stored with the facepiece and exhalation valve in a non-distorted position. A metal cabinet with shelves is well suited for this purpose.

Repairs

Certain parts of the respirator can be changed by the employee. However, repair or replacement of component parts must be done by qualified individuals. Substitution of parts or cartridges from a different brand or type of respirator will invalidate the approval of the respirator.

XI. TRAINING

For proper use of any respiratory protection device, it is essential that the user be properly instructed in its selection, use and maintenance. Both supervisors and workers must be instructed by competent persons.

1. Methods of recognizing respiratory hazards.

2. Instruction in the hazards and on honest appraisal of what could happen if the proper respiratory protection device is not used.

3. Explanation of why more positive control is not immediately feasible. This must include recognition that every reasonable effort is being made to reduce or eliminate the need for respiratory protection.

4. A discussion of why various types of respiratory protection devices are suitable for particulate purposes.

5. A discussion of the device's capabilities and limitations.

6. Instruction and training in actual use of respiratory protection equipment and close and frequent supervision to assure that it continues to be properly used.

7. Classroom and field training to recognize and cope with emergency situations.

Training should provide personnel with an opportunity to handle the device, have it fitted properly, test its face-to-face piece seal, wear it in normal air for a long familiarity period and, finally, to wear it in a test atmosphere.

RESPIRATORY PROTECTION TRAINING PROGRAM LOG

Instructor: _____ Date: _____

Department/Work Area: _____

Print Name Job Title Social Security # Signature

_____

_____

_____

_____

_____

_____

_____

_____

XII. PROGRAM EVALUATION

We must conduct evaluations of the workplace to ensure the written Respiratory Protection Program is properly implemented. The employer must observe and consult employees to determine if they have any problems with the program and ensure that the respirators are used properly.

Evaluation Form

Date	Who Interviewed	Results/Actions

XIII. RECORDKEEPING

Records to be kept:

- Written Program
- Program Evaluation
- Air Monitoring Results
- Medical Evaluations
- Fit Testing Records

XIV. MEDICAL PROGRAM

Workers will never be assigned to any operations requiring respiratory protection until a physician has determined that they are capable physically and psychologically to perform the work using the respiratory protective equipment.

When respiratory protection is necessary a separate medical program will be in effect with BWE Safety Director monitoring.

Appendix 003

Respiratory Protection Program

Employee Qualification Questionnaire

This questionnaire must be completed by employees required to wear a respirator for the performance of work. This questionnaire must be completed during normal business hours or at a time and place convenient to you. The information you provide herein is confidential and will not be reviewed by representatives and will be delivered to the healthcare professional selected to review the information for the purpose of determining your ability to wear and work in a respirator.

Can you read (circle one): Yes No

PART A – Section 1 (Mandatory) --The following information must be provided by every

Employee who has to use any type of respirator (please print).

1. Today's Date: _____

2. Your Name: _____

3. Your Age (to nearest year): _____

4. Your Sex (circle one): Male Female

5. Your Height: _____ Feet _____ Inches

6. Your Weight: _____ Lbs.

7. Your Job Title: _____

8. Phone Number (___)_____ Where you can be reached by the
Area Code Number healthcare professional who will review this questionnaire.

The best time to reach you: _____ AM _____ PM

9. Are you aware that we have arranged to submit your completed questionnaire in a sealed envelope to a healthcare professional at _____ for review?

(circle one) Yes No

11. Check the type of respirator you will use (you can check more than one category):

[ ] N, R or P disposable respirator (filter-mask, non-cartridge type only)

[ ] Half – Facepiece [ ] Full – Facepiece [ ] Powered Air Purifying

[ ] Supplied Air [ ] Self-Contained Breathing Apparatus (SCBA)

12. Have you worn a respirator? (circle one) Yes No

If "yes", what type(s) _____

PART A – Section 2 (Mandatory) -- The following information must be provided by every employee

who has selected to use any type of respirator .

(please circle Yes or No).

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the past month? Yes No

2. Have *you ever* had any of the following conditions?

a. Seizures (fits) Yes No b. Diabetes (sugar disease) Yes No

c. Allergic reactions that interfere with your breathing Yes No

d. Claustrophobia (fear of closed-in places) Yes No

e. Trouble smelling odors: Yes No

~~3.~~4. Have *you ever* had any of the following pulmonary or lung problems?

a. Asbestosis Yes No

b. Asthma Yes No

c. Chronic Bronchitis Yes No

d. Emphysema Yes No

e. Pneumonia Yes No

f. Tuberculosis Yes No

g. Silicosis Yes No

h. Pneumothorax (collapsed lung) Yes No

i. Lung Cancer Yes No

j. Broken ribs Yes No

k. Any chest injuries or surgeries Yes No

l. Any other lung problem that you have been told about Yes No

4.5. Do you *currently* have any of the following symptoms or pulmonary or lung illnesses?

a. Shortness of breath Yes
No

b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline Yes No

c. Shortness of breath when walking with other people at an ordinary place on level ground Yes
No

d. Need to stop for breath when walking at your own pace on level ground Yes
No

e. Shortness of breath when washing or dressing yourself Yes No

f. Shortness of breath that interferes with your job Yes
No

g. Coughing that produces phlegm (thick sputum) Yes
No

h. Coughing that wakes you early in the morning Yes
No

i. Coughing that occurs mostly when you are lying down Yes No

j. Coughing up blood during the last month Yes No

k. Wheezing Yes No

Wheezing that interferes with your job Yes
No

l. Chest pain when you breathe deeply Yes No

m. Any other symptoms that you think may be related to lung problems Yes
No

~~5.~~6. Have you *ever had* any of the following cardiovascular or heart problems?

a. Heart attack Yes No b. Stroke Yes
No

c. Angina Yes No d. Heart Failure Yes
No

e. Swelling of your legs or feet (not caused by walking) Yes
No

f. Heart arrhythmia (heart beating irregularly) Yes
No

g. High blood pressure Yes
No

h. Any other problem that you have been told about
Yes No

~~6.~~7. Have you *ever had* any of the following cardiovascular or heart systems?

a. Frequent pain or tightness in the chest Yes No

b. Pain or tightness in your chest during physical activity Yes No

c. Pain or tightness in your chest that interferes with your job Yes No

n. In the past two (2) years, noticed your heart skipping or missing a beat Yes No

o. Any other symptoms you think may be related to heart or circulation problems Yes No

~~7.~~8. Do you *currently* take medication for any of the following problems?

a. Breathing or lung problem Yes No b. Heart trouble Yes No

c. Blood pressure Yes No d. Seizures (fits) Yes No

~~8.~~9. If you have used a respirator, have you *ever had* any of the following problems?

(If you never used a respirator, check here and go directly to question #9) [ ]

a. Eye irritation Yes No b. Skin allergies/rashes Yes No

c. Anxiety Yes No d. General weakness or fatigue Yes No

e. Any other problem that interferes with your use of a respirator Yes No

~~9.~~10. Would you like to talk to the health care professional, who will review this questionnaire, about your answers to this questionnaire? Yes No

Full Facepiece /SCBA Section – Questions 10 through 15 must be answered by every employee who has been selected to use either a full facepiece or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever* lost vision in either eye (temporarily or permanently) Yes No

11. Do you *currently* have any of the following vision problems?

a. Wear contact lenses Yes No b. Wear glasses Yes No

c. Color blind Yes No d. Any other eye or vision problem Yes No

12. Have you *ever had* an injury to your ears, including a broken ear drum?
Yes No

13. Do you *currently* have any of the following hearing problems?

a. Difficulty hearing Yes No

b. Wearing a hearing aid Yes No

c. Any other ear or hearing problem Yes No

14. Have you *ever had* a back injury? Yes No

15. Do you *currently* have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet Yes No

b. Back pain Yes No

c. Difficulty fully moving your arms and legs Yes No

d. Pain or stiffness when you lean forward ore backward at your waist Yes No

e. Difficulty moving your head up or down Yes
No

f. Difficulty fully moving your head side to side Yes
No

g. Difficulty bending at your knees Yes
No

h. Difficulty squatting to the ground Yes
No

i. Difficulty climbing a flight of stairs or ladder carrying more than 25 lbs. Yes
No

j. Any other musculoskeletal problem that interferes with using a respirator Yes
No

PART B – Additional – Answers to the questions below will provide information to the health care

professional reviewing this questionnaire. (Please circle Yes or No)

1. In your present job, do you work at high altitudes (above 5,000 feet) or in a place

that has lower than normal amounts of oxygen? Yes
No

If “yes”, do you have feelings of dizziness, shortness of breath, pounding in your chest,

or other symptoms when you are working under these conditions? Yes
No

2. At work or at home. have you ever been exposed to hazardous solvents, hazardous

airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact

with hazardous chemicals?
Yes No

If “yes”, identify the chemicals or substances if you know them: _____

_____.

3. Have you ever worked with any of these materials, or under any of the following conditions:

a. Asbestos Yes No b. Silica (e.g., sandblasting) Yes No

c. Tungsten / cobalt Yes No d. Berryllium Yes No

(grinding or welding this material)

e. Aluminum Yes No f. Coal (mining) Yes No

g. Iron Yes No h. Tin Yes No

i. Dusty environments Yes No j. Any other hazardous exposure Yes No

If “yes”, identify the chemicals or substances if you know them:
_____

_____
_.

4. List any side jobs or businesses you have: _____

_____.

5. List your previous occupations: _____

_____.

6. List your current and previous hobbies: _____

_____.

7. Have you been in the military service? Yes
No

If “yes”, were you exposed to biological or chemical agents

(either in training or combat)? Yes
No

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure,

and seizures mentioned earlier in this questionnaire, are you taking any other medication

for any reason (including “over-the-counter” medications)? Yes
No

If “yes”, identify the medications if you know them:
_____.

~~10.~~11. Will you be using any of the following items with your respirator(s)?

a. HEPA filters Yes No b. Cartridges Yes No

c. Canisters (e.g., gas masks) Yes No

11. How often are you expected to use your respirator(s)? Circle "Yes" or "No" for all answers that apply to you.

a. Escape only (no rescue) Yes No b. Emergency rescue only Yes No

c. Less than 5 hours *per week* Yes No d. Less than 2 hours *per day* Yes No

e. 2 to 4 hours *per day* Yes No f. Over 4 hours *per day* Yes No

12. During the period you are using the respirator(s), is your work effort:

a. ***Light*** (less than 200 kcal per hour) Yes No

(Examples of light work effort are sitting/standing while writing, drafting, sitting while performing light assembly work, operating or controlling a small machine.)

b. ***Moderate*** (200 to 350 kcal per hour) Yes No

(Examples of moderate work effort are siting while nailing, fastening or filing; driving a truck or piece of equipment; standing while drilling, nailing or performing assembly work; transferring a moderate load [35 lbs.], at truck level; walking or pushing a wheelbarrow with a heavy load [100 lbs.] on a level surface.)

If “yes”, how long does this period last during the average shift: _____ hrs. _____ min.

c. ***Heavy*** (above 350 kcal per hour) Yes No

(Examples of heavy work effort are lifting a heavy load [about 50 lbs.] from the floor to your waist; shoveling; standing while bricklaying or chipping; walking up a grade [8 degrees or greater]; or climbing stairs with a heavy load [50 lbs.].)

If “yes”, how long does this period last during the average shift: _____ hrs. _____ min.

13. Will you be wearing protective clothing an/or equipment (other than the respirator) when you are using your respirator(s)? Yes
No

If “yes”, describe this protective clothing and/or equipment: _____

_____.

14. Will you be working under hot conditions (temperatures exceeding 77°F)? Yes
No

15. Will you be working under humid conditions? Yes
No

16. Describe the work you will be doing while wearing your respirator(s):

_____
____

_____
____

_____
____.

17. Describe any special hazardous conditions you might encounter when you are using your respirator(s).

(For example, confined spaces, explosives or toxic gases.)

_____
____

_____
____

_____
____.

18. Provide the following information, if you know it, for each toxic substance that you will be exposed to when you are using your respirator(s).

a. Name the first toxic substance:
_____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____ hrs. _____ mins.

b. Name the second toxic substance:
_____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____ hrs. _____ mins.

c. Name the third toxic substance:
_____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____ hrs. _____ mins.

d. Name of any other toxic substance that you will be exposed to while using your respirator:

_____
____

_____
____

_____
____.

19. Describe any special responsibilities you will have while you are using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

_____
_____

_____
_____

_____
_____.

14.23 Control of Hazardous Energy / Lockout & Tagout

Applicable OSHA Standards: 29 CFR 1910.147

1 PURPOSE & SCOPE

a) This policy and program for Blue Water Environmental covers the servicing and maintenance of pipelines and pipeline components, machines, powered tools and equipment used in the workplace where the unexpected energization or release of product, start up of the machines, equipment or system, or release of stored energy, could cause injury to employees. This policy establishes minimum performance requirements for the control of such hazardous energy.

b) This policy and program apply to the control of energy during installation, servicing, repair and/or maintenance operations. Normal production operations are not covered by this policy.

c) Servicing and/or maintenance which takes place during normal production operations is covered by this standard only if:

   i) An employee is required to remove or bypass a guard or other safety device; or

   ii) An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

   iii) Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection.

d) This policy and program does not apply to work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

e) This policy and program does not apply to hot tap operations involving transmission and distribution systems for substances such as gas, steam, water or petroleum products when they are performed on pressurized pipelines, provided that the employer demonstrates that:

   i) continuity of service is essential;

   ii) shutdown of the system is impractical; and

   iii) documented safe work procedures are followed, and special equipment is used which will provide proven effective protection for employees.

f) Under this policy and program, the company shall establish and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy in order to prevent injury to employees.

g) When other operations and specific safe work procedures require the use of lockout or tagout, they shall be used and supplemented by the procedural and training requirements of this policy and the procedures set forth herein.

h) Written company *Lockout and Tagout (LOTO) Procedures* shall be referenced when following machine-specific, circuit specific and system-specific methods for isolating and controlling hazardous energy.

2 DEFINITIONS

a) *Affected employee.* An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

b) *Authorized employee.* A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this program. Company requirements for an authorized employee include training in the company’s system and specific procedures for performing and removing a lockout and tagout; participation in a group lockout and tagout; and additional training as may be required to be equivalent to the host employer’s LOTO and work permit procedures (when applicable).

c) *Capable of being locked out.* An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

d) *Energized.* Connected to an energy source or containing residual or stored energy.

e) *Energy isolating device.* A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following:

   i) A manually operated electrical circuit breaker; a disconnect switch;

   ii) A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently;

   iii) A line valve;

   iv) A block;

   v) And any similar device used to block or isolate energy. ***IMPORTANMT NOTE: Push buttons, selector switches and other control circuit type devices are not energy isolating devices.***

f) *Energy source.* Any source of electrical (direct or stored), mechanical, hydraulic, pneumatic, chemical, thermal, kinetic, springs or devices under tension, gravity or other energy.

g) *Hot tap.* A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. Hot tapping is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

h) *Lockout.* The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

i) *Lockout device.* A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

j) *Normal production operations.* The utilization of a machine or equipment to perform its intended production function.

k) *Servicing and/or maintenance.* Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

l) *Setting up.* Any work performed to prepare a machine or equipment to perform its normal production operation.

m) *Tagout.* The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

n) *Tagout device.* A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

3 GENERAL REQUIREMENTS

a) Energy Control Program

The energy control program established here consists of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

b) Lockout/tagout

i) Lockout and tagout shall only be performed by authorized persons as defined in this policy and program. Persons who are exposed to accidents and injury in their work by the accidental energizing of the machine, circuit or system on which they are working shall be trained and authorized to perform lockout and tagout. This includes supervisors, welders, and each individual who is exposed to the hazard.

ii) If an energy isolating device is not capable of being locked out, the employee authorized to perform lockout and tagout shall utilize a tagout system, but only with specific permission of the on-site supervisor and the company Safety Coordinator. In all other circumstances lockout and tagout shall be utilized to control and isolate hazardous energy sources.

iii) Whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, company management shall confirm that energy isolating devices for such machines or equipment are designed to accept a lockout device.

c) Special permissions and full employee protection required for "tagout only"

i) Specific permissions of the on-site supervisor and the company Safety Coordinator are required when a lock cannot be placed and "tagout only" is considered. When such permissions have been obtained and a tagout device is used on an energy isolating device that is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached. The standard that shall be met in all authorized "tagout only" situations is that the company shall demonstrate that the tagout program alone will provide a level of safety equivalent to that obtained by using a lockout program.

ii) In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, the safety standard that shall be met is full compliance with all tagout-related provisions together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection shall include the implementation of additional safety measures such as:

(1) the removal of an isolating circuit element,

(2) blocking of a controlling switch,

(3) opening of an extra disconnecting device,

(4) or the removal of a valve handle to reduce the likelihood of inadvertent energization.

d) Energy control procedure

i) Procedures shall be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this policy and program based on job-specific and site-specific work situations.

ii) The company need not document the required procedure for a particular machine or equipment, when all of the following elements exist:

(1) The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees;

(2) the machine or equipment has a single energy source which can be readily identified and isolated;

(3) the isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;

(4) the machine or equipment is isolated from that energy source and locked out during servicing or maintenance;

(5) a single lockout device will achieve a locked-out condition;

(6) the lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;

(7) the servicing or maintenance does not create hazards for other employees; and

(8) in utilizing this exception, the company has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

e) The machine-specific or system-specific procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

i) A specific statement of the intended use of the procedure;

ii) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;

iii) Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them; and

iv) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

f) Protective materials and hardware

i) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the

company for isolating, securing or blocking of machines or equipment from energy sources.

ii) Lockout devices and tagout devices shall be singularly identified; shall be the only devices(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

(1) Durability

(a) Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

(b) Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

(c) Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

(2) Standardized devices

(a) Lockout and tagout devices shall be standardized within the facility or workplace in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

(3) Substantial design and construction

(a) Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

(b) Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a 1-piece, all environment-tolerant nylon cable tie.

(4) Identifiable.

(a) Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

iii) Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: ***Do Not Start. Do Not Open. Do Not Close. Do Not Energize. Do Not Operate.***

g) Periodic inspection

i) The Safety Coordinator shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and OSHA requirements are being followed.

ii) The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure being inspected.

iii) The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

iv) Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

v) Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in paragraph (c)(7)(ii) of this section.

vi) The company shall certify in writing that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

h) Training and communication

i) The company shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

(1) Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the

energy available in the workplace, and the methods and means necessary for energy isolation and control.

(2) Each affected employee shall be instructed in the purpose and use of the energy control procedure.

(3) All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

ii) When tagout systems are used, employees shall also be trained in the following limitations of tags:

(1) Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

(2) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

(3) Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.

(4) Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

(5) Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

(6) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

iii) Employee retraining

(1) Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

(2) Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the company has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

(3) The retraining shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

iv) The company shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

i) Energy isolation, lockout and/or tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

j) Affected employees shall be notified by the company on-site or department supervisor or authorized employee of the application and removal of lockout devices or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.

4 APPLICATION OF CONTROL

a) The established procedures for the application of energy control (the lockout or tagout procedures) shall cover the following elements and actions and shall be done in the following sequence:

i) *Preparation for shutdown.* Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

ii) *Machine or equipment shutdown.* The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

iii) *Machine or equipment isolation.* All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

iv) Lockout or tagout device application.

(1) Lockout or tagout devices shall be affixed on each energy isolating device by authorized employees.

(2) Lockout devices, where used, shall be affixed in a manner to that will hold the energy isolating devices in a "safe" or "off" position.

(3) Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the “safe" or "off" position is prohibited.

(a) Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.

(b) Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

(4) Stored energy

(a) Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

(b) If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

(5) Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and deenergization of the machine or equipment have been accomplished.

v) *Release from lockout or tagout.* Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

(1) The machine or equipment. The work area shall be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.

(2) Employees.

(a) The work area shall be checked to ensure that all employees have been safely positioned or removed.

(b) After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed.

(3) Lockout or tagout devices removal.

(a) Each lockout or tagout device shall be removed from the energy isolating device by the employee who applied the device.

(b) When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the On-site Supervisor or Department Supervisor in accordance with the company's specific written procedures, and when the supervisor has been trained for such removal in accordance with the company's written lockout and tagout procedures. The safety standard to be met is that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

(i) Verification by the company that the authorized employee who applied the device is not at the facility;

(ii) Making all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout or tagout device has been removed; and

(iii)Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

b) *Additional requirements.*

i) Testing or positioning of machines, equipment or components thereof. In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

(1) Clear the machine or equipment of tools and materials in accordance with procedures specified in this policy and program;

(2) Remove employees from the machine or equipment area in accordance with procedures specified in this policy and program;

(3) Remove the lockout or tagout devices in accordance with procedures specified in this policy and program;

(4) Energize and proceed with testing or positioning;

(5) De-energize all systems and reapply energy control measures in accordance with procedures specified in this policy and program to continue the servicing and/or maintenance.

ii) Outside personnel (contractors, etc.)

(1) Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the company and the outside contractor shall inform each other of their respective lockout or tagout procedures.

(2) The company on-site supervisor shall ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside contractor's energy control program.

iii) Group lockout or tagout

(1) When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.

(2) Group lockout or tagout devices shall be used in accordance with the procedures required by machine, circuit or system specific lockout and tagout procedures, but not necessarily limited to, the following specific requirements:

(a) Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

(b) Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment and

(c) When more than 1 crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and

(d) Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

iv) *Shift or personnel changes.* Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

5 SPECIFIC PROCEDURES

a) Individual LOTO. Compare company LOTO procedures with host employer LOTO procedures in place or being utilized at the job site. Proper LOTO procedures require the following steps:

i) Complete the company's or host employer's work permit or Job Safety Analysis (JSA), as applicable to the work and situation and in accordance with company procedures.

ii) Notify all affected personnel and host employer personnel in the immediate or affected area that LOTO will be utilized and why.

iii) Identify all energy sources and isolation devices.

iv) As allowed and authorized by the host employer, shut down the equipment by following normal shutdown procedures in accordance with host employer requirements. The host employer may require shutdown by host employer personnel only.

v) Isolate the equipment from all potential energy sources.

vi) Lockout and tagout energy isolation devices in accordance with company safety procedures, or confirm any such LOTO by host employer personnel. Complete the required LOTO information on the work permit form or JSA in accordance with form completion procedures.

vii) Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, capacitors, steam, or water pressure) must be dissipated or restrained by appropriate methods (such as repositioning, blocking, bleeding down).

viii) Visually inspect equipment isolation and de-energization by attempting to start or otherwise operate the device. This is done to ensure that the LOTO was effective.

ix) Perform the repair or maintenance.

x) Inspect the area around the machines or equipment to ensure that no one is exposed; then remove any tools or rags, and replace any guards or covers.

xi) Notify all affected personnel in the area that energy will be restored.

xii) Remove all LOTO devices.

xiii) Operate the energy-isolating devices to restore energy to the machine or equipment.

xiv) Return the equipment to normal service.

xv) Advise all affected personnel that operations are back to normal.

xvi) Complete and terminate the work permit or JSA form.

b) Extended-Time Energy Isolation Work. When equipment or machines have been locked out for longer that 24 hours, the individual performing the work shall confirm the following:

i) Appropriate locks and tags remain in place

ii) The tag is still serviceable, effective in its communication, and appropriate to the situation

c) Shift Changes and Call-Out Situations. During changes of shifts and when there is a call-out, any LOTO in place must carry over and be maintained as effective protection. The procedures explained below shall be followed regarding shift changes and call-outs:

i) Employees coming to work on a shift or called out to a work assignment shall identify any equipment, machines or systems pertinent to the work that are locked out.

ii) Employees shall inspect and become thoroughly familiar with the LOTO procedures in place and how they are protecting personnel at the time of the shift change or call-out.

iii) When the authorized person who installed the LOTO will not be the same person who completes and removes the LOTO, the personnel coming onto the shift or responding to the call-out shall place their own lock(s) and tag(s) either before or during the process of removal of the lock(s) and tag(s) of the authorized person being relieved.

d) Procedure Involving More Than One Person

i) When more than one person is performing work on equipment, machines or systems that require LOTO, each individual performing this work must place his or her own lock(s) or tag(s) in a manner that effectively isolates energy sources.

ii) If an energy-isolating device accepts only a single lock or tag, a LOTO hasp device that accepts multiple locks and tags shall be used to secure the single-lock energy isolating device.

iii) If locked box or locked cabinet procedures is chosen for performing LOTO, confirm that a single lock is placed on the energy-isolating device and the key to that single lock is secured in the locked box or locked cabinet. In turn, the locked box or cabinet is then secured by a lock placed by each employee performing the work. In this way each member of the group is protected by his or her own lock and key because it secures the key to the lock on the energy-isolating device.

iv) As each member of the group completes his or her work and no longer need LOTO protection, that individual shall remove his or her lock from the box or cabinet containing the key to the lock on the energy-isolating device.

e) Testing or Positioning.

i) A supervisor in charge of work must authorize any removal of a LOTO device prior to any testing or positioning of machines, equipment or components, this must be approved by supervision.

ii) The authorized person who placed the LOTO must clear the machine or equipment and make sure that potentially exposed personnel are at a safe location before any LOTO device is removed.

iii) LOTO device(s) shall be removed only for the time necessary to conduct the test or positioning.

iv) As soon as testing or positioning are completed, the equipment, machine or system shall be de-energized in accordance with LOTO procedures and LOTO shall be re-applied. At that point attempt shall be made to start the equipment, machine or system as a test to confirm that the replaced LOTO is effective.

f) When Work and Required LOTO Carry Over to Another Shift. Sometimes specific work or maintenance will carry over to the next shift. In this situation the locked box procedure for LOTO may be used to protect personnel. This procedure involves:

i) The authorized person(s) place one lock and tag on an energy isolation device. Note that more than one energy-isolating device may be involved.

ii) All keys to locks placed on energy-isolating devices are then secured inside of a locked box.

iii) The locked box is secured with a hasp that accepts multiple locks.

iv) Once an authorized person involved in the work confirms that all potentially hazardous energy sources are effectively isolated, locked out and tagged out, the authorized person places his or her own lock and tag on the locked box. This is an acceptable alternative to having each authorized person place a lock and tag on each locked-out energy-isolating device.

g) Removal of Another Authorized Person's LOTO. In the event that an authorized person leaves the work location without removing a LOTO he or she has placed there, the company has established specific safety procedures that shall be followed prior to and when removing the lock or tag. Note that the host employer may have its own procedures regarding removal of another person's LOTO. These should be reviewed and coordinated with company procedures. Company procedures are explained below:

i) Make a determined effort to notify the authorized person who placed the LOTO so that they can return to the work location and personally remove the lock and tag.

ii) In the event that the authorized person who placed the LOTO cannot be contacted or is not able to come to the work location, the company Site Supervisor or other authorized personnel shall confirm that it is safe to remove the lock and that the lock is removed, and all energy-isolating devices are returned to normal operating position.

iii) The Site Supervisor shall notify the authorized person who initially placed the LOTO about the removal immediately upon that individual's returning to work.

h) Group LOTO -- Responsibilities and Requirements.

The following safe work procedures for performing a *Group Lockout and Tagout* have been established by the company. These procedures shall be followed in coordination with group LOTO procedures of the host employer.

Procedures are designed to make sure all employees and personnel involved are identified, and that the level of LOTO protection provided to the group is equivalent to that provided by an individually placed LOTO.

When a LOTO involves more than one energy-isolating device, or when multiple personnel are involved, it may be appropriate to use separate group lockouts and tagouts.

For example, it may not be practical to require each authorized person to LOTO at multiple energy-isolating devices if not practical. At the same time, each employee shall comply with LOTO procedures and achieve effective protection from potentially hazardous energy sources.

The group LOTO procedure provides an option for compliance with safe work requirements while not requiring an authorized person to place more than a single LOTO.

The company's Site Supervisor and the host employer's field supervisor shall make the decision when to perform a group LOTO rather than LOTOs placed by individual authorized persons.

Group LOTO requires that a single authorized person be designated as the individual with overall and primary responsibility for coordinating the group LOTO. This designated authorized person shall be in charge of the LOTO and be responsible for ensuring that LOTO sequences are effectively completed. This includes performing the basic procedures and confirming that all procedures for group LOTO are followed.

Procedures for group LOTO are:

i) Complete the appropriate company and/or host employer work permit.

ii) Designate the authorized person who will be in charge of and responsible for the group LOTO.

iii) Complete a thorough assessment of the machines, equipment, systems and processes involved to determine all potential sources of hazardous energy. This includes identification and understanding all potential sources of residual or stored energy. This step may include discussions with other work groups, workers who have previously performed similar work, and host employer representatives who are familiar with this type of work operation and the effective control of hazardous energy.

iv) Confirm that the host employer has been notified in accordance with established procedures.

v) Shutdown, or confirm shutdown, of equipment, machines, systems or processes involved with the work assignment. This may involve having the host employer designate the components involved are ready for servicing, repair or maintenance.

vi) Safe-for-work designation by the host employer may involve cleaning, flushing or otherwise making sure that work assignment components are in fact safe and ready for work to begin. In situations when the host employer does not make this designation, host employer personnel should specify how the equipment, machine, system or process should be rendered safe.

vii) The authorized person in charge of the group LOTO must identify, locate, and isolate all energy sources associated with the job. If needed, they must also identify, locate, and prepare relief devices for ensuring that residual or accumulated energy creates no employee hazard.

viii) The authorized person in charge of the group LOTO places the appropriate LOTO devices and tags on energy-isolating devices and then tests the devices to confirm that energy has been effectively isolated and cannot re-accumulate, re-charge or build up pressure. In certain situations the host employer's personnel may also apply LOTO devices in addition to those places by the authorized person in charge.

ix) The authorized person in charge of the group LOTO shall record LOTO information on the work permit in accordance with form procedures.

x) All keys to lockout devices must be placed in a group lockout box (or a similar securing device). This box then shall be locked by the authorized person in charge of the group LOTO. The group LOTO box shall be located in a secure place known to all authorized persons involved with the work.

xi) Each authorized person and host employer personnel involved in the group LOTO shall place his or her individual locks and tags to the group LOTO box prior to beginning the work at hand.

xii) Company employees involved in the group LOTO should:

(1) Follow and respect the LOTO process.

(2) Check and, as applicable, test specific LOTO device locations to confirm that proper and effective LOTO is in place.

(3) The authorized person in charge of the group LOTO, or someone this person may designate, shall direct and accompany the other authorized persons to the specific locations where energy isolation is in place.

xiii) During shift changes and the arrival of new crews, the group LOTO box shall remain locked until the authorized person in charge of the group LOTO determines that it is safe to remove the keys. This means that the lock placed by the authorized person in charge of the group LOTO usually stays on the group LOTO box until the job is completed. Other control procedures approved by the authorized person in charge of the group LOTO may be used as required as long as personnel are properly protected.

xiv) When work is finished, the authorized person in charge of the group LOTO and, if applicable, a host employer representative inspects and reviews the completed work to confirm that it is safe to remove LOTO devices. Special precautions shall be taken to ensure that all personnel are relocated away from danger if removal of a LOTO device might present a hazard.

xv) The authorized person in charge of the group LOTO shall review all forms and permits filled out during the work to ensure that the assignment is properly and safely completed. When this is accomplished, the authorized person in charge of the group LOTO is ready to remove LOTO devices from the lockout box and all other energy isolation devices.

xvi) All applicable work permits and forms shall be completed, signed and submitted in accordance with company and host employer requirements.

xvii) Personnel and supervisors shall acknowledge that each group LOTO is different and requires individual site-specific consideration and special procedures / precautions as appropriate to situations at hand. This may include procedures and precautions that are not included in the procedures explained above. Consequently, the authorized person in charge of a group LOTO has the authority to do whatever is necessary to achieve safety for all company employees and personnel in the work area.

i) Periodic Assessment and Challenge of LOTO Procedures. The company shall inspect, evaluate and challenge LOTO procedures for energy control at least once each year. This process is intended and shall be carried out to ensure that LOTO procedures are correct, effective and in accordance with OSHA standards and requirements. Additionally, the process shall identify and address any inadequacies or needs for updating that may be discovered.

14.24 Material Safety Data Sheets

Material Safety Data Sheets for all products used on site will be provided and posted in the field office for ready access. Subcontractors prior to beginning their work operations will submit data sheets for the products they will be bringing to the site.

All Material Safety Data Sheets will be kept according to the appropriate OSHA standards.