

MAIROLL, INC.

1-52-004

***OLD RECHARGE BASIN
EAST FARMINGDALE, NEW YORK***

***OLD RECHARGE BASIN BOTTOM
SEDIMENT INVESTIGATION WORK PLAN***

May 2002

***MAC CONSULTANTS, INC.
222 Middle Country Road, Suite 209
Smithtown, New York 11787
tel 631-265-7700
fax 631-265-9073***

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1.0 INTRODUCTION

MAC CONSULTANTS, INC. (MAC) has prepared this scope-of-work on behalf of Mairoll Inc. to delineate the Old Recharge Basin (ORB) bottom sediment confined and re-buried during closure, buried chromium soil, and perform a soil gas survey. This delineation was discussed as one of two items the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) are seeking to support the institutional controls requirement of the closure. The other item is the deed notice NYSDEC has been working on internally with Department legal staff. The purpose of this investigation is to provide NYSDEC with the information that the Department has specifically requested and it is not intended as a pre-construction document. In the event that construction activities are undertaken by any party, it may be necessary for those parties to conduct an independent investigation where construction is to occur, in order to insure compliance with site-specific and general environmental regulations by Federal, State or local agencies.

Briefly, the bottom sediment rose to the surface as the higher density sand and gravel fill was placed in the area shown on Figure 1, prepared by Savik & Murray. The sediment was confined by surrounding it with an earthen berm to prevent spreading the sediment over a wider area. The sediment was placed in trenches shown on Figure I and were allowed to dry as much as possible before being buried beneath clean sand and gravel fill. Savik & Murray estimates that the sediment is approximately 5 feet below the present site grade. The limits of the buried sediment, including the trenches, were staked and surveyed by Savik & Murray, as shown on Figure 1.

When the sediment first rose to the surface of the ORB, MAC collected two soil samples and one water sample on August 25, 1997. These samples were sent to EcoTest labs for chemical analyses. The laboratory data sheets for the chemical analyses are provided in Appendix A. The analytical results indicated elevated concentrations of metals, PCBs and semi-volatile organic compounds (SVOCs). NYSDEC reviewed these results and concurred with the decision to bury the sediments

onsite. Since the site may be developed in the future, it is recommended that the area and depth of these sediments below grade be delineated so that if these soils are encountered, they can be properly managed.

2.0 SAMPLING PROCEDURES

2.1 Soil Sampling Procedures

A Geoprobe direct-push device will be used to bore through the soil and buried bottom sediment and will collect soil samples for inspection and laboratory analyses. A four foot long by 2-inch outside diameter soil sampler (“macro core”) will be driven from grade to the 12 feet below grade. Soil samples will be collected continuously at the 0 to 4 foot, 4 to 8 foot, and 8 to 12 foot intervals at each of the proposed locations. The proposed boring locations are shown on Figure 1 and described in detail below.

2.1.1 Buried Chromium Soil

Soils containing elevated levels of chromium are buried beneath a berm along the western boundary of the site. Twenty-eight borings will be drilled in the vicinity of the buried chromium soil to delineate the presence and depth of total chromium in the soil. The number and spacing of the borings is based upon proposed utilities in the vicinity of the buried chromium soil. The buried chromium soil and proposed boring locations are shown of Figure 1. Three soil samples per boring will be collected for laboratory analysis at the 0 to 4 foot, 4 to 8 foot, and 8 to 12 foot intervals.

2.1.2 Buried Bottom Sediment

Seventeen borings will be drilled to delineate the presence and depth of bottom sediment. The location of the buried bottom sediment and proposed boring locations are shown on Figure 1. These boring locations are based on 1997 surveyed boundaries of bottom sediment at grade. The locations may be shifted in the field, depending upon results of initial borings. Soil samples will be collected from the macro core which contains obvious bottom sediment material that is easily identified by its dark gray to black color and silty characteristics. If bottom sediment is readily identified, a boring

may be stopped at the depth the bottom sediment is found, and a sample will be collected for laboratory analysis. If no clearly identifiable bottom sediment is found, a soil sample will be collected from each cored interval to confirm absence of bottom sediment.

2.1.3 Additional Soil Sampling

The ORB has been sectioned into 13 grids. One boring will be drilled in each grid (with the exception of grids 1, 4, 5, 6, 7, and 8 that will be sampled for buried chromium soil and buried bottom sediment) to determine if the bottom sediment material is present. The grid locations and proposed boring locations are shown on Figure 1. If bottom sediment is reality identified, a boring may be stopped at the depth the bottom sediment is found, and a sample will be collected for laboratory analysis. If no clearly identifiable bottom sediment is found, a soil sample will be collected from each cored interval to confirm absence of bottom sediment.

2.1.4 Soil Disposal

Unused soil sample from the cores will be placed back in the boring from which it was recovered. If it is not possible to place the unused cores in their respective borings due to hole collapse, they will be containerized for off-site disposal.

2.1.5 Decontamination

The Geoprobe drill rods and other equipment coming in contact with the soil will be cleaned with Alconox and double rinsed between each use.

2.2 Soil Gas Survey

A soil gas survey will be performed to address the potential presence of volatile organic compounds

(VOCs) in the soil gas. One soil gas sample will be collected from each grid as shown on Figure 1. A vehicle-mounted Geoprobe unit will be used to perform the soil gas survey at the respective locations.

The probe rods and an expendable drive point will be driven to 4 feet below grade. Once the drive point is set at the 4 foot depth, the probe rods will be retracted approximately 3 to 4 inches to create a void which will allow the migration of the soil vapor sample into the bottom of the borehole. A clean, ¼" polyethylene tube will then be attached to the bottom of the lead probe rod. The line will be purged by drawing soil gas / vapor through the tubing using a vacuum pump.

The tubing will then be disconnected from the vacuum pump and attached to a Photoionization Detector (PID) to detect the presence of VOC vapors. A sample will also be extracted by vacuum into a Tedlar bag.

The probe rods and sample equipment will be cleaned with Alconox and double rinsed between each use.

2.3 Health and Safety

A Health and Safety Plan (HASP) for the soil sampling was developed to address the protection of MAC workers and public health and safety; and respond to contingencies that could impact public health, safety and the environment during the investigation. The HASP shall satisfy the requirements of the "Occupational Safety and Health Guidance for Hazardous Waste Site Activities", (October 1985, DHH 5 NIOSH Publication No. 85-115), and the Occupational Safety and Health Administration, U.S. Department of Labor ("OSHA") requirements cited below.

Site activities such as inspection and investigation activities shall be performed to ensure the safety and health of personnel and shall be conducted in accordance with the pertinent general industry (29

CFR 1910) and construction (29 CFR 1926) OSHA standards, as well as any other applicable State and municipal codes or ordinances. All site activities shall comply with those requirements set forth in OSHA's March 6, 1989 Final Rule entitled "Hazardous Waste Operations and Emergency Response", 29 CFR 1910.120, Subpart H.

The HASP is included in Appendix B.

3.0 LABORATORY ANALYSIS

3.1 Buried Chromium Soil

Soil samples collected as part of the buried chromium soil investigation will be analyzed for total chromium. Additional sample will be collected so that the ten highest total chromium samples can be analyzed for TCLP total chromium.

3.2 Buried Bottom Sediment

Soil samples collected as part of the buried bottom sediment investigation will be analyzed for VOCs using USEPA Method 8260, SVOCs using USEPA Method 8270, PCBs using Method 8082, and Target Analyte List metals using Method 6010.

3.3 Additional Soil Sampling

Soil samples collected as part of the additional soil sampling investigation will be analyzed for PCBs using Method 8082.

3.4 Soil Gas

Air samples collected during the soil gas survey will be analyzed for VOCs using Method 8260.

3.5 Quality Assurance / Quality Control

QA/QC procedures will include a field rinse blank analysis of the decontaminated Geoprobe tools, a volatiles trip blank, and a laboratory matrix spike sample analysis.

4.0 SCHEDULE

The Geoprobe soil borings and soil gas survey will take six to seven days to complete, depending on underground obstacles encountered during drilling. Laboratory turnaround is estimated at four to five weeks for all parameters. The report will be completed within two weeks of receipt of all laboratory data and receipt of the surveyed soil boring and soil gas survey locations.

5.0 DATA REVIEW AND REPORT

MAC will prepare a concise narrative of the Geoprobe soil borings, the soil sampling, soil gas survey, field description of soil samples, and other observations. Soil boring logs with sampling depth notations will be appended to the report.

The laboratory results will be reviewed and tabulated, referencing the New York State TAGM guidance for soils. The laboratory results table will indicate the depths at which the individual samples were collected.

The field and laboratory data will be used to prepare a map showing the area of and depth to bottom sediment. It may not be possible to penetrate the full thickness of bottom sediment because the ORB fill contains demolished concrete fill. The main objective of this investigation is to determine the depth to the bottom sediment rather than the thickness, because it is the depth that should be known as a precaution in the face of future construction.

G:\FAIRCH-1\ORB\REPORTS\SED_PLAN.WPD

Appendix A

EcoTest Laboratory Data Sheets

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C973578/1

09/10/97

MAC Consultants, Incorporated
515 Route 111
Hauppauge, NY 11788
ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Water sample, #1 NE/ORB, 10:10 am
UNITS: ug/L

ANALYTICAL PARAMETERS

Bis(2-chloroethyl)ether	<10
1,3 Dichlorobenzene	<10
1,4 Dichlorobenzene	<10
Carbazole	<10
1,2 Dichlorobenzene	<10
Bis(2-chloroisopropyl)ether	<10
N-Nitrosodi-n-propylamine	<10
Hexachloroethane	<10
Nitrobenzene	<10
Isophorone	<10
Bis(2-chloroethoxy)methane	<10
124-Trichlorobenzene	<10
Naphthalene	<10
4-Chloroaniline	<10
Hexachlorobutadiene	<10
2-Methylnaphthalene	<10
Hexachlorocyclopentadiene	<100
2-Chloronaphthalene	<10
2-Nitroaniline	<10
Dimethyl Phthalate	<10
Acenaphthylene	<10
2,6-Dinitrotoluene	<10
3-Nitroaniline	<10
Acenaphthene	<10
Dibenzofuran	<10

ANALYTICAL PARAMETERS

2,4-Dinitrotoluene	<10
Diethyl Phthalate	<10
4-Chlorophenyl phenyl ether	<10
Fluorene	<10
4-Nitroaniline	<10
N-Nitrosodiphenylamine	<10
4-Bromophenyl phenyl ether	<10
Hexachlorobenzene	<10
Phenanthrene	<10
Anthracene	<10
Di-n-Butyl Phthalate	<10
Fluoranthene	<10
Pyrene	<10
BenzylButylPhthalate	<10
3,3'-Dichlorobenzidine	<100
Benzo(a)anthracene	<10
Chrysene	<10
Bis(2-ethylhexyl)phthalate	12
Di-n-octyl Phthalate	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Benzo(a)pyrene	<10
Indeno(1,2,3-cd)pyrene	<10
Dibenzo(a,h)anthracene	<10
Benzo(ghi)perylene	<10

cc:

REMARKS:

DIRECTOR 

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SAMPLE: Water sample, #1 NE/ORB, 10:10 am
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ANALYTICAL PARAMETERS

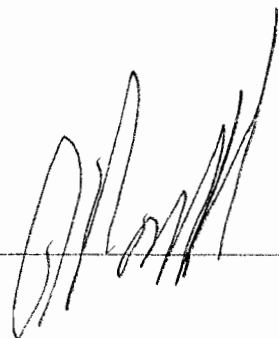
Phenol	<10
2-Chlorophenol	<10
2-Methylphenol (o-cresol)	<10
4-Methylphenol (p-cresol)	<10
2-Nitrophenol	<10
2,4-Dimethylphenol	73
2,4-Dichlorophenol	<10
4-Chloro-3-methylphenol	<10
2,4,6-Trichlorophenol	<10
2,4,5-Trichlorophenol	<10
2,4-Dinitrophenol	<100
4-Nitrophenol	<500
2-Methyl-4,6-dinitrophenol	<100
Pentachlorophenol	<100

ANALYTICAL PARAMETERS

cc:

REMARKS:

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SAMPLE: Water sample, #1 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

Lindane	ug/L	<0.05
Heptachlor	ug/L	<0.25
Aldrin	ug/L	<0.25
Heptachlor Epoxide	ug/L	<0.25
p,p-DDE	ug/L	<0.25
Dieldrin	ug/L	<0.05
Endrin	ug/L	<0.05
p,p-DDD	ug/L	<0.05
p,p-DDT	ug/L	<0.5
Chlordane	ug/L	<1
Toxaphene	ug/L	<5
Endrin Ketone	ug/L	<0.05
a BHC	ug/L	<0.05
b BHC	ug/L	<0.05
d BHC	ug/L	<0.05
Endosulfan 1	ug/L	<0.1
Endosulfan 2	ug/L	<0.1
Endosulfan Sulfate	ug/L	<0.3
Methoxychlor	ug/L	<0.05
Endrin Aldehyde	ug/L	<0.3
Aroclor 1016	ug/L	<5
Aroclor 1221	ug/L	<1
Aroclor 1232	ug/L	<5
Aroclor 1242	ug/L	<5
Aroclor 1248	ug/L	18

ANALYTICAL PARAMETERS

Aroclor 1254	ug/L	8
Aroclor 1260	ug/L	<1

cc:

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ANALYTICAL PARAMETERS

Aluminum as Al	mg/L	51
Antimony as Sb	mg/L	<0.01
Arsenic as As	mg/L	0.011
Barium as Ba	mg/L	0.23
Beryllium as Be	mg/L	<0.001
Cadmium as Cd	mg/L	0.038
Calcium as Ca	mg/L	54
Chromium as Cr	mg/L	9.1
Cobalt as Co	mg/L	<0.1
Copper as Cu	mg/L	0.40
Iron as Fe	mg/L	79
Lead as Pb	mg/L	0.18
Magnesium as Mg	mg/L	22
Manganese as Mn	mg/L	1.0
Mercury as Hg	mg/L	0.001
Nickel as Ni	mg/L	<0.05
Potassium as K	mg/L	8.7
Selenium as Se	mg/L	<0.005
Silver as Ag	mg/L	0.05
Sodium as Na	mg/L	31
Thallium as Tl	mg/L	<0.01
Vanadium as V	mg/L	0.11
Zinc as Zn	mg/L	1.8
Cyanide as CN	mg/L	0.05

ANALYTICAL PARAMETERS

cc:

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SAMPLE: Water sample, #1 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

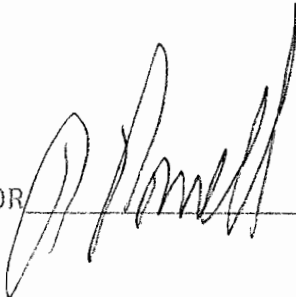
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	2
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
c-1,3Dichloropropane	ug/L	<1
Trichloroethene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
t-1,3Dichloropropane	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10

ANALYTICAL PARAMETERS

2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Vinyl Acetate	ug/L	<10

cc:

REMARKS: Analysis was performed by GC/MS, EPA Method 624.

DIRECTOR 

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515 Route 111
Hauppauge, NY 11788
ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #2 NE/ORB, 10:10 am
UNITS: ug/Kg

ANALYTICAL PARAMETERS

Bis(2-chloroethyl)ether <30
1,3 Dichlorobenzene <30
1,4 Dichlorobenzene <30
Carbazole <30
1,2 Dichlorobenzene <30
Bis(2-chloroisopropyl)ether <30
N-Nitrosodi-n-propylamine <30
Hexachloroethane <30
Nitrobenzene <30
Isophorone <30
Bis(2-chloroethoxy)methane <30
1,2,4-Trichlorobenzene <30
Naphthalene <30
4-Chloroaniline <30
Hexachlorobutadiene <30
2-Methylnaphthalene <30
Hexachlorocyclopentadiene <300
2-Chloronaphthalene <30
2-Nitroaniline <30
Dimethyl Phthalate <30
Acenaphthylene <30
2,6-Dinitrotoluene <30
3-Nitroaniline <30
Acenaphthene <30
Dibenzofuran <30

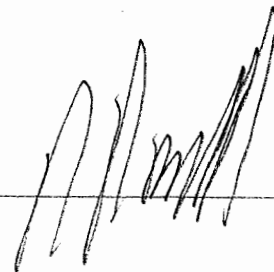
ANALYTICAL PARAMETERS

2,4-Dinitrotoluene <30
Diethyl Phthalate <30
4-Chlorophenyl phenyl ether <30
Fluorene <30
4-Nitroaniline <30
N-Nitrosodiphenylamine <30
4-Bromophenyl phenyl ether <30
Hexachlorobenzene <30
Phenanthrene 45
Anthracene <30
Di-n-Butyl Phthalate <30
Fluoranthene 110
Pyrene 120
BenzylButylPhthalate <30
3,3'-Dichlorobenzidine <3000
Benzo(a)anthracene 63
Chrysene 76
Bis(2-ethylhexyl)phthalate 250
Di-n-octyl Phthalate <300
Benzo(b)fluoranthene <300
Benzo(k)fluoranthene <300
Benzo(a)pyrene <300
Indeno(1,2,3-cd)pyrene <300
Dibenzo(a,h)anthracene <300
Benzo(ghi)perylene <300

cc:

REMARKS:

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SAMPLE: Soil sample, #2 NE/ORB, 10:10 am
UNITS: ug/Kg

ANALYTICAL PARAMETERS

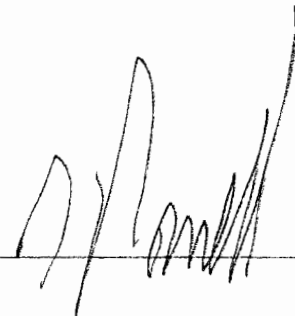
Phenol	<30
2-Chlorophenol	<30
2-Methylphenol (o-cresol)	<30
4-Methylphenol (p-cresol)	<30
2-Nitrophenol	<30
2,4-Dimethylphenol	54
2,4-Dichlorophenol	<30
4-Chloro-3-methylphenol	<30
2,4,6-Trichlorophenol	<30
2,4,5-Trichlorophenol	<30
2,4-Dinitrophenol	<300
4-Nitrophenol	<300
2-Methyl-4,6-dinitrophenol	<300
Pentachlorophenol	<300

ANALYTICAL PARAMETERS

cc:

REMARKS:

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SAMPLE: Soil sample, #2 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

Lindane	ug/Kg	<2
Heptachlor	ug/Kg	<2
Aldrin	ug/Kg	<10
Heptachlor Epoxide	ug/Kg	<5
p,p-DDE	ug/Kg	<5
Dieldrin	ug/Kg	<2
Endrin	ug/Kg	<2
p,p-DDD	ug/Kg	<2
p,p-DDT	ug/Kg	<10
Chlordane	ug/Kg	<40
Toxaphene	ug/Kg	<200
Endrin Ketone	ug/Kg	<2
a BHC	ug/Kg	<2
b BHC	ug/Kg	<2
d BHC	ug/Kg	<2
Endosulfan 1	ug/Kg	<4
Endosulfan 2	ug/Kg	<4
Endosulfan Sulfate	ug/Kg	<12
Methoxychlor	ug/Kg	<2
Endrin Aldehyde	ug/Kg	<12
Aroclor 1016	ug/Kg	<100
Aroclor 1221	ug/Kg	<40
Aroclor 1232	ug/Kg	<100
Aroclor 1242	ug/Kg	<100
Aroclor 1248	ug/Kg	430

ANALYTICAL PARAMETERS

Aroclor 1254	ug/Kg	250
Aroclor 1260	ug/Kg	<40
% Solids		18

cc:

REMARKS:

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SAMPLE: Soil sample, #2 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

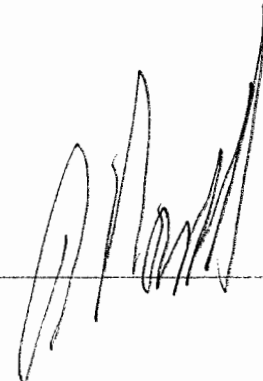
ANALYTICAL PARAMETERS

Aluminum as Al	mg/Kg	5000
Antimony as Sb	mg/Kg	<2.0
Arsenic as As	mg/Kg	1.3
Barium as Ba	mg/Kg	30
Beryllium as Be	mg/Kg	0.31
Cadmium as Cd	mg/Kg	14
Calcium as Ca	mg/Kg	3000
Chromium as Cr	mg/Kg	3300
Cobalt as Co	mg/Kg	3.3
Copper as Cu	mg/Kg	160
Iron as Fe	mg/Kg	16000
Lead as Pb	mg/Kg	53
Magnesium as Mg	mg/Kg	1400
Manganese as Mn	mg/Kg	210
Mercury as Hg	mg/Kg	0.019
Nickel as Ni	mg/Kg	9.0
Potassium as K	mg/Kg	120
Selenium as Se	mg/Kg	<0.4
Silver as Ag	mg/Kg	28
Sodium as Na	mg/Kg	66
Thallium as Tl	mg/Kg	<0.5
Vanadium as V	mg/Kg	17
Zinc as Zn	mg/Kg	660
Cyanide as CN	mg/Kg	<2

cc:

REMARKS:

DIRECTOR _____



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C973578/2

09/10/97

MAC Consultants, Incorporated
515 Route 111
Hauppauge, NY 11788
ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #2 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

Chloromethane	ug/Kg	<10
Bromomethane	ug/Kg	<10
Vinyl Chloride	ug/Kg	<10
Chloroethane	ug/Kg	<10
Methylene Chloride	ug/Kg	<10
Acetone	ug/Kg	130
Carbon disulfide	ug/Kg	<10
1,1 Dichloroethene	ug/Kg	<10
1,1 Dichloroethane	ug/Kg	<10
1,2 Dichloroethene	ug/Kg	15
Chloroform	ug/Kg	<10
1,2 Dichloroethane	ug/Kg	<10
2-Butanone	ug/Kg	<100
111 Trichloroethane	ug/Kg	<10
Carbon Tetrachloride	ug/Kg	<10
Bromodichloromethane	ug/Kg	<10
1,2 Dichloropropane	ug/Kg	<10
c-1,3Dichloropropene	ug/Kg	<10
Trichloroethene	ug/Kg	<10
Chlorodibromomethane	ug/Kg	<10
112 Trichloroethane	ug/Kg	<10
Benzene	ug/Kg	<10
t-1,3Dichloropropene	ug/Kg	<10
Bromoform	ug/Kg	<10
4-Methyl-2-Pentanone	ug/Kg	<100

ANALYTICAL PARAMETERS

2-Hexanone	ug/Kg	<100
Tetrachloroethene	ug/Kg	<10
Toluene	ug/Kg	<10
1122Tetrachloroethane	ug/Kg	<10
Chlorobenzene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<10
Styrene	ug/Kg	<10
o Xylene	ug/Kg	10
m + p Xylene	ug/Kg	20
Xylene	ug/Kg	30
Vinyl Acetate	ug/Kg	<100

cc:

REMARKS: Analysis was performed by GC/MS, EPA Method 8240.
Elevated detection levels due to interference in sample.

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C973578/3

09/10/97

MAC Consultants, Incorporated
515 Route 111
Hauppauge, NY 11788

ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #3 NE/ORB, 10:10 am
UNITS: ug/Kg

ANALYTICAL PARAMETERS

Bis(2-chloroethyl)ether	<30
1,3 Dichlorobenzene	<30
1,4 Dichlorobenzene	<30
Carbazole	<30
1,2 Dichlorobenzene	<30
Bis(2-chloroisopropyl)ether	<30
N-Nitrosodi-n-propylamine	<30
Hexachloroethane	<30
Nitrobenzene	<30
Isophorone	<30
Bis(2-chloroethoxy)methane	<30
124-Trichlorobenzene	<30
Naphthalene	<30
4-Chloroaniline	<30
Hexachlorobutadiene	<30
2-Methylnaphthalene	<30
Hexachlorocyclopentadiene	<300
2-Chloronaphthalene	<30
2-Nitroaniline	<30
Dimethyl Phthalate	<30
Acenaphthylene	<30
2,6-Dinitrotoluene	<30
3-Nitroaniline	<30
Acenaphthene	<30
Dibenzofuran	<30

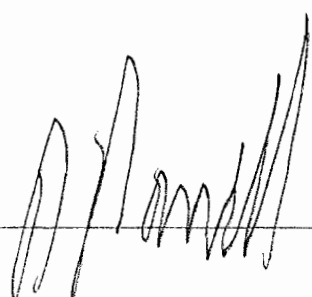
ANALYTICAL PARAMETERS

2,4-Dinitrotoluene	<30
Diethyl Phthalate	<30
4-Chlorophenyl phenyl ether	<30
Fluorene	<30
4-Nitroaniline	<30
N-Nitrosodiphenylamine	<30
4-Bromophenyl phenyl ether	<30
Hexachlorobenzene	<30
Phenanthrene	200
Anthracene	38
Di-n-Butyl Phthalate	<30
Fluoranthene	470
Pyrene	580
BenzylButylPhthalate	<30
3,3'-Dichlorobenzidine	<3000
Benzo(a)anthracene	230
Chrysene	280
Bis(2-ethylhexyl)phthalate	550
Di-n-octyl Phthalate	<300
Benzo(b)fluoranthene	<300
Benzo(k)fluoranthene	<300
Benzo(a)pyrene	<300
Indeno(1,2,3-cd)pyrene	<300
Dibenzo(a,h)anthracene	<300
Benzo(ghi)perylene	<300

cc:

REMARKS:

DIRECTOR



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MAC Consultants, Incorporated
515 Route 111
Hauppauge, NY 11788
ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #3 NE/ORB, 10:10 am
UNITS: ug/Kg

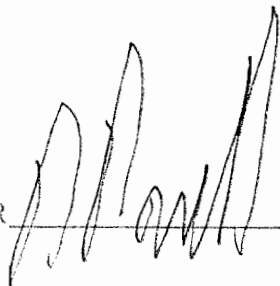
ANALYTICAL PARAMETERS

ANALYTICAL PARAMETERS

Phenol	<30
2-Chlorophenol	<30
2-Methylphenol (o-cresol)	<30
4-Methylphenol (p-cresol)	35
2-Nitrophenol	<30
2,4-Dimethylphenol	700
2,4-Dichlorophenol	<30
4-Chloro-3-methylphenol	<30
2,4,6-Trichlorophenol	<30
2,4,5-Trichlorophenol	<30
2,4-Dinitrophenol	<300
4-Nitrophenol	<300
2-Methyl-4,6-dinitrophenol	<300
Pentachlorophenol	<300

cc:

REMARKS:

DIRECTOR 

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515 Route 111
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ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #3 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

Lindane	ug/Kg	<20
Heptachlor	ug/Kg	<100
Aldrin	ug/Kg	<100
Heptachlor Epoxide	ug/Kg	<400
p,p-DDE	ug/Kg	<100
Dieldrin	ug/Kg	<100
Endrin	ug/Kg	<100
p,p-DDD	ug/Kg	<20
p,p-DDT	ug/Kg	<200
Chlordane	ug/Kg	<800
Toxaphene	ug/Kg	<4000
Endrin Ketone	ug/Kg	<20
a BHC	ug/Kg	<20
b BHC	ug/Kg	<20
d BHC	ug/Kg	<20
Endosulfan 1	ug/Kg	<20
Endosulfan 2	ug/Kg	<4
Endosulfan Sulfate	ug/Kg	<12
Methoxychlor	ug/Kg	<40
Endrin Aldehyde	ug/Kg	<12
Aroclor 1016	ug/Kg	<2000
Aroclor 1221	ug/Kg	<400
Aroclor 1232	ug/Kg	<2000
Aroclor 1242	ug/Kg	<2000
Aroclor 1248	ug/Kg	11000

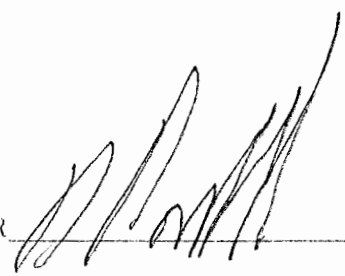
ANALYTICAL PARAMETERS

Aroclor 1254	ug/Kg	3600
Aroclor 1260	ug/Kg	<400
% Solids		20

cc:

REMARKS:

DIRECTOR



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515 Route 111
Hauppauge, NY 11788

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COLLECTED BY: Client DATE COL'D:08/25/97 RECEIVED:08/25/97

SAMPLE: Soil sample, #3 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

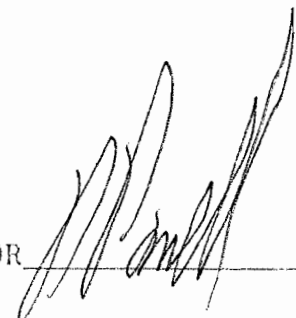
Aluminum as Al	mg/Kg	8700
Antimony as Sb	mg/Kg	<2.0
Arsenic as As	mg/Kg	2.3
Barium as Ba	mg/Kg	40
Beryllium as Be	mg/Kg	0.74
Cadmium as Cd	mg/Kg	17
Calcium as Ca	mg/Kg	5000
Chromium as Cr	mg/Kg	2900
Cobalt as Co	mg/Kg	3.7
Copper as Cu	mg/Kg	300
Iron as Fe	mg/Kg	8100
Lead as Pb	mg/Kg	70
Magnesium as Mg	mg/Kg	2000
Manganese as Mn	mg/Kg	350
Mercury as Hg	mg/Kg	0.25
Nickel as Ni	mg/Kg	14
Potassium as K	mg/Kg	110
Selenium as Se	mg/Kg	<0.4
Silver as Ag	mg/Kg	26
Sodium as Na	mg/Kg	94
Thallium as Tl	mg/Kg	<0.5
Vanadium as V	mg/Kg	23
Zinc as Zn	mg/Kg	1000
Cyanide as CN	mg/Kg	<2

ANALYTICAL PARAMETERS

cc:

REMARKS:

DIRECTOR



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Hauppauge, NY 11788
ATTN: Kevin McHale

SOURCE OF SAMPLE: Fairchild-Northeast ORB
COLLECTED BY: Client DATE COL'D: 08/25/97 RECEIVED: 08/25/97

SAMPLE: Soil sample, #3 NE/ORB, 10:10 am

ANALYTICAL PARAMETERS

Chloromethane	ug/Kg	<20
Bromomethane	ug/Kg	<20
Vinyl Chloride	ug/Kg	42
Chloroethane	ug/Kg	<20
Methylene Chloride	ug/Kg	<20
Acetone	ug/Kg	<200
Carbon disulfide	ug/Kg	<20
1,1 Dichloroethene	ug/Kg	<20
1,1 Dichloroethane	ug/Kg	<20
1,2 Dichloroethene	ug/Kg	130
Chloroform	ug/Kg	<20
1,2 Dichloroethane	ug/Kg	<20
2-Butanone	ug/Kg	<200
111 Trichloroethane	ug/Kg	<20
Carbon Tetrachloride	ug/Kg	<20
Bromodichloromethane	ug/Kg	<20
1,2 Dichloropropane	ug/Kg	<20
c-1,3Dichloropropene	ug/Kg	<20
Trichloroethene	ug/Kg	<20
Chlorodibromomethane	ug/Kg	<20
112 Trichloroethane	ug/Kg	<20
Benzene	ug/Kg	<20
t-1,3Dichloropropene	ug/Kg	<20
Bromoform	ug/Kg	<20
4-Methyl-2-Pentanone	ug/Kg	<200

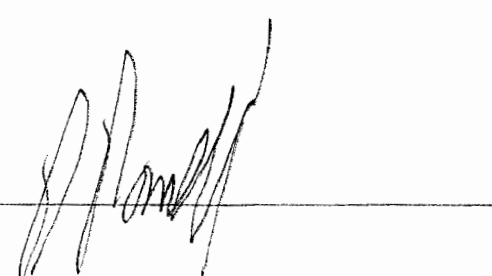
ANALYTICAL PARAMETERS

2-Hexanone	ug/Kg	<200
Tetrachloroethene	ug/Kg	<20
Toluene	ug/Kg	25
1122Tetrachloroethan	ug/Kg	<20
Chlorobenzene	ug/Kg	44
Ethyl Benzene	ug/Kg	<20
Styrene	ug/Kg	<20
o Xylene	ug/Kg	32
m + p Xylene	ug/Kg	40
Xylene	ug/Kg	72
Vinyl Acetate	ug/Kg	<200

cc:

REMARKS: Analysis was performed by GC/MS, EPA Method 8240.
Elevated detection levels due to interference in sample.

DIRECTOR



Appendix B

Health and Safety Plan

MAIROLL, INC.

***OLD RECHARGE BASIN
EAST FARMINGDALE, NEW YORK***

HEALTH AND SAFETY PLAN

May 2002

***MAC CONSULTANTS, INC.
222 Middle Country Road, Suite 209
Smithtown, New York 11787
tel 631-265-7700
fax 631-265-9073***

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 RESPONSIBILITIES 1

3.0 SITE DESCRIPTION 1

4.0 PLANNED FIELD ACTIVITIES 2

5.0 HAZARD EVALUATION 2

6.0 AIR MONITORING 3

7.0 ACTION LEVEL 3

8.0 LEVELS OF PROTECTION 3

9.0 SITE CONTROL 4

10.0 EQUIPMENT DECONTAMINATION 5

11.0 SAFE WORK PRACTICES 6

12.0 EMERGENCY PLAN 7

ATTACHMENTS

1. Site Visitors Log
2. Tailgate Safety Meeting Form
3. Accident Reporting Form, OSHA 101
4. Utilities and Structures Checklist

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been developed to address the potential physical and chemical hazards that **MAC** employees may face while performing the planned soil sampling for the Old Recharge Basin in East Farmingdale, New York. This HASP establishes procedures to minimize worker's exposures through personal protective equipment and safe work practices. This HASP has been developed to meet the requirements of the Occupational Safety and Health Administration (OSHA) regulation, Title 29, Code of Federal Regulations, Part 1910.120 (20 CAR 1910.120), "Hazardous Waste Operations and Emergency Response" (OSHA 1989). It is intended for the protection of **MAC** employees. Anyone else, such as subcontractors, client, and visitors may review **MAC**'s HASP and follow its procedures if they so decide. Subcontractors and others working on the site must provide their own HASP to be followed by their personnel.

2.0 RESPONSIBILITIES

Keith Milano has been designated as the Site Safety Officer (SSO) for **MAC**. He will be responsible for implementing the procedures and safe work practices established in this HASP. In the event that the SSO must leave the site while the work is in progress, an alternate SSO will be designated to ensure that the HASP will continue to be followed. The SSO will report all health and safety matters to the project manager, Michael McEachern, who has responsibility for overseeing the planned activities. Nicholas Andrianas, a **MAC** principal, will also be available on an as needed basis. The New York State Department of Environmental Conservation (NYSDEC) project manager is Steven Scharf. Subcontractors and others that may be involved in the work must designate an SSO for their firm and the SSO shall enforce compliance with the subcontractors HASP.

3.0 SITE DESCRIPTION

MAC prepared a scope-of-work on behalf of Mairoll Inc. to delineate the Old Recharge Basin (ORB)

bottom sediment confined and re-buried during closure, buried chromium soil, and perform a soil gas survey.

4.0 PLANNED FIELD ACTIVITIES

A Geoprobe direct-push device will be used to bore through the soil and buried bottom sediment, collect soil samples for inspection and laboratory analyses, and collect soil gas samples for laboratory analyses.

5.0 HAZARD EVALUATION

The potential physical and chemical hazards associated with the planned field activities for this site have been evaluated in this document. Existing information such as past site experience, site history, and soil and groundwater sampling results, are all used in this evaluation process.

The physical hazards associated with the planned field activities include the following: potential for being struck by flying and falling objects while working near the drill rig, contact with contaminated soil, and slips and falls due to wet or uneven surfaces.

The chemical hazards associated with this site are based on the soil sampling results obtained from when the sediment first rose to the surface of the ORB. MAC collected two soil samples and one water sample on August 25, 1997. The analytical results indicated elevated concentrations of metals, PCBs and semi-volatile organic compounds (SVOCs). Based on this information, the following exposure pathways have been identified in order to minimize potential worker's exposure:

- Inhalation of vapors and gasses.
- Direct skin contact with and absorption of vapors, soil, and sediments.

- Accidental ingestion of contaminants.

6.0 AIR MONITORING

Air monitoring will be conducted at this site during all planned field activities in order to ensure that the workers are appropriately protected from inhalation of organic vapors. A Photoionization Detector (PID) will be used. This instrument is designed to measure trace quantities of VOCs in air. This instrument will be calibrated each morning before field use.

7.0 ACTION LEVEL

To evaluate whether actual field conditions will require an upgrade in the level of protection, the following action level procedure based upon the existing data has been established for all planned field activities. Air monitoring will be conducted using an PID instrument during each task. A 1 part per million (ppm) reading for a sustained period of 5 minutes in the worker's breathing zone has been selected as an action level. If the action level is exceeded, work will be discontinued, the work area will be permitted to vent while the workers move to an area upwind. Work will not resume until the PID readings fall below 1 ppm. If after 30 minutes, the PID readings do not fall below the action level, then the work will resume with the level of protection upgraded to Level C using a full-face air purifying respirator equipped with an organic vapor canister. When this monitoring indicates that the concentration is below the action level, then downgrading to Level D is possible. If the monitoring indicates that the PID readings exceed 10 ppm, all work will be discontinued, and workers will move to an area upwind. Work will not be resumed until air monitoring results confirm that the levels are less than 10 ppm.

8.0 LEVELS OF PROTECTION

Based upon the hazard evaluation results, the work will be performed in Level D protection. In the

event that the action level is exceeded, the level of protection will be upgraded to Level C. The following is a description of the personal protective equipment required for each level:

Level D

- Hard hat (optional for all tasks except well drilling).
- Disposable coveralls (optional).
- Safety glasses, goggles, or face shield.
- Steel-toe and shank, chemical-resistant boots.
- Chemical-resistant gloves (optional except when handling soil, sediment or surface water).
- Shoulder harness and lifeline (only required for confined space entry).
- Hearing protection, NRR of 35 decibels (optional).

Level C

- Hard hat (optional for all tasks except well drilling).
- Disposable coveralls (optional).
- Safety glasses, goggles, or face shield.
- Steel-toe and shank, chemical-resistant boots.
- Chemical-resistant gloves (optional except when handling soil, sediment or ground water).
- Shoulder harness and lifeline (only required for confined space entry).
- Hearing protection, NRR of 35 decibels (optional).
- Full face air purifying respirator equipped with organic vapor cartridges.

9.0 SITE CONTROL

Prior to the start of the field activities, the SSO will be responsible for the designation of the work zone, support zone, and clean zone. The work zone will be an area surrounding the immediate work

being performed, where the greatest potential hazards exist. Only the necessary workers required to perform the work will be permitted in this zone. A support zone will be established for the storage of equipment.

10.0 EQUIPMENT DECONTAMINATION

The drill rods, and sampling tools, and any piece of equipment that comes in contact (directly or indirectly) with the formation, will be rinsed with Alconox between boreholes. All on-site decontamination activities will be monitored by the field hydrogeologist. In addition to the drilling and sampling equipment, the following equipment will be used during the drilling and sampling of boreholes.

- Alconox Laboratory Grade Detergent
- Brushes
- Plastic Buckets
- Distilled Water
- Potable Water
- Photo-ionization detector (PID)
- Health & Safety Equipment (As discussed in the Health & Safety Plan)
- Sample Containers

The macro core sampler will be decontaminated prior to collecting each sample. Disposable gloves will be worn while equipment is cleaned to avoid contamination, and the gloves will be changed frequently. The procedure for cleaning sampling equipment is as follows:

1. A solution of Alconox and potable water will be prepared in a bucket.
2. The macro core will be rinsed with the Alconox solution.
3. All equipment will be scrubbed with a brush to remove any adhering particles.
4. All equipment will be rinsed with potable water.
5. The macro core will be placed on clean plastic sheeting until it is needed. The macro core will be handled by the field hydrogeologist or the drilling crew only when clean gloves are being worn.

Disposal of Drill Cuttings

Unused soil sample from the cores will be placed back in the boring from which it was recovered. If it is not possible to place the unused cores in their respective borings due to hole collapse, they will be containerized for off-site disposal.

11.0 SAFE WORK PRACTICES

A pre-entry, tailgate safety meeting will be conducted prior to the start of each task to discuss the associated hazards. Attendees will be recorded on the Tailgate Safety Meeting Form (Attachment 2).

- All utilities and structures will be cleared and marked out prior to the start of any ground

intrusive work. Attachment 4 will be used to record this information.

- The SSO will inform all subcontractors of the potential hazards associated with the site and the planned field activities. A copy of the HASP will be made available for their review.
- No eating, drinking, or smoking will be permitted in the work and support zones.
- No sources of ignition, such as matches or lighters will be permitted in the work and support zones.
- No confined space entry will be permitted for this scope of work.
- Calls for help will be made via the cellular phone.
- The buddy system will be used in the work zone.
- During hazardous weather conditions, such as lightning and thunder storms, work will cease immediately.

12.0 EMERGENCY PLAN

On-site verbal communications should not be a problem since all tasks will be performed in Level D protection. In the event that the action level is exceeded and personnel are upgraded to Level C protection, verbal communications may become difficult. A universal set of hand signals will then be used. They are as follows:

Hand gripping throat:

Can't breathe.

Grip partner's wrist or
place hands around waist: Leave work area immediately.

Hand on top of head: Need assistance.

Thumbs up: OK, I'm all right.

Thumbs down: No, negative.

Communications from the site will be through a cellular telephone which will be brought to the site.

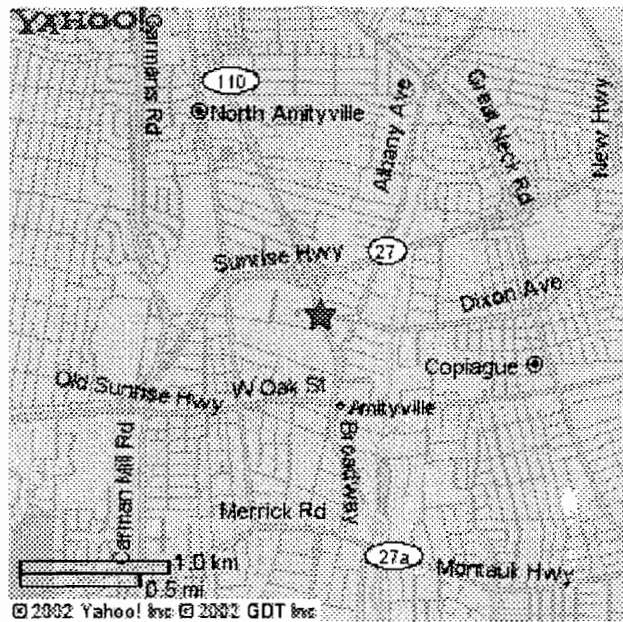
All job-related injuries and illnesses will be reported to the SSO. If medical attention is needed, the injured worker will be decontaminated, if possible, prior to leaving the site. The SSO will investigate the cause of the accident and corrective measures will be taken before the work can resume. It will be the responsibility of the SSO to complete the accident reporting form, OSHA 101, included in this report for all injuries. The completed OSHA 101 (Attachment 3) should be forwarded to the office health and safety manager within six days for recording into the OSHA 200 log. If there is a fatality, or if 5 or more workers are hospitalized as a result of a single incident, the SSO will contact the office health and safety manager immediately for OSHA reporting purposes.

EMERGENCY TELEPHONE NUMBERS

Police	911
Fire	911
Hospital Emergency Room	789-7258

HOSPITAL

The closest hospital to the site is Brunswick Hospital Center, Amityville, New York. To get to the hospital, go south on Route 110 to Route 27 (Sunrise Highway). Brunswick hospital is on the right or west side of Route 110 south of Sunrise Highway.



ATTACHMENT 1

SITE VISITORS LOG

ATTACHMENT 2
TAILGATE SAFETY MEETING FORM

TAILGATE SAFETY MEETING

Prepared by _____

Client _____

Project _____

Date _____

Project Number _____

Work Location _____

Type of Work to be Done _____

SAFETY TOPICS PRESENTED

Chemical Hazards _____

Physical Hazards/Underground Utilities _____

Protective Clothing/Equipment _____

Special Equipment _____

Emergency Procedures _____

Hospital/Clinic _____ Phone () _____

Paramedic Phone () _____

Hospital Address _____

Other _____

ATTENDEES

NAME PRINTED

SIGNATURE

ATTACHMENT 3

ACCIDENT REPORTING FORM, OSHA 101

OSHA FORM 101
SUPPLEMENTARY RECORD OF OCCUPATIONAL INJURIES AND ILLNESSES

EMPLOYER

1. Name _____
2. Mail Address _____
(No. and street) (City or town) (State)
3. Location, if different from mail address _____

INJURED OR ILL EMPLOYEE

4. Name _____ Social Security No. _____
(First name) (Middle name) (Last name)
5. Home Address _____
(No. and street) (City or town) (State)
6. Age _____ 7. Sex: Male _____ Female _____ (Check one)
8. Occupation _____
(Enter regular job title, not the specific activity he was performing at time of injury.)
9. Department _____
(Enter name of department or division in which the injured person is regularly employed, even though he may have been temporarily working in another department at the time of injury.)

THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL ILLNESS

10. Place of accident or exposure _____
(No. and street) (City or town) (State)

If accident or exposure occurred on employer's premises, give address of plant or establishment in which it occurred. Do not indicate department or division within the plant or establishment. If accident occurred outside employer's premises at an identifiable address, give that address. If it occurred on a public highway or at any other place which cannot be identified by number and street, please provide place references locating the place of injury as accurately as possible.

11. Was place of accident or exposure on employer's premises? _____ (Yes or No)
12. What was the employee doing when injured? _____
(Be specific. If he was using tools or equipment or handling material, name them and tell what he was doing with them.)

13. How did the accident occur? _____
(Describe fully the events which resulted in the injury or occupational illness. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use separate sheet for additional space.)

OCCUPATIONAL INJURY OR OCCUPATIONAL ILLNESS

14. Describe the injury or illness in detail and indicate the part of body affected _____
(e.g. amputation of right index finger at second joint;
fracture of ribs; lead poisoning; dermatitis of left hand, etc.)

15. Name the object or substance which directly injured the employee. (For example, the machine or thing he struck against or which struck him; the vapor or poison he inhaled or swallowed; the chemical or radiation which irritated his skin; or in cases of strains, hernias, etc., the thing he was lifting, pulling, etc.) _____

16. Date of injury or initial diagnosis of occupational illness _____
(Date)
17. Did employee die? _____ (Yes or No)

OTHER

18. Name and address of physician _____
 19. If hospitalized, name and address of hospital _____
- Date of report _____ Prepared by _____
Official position _____

ATTACHMENT 4

UTILITIES AND STRUCTURES CHECKLIST

UTILITIES AND STRUCTURES CHECKLIST

Project: _____ Prepared by: _____

Location: _____ Date: _____

Instructions. This checklist has to be completed by a _____ staff member as a safety measure to insure that all underground utility lines, other underground structures as well as above-ground power lines are clearly marked out in the area selected for boring or excavation. **DRILLING OR EXCAVATION WORK MAY NOT PROCEED UNTIL LINES ARE MARKED AND THIS CHECKLIST HAS BEEN COMPLETED.** Arrangements for underground utility markouts are best made at the time of the preliminary site visit to allow client and/or utility company sufficient time. Keep completed checklist and maps onsite send copy to Project Manager.

Assignment of Responsibility. Client is responsible for having underground utilities and structures located and marked. Preferably, the utilities themselves should mark out the lines.

Drilling or Excavation Sites. Attach a map of the property showing the proposed drilling or excavation site (or if sites are widely separated, several maps) clearly indicating the area(s) checked for underground utilities or underground structures and the location of above-ground power lines.

Utilities and Structures

Type	Not Present	Present	How Marked? ¹⁾
Petroleum products line			
Natural gas line			
Steam line			
Water line			
Sewer line			
Storm drain			
Telephone cable			
Electric power line			
Product tank			
Septic tank/drain field			
Overhead power line			

¹⁾ Flags, paint on pavement, wooden stakes, etc.

Name and affiliation of person who marked out underground lines or structures.

_____ NAME _____ ORGANIZATION _____ PHONE _____

Emergency Procedures

Persons at site or facility to contact in case of emergency

1. _____ Phone _____

2. _____ Phone _____

Fire Dept.: Phone _____ Ambulance: Phone _____

Utility: Phone _____ Utility: Phone _____

Utility: Phone _____ Utility: Phone _____

Directions to nearest hospital (describe or attach map).