

PART 373 PERMIT
MODULE II - CORRECTIVE ACTION REQUIREMENTS

A. APPLICABILITY

1. Statute and Regulations - Article 27, Title 9, Section 27-0913, and 6NYCRR 373-2.6(l) requires corrective action, including Corrective Action beyond the facility boundary where necessary to protect human health and the environment, for all releases of hazardous wastes, including hazardous constituents, from any Solid Waste Management Unit (SWMU) at a storage, treatment or disposal facility seeking a 6NYCRR Part 373 Permit, regardless of the time at which waste was placed in such unit. Pursuant to 6NYCRR 373-1.6(c)(2) the Commissioner may impose Permit conditions as the Commissioner determines necessary to protect human health and the environment (i.e., Areas Of Concern (AOC)).
2. Solid Waste Management Units (SWMUs) and Areas Of Concern (AOCs) - The terms “Solid Waste Management Unit (SWMU)” and “Area Of Concern (AOC)” used throughout this Module are defined in **Module I, Condition J** of this Permit. The Permittee has completed the required evaluations of all known SWMUs and AOCs at the facility.

The conditions of this Module apply to:

- a) All known SWMUs and AOCs; and
- b) Any additional SWMUs and AOCs identified during the course of groundwater monitoring, field investigations, environmental audits or other means.

B. STANDARD CONDITIONS FOR CORRECTIVE ACTION

1. The Permittee must follow the requirements of the Groundwater Monitoring Program in Attachment E, Appendix E-1 and **Module VIII** of this Permit, and the “Groundwater Sampling and Analysis Plan” which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit, for all sampling and analysis performed as part of corrective action activities.
2. The Permittee and all contractors performing corrective action activities shall undergo appropriate training in accordance with the Personnel Training Plan in Attachment H of this Permit and follow the appropriate facility or contractor Health and Safety Plan.
3. All plans, reports and schedules required by the terms of this Permit are, upon approval of the Department, incorporated into this Permit in accordance with **Module I, Condition A** of the Permit. Any non-compliance with such approved plans (studies), reports or schedules, shall constitute a violation of this Permit.

4. The Department will review any plans, reports, schedules, and/or written submittals, and inform the Permittee in writing of its approval, approval with modifications or disapproval of these submittals or any part thereof. In the event of disapproval or modification of all or any part of any submittal, the Department will specify the deficiencies and reasons for the disapproval or any required modifications. Within ten (10) days of receipt of such disapproval or required modifications, the Permittee shall notify the Department in writing of the Permittee's position concerning the disapproval or required modifications and arrange for the immediate scheduling of an appropriate forum to discuss the Department's determinations and resolve any issues concerning those determinations.

The Department shall, pursuant to 6NYCRR Part 621.14 and within 45 days of notice of disapproval or required modifications, send to the Permittee a notice of intent to modify this Permit with regard to all unresolved issues.

5. Compliance with Governmental Requirements - During investigative activities, interim corrective measures, and final corrective measures, (including, but not limited to, equipment decommissioning, excavation and unit demolition) required by this Module, the Permittee shall ensure that the transportation, treatment, storage, discharge, and disposal of all contaminated materials generated as a result of such activities (including, but not limited to, soils, sediments, liquids, tanks, pipes, pumps, rubble, debris, and structural materials) are performed in an environmentally sound manner pursuant to all applicable Federal, State and local requirements, and in a way that is protective of human health and the environment. Nothing in this Module shall be construed to require the Permittee to proceed in a manner which is in violation of any such requirements.

6. Notifications -

- a) Notification of Groundwater Contamination - If at any time the Permittee discovers that hazardous constituents in groundwater that have been released from a Solid Waste Management Unit or Area Of Concern at the facility have migrated beyond the facility boundary in concentrations that exceed the Department's "Technical Assistance Guidance Manual" (TAGM) 3028 action levels, the Permittee shall, within fifteen (15) calendar days of discovery, provide written notice to the Commissioner.
- b) Notification of Air Contamination - If at any time the Permittee discovers that hazardous constituents in air that have been released from a Solid Waste Management Unit or Area Of Concern at the facility, and have or are migrating to areas beyond the facility boundary in concentrations that exceed action levels in the Department's "Air Guide 1", and that residences or other places at which continuous, long-term human exposure to such constituents might occur are located within such areas where, the Permittee shall, within fifteen (15) calendar days of such discovery:
 - i) Provide written notification to the Commissioner; and
 - ii) Initiate any actions that might be necessary to provide notice to all individuals who have or may have been subject to such exposure.

- c) Notification of Residual Contamination - Because hazardous wastes or hazardous constituents have been released from Solid Waste Management Units or Areas Of Concern and will remain in or on the land, including groundwater, after the term of the Permit has expired, the Permittee must record, in accordance with State law, a notation in the deed to the facility property or in some other instrument which is normally examined during title search that will, in perpetuity, notify any potential purchaser of the property, of the types, concentrations and locations of such hazardous wastes or hazardous constituents.

- d) Newly Discovered SWMUs - The Permittee shall notify the Department, in writing, of any additional SWMUs discovered during the course of groundwater monitoring, field investigations, environmental audits or other means within fifteen (15) days of discovery. Thereafter, the Permittee shall proceed with the assessment, investigation, evaluation and remediation of the SWMU as set forth in Attachment E, Appendix E-3 of this Permit.

C. CORRECTIVE ACTION REQUIREMENTS

Introduction

This Section of Module II begins with a brief discussion of the nature and extent of releases of hazardous waste constituents which have been observed at the CWM Model City Facility (CWM). It sets forth the “remedial goals” which the Department has established to address those releases and describes the “Final Corrective Measures” which will be used to attain those goals.

Background

RCRA Facility Investigation (RFI)

As required by the Administrative Order on Consent, USEPA Docket No. II RCRA-3008h-88-0207, signed August 30, 1988, and superseded by the USEPA Hazardous and Solid Waste Amendments of 1984 and NYSDEC 6 NYCRR Part 373-2 Permits dated September 1, 1989, the Permittee has undertaken eighty three (83) RFI investigations at Solid Waste Management Units (SWMUs) and site-wide areas at the Model City facility. The individual/group RCRA Facility Investigations have been completed and are briefly described in Attachment E of this Permit. Detailed descriptions of the investigations can be obtained by referring to the individual/group RFI Reports which are listed in Attachment E of this Permit.

Following Department approval of the last of the individual RFI Reports, the Permittee submitted the "RCRA Facility Investigation Summary Report, Model City Facility TSDR Facility, Model City, New York (Jan 1993)" which presents a site-wide overview of the results of the investigations. The report provides a comprehensive description of the occurrence of hazardous waste constituents, and the nature and extent of contamination in soil and groundwater throughout the facility.

During the course of conducting the RFI investigations, the Permittee discovered numerous areas of contamination at the facility. In most cases, the contamination is thought to have resulted from historical (pre-1980) spills and leaks rather than from releases at regulated landfills. **It should be noted that due to the slow rates of groundwater migration at the facility, there are no cases where the contamination has traveled more than a short distance from its presumed source.** Nevertheless, the contamination requires remediation.

The hazardous waste constituents which were released to the environment are present in the soil and groundwater as aqueous (dissolved) phase contaminant plumes and in a few locations (West Drum Area, Process Area, Area South of SLF 3)) as dense non-aqueous phase liquids (DNAPL). Volatile organic compounds (VOCs) and PCBs are the hazardous constituents which are most commonly observed in the soil and groundwater at the facility. The nature and extent of VOCs and PCBs is depicted in Figures III-1 through III-3 presented in Attachment E, Appendix E-4 of this Permit. A list of the Site Specific Indicators which have been released to the soil and groundwater, and the "groundwater protection standard" for those hazardous waste constituents is included in Table II-1 presented at the end of this Module.

Interim Corrective Measures

The Permittee and the Department have worked together to implement Interim Corrective Measures programs at locations at the site where significant groundwater or soil contamination has been observed. The purpose of the Interim Measures was to check the spread of the contamination and, ultimately, to improve groundwater quality in the affected areas. The Interim Corrective Measures which have been implemented by the Permittee are described in Attachment E of this Permit and are summarized in Table II-2 below:

**Table II-2
Description of Interim Measures**

Area	Description of ICM	Date
Process Area Phase I	335 ft long Groundwater Inteceptor Trench w/DNAPL Collection Sumps	1993
Process Area Phase II	95 ft long Groundwater Inteceptor Trench w/DNAPL Collection Sumps, and 7 Groundwater Extraction Wells	1994
West Drum Area	750 ft long Groundwater Inteceptor Trench w/DNAPL Collection Sumps	1991
Area South of SLF-3	Two Groundwater Extraction Wells	1991
BW02S	Two Groundwater Extraction Wells	1995
P1202S	Two Groundwater Extraction Wells	1995
PCB Warehouse	Two Groundwater Extraction Wells	1997
PCB Soils	Excavation and disposal of soils with PCB concentrations > 25ppm	1995, 1996

Salts and Lagoon Areas	Groundwater Extraction Trench & Wells	1991
	Replaced with a more extensive Groundwater Extraction Trench	1997
	In-situ Stabilization of Sludge	1999-present

Corrective Measures Study

The Corrective Measures Study (CMS) for the Model City Facility was performed by the Permittee has two main components, the Site-Wide CMS and the SWMU-Specific CMS. The Site-Wide CMS (RUST Environment & Infrastructure Inc. (RE&I), January 1995) was submitted to the Department on January 4, 1995. It addresses all of the SWMUs listed in Attachment E of this Permit except the Salts and Lagoon Areas. In addition to evaluating possible corrective measures for individual SWMUs, the Site-Wide CMS included an evaluation of site-wide groundwater and surface water. The Site-Wide CMS also contains an “Ecological Assessment/Fish and Wildlife Impact Analysis” and a “Risk Evaluation” of those SWMUs that were identified in the RFI as having the potential to have impacted soil or groundwater at the site.

The SWMU-Specific CMS (RE&I, May 1995), which evaluated remedial alternatives for sludges/sediments contained in eight (8) surface impoundments (Lagoons and Salts Areas) was submitted to the Department in May 1995. The Lagoons and Salts Areas consist of the following surface impoundments:

- Lagoons 1, 2 and 5; and
- East Salts, West Salts, North Salts, and Lagoon 6 and 7 Salts Areas

The Permittee subsequently conducted an additional evaluation of alternative corrective measures through the use of a team of recognized experts from academia and consulting firms, referred to herein as the Peer Review Panel. The Peer Review Panel conducted an independent review and assessment of the corrective measures being considered for the facility and provided the Permittee with their recommendations for a comprehensive approach to closure and corrective measures at the central area of the facility. The Peer Review Panel Report was submitted to the Department in April 1996.

A Draft Addendum to the Site-Wide and SWMU-Specific CMS (Golder, July 1996) (Draft Addendum) was submitted to the Department on July 2, 1996. It presented revised proposed corrective measures alternatives for the Lagoons and Salts Areas based on the recommendations of the Peer Review Panel. The proposed measures included installation of a groundwater collection system downgradient of the Lagoons and in-situ stabilization of the waste material in the Salts and Lagoons. The Draft Addendum also included an update on progress made related to the Site-Wide CMS and addressed proposed resolutions to outstanding issues related to the Site-Wide CMS.

Although the Department and the Permittee were in general agreement with the nature and the scope of the remedies proposed in the Corrective Measures Studies, the Department had some differences of opinion with the Permittee over certain aspects of the Corrective Measures

Program. The most important issues requiring resolution were the acceptability of the pulsed-pumping strategy the Permittee proposed for groundwater remediation, and the acceptability of the in-situ stabilization process which was proposed for remediation/closure of the Salts and Lagoons. Based on the groundwater modeling which the Permittee performed, and on the performance monitoring results from the Interim Corrective Measures groundwater collection systems, the Department has determined that pulsed pumping is acceptable for containment and cleanup of the site groundwater.

The "Update to Corrective Action Program, CWM Chemical Services, LLC., Model City, New York Facility," April 1999, summarizes the correspondence between the Department and the Permittee regarding the Corrective Measures process at the facility.

In order to evaluate the Permittee's proposed approach for remediation/closure of the Salts and Lagoons, the Department required the Permittee to implement a field-scale demonstration of the in-situ stabilization technology. In April 2000, the Permittee submitted the "Lagoon 5 Field Demonstration Phase Report, Lagoons 1, 2 and 5 Corrective Measures." That report describes the activities completed during the demonstration phase, and the achievement of all performance criteria which the Department has established for a successful demonstration of the technology.

Based on the results of the CMS and on performance monitoring data generated as part of the Interim Corrective Measures (ICMs) projects, the Department has determined that the ICMs which have been implemented at the facility are capable of achieving the goals of the corrective action program and are protective of human health and the environment. The ICMs, when combined with a detailed monitoring and response program and with appropriate Institutional Measures should serve as the basis for Final Corrective Measures for the CWM Model City Facility. Details of the Final Corrective Measures Program are provided below:

1. REMEDIAL GOALS

The corrective action design goals for the remediation of the CWM Model City Facility are as follows:

- a) Remediation of the overburden contamination and restoration of the overburden groundwater through the development of a groundwater extraction system, natural attenuation, or an alternative system as needed.
- b) Containment and control of the plume of overburden contamination to prevent its migration.
- c) Containment and control of the DNAPL contamination through the development of a groundwater/DNAPL extraction system or an alternative system as needed.
- d) Preclude the dispersal of the contaminated soil, fill and waste from closed Landfills and Surface Impoundments, and Areas of Contamination.

These goals will be achieved through implementation of the Corrective Measures program specified herein. Given the magnitude of contamination present at the facility, the Department has determined that cleanup of the soils and groundwater beneath the facility to pre-industrial use conditions is not feasible at this time. Therefore, the primary objective of the Corrective Measures program is to utilize containment technologies to achieve the remedial goals. Because cleanup of the facility will not be feasible for the foreseeable future and because containment of the hazardous waste constituents is necessary for protection of human health and the environment, the Permittee is herein required to operate and maintain the specified remedial systems in perpetuity. The Permittee must also maintain a corrective measures cost estimate, in current dollars, and provide financial assurance to cover the costs of operation and maintenance of those systems in perpetuity, in accordance with **Conditions W & X** in **Module I** of this Permit.

2. REMEDIAL CRITERIA

The following general criteria have been established to ensure that the remedial goals are achieved. More detailed criteria are specified in the description of each of the various remedial components.

a) Groundwater

- i) Plume Capture - Dissolved Phase: Establish and maintain groundwater hydraulic barriers in specified locations at the facility. The intent of the hydraulic barriers shall be to control the movement of groundwater so as to restrict migration of hazardous waste constituents, and to ultimately restore the groundwater quality of the overburden.

Although the concentration of hazardous constituents in the groundwater at certain locations within the facility exceeds the Groundwater Protection Standards, groundwater monitoring data indicate that the magnitude and extent of the contamination is limited. In those areas, the Department has determined that active remediation of groundwater contamination is not necessary at this time. The Department will rely on natural attenuation to restore the groundwater quality in those areas. If, however, the magnitude or extent of contamination in those areas increases, the Department may require the Permittee to install hydraulic barriers, or take other actions to prevent the further spread of the contaminant plumes.

- ii) Mobile DNAPL Capture: Establish and maintain a capture zone within the area of DNAPL contamination. The primary purpose of the capture zone shall be to prevent the expansion of mobile DNAPL and the highly contaminated groundwater associated with the DNAPL. In addition, the remedial system shall be designed to collect as much DNAPL as is practicable given the present state of such technology.

- iii) Cleanliness Standards: Restore the quality of the overburden groundwater to levels at or below the Groundwater Protection Standards set forth in Table II-1 at the end of this Module.
 - iv) Treatment and Discharge: Groundwater collected pursuant to this Permit shall be treated and discharged in compliance with the requirements of the NYSDEC SPDES Program. DNAPL shall be managed and treated as required by 6NYCRR Parts 370-376.
- b) Closed Landfills and Surface Impoundments, Specified Areas of Contamination:
- i) Establish and maintain cap and cover systems that preclude the dispersal of the contaminated soil, fill and waste.
- c) Lagoons and Salt Areas:
- i) In-Situ Stabilize Lagoon Sludge and Salts to meet specified contaminant reductions and strength criteria.
 - ii) Cap and maintain cover systems to limit infiltration of surface water into the stabilized waste materials.

3. SWMU CATEGORIES

Many of the SWMUs listed in Attachment E of this Permit have similar waste and design characteristics and will require the same level of effort to address them. As described in the Site-Wide CMS, six functional categories have been used to group SWMUs and Areas of Contamination based on the SWMU type, history, regulatory status, and nature of the contamination. Each category includes SWMUs that will require a similar level of effort to satisfactorily address potential concerns. Table II-3 presents the SWMUs in their appropriate category.

**Table II-3
SWMU Categories**

ENGINEERED and/or MONITORED UNITS (no releases identified) CATEGORY 1	
SLF 1	SLF 6
SLF 7	SLF10
SLF 11	SLF 12
Facultative Pond 1	Facultative Pond 2
Facultative Pond 3	Facultative Pond 8
PREVIOUSLY ADDRESSED AREAS (clean closed, etc.) CATEGORY 2	
Drum Area I	Facultative Pond 9
Fire Pond	Stabilization Area
AREAS REQUIRING NO FURTHER ACTION CATEGORY 3	
Town of Lewiston Salts Area	North Drum Area
Facultative Pond 4	Spent Carbon Piles
MacArthur Street between Main and "J" Streets	
DEFERRED SWMUs CATEGORY 4	
1. Third Party SWMUs (U.S. Government is Responsible for Releases)	
Olin Burn Area	Air Force Drum Area I
Air Force Drum Area II	Air Force Drum Area III
Acid and TNT Lines	Low Level Radioactive Contamination
M Street Manhole	Property "G"
Nike Underground Tank	Waterline Construction Area 2
Waterline Construction Area 3	Waterline Construction Area 4
2. Permitted Units Handled Under Closure	
Tanks 64 and 65	Drum Storage Warehouse
Leachate Storage Tanks	Truck Wash
A.B.T.U. 58	
LIMITED PROGRAM SWMUs CATEGORY 5	

Table II-3	
SWMU Categories	
Swale	Area west of Drum Area II
Site Wide PCB Sampling	Surface Water Swales
Tank 42	
SWMUs SUBJECT TO A FULL CMS CATEGORY 6 See Table II-4	

D. FINAL CORRECTIVE MEASURES FOR SWMUs IN EACH CATEGORY

1. Category 1 - Engineered or Monitored Units (No Releases Identified)

SLF 1	SLF 6	SLF 7
SLF 10	SLF 11	SLF 12
Facultative Pond 1	Facultative Pond 2	Facultative Pond 3
Facultative Pond 8	RMU-1	

The location of Category 1 SWMUs is depicted on Figure III-4 in Attachment E, Appendix E-4 of this Permit. These units were designed and constructed to isolate wastes from the environment. **There have been no identifiable releases of hazardous constituents from these units. Therefore, Corrective Measures are not required at these units at the present time.** In order to minimize the potential for future environmental impacts at these units, the Permittee must continue to maintain and monitor them appropriately.

- a) Monitoring - The Permittee must monitor and evaluate these units as specified in the Groundwater Monitoring Program in Attachment E, Appendix E-1 and **Module VIII** of this Permit and the Department approved “Groundwater Sampling and Analysis Plan” (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. The GWSAP shall be updated annually. Any changes to the monitoring and evaluation program requires written approval from the Department.

Monitoring of the Landfills shall continue in perpetuity. Monitoring of the Facultative Ponds shall continue for a period of no less than three years after closure of the unit (assuming “clean closure”). In the event that any of the Facultative Ponds is not “clean closed” monitoring of that unit shall continue in perpetuity unless otherwise specified by the Department.

If a future release of hazardous constituents is detected at any of these units, the investigation, evaluation and implementation of Corrective Measures to address the release shall be consistent with the historical approach that the Permittee has followed in

addressing other SWMUs at the facility.

- b) Maintenance - The Permittee must continue to maintain these units as specified in **Module V** (for FAC Pond Impoundments) and **Modules I & VI** (for landfills).

2. Category 2 - Previously Addressed SWMUs

Drum Area I	Facultative Pond 9
Fire Pond	Stabilization Area

The location of Category 2 SWMUs is depicted on Figure III-5 in Attachment E, Appendix E-4 of this Permit. These units were previously used for various waste management activities, but are now closed. Although there may have been minor releases at these units, the releases have been addressed as part of the closure of the units. The Department has reviewed the closure certification reports for these units and has determined that **no further action is required** under the Corrective Measures Program.

A brief description of the units follows:

Drum Area I - Previously located in the northeast of what is now Landfill SLF 11C. It operated from the 1970s to 1986 as a drum storage/truck staging area. Closure of the area was completed in 1986: the area was excavated as part of the SLF 11 construction.

Facultative Pond 9 - Formerly used for storage of treated wastewater prior to discharge to the Niagara River. The lagoon was drained and “closed clean” in 1989.

Fire Pond - Formerly used for storage of water for use in the fire protection program. Also used to store treated wastewater prior to discharge to other Facultative ponds. The lagoon was drained and backfilled in 1988 and has been certified as “closed clean”.

Stabilization Area - An area south of SLF 7 where kiln dust was added to sludges for stabilization prior to land disposal. Operated from 1986 through 1991. Closed in 1991. Confirmation samples have indicated that operations at this unit have not impacted the environment.

3. Category 3 - SWMUs and AOCs Requiring No Further Action

Town of Lewiston Salts Area	North Drum Area
Facultative Pond 4	Spent Carbon Piles
MacArthur Street between Main and J Streets	

The location of Category 3 SWMUs is depicted on Figure III-6 in Attachment E, Appendix E-4 of this Permit. These units were previously identified as SWMUs or AOCs. Based upon the information collected during the RCRA Facility Investigation (RFI), the Department has determined that **no further action is required** under the Corrective Measures Program.

A description of the investigations which were performed at the units is provided in Attachment E of this Permit.

4. Category 4 - Deferred SWMUs

There are two types of SWMUs in Category 4: Permitted Units that will be addressed when closed, and “Third Party” SWMUs that are related to former Department of Defense activities at the site when it was the Lake Ontario Ordinance Works. The location of Category 4 SWMUs is depicted on Figure III-7 in Attachment E, Appendix E-4 of this Permit.

Permitted Units -Truck Wash Facility	Drum Storage Warehouse
ABTU 58	Tanks 64 & 65
Leachate Storage Tanks	

These units have not yet formally closed. Evaluation of possible releases from the units will be performed as part of the closure process.

Third Party SWMUs -	Olin Burn Area	Air Force Drum Area I
	Air Force Drum Area II	Air Force Drum Area III
	Acid and TNT Lines	M-Street Manhole
	Property G	Nike Underground Tank
	Waterline Construction Areas	
	Low Level Radioactive Contamination	

The Department of Defense (DOD) is in the process of investigating and, in some instances, remediating these SWMUs. The Department anticipates that the DOD will assume responsibility for remediation of these areas. If the Department determines that the DOD has failed to accomplish the necessary remediation of these SWMUs, the Department may require the Permittee, as the owner of the property on which the SWMUs are located, to remediate the SWMUs.

(Note: Nothing in this Module is intended, and nothing herein is to be construed, to waive, prejudice or otherwise limit the authority of the Department, in the exercise of their lawful discretion, to order the Permittee to remediate the aforesaid SWMUs under any applicable laws.)

5. Category 5 - Limited Program SWMUs and AOCs

Swale	Area West of Drum Area II
Tank 42	Surface Water Swales
Site-Wide PCBs	

The location of Category 5 SWMUs is depicted on Figure III-8 in Attachment E, Appendix E-4 of this Permit. Investigations at these SWMUs have indicated a limited impact on the soil, but no impact on groundwater quality (See Attachment E of this Permit).

A brief description of the units follows:

Swale - The Swale has been identified as a SWMU due to potential spills related to operation of SLF 1-6. Six soil samples were taken from within the swale. The results of the investigation indicate the presence of minimal soil contamination. **The Department has determined that remediation of the Swale is not necessary.**

Area West of Drum Area II - This area was identified as a possible SWMU based upon review of historic aerial photographs. Although no known waste handling activity took place in the area, two soil samples were taken from within the area. The results of the investigation indicate the presence of minimal soil contamination. **The Department has determined that remediation of the area is not necessary.**

Tank 42 - The tank was located along M Street. It was removed prior to 1973. Two soil samples were taken from within the area where the tank was located. The results of the investigation indicate the presence of minimal soil contamination. **The Department has determined that remediation of the area is not necessary.**

Surface Water Swales - A Facility-Wide Surface Water Investigation was performed to evaluate the potential impacts of past site activities on the Facility drainage ditches. Twenty five sediment samples were collected from swales throughout the Facility. Trace metals concentrations above expected site background values were identified at several locations in the vicinity of SLF 7 and SLF 11. The extent of the those areas of contamination was limited.

The ecological risk assessment conducted by the Permittee concluded that the drainage features do not represent a significant aquatic habitat and that the presence of contaminated sediments does not represent a direct threat to fish and benthic invertebrates. The Department agrees with that conclusion. **Therefore, the Department has determined that remediation of the area is not necessary. However, this determination shall in no way limit sampling and possible additional measures required by Condition V.2.b in Module I of this Permit.**

Site-Wide PCBs - The purpose of the PCB Surface Soil Investigation was to evaluate the potential impact of past PCB handling operations on site soils. A total of 114 soil and sediment samples were collected from areas throughout the site. PCBs were detected in most of the samples, however, there were only five locations where PCBs were observed in excess of 10 ppm.

In December 1995, Corrective Measures (excavation) were performed at two areas of the site where PCB concentrations exceeded 25 ppm. In addition, Corrective Measures (paving) were also performed at two small areas where excavation was not practicable.

The Department has determined that further excavation or paving of the PCB contaminated soils is not required. (The remaining concentrations of PCBs are below the

25 ppm criteria that the Department has established as an acceptable residual concentration for restricted access areas.) **However, this determination shall in no way limit sampling and possible additional measures required by Condition V.2.b in Module I of this Permit.**

6. Category 6 - SWMUS Subject to Ongoing Corrective Measures

The SWMUs in Category 6 have been identified as having the potential to impact soil and/or groundwater. As part of the Corrective Measures Study (CMS), the Permittee performed a “Risk Evaluation” of these SWMUs and an “Evaluation of Corrective Measures Alternatives” to address the contamination associated with the SWMUs. The location of Category 6 SWMUs is depicted on Figure III-9 in Attachment E, Appendix E-4 of this Permit. Table II-4 contains a list of the Category 6 SWMUs, a description of the contamination associated with the SWMU, and a brief description of the proposed remedy for the SWMU. A more detailed description of the remedy is included in **Condition E** of this Module.

Table II-4

Category 6 SWMUs Actions

Unit	Approximate Contamination Levels	Action
SLF 2	Groundwater, Total VOC's - 100 ppb	Continued monitoring w/trigger
SLF 3 (north side)	Groundwater, Total VOC's - 200 ppb	Continued monitoring w/trigger
SLF 4	Groundwater, Total VOC's - 150 ppb	Continued monitoring w/trigger
SLF 5	Groundwater, Total VOC's - <50 ppb	Continued monitoring w/trigger
ICMs South of SLF 3	Groundwater, Total VOC's - >100 ppm, DNAPL	Seasonal operation of existing Interim Corrective Measures
Drum Storage west of SLF 1	Soils	Health & Safety awareness program
Wells W0703s and W0705s	Groundwater, Total VOC's W703s - 500 ppb W705s - <20 ppb	Continued monitoring w/trigger
Drum Storage Along H Street and Mac Arthur Street (wells P0701s, P0703s, W1103s, W1104s, W1105s, W1106s)	Groundwater, Total VOC's: W1103s - 50 ppb W1104s - 150 ppb W1105s - 50 ppb W1106s - 50 ppb P701s - 100 ppb P703s - 60 ppb	Continued monitoring w/trigger
Lagoons 1, 2, 5, 6 and 7	Groundwater, Total VOC's - >100 ppm, DNAPL, Full suite of contaminants within impoundments	Seasonal operation of existing Interim Corrective Measures, In-Situ stabilization of sludge + cap
North Salts Area	No GW contamination detected, Full suite of contaminants within impoundment	In-Situ stabilization of sludge + cap
East and West Salts Areas	See TMW-1S for groundwater, Full suite of contaminants within impoundments	In-Situ stabilization of sludge + cap
West Drum Area	Groundwater, Total VOC's - >100 ppm, DNAPL	Seasonal operation of existing Interim Corrective Measures
Group D	Soils - Isolated detection of 50 ppm Groundwater - 3 ppm	Monitoring w/trigger

Unit	Approximate Contamination Levels	Action
Tank Farm E	Groundwater, Total VOC's - 1 ppm	Monitoring w/trigger Health & Safety awareness program
F5801s groundwater	Groundwater, Total VOC's - <50 ppb	Continued monitoring w/trigger
Houghson Lagoon	Groundwater, Total VOC's - 220 ppb	Health & Safety awareness program
Acid Pit	Soils - <1ppm	DOD responsibility
Oil Pit	Soils - <1ppm	DOD responsibility
Syms Tank Area	Soils - <1ppm	DOD responsibility
Chemical Waste Lift Stations	Percent levels within lift stations	DOD responsibility
Process Area	Groundwater, Total VOC's - >100 ppm, DNAPL	Seasonal operation of existing Interim Corrective Measures
Well 1002s	Groundwater, Total VOC's: W1002s - 1-2 ppm TW24s - 20-30 ppm	Continued monitoring w/trigger
Piezometer P1202s	Groundwater, Total VOC's - >100 ppm	Seasonal operation of existing Interim Corrective Measures, Continued monitoring w/trigger
Tanks 50 & 51 Area	Groundwater, Total VOC's - <50 ppb	Health & Safety awareness program
PCB Warehouse	Groundwater, Total VOC's - >100 ppm	Seasonal operation of existing Interim Corrective Measures
Monitoring Well BW02s	Groundwater, Total VOC's - 50 - 100 ppm	Seasonal operation of existing Interim Corrective Measures
RMU-1 Well Investigations	Groundwater, Total VOC's - 100 ppb	Continued monitoring
TW01s, TMW-1s-3n investigations	Groundwater, Total VOC's - 150 ppb	Continued monitoring

E. SPECIFIED REMEDIES

Final Corrective Measures for the facility include a combination of active remediation and “natural attenuation” as set forth below.

1. Active Remediation

Throughout the 1990s, the Permittee and the Department have worked together to design, install, operate and maintain “Interim Corrective Measures Systems” at areas of the facility where the magnitude and extent of contamination is excessive. Continued operation of those systems is the keystone of the Final Corrective Measures for the facility.

- a) **Central Area Corrective Measures** - The vast majority of soil and groundwater contamination exists in the Central Area of the facility (Figure III-10 in Attachment E, Appendix E-4 of this Permit). There are more than 20 Category 6 SWMUs within the Central Area. They include: Lagoons 1,2,5,6 &7, the North Salts and East/West Salts Areas, the Process Area, Group D, Tank Farm E, the West Drum Area, SLFs 1-6, contamination south of SLF 3, Tanks 50, 51 and 58 and contamination attributed to, historic Drum Storage along the roadways in the vicinity of SLFs 1-6 & the East West Salts. Given the nature and distribution of soil and groundwater contamination in the area, the Department considers the entire area to be a single “Area of Contamination”. Furthermore, the Department has determined that implementing individual remedies to address releases from each SWMU within the Central Area would be impracticable. Therefore, the SWMUs within the area are being treated as a group for the purpose of implementing Corrective Measures. (The aforementioned approach does not release the Permittee from any other obligations it may have to operate, maintain, monitor and close any current (or future) regulated units, tanks, containers, etc., in accordance with the applicable regulations; nor does it obviate the Permittee’s obligation to perform SWMU-specific corrective measures if the Department determines that such actions are necessary as part of a “source control” program.)

Corrective Action Management Units (CAMUs) - In order to enhance the implementation of effective, protective, and reliable remedial actions at the facility, the Commissioner has designated the following units in the Central Area as Corrective Action Management Units (CAMUs): Lagoons 1,2,5,6 &7, the North Salts and East/West Salts Areas (Figure III- 11 in Attachment E, Appendix E-4 of this Permit). The primary rationale for the designation of these former surface impoundments as CAMUs is to foster the implementation of innovative treatment technologies (in-situ stabilization) to reduce the toxicity and mobility of the wastes contained within these units and the contaminated media within the central area of the facility. The designation of these units as CAMUs will also expedite the timing of the remedial activities associated with them. The designation of these units as CAMUs shall in no way be interpreted to mean that wastes other than wastes which originated in the impoundments or contaminated media which exist in the Central Area of the facility, as depicted in Figure III-9 in Attachment E, Appendix E-4 of this Permit, shall be treated or disposed in these CAMUs. All treatment,

disposal, and other waste management activities that take place at the CAMUs must be approved by the Department.

Corrective Measures for the Central Area shall include the following -

- i) The Permittee Shall Perform Continued Operation and Monitoring of the Groundwater & DNAPL Collection and Monitoring Systems within the Central Area. The Permittee shall operate these systems in accordance with the previously approved “Interim Corrective Measures (ICM) Implementation Plans” and the “ICM Operation and Maintenance (O&M) Manual” which are incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. The Permittee shall monitor these systems in accordance with the Corrective Measures for Specific Unit Groups and the Groundwater Monitoring Program in Attachment E, Appendix E-1 and **Module VIII**, respectively, of this Permit, and the Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. These systems include:

Lagoons Area Collection Trench
Process Area Phase I and Phase II
West Drum Area
Area South of SLF 3

- ii) The Permittee Shall Perform Closure of CAMU Lagoons 1,2,5,6 &7, the North Salts and East/West Salts Areas using in-situ stabilization treatment techniques. Treatment of the material shall be performed by the Permittee in accordance with the previously approved “In-Situ Stabilization Work Plan for the Lagoons/Salts Areas” which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. Unless otherwise agreed to by the Department in writing, treated material must achieve the following performance criteria:

- Contain no free liquids based upon the Paint Filter Test;
- Achieve a minimum Compressive Strength of 25 lbs/in² at 28 days;
- Achieve a minimum 50 % reduction in total VOCs based on pretreatment/post-treatment comparisons;
- Leachable PCBs (TCLP) shall be no greater than 500 ppb &
- Leachable Metals (SPLP) shall be no greater than 100 times the 6NYCRR Part 703 groundwater quality standards.

- iii) The Permittee Shall Perform Closure/Capping of Lagoons 1,2,5,6 &7, the North Salts and East/West Salts Areas in accordance with **Conditions D.7 & S.1** in **Module I** of this Permit, and according to the Department approved “Corrective Measures for the Lagoons/Salts Area - Final Cover Detail Design” which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. The Permittee shall complete closure of all Lagoons/Salts

impoundments, including submission of closure certifications, within one (1) year from the effective date of this Permit.

- iv) Detection Monitoring - Although hazardous waste constituents have been observed in the area downgradient of the SLF 1-6, the East/West Salts, and the North Salts, the Department has determined that those units are not the source of the contamination. Nevertheless, a monitoring program is required to insure that any future releases from those units will be detected and an appropriate response developed. The Permittee shall continually implement the detection monitoring program for SLF 1-6 in accordance with the Groundwater Monitoring Program in **Module VIII** of this Permit. The Permittee shall continually implement the detection monitoring program for the North Salts and the East/West Salts in accordance with Attachment E, Appendix E-1 of this Permit.
 - v) Soil Contamination Containment - In order to preclude the dispersal/migration of contaminated soil and fill from the Closed Process Area Tank Systems in the Central Area of Contamination by surface water, air and/or human activity, the Permittee must fulfill the inspection, maintenance and sampling requirements in accordance with an approved Central Area Inspection Plan and **Condition V.2** in **Module I** of this Permit.
 - vi) Long Term Post-Closure Care - Because cleanup of the area will not be feasible for the foreseeable future and because containment of the hazardous waste constituents is necessary for protection of human health and the environment, the Permittee is herein required to operate and maintain the Central Area remedial systems (i.e., Groundwater & DNAPL Collection and Monitoring Systems) in perpetuity, in accordance with **Conditions U & V** in **Module I** of this Permit. The Permittee must also provide financial assurance to cover the costs of operation and maintenance of those systems in perpetuity, in accordance with **Conditions W & X** in **Module I** of this Permit.
- b) Active Corrective Measures at Other Areas of the Facility - Although the vast majority of soil and groundwater contamination exists in the central area of the facility, there are other areas of the facility where the Department has identified a need for implementing individual remedies to address releases. Those areas include:

BW02S
P1202S
PCB Warehouse Area

As stated previously, Interim Corrective Measures (ICMs) have been implemented at those areas (Figure III-9 in Attachment E, Appendix E-4 of this Permit). The Department has determined that those ICMs are capable of achieving the goals of the corrective action program and serve as the basis for Final Corrective Measures. Therefore, the Permittee shall continue the operation and monitoring of these individual remedial systems in

accordance with the previously approved “Interim Corrective Measures (ICM) Implementation Plans” and the “ICM Operation and Maintenance (O&M) Manual” which are incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit, the Corrective Measures for Specific Unit Groups and the Groundwater Monitoring Program in Attachment E, Appendix E-1 and **Module VIII**, respectively, of this Permit, and the Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit.

2. Natural Attenuation

There are certain areas at the facility where, despite the fact that hazardous waste constituents have been observed in the groundwater at concentrations that exceed the 6NYCRR Part 703 groundwater quality standards, the Department has not required the Permittee to implement Interim Corrective Measures. These areas include:

Drum Storage Along H Street and Mac Arthur Street
RMU-1 Investigation Wells
Abandoned Railroad Bed

A description of these areas is included in Attachment E. The Location of the areas is depicted on Figure III-9 in Attachment E, Appendix E-4 of this Permit.

The source of the contamination in these areas has been attributed to historic drum storage along roadways during the initial stages of development of the facility as a commercial disposal facility (many years prior to the Permittee’s involvement with the site) and solvent use during the years when the site was utilized for military purposes. There are two main factors which influenced the Department’s decision to forgo implementation of Interim Corrective Measures in these areas:

- The presumed source of the contamination has long been removed from the area; and
- Downgradient monitoring wells indicate that the contaminant plumes have not migrated any substantial distance from the roadways and do not appear to pose a significant threat to human health or the environment.

The Department has required the Permittee to investigate, and subsequently monitor these areas since they were identified during the RCRA Facility Investigation (RFI). The Department has also established Well-Specific statistically based contaminant evaluation protocols that have been used to track changes in the nature and extent of the contamination in these areas and to trigger additional actions in the event that the prescribed threshold concentrations are exceeded. Those protocols are set forth in the Permittee’s approved Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit.

Based upon the groundwater monitoring data collected in these areas during the past twelve years, the Department has determined that the plumes of groundwater contamination in these areas are essentially stable and that active hydraulic containment of the plumes is unnecessary for the protection of human health and the environment. Therefore, active remediation of these areas is not required at this time. The Department will rely on Natural Attenuation of the groundwater contamination in these areas as the means for achieving the Remedial Goals. In order to insure that Natural Attenuation remains an appropriate remedy in the future, the Permittee must continue to implement the following monitoring and response programs at the areas designated below:

- a) Corrective Measures for the Natural Attenuation Areas shall include the following -
 - i) Drum Storage along H and Mc Arthur Streets - In order to monitor the magnitude and extent of the groundwater contamination, the Permittee shall monitor wells P701S, P703S, GZR01S, GZR02S, GZR03S and GZR04S at least semi-annually for the site specific "6NYCRR Part 371 Appendix 23" parameters set forth in Attachment E, Appendix E-1 of this Permit.
 - ii) Drum Storage along Mc Arthur street near SLF 10 - In order to monitor the magnitude and extent of the groundwater contamination, the Permittee shall monitor wells TW24S at least quarterly and TW29S at least semi-annually for the site specific "6NYCRR Part 371 Appendix 23" parameters set forth in Attachment E, Appendix E-1 of this Permit.
 - iii) Area of Contamination North of RMU-1 (J Street) - In order to monitor the magnitude and extent of the groundwater contamination, the Permittee shall monitor wells R102S, R108S, and R110S at least semi-annually for the site specific "6NYCRR Part 371 Appendix 23" parameters set forth in Attachment E, Appendix E-1 of this Permit.
 - iv) The Permittee shall follow the well specific evaluation procedures in the approved Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit, to track and assess the groundwater contamination.
 - v) In the event that statistical triggers (see GWSAP) for monitoring wells in these areas are exceeded, the Department will reevaluate the appropriateness of using Natural Attenuation, and may require the Permittee to implement a groundwater containment program to remediate the affected area.
- b) The monitoring requirements set forth above shall continue in perpetuity, in accordance with **Conditions U & V** in **Module I** of this Permit.

3. DOD Remediation

Acid Pit Oil Pit
Syms Tank Area Chemical Waste Lift Stations

The Department of Defense (DOD) is in the process of investigating and, in some instances, remediating these SWMUs. The Department anticipates that the DOD will assume responsibility for remediation of these areas. If the Department determines that the DOD has failed to accomplish the necessary remediation of these SWMUs, the Department may require the Permittee, as the owner of the property on which the SWMUs are located, to remediate the SWMUs.

(Note: Nothing in this Module is intended, and nothing herein is to be construed, to waive, prejudice or otherwise limit the authority of the Department, in the exercise of their lawful discretion, to order the Permittee to remediate the aforesaid SWMUs under any applicable laws.)

F. COMPLIANCE SCHEDULE FOR ADDITIONAL CORRECTIVE ACTION ACTIVITIES

There are certain areas identified during the RCRA Facility Investigation (RFI) and the Corrective Measures Study (CMS) process that require additional groundwater monitoring. Those areas include:

Tank Farm D
Railroad Bed Investigation Area
Area downgradient of TW26S

The Permittee shall sample the additional wells installed in accordance with the Department's April 9, 2001 conditional approval of the March 2001 "Well Installation Work Plan" which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. The Permittee shall sample these wells on an annual basis, unless the Department determines that more frequent sampling is necessary. Well samples shall be analyzed for Volatile Organic Compounds (VOCs) in accordance with the approved Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Condition B** (Table 2.0) in **Module I** of this Permit. Results are to be included in the monthly monitoring reports required by **Condition C.5** in **Module I** of this Permit.

G. COST ESTIMATES & FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

The Permittee must maintain Department approved cost estimates, in current dollars, and establish financial assurance for any corrective action as required by 6 NYCRR Sections 373-2.6 (1) and 373-2.8. The Department approved cost estimates for corrective action shall be maintained in accordance with **Condition W** in **Module I** of the Permit. Financial assurance shall be provided and maintained in accordance with **Condition X** in **Module I** of this Permit.

H. DEED RESTRICTIONS

There are known areas of soil and groundwater contamination at the facility. Therefore, the Permittee has included and shall maintain a formal notation on an instrument included with the deed to the facility property, which is normally examined during title search, that in perpetuity notifies any potential purchaser of the property that:

1. The land has been used to manage hazardous waste. The deed restrictions will include a map and description of the potential areal and vertical presence of hazardous waste constituents which have been detected in the soil and groundwater at the facility, typical properties of the chemicals and a list of the potential human exposure routes.
2. Use of certain areas of the facility may be restricted under 6 NYCRR Part 373-2.7, as if they were a "hazardous waste disposal facility."
3. CWM Chemical Services, L.L.C., for itself, and the State of New York, acting through the Department of Environmental Conservation or its designee, retain the right of access to and use of the property, but without the right to interfere with, obstruct, or otherwise physically impact any structures now or hereafter erected thereon for the commercially useful life of any such structure, to the extent necessary to complete the work required to implement corrective measures, and any further work determined to be necessary as a result thereof, including but not limited to any groundwater monitoring or treatment, soil management, cap and cover installation or maintenance. Subsurface alterations, construction or changes in existing building foundations, sewers, utilities, and other subsurface structures, or excavation on the property should be made with appropriate caution.
4. Future use of the facility property is restricted to industrial or commercial use only; said use shall take into account the nature and distribution of hazardous waste constituents in the soil and groundwater at the facility.

I. TEMPORARY UNITS

Temporary tanks and container storage areas used for treatment or storage of hazardous remediation waste during remedial activities identified under **Condition E.1.a.ii** of this Module may be designated as a Temporary Unit (TU) in accordance with 6NYCRR 373-2.19(b). The TU shall be allowed to operate for a period up to one year, unless extended by the Commissioner for an additional one year period as allowed by 6NYCRR 373-2.19(b)(5).

J. SUPPLEMENTAL CORRECTIVE ACTION REQUIREMENTS

The Supplemental Corrective Action Requirements that are specified by this Permit condition pertain to the investigation and control of historic chemical and radiological contamination that is known or potentially present in the environmental media on the property of the Permitted facility. All plans, reports and schedules required by this Permit condition and all subsequent amendments to those documents are incorporated by reference into this Permit, upon approval by the Department in accordance with **Module I, Condition A** of the Permit. In addition, the Permittee must submit all such plans, reports and schedules required by this Permit condition, to the New York State Department of Health (NYSDOH) in accordance with **Module I, Condition H** of the Permit.

All samples of environmental media obtained by the Permittee pursuant to this Permit condition must be analyzed by a laboratory approved for such analysis in accordance with 6NYCRR 370.1(f). The Permittee shall notify the Department at least seventy-two (72) hours in advance of any scheduled sampling or other investigative activities to be implemented by the Permittee, and shall allow Department staff and/or its authorized representatives to collect samples or splits of any samples collected by the Permittee pursuant to this Permit condition.

1. Site Radiological Survey Plan

The Permittee shall submit for Department approval, a Site Radiological Survey Plan (SRSP), including a schedule for implementation of all activities specified in the SRSP, **within 60 days of Permit issuance**. Regarding any and all Department approvals, determinations or requirements pertaining to the SRSP, the Department will act with the concurrence of NYSDOH. Upon approval, the Permittee must implement the SRSP in accordance with the schedule within the plan. The SRSP shall provide for a radiological assessment of the site's surface soils and specified building interiors. Radiological analyses of any samples collected shall include isotopic uranium, isotopic thorium, radium-226 and radium-228, and gamma spectroscopy, and other radionuclides determined by the Department to be relevant to the media and location. The SRSP shall require that any locations found to exceed pre-determined screening levels be further characterized to define the nature and extent of the elevated levels. At any time during or subsequent to SRSP implementation, if locations with elevated levels are identified and defined, the Permittee may take action, or the Department shall, at its discretion and upon concurrence of NYSDOH, require the Permittee to take action, to mark the identified areas, restrict access to these areas and, if necessary, institute measures to control migration of contaminants from these areas, as deemed necessary to protect human health and the environment. Such action, at Permittee's request, shall be subject to the provisions of Condition B.4 of this Module.

The SRSP must be made up of two components. Within 60 days of completing all activities specified for each component, the Permittee shall submit a report to the Department and NYSDOH containing all data collected during that component and corrective action recommendations for any locations identified above screening levels. The two components are the following:

a. Gamma Walkover Survey

The SRSP shall specify that a Gamma Walkover Survey be conducted to provide a surface scan of the property, except for any areas deemed inaccessible by the Permittee, with the Department's concurrence. The SRSP may provide for a phased implementation of the Survey. The SRSP must indicate that the Gamma Walkover Survey will include the following items:

- Contractor qualifications for conducting the survey;
- A map of the facility showing the implementation phases of the survey;
- A description of the instruments to be used in the survey;
- The QA / QC procedures to be employed;
- Procedures for recording data and the corresponding GPS coordinates;
- Screening level count rate and confirmation procedures; and
- A 100% coverage of each area surveyed.

b. Building Interior Survey

The SRSP shall specify that a Building Interior Survey be conducted to investigate potential surface contamination in specified buildings and radon levels inside all facility buildings.

2. Site Radiological Monitoring Plan

The Permittee shall submit for Department approval, a Site Radiological Monitoring Plan (SRMP), including a schedule indicating the frequencies of all environmental sampling events specified in the SRMP, **within 60 days of Permit issuance**. Regarding any and all Department approvals, determinations or requirements pertaining to the SRMP, the Department will act with the concurrence of NYSDOH. Upon approval, the Permittee must implement the SRMP in accordance with the sampling frequencies in the plan. The SRMP shall provide for routine environmental monitoring of groundwater, air, surface water and wastewater to track the potential for off-site migration of contamination. Aside from those samples and analyses already performed, radiological analyses of all samples shall include isotopic uranium, isotopic thorium, radium-226 and radium-228, and gamma spectroscopy, and other radionuclides determined by the Department to be relevant to the media and location. At any time during the monitoring of environmental media, if sampling data suggest the potential for off-site migration of radiological contamination, the Permittee may take action, or the Department may require the Permittee to take action, to control migration of contaminants, as deemed necessary to protect human health and the environment. Such action, at Permittee's request, shall be subject to the provisions of Condition B.4 of this Module. The analytical data generated in accordance with the approved SRMP shall be included in the Permittee's Monthly Monitoring Reports and submitted to the Department in accordance with **Module I, Condition C.5** of the Permit. In addition, the monthly reports must include a narrative summarizing the radiological data. The Permittee may petition the Department to revise the SRMP at any time subsequent to completion of one (1) year of

monitoring. The SRMP revisions shall become effective subsequent to Department approval.

The SRMP must be made up of the following components:

a. Groundwater Monitoring

The SRMP shall specify that groundwater samples will be collected for radiological analysis at existing monitoring wells, at the same time groundwater samples are routinely collected for chemical analysis. The SRMP must indicate that Groundwater Monitoring will include the following items:

- Sample collection for radiological analysis at specified shallow and deep Groundwater Monitoring Wells.;
- Radiological analysis of the well samples, and
- At least two (2) rounds of sample collection and radiological analysis per year to represent seasonal extremes.

b. Air Monitoring

The SRMP shall specify a procedure for collecting airborne particles for radioanalysis. Over a period of one year, at least one sample from each air monitoring station must be analyzed for radionuclides.

c. Surface Water Monitoring

The SRMP shall specify that surface water samples will be collected for radiological analysis which represent storm water discharges. The SRMP must indicate that Surface Water Monitoring will include the following items:

- Storm water sample collection for radiological analysis at SPDES Outfalls 002, 003 & 004; and
- At least two (2) rounds of storm water sample collection and radiological analysis per year, during high flow conditions.

d. Wastewater Monitoring

The SRMP shall specify that wastewater samples will be collected for radiological analysis which represent Fac Pond discharges. The SRMP must indicate that Wastewater Monitoring will include the following items:

- Radiological analysis of samples routinely collected to qualify each batch discharge of Fac Pond wastewater to off-site water bodies;
- Submission of radiological data with each Fac Pond Discharge Pre-Qualification Report to facilitate Department review prior to discharge approval in accordance with **Module V, Condition B.5** of the Permit.

3. Site Soil Monitoring and Management Plans

The Permittee must develop Site Soil Monitoring and Management Plans (SSMMPs), as described below, to ensure control and prevent migration of historic chemical and radiological contamination during soil excavation or soil disturbance activities. Regardless of the size of the area or amount of soil involved, each SSMMP shall describe the screening procedures that will be employed during soil excavation/disturbance to detect chemical and/or radiological contamination. Each SSMMP shall include procedures to be followed to characterize, and if deemed necessary, remediate the detected chemical and/or radiological contamination in the project area. Prior to soil disturbance or excavation, if screening indicates possible radiological contamination, the Permittee may rely upon the US Department of Defense (DOD) for performance of remedial activity as set forth in **Condition E.3** of this Module. If contamination is detected during excavation or soil disturbance, any wastes generated by such activities must be managed and disposed of in strict accordance with the Federal and State regulations which are applicable to the waste. Also, if an area of radiological contamination is remediated a final status survey must be performed in that area using procedures consistent with the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM).

The Permittee shall develop a Generic SSMMP for “small” soil excavation/disturbance projects, and, as needed, the Permittee shall develop Project-Specific SSMPs for “large” projects, as described below:

a. Generic Site Soil Monitoring and Management Plan

Within 30 days of Permit issuance, the Permittee shall submit for Department approval, a Generic SSMMP which shall be applicable to projects where the area of soil excavation/disturbance does not exceed 1000 m² (1196 yd²) and the volume of excavated/disturbed soil does not exceed 150 m³ (196 yd³). Any and all Department approvals, determinations or requirements pertaining to the generic or project specific SSMP are to be done with the concurrence of NYSDOH. Subsequent to Department approval of the Generic SSMMP, the Permittee may undertake soil excavation/disturbance projects which meet the above criteria for “small projects” without the need for project specific Department approval with respect to potential historic chemical or radiological contamination. However, the Permittee must obtain any other approvals that might be needed for such projects and the implementation of such projects must be in strict accordance with the approved Generic SSMMP. In addition to the previously mentioned requirements for all SSMMPs, the Generic SSMMP must, at a minimum, include the following:

- Procedures for performing chemical screening activities during soil excavation/disturbance;
- Sampling and analytical procedures to be employed to characterize any chemical contamination which is tentatively identified by screening techniques;

- Procedures for conducting radiological surveys including subsurface surveys and sampling;
- Qualifications for contractors or individuals involved in chemical screening or radiological surveys and sampling;
- Description of instrumentation to be used with a calibration and QA program;
- Department and NYSDOH notification prior to starting each project; and
- Procedures for reporting data collected during each project within 60 days of completion.

b. Project-Specific Site Soil Monitoring and Management Plans

Thirty (30) days prior to the anticipated implementation of any project where the area of soil excavation/disturbance is greater than 1000 m² (1196 yd²) or the volume of excavated/disturbed soil is greater than 150 m³ (196 yd³), the Permittee must submit a Project-Specific SSMMP for Department approval. In addition to the previously mentioned requirements for all SSMMPs, the Project-Specific SSMMP shall include many of the same components of the Generic SSMMP as well as project specific requirements. The Permittee may not undertake any project involving soil excavation/disturbance which is in excess of the above criteria until the Department has granted approval to the Project-Specific SSMMP applicable to that project. Any and all Department approvals, determinations or requirements pertaining to the generic or project specific SSMP are to be done with the concurrence of NYSDOH. Subsequent to Department approval of the Project-Specific SSMMP, the Permittee may implement project activities in strict accordance with the applicable Project-Specific SSMMP.

**TABLE II-1
SITE SPECIFIC INDICATORS
CWM MODEL CITY FACILITY**

Analytes	Units	Groundwater Protection Standard
Benzene	µg/l	1
Bromoform	µg/l	50GV
Carbon Tetrachloride	µg/l	5
Chlorobenzene	µg/l	5
Chlorodibromomethane	µg/l	50
Chloroethane	µg/l	5
2-Chloroethylvinylether	µg/l	50
	µg/l	7
Dichlorobromomethane	µg/l	5
1,1-Dichloroethane	µg/l	5
1,2-Dichloroethane	µg/l	0.6
1,1-Dichloroethene	µg/l	5
1,2-Dichloropropane	µg/l	1
cis-1,3-Dichloropropylene	µg/l	5
trans-1,3-Dichloropropylene	µg/l	5
Methyl Bromide	µg/l	5
Methyl Chloride	µg/l	5
Methylene Chloride	µg/l	5
Tetrachloroethylene	µg/l	5
1,1,2,2-Tetrachloroethane	µg/l	5
Toluene	µg/l	5
1,2-Trans-Dichloroethylene	µg/l	5
1,1,1-Trichloroethane	µg/l	5

**TABLE II-1
SITE SPECIFIC INDICATORS
CWM MODEL CITY FACILITY**

Analytes	Units	Groundwater Protection Standard
1,1,2-Trichloroethane	µg/l	1
Trichloroethylene	µg/l	5
Vinyl Chloride	µg/l	2
Acenaphthene	µg/l	20GV
Acenaphthylene	µg/l	50
Anthracene	µg/l	50
Benzo(a)pyrene	µg/l	ND
Benzo(g,h,i)perylene	µg/l	50
Benzo(k)fluoranthene	µg/l	0.002 GV
Bis(2-chloroethoxy)methane	µg/l	5 GV
Bis(2-chloroethyl)ether	µg/l	1.0
Bis(2-chloroisopropyl)ether	µg/l	50
Bis(2-ethylhexyl)phthalate	µg/l	5
4-Bromophenylphenylether	µg/l	*see total phenols std.
Butylbenzylphthalate	µg/l	50 GV
2-Chloronaphthalene	µg/l	10 GV
Chrysene	µg/l	0.002 GV
1,2-Dichlorobenzene	µg/l	3
1,3-Dichlorobenzene	µg/l	3
1,4-Dichlorobenzene	µg/l	3
3,3"-Dichlorobenzidene	µg/l	5
Diethylphthalate	µg/l	50 GV
Di-n-butylphthalate	µg/l	50

**TABLE II-1
SITE SPECIFIC INDICATORS
CWM MODEL CITY FACILITY**

Analytes	Units	Groundwater Protection Standard
2,6-Dinitrotoluene	µg/l	5
2,4-Dinitrotoluene	µg/l	5
Fluoranthene	µg/l	50 GV
Hexachlorobenzene	µg/l	0.04
Hexachlorocyclopentadiene	µg/l	5
Hexachloroethane	µg/l	5
Indeno(1,2,3-cd)pyrene	µg/l	2.0 10 ⁻³
Isophorone	µg/l	50 GV
Naphthalene	µg/l	10 GV
N-nitrosodi-n-propylamine	µg/l	50
N-nitrosodiphenylamine	µg/l	50 GV
Phenanthrene	µg/l	50 GV
1,2,4-Trichlorobenzene	µg/l	5
2-Chlorophenol	µg/l	*see total phenols std.
2,4-Dichlorophenol	µg/l	5 *see total phenols std.
4,6-Dinitro-o-cresol	µg/l	*see total phenols std.
2,4-Dinitrophenol	µg/l	10 GV *see total phenols std.
2-Nitrophenol	µg/l	*see total phenols std.
P-Chloro-m-cresol	µg/l	*see total phenols std.
Phenol	µg/l	*when more than one phenol compound is detected, each phenol compound may not exceed a standard of 1

**TABLE II-1
SITE SPECIFIC INDICATORS
CWM MODEL CITY FACILITY**

Analytes	Units	Groundwater Protection Standard
Aroclor 1242	µg/l	total PCBs 0.1
Aroclor 1254	µg/l	total PCBs 0.1
Aroclor 1260	µg/l	total PCBs 0.1
Aroclor 1248	µg/l	total PCBs 0.1
Aroclor 1232	µg/l	total PCBs 0.1
Aroclor 1221	µg/l	total PCBs 0.1
Aroclor 1016	µg/l	total PCBs 0.1