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John P. Cahill
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STATEMENT OF BASIS

# SELECTION OF FINAL CORRECTIVE MEASURES

## CWM Chemical Services, L.L.C.

**USEPA ID No. NYD049836679**

**Model City, NY 14107**

The New York State Department of Environmental Conservation (Department) herein describes the selection of Final Corrective Measures to address the presence of contamination at the CWM Chemical Services, L.L.C. (CWM) facility in Model City, New York. The Final Corrective Measures have been incorporated into a modification of Module III of the facility's operating Permit #9-2934-00022/00036-0. A public comment period to consider the proposed remedy was held from September 27, 2000 to November 13, 2000. In addition, the Department held a public information meeting on October 18, 2000 in Lewiston, New York. Department staff made presentations explaining the investigation that was performed and the process that led to the selection of the proposed Final Corrective Measures for the Model City Facility.

Other than some minor comments from CWM, no public comments on the proposed Final Corrective Measures were received during the public comment period or at the public information meeting. The Department determined that the Draft Permit should be modified to incorporate the changes which CWM requested. A summary of CWM's comments and the changes which were made to the Draft Permit are described in the Responsiveness Summary for the Permit. The Department has also determined that the draft Statement of Basis, as modified herein, shall be the Final Statement of Basis. The proposed Final Corrective Measures, as modified to address CWM's comments, shall be implemented by CWM as the Final Corrective Measures for the Model City facility.

Dated: January 31, 2001

By: Stephen Hammond

Stephen Hammond, P.E.
Director
Division of Solid & Hazardous Materials

## STATEMENT OF BASIS

### Purpose

The purpose of this Statement of Basis is to provide an opportunity for the public to be informed of and participate in the selection of a remedy that addresses the soil and groundwater contamination which has been observed at the CWM Chemical Services, L.L.C. facility in Model City, New York.

This document:

- provides a brief overview of the site history and site investigations which were conducted by CWM;
- identifies the proposed remedy for corrective actions at the facility and the rationale for selection of the remedy; and
- provides information on how the public can be involved in the remedy selection process.

This document summarizes information that can be found in greater detail in the administrative record for the facility.

### Introduction

This section begins with a brief discussion of the nature and extent of releases of hazardous waste constituents which have been observed at the CWM. It sets forth the "remedial goals" that 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 – 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, CWM has undertaken eighty-three (83) investigations at Solid Waste Management Units (SWMU) and site-wide areas at the Model City facility. Following Department approval of the last of the individual RFI Reports, CWM 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 RCRA Facility Investigation (RFI), CWM discovered numerous areas of contamination (AOCs) 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 will require remediation.

The hazardous 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 polychlorinated biphenyls (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.

Interim Corrective Measures – CWM and the Department have worked together to implement Interim Corrective Measures (ICM) 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 CWM are summarized in Table I below:

**Table I**
**Interim Corrective Measures**

| Area | Description of Interim Corrective Measures | Date |
|---|---|---|
| Process Area Phase I | 335 ft long Groundwater Interceptor Trench w/DNAPL Collection Sumps | 1993 |
| Process Area Phase II | 95 ft long Groundwater Interceptor Trench w/DNAPL Collection Sumps, and 7 Groundwater Extraction Wells | 1994 |
| West Drum Area | 750 ft long Groundwater Interceptor 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 |

| Area | Description of Interim Corrective Measures | Date |
|---|---|---|
| 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 CWM as 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 A 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 Lagoons 6 and 7 Salts Areas

CWM 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 CWM 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 CWM 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 CWM over certain aspects of the Corrective Measures Program. The most important issues requiring resolution were the acceptability of the pulsed-pumping strategy CWM 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 CWM 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 CWM regarding the Corrective Measures process at the facility.

In order to evaluate CWM's proposed approach for remediation/closure of the Salts and Lagoons, the Department required CWM to implement a field-scale demonstration of the in-situ stabilization technology. In April 2000, CWM 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.

As part of the CMS, CWM evaluated each remedial alternative for suitability as a component of the Final Corrective Measures for the facility based on the following criteria:

I. effectiveness
1. implementability
2. protection of human health and the environment
3. consistency with cleanup goals
4. cost effectiveness
5. permanence of remedy
6. reduction of toxicity, mobility and volume, and
7. compliance with State and federal standards and guidelines.

Based on the results of the CMS and on performance monitoring data generated as part of the Interim Corrective Measures 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 proposed Final Corrective Measures Program as follows:

## I. REMEDIAL GOALS

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

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 proposed 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, **CWM is herein required to operate and maintain the specified remedial systems in perpetuity. CWM must also provide financial assurance to cover the costs of operation and maintenance of those systems in perpetuity.**

## II. 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

1. 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 that CWM install hydraulic barriers, or take other actions to prevent the further spread of the contaminant plumes.

2. 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.

3. Cleanliness Standards: Restore the quality of the overburden groundwater to levels at or below the Groundwater Protection Standards established by the Commissioner. These standards are specified in Table III-1 of the Permit.

4. Treatment and Discharge: Groundwater collected pursuant to this Permit shall be treated and discharged in compliance with the requirements of the Department 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:***

1. Establish and maintain cap and cover systems that preclude the dispersal of the contaminated soil, fill and waste.

C. **Lagoons and Salts Areas:**

1. In-Situ Stabilize Lagoon Sludge and Salts to meet specified contaminant reductions and strength criteria.

2. Cap and maintain cover systems to limit infiltration of surface water into the stabilized waste materials.

## III. SWMU CATEGORIES

Many of the SWMUs at the Model City facility 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 2 presents the SWMUs in their appropriate category.

| Table 2<br>SWMU Categories | |
|---|---|
| ENGINEERED and/or MONITORED UNITS (no releases identified)<br>CATEGORY 1 | |
| SLF 1 | SLF 6 |
| SLF 7 | SLF10 |
| SLF 11 | SLF 12 |
| Facultative Pond 1 | Facultative Pond 2 |
| Facultative Pond 3 | Facultative Pond 4 |
| PREVIOUSLY ADDRESSED AREAS (clean closed, etc.)<br>CATEGORY 2 | |
| Drum Area I | Facultative Pond 9 |
| Fire Pond | Stabilization Area |
| AREAS REQUIRING NO FURTHER ACTION<br>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<br>CATEGORY 4 | |
| *1. 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 | 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 |

| | |
|---|---|
| DEFERRED SWMUs<br>CATEGORY 4 | |
| A.B.T.U. 58 | |
| LIMITED PROGRAM SWMUs<br>CATEGORY 5 | |
| Swale | Area west of Drum Area II |
| Site Wide PCB Sampling | Surface Water Swales |
| Tank 42 | |
| SWMUs SUBJECT TO A FULL CMS<br>CATEGORY 6<br>See Table 3 | |

**The Final Corrective Measures for SWMUs in each category are specified below:**

A. **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 | | |

The location of Category 1 SWMUs is depicted on Figure III-4. 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, CWM must continue to maintain and monitor them appropriately.

**Monitoring** - CWM must monitor and evaluate these units as specified in the Department approved "Groundwater Sampling and Analysis Plan, Revised October 1999," (GWSAP). The GWSAP shall be updated annually. Any changes to the monitoring and evaluation program require 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 are not "clean closed," monitoring of that unit shall continue in perpetuity unless otherwise specified by the Department.

If 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 CWM has followed in addressing other SWMUs at the facility.

**Maintenance** - CWM must continue to maintain these units as specified in Permit Module VII (for Impoundments) and in the Department Approved Site-Wide Post Closure Plan (Attachment G of the Permit).

B. **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. 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.

C. **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. These units were previously identified as SWMUs or AOCs. Based upon the information collected during the 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 Permit Module III, Attachment A.

D. **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.

| | | |
|---|---|---|
| **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 CWM, 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 CWM to remediate the aforesaid SWMUs under any applicable laws.)*

E. **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. Investigations at these SWMUs have indicated a limited impact on the soil, but no impact on groundwater quality.

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 CWM 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.**

**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.)

F. **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 CMS, CWM 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. On the following pages, Table 3 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 proposed remedy is included after Table 3.

| Table 3 – Category 6 SWMUs Proposed Actions | | |
|---|---|---|
| **Unit** | **Approximate Contamination Levels** | **Proposed 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<br>W703s - 500 ppb<br>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:<br>W1103s - 50 ppb<br>W1104s - 150 ppb<br>W1105s - 50 ppb<br>W1106s - 50 ppb<br>P701s - 100 ppb<br>P703s - 60 ppb | Continued monitoring w/trigger |

| Table 3 – Category 6 SWMUs Proposed Actions | | |
|---|---|---|
| **Unit** | **Approximate Contamination Levels** | **Proposed Action** |
| 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<br>Groundwater - 3 ppm | Monitoring w/trigger |
| Tank Farm E | Groundwater, Total VOC's - 1 ppm | Monitoring w/trigger<br>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 |

| Table 3 – Category 6 SWMUs Proposed Actions | | |
|---|---|---|
| **Unit** | **Approximate Contamination Levels** | **Proposed Action** |
| 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:<br>W1002s - 1-2 ppm<br>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, add Zone 3 monitoring well near TMW26-S** |
| 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 |

IV. SPECIFIED REMEDIES – Final Corrective Measures for the facility include a combination of "active remediation" and "natural attenuation"as set forth below.

A. **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.

1. Central Area Corrective Measures – The vast majority of soil and groundwater contamination exists in the Central Area of the facility (Figure III-10). 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 CWM from any other obligations it may have to operate, maintain, monitor and close any current (or future) regulated units, tanks, containers waste piles, etc., in accordance with the applicable regulations; nor does it obviate CWM's obligation to perform SWMU-specific corrective measures if the Department determines that such actions are necessary as part of a "source control" program.*

a. *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: Lagoons 1,2,5,6 and 7, the North Salts and East/West Salts Areas (Figure III- 11). 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 that originated in the impoundments or contaminated media which exist in the Central Area of the facility, as depicted in

Figure III-9, 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.

b. *Corrective Measures for the Central Area shall include the following*:

(1) Continued Operation and Monitoring of the Groundwater & DNAPL Collection and Monitoring Systems within the Central Area (Figure III-12) in accordance with the previously approved Interim Corrective Measures Implementation Plans, the Operation and Maintenance Manual, the Groundwater Sampling and Analysis Plan, and any subsequent modifications or additions to these Plans that are approved by the Department. These systems include:

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

The location of the groundwater collection systems is depicted on Figure III-12.

(2) 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 according to applicable work plans approved by the Department. Unless otherwise agreed to by the Department in writing, treated material must achieve the following performance criteria:

(a) Contain no free liquids based upon the Paint Filter Test;
(b) Achieve a minimum Compressive Strength of 25 $lbs/in^2$ at 28 days;
(c) Achieve a minimum 50 % reduction in total VOCs based on pretreatment/ post-treatment comparisons;
(d) Leachable PCBs (TCLP) shall be no greater than 500 ppb; and
(e) Leachable Metals (SPLP) shall be no greater than 100 times the 6NYCRR Part 703 groundwater quality standards.

(3) Capping of Lagoons 1,2,5,6 &7, the North Salts and East/West Salts Areas shall be performed according to the Department approved "Final Design Cover Report" (April 28, 1999) for those units.

(4) 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 detection monitoring program for SLF 1-6 is specified in Module VII. The detection

monitoring program for the North Salts and the East/West Salts is specified in Appendix I of Attachment A.

(5) Soil Contamination Containment - In order to preclude the dispersal of the contaminated soil and fill from the Central Area of Contamination, the Permittee must, within 30 days after the effective date of this Permit, submit a Plan for a Central Area cap/cover management system. The Plan shall include a detailed map that depicts the places within the Central Area where the various cap/cover elements are (or will be) located, the basis for their use in achieving the remedial criteria, and provisions for their inspection and maintenance. The Plan shall also include a schedule of implementation for installation of cap/cover elements at locations within the Central Area which currently lack mechanisms to preclude dispersal of contaminated soils.

(6) 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, CWM is herein required to operate and maintain the Central Area remedial systems in perpetuity. **CWM must also provide financial assurance acceptable to the Commissioner to cover the costs of operation and maintenance of those systems in perpetuity.**

2. 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 have been implemented at those areas (Figure III-9). The Department has determined that those ICMs are capable of achieving the goals of the corrective action program and should serve as the basis for Final Corrective Measures. Therefore, CWM shall continue the operation and monitoring of these individual remedial systems in accordance with the previously approved Interim Corrective Measures Implementation Plans, the Operation and Maintenance Manual, and the Groundwater Sampling and Analysis Plan, and any subsequent modifications or additions to these Plans that are approved by the Department.

B. **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 CWM 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 A. The location of the areas is depicted on Figure III-9.

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 CWM'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 CWM to investigate and subsequently monitor these areas since they were identified during the 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 CWM's approved Groundwater Sampling and Analysis Plan (GWSAP).

Based upon the groundwater monitoring data collected in these areas during the past 12 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,

CWM must continue to implement the following monitoring and response programs at the areas designated below:

1. Drum Storage along H and McArthur 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 "Appendix 33" parameters set forth in Attachment A, Appendix I of the Permit.

2. 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 "Appendix 33" parameters set forth in Attachment A, Appendix I of the Permit.

3. 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 "Appendix 33" parameters set forth in Attachment A, Appendix I of the Permit.

4. CWM shall follow the well-specific evaluation procedures in the approved Groundwater Sampling and Analysis Plan to track and assess the groundwater contamination.

C. 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 CWM to implement a groundwater containment program to remediate the affected area.

The monitoring requirements set forth above shall continue in perpetuity unless otherwise specified by the Department.

## V. DOD REMEDIATION

| | |
|---|---|
| Acid Pit | Oil Pit |
| Syms Tank Area | Chemical Waste Lift Stations |

The 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 CWM, 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 CWM to remediate the aforesaid SWMUs under any applicable laws.*

## VI. COMPLIANCE SCHEDULE FOR ADDITIONAL CORRECTIVE ACTION ACTIVITIES

There are certain areas identified during the RFI and CMS process that require additional groundwater monitoring. Those areas include:

Tank Farm D
Railroad Bed Investigation Area
Area downgradient of TW26S

By March 31, 2001, CWM shall submit a Plan to install wells and monitor groundwater downgradient of these areas. Within 90 days of Department approval of the well installation Plan, CWM shall install the wells and shall submit an evaluation and response program for these areas that is similar to those developed to track contamination in the Natural Attenuation areas described in paragraph IV. B. above.

## VII. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

The Permittee must establish financial assurance for any corrective action as required by 6 NYCRR Sections 373-2.6 (1) and 373-2.8. Financial assurance shall be provided as set forth in Attachment D, and maintained in accordance with Conditions Q & R in Module II of this Permit.

## VIII. DEED RESTRICTIONS

There are known areas of soil and groundwater contaminations at the facility. Therefore, within 30 days of the effective date of this permit Module, CWM shall make a formal notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

A. 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 that 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.

B. 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."

C. 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.

D. 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.

## STATEMENT OF BASIS SUMMARY

The following section profiles the performance of the proposed remedies with the four general standards and five remedial decision factors which the Department used to evaluate the efficacy of the remedy:

1. Overall Protection – The proposed remedies would extract groundwater and treat it to remove contaminants thereby reducing the risks of direct contact and minimizing the potential for migration of contaminants from the site. The In-situ stabilization of the Lagoons and Salts will further reduce the source of the contaminants at the facility.

2. Attainment of Media Cleanup Standards – The proposed remedies includes attainment of State groundwater standards as a remedial goal. Termination of the remedial program will only be possible when the standards are achieved. Because site conditions may preclude achievement of the standards, perpetual operation and maintenance of the remedial systems is required. (Cleanup of contaminated soils is not required; however, the permittee is required to cap or cover contaminated soils to preclude their disposal.)

3. Controlling the Sources of Releases – Historical data indicate that the proposed remedies will be effective in reducing, to the extent practicable, further migration of contaminants in groundwater. The proposed remedies would remove contaminated groundwater prior to reaching the facility boundary.

4. Compliance with Waste Management Standards – Closure of the Lagoons and Salts Areas and the removal of groundwater and its treatment will comply with the applicable requirements for the management of generated wastes. This compliance will assure that the management of wastes is conducted in a protective manner.

5. Long-term Reliability and Effectiveness – Historical operations of similar remedial systems in New York State, particulary the Niagara Frontier, indicate that the technology of the proposed remedy is effective and reliable on a long-term basis.

6. Reduction of Toxicity, Mobility or Volume of Wastes – The proposed remedy should reduce the mobility, volume and; hence, the toxicity of the hazardous constituents via the removal of VOCs during in-situ stabilization of the Lagoons and Salts and via removal of contaminated groundwater from the site.

7. Short-term Effectiveness – Historical operations of similar remedial systems indicate that the technology of the proposed remedy is effective and reliable on a short-term basis. Performance data obtained during operations of the interim measures systems support their effectiveness in stabilizing the Lagoons and Salts Areas and in containing the contaminated groundwater.

8. Implementability – The proposed remedy can be readily implemented, most of the major elements of the remedy are already in place.

9. Cost – Historical operations of similar remedial systems in the Niagara Frontier indicate that the technology of the proposed remedy is cost effective.

## PUBLIC PARTICIPATION

The Department encouraged input from the community on the remedial methods proposed. The public was also invited to provide comments on remedial alternatives not addressed in the CMS. The Department established a public comment period from September 27, 2000 to November 13, 2000 to solicit public participation in the selection process. A public information session was held on October18, 2000 at the Lewiston Porter School to inform the public about the proposed permit modification and proposed corrective action at the site.

The administrative record is available at the following locations:

Town of Lewiston Public Library
305 South Eighth Street
Lewiston, New York 14092

NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
50 Wolf Road, Room 460
Albany, New York 12233-7252
(contact person: William Wertz, 518/457-9253)

NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
Region 9, Buffalo Office
270 Michigan Avenue, Buffalo, New York 14203
(contact person: Bidjan Rostami, 716/851-7220)

Comments about the State Part 373 draft permit modification were sent to:

Mr. Steven J. Doleski
Regional Permit Administrator
NYSDEC Region 9
270 Michigan Avenue
Buffalo, New York 14203

Attachments