WASTE MANAGEMENT

CWM CHEMICAL SERVICES, LL
1550 Balmer Road
P.O. Box 200
Model City, NY 14107
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November 30, 2006

Mr. James Strickland, P.E.
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Revised Generic Small Project Soil Excavation Monitoring and Management Plan

Dear Mr. Strickland:

On March 16, 2006, CWM Chemical Services, LLC (CWM), submitted a Revised Generic Small Project Soil Excavation Monitoring and Management Plan, as required by Module II, Condition J(2) of the CWM Part 373 Permit #9-2934-00022/00097, and to address the Department's January 25, 2006, comments. On November 27, 2006, CWM received your request via email for additional revisions. As requested, attached please find a Revised Generic Small Project Soil Excavation Monitoring and Management Plan which replaces the March 2006 Generic Plan in its entirety, except that all appendices from the previous Generic Plan shall be retained.

Please call Mr. John Hino at (716) 754-0278 or myself at (716) 754-0246 if you have any questions or comments.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Sincerely,
CWM CHEMICAL SERVICES, LLC

Jill A. Banaszak

Jill A. Banaszak
Technical Manager
Model City Facility

JBH/JAB/jbh
Attachment

cc:

B. Rostami	- NYSDEC/Region 9	- W/O Attachment
P. Kutlina	- NYSDEC/On-site Monitor	- W/Attachment
E. Dassatti	- NYSDEC/Albany, NY	- W/Attachment
B. Youngberg	- NYSDEC/Albany, NY	- W/Attachment
S. Gavitt	- NYSDOH/Troy, NY	- W/Attachment
J. Devald	- NCHD/Lockport, NY	- W/Attachment
R. Sturges	- CWM/Model City, NY	- W/O Attachment
M. Mahar	- CWM/Model City, NY	- W/O Attachment
J. Hino	- CWM/Model City, NY	- W/Attachment
S. Rydzyk	- CWM/Model City, NY	- W/Attachment
CAC		- W/Attachment
EMD Subject File		
Q & A		

GENERIC SMALL PROJECT SOIL EXCAVATION MONITORING AND MANAGEMENT PLAN

CWM CHEMICAL SERVICES, LLC. MODEL CITY FACILITY

September 2005
(Revised November 2006)

Prepared By: *CWM Chemical Services, LLC.*
1550 Balmer Road
Model City New York, 14107

With Assistance From: *URS Corporation*
77 Goodell Street
Buffalo, New York, 14203

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APPENDICES

I. Introduction

Prior to being operated as a Treatment, Storage and Disposal Facility (TSDF), the property currently owned by CWM Chemical Services, LLC (CWM), was utilized by the U.S. Government from the early 1940s to the mid 1960s as part of the Lake Ontario Ordinance Works (LOOW). Some of these U.S. Government activities resulted in the contamination of certain areas of the Model City Facility with chemical and radioactive wastes. On April 27, 1972, the New York State Department of Health (NYSDOH) issued an order relating to approximately 614 acres of former LOOW property, which imposed certain restrictions on the use of said property. On June 21, 1974, NYSDOH issued a supplemental order to amend the 1972 order.

As a result of extensive corrective remedial actions taken at the CWM property since the 1972 Order, on May 7, 1992, the Department of Energy (DOE) certified that the majority of the CWM property was "in compliance with applicable (radiological) decontamination criteria and standards" and provided "assurance that future use of the property will result in no radiological exposure above DOE criteria and standards established to protect members of the general public or site occupants". Decontamination was certified for all properties owned by CWM, with the exception of three properties designated as E, E' and G. These properties were excluded from the decontamination certification because an area within each property could not be properly assessed due to inaccessibility and the DOE could not confirm that contamination did not exist in these areas. The three inaccessible areas were (1) soil beneath Lagoon 6 and the berm surrounding that lagoon on Property E, (2) soil beneath a roadway and PCB storage tanks on Property E', and (3) soil beneath the liquid treatment pond on the western edge of Property G.

Based on the May 7, 1992, DOE letter, on December 23, 2003, CWM requested that the NYSDOH execute an order to rescind and vacate the 1972 and 1974 Orders for all CWM property, except properties E, E' and G. After reviewing all historical documentation and data related to the areas covered by the Orders, both in the NYSDOH files and provided by CWM, the NYSDOH determined a potential for residual radiological contamination still exists and that monitoring is necessary prior to and during any excavation activities. In order to address this concern, the NYSDEC included permit condition J.3.a. in Module II (Corrective Action) of CWM's 2005 Sitewide Permit.

As required by condition J.3.a of Module II (Corrective Action) of CWM's Sitewide 6 NYCRR Part 373 Permit issued 8/5/05, a revised Generic Small Project Soil Excavation Monitoring and Management Plan was submitted and approved by NYSDEC. This plan was not written for any specific project, but, rather, in accordance with condition D.4 of Exhibit B of Schedule 1, supplement to Module II of the 373 Permit issued 8/21/13, it will be followed for all minor excavations and soil disturbance projects in any location at the CWM facility whose area affects 1,000 square meters (10,764 square feet) or less of existing soils and involves the removal of less than 150 m^3 (196 cubic yards) or less of soil. Projects, which are anticipated to disturb an area greater than this will require the submission and approval of a project-specific monitoring plan.

The purpose of this program is to ascertain the radiological characteristics of the soil in the areas to be excavated for site maintenance or small project activities. Prior to initiating a small project excavation, both New York State Department of Conservation (NYSDEC) and NYSDOH will be notified.

II. Radiation Survey

In most cases, it is expected that the surface survey in the area of the intended excavation will have been performed or will be performed as part of the Sitewide Gamma Radiation Walkover Survey by a qualified consultant (see Site Radiological Survey Plan for details and **Appendix 1** for example resumes of survey personnel). Survey personnel will use a 2-inch x 2-inch Sodium Iodide (NaI) gamma scintillation detector with a scaler/ratemeter, or equivalent. The approximate detection sensitivities will be 2120 pCi/g for Th-230, 2.8 pCi/g for Ra-226 and 39 pCi/g for U-238, following the guidance of NUREG-1507 (U.S. Nuclear Regulatory Commission, 1998) using nominal literature values for background, response and site conditions for Ludlum detectors. Refinements to these detection sensitivity estimates will be made, as necessary, based on actual instrument response and background data gathered during site survey activities (see Site Radiological Survey Plan for calculated values of detector efficiencies). The walkover survey will use gamma ray detectors, coupled to count rate meters, sub-meter global positioning systems (GPS) and data loggers to automatically record the radiation levels and their locations. The electronic record of the survey results will be downloaded and transferred to a computer for processing and entry into a geographical information system for analysis.

In the case of an urgent project (eg. a water line break), the surface area of the intended excavation will be scanned by a manual walkover by a qualified contractor using a 2-inch x 2-inch Sodium Iodide (NaI) gamma scintillation detector with a scaler/ratemeter. The analyst will walk at a speed of approximately 2 feet per second while passing the detector within 6 inches of the ground surface in a serpentine fashion. Audible output of the instrument will be monitored. At locations of increased activity, the reading on the meter will be reviewed and the value recorded. Documentation will include a sketch of the area to be excavated and GPS data to document its location as well as reference to site landmarks. Alternately, survey data may be used to document the location.

All instrumentation will have current calibration (within the past 12 months or more frequently if recommended by the manufacturer). Daily field performance checks (i.e. background and source check) will be conducted in accordance with individual instrument use procedures. These performance checks will be performed prior to daily field activities and at any time the instrument response appears questionable. Only data obtained using instruments that satisfy the performance requirements will be accepted for use in the evaluation.

An initial investigation level of 16,000 counts per minute (cpm) will be employed. A media specific investigation level may be used after development of such values as part of the Sitewide Radiation Survey. The investigation level of 16,000 cpm is consistent with other radiation surveys performed in WNY as well as being approximately one and one-half times the general site background of 10,000 cpm. If an area above the investigation level is identified during the surface survey, the characterization, sampling and analysis developed as part of the Sitewide Radiological Investigation Soil Sampling Plan will be followed. As long as the surface survey does not identify any areas above the investigation level, the small project excavation may proceed. If the excavation will be deeper than six inches (6"), the newly exposed soil will be surveyed after approximately each 6" of soil is removed. In addition, the excavated soil staged

in stockpile or stored in container(s) will be scanned with the survey meter to verify that the material is below the investigation level. The walls and floor of the completed excavation will also be scanned to ensure that no material above the investigation level has been exposed

If a reading greater than the investigation level is detected, the approximate area of increased activity will be delineated and the requirements of the attached Health & Safety Plan (HASP) will be followed (see Appendix 2). If a reading exceeds 110,000 cpm, all work will cease. Before the assigned health physicist leaves the project area, a one minute static count will be taken with the detector located no more than 2 inches above the ground surface. The data will be forwarded to the NYSDEC and NYSDOH for review and consultation. If the readings are less than 110,000 cpm and it appears that there is a localized spot of activity (<1 square foot), the soil may be excavated and placed in a container. Prior to excavation, specified Personal Protective Equipment (PPE) will be donned. Efforts will be made to minimize dusting and release during excavation (eg. soil may be wetted prior to removal). After soil exceeding the investigation value is removed, the exposed surface will be surveyed to ensure that the potentially impacted soil has been completely removed. Impacted soil will be sampled and the samples sent off-site for isotopic uranium, thorium, radium, as well as gamma spectroscopy, testing. CWM will coordinate split sampling as requested by the NYSDEC and NYSDOH. All results will be reviewed with both the NYSDEC and NYSDOH. If it is determined that the soil is a radioactive waste, it will be disposed of by CWM in accordance with all applicable laws and regulations, no later than two years after it has been excavated. CWM will also consult with the New York State Department of Labor if a new specific radioactive materials license is required to authorize storage of the soil while arrangements are made for disposal. If the area appears to be >1 square foot, the project will be suspended and the agencies consulted. If the excavation is suspended, prevention of air dispersion and run-on/run-off control will be priorities while the finding is discussed with the agencies. The excavation area may be covered with a tarp, or backfilled with soil while options are evaluated. Access to the area will be restricted until a decision is reached.

III. Potential Chemical Contamination

Similar to the radiation scanning, a Foxboro TVA-1000 air monitor with a flame ionization detector (FID) will be used to screen the soil for the presence of volatile organic contamination. The instrument will be calibrated prior to use. The exposed soil will be screened by personnel from CWM's laboratory or environmental department. Depending on the configuration and equipment used to perform the excavation, the method of screening the soil will vary. If the soil is removed in layers, each newly exposed soil layer will be screened for the presence of volatile organics, or if a deeper excavation is required, the soil shall be screened in the excavator bucket as it is removed. Several different soil screening methods may be utilized in order to effectively screen the material in the safest and economical means as necessary. In addition, the excavated soil staged in a stockpile or stored in container(s) will be scanned with the FID to determine if any volatile organics appear to be present in the soil. When scanning is being performed, the FID will be held within 12 inches of the soil material. If a reading above 10 ppm is obtained, the soil will be considered to be potentially chemically contaminated. In addition, if odor or discoloration is noted or a colored sheen is present on water present in the excavation, chemical contamination will be suspected. In these areas, CWM's Contamination Control Program (HS-1144) and Personal Protective Equipment (HS-1161) procedures will be followed. Potentially

contaminated soil will be containerized rather than stockpiled to prevent dispersion or run-off of contaminants.

Based on the information obtained during the FID screening and the historical contamination data for the area of the excavation that was compiled during the facility's RCRA Facility Investigation (RFI), the soil will be assigned one of the following four categories for management. If sampling and analysis is specified, representative sample(s) will be collected by CWM laboratory or environmental personnel in accordance with SDP 2004 (**Appendix 3,** ref. Section 7.8.4) and tested by CWM's ELAP/NELAP certified laboratory.

1. **Historic data and screening procedures do not indicate the presence of chemical contamination.**
    a. Soil may be used for backfill, placed in a soils stockpile for future use on-site or placed in the landfill as a non-hazardous waste.
2. **Historic data indicates the potential presence of chemical contamination in the excavated soil, but no chemical contamination is detected by the screening procedures.**
    a. Soil may be used to backfill the excavation; or
    b. If the soil is being considered for placement in a soil stockpile or disposal in the landfill, a representative sample will be collected and tested for PCBs and VOCs.
        i. If the PCBs are >1 ppm, the soil will not be placed in a stockpile.
        ii. If the PCBs are >50 ppm, the soil will be managed as a hazardous waste.
        iii. If any volatile organics are detected, the historical activities for the area will be considered to determine if any listed waste codes apply. The constituent concentration(s) will be evaluated to determine if any are high enough that the soil could qualify as characteristic. If the soil qualifies as a hazardous waste, the constituent concentrations will be reviewed against the UTS to determine if the soil meets the LDR standards or the alternate soil standards. If the soil meets either of these standards, then it will be landfilled as a hazardous waste after the completion of the appropriate paperwork (LDR form).
        iv. If the soil is determined to be non-hazardous, it may be disposed of in the landfill, or if it contains <5 ppm VOCs, it may be placed in a soil stockpile for future use; or
    c. An economic based conservative assumption may be made and the soil managed as a RCRA/TSCA waste for incineration disposal in lieu of completing PCB and VOC testing.
3. **Historic data does not indicate the potential presence of chemical contamination in the excavated soil, but chemical contamination is detected by the screening procedures.** Follow 2.b. or 2 c. above. If chemical contamination is found in an area not previously identified in the RFI, the conditions in Module II (Corrective Action Requirements) of the facility's Sitewide Permit will be followed (eg. Newly Discovered SWMUs).
4. **Historic data and screening procedures indicate the presence of chemical contamination in the excavated soil.** Follow 2.b or 2.c above.

IV. Laboratory Debris

In the event that the excavation of soil uncovers any items indicating the presence of laboratory waste (such as test tubes, petri dishes, animal bones, or instruments), excavation activities will cease. CWM will immediately (i.e., no later than one half-hour after the discovery of the items) notify the DEC on-site monitors and the radiation control program staffs of DEC and DOH .

If the project is an emergency repair, work may resume with the approval of DEC. The excavated soil will be segregated and contained for further analysis, and clean fill will be used to close the excavation.

If the project is not an emergency repair, work will remain suspended while samples are collected, the analytical results are reviewed by DEC and DOH, and the State agencies approve resumption.

All samples will be analyzed in accordance with the Sitewide Radiological Investigation Soil Sampling Plan. In addition, the samples will be analyzed for isotopic plutonium.

V. Reporting

The data from the surveys will be compiled and added to a brief description of the project. A copy of these small project reports will be included with the environmental monthly monitoring reports, which are submitted in accordance with CWM's Sitewide 6NYCRR Part 373 Permit. An example report is included in **Appendix 4**.

APPENDIX 1

EXAMPLE RESUMES

URS

B. Scott Davidson, CHP, CSP

Principal Health Physicist

Overview

Mr. Davidson has 31 years of professional experience in radiological and environmental management. Specialties include program development, assessment and implementation, instrumentation, air monitoring, radiological risk assessment, data management, licensing, permits, and training.

Areas of Expertise

Radiological Health, Engineering, and Assessment

Radioactive Waste Management and Disposal

Years of Experience

With URS: 1.5 Year

With Other Firms: 30 Years

Education

M.S./1975/Radiological Health Option/Rutgers University, New Brunswick, New Jersey

B.S./1973/Environmental Sciences/Rutgers University, New Brunswick, New Jersey

Registration/Certification

1984/CHP/#2292

2001/CSP/#16766

Project Specific Experience

Remedial Investigation

Consultant Certified Health Physicist, USACE FUSRAP sites (2003–2004):

Radiation Safety Officer and Site Safety and Health Officer for remedial investigation of shallow land disposal area in Western Pennsylvania. The disposal area was used primarily for uranium wastes. Conduct comprehensive health and safety program during remedial investigation activities at a radioactive and hazardous waste disposal facility including use of Level B personnel protective equipment. Routine radiation and contamination surveys, RWPs, external dosimetry and internal dosimetry, RP instrumentation, four-gas and PID measurements. Compressed gas and hazardous energy control, fire safety, daily toolbox briefing, etc. Site Manager/SSHO and RSO during abandoned warehouse site investigation and Class 3 MARSSIM survey – reviewed and implemented survey design. RSO/SSHO for groundwater delineation project at FUSRAP project. Used CAP-88 to determine annual radiation doses to members of the public from FUSRAP project.

Research Reactor Decommissioning

Nuclear Engineer/Health Physicist, Plum Brook Reactor Facility D&D Project, Sandusky, Ohio (2001–2003):

Senior advisor to the team on all aspects of radiological safety and decommissioning for NASA research reactor. This work included working with the client (NASA) and the prime contractor to USACE to develop and review the remedial design plans and procedures for the demolition and decommissioning of two research reactors. Radiological Functional Team Lead – review and concur with the NASA RSO on key elements of the radiological program. Development of QA procedures and conducted field oversight of characterization surveys, demolition and other contractor-performed work. Ensure that the integration of industrial safety and health program including Be, LO/TO, cranes, confined space, machine guarding, etc. and radiological safety met client requirements. Assisted USACE and NASA Environmental Scientists in environmental and safety program areas including development of environmental sampling plans, groundwater and air monitoring program and data review.

Radiological Consultant

NORM

Radiological risk assessment for source material licensee facility (Molycorp, Inc.) in Pennsylvania for interim storage facility. Risk assessment included dose calculations to workers and the environment. Performed dose calculations to personnel from radium scale in pipes used in gas and oil industry. .

Radiological Closure

Health Physicist, DOE Ohio Field Office (1997–1998):

Oversight of management, bioassay, and radiation protection program. Health Physics subject matter expert for Operational Readiness Review for restart of activities involving enriched restricted materials. Reviewed Contractor's Implementation Plan and Basis for Interim Operations (remedial design and demolition plans). Performed plant hazard analyses including determination of credible accident scenarios during remediation work. Development of potential source terms and consequences; and determination of preventive and compensatory measures in support of IP/BIO development.

Medical Products

Health Physicist (2001):

Day-to-day responsibility for radiation protection program at a facility with four cyclotrons. Wrote procedures, prepared Radiation Work Permits, and trained facility staff. Performed extremity dose reconstruction. Implemented electronic dosimeter use and improved whole body multi dosimetry.

Independent Review

Lead Health Physicist and Project Manager (1998–2001):

Expert review of the DOE-Mound Bioassay and Internal Dosimetry and Radiological Protection Program.

Agreement State Program

Staff Health Physicist (1997):

Developed and implemented licensing and inspection program for Ohio Department of Health, Columbus, Ohio. Inspection of radioactive materials licensees, including medical and industrial facilities.

Radiological Decommissioning

Senior Radiological Consultant, Site remediation (1994–1996):

Developed radiological protection program for drug delivery system NRC applicant. This included license application and conducted training for radiation safety personnel and investigators Performed chemical and ecological risk assessment. Designed experiments to determine site-

specific K_d partition coefficient for contaminated soil to determine radionuclide fate and transport. Developed site-scoping procedures for D&D.

Commercial Power

Radiological Operations Support Division Manager, Pilgrim Nuclear Power Station (1989–1993):

Responsible for:

- Calibration of fixed and portable radiation detection instrumentation including area and process radiation monitoring equipment used for normal and emergency plant monitoring.
- Respiratory protection including maintenance, inspection, and sanitization of full face and PAPR respirators, SCBA, and bottle charging equipment. Use of breathing air system, as needed.
- Personnel radiation monitoring including issuance of TLDs and Self-Reading Pocket Optical Dosimeters.
- Radiation records.
- Litigation research and support.
- Operation and maintenance of whole body counting equipment (closed chair and standup monitors).
- Operation and maintenance of intrinsic germanium detector systems.
- Supervision of four professional, four technicians, and several clerical staff.
- Wrote application to the NRC for removal and placement of 65,000 ft^3 of radioactively contaminated soil under 10 CFR 20.302
- Emergency Plan Dose Assessor.

Radiation Specialist, U.S. Nuclear Regulatory Commission, King of Prussia, Pennsylvania (1986–1989):

Responsible for performing safety inspections at commercial nuclear power plants in the following areas: solid, liquid, and gaseous waste systems, transportation and disposal, confirmatory measurements, radiological environmental monitoring, etc.

Staff Health Physicist, South Carolina Electric and Gas, VC Summer Nuclear Station (1981–1986):

Procedure development for start up and testing of commercial nuclear plant, training and personnel dosimetry issues. Developed radiological laboratory intercomparison program, performed power entries to perform neutron spectral measurements at 50 & 100% power, etc.

Health Physicist

Development of radiation safety program for rare earth facility decommissioning. Implemented compliance activities for radiography program.

URS

Military Installation Radiation Safety Program Implementation

Radiation Safety Officer, Charleston, SC, Naval Shipyard, U.S. Army R&D facility (1977–1979):

Responsible for NRC license compliance regarding radiography, calibration, and DOT shipping, and transportation activities. Assisted in baseline environmental monitoring at future shipyard and emergency planning and response.

Professional Societies/Affiliates

Health Physics Society (Plenary Member since 1974)

American Academy of Health Physics (Certified Health Physicist)

Board of Certified Safety Professionals (Certified Safety Professional)

Languages

English

Specialized Training

Confined Space/PCB/Lead Awareness

Asbestos Abatement Contractor/Supervisor

HAZWOPER Refresher

MARSSIM

RESRAD/RESBUILD

Hazardous Waste/Radioactive Waste Manifest Refresher

HM-230 Radioactive Material Transportation Refresher

Security Clearance

Inactive DOE Q Clearance

Publications

"Independent Expert Review of the DOE-Mound Bioassay/Internal Dosimetry and Radiological Programs", work performed by Davidson & Associates, LLC under contract to the DOE Ohio Field Office, December 2000

"Discovery of Five-Year Old Unanalyzed Bioassay Samples", Smith, David G. (Team Lead), Davidson, B. Scott (Team Member) et al.

Chronology

08/03–Present, URS Group

07/01–08/03, USACE

07/98–07/01, Davidson & Associates, LLC

07/97–07/98, Jason Associates Corporation

12/1996–06/97, Ohio Department of Health

URS

10/94–12/96, ICF Kaiser Engineers
01/94–10/94, Sole Proprietor
01/89–12/93, Boston Edison Company
03/86–01/89, U.S. Nuclear Regulatory Commission
10/81–03/86, South Carolina Electric & Gas Company
10/80–10/81, Catalytic, Inc.
03/80–09/80, Rad Services, Inc.
10/79–03/80, Yankee Atomic Electric Company
04/78–10/79, U.S. Navy Shipyard Charleston, SC
07/77–04/78, U.S. Army Fort Monmouth, NJ
10/75–06/77, University of Illinois, Chicago, IL
11/74–10/75, Hines VA Hospital, Hines, IL

URS

Eric W. Olson

Environmental Engineer

Areas of Expertise

Radiological Remediation
Field Engineering
Facility Decontamination

Years of Experience

With URS: 3 Years
With Other Firms: 9 Years

Education

BS/Civil Eng/Michigan Technological University

Registration/Certification

Engineer-In-Training
Yearly/Radiation Worker Requalification
Yearly/HAZWOPER

Overview

Mr. Olson has over 12 years of experience in field engineering and management. He prepares work plans and specifications for environmental remediation projects, and provides field supervision and support for characterization and remediation projects.

Project Specific Experience

Hicksville Soil Remediation Project (Verizon), Hicksville, NY

- Team Leader for health physics support and remediation verification for the remediation of uranium- and thorium-contaminated soils. Manages field group of health physics technicians that perform MARSSIM final status surveys and associated soil sampling,
- Primary Investigator for evaluation of on-site Gamma Spectroscopy results and Alpha Spectroscopy results, which are analyzed at an independent off-site laboratory. Used a regression analysis to compare the results of the two labs and to develop a standard-error correction factor.
- Prepared Standard Operating Procedures for radiological work involving elevated levels of Uranium-235, Uranium-238, and Thorium-232. The work also involves high levels of Tetrachloroethene (PCE) and Trichloroethene (TCE). These procedures provide instructions for the operating radiological field equipment, air monitoring, analyzing air and soil sample analysis, sample preparation, and Radiation Health instructions. The QA/QC specifications for the work processes and instrument checks were incorporated into each procedure.
- Analyzes environmental samples on the project's on-site Gamma Spectroscopy Detectors. Assisted in the development of the Quality Assurance program, as it applies to Gamma Spectroscopy.
- Assisted in the development of an automated process of real-time output of Gamma Spectroscopy analytical results into the project's sample database. This process involves several different work groups and companies. Over 15,000 samples have been analyzed by the site's Gamma Spectroscopy Units and the results have been compiled into the master on-site database.
- Developed the project's Anomaly Database, used to record information on sub-surface anomalies found during excavation. This database tracks anomalies and compares them to the field instrument readings, VOC analysis results, and on-site Gamma Spectroscopy results.

Radiological/Project Engineer, Bettis Laboratory (1999-2002) Developed technical work documents and provided project-engineering support for the remediation of radiologically contaminated buildings and equipment from the initial research phase to final package closeout. Responsible for issuing project cost estimates, exposure estimates, man loading, and schedules. Work includes hazardous/mixed waste identification, minimization, storage, and disposal requirements. Responsible for selecting the required personal protective equipment for projects under his cognizance. Tasks involves developing procedures for

work with 1R/hr controls and >1,000,000 pCi/100 cm^2 conditions, selection and configuration of Lifting and Handling equipment including structural calculations and welding specifications, and coordinating several simultaneous work crews. Conducted Quality Assurance (QA) audits of projects not under his cognizance.

Completed Projects:

GMTR Pump Room (Assistant and later Lead Engineer)

- Prepared technical work documents and specifications for removal of water and sludge from a pump room that used to transfer radiological liquids. The waste material contained high levels of Tetrachloroethene, Xylene, Dichloroethane, Thorium-232, and Cesium-137.
- Designed the engineering controls and the pumping system used to transfer the water and sludge from the sump up 30 feet to the Mixed Waste Storage Area.
- Developed the sampling plan used to characterize each container of waste. Trained the Radiation Technicians and Radiation Workers on the sampling methods to be used.

MEL MET and Central Fan Rooms (Lead Engineer)

- Prepared technical work documents for the remediation of approximately 5000 square feet of Cobalt-60 and Uranium-238 contaminated test facility in a High Radiation Area.
- Performed the engineering calculations needed to select the lifting and handling equipment needed to move heavy waste items from the fan room to the main floor. Prepared the required Lifting and Handling Authorization Forms, which required the engineer to prove through calculations that the lifting configuration selected was adequate for proposed loading.
- Supervised the removal of over 500 cubic feet of contaminated waste, which was removed and packaged for disposal. Waste items included equipment containing PCB's, Lead, Chromium, Cadmium, and Asbestos. Designed the Asbestos controls needed for the disassembly of Asbestos Containing Materials (ACM) and prepared the Asbestos Work Permits needed for this project.
- Two obsolete gloveboxes were dismantled and packaged for disposal. Designed two large ventilated glovebags which fully encased each glovebox.
- The project was completed 2 months ahead-of-schedule and under budget.

Sampling of Contaminated Storm Drain (Lead Engineer)

- Developed the Sampling Plan for the characterization of future site work involving a contaminated storm sewer line. The drain contained Uranium-235, Uranium-238, and Cobalt-60 contaminated debris from a nearby shop facility. The area is also suspected to contain hazardous contaminates above the RCRA and TSCA limits. The sample plan was developed by using the guidelines in the EPA's Test Methods for Evaluating Solid Waste (SW 846) and the site's Environmental Engineering Manual.
- Trained the Radiation Workers and Technicians on the sampling methods to be used when collecting the radiological samples, to minimize the spread of

contamination and to reduce the chance of cross-contamination.

- Supervised the collection of soil and debris samples that were sent to Gamma Spectroscopy for analysis. Prepared and maintained the QA/QC documents used during sample collection.

Demolition of Uranium Fuel Storage Vault (Lead Engineer)

- Prepared work documents and specifications for the complete removal of a 2000 cubic feet nuclear fuel storage vault. The vault was made of extremely high density and strength concrete (nuclear grade concrete). The fuel storage compartments were wrapped in Cadmium sheeting. Some materials of the vault also contained high level of PCB's and Asbestos.

- Prepared and maintained the Cadmium Compliance Document used to describe what engineering and administrative controls would be used during demolition. Developed the engineering controls used to minimize Cadmium airborne concentrations, which included the use of localized work-site ventilation, hooded ventilation workstations, and a large work-site enclosure. Selected the locations, frequency, and methods used to collect air samples (both area and personnel air samples). These samples were analyzed for Cadmium fume, Silica dust, and radioactive particulates.

- Prepared the Contract of Analytical Services for an off-site laboratory that was used to analyze the air samples for Cadmium and Silica dust. Calibrated the air sampling equipment. Completed and maintained the QA/QC paperwork for the air sampling program. Reviewed the air sample results daily for action limits and trend analysis.

- Provided training for the assigned Radiation Workers and Technicians on the hazards of PCB's and Cadmium, and how these hazards were to be mitigated during the course of the project.

- The demolition was designed in a manner to segregate the different types of wastes and to prevent the spread of contamination to other materials. The result was the generation of no Mixed Waste with this project, saving the client time and money that would have been needed for waste processing. concentrations did not exceed the Permissible Exposure Level specified by 29CFR1926.

- Due to needs of the client, a majority of this project was performed after normal working hours. Designated by the site manager as his representative after normal working hours.

- Documented and tracked the quantity and disposition of hazardous waste as it was generated.

Removal of Thoria Exhaust Filters (Lead Engineer)

- Prepared technical work documents and specifications for the removal of highly contaminated lab ventilation filters. The filters were used to trap airborne contaminates from the exhaust ventilations from Uranium and Thorium contaminated gloveboxes which were used in the preparation and testing of fissile and fertile materials. Each filter contained approximately one curie of radioactivity.

- Developed a sampling plan used to determine the spread of contamination through various components of the ventilation system. Used these sample results to specify the engineering controls needed to dismantle specific ventilation components.

URS

- Developed a mock-up training program that was used to simulate the removal of the filters and to train the assigned work crew. This program was also used to test engineering controls that would be used during the actual removal process and to identify potential problems.
- Supervised the removal of the filters, which was performed using the High Risk Radiological Controls program, used for task involving contamination levels in excess of 1,000,000-pCi/100 cm2.

Specialized Training

Hazardous Waste Generator/Transporter (Commonwealth of Pennsylvania)

Chronology

2002 – Present: URS, Buffalo, N.Y.

1999 – 2002 - Philotechnics Ltd., West Mifflin, PA

1993 – 1999 – US Navy

URS

Jeffrey S. Day

Senior Environmental Engineer/Physicist

Areas of Expertise

Radiological Measurements
Physics
Environmental Engineering
Information Systems

Years of Experience

With URS: 5 Years
With Other Firms: 3 Years

Education

MS/Instrumentation, Physics/1999/University of Utah
BS/Physics/1998/University of Utah

Registration/Certification

National Registry of Radiation Protection Technologist (RRPT)

Overview

Mr. Day has over 5 years of experience in Radioactive Waste Management, and Applied Radiation Protection for clients in government and private sectors and over 7 years experience in Programming, Data reduction, Instrumentation, and Physics. He has provided technical and computer support to both state and federal government agencies. Mr. Day has participated in demolition and decontamination activities for the control and containment of waste and has performed surface and subsurface characterization.

Project Specific Experience

Federal Projects

Instrumentation Specialist, SLDA Parks – Site Characterization, Parks, PA, ACOE, 2004: Performed 100% coverage survey on 45 acre site using Sodium Iodide detector and fidler. Radiation instrumentation was connected to Global Positioning System with all data recorded electronically.

Instrumentation Specialist, Bone Break Seminary & Adjacent School/Chemfirst, Dayton, OH, ACOE,2003: Investigated sites, Bone Break Seminary and Adjacent School, and Chemfirst both are in Ohio, for the Army Corps of Engineers using a global positioning system in conjunction with radiation survey equipment. Provided all necessary support to log, differentially correct, and export data.

Instrumentation Specialist, Bone Break Seminary & Adjacent School – Site Characterization, Dayton, OH, ACOE, 2003: Provided radiological support for Army Corps of Engineers for site characterization and collection of geoprobe samples at the Bone Break Seminary and Adjacent School. Maintained, packaged, shipped samples according to Army Corps of Engineers' strict protocol and procedures.

Hazardous Waste Management Projects

Technical Support, Radiological Investigation of the Agrico Site, Carteret, NJ (2005): Performed GPS-linked gamma radiation surveys of 35 acres of former industrial land to identify areas of contamination. Performed 20%-coverage surveys site-wide and 100%-coverage fill-in surveys to characterize contaminated areas. Set up GPS systems and performed data transfers.

Technical Support, Field Survey of NORM Radioactivity in Oilfield Pipes in Santa Maria, CA (2005): Performed gamma- and beta-gamma radiation surveys of used oilfield pipe to characterize radiation levels at 30-cm intervals in hundreds of pipes using a high-efficiency scintillometer coupled to a data logger.

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Health Physicist, Radiological Surface Surveys at Colorado School of Mines, Golden, CO, 2001: Performed radiological surface surveys and support during characterization phase of clean up at Colorado School of Mines. Using a global positioning system connected to radiation survey equipment the 6 acre site was characterized in preparation for decommissioning activities.

Health Physicist, BP, Health Physics and Radiological Support, Warrensville, OH, 2003: As decontamination and decommissioning contractor provided health physics and radiological support for BP Warrensville, OH. Provided air monitoring, dosimetry, and final status survey support for license termination of the facility. Ensured all activities were conducted in accordance with the methodology as presented in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (NUREG-1575).

Health Physicist, BP, QA for D&D Activities, Warrensville, OH, 2001-2003: Provided over-site and quality assurance (QA) for decontamination and decommissioning activities to allow unrestricted use of BP Warrensville facility, in Ohio, and license termination. Ensured all activities were conducted in accordance with the methodology as presented in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)(NUREG-1575). Performed formal review of multiple reports submitted to the state of Ohio.

Professional Societies/Affiliates

Health Physics Society, Member #30943

Languages

English

Specialized Training

2002/LANL Rad Worker II Training
2000/Respirator Certified
1999/40-hour Hazardous Waste Operations and Emergency Response Training (29 CFR 1910.120)
Engineer In Training – Passed FE Exam (EIT)
2004/National Registered Radiation Protection Technologist (RRPT)

Security Clearance

DOE Clearance C, Badge #171634

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URS

Amy Robin Jones

Environmental Engineer

Areas of Expertise

Data Analysis and Interpretation
Radiological Assessment and Verification

Years of Experience

With URS: 3 Years
With Other Firms: 9 Years

Education

MS/2000/Environmental Policy and Management/University of Denver
BS/1990/Science Biology/Mesa State College

Registration/Certification

Registered Radiation Protection Technologist

Overview

Ms. Amy Jones is a registered radiation protection technologist with over 12 years experience conducting radiological assessment and verification surveys; and analyzing radiological and site data. She has developed, reviewed and implemented radiological work plans and project specific procedures. She assisted in the development of procedures and data management practices to handle the large volume of electronic data generated by combining GPS data with radiological survey data.

Project Specific Experience

Technical Support, Radiological Investigation of the Agrico Site, Carteret, NJ (2005): Performed GPS-linked gamma radiation surveys of 35 acres of former industrial land to identify areas of contamination. Set up and verified instrument performance. Performed 20%-coverage walk-over surveys and 100%-coverage fill-in surveys. Developed isopleth maps of Ra-226 contamination.

Radiological Survey Team Member, Kraft Site (2003): Radiological assessment of building and parking lot at the Kraft site in West Chicago.

Radiological Survey Team Member, Norton Air Force Base (2001): Radiological verification and data analysis of final status surveys at Building 732, Norton Air Force Base. Specific duties included conducting surveys, oversight of remediation contractor, analysis of radiological data and review of data for final report.

Inclusion and Verification Radiological Team Leader, Monticello Vicinity Properties (1992-1999): Radiological Team Leader for Inclusion and independent verification of the 424 Monticello vicinity properties. Specific duties included conducting radiological surveys, evaluating survey data, and generating project reports. Preformed independent evaluation of radiological survey methods and procedures used to verify sites meet site criteria. Reviewed historical assessment, construction, remedial action, and verification data to ensure sites meet criteria to support deletion from the NPL.

Professional Societies/Affiliates

Health Physics Society

Specialized Training

1991/40-hour Hazardous Waste Operations and Emergency Response Training

1994/8 Hour Supervisor Hazardous Waste Operations and Emergency Response Training

URS

Mark F. Passuite

Senior Environmental Scientist

Areas of Expertise

Facilities Assessment
Data Validation
Radiation Health and Safety

Years of Experience

With URS: 13 Years
With Other Firms: 2 Years

Education

BA/1982/Biology/State University of New York at Buffalo

Registration/Certification

1983/Certified Nuclear Medicine Technologist/Nuclear Medical Institute
Yearly/Radiation Worker Requalification
2004/Safe Transportation of Hazardous Materials (HM126F)

Overview

Mr. Passuite has fifteen years of experience in site characterization, environmental monitoring, data assessment, quality assurance and radiation science. His current assignment is in radiochemical data validation and quality assurance supporting environmental monitoring, hazardous waste programs, and internal dosimetry.

Project Specific Experience

Senior Environmental Scientist, WVDP (2003-Present): Perform radioanalytical and chemical data validation for the Department of Energy's (DOE) West Valley Demonstration Project (WVDP). This includes various environmental and waste stream data.

Radiation Safety Officer, FUSRAP (2000-2001, 2003-Present): Health Physicist for a field investigations at the Middlesex Sampling Plant. This site is a part of the DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP).

Senior Environmental Scientist, USACE (2003-Present): Performed radioanalytical validation of data collected at various U.S. Army Corps of Engineers (USACE) sites. These included the Middlesex Sampling Plant and the Shallow Land Disposal Area Site at Parks Township.

Senior Environmental Scientist, DOE/USACE (2003-Present): Responsible for interacting with contract laboratories to resolve analytical discrepancies with the DOE and USACE.

Lead Scientist, WVDP (1990-2001): Lead scientist responsible for field team coordination and sample management during numerous investigations of environmental samples collected at the WVDP. The sampling events involved subsurface soils, surface soils, sediments and groundwater for radiological and chemical parameters. These programs were done in accordance with the U.S. Department of Energy (DOE) and WVDP Radiological and Industrial Work Permits.

Lead Scientist, WVDP (1990-2001): Lead scientist for conducting near-site surface soil surveys at the WVDP to evaluate airborne deposition of radionuclides. This included performing an overland gamma survey, analyzing data, and preparing a report of the results.

Co-Preparer, WVDP (1990-2001): Co-preparer of the WVDP site radiological surveys environmental information document in support of the environmental impact statement (EIS).

Chronology

2003 – Present: URS, West Valley, N.Y.
2001 – 2003: Niagara County, New York
1990 – 2001: URS/Dames & Moore, West Valley, N.Y.
1983 – 1990: Erie County Medical Center, New York

URS

Thomas J. Urban

Environmental Engineer

Areas of Expertise

Radioactive Materials Handling
Environmental Monitoring
Geographic Information Systems

Years of Experience

With URS: 3 Years
With Other Firms: 2 Years

Education

BS/1997/Environmental Studies/SUNY College of Env Science and Forestry
MS/2000/Environmental Studies/Univ of Rochester

Overview

Mr. Urban provides field and project support for environmental programs. He combines a familiarity with radiological and chemical monitoring instrumentation with capability for data management through Geographic Information Systems (GIS).

Project Specific Experience

SLDA – Vandergrift, PA: Responsibilities included site health physicist and safety officer. Conducted groundwater sampling and sampling soil for the presence of radioactive contamination. Provided health & safety monitoring for level B (supplied air) operations during trench soil borings. Collecting monthly air monitoring samples.

Temple University - Associate Health Physicist/Industrial Hygienist, Temple University, Philadelphia, PA: Responsibilities included performing general, biological, chemical, and radiation safety inspections of laboratories. Responding to chemical and radiological emergencies, collecting and segregating hazardous waste in compliance with RCRA regulations. Inspection of hazardous material storage areas and radioactive waste facilities. Collecting and analyzing drinking water samples. Identifying unknown substances. Performing calibrations on various chemical and radiation monitoring equipment and performing respirator fit-testing to ensure proper fit and usage.

NYPA-ROW Inventory, Throughout New York State: Digitally map vegetation along NYPA owned power lines to determine compatible and non-compatible species and relative densities of each.

NYPA – Invasive SPP – Throughout Niagara County, NY: Digitally map invasive species on NYPA owned land.NYPA – Niagara Power Plant Relicensing: Perform groundwater sampling via low flow purge methods throughout Niagara County.

Buffalo Sewer Authority (BSA), Buffalo, NY: Conduct routine monitoring and sampling of various industries throughout the Buffalo region to assure compliance with BSA wastewater discharge limitations.

APPENDIX 2

CWM HEALTH AND SAFETY PLAN

CWM CHEMICAL SERVICES, LLC.
MODEL CITY FACILITY

HEALTH AND SAFETY PLAN FOR THE GENERIC SMALL PROJECT SOIL EXCAVATION MONITORING AND MANAGEMENT PLAN

September 2005

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TABLES

ATTACHMENTS

ACRONYMS AND SYMBOLS

AHA	Activity Hazard Analysis
ALARA	As Low As Reasonable Achievable
ANSI	American National Standards Institute
APR	Air Purifying Respirator
CPR	Cardio-Pulmonary Resuscitation
CHP	Certified Health Physicist
CIH	Certified Industrial Hygienist
CSP	Certified Safety Professional
EMR	Experience Modification Rate
FSP	Field Sampling Plan
GPS	Global Positioning System
HASP	Health and Safety Plan
HEPA	High Efficiency Particulate Air
LWCR	Lost Workday Case Rate
MSDS	Material Safety Data Sheet
MSL	mean sea level
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PPE	Personnel Protective Equipment
Ra	Radium
Scan MDC	Scan Minimum Detectable Concentration
SMS	Safety Management Standards
SSHP	Site Safety and Health Plan
Th	Thorium
U	Uranium

1.0 PURPOSE AND OBJECTIVE

The purpose of this Health and Safety Plan (HASP) is to present guidelines to be utilized by CWM, Contractor, and Consultant personnel for site activities involving soil disturbance or small excavation activities, generally less than 196 cubic yards of soil movement, at the CWM Model City Facility. The intent of this plan is to focus on the radiological testing and investigative sampling of soils rather than actual excavation methods and construction activities.

The objective of this HASP is to provide a mechanism for establishing safe working conditions for personnel of contracted companies working for CWM at the Model City Facility. The safety organization, procedures, and protective equipment have been established based upon an analysis of potential physical, chemical, radiological, and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of accident, injury, and exposure.

Activities covered under this HASP include a pre/post gamma walkover surveys, monitoring during excavation and sampling activities. CWM, contractor, and consultant personnel on a project must meet the training requirements of 29 CFR 1910.120(e) and participate in a medical surveillance program per 29 CFR 1910.120(f).

The Project Manager and Site Health & Safety Specialist are responsible for implementation of this plan with assistance from the Site's Technical Manager. Safety procedures will be performed in accordance with applicable OSHA standards and established CWM Health & Safety procedures and requirements.

2.0 PROJECT LOCATION

The CWM Chemical Services, LLC (CWM) Model City facility site occupies approximately 710 acres comprising approximately 450 developed acres and approximately 260 acres of wooded space that surrounds the developed portion. The site is located in the Erie-Niagara Region of western New York State. The facility is situated on the boundary between the Towns of Lewiston and Porter in Niagara County. Lake Ontario is north of the site. The site's address is 1550 Balmer Road, Model City, New York 14107.

3.0 SITE DESCRIPTION AND HISTORY

The CWM Model City Facility is a hazardous waste management landfill. Its active units are permitted as part of the Model City Treatment, Storage, and Disposal Facility (TSDF). The site uses permitted state of the art technologies for the proper storage, treatment, and disposal for a variety of liquid, solid and semi-solid organic and inorganic hazardous waste and industrial non-hazardous waste. Site capabilities include Aqueous Wastewater Treatment System, waste stabilization, secure landfilling of approved waste solids and semi-solids including PCBs, solvent and fuel blending processes, and storage and disposal of wastes regulated under the Resource conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA).

The Model City facility began TSDF operations in 1971 as Chem-Trol Pollution Services, Inc. Due to corporate acquisitions and name changes, CWM Chemical services, LLC, a subsidiary of Waste Management, Inc. (WMI) is the present owner and operator of the facility. WMI is based in Houston, Texas.

Prior to operation as a commercial waste facility, the site was owned by the U.S. Government (early 1940s through the mid 1960s) and was part of the Lake Ontario Ordinance Works (LOOW). U.S. Government activities at and in the vicinity of the site included:

- Explosives and solid/liquid fuel propellant research, development and production.
- Research, development and waste storage related to the Manhattan Project.
- Detonation of outdated or off-specification explosives.

Some of these activities resulted in the contamination of certain areas of the site with organic and inorganic chemicals and low level radioactive wastes. During the 1960s, prior efforts to decontaminate the site were made by the U.S. Atomic Energy Commission (AEC) and the U.S. Department of Energy (DOE). In 1993, CWM concluded its own investigation into the nature and extent of contamination in soil and groundwater throughout the facility (including low level radioactive contamination) with the submission of a RCRA Facility Investigation (RFI) Summary Report to the New York State Department of Environmental Conservation (NYSDEC). The corrective Measures Study was completed in 1996, proposing measures to address the contaminated areas. In 2001, NYSDEC revised the CWM permit to include these corrective measures, which were recently completed by CWM.

Due to potential for historical residual radiological contamination from the previous U.S. Government activities, the New York State Department of Health (NYSDOH) issued an order (4/27/72) for approximately 614 acres of former LOOW property which imposed certain restrictions on the future use of said property, until such time that the radioactive emissions were reduced to acceptable levels. On June 21, 1974, NYSDOH issued a Supplemental Order which amended the 1972 Order related to 240 acres of the property then owned by Chem-Trol.

As a result of extensive corrective remedial actions taken at the CWM property since the 1972 Order, on May 7, 1992, the DOE certified that the majority of the CWM property was "in compliance with applicable (radiological) decontamination criteria and standards" and provided "assurance that future use of the property will result in no radiological exposure above DOE criteria and standards established to protect members of the general public or site occupants". Decontamination was certified for all properties owned by CWM, with the exception of three properties designated as E, E' and G. These properties were excluded from the decontamination certification because an area within each property could not be properly assessed due to inaccessibility and the DOE could not confirm that contamination did not exist in these areas. The three inaccessible areas were (1) soil beneath Lagoon 6 and the berm surrounding that lagoon on Property E, (2) soil beneath a roadway and PCB storage tanks on Property E', and (3) soil beneath the liquid treatment pond on the western edge of Property G.

Based on the May 7, 1992, USDOE letter, on December 23, 2003, CWM requested that the NYSDOH execute an order to rescind and vacate the 1972 and 1974 Orders for all CWM

property, except properties E, E' and G. After reviewing all historical documentation and data related to the areas covered by the Orders, both in the NYSDOH files and provided by CWM, the NYSDOH determined a potential for residual radiological contamination still exists and that monitoring is necessary prior to and during any excavation activities. In order to address this concern, the NYSDEC included permit condition J.3.a. in Module II (Corrective Action) of CWM's Sitewide Permit.

4.0 RESPONSIBLE PERSONNEL

Position	***Name***	***Site Phone#***
Project Manager	Varies	TBD
Site Technical Manager	Jill Banaszak	716-754-0246
Site H & S Specialist/EMT	Tim Fogarty	716-754-0331
District Manager	Richard Sturges	716-754-0230
Certified Health Physicist	Varies	TBD
Site Health Physicist	Varies	TBD
Site Maintenance Manager	Gary Wilczek	716-754-0240
Site Engineer	Stephen Rydzyk	716-754-0325
Environmental Monitor	Greg Zayatz	716-754-0233
Laboratory Manager/EMT	James Lis	716-754-0342

All personnel must adhere to these procedures during the performance of their work. Each person is responsible for completing tasks safely, and reporting any unsafe acts or conditions to his immediate supervisor. No person may work in a manner which conflicts with these procedures. After due warnings, the Project Manager will dismiss from the site any person who violates the safety procedures.

The Project Manager is ultimately responsible for verifying that all project activities are completed in accordance with the requirements of this HASP. The Project Manager is also responsible for providing project personnel with the appropriate information regarding the project activities to insure compliance with this HASP.

A Certified Health Physicist developed the technical health and safety aspects of this plan. The Site H & S Specialist and/or a Certified Health Physicist may be consulted at any point during a small project excavation. The project Manager or Site H & S Specialist is responsible for:

- Conducting on-site safety orientation for contractors/consultants,
- Conducting safety audits of work activities to insure compliance with this HASP,
- Maintaining required H & S documents and records,
- Stop project activities when threshold chemical or radiological levels are reached.

All personnel must read and acknowledge their understanding of this HASP, abide by the requirements of the HASP, and cooperate with site supervision in ensuring a safe work site. Site/contractor/consultant personnel will report any of the following to the Project Manager or Health & Safety Specialist:

- Accidents or injuries, no matter how minor,
- Unexpected or controlled releases of chemical substances,
- Symptoms of chemical or radiological exposures,
- Unsafe or malfunctioning equipment,
- Changes in site conditions that may affect the health and safety of project personnel,
- Damage to equipment and property, and;
- Situations or activities for which they are not properly trained.

5.0 EMERGENCY CONTACT INFORMATION

Hospital/Clinic:	Mount St Mary's Hospital 5300 Military Rd, Lewiston, NY 14092, US
Paramedic:	Site Extension 200 (Emergency Number)
Fire:	Site Extension 200 (Emergency Number)
Police Department:	Site Extension 200 (Emergency Number)
Site Guard House:	Site Extension 221
Site Health/Safety ERT Incident Commander	Tim Fogarty (716) 754-0331

6.0 EMERGENCY/CONTINGENCY PLAN

Refer to Attachment A for details regarding CWM's Emergency Evacuation and Response Procedures. Summarizing the procedure:

In the event the first siren alarm is activated,

- Remain at work location unless in the immediate danger area.
- Vehicular traffic will pull as far to the right side of the road as possible and stop unless directed otherwise.
- EMERGENCY VEHICLES HAVE THE RIGHT OF WAY AT ALL TIMES
- Follow instructions of facility personnel if roads passage is obstructed.
- FACILITY TELEPHONES AND PLANT RADIOS ARE RESTRICTED TO EMERGENCY COMMUNICATION ONLY.

If the second siren is activated,

- Report to Old Transportation Garage area or Alternate Locations which are Main Plant Entrance, SPEC (Admin) Building or SPEC Building East Parking Lot
- Check in with CWM personnel to insure accountability
- Wait for further instructions from CWM.

Following initiation of emergency notifications, all personnel will remain at either Primary or Secondary Reporting Location until directed to leave by the Emergency Coordinator. No one may leave without notification to the Emergency Coordinator.

7.0 CHEMICAL HAZARDS

A variety of chemical non-radiological wastes were disposed of at the CWM Facility. However, the site has stable cover over all areas that will be assessed during this survey, which will minimize any potential for worker exposure to these wastes. Volatile and/or soil-borne exposures are not anticipated based on the presence of the cover. As a result, the typical level of protection will be Level D.

If the excavation will take place in an area identified as having VOAs >1 ppm during the facility's RFI, chemical contamination will be expected to be present. In these areas, or if obvious chemical contamination is noted in any area (eg. odor, discoloration) CWM's Contamination Control Program (HS-1144) and Personal Protective Equipment (HS-1161) (refer to Attachment B) procedures will be followed.

8.0 RADIOLOGICAL ASSESSMENT, FIELD SAMPLING AND EXCAVATION

This section is specific to on-site, small excavation activities to conduct radiological measurements, assess and evaluate those measurements to permit CWM to effect repairs needed for the continued operation of the facility.

During excavation activities, personnel from the radiological support staff will evaluate field instrument readings to determine the extent of the hazard potential based on known or suspected radionuclides present at the facility. Based on knowledge of site contaminants being from the U-238 decay chain, survey instruments will be selected based on response to gamma emissions. The usual instrumentation will be a 2" x 2" sodium iodide (NaI) detector. A graded approach to the radiation protection of personnel performing excavations is presented in this section. Site activities may also involve collecting soil and sediment samples and the shipment of the samples to a pre-qualified laboratory for analysis.

Throughout the site, there are many facilities and equipment which provide services such as clean water, leachate collection systems, etc. that require CWM to remove surface soil to have access to the areas that need to be repaired. In addition, site modifications and maintenance such as installation and repair to traffic signs, building footings, etc, may be necessary for the continued facility operation. Excavation of areas is limited to the parameters in the "CWM Generic Small Project Soil Excavation Monitoring and Management Plan" which limits the area and volume of the excavation. Due to the limitations of radiation survey equipment, no more than 15 cm of depth may be assessed in any one set of measurements.

Radiological support includes pre-excavation screening of the intended area, and ongoing surveying as the excavation proceeds. Qualified personnel will record and evaluate screening results.

8.1 RADIOLOGICAL ASSESSMENT

The radionuclides that are suspected to be of a concern at the Model City Facility include the following:

- Ra-226 (includes progeny through stable Pb-206)
- Th-230 (does not include any progeny)
- U-238 (includes progeny Th-234, Pa-234m and Pa-234)

In general the radionuclides listed above are readily detectable except for the Th-230. Because of this technological shortfall, it must be assumed that the Th-230 will not exist in the absence of other more detectable radionuclides. This is a reasonable assumption since any thorium-only waste streams would include Th-232 and all associated decay products, which would emit detectable levels of gamma radiation. Because the activities addressed in this section are related to site workers, the exposure routes are limited to external exposure to radiation and internal exposure to radioactive materials by inhalation, ingestion or wounds. Site workers covered by this section are considered to be Members of the Public from an exposure control perspective. The limit for members of the public from a licensed activity is 100 mrem per year. Though these workers have been trained in radiation protection and might otherwise be considered to be radiation workers who could receive up to 5,000 mrem per year, this section covers site activities at a much lower level of risk.

If this limit is divided equally between internal and external dose, each is equal to 50 mrem. Assuming that excavation work is not the primary function of the personnel, it has been estimated that such activities would take no more than 200 hours per year, on average. Based on this amount of time, the average exposure should not exceed 50 mrem/200 hours or 0.25 mrem/hour. The field instruments consist of sodium iodide detectors and pancake Geiger Mueller (PGM) detectors. The response of these instruments, based on their manufacturer's literature, are 900 counts per minute (cpm) per urem h^{-1} and 3300 cpm/mrem h^{-1}, respectively. Therefore, the 0.25 mrem/h (which is equal to 250 urem/h) corresponds to a value of 225,000 cpm for the NaI. The corresponding equivalent for the PGM is significantly lower at approximately 800 cpm. With either of these instruments, field assessment of the exposure potential is possible.

The 50 mrem internal dose limit is addressed by a review of the published information on the regulatory Annual Limit of Intake (ALI), as set by the Nuclear Regulatory Commission in 10 CFR 20, Appendix B, and repeated in 6 NYCRR 380, Table 1. For the purpose of this Addendum, the ALI is the amount of radioactivity for a particular isotope that corresponds to a dose to a person of 5 rem per year (5,000 mrem). Therefore, 1% of the ALI is equal to 50 mrem. The ALIs for these radionuclides, based on assumed conditions of equilibrium and implied radionuclides present are:

TABLE 8-1

	Regulatory Levels (ALI)		Allowable Intake (1% of ALI)	
Parent Radionuclide	*Ingestion (μCi)*	*Inhalation (μCi)*	*Ingestion (μCi)*	*Inhalation (μCi)*
Ra-226	0.4	0.05	0.004	0.0005
Th-230	4	0.006	0.04	0.00006
U-238	9.6	0.04	0.096	0.0004

It is important to observe that the above values reflect the assumption that Ra-226 is in equilibrium with its progeny through to stable lead and that U-238 is in equilibrium with Th-234 and Pa-234m/Pa-234. Very little additional U-234 would be added from the U-238. Th-230 decays to Ra-226 but very little additional Ra-226 would be present from decay of Th-230. The ALIs were calculated as mixtures as discussed in 10 CFR 20 Appendix B.

The annual level of effort of 200 hours of work at 8 hours per day corresponds to 25 days. The ingestion of soil incident to excavation work is assumed at a rate of 400 mg per day. The total amount of soil ingested in 25 days would be 10 grams. Using 1% of the lowest ingestion ALI (Ra-226), this corresponds to 0.004 uCi/10 grams or 0.0004 uCi/g. This is also equal to 400 pCi/g. The dose rate from a small patch of (~1 ft^2) soil 15 cm deep at only 40 pCi/g of Ra-226 is about 13 urem/h at 6"; a 1 m^2 area at this concentration would result in a dose rate of ~44 urem/h. These are a very detectable condition that is readily identifiable by the radiological control staff. U-238 and its progeny (discussed above) will result in a 10% higher dose rate than this. Elevated readings at these concentrations would be investigated and would be within the level of risk assumed for this phase of work.

The lowest inhalation ALI is for Th-230, with an allowable inhalation uptake of about 60 pCi for a dose of 50 mrem. Dust is generally controlled when it is visible, which is at approximately 5 mg/m^3. An inhalation uptake of 60 pCi over an exposure period of 200 hours would correspond to a soil concentration of about 50 pCi/g. It is unlikely that Th-230 would exist by itself, but would instead be associated with Uranium-238 decay chain members, including Ra-226, or would be present with processed thorium, which would consist predominantly of Th-232. It is therefore likely that gamma-emitters would be present in sufficient concentrations to indicate Th-230.

Observing that the Ra-226 ALI is a factor of 8 greater than that for Th-230 indicates that the corresponding soil concentration would also be a factor of 100 times greater, or 400 pCi/g to reach the inhalation dose limit.

A worker exposure of 50 mrem over 200 hours is an average of 250 μrem/hr, which would correspond to a concentration of about 350 pCi/g for the Ra-226. This would be below the action level based on allowable soil ingestion (1,500 pCi/g) and that for inhalation (5,000 pCi/g). The external dose criterion is thus the controlling level for allowable worker dose. As discussed above, this corresponds to a NaI instrument response of about 225,000 cpm, as compared to a nominal background of 10,000 cpm.

8.2 ACTION LEVELS

The limiting concentrations identified above are based on an assumed exposure period of less than 200 hour per year for the excavation workers that could result in a worker dose of 50 mrem. Survey activities at FUSRAP sites in Western New York have identified 16,000 cpm for a 2x2 NaI detector as roughly corresponding to soil investigation levels. Therefore, administrative levels are established to protect workers and minimize the potential for exceeding the non-radiation worker dose limit of 100 mrem/yr.

The first administrative limit is based on reducing exposure to soil above the FUSRAP investigation limits. If soil screening measurements exceed 16,000 cpm, then workers should don full Level D PPE, and dust suppression should be used to limit levels to less than 5 mg/m3. Alternatively, the crew can implement Level C PPE in the excavation area. This level (16,000 cpm) corresponds to the FUSRAP survey investigation level and is also about 10% of the external dose rate limit.

A second administrative limit is set at 110,000 cpm, about 50% of the external dose rate limit plus background. If readings exceed 110,000 cpm, then excavation work will cease, and the area will be secured in a safe and orderly manner. A project-specific plan will be developed to respond to this contamination. While the level of contamination suggested by such instrument readings does not pose a significant risk to workers, the concentrations of radionuclides associated with those radiation levels are not expected for the Model City site, and should be dealt with in an appropriate and planned manner.

8.3 SUMMARY

Qualified personnel will perform radiation surveys prior to and during planned soil excavations at the CWM facility, in accordance with the *CWM Generic Small Project Soil Excavation Monitoring and Management Plan* (September, 2005). These surveys will be done using appropriately calibrated 2" x 2" sodium iodide detectors. Based on a nominal background rate of 10,000 cpm, the following action levels will be implemented:.

TABLE 8-2

SURVEY LEVEL	ACTION
≤16,000 cpm	Level D
>16,000 cpm, but <110,000 cpm	Level D and dust suppression to 5 mg/m3. Level C respiratory protection can be used in the excavation area in lieu of dust suppression
≥110,000 cpm	Cease operations and secure site. Prepare project-specific work plan.

9.0 PHYSICAL HAZARDS

Physical hazards will be present during field activities. Common physical hazards include sampling, mechanical hazards, slip-trip-fall hazards associated with the field environment;

hazards associated with weather conditions and musculoskeletal injury from lifting tasks. The typical physical hazards anticipated being present on the site and the methods for preventing injury to these hazards is described below.

Sampling – radiation exposure will be minimized by ensuring that personnel are experienced in the task, thus reducing their time in the area. Personnel protective equipment will be used to prevent skin contamination.

Noise – not anticipated to be a hazard on this project.

Slip-Trip-Fall Hazards - Slip-trip-fall hazards are common at field sites due to slippery or unstable surfaces, and due to the sloped surfaces on the site. While it is difficult to eliminate all slip-trip-fall hazards, implementing safe work practices, and using proper footwear will minimize risk of injury.

Lifting Hazards - Field operations often require the performance of laborious tasks. All employees must implement proper lifting procedures, such as keeping the load close to the body, and using leg muscles instead of back muscles to perform lifting tasks. Additionally, employees will not attempt to lift large, heavy, or awkwardly shaped objects without assistance.

Weather - Weather conditions are an important consideration in planning and conducting site operations. Extremely hot or cold weather can cause physical discomfort, loss of efficiency and personal injury.

Lightning may accompany storms, creating an electrocution hazard during outdoor operations. To eliminate this hazard, weather conditions will be monitored and work suspended during electrical storms.

Cold stress is not anticipated to be a concern during these operations, which are expected to take place during the summer and fall months. Heat stress is anticipated to be a concern during these operations.

Underground Utilities – No ground-penetrating activities for the gamma walkover survey are anticipated which would necessitate the location of buried utilities. In the event that utilities may be present during sampling or excavation activities, the established CWM policies and procedures for an Excavation Permit will be followed.

Overhead Hazards - Overhead power lines do not pose a danger during the task of the gamma walkover survey and associated sampling activities. CWM procedures for working near or beneath overhead lines will be followed..

Work Area Protection - Various tasks related to site survey may be undertaken in a roadway and motor vehicles may be a hazard. Personnel are to wear high visible vests and utilize orange construction cones and barriers when working in traffic areas.

10.0 BIOLOGICAL HAZARDS

Biological hazards will be present during field activities. In particular, these will be more abundant when the ground cover is thicker but in general, biological hazards may even be present when there is little ground cover. This includes but may not be limited to ticks and spiders, poisonous plants and snakes.

Be careful to wear long sleeved shirts and pants. Pant cuffs may be tucked into a boot if needed. Apply insect repellant and use caution when removing any ticks that are imbedded in skin.

Venomous snakes are best left alone. None of our species are particularly aggressive animals, but they will attempt to bite when handled. Insects (mosquitos, wasps and bees) should be avoided if noticed in areas that are to be scanned.

Ticks do not jump, crawl or fall on a person but are picked up when clothing or hair brushes a leaf or other object the tick is on. Poisonous plants should be recognized and avoided.

11.0 MONITORING EQUIPMENT

The following monitoring equipment will be used for health and safety purposes during field activities:

Meters

- Ludlum Survey Meter Model 3 (or equivalent)
- Ludlum Model 2221 (or equivalent)

Detectors

- Ludlum GM Pancake Probe Model 44-9 (or equivalent)
- Ludlum Model 44-10, 2"x2" NaI(Tl), (or equivalent)

The monitoring equipment will be calibrated in accordance with the manufacturer's instructions. In addition, the results of daily instrument calibration checks or calibrations shall be logged in the field logbook.

12.0 ACTION LEVELS

Field investigations will be initiated in Level D PPE, which includes the use of work boots, and safety glasses, hard hats, long sleeve shirts and long pants during sampling activities. As the work progresses, the Project Manager or Site H & S Specialist may elect to increase the required level of PPE to Level D with dust suppression or the addition of Level C respiratory protection, or stop work if on-site monitoring indicates that any of the action levels presented in Table 8-1 are exceeded. Respiratory protection will be used when airborne contaminants, either radioactive material or chemicals, exist at levels that require personnel protection that cannot otherwise be provided. Monitoring results that exceed the action levels will be recorded in the field log book by the Site H & S Specialist or Certified Health Physicist representative. Cotton

coveralls or tyvec suits may be used for field sampling. Work gloves are not required unless physical hazards are expected (e.g., pinch hazard).

13.0 SITE CONTROL

Active areas of the site are secured by fencing and gated access. All visitors and workers will sign in and sign out at the Guard Station which is maintained by CWM Access to the area of small project excavation will be limited to the project team. If a reading greater than 16,000 cpm is obtained, access will be limited to necessary personnel only. If a reading greater than 110,000 cpm is obtained, a barrier or other warning device will be established to restrict access to the project area pending further review with the Health Physicist and the agencies.

14.0 DECONTAMINATION PROCEDURES

It is not anticipated that workers will become contaminated to a level that warrants their decontamination. If workers have come into contact with soil above the action levels, they will frisk or be frisked with the GM probe using a criterion of 100 counts above background (ccpm). If contamination is on shoes an attempt to reduce radioactivity levels may consist of the use of a boot wash. If the levels persist above the 100 ccpm, the PPE will be placed into a steel drum or other container and staged in a location designated by CWM. After sampling and prior to eating, drinking, smoking, chewing, or the use of cosmetics, workers will wash their hands and face thoroughly.

If the monitoring instrument readings indicate a radiological hazard, the following steps will be followed whenever personnel leave the work area. The following may be altered by the Certified Health Physicist as conditions necessitate:

1. Don two pairs of removable gloves if not already in place.
2. Place bag over boot if contaminated.
3. Untie boot and step out of boot, while keeping it in its bag.
4. Remove outer gloves; discard in provided container
5. Remove Tyvek® or cotton coverall; discard in provided container.
6. Remove inner gloves.
7. Re-scan for contamination. Health physicist/technician to assist.
8. Wash hands and face with wet wipes or damp towels. Discard of wipes in provided container.

Deviations from this process will be noted in the field logbook. All spent decontamination fluids (rinse waters, etc.) shall be handled as directed by the Field Manager and in accordance with relevant regulations.

15.0 PERSONNEL PROTECTIVE EQUIPMENT

Typical Personnel Protective Equipment to be utilized by field personnel during the survey and sampling activities include the following:

- ANSI-Approved Safety glasses with side shields (or goggles) for sampling

- ANSI-Approved Hard hat when overhead hazards are present
- Ordinary coveralls (e.g., cotton) (Tyvek® may be substituted)
- Ordinary work gloves (e.g., leather) when pinch hazards are likely
- Hiking boot with ankle support or ANSI-Approved Steel-toe, steel-shank work shoes or boots with ankle support. Soles should be appropriate for field conditions with sloped hills.

In the event that site conditions change, or specified radiological or chemical contamination action levels are approached, the Site Safety Specialist or Health Physicist may increase the PPE level to C or higher if necessary.

16.0 HAZARD COMMUNICATION

Chemicals will not be required for site work; therefore, Material Safety Data Sheets (MSDSs) will not have to be provided. Requirements for an initial safety meeting and daily safety meetings ("tailgate" meetings) are presented in the Accident Prevention Plan (Attachment C) and Activity Hazard Analysis (Attachment D).

17.0 SUBSTANCE ABUSE POLICY

Contractor/Vendor shall disseminate to its employees, agents and subcontractors the following text of the CWM Chemical Services, LLC. Substance Abuse Policy as follows and require such persons and their employees to abide by the terms of such policy:

CWM Chemical Services, LLC. is vitally concerned with the safety and well-being of the employees of its contractors. Therefore, it is important for you to be aware of CWM's policy regarding alcoholic beverages and controlled substances:

The use, possession, sale, transfer, or purchase of alcoholic beverages and controlled substances on the work site is prohibited.

"The work site" means any property or facility under the control of CWM wherever located, including land, buildings, structures, installations, cars and trucks.

"Controlled substances" means any drug or other ingestible, inhalable, or injectable substance for the use, sale, or possession of which is prohibited or restricted by law except drugs prescribed for the user by a licensed physician.

"Use" means ingesting, inhaling, or injecting alcoholic beverages or controlled substances either during the time an individual is present on the work site or within such time prior to entering upon or returning to that his or her coordination, visual perception, or reaction time is, or is likely to be, affected by such beverage or substance.

Entry into the work site constitutes consent to inspection of the individual's person and his or her personal effects upon entering or while remaining present on the work site. Any Individual who

is found in violation of this Substance Abuse Policy or who refuses to permit inspection is subject to be removed and barred from the work site at the discretion of CWM.

ATTACHMENT A

CWM MAJOR EMERGENCY EVACUATION AND RESPONSE PROCEDURE

Major Emergency Evacuation and Response Procedure

The primary purpose of this procedure is the accurate accounting of every person within the CWM Chemical Services, LLC. Model City facility.

In the event of an emergency, the Emergency Sirens will be sounded for two (2) minutes. When the sirens are activated, the following procedures shall be in effect:

1. Emergency Response Team Personnel will report to the Response Unit Garage (Team members should, if possible, notify their Supervisor, that they are reporting to the Response Unit Garage).

2. Department Supervision will be on an alert status. Supervisors will determine the location of their personnel and be prepared to account for them.

3. All other Facility Personnel will remain at their work location unless they are within the immediate danger area.

4. All vehicular traffic will pull as far to the right side of the road as possible and stop until directed otherwise. This includes facility equipment, Contractors, Drivers and Visitors.

5. EMERGENCY VEHICLES HAVE THE RIGHT-OF-WAY AT ALL TIMES.

6. Facility personnel will keep roads clear of any equipment and have the authority to direct non-plant personnel to stop and/or clear the road.

7. **DURING AN EMERGENCY, FACILITY TELEPHONES AND PLANT RADIOS ARE RESTRICTED TO EMERGENCY COMMUNICATIONS ONLY.**

IN THE EVENT THE POSSIBILITY OF EVACUATION BECOMES NECESSARY, THE EMERGENCY SIRENS/ALARMS WILL BE SOUNDED FOR A SECOND TWO (2) MINUTE INTERVAL. WHEN THE SIRENS ARE ACTIVATED FOR THE SECOND TIME, THE FOLLOWING PROCEDURE WILL BE IN EFFECT:

1. Everyone not engaged in the emergency response MUST report to:

Primary Facility Site	Scalehouse / Roll off Garage
Alternate Locations	Plant Main Entrance Gate (1550 Balmer Road)
	SPEC (Admin) Building
	SPEC Building East Parking Lot

2. Guard will fax to scale house all on-site contractors and drivers list. Guard will also transmit current list of all CWM Personnel to Scalehouse. Scales individual will obtain lists and assist CWM designee who is responsible for the site head count.

3. Operations Manager and Department Supervisors not involved in response – are responsible for recording all persons reporting to the site primary or secondary reporting location (Current employee and contractor list will be available at the Scalehouse/Roll-off Garage).

4. CWM employees will line up inside the Roll-off Garage. Contractors will gather at the west side of the Roll-off garage.

5. Department Supervisors are responsible for an accurate account of individuals from their respective Department.

6. Supervisors are responsible for checking and clearing their work areas of Contractors, Visitors, Truck Drivers, etc.
7. The Emergency Coordinator or designee is responsible for coordinating Search and Rescue Operations for unaccounted individuals.

8. No CWM or private vehicle will obstruct emergency response equipment or emergency operations.

9. All personnel will remain at the Primary or Secondary Reporting Location until directed to leave by the Emergency Coordinator.

10. No one will exit the facility without giving notice to the Emergency Coordinator or designee.

Department supervision shall have a prearranged plan established for SECURING vital records and/or process shut-down procedures.

CONTRACTORS

In addition to following the Evacuation Plan, Contractors may be requested by the Emergency Coordinator to assist with heavy equipment.

LANDFILL SUPERVISION

When the second siren alarm is sounded, Supervision will shut down all landfill operations immediately. No one will remain in the landfill, i.e., truck drivers who may wish to continue unloading. All individuals, including truck drivers, will be directed or provided with transportation to the Primary or Secondary Site Reporting Location.

TRUCK DRIVERS/BROKERS

Truck Drivers/Brokers who are in the process of unloading trucks when the second siren alarm is sounded will immediately shut off their truck engine, secure records and report to the Primary or Secondary Site reporting Location for further directions.

GUARD HOUSE

The Security Guard will **NOT ALLOW ANYONE** to enter the facility during a major emergency except Emergency Equipment/Personnel, and CWM Supervision. NYSDEC and USEPA Representatives will only be admitted upon approval of the Emergency Coordinator or Engineering and Environmental Manager or Health & Safety Manager or General Manager.

ADMINISTRATION BUILDING AND ENVIRONMENTAL MONITORING PERSONNEL

Personnel in the SPEC Center (Administration Building) and environmental monitoring personnel will evacuate to the Spec Center East Parking lot. The Environmental Compliance Specialist or Designee is responsible for recording all personnel who report to the SPEC Center Parking Lot. This individual will notify the Emergency Coordinator by radio the status of the personnel recording list. The list of SPEC Center current employees utilized for head count purposes will be posted in the SPEC Center Mail Room.

COMMUNICATIONS

The SPEC Center telephone person will maintain open outside telephone lines for emergency use. Two way radio communications will be established as quickly as possible from the response incident site to the Emergency Coordinator & Operation Center.

TESTING

Testing of the siren(s) for operation will normally be conducted at 12:00 noon every Wednesday of each month. No response by any personnel is needed.

ATTACHMENT B

CONTAMINATION CONTROL PROGRAM (HS-1144) & PERSONAL PROTECTIVE EQUIPMENT (HS-1161) AND ACTIVITY HAZARD ANALYSIS

MODEL CITY FACILITY	Title: Contamination Control Program	Date: Jan 1997 Page: 1 of 5
		Revision Date: Nov 1996
	MDC HS-1144	Supersedes: Dec 1994
Health and Safety Program	Approval: Michael P. McGinnis	Title: President

1.0 PURPOSE:

1.1 This program describes the contamination control procedures within the CWM Model City Facility. The intent of the program is to minimize and control the spread of contamination within the facility, and to prevent accidental chemical contact to employees and visitors of the facility.

2.0 SCOPE

2.1 This procedure applies to CWM Chemical Services, Inc. employees that enter work areas where the potential for contact with hazardous substances exist.

3.0 RESPONSIBILITY

3.1 CWM Health & Safety Manager is responsible for overall administration of the Contamination Control Program.

3.2 CWM Health & Safety Manager is responsible to insure employees are trained and understand all conditions of this program.

3.3 CWM Operations Manager is responsible for insuring that employees understand the necessity of complying with this program.

3.4 All employees have the responsibility to adhere to all conditions stated in this program

4.0 DOCUMENTATION/FORMS

4.1 Attachment #1, List of Standard Division Practices affecting contamination control.

4.2 Attachment #2, Personal Protective Equipment Debris and Contaminated Equipment Disposal.

5.0 DEFINITIONS OF CONTAMINATION CONTROL AREAS

5.1	Clean Area	Chemical contamination is not expected to be present.
5.2	Controlled area	Chemical contamination may be present due to residual contamination from past spills, leaks, or from contact with contaminated equipment or shoes. Processes within the controlled areas are enclosed or controlled to minimize employee exposure and spillage.
5.3	Exclusion area	Chemical contamination is likely to be present due to the nature of the operation(s) within the area.
5.4	Transition area	Area where personnel leaving an exclusion area remove potentially contaminated clothing or decontaminate their protective equipment.

6.0. CONTAMINATION CONTROL AREAS

6.1	Clean areas	Administrative offices, lunchroom, heavy equipment and facility maintenance shops, plant entrance thoroughfares.
6.2	Controlled areas	Drum Handling Building; Aqueous Treatment Building; Truck Wash; Fuels Area; PCB Warehouse, Oil/Water Separator - SLF 1-6 and SLF 12; Tank Containment - Tanks 101-103.
6.3	Exclusion areas	Stabilization Facility; T/O Building; SLF's 1-6, 7, 10, 11, 12; RMU-1; Salts Area - North, East, West; Aqueous Treatment; Lagoons - 1, 2, 5, 6, 7 ; excavation in Process Area + other areas identified as > 1 ppm VOAs in RFI
6.4	Transition areas	Access areas to exclusion areas; Stabilization Facility; T/O Building; SLF's 1-6, 7, 10, 11, 12; Salts Areas - North, East, West; Aqueous Treatment; Lagoons - 1, 2, 5, 6, 7

7.0 PROCEDURES GOVERNING CONTAMINATION CONTROL AREAS

7.1 Clean areas

7.1.1 All forms of protective equipment with the exception of hard hats, safety glasses, and safety shoes are prohibited from clean areas.

7.1.2 Process or waste samples are prohibited from being stored or handled in clean areas.

7.2 Controlled areas

7.2.1 Controlled areas are delineated by signs at building or operations entrance locations which:

1) specify personal protective equipment requirements.
2) specify that entrance is limited to authorized personnel only.

7.2.2 Safety glasses, hard hat, and safety shoes shall be worn by all individuals entering the controlled areas. Additional protective equipment may be required in controlled areas as defined in the CWM Chemical Services Health & Safety Program: MDC HS-1161, "Personal Protective Equipment".

7.2.3 Disposable protective equipment used for specific operations within the controlled areas shall be disposed of in designated receptacles before entering clean areas of the facility. Receptacles are located at entrance/exit locations of the Stabilization Facility; Drum Handling Building; Aqueous Treatment Building; Truck Wash; Fuels area; PCB Warehouse and RMU-1.

7.2.4 Reusable protective equipment shall be decontaminated after use and stored in designated locations. Reusable Personal Protective Equipment items that may require decontamination include hard hats, safety glasses, respirators, gloves and boots.

A cloth or brush shall be used to remove surface contamination. Cleaning is considered complete when visible signs of contamination are removed.

7.0 PROCEDURES GOVERNING CONTAMINATION CONTROL AREAS (cont):

Respirator cleaning shall be accomplished as specified in the CWM Chemical Services Health & Safety Program, #38 Respiratory Protection.

PCB contaminated articles shall be cleaned with an organic solvent such as kerosene.

Decontamination of highly contaminated articles or articles contaminated with extremely toxic materials shall be performed as prescribed by the CWM Health and Safety Manager or Laboratory Manager on a case-by-case basis.

7.2.5 All equipment in the controlled areas shall be decontaminated prior to removal for maintenance activities or before maintenance activities are performed on the equipment in the controlled areas. This equipment includes but is not limited to pipes, pumps, tanks, filters and hoses.

7.3 Materials from the controlled areas of the plant shall be discarded by placing the items in designated site containers destined for proper disposal.

7.4 Employees and visitors leaving the controlled areas should wash their hands and face before engaging in other activities.

7.5 Employees and visitors leaving the controlled areas shall remove loosely bound contaminated material from their shoes or boots before entering the clean area. Shoe/boot cleaning stations are located in the Aqueous Treatment Building; Stabilization Facility and RMU-1 entrance/exit area.

8.0 EXCLUSION AREAS

8.1 Safety glasses, eye protection and safety shoes are the minimum protective equipment required in the exclusion areas. Additional protective equipment may be required in the exclusion areas as defined in the CWM Chemical Services Health & Safety Program, MDC HS-1161 "Personal Protective Equipment".

8.2 Disposable PPE worn in the exclusion areas shall be removed and placed in the proper receptacle in the transition area before entering the clean areas of the plant. Refer to Attachment 2 Flow Sheet.

8.3 Reusable protective equipment shall be decontaminated after use and stored in designated locations.

Reusable Personal Protective Equipment items that may require decontamination include hard hats, safety glass, respirators, gloves and boots.

A cloth or brush will be used to remove surface contamination. Cleaning is considered complete when visible signs of contamination are removed.

Respirator cleaning will be accomplished as specified in the CWM Chemical Services Health & Safety Program, MDC HS-1162 "Respiratory Protection".

PCB contaminated articles shall be cleaned with an organic solvent such as kerosene.

9.0 WORK PRACTICES TO MINIMIZE OR ELIMINATE POTENTIAL EXPOSURE TO HAZARDOUS MATERIALS

9.1 Division Standard Operating Procedure include work practices to minimize or eliminate potential exposure to hazardous materials. Refer to Attachment #1.

10.0 PROCEDURES TO ASSURE VISITORS AND CONTRACTORS ARE ADEQUATELY PROTECTED FROM POTENTIAL CONTAMINATION

10.1 CWM Health and Safety Procedure MDC HS-1105, "Visitor Safety Program"; and MDC HS-1105.1, "Contractor Safety Procedure", address procedures to assure visitors and contractors are adequately protected from potential contamination.

11.0 PROCEDURE TO HANDLE CONTAMINATED PERSONNEL OR EQUIPMENT DURING EMERGENCIES

11.1 Decontamination is required for all personnel that enter an emergency contaminated zone. All personnel exiting the contaminated zone must decontaminate at the perimeter of that zone, in order to minimize the exposure of uncontaminated employees.

11.2 Decontamination shall be accomplished by removing or decontaminating all personal protective equipment that could have come in contact with a potential contaminated material. The PPE must be discarded or decontaminated using the decontamination protocol specified in this procedure and the Division's Contingency Plan.

12.0 CLEANING AND DECONTAMINATION OF VEHICLES PRIOR TO PERFORMANCE OF MAINTENANCE, ANNUAL TESTING, OR REMOVAL FROM ACTIVE AREAS

12.1 Standard Division Practice #2021, addresses cleaning and decontamination of vehicles exiting the landfill.

13.0 MISCELLANEOUS PROCEDURES

13.1 Spills in the facility will be cleaned up as quickly as possible according to the procedures described in the CWM Chemical Services Facility's Contingency Plan; Spill Prevention, Control and Counter Measures Plan and PCB Spill Cleanup Policy.

13.2 Leaks and spills shall be reported to the supervisor on duty as soon as possible after they are discovered.

13.3 All company supplied clothing worn in the controlled areas of the facility shall be removed before leaving the premises and placed in the "dirty" clothes receptacle located in the Employee Locker Room.

13.4 For personnel assigned a locker in the Employee Locker Room, safety shoes shall be removed before leaving the premises and stored in the employees "dirty" locker section of the Employee Locker Room.

13.5 Reusable protective equipment shall be frequently inspected. It shall be discarded if the contamination is likely to cause employee skin contact with the contaminants or if the integrity of the protective equipment appears to be compromised.

14.0 LOCKER ROOM FACILITIES

14.1 The locker room is divided into two (2) basic sections, a clean and dirty area. Lockers are provided in each section for individual storage of street clothes (clean section) or work clothes (dirty section). Employees will park their personal vehicle in the north parking lot and enter the locker room through the north entrance door.

14.2 Individuals will proceed to the locker room clean section where they will store their street clothes in assigned lockers, then progress to the locker room dirty section where again each employee is assigned a locker for the change into work uniforms. Individuals will exit through the south exit door and be transported by company vehicle to the site operations. When returning to the locker room from the site, entrance will be through the south entrance door into the dirty locker room section.

14.3 Showers are located in the dirty section. Only toiletry items are allowed in the shower room drying area. Soiled work uniforms should be placed in hampers located in soiled laundry room area. Clean uniforms are available from linen lockers located in the main laundry room.

14.4 Contaminated Personal Protective Equipment, i.e, coveralls, boots, etc. MUST be disposed of in the appropriate work area. NO CONTAMINATED PPE WILL BE TAKEN INTO THE LOCKER ROOM. A boot wash is located inside the south entrance door to the dirty section. Soiled boots must be cleaned before transporting them in the locker room area. Eating is prohibited in ALL areas of the locker room and smoking is permitted only in the clean section of the locker room.

15.0 POTENTIAL FOR SPILLS

15.1 There are several operations within the facility which have the potential for spills if not performed properly. The CWM Chemical Services Standard Division Practices for these operations follows; refer to Attachment #1.

16.0 FUGITIVE DUST CONTROL PLAN

16.1 Fugitive dust control shall be accomplished as specified in the Site Wide NYSDEC Permit #373, Section "J".

STANDARD DIVISION PROCEDURES	NUMBER
Sampling of Solids and Semi-solids in Drums and Pails	2001
Sampling of Liquids and Sludges in Drums and Pails	2002
Sampling Tankers	2003
Sampling of Bulk Solids and Semi-Solids	2004
Sampling Liquid Fuel Tanks	2005
Sampling Aqueous Tanks	2006
Bulk Liquid Tank Truck Unloading	2019
Cleaning and Decontamination of Vehicles Exiting Landfill	2021
Taking Fuel Tank Level Measurements	2034
Transformer Handling	2044
Transformer Draining and Flushing	2045
Disposal and Stabilization of DuPont Sodium Waste	2046
Measuring Landfill Leachate Levels	2055
Monitoring Caustic Levels and Concentrations in the Aqueous Treatment Scrubber	2061
Removal of Accumulated Rainwater From Containment Areas	2063
Leachate Collection Pit Transfer	2064
Operation of the SLF-12 Oil/Water Separator System	2067
Operation of the Mechanized Stabilization Process Train	2068
Stabilization Using Backhoe and Roll-off Box	2069
Cleaning of the Mechanized Stabilization Process Train	2078
Stabilization of PCB Wastes	2079
PLC Decant of Fuels Materials	2080
Stabilization of Wastes in Dump Trucks and Trailers	2081
PLC Decant of Aqueous Materials	2082
Landfill Disposal of Asbestos Material	2083
Stabilization of Asbestos Wastes	2085
Sampling of Stabilized Residuals	2092
Tank to Tank Product Transfer	2110
Bulk Tank Truck Loading	2111

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11/19/96

MODEL CITY's SOP's

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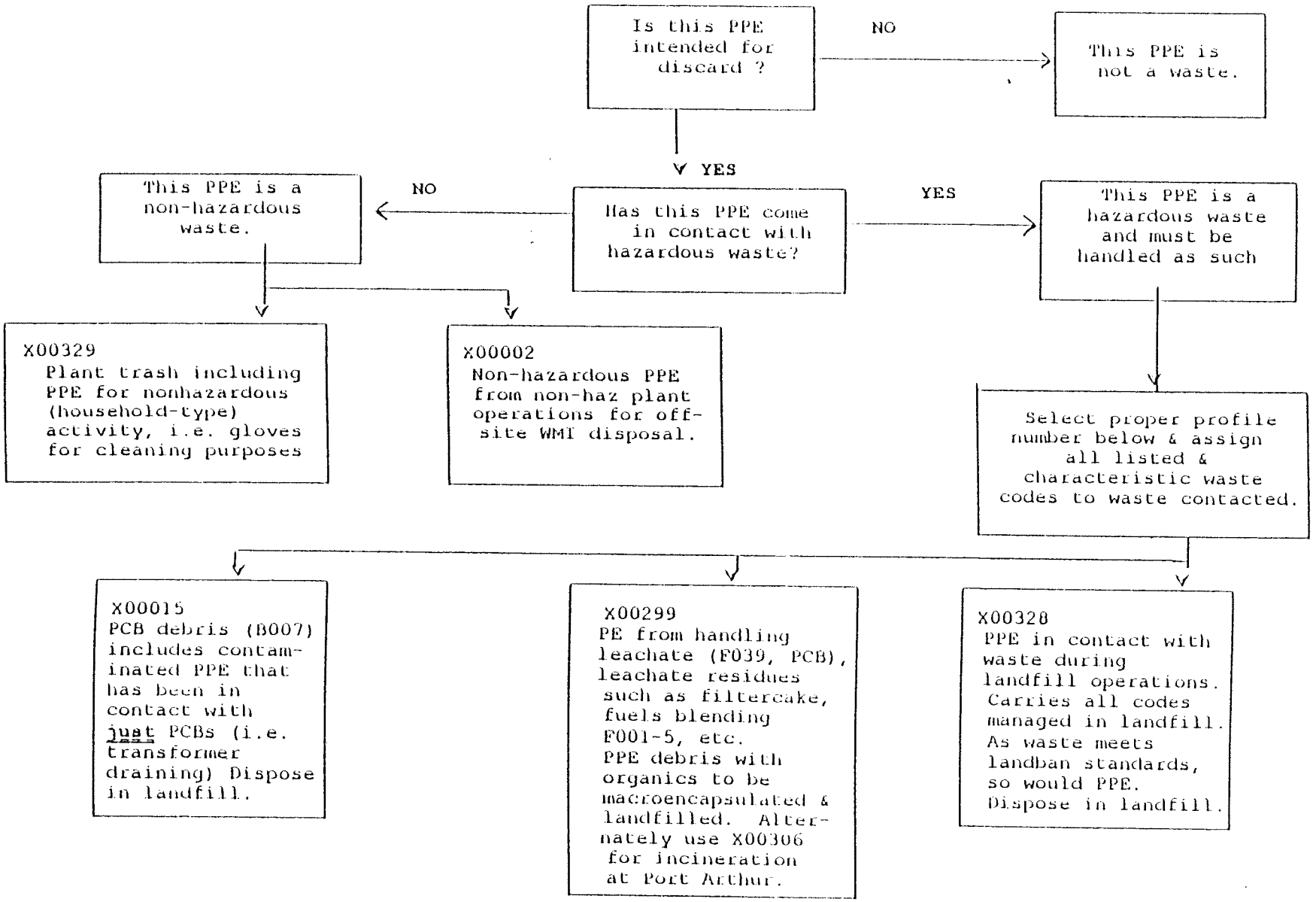
PPE[1] Characterization and Disposal



[1]PE includes all types of equipment including tyveks, respirator cartridges, gloves, etc..

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Updated: 08/18/95

MODEL CITY FACILITY	Title: Personal Protective Equipment	Date: Apr 1997 Page: 1 of 11
		Revision Date: April 2005
	MDC HS-1161	Supersedes: Aug 1999
Health and Safety Program	Approval:	Title: District Manager

1.0 PURPOSE

This procedure defines the minimum CWM Chemical Services, L.L.C. requirements and responsibilities for the implementation of CWM personal protective equipment programs designed to protect employees from hazards during the performance of work activities.

2.0 SCOPE

This practice describes the minimum PPE that must be donned prior to entering specific work areas at the CWM Chemical Services, L.L.C., Model City, NY facility. It also includes the minimum PPE required to perform various jobs or tasks. Depending upon the hazard and/or the job, it may be necessary to don additional PPE. Personnel will be informed of additional PPE requirements through Material Safety Data Sheets (MSDSs), Waste Profile Sheets, Standard Division Practices and work area supervisors.

3.0 PROGRAM RESPONSIBILITIES

3.1 Safety Specialist is the personal protective equipment administrator and has the responsibility to:

3.1.1 Coordinate the program.

3.1.2 Ensure that annual training is conducted in accordance with Section 8 of this Program.

3.1.3 Review the program annually.

3.1.4 Safety Specialist is responsible for maintaining the site PPE inventory control program.

3.1.5 Safety Specialist is responsible for the purchase of PPE, including respiratory protection.

3.2 Supervisors are responsible for informing workers of the personal protective equipment requirements within their department/area. The supervisor will also ensure that workers have been instructed in the proper donning, wearing, removal and the cleaning or disposal procedures for such equipment, and that the worker has understood the instructions. The supervisor will provide additional instructions, as needed.

3.3 Supervisors are responsible for ensuring employees have no facial hair which will interfere with a proper respirator face seal.

3.4 Workers are responsible for properly donning, wearing, removing, cleaning, and disposing of the required protective equipment.

3.5 Project Engineers/Contact Person are responsible for ensuring that contractors provide their own protective equipment as specified in the Division's "Contractor Safety Procedure", MDC HS-1105.1 and wear protective equipment as specified in this Program.

4.0 GENERAL REQUIREMENTS

Personal Protective Equipment (PPE) refers to the broad category of safety equipment into which is placed virtually any wearable item designed to protect the worker. Subcategories of PPE would include, but are not limited to: chemical protective clothing, respiratory protection, head and eye protection, hearing protection, and special hazards equipment such as life-lines and harnesses, cooling vests, hot work clothing, and others. The requirements for CWM's "Respiratory Protection Program", are described in Health and Safety Program procedure under MDC HS-1162. Selection and use requirements for hearing protectors are described in Health and Safety Program Procedure under MDC HS-1123, "Hearing Conservation". Guidelines for the selection and use of chemical protective clothing are provided in "Guidelines for the Selection of Chemical Protective Clothing" published by the American Conference of Governmental Industrial Hygienists (ACGIH).

4.1 CWM employees shall only use personal protective equipment supplied by the company.

4.2 Visitors will be supplied with the following personal protective equipment as outlined in the Division's Health & Safety Program, "Visitor and Contractor Safety", MDC HS-1105.

4.3 Disposal of PPE and cleaning of reusable PPE is governed by the procedures specified in the Division's Health & Safety Programs for "Respiratory Protection Program", MDC HS-1162, and "Contamination Control Program", MDC HS-1144. Disposal of PPE should be in accordance to SDP 3001 Site Generated Waste.

4.4 Written procedures governing the safe use of PPE that might be required in an emergency are contained in the division's Health & Safety Program, "Guidelines & Procedures for Hazardous Material Emergencies", MDC HS-1181.1, CONTINGENCY PLAN. SPCC PLAN, SPILL ABATEMENT, etc.

5.0 GENERAL CLOTHING (WORK UNIFORM)

5.1 Shorts are prohibited and employees must wear clothing which covers the upper portion of the body and arms.

5.2 Long-sleeved shirts and long pants, are required for employees working on the active areas of the facility and in the Maintenance and Heavy Equipment shops.

5.3 Long sleeved shirts may be turned up to just below the elbow when doing so either: does not jeopardize the protection of the employee (e.g. driving through the active areas of the facility), provides the employee greater protection (e.g. when the sleeves of the uniform may interfere with the task being performed) or when employee protection is provided through another means (e.g. tyvek coverall sleeves extend well into employees gloves).

6.0 EYE AND FACE PROTECTION

The following shall be used to assist in the selection of eye and face protection:

6.1 Selection of eye and face protection will conform to ANSI Standard, Z87.I-I989 and OSHA 29 CFR 1910.133.

6.0 EYE AND FACE PROTECTION

6.2 Minimum eye protection consists of spectacles with industrial safety lenses and half side shields. In addition, suitable eye and face protectors will be provided as specified in the Task/Area PPE Requirement Sheets.

6.3 Eye protection (safety glasses with side shields) are required to be worn at all times while on the site other than in offices, the SPEC center (including parking lot), break and lunch rooms, entering and leaving employee's work station (including from a vehicle to an office), at the beginning and end of shift, etc.

6.4 Prescription safety glasses with side shields shall be provided to employees requiring corrective lenses.

6.5 Eye Protection for contact lens wearers shall be selected using the same criteria as for individuals not wearing contact lenses to ensure protection against the anticipated hazard (e.g. eye protection for handling of liquids posing a chemical splash hazard must include splash goggles, full-face shield or full-face respirator). Contact lenses may be worn when wearing a full-face respirator. Personnel shall not be allowed to wear contact lenses in dusty environments (e.g., landfills, stabilization buildings).

6.7 Face shields do not provide adequate eye protection and shall not be worn as a substitute for full face piece respirators.

The use of a full face piece air purifying full face piece supplied air respirator or a half face piece air purifying with chemical goggles shall be worn when chemical liquid splashing may occur.

7.0 PROTECTIVE HEADWEAR

7.1 All head protection (hard hats) will comply with ANSI Standard Z89.1-1997 and OSHA Standard 29 CFR Part 1910.135

7.2 Hard hats are required to be worn in all areas of operations.

7.3 Hard hats are not required to be worn while inside vans, pick up trucks, automobiles, and buses at any time, or while operating heavy equipment, tractors, fork lifts, etc equipped with rollover protection.

7.4 Hard hats are required to be worn at all times while on the site other than in offices, the SPEC Center (including parking lot), break and lunch rooms, entering and leaving employee's work station (including from a vehicle to an office), at the beginning and end of shift, etc.

8.0 PROTECTIVE FOOTWEAR

8.1 Selection of foot protection will conform with ANSI Standard Z41.1991, which has been adopted by reference in OSHA 29 CFR 1910.136. If purchased prior to July 5, 1994 it will conform to ANSI Standard Z41.1-1967.

8.2 Safety shoes (steel toe cap - 6" upper) are required for employees working on active work areas of the facility and in the Maintenance and Heavy Equipment shops.

9.0 HIGH VISIBILITY VEST

9.1 All employees working in or near motor vehicle traffic must wear a high visibility vest per ANSI Standard ISEA 107-1999 Conspicuity Class 2 High Visibility Safety Apparel.

10.0 TRAINING

Training on the contents of this program shall be conducted annually and shall include the following:

10.1 Proper selection, use and maintenance of the equipment, including capabilities and limitations.

10.2 The nature of potential hazards and the consequences of not using the appropriate equipment.

10.3 Procedures for inspecting, donning, doffing, checking, and fitting equipment.

10.4 Emergency procedures in the event of equipment failure.

10.5 A review of the area and task specific protective equipment requirements of Appendix G of this procedure.

11.0 PROCEDURES

NOTE: It must be understood that this practice describes the minimum PPE requirements for entering a contaminated area or performing a specific job. Minimum PPE requirements are based on data collected through the industrial hygiene air sampling program, hazard evaluation, incident investigation, job safety analysis, observation and experience. However, not all hazards can be anticipated and occasionally different or additional PPE may be required depending upon the circumstances. Therefore, it is equally important that employees learn to identify and evaluate hazards to ensure that the proper PPE is selected.

11.1 Identify and evaluate hazards encountered on the job.

11.1.1 Determine the physical hazards.

11.1.1.1 Consider sharp or falling objects.

11.1.1.2 Consider overhead obstructions.

11.1.1.3 Consider slippery surfaces.

11.1.1.4 Consider heat or cold.

11.1.1.5 Consider flying particles.

11.1.1.6 Consider pinch points.

11.1.2 Determine the health hazards.

11.1.2.1 Consider splashes or vapors from corrosive or toxic substances.

11.1.2.2 Consider harmful dusts, fogs, fumes, mists, gases, smokes and sprays.

11.1.3 Review hazard information sources.

11.0 PROCEDURES (cont):

11.1.3.1 Consider Material Safety Data Sheets (MSDSs), Warning Labels and Signs, Profile Records Hazardous Waste Manifests, Treatment and Disposal Slips, Work Permits, Lab Approval Notifications, Special Waste Analysis Reports (SWARs), and Standard Division Practices (SDPs).

11.1.4 Utilize test and/or sampling equipment (i.e., Noise Level Meter, LEL/0_2 Meter, Drager Tubes, Air Sampling Pumps, etc.) to evaluate hazards like noise, flammable gases, atmospheres that are Immediately Dangerous to Life and Health (IDLH) and exposure to contaminants at levels above the established Time Weighted Average - Threshold Limit Value (TWA-TLV).

NOTE: Employees must be trained and qualified prior to operating test equipment.

11.2 Once the hazard identification and evaluation process is completed, match the PPE to the hazard.

11.2.1 Refer to "Criteria for the Selection of PPE" at Exhibit #1.

11.2.2 Refer to "Gloves Selection" at Exhibit #2.

11.2.3 Refer to "Selection Chart for Eye and Face Protectors" at Exhibit #3.

11.2.4 Refer to "Respirator Selection Flow Chart" at Exhibit #4.

11.2.5 Refer to "Cartridge Selection Guide" at Exhibit #5.

11.3 Select PPE that will provide adequate protection against hazards faced on the job.

11.3.1 Determine area or job specific PPE requirements.

11.3.1.1 Refer to "PPE Certification of Hazard Assessment and Equipment Selection", Exhibit #6.

CAUTION: The PPE Certification of Hazard Assessment and Equipment Selection Sheets does not cover all the hazards that an employee may face during job performance. Employees must remain alert for any new hazard(s) and take appropriate action to protect themselves.

11.3.1.2 Prior to handling any hazardous chemicals, read the MSDS.

NOTE: Pay particular attention to those sections on the MSDS that address PPE. MSDSs are available in department computers.

11.3.1.3 Prior to handling hazardous waste, review the Waste Profile Record for information concerning PPE.

11.3.1.4 Read PPE requirements on work permits.

11.0 PROCEDURES (cont):

11.3.1.5 Prior to job performance, study written procedure (i.e., SDP, SOP, etc.).

NOTE: All personnel not assigned to a specific operating or maintenance area shall consult with the area supervisor before entering the area so they can be briefed on any additional hazards and PPE requirements that may exist.

11.3.2 Determine the level of protection needed to enter the work areas.

11.3.2.1 If you enter an immediate work area without the proper PPE, promptly leave the area where the work is being performed or don the PPE required for that work.

11.3.2.2 Refer to "PPE Certification of Hazard Assessment and Equipment Selection" in Exhibit #6 for job specific requirements.

11.3.3 Recognize and distinguish between areas where PPE is required and areas where PPE is not required.

11.3.4 Warn any individual not wearing the required PPE.

NOTE: Every CWM employee has the responsibility of warning any individual not wearing the required PPE in a specific area or while performing a specific task.

NOTE: High heels, sandals, tennis shoes, tank tops, sleeveless shirts, short pants or dresses are prohibited in operating areas.

NOTE: Site tour personnel (i.e., guide, visitors, etc.) are exempt from the no dress/no high heel rule, as long as they remain in the site tour bus or are walking from the bus to the training room for orientation.

11.4 Test and inspect PPE prior to use.

11.4.1 Ensure that a qualitative fit test is completed each time you are issued a new respirator and/or yearly. (Refer to Health & Safety Procedure, MDC HS-1162, "Respiratory Protection Program").

11.4.2 Ensure that the correct filters are installed on air purifying respirators.

11.4.2.1 Match the chemical cartridge to the hazard.

11.4.2.2 Read the chemical cartridge label.

NOTE: The label will describe the chemical(s) that the cartridge will protect against.

11.4.2.3 Refer to the "Cartridge Selection Guide" at Exhibit #5.

11.4.2.4 If you are not sure what filter to use, ask your supervisor.

11.0 PROCEDURES (cont):

11.4.3 Inspect air purifying respirators.

11.4.3.1 Check rubber face piece for dirt, pliability of rubber, deterioration, cracks, tears and holes.

11.4.3.2 Check straps for breaks, tears, loss of elasticity, broken attachments or snaps and proper tightness.

11.4.3.3 Check exhalation and inhalation valves for holes, warpage, cracks and dirt.

11.4.4 Check all PPE for tears, leaks, punctures, or signs of wear.

NOTE: Tearing tyvek or poly tyvek suits for any reason, other than removal, is prohibited.

11.4.5 Ensure that non-disposable PPE is not contaminated from it's last use.

11.4.5.1 Refer to Health & Safety Program, MDC HS-1144, "Contamination Control".

11.4.6 Check safety glasses, goggles, face shields, or full face respirator lens for obstructed vision (i.e., nicks, scratches, stains, dirt, etc.).

11.5 Don PPE correctly.

11.5.1 Always make sure that everything fits.

WARNING: Loose clothing can get caught in machines.

11.5.2 Ensure that all buttons and snaps are fastened.

11.5.3 Ensure that all straps are secure.

11.5.4 Ensure that all zippers are up.

11.5.5 If necessary, use tape to seal zippers or secure cuffs and pants.

11.5.6 Ensure that there is an air tight seal between your face and the respirator.

CAUTION: Facial hair (i.e., all beards, beard stubble, side burns, long mustaches, etc.) will prevent adequate face seal. Male employees must shave daily to ensure proper seal.

11.5.6.1 Prior to each use, conduct a field fit (positive/negative) test on all air-purifying respirators. (Refer to Health & Safety Procedure, MDC HS-1162, "Respirator Protection Program".)

11.6 Remove PPE correctly.

11.6.1 Decontaminate non-disposal PPE clothing (i.e., slicker suit, acid suit, rubber boots, etc.) prior to removal.

11.0 PROCEDURES (cont):

11.6.1.1 Refer to Health & Safety Program, MDC HS-1144, "Contamination Control".

11.6.2 Remove disposable PPE carefully so as not to contaminate yourself.

11.6.2.1 Remove outer gloves first.

11.6.2.2 Leave inner gloves on when removing contaminated PPE.

NOTE: The ideal way to remove contaminated PPE is to take off items on the upper body first and then work down. Inner gloves should be the last item removed.

CAUTION: Be careful and try not to contaminate your bare hand when taking off inner gloves. Grasp inner glove at wrist and peel off.

11.6.3 Place disposable PPE in proper container.

11.6.4 Clean and inspect your respirator.

11.6.5 Store all non-disposable PPE in designated location.

11.7 Maintain non-disposable PPE.

NOTE: PPE is provided by the Division as a line of defense against potential hazards that exist at our facility. To afford maximum protection, the PPE must be properly maintained. Respirators must be cleaned after each day's use or more often, if necessary. When not in use, respirators must be stored in appropriate storage.

11.7.1 Clean and disinfect PPE regularly.

11.7.2 Inspect PPE before and after each use.

11.7.3 Replace any punctured, leaking, torn, worn or damaged PPE and/or accessories.

11.7.4 Replace safety glasses, goggles, or face shields if vision is obstructed.

11.7.5 Replace respirator dust filters and chemical cartridges daily or more often if wearer detects odor, taste, irritation or plugging.

11.7.6 Store PPE in designated location.

11.8 Recognize and understand PPE limitations.

11.8.1 If available, read instructions provided by the manufacturer.

NOTE: Instructions usually accompany new equipment.

11.8.2 Use boot covers to protect leather footwear from contamination.

CAUTION: Leather absorbs and cannot be decontaminated.
CAUTION: Boot covers may be slippery on wet or dusty surfaces.

11.0 PROCEDURES (cont):

11.8.3 Do not wear shaded safety glasses during night time or indoor operation.

CAUTION: Shaded safety glasses reduce vision at night and are prohibited on evening shifts, or indoor activities.

11.8.4 Do not use air purifying respirators in oxygen deficient atmospheres.

WARNING: Never use air purifying respirators in oxygen deficient atmospheres (less than 19.5% oxygen) or atmospheres immediately dangerous to life and health (IDLH).

11.8.5 Use air purifying respirators around chemicals with adequate warning properties (i.e., offensive odor, irritant, etc.).

11.8.6 Use supplied air respirators around chemicals with little or no warning properties.

11.8.7 Determine the degree of protection afforded by a respirator.

11.8.7.1 Refer to "Respirator Protection Factors" at Exhibit #10.

11.8.8 Replace chemical cartridges often enough to prevent break-through.

11.8.8.1 Refer to Health & Safety Procedure, MDC HS-1162, "Respiratory Protection Program".

NOTE: Break-through occurs when the sorbent material and filter pads in the cartridge are no longer effective due to excessive contaminants.

CAUTION: High humidity can reduce chemical cartridge effectiveness.

12.0 EVALUATION OF PPE PROGRAM

The Division shall annually evaluate its PPE program to ensue its effectiveness and that it meets all regulatory and company requirements. Exhibit #7.

USER RESPONSIBILITIES

12.1 Identifies and evaluates hazards encountered on the job.

12.2 Determines what the physical and health hazards are.

12.3 Reviews hazard information sources.

12.4 Matches the PPE to the hazard.

12.5 Selects PPE that will provide adequate protection.

12.6 Utilizes the PPE Certification of Hazard Assessment and Equipment Selection Information.

12.7 Consults with supervisor prior to entering work area(s).

12.0 EVALUATION OF PPE PROGRAM (cont):

USER RESPONSIBILITIES (cont):

12.8 Warns any individual not wearing the required PPE.

12.9 Tests and inspects PPE prior to use.

12.10 Maintains respirator and other PPE in good working condition.

12.11 Dons and removes PPE properly.

12.12 Recognizes and understands PPE limitations.

12.13 Complies with PPE policy and procedures.

13.0 USER PERFORMANCE CRITERIA

13.1 Safely performs all steps of the practice.

13.2 Meets minimum section demands for speed and accuracy.

13.3 Can explain why and when the job must be done.

13.4 Can explain why each step in the practice is needed.

13.5 Can identify basic facts and terms about the job.

13.6 Utilizes equipment, tools, and supplies as they were designed and intended to be used.

13.7 Recognizes and reports any unsafe conditions/acts immediately.

13.8 Recognizes, understands, and complies with Federal, State and local standards that apply throughout this practice.

13.9 Uses good oral and written communications skills.

14.0 CROSS REFERENCES:

14.1 Health & Safety Program, MDC HS-1144, "Contamination Control".

14.2 Health & Safety Program, MDC HS-1105, "Visitor and Contractor Safety".

14.3 Health & Safety Program, MDC HS-1162, "Respirator Protection Program".

15.0 REGULATORY/PERMIT REQUIREMENTS

15.1 CFR 29 Part 1910.132: PPE shall be provided, used and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards that could be encountered in a manner capable of causing injury in the function of any part of the body through absorption, inhalation or physical contact.

15.2 CFR 29, Part 1910.133: Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment.

15.3 CFR 29, Part 1910.134: The employee shall use the provided respiratory protection in accordance with instruction and training received. Respirators shall be regularly cleaned and disinfected. Respirators shall be stored in a convenient, clean, and sanitary location. Respirators shall be inspected routinely.

15.4 CFR 29, Part 1910.120: Whenever engineering controls and work practices are not feasible, PPE shall be used to reduce and maintain exposures to or below the permissible exposure limits of substances regulated by CFR 29, Part 1910, Subpart Z (Toxic and Hazardous Substances).

16.0 GLOSSARY OF TERMS

16.1 Permissible Exposure Limit (PEL): The legally established time-weighted average (TWA) concentration or ceiling concentration that shall not be exceeded.

16.2 Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period (usually 8 hours).

16.3 Threshold Limit Values (TLVs): Time-weighted concentrations of airborne substances to which nearly all workers may be continuously exposed (during 8-hour work days and 40 hour work weeks) without adverse effects.

16.4 Threshold Limit Value - Ceiling (TLV-C): The concentration that should not be exceeded during any part of the working exposure.

16.5 LEL/Meter: Instrument used to determine the Lower Explosive Limit (LEL) and/or oxygen content of an atmosphere.

16.6 Break-through: Occurs when a respirator filter fills up with contaminants and no longer protects the wearer.

EXHIBIT 1

CRITERIA FOR THE SELECTION OF PPE

EYE/FACE PROTECTION

	Personal Hazard	Protection Required
○	Low Energy flying solids	Safety glasses with side shields
○	High energy flying solids	Face shield or goggles and safety glasses with side shields
○	Low energy flying liquids	Face shield and safety glasses with side shields
○	High flying liquids and corrosive liquids	Face shield and goggles

(Note: when respiratory protection is required, a full face respirator can be utilized in lieu of face shield and safety glasses or goggles.)

HEAD PROTECTION

Worn in "hard hat areas" due to the potential for exposure to overhead obstructions or falling objects that sometimes exist in various areas.

FOOT PROTECTION

- ○ Steel toed footwear is required any time personnel are working with tools or objects that could be dropped or otherwise contact and damage the foot.
- ○ Highly impermeable footwear is required when foot contact with waste is possible. Leather footwear, once contaminated, cannot be decontaminated properly. Leather footwear is acceptable when worn with impervious boot covers.

PROTECTIVE CLOTHING

- ○ Tyvek suit is adequate for possible brush contact with solids.
- ○ Highly impermeable clothing is required for possible contact with sludges or liquids. This clothing includes slicker suits, long slicker coats, polytyvek suits and saranex coveralls.

HAND PROTECTION

- ○ Leather gloves are adequate for possible abrasion or finger pinches from non-contaminated surfaces.
- ○ Gloves constructed of synthetic materials are required for possible contact with contaminated surfaces or materials. The chemical/waste being handled dictate the specific type of synthetic glove to be worn.

RESPIRATORY PROTECTION

- ○ Respiratory protection is required when exposure to contaminants at levels that could exceed ACGIH 8 hour TLV is possible.
- ○ Supplied air respiratory protection is required when exposure to contaminants at levels that exceed ACGIH 8 hour TLV is imminent, confirmed, or required by specific OSHA standards.

EXHIBIT 2

GLOVE SELECTION

The following lists the type of gloves used at the Model City Facility along with the type of chemicals resistant to them. Discard gloves if they become ripped, torn or discolored due to chemical action.

TYPE OF GLOVE	CHEMICAL GROUP
Nitrile/Neoprene	Acids, caustics, petroleum solvents, aromatic solvents, chlorinated solvents
Rubber or PVC	Acids, caustics, alcohols, low level organic solvents
Latex/Vinyl	Acids, caustics, alcohols
Leather	To protect against injuries; not resistant to chemicals.

CWM Chemical Services, LLC.
Certification of Hazard Assessment and Equipment Selection

Department: Environmental	
Routine Task: Excavation in areas with VOAs > 1 ppm per RFI*	
Assessment Reviewed By: Jill Banaszak	
Signature: Jill Banaszak	**Date:** 9/9/05

PROTECTION	POTENTIAL (Yes or No)	PPE REQUIREMENT
Eyes and Face		
• Flying particles	Yes	X Safety Glasses
• Non-corrosive liquid chemicals	No	Full Face Respirator
• Corrosive liquid chemicals	No	Face Shield
• Optical radiation	No	Welding Helmet
		Welding Shield
		Other (s) Describe:
Foot		
• Falling/Rolling Objects	No	X Work shoes (steel toe, steel midsole, min 6" high with laces
• Sole Piercing	No	
• Chemical hazards	Yes – if excavation will be entered.	X Rubber boots
		Other (s) Describe:
• Electrical hazards	No	
Head	Yes – Required in operating areas.	X Hard Hat
		Other (s) Describe:
Hand		
• Non-corrosive liquid chemicals	No	Fabric work gloves with/or abrasion /cut resistant gloves
• Corrosive liquid chemicals	No	
• Solid chemicals	Yes – Contam. soil	X Chemical protective gloves
• Severe cuts or lacerations (cutting tools)	No	Type: Neoprene or Nitrile
		Other (s) Describe:
• Severe abrasions	No	
• Punctures (sharp tools/objects)	No	
• Burns (Thermal)	No	
Body		
• Non-corrosive liquid chemicals	No	X Work Uniform with:
• Corrosive liquid chemicals	No	X Coverall
• Solid chemicals	Yes	PE (Saranex with hood
• Burns (Thermal)	No	Other (s) Describe:
• Visibility	No	
Respiratory		
Nuisance Dust	Yes – if soil dry	X Half mask respirator with:
Toxic Dust	No	X Acid/organic cartridge
Chemical gases or vapors	Yes	HEPA P100 Filter
		Full Face Respirator with:
		Acid/organic cartridge
		HEPA P100 Filter
		SCBA
		Other (s) Describe:
Hearing		
Loud noise	No	Ear Plus (Optional)
		Canal Caps
		Ear Muffs
		Other (s) Describe:

* PPE also required if air monitoring is performed with Foxboro TVA100 GC/FID and a reading above 50 ppm (as methane) or if a significant chemical ordor is noted.

ACTIVITY HAZARD ANALYSIS (AHA)

Model City Facility

Activity: Radiation Survey/Sampling

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
Walk over and property line measurements	Stepping on sharp and/or protruding objects	• Recent mowing will enhance visibility • Surveyor must be aware of changing terrain when performing survey • Proper safety footwear will minimize the potential for foot injury • Be aware of damaged fencing wire and posts
	Slips, trips, falls	• Recent mowing will enhance visibility • Surveyor must be aware of changing terrain, wet ground, animal burrows and general debris • Ensure instrument wires, straps and cables do not interfere with walking
	Potential exposure to chemical and radiological contaminants	• Avoid activities that disturb areas with distressed vegetation • Avoid areas that exhibit unusual characteristics (odor, color) or other signs of contamination until properly evaluated • Modify PPE as required by conditions
	Biological Hazards	• Wear light colored clothing or white Tyvek® to allow you to see ticks that are crawling on your clothing. • Tuck your pant legs into your socks or boots, wear high rubber boots, or use tape to close the opening where they meet so that • Wear a hat, tie back long hair. • Apply repellents to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing and will last for several days. Repellents containing DEET (n,n-diethyl m-toluamide) can be applied to the skin, but will last only a few hours before reapplication is necessary. Apply according to Environmental Protection Agency guidelines to reduce the possibility of toxicity. • Learn to identify the toxic plants and avoid them. • Wear long pants and long sleeves, boots and gloves. • Barrier skin creams may offer some protection if applied before contact. • Avoid indirect contact from tools, clothing or other objects that have come into contact with a crushed or broken plant. Don't forget to wash contaminated clothing and clean up contaminated equipment. • If you can wash exposed skin areas within 3-5 minutes with cold running water, you may keep the urushiol from penetrating your skin. • Proper washing may not be practical in remote areas, but a small wash-up kit with pre-packaged alcohol-based cleansing tissues can be effective. • Wear long pants and long sleeves, boots and gloves. • Barrier skin creams may offer some protection if applied before contact.

		• Avoid indirect contact from tools, clothing or other objects that have come into contact with a crushed or broken plant. Don't forget to wash contaminated clothing and clean up contaminated equipment. • If you can wash exposed skin areas within 3-5 minutes with cold running water, you may keep the urushiol from penetrating your skin. • Proper washing may not be practical in remote areas, but a small wash-up kit with pre-packaged alcohol-based cleansing tissues can be effective.
	Heat Stress	• Provide water and electrolyte replacement drinks • Allow employees who are not accustomed to working in hot environments appropriate time to become acclimated • Investigate use of auxiliary cooling devices in extreme conditions • Conduct briefings for employees regarding health hazards and control measures associated with heat stress whenever conditions require the implementation of heat stress monitoring
	Cold Stress	• Proper clothing for weather conditions • Available warming stations and warm, non-dehydrating beverages • Survey teams should be reminded to observe physiological indications • Protect instruments from thermal shock and other weather impacts
EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
1. Level D PPE 2. Radiation Detection Instrumentation 3. GPS Equipment	1. Inspect PPE prior to use 2. Source check daily 3. Ensure reception is satisfactory / Ensure that instrumentation is secure in backpack.	• HAZWOPER 40 hour or current 8 hour refresher • Radiation Worker Training • Equipment Operator Specific Training • Safety and health briefing prior to initial operations
PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
Vehicular traffic onsite Travel to and at the site	Struck by vehicles Operation of Motor Vehicles	• Be alert to the presence of vehicles • Ensure reflective vest is worn at all times when onsite • Comply with all federal, state, local and site regulations • Inspect vehicles daily and document inspections • Drive defensively • Wear seatbelts while vehicles are in motion • Avoid backing vehicles when possible
EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
Vehicles Trucks/Trailers	Vehicle Inspections	• Licensed for the operation of vehicle

ATTACHMENT C

ACCIDENT PREVENTION PLAN

ACCIDENT PREVENTION PLAN

RESPONSIBILITIES

Project responsibilities are specified in Section 4.0 of the Health and Safety Plan.

SUBCONTRACTORS/CONSULTANTS

All contractors/consultants are required to comply with the CWM safety programs. A contractor/consultant health and safety representative will be designated to serve as the direct contact with CWM in matters of health and safety.

TRAINING

All contractor/consultant personnel are required to attend a safety orientation prior to commencing activities on site. These orientation sessions are documented and filed with other project records. This site orientation will be conducted by a CWM representative. At a minimum, the following topics relevant to this particular project will be presented:

- Chemical and radiological contaminants expected to be encountered on site;
- Slips, trips, and falls;
- Overhead and buried utilities;
- Hazard Communication;
- Appropriate use of PPE (head, eye, hand, and hearing protection);
- Motor vehicle safety;
- Fire prevention;
- Housekeeping;
- Emergency response; and
- Back injury prevention

Safety briefings will be conducted prior to beginning work every day. Topics for the day will be chosen based upon recent activities, worker concerns, near misses, and program requirements. Attendance at these briefings will be recorded and filed with other project safety documentation.

Periodic Safety Committee meetings will take place as deemed necessary. The total number of personnel plus management on site is expected to be small (5-10 people) and so it is expected that the morning "tailgate" will serve the purpose of these program planning and evaluation sessions.

Field personnel will be trained as radiation workers and have OSHA 40 hour Hazardous Material Worker qualification. In addition, workers will have training in the proper response to emergency conditions that may arise during field activities.

INSPECTIONS

Periodic health and safety inspections by CWM will be conducted during field operations to identify conditions which have the potential to cause illness or injury to workers, damage equipment, or put the general public at risk from site operations.

A portion of these inspections will be conducted by the Site's Health & Safety Specialist but some inspections (such as motor vehicles or heavy equipment) will be conducted by qualified individuals responsible to the URS safety organization.

ACCIDENT REPORTING

Contractor/consultant shall report to CWM Project Manager as soon as possible all accidents or occurrences (including spills) resulting in injuries to contractor's employees or third parties or damage to property of third parties or CWM, arising out of or during the course of service for CWM by contractor or of any subcontractor of contractor, and when requested, shall furnish CWM with a copy of reports made by contractor's insurers or to others of such accidents and occurrences. For purposes of this paragraph, notice is to be given to at:

CWM Chemical Services, L.L.C.
Model City Facility
P.O. Box 200
1550 Balmer Road
Model City, New York 14107
Attn: Site Health and Safety Specialist
(716) 754-0331

In case of an accident, the contractor/consultant shall furnish his own First Aid treatment care. CWM will assist in any emergency upon request of the contractor/consultant.

MEDICAL SUPPORT

CWM has first aid kits located throughout the facility to aid in the support of minor injuries. CWM will, upon request of the contractor/consultant, supply medical care for the contractor/consultant. CWM currently has on staff, two certified Emergency Medical Technicians to assist in the event of a medical emergency. Additional Ambulatory, Paramedic and Fire Department support is available on the 911 system.

PERSONAL PROTECTIVE EQUIPMENT

The selection of personal protective equipment is based upon an Activity Hazard Analysis performed in accordance with 29 CFR 1910.132 (d). The personal protective equipment that has been selected based on the anticipated hazards is listed in the Health and Safety Plan. This equipment list may be modified as safety conditions warrant.

SAFETY PROGRAMS

CWM will be responsible for reviewing all contractor/consultant company safety program documentation to insure compliance with CWM, OSHA, and project standards.

Description of work

The primary field activity is a radiological survey (walkover) and associated investigative sampling. The physical hazards associated with these activities are discussed in the Health and Safety Plan. The programs described below are implemented to minimize these potential hazards.

Near Miss Reporting

All project personnel are encouraged to report "near miss" occurrences. A "near miss" report is a worker's evaluation of a situation that, if left uncorrected, could cause an accident. The importance of reporting a "near miss" is that it raises awareness of the problem and contains information helpful in avoiding the same situation in the future.

Housekeeping

Poor housekeeping has the potential to play a role in a wide range of accidents. As such, the importance of housekeeping and the expectation that good housekeeping be maintained will be emphasized regularly during safety meetings.

Mechanical Equipment Inspection

No heavy mechanical equipment is expected to be used by CWM's consultants for the gamma walkover field survey or investigative sampling activities. In the event that heavy equipment is required, the equipment shall be in good working condition with Daily Vehicle Inspection Reports (DVIRs) completed.

Activity Hazard Analysis

Activity Hazard Analyses (AHAs) are used to identify potential safety and health hazards associated with specific project tasks. The AHA is developed prior the beginning activities. The AHA is reviewed periodically during operations and modified as necessary. The Activity Hazard Analysis can be found in Attachment B.

Fire Prevention and Protection

Fire prevention and protection procedures and resources at this project include:

- Emergency services are obtained by calling site extension #200 in accordance with facility's Contingency Plan. This service will contact the site's Incident Commander for Emergency Response actions. Based upon the hazard, the site's Emergency

Response Team may be activated, or local Police/Fire Department support may be requested.

- Hot work permits are required prior to performing any flame or spark producing activity.
- Flammable and oxidizing materials are to be properly marked and stored in NO SMOKING areas. Fire extinguishers are to be available in this area.

ALARA Program

The ALARA (As Low As Reasonably Achievable) program describes the approach to radiation protection to manage and control exposures (both individual and collective) to the work force and to the general public to as low as is reasonable, taking into account social, technical, economic, practical, and public policy considerations. As used, ALARA is not a dose limit but a process which has the objective of attaining doses as far below the applicable limits as is reasonably achievable, based on professional judgment.

ALARA principles will be applied to minimize the following types of exposure during operations:

- internal exposure due to airborne radioactive material;
- external exposure due to beta-gamma emitting nuclides; and
- personnel contamination due to direct contact with radioactive material.

Strategies to minimize exposure include:

- the use of coveralls, gloves and shoe covers if necessary to prevent direct contact with radioactive material;
- the use of radiation detection equipment to assess general area radiation levels;
- the use of air sampling devices to assess the airborne concentration of radioactive material;
- the use of respiratory protection if necessary to minimize internal exposure; and
- Administrative controls such as Radiation Worker Training and the use of Radiation Work Permits, which specify radiological controls and access requirements.

Hazard Communication

This program incorporates the OSHA standards and specifically requires:

- a hazardous material inventory that lists the hazardous being used at the work site;
- that Material Safety Data Sheets be obtained before the chemical is used and that they be available to workers for reference at all times;
- that chemical containers be properly labeled; and
- that all subcontractors be provided information regarding the hazards associated with the substances and the proper protective measures against them.

Emergency Response

All personnel on-site will be briefed on the appropriate responses to emergencies that may occur. This will be a component of comprehensive safety indoctrination. Topics covered will include:

- emergency egress;
- responsibilities and lines of authority;
- alarms;
- congregation points and personnel accountability;
- notification of off-site emergency support personnel; and
- types of potential emergencies.

Respiratory Protection Plan

Respiratory protection will be used when airborne contaminants, either radioactive material or chemicals, exist at levels that require personnel protection that cannot otherwise be provided. All personnel requiring the use of respiratory protection will be qualified in its use. This qualification includes a medical exam, a respirator fit-test and a discussion of the purpose and limitations of respirators.

Site Layout

In addition to presenting the route to the closest hospital, Appendix E indicates the site location and surrounding Model City Facility area.

ACTIVITY HAZARD ANALYSIS (AHA)

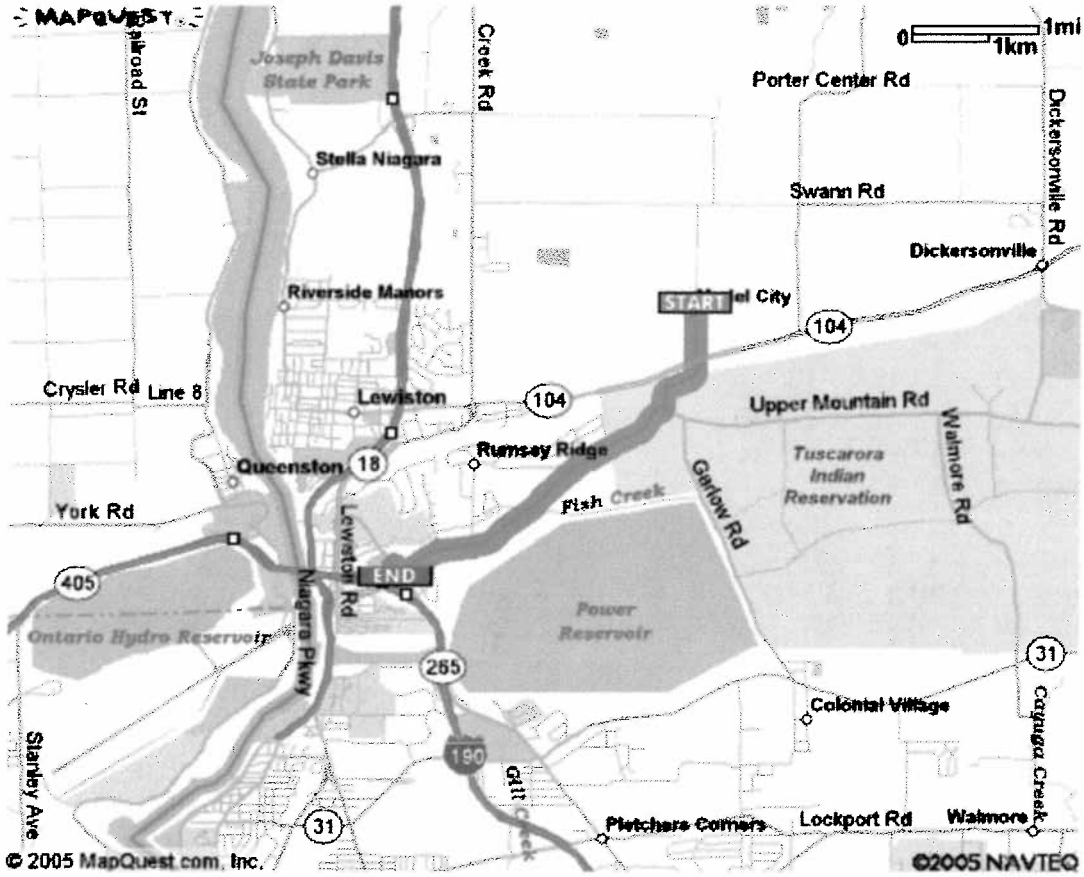
Model City Facility

Activity: Radiation Survey/Sampling

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
Walk over and property line measurements	Stepping on sharp and/or protruding objects	• Recent mowing will enhance visibility • Surveyor must be aware of changing terrain when performing survey • Proper safety footwear will minimize the potential for foot injury • Be aware of damaged fencing wire and posts
	Slips, trips, falls	• Recent mowing will enhance visibility • Surveyor must be aware of changing terrain, wet ground, animal burrows and general debris • Ensure instrument wires, straps and cables do not interfere with walking
	Potential exposure to chemical and radiological contaminants	• Avoid activities that disturb areas with distressed vegetation • Avoid areas that exhibit unusual characteristics (odor, color) or other signs of contamination until properly evaluated • Modify PPE as required by conditions
	Biological Hazards	• Wear light colored clothing or white Tyvek® to allow you to see ticks that are crawling on your clothing. • Tuck your pant legs into your socks or boots, wear high rubber boots, or use tape to close the opening where they meet so that • Wear a hat, tie back long hair. • Apply repellents to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing and will last for several days. Repellents containing DEET (n,n-diethyl m-toluamide) can be applied to the skin, but will last only a few hours before reapplication is necessary. Apply according to Environmental Protection Agency guidelines to reduce the possibility of toxicity. • Learn to identify the toxic plants and avoid them. • Wear long pants and long sleeves, boots and gloves. • Barrier skin creams may offer some protection if applied before contact. • Avoid indirect contact from tools, clothing or other objects that have come into contact with a crushed or broken plant. Don't forget to wash contaminated clothing and clean up contaminated equipment. • If you can wash exposed skin areas within 3-5 minutes with cold running water, you may keep the urushiol from penetrating your skin. • Proper washing may not be practical in remote areas, but a small wash-up kit with pre-packaged alcohol-based cleansing tissues can be effective. • Wear long pants and long sleeves, boots and gloves. • Barrier skin creams may offer some protection if applied before contact.

		• Avoid indirect contact from tools, clothing or other objects that have come into contact with a crushed or broken plant. Don't forget to wash contaminated clothing and clean up contaminated equipment. • If you can wash exposed skin areas within 3-5 minutes with cold running water, you may keep the urushiol from penetrating your skin. • Proper washing may not be practical in remote areas, but a small wash-up kit with pre-packaged alcohol-based cleansing tissues can be effective.
	Heat Stress	• Provide water and electrolyte replacement drinks • Allow employees who are not accustomed to working in hot environments appropriate time to become acclimated • Investigate use of auxiliary cooling devices in extreme conditions • Conduct briefings for employees regarding health hazards and control measures associated with heat stress whenever conditions require the implementation of heat stress monitoring
	Cold Stress	• Proper clothing for weather conditions • Available warming stations and warm, non-dehydrating beverages • Survey teams should be reminded to observe physiological indications • Protect instruments from thermal shock and other weather impacts
EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
1. Level D PPE 2. Radiation Detection Instrumentation 3. GPS Equipment	1. Inspect PPE prior to use 2. Source check daily 3. Ensure reception is satisfactory / Ensure that instrumentation is secure in backpack.	• HAZWOPER 40 hour or current 8 hour refresher • Radiation Worker Training • Equipment Operator Specific Training • Safety and health briefing prior to initial operations
PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
Vehicular traffic onsite Travel to and at the site	Struck by vehicles Operation of Motor Vehicles	• Be alert to the presence of vehicles • Ensure reflective vest is worn at all times when onsite • Comply with all federal, state, local and site regulations • Inspect vehicles daily and document inspections • Drive defensively • Wear seatbelts while vehicles are in motion • Avoid backing vehicles when possible
EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
Vehicles Trucks/Trailers	Vehicle Inspections	• Licensed for the operation of vehicle

ATTACHMENT D HOSPITAL ROUTE MAP



	1: Start out going SOUTH on MODEL CITY RD toward NY-104 / RIDGE RD.	0.4 miles	Map
	2: MODEL CITY RD becomes INDIAN HILL RD / CR-11.	0.5 miles	Map
	3: Turn SLIGHT RIGHT onto UPPER MOUNTAIN RD / CR-11.	2.5 miles	Map
	4: Turn RIGHT onto NY-265 / MILITARY RD.	<0.1 miles	Map
END	**5:** End at **Mount St Mary's Hospital** 5300 Military Rd, Lewiston, NY 14092, US		Map

END OF CWM HEALTH AND SAFETY PLAN FOR GENERIC SMALL PROJECT SOIL EXCAVATION AND MONITORING PLAN

APPENDIX 3

SITE WIDE DISTRIBUTION OF TOTAL VOLATILE COMPOUND FIELD GAS CHROMATOGRAPH DATA

APPENDIX 4

EXAMPLE REPORT

WASTE MANAGEMENT

CWM Chemical Services, LLC.

Generic Small Project Soil Excavation Monitoring and Management Report

Prepared By: _____ **Date of Report:** _____

Description of Excavation Location: _____

_____

GPS Northing: _____
GPS Eastern: _____
Elevation: _____ msl

Purpose of Excavation: _____

_____

_____

1. Radiological Survey Scan

Rad Scan Performed By: _____ **Date of Rad Survey:** _____

Rad Instrument Used: _____ **Date of Calibration:** _____

Documentation of QC checks performed before and after survey (describe):

_____

_____

_____

Description of Rad Survey performed: _____

_____

_____

Rad Scan Survey Results:

Time	Scan Survey Data	Units	Scan Location (Layer, Lift, Bottom)

Note: Attach sketches, maps or drawings of scan and sample locations as necessary to document exact location of excavation activities.

If soil or other media samples are collected, complete the following:

Sample ID#	Sample Location			1 Minute Static Count within 1 inch of Sample Location		Estimated Sample Volume (Include Units)
	Northing	Easting	Elevation (msl)	Before	After	

Note: Attach analytical analysis of samples to this report when results are obtained.

2. Chemical Contamination Screening

FID Scan Performed By: _____ **Date of FID Survey:** _____

FID Instrument Used: _____ **Date of Calibration:** _____

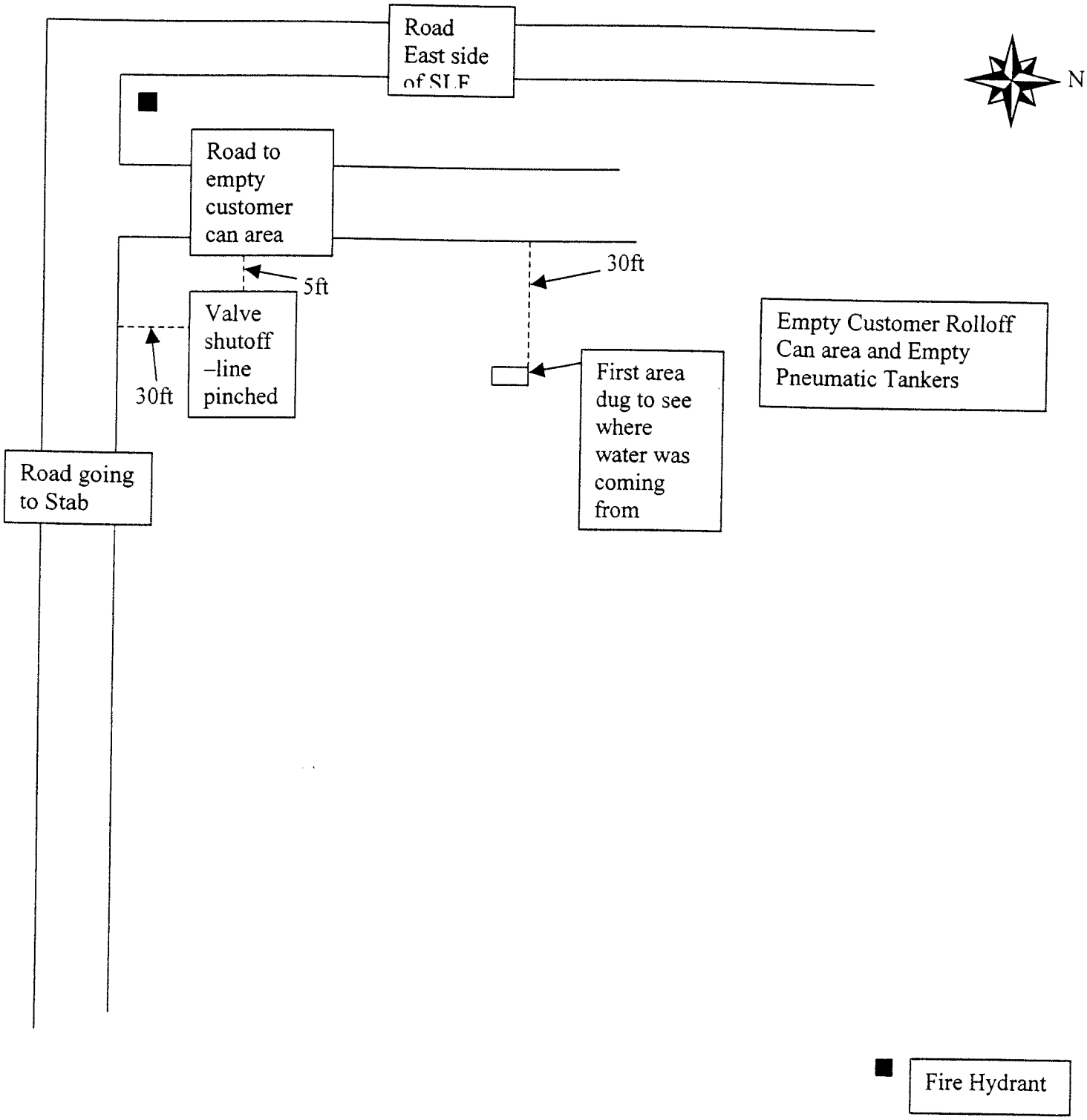
Level of PPE Required: _____ **Visible Evidence of Chemical Contamination:** **Yes** **No**
(Circle One)

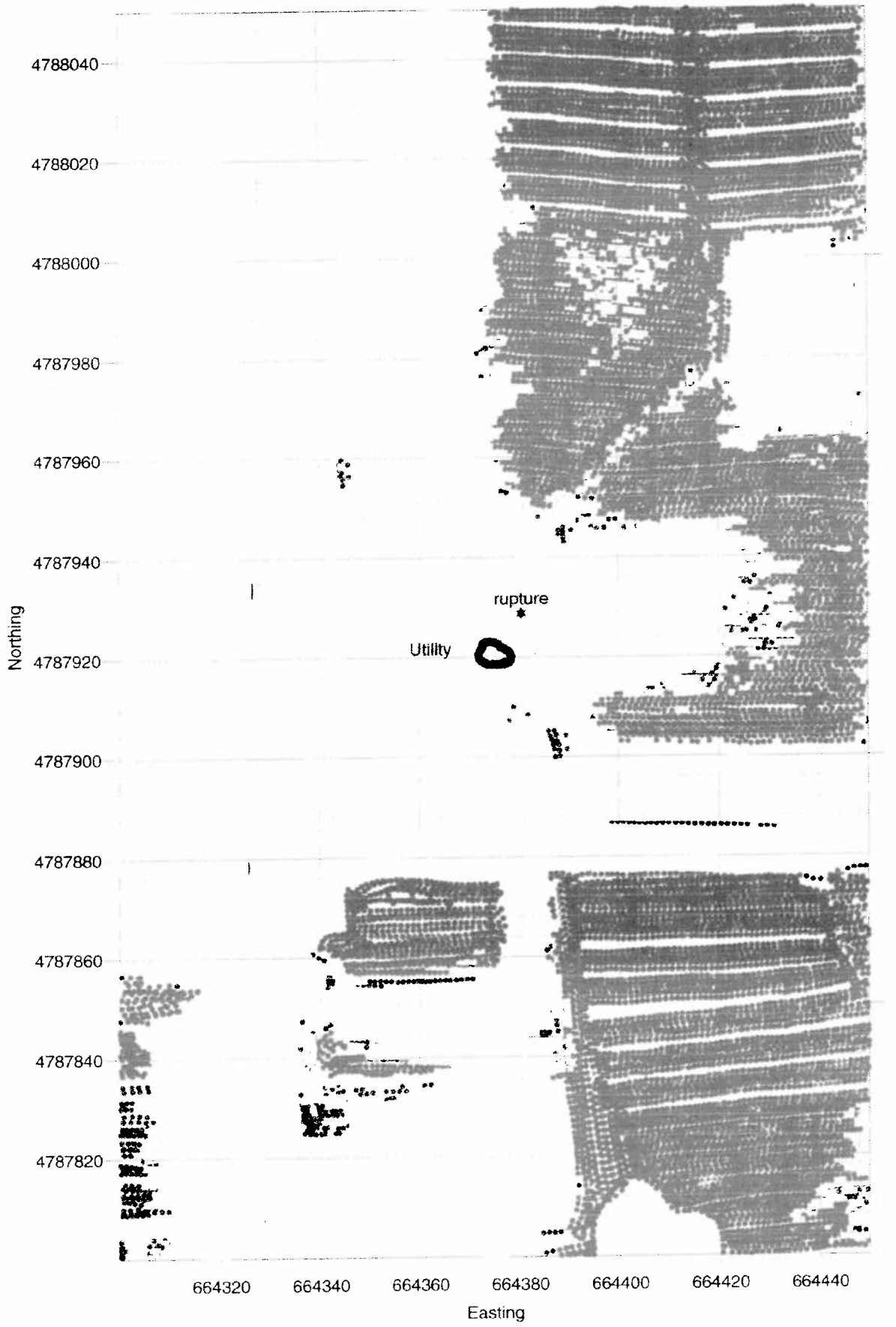
Description of FID Survey performed: _____

Time	VOA Screening Data	Units	Scan Location (Layer, Lift, Bottom)

Comments: _____

Attach chain of custody and any analytical results of soil samples collected.


Road East side of SLF
N
Road to empty customer can area
5ft
30ft
Valve shutoff –line pinched
30ft
Empty Customer Rolloff Can area and Empty Pneumatic Tankers
First area dug to see where water was coming from
Road going to Stab
Fire Hydrant



GPS Coordinate system
UTM, 17N, NAD 83 CONUS

CWM Chemical Service, LLC
Model City Facility
Waterline Excavation

Gamma Radiation readings in cpm
Ludlum 2221 with a 2x2 inch NaI detector

August 30, 2005

URS Corporation

ANALYTICAL REPORT

Prepared for:

Waste Management

,

Project: Waterline excavation

Order#: G0511531

Report Date: 08/25/2005

Certificates

NYSDOH Lab ID No. 11383
US EPA Laboratory Code NY01252

1 OF 3 " PAGES

ANALYTICAL REPORT

CWM Chemical Services, LLC

Waste Management

Order#: G0511531

Project: Waterline excavation

Sample ID: Area east of slf12

Lab ID: 0511531-01

Matrix: SOIL

% SOLIDS: 0%

Date Collected: 8/23/2005

Date Received: 8/24/2005

FINGERPRINT

Parameter Run#: 1	Result	Qualifier	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Physical Description	n/a		None	1	0	VARIES	8/24/2005	hdl
Physical State (Solid, Liquid,Sludge)	n/a		ppm	1	0	VARIES	8/24/2005	hdl
Paint Filter Test	n/a		None	1	NFL	VARIES	8/24/2005	hdl
Description and ID of Soils	n/a		None	1	0	VARIES	8/24/2005	hdl
Radioactivity Screening	=BKG		None	1	=BKG	VARIES	8/24/2005	hdl
pH Screening, paper	n/a		pH-units	1	7	VARIES	8/24/2005	hdl
Cyanide Screen (Cyantesmo)	n/a		ppm	1	< 1.0	VARIES	8/24/2005	hdl
Sulfide Screen (Lead Acetate)	n/a		ppm	1	< 1.0	VARIES	8/24/2005	hdl
Water Mix Screen	n/a		None	1	NSOL SIN	VARIES	8/24/2005	hdl
Flammability Screen	n/a		None	1	NEG	VARIES	8/24/2005	hdl

N/A = Not Applicable RL = Reporting Limit MCL = Maximum Contaminant Level

CWM Chemical Services, LLC 1550 Balmer Road. P.O. Box 200, Model City, NY 14107 Ph: 716-754-8231

ANALYTICAL REPORT

Prepared for:

Environmental Monitor
Environmental Monitor
1550 Balmer Road PO Box 200
Model City, NY 14107

Project:	EXCAVATION
Order#:	G0511507
Report Date:	08/24/2005

Certificates
NYSDOH Lab ID No. 11383
US EPA Laboratory Code NY01252

1 OF 4 PAGES

ANALYTICAL REPORT

CWM Chemical Services, LLC

Environmental Monitor
Environmental Monitor
1550 Balmer Road PO Box 200
Model City, NY 14107

Order#: G0511507
Project: EXCAVATION

Sample ID: HOLE BY SLF 12
Lab ID: 0511507-01

Matrix: AQUEOUS

Date Collected: 8/22/2005
Date Received: 8/23/2005

Parameter	Run#: 1	Result	Qualifier	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Conductivity - 2510B		438		umhos	1	0	2510B	8/23/2005	BTG

N/A = Not Applicable RL = Reporting Limit MCL = Maximum Contaminant Level

ANALYTICAL REPORT

CWM Chemical Services, LLC

Environmental Monitor
Environmental Monitor
1550 Balmer Road PO Box 200
Model City, NY 14107

Order#: G0511507
Project: EXCAVATION

Sample ID: DITCH SOUTH OF SLF 12
Lab ID: 0511507-02
Matrix: AQUEOUS
Date Collected: 8/22/2005
Date Received: 8/23/2005

Parameter	Run#: 1	Result	Qualifier	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Conductivity - 2510B		302		umhos	1	0	2510B	8/23/2005	BTG

3 OF 4 PAGES

N/A = Not Applicable RL = Reporting Limit MCL = Maximum Contaminant Level