ATTACHMENT E

Corrective Action Requirements

[*NOTE: Attachment E is **NOT** being modified. It is presented in association with the Draft RMU-2 landfill modification since some of the requirements contained in this attachment are or may be applicable to the proposed units.*]

ATTACHMENT E - CORRECTIVE ACTION REQUIREMENTS

SWMU Group Status Summary:

Group A:

Units: SLF 1, SLF 2, SLF 3, SLF 4, SLF 5, SLF 6, Drainage Swale, Town of Lewiston Salts Area, Drum Storage West of SLF 1

GROUP A INVESTIGATION STATUS

SLF 1 - 6 Area: The RCRA Facility Investigation (RFI) of secure landfills SLF 1-6 consisted of an evaluation of landfill leachate and groundwater monitoring data from wells in the vicinity of these units. Historical groundwater monitoring results have indicated the presence of Volatile Organic Compounds (VOCs) at concentrations above statistical trigger levels in monitoring wells W202S, W301S, W302S, W401S, and W501S. Subsequent investigations of these wells included: sampling the wells in question for USEPA Appendix IX parameters, comparing of chemical data from landfill leachate to groundwater results to identify a potential source, and a soil boring program to determine the extent and possible source of contamination.

The nature and distribution of contamination in the vicinity of wells W202S, W301S and W401S is such that CWM was not able to determine a specific source of the contamination. Possible sources include surface spills, past site practices in the area, the East-West Salts Area, SLF 3 and/or SLF 4. Remediation of the groundwater contamination detected in these wells was evaluated as part of the Corrective Measures Study (CMS) for the facility. An alternative statistical evaluation criteria along with a quarterly monitoring schedule has been implemented to keep track of the magnitude and extent of contamination in the vicinity of these wells. The data evaluation procedures are included in Exhibit F in Schedule 1 of Module I of this permit. Groundwater monitoring data from the wells indicate contamination levels have stabilized and are trending lower.

The nature and distribution of contamination in the vicinity of well W501S suggests that the source of VOCs in W501S appears to be related to surface spills or possibly past activities associated with a former Air Force Burn Pit. Remediation of the groundwater contamination detected in this well was evaluated as part of the Corrective Measures Study (CMS) for the facility. An alternative statistical evaluation criteria along with a quarterly monitoring schedule has been implemented to keep track of the magnitude and extent of contamination in the vicinity of this well. Contamination has not been detected in well W501S since 1994. The data evaluation procedures are included in Exhibit F in Schedule 1 of Module I of this permit.

During the investigation of well W302S an additional area of contamination was found in the vicinity of boring MW3-2-1W. Follow-up investigation of this area consisted of the collection of soil and groundwater samples. It appears that a past external leachate collection sump is the source of the contamination in W302S and in the area south of SLF 3. Data collected from the various investigations south of SLF 3 were used to prepare a interim remedial design for the area. This design included the installation of two extraction wells in the area to remove groundwater containing organic contaminants in the Upper Tills. Upon DEC and EPA approval, the two extraction wells (EW06 & EW07) were installed south of SLF 3 in November 1990. The extraction well (interim corrective measures) system has been in operation since July 1991. The ICM system has a performance monitoring program in place to evaluate the systems effectiveness in capturing and containing groundwater contamination. The Interim corrective measures system was evaluated under the CMS and determined it is suitable as part of the long term corrective measures program needed for the facility. Seasonal (April 1 – December 1) operation of the installed corrective measures system, in accordance with the approved Groundwater Extraction Systems Operations and Maintenance Manual and Groundwater Sampling and Analysis Plan, shall constitute the final corrective measure.

Swale: The RFI for the Swale consisted of six (6) soil borings (DA41-1 through DA41-6). Four of the borings were sampled for Volatile Organic Analysis, Priority Pollutant Metals, and PCBs. Two soil borings were sampled for the full suite of priority pollutants. In addition, samples from each boring were collected and analyzed using a field GC during the investigation. Analytical results of the samples indicate that metals concentrations are within the expected background range. In addition, Methylene Chloride was present at levels below 5 parts per billion in all borings, and total PCBs were present at a concentration of 2.38 parts per million (PPM) in sample DA41-3-2 (boring DA41-3). Remedial programs to address the contamination were evaluated as part of the **Site-Wide** CMS. The Department has determined that no further action is necessary.

Town of Lewiston Salts Area: The RFI for this Area consisted of eight (8) soil borings (DA42-1 through DA41-8). Six of the borings were sampled for Volatile Organic compounds, Priority Pollutant Metals, and PCBs. Two soil borings were sampled for the full suite of priority pollutants. In addition, samples from each boring were collected and analyzed using a field GC during the investigation. Analytical results of the samples indicate that metals concentrations are within the expected background range. In addition, Methylene Chloride was present at levels below 12 parts per billion (ppb) in all borings, and total PCBs were present at a concentration of 9 ppb in sample DA42-4-1B (boring DA42-4). Based upon CWM's investigation of the Town of Lewiston Salts Area the Department has determined that a significant release to the environment has not occurred and that remedial measures are not needed for the unit.

Drum Storage Area West of SLF-1: The initial RFI of the Drum Storage Area West of SLF-1 was composed of sampling four (4) soil borings (DA6-1 through DA6-4) for priority pollutant analysis. A field GC was used to perform headspace analysis of soil samples in the field. Laboratory analyses of the four soil samples indicate the presence of several organic compounds

in each sample. Based on these results, a Phase II investigation consisting of analyses of nine (9) soil borings (DSW-1 through DSW-9) and groundwater samples was performed. The Phase II investigation results indicate:

- PCBs at levels greater the 10 ppm in borings DSW-2, DSW-3, DSW-4 and DA6-2.

- The presence of organic compounds in borings DSW-5, DSW-7, DSW-8, and Phase I borings DA6-3 and DA6-4.

As a result of the investigation, CWM has concluded that:

- The presence of organic contaminants is limited to the first few feet of the Upper Clay Till.

- The areal extent of VOCs in the soils appears to be limited to the southern portion of the Drum Storage Area West of SLF-1.

- The source of the contamination is suspected to be the result of past spills or drum leakage along the roadway.

Remedial measures to address the contamination detected in this area was evaluated as part of the Corrective Measures Study (CMS) for the facility. The Department has determined that Natural Attenuation will serve as the final remedy for this area.

References

CWM Chemical Services Inc., February 1992, "Data Collection Program; Interim Measures Remedial Systems, CWM Chemical Services Inc., Model City New York."

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., April 1989a, "Interim Report, MW-3-1S, MW3-2S, and MW4-1S Investigation, Model City TSD Facility, Model City, New York."

Golder Associates Inc., April 1989b (Vol. I) and December 1989 (Vol. II), "Interim Report on East Salts Area, West Salts Area, TMW-1S Investigation, Model City TSD Facility, Model City, New York," Volumes I and II.

Golder Associates Inc., September 1989a, "Well MW5-1S Investigation, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., January 1990a, "Conceptual Interim Remedial Design Area Adjacent to Well MW3-2S, Model City TSDR Facility."

Golder Associates Inc., April 1990a, "Detailed Design of Interim Measures, West Drum Area, Lagoons Area and South of SLF 3, Model City, New York," Volumes I and II.
Golder Associates Inc., June 1990b, "Landfills SLF 1 through 6, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., January 1991a, "Interim Report on the Site Areas Investigation, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., October 1991, "Letter Report on Background Trace Metal Evaluations."

Golder Associates Inc., February 1992, "Drum Storage Area West of SLF 1 Phase II Investigation, Model City, New York."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

Group B:

Units: SLF 7, SLF 11, Drum Area I, North Drum Area, Drum Storage Along H Street and MacArthur Street

GROUP B INVESTIGATION STATUS

SLF 7: The RCRA Facility Investigation (RFI) of Secure Landfill 7 consisted of an evaluation of landfill leachate and groundwater monitoring data from wells in the vicinity of this unit. In addition, the groundwater investigation program included an evaluation of VOCs detected in well W703S. The investigation program for well W703S consisted of sampling for USEPA Appendix IX parameters, a geophysical survey and soil borings with soil headspace analyses.

Evaluation of the results of the RFI indicate that source(s) of VOCs detected in well W703S adjacent to SLF 7 were linked to past government use of the property. CWM has concluded that the Olin Burn Area (see Group I) is the probable source of the VOCs detected in well W703S. Alternative statistics have been developed for W703S to allow for its continued use in the detection monitoring network for SLF 7. Groundwater monitoring results indicate contaminant concentration reduction of an order of magnitude, from 500 ppb to approximately 50 ppb. The data evaluation procedures for this well are included in Exhibit F in Schedule 1 of Module I of this permit.

Subsequent to the RFI, well W705S failed the statistical evaluation procedures for 1,1,1-Trichloroethane and a total VOC concentration of 25 ppb. CWM has performed a NYSDEC approved investigation and has determined that the contamination is not related to releases from the landfill. The Department has approved an alterative statistical evaluation procedure for well W705S. Remedial measures to address the groundwater contamination detected in the monitoring wells in the vicinity of SLF 7 was evaluated as part of the Corrective Measures Study (CMS). The Department has determined that Natural Attenuation will serve as the final remedy for this area.

SLF 11 and Drum Area I: The RFI for SLF 11 and Drum Area I include an evaluation of landfill leachate and groundwater monitoring data from wells in the vicinity of the units. The evaluation included the investigation of four monitoring wells (W1103S, W1104S, W1105S and W1106S) which contained statistically significant concentrations of VOCs. The source of the VOCs in these wells is presumed to be a result of past drum storage along the roadways (see following summary of Drum Storage Along "H" Street and Mac Arthur Street investigation). Alternative statistical procedures for these wells have been developed for the continued use of these wells for detection monitoring of SLF 11. Remedial measures to address the groundwater contamination detected in the monitoring wells in the vicinity of SLF 11 was evaluated as part of the Corrective Measures Study (CMS). The Department has determined that Natural Attenuation will serve as the final remedy for this area. Groundwater monitoring results indicate contaminant concentration reduction of an order of magnitude, from approximately 150 ppb to approximately 15 ppb. The data evaluation procedures for this well are included in Exhibit F in Schedule 1 of Module I of this permit.

North Drum Area: The North Drum Area investigation included two soil borings which were sampled and analyzed for VOCs in the field using a field gas chromatograph (GC). One sample from each boring was also sent to an analytical laboratory for priority pollutant analysis. Results of these analyses did not indicate the presence of any constituents at concentrations requiring further action.

Drum Storage Along "H" Street and Mac Arthur Street: Investigations performed to evaluate the impacts of known past drum storage along H street and McArthur street include the well Z03 assessment, soil sampling along H street and McArthur street (associated with assessments of wells W1103S, W1104S, W1105S, W1106S), the well W1103 confirmation study and Drum storage - McArthur street between Main street and J street investigation. The conclusions of the first two investigations were that VOCs are present in soils and groundwater in random, localized zones as a result of leakages from drums or tank trucks which were stored along the roadways. Alternative statistics were developed for wells P701S, P703S, W1103S, W1104S, W1105S, W1106S for their continued use as monitoring wells.

Continued monitoring well W1103S indicated VOCs at concentrations which exceeded the alternative statistics developed for this well. To evaluate if the source of increased VOCs in well

W1103S was due to past drum storage, a confirmation study was performed. The confirmation study consisted of analysis of a groundwater sample from W1103S for Appendix 33 constituents: replacement of four downgradient shallow trench wells with bored wells (GZR01S through GZR04S) of similar design to the 373-2 monitoring wells; and subsequent analysis of samples from the four replacement wells. Results of the Appendix 33 analyses on the sample from W1103S did not indicate additional constituents to those previously detected and attributed to past drum storage. Analyses of samples from the replacement wells did not indicate the presence of VOCs. The study confirmed that the VOCs detected were due to past drum storage and that the downgradient extent of the VOCs is limited. The Department has determined that Natural Attenuation will serve as the final remedy for this area.

An additional investigation was conducted to evaluate whether past drum storage along the roadway may have impacted the environment along McArthur street between Main street and J street. This investigation consisted of eight soil borings (MR-1 through MR-8) which were continuously sampled through the Upper Till units and into the underlying Glaciolacustrine Clay. All soil samples were analyzed for select VOCs with a field GC. One soil sample, from boring MR-6, was sent to an analytical laboratory for volatile organic analysis. Results of the investigation did not indicate the presence of VOCs along this portion of McArthur street.

References

CWM Chemical Services Inc., January 1990, "SLF 11 Confirmation Study"

CWM Chemical Services Inc., April 1992, "Monitoring Well W705S" Letter Report.

Golder Associates Inc., April 1988b, "Well MW7-3S Investigation, Model City TSD Facility, Model City, New York."

Golder Associates Inc., February 1989 and Revised Figures, May 1989, "Aerial Photographic Interpretation Report, Model City TSD Facility, Model City, New York."

Golder Associates Inc., June 1989, "SLF 7 Interim Report, Model City TSD Facility, Model City, New York."

Golder Associates Inc., September 1989b, "Interim Report on SLF 11, Drum Area I, and Drum Storage Along H Street and McArthur Street, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., January 1990b, "Investigation of McArthur Street Between Main Street and J Street, Model City TSD Facility, Model City, New York."

Fred C. Hart Associates, Inc., April 1986, "H Street Soil Sampling Program, SCA Chemical Services, Inc., Model City, New York."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units.

Group C:

Units: Lagoon 1, Lagoon 2, Lagoon 5, Lagoon 6, Lagoon 7, North Salts Area, West Drum Area, Area West of West Drum Area

GROUP C INVESTIGATION SUMMARY

Lagoons 1, 2, 5, 6 AND 7: VOCs were detected in groundwater samples from several wells around the Lagoons (TW05S, TW08S, TW09S and TW10S). The source of these VOCs is suspected to be the Lagoons. As a result of these detections, investigations were conducted under the DEC investigation program. The investigation included Appendix 33 groundwater sampling of three wells monitoring the lower Glaciolacustrine Silt/Sand unit (TW09D, TW10D, and TW30D) and field/laboratory analyses of twenty two soil borings.

Based on the results of the investigations, the Department required CWM to develop Interim Corrective Measures (ICM) for the removal and treatment of contaminated groundwater around the lagoons. Further investigations North and West of the Lagoons were implemented to delineate the extent of the areas where interim measures were needed. This program included borings LS-18 through LS-41. In November 1990, five groundwater extraction wells North of the Lagoons and one hundred eighty feet (180') of groundwater collection trench West of Lagoon 6 were installed. Start-up of the ICM system was initiated in June 1991. The ICM system was expanded in 1998. CWM has a performance monitoring program in place to evaluate the systems effectiveness in capturing and containing the groundwater contamination.. The Interim corrective measures system was evaluated under the CMS to determine its applicability as part of the final corrective measures for the facility.

A SWMU specific CMS was conducted to evaluate remediation of Lagoons 1,2,5,6 & 7 and the East/West and North Salts Areas. 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

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 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 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 the CWM 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 AUpdate 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 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, the Permittee submitted the ALagoon 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. Upon issuance of the Final Statement of Basis (NYSDEC, 2001), approximately 200,000 cu. yds. of materials were treated and capped in place. Operation and maintenance of the containment and groundwater remedial system are addressed as part of the approved Groundwater Extraction Systems Operations and Maintenance Manual and Groundwater Sampling and Analysis Plan.

North Salts Area: The RFI of the North Salts Area was performed by evaluating all the North Salts Area groundwater monitoring data and sludge samples taken from the salts impoundment. The salts samples contained VOCs in high (> 500 ppb) concentrations. Groundwater data from wells around the unit show no indications of releases of VOC's from the impoundment. Final Measures will include in-situ treatment of the lagoon sludges and soils.

Drum Area II (West Drum Area): Initial clean-up of this area involved the removal of approximately 10,000 cubic yards of contaminated surface soils. Further excavation to remove contaminated soil to a depth ranging from 5 to 20 feet, was performed in 1986 and the area was certified as closed. Thereafter, monitoring wells (TW16s, TW17S and TW18S) were installed to evaluate the impacts of the unit on groundwater. High concentrations of several organic compounds were detected in samples from wells TW16S and TW17S. In addition, the potential presence of DNAPLs was observed during the initial sampling program.

CWM was required to perform an RFI to determine the nature and extent of the organic compounds in the vicinity of the units. Based on the results of the investigation, CWM was required to develop Interim Corrective Measures (ICM) for the containment, removal and treatment of contaminated groundwater in the vicinity of the West Drum Area. Additional investigations were performed to delineate the extent of the areas where interim measures were needed. That program included borings WDGW1 through WDGW20.

In the fall of 1990, seven hundred and fifteen feet of collection trench was constructed along the western and northern boundaries of the area. Start-up of the ICM system was initiated in June 1991. The ICM system has a performance monitoring program in place to evaluate the systems effectiveness in capturing and containing groundwater contamination. The Interim corrective measures system was evaluated under the CMS to determine its applicability as part of the Final Corrective Measures for the facility. The department has determined that the ICMs shall continue as the final remedy for this area.

Area West Of Drum Area II: The RFI for the Area West of Drum Area II consisted of two soil borings, DA2-1 and DA2-2. Two organic compounds, PCB-1260 and PCB-1242, were detected in soils in this area. The concentrations of PCB,s are below CWM's investigative action level of 10 ppm, but further evaluation of the PCB contamination was required as part of the corrective measures study. No further actions are required at this area.

References

CWM Chemical Services Inc., February 1992, "Data Collection Program; Interim Measures Remedial Systems, CWM Chemical Services Inc., Model City New York."

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., November 1988, "Investigations North and West of the West Drum Area, Model City TSD Facility, Model City, New York."

Golder Associates Inc., February 1989 and Revised Figures, May 1989, "Aerial Photographic Interpretation Report, Model City TSD Facility, Model City, New York."

Golder Associates Inc., March 1989a, "Interim Report on Lagoons and Salts Area 7 Investigation, Model City TSD Facility, Model City, New York," Volumes I and II.

Golder Associates Inc., May 1989, "Delineation of Area for Interim Remedial Measures, Former West Drum Area."
Golder Associates Inc. July 1989, "Delineation of Area for Interim Remedial Measures, Lagoon Areas."

Golder Associates Inc., August 1989 (Volume I and II) and October 1989 (Vol. III), "Report on Conceptual Remedial Design, West Drum and Lagoon Areas, Model City TSDR Facility," Volumes I through III.

Golder Associates Inc., April 1990a, "Detailed Design of Interim Measures, West Drum Area, Lagoons Area and South of SLF 3, Model City, New York," Volumes I and II.

Golder Associates Inc., May 1990, "Interim Report on North Salts Area, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., August 1991, "As-Built Documentation and Construction Certification Interim Remedial Systems, " Volume I, Calocerinos and Spina Engineers, P.C., Volume II.

Fred C. Hart Associates, Inc., December 1986, "Closure Report and Certification, West Drum Area, SCA Chemical Services, Inc., Model City, New York,"

Northeast Research Institute Inc., March 1989, "Results on the Findings of the Petrex Soil Gas Survey Conducted at the Model City Landfill in New York for Golder Associates."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

Group D:

Units: Lagoon 3, Lagoon 4, Drum Storage Area east of Lagoon 2, Trailer Parking Area

GROUP D INVESTIGATION SUMMARY

The Trailer Parking Area is the only unit which is still in operation, the other units were closed by 1980.

The initial RFI evaluation of Group D consisted of 11 shallow soil borings (DA24-1 through DA24-10 and DA24-1A) from which soil samples were collected and analyzed in the field using

field gas chromatographs. Additionally, ten (10) soil samples, representing the first undisturbed soil layer encountered in each boring, were sent to an analytical lab for priority pollutant analysis. Review of the field and analytical data indicated the presence of organic compounds at five locations (DA24-1, DA24-3, DA24-5, DA24-6 and DA24-8). Based on the results of the initial investigation of the Group D Area, a further investigation was required to evaluate the areal and vertical extent of the contamination. The Phase II investigation consisted of six (6) additional borings (GDA-1 through GDA-6) from which soil and groundwater samples were collected and analyzed using the field GC. In addition, one soil sample was collected and sent to an analytical lab for priority pollutant organics analysis. Review of the Phase II investigation field and analytical results indicated the presence of organic contaminants in five of six borings.

Based on the findings of the Phase I and Phase II investigations of Group D Area, the following general conclusions were made:

- Borings completed at the north, south, east and west boundaries of the Group D area that yielded soil, groundwater or both, having minor or no reported detection of organic compounds;

- The vertical extent of organic compounds in the subsurface of the Group D Area has been defined. All Phase II borings were terminated in the Glaciolacustrine clay. Organic compounds were not reported in samples collected from this unit. Detections of organic compounds were confined to the fill or Upper Tills unit;

- The localized nature of the impacted areas suggest potential sources such as surface spills from past waste handling practices or residual organic compounds related to the lagoons which formerly occupied the area.

An additional monitoring well (GDA01S) was installed downgradient of Group D to confirm that natural attenuation is an appropriate final remedy for this area.

The Department is aware of the presence of inactive TNT process lines associated with the former Department of Defense (DOD) usage of the Site. Past analyses of the contents of these lines reveal the presence of significant concentrations of hazardous constituents. The NYSDEC anticipates that the Department of Defense will assume responsibility for development and implementation of appropriate corrective measures to address the TNT lines.

References

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., January 1992b, "Group D Area: Lagoons 3 and 4, Trailer Parking and Empty Drum Storage Area, Model City TSDR Facility," Volumes I and II.

Group E:

Units: Facultative Pond 1, Facultative Pond 2, Facultative Pond 3, Facultative Pond 8, Facultative Pond 9, Fire Pond, Aggressive Biological Treatment Unit (A.B.T.U.) 58

GROUP E INVESTIGATION STATUS

Fac Ponds 1,2,3,and 8: The RFI for Fac. Ponds 1,2,3 and 8 consisted of an evaluation of existing groundwater monitoring data. Review of the historical data indicates that hazardous waste constituents have not been released from these impoundments to the groundwater. These units are subject to continued groundwater detection monitoring requirements as part of the 6 NYCRR Part 373~~-2~~ Site-Wide permit. Further evaluation of the possible impacts of these units will be addressed as part of a NYSDEC approved closure plan.

Fac Pond 9:Fac. Pond 9 was evaluated under the RFI in the same manner as Fac. Ponds 1,2,3 & 8. Review of the historical data indicated that this unit had not impacted the groundwater in its vicinity.

In 1991, CWM closed Fac. Pond 9 in accordance with an approved closure plan. The closure of this unit consisted of draining the impoundment followed by the collection of samples from 55 locations. Due to QA/QC problems with some of the analyses, the DEC requested additional sampling and analysis. Results of the additional sampling did not reveal the presence of organic or metallic compounds above trace levels. The DEC accepted CWM=s certification of the "Clean Closure" of FAC Pond 9 on August 7, 1992.

Fire Pond: The RFI for the Fire Pond consisted of an evaluation of existing groundwater monitoring data. Review of the historical data indicates that hazardous waste constituents have not been released from this impoundment to the groundwater.

In 1988, CWM initiated closure activities for the Fire Pond. Closure activities consisted of fluid removal, excavation of the top 6 inches of sediment inside the impoundment and the collection of samples. Results of the sampling did not reveal the presence of organic or metallic compounds above trace levels. The DEC accepted CWM=s certification of the "Clean Closure" of the Fire Pond in 1990.

A.B.T.U. 58: In August 1991, CWM informed the Department that well F5801S failed its statistical evaluation procedures. As required, an investigation consisting of Appendix 33 groundwater sampling and a review of existing soils investigation data was performed. The results of the investigation revealed the presence of Phenol in the soils at a concentration >1000 ppb. Based on those results, the Department required CWM to undertake an additional investigation to determine whether a release from A.B.T.U. 58 had occurred. The investigation included an inspection of the concrete floor of the impoundment and the evaluation of soil

borings at 4 locations. Soil and groundwater samples were obtained from each of the borings and analyzed by field GC. Additionally groundwater samples were obtained from the open boreholes and analyzed for phenol at an analytical laboratory. The only VOCs detected during the investigation were limited to boring F5801S-2. The contamination in the vicinity of A.B.T.U. 58 is believed to be related to former operations in the Process Area rather than to releases from the impoundment. Remedial measures to address the contamination were evaluated in the Corrective Measures Study. The groundwater monitoring and response program will continue at the active SWMUs.

References

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., March 1989b, "Interim Reports on ABTU 58 and the Fire Pond, Interim/Group E Report: FAC Ponds 1 and 2, FAC Pond 3, FAC Pond 8 and FAC Pond 9," Volumes I and II.

Golder Associates Inc., January 1991a, "Interim Report on the Site Areas Investigation, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., October 1991, "Letter Report on Background Trace Metal Evaluations."

Golder Associates Inc., June 1992a, "F5801S Well Investigation, Model City TSDR Facility, New York."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

Group F:

Units: Houghson Lagoon, Acid Pit, Oil Pit, Syms Tank Area, Syms Property Underground Tanks

GROUP F INVESTIGATION SUMMARY

Houghson Lagoon: The RFI for the Houghson Lagoon consisted of sampling the contents of the lagoon, both sludge and liquid, and installation and sampling of four soil borings and a groundwater monitoring well. All collected samples were analyzed by an analytical lab for priority pollutants. The sludge sampled from the Houghson lagoon did not indicate the presence of VOCs or PCBs. The sludge sample was reported to contain elevated concentrations of

cadmium, chromium, copper, lead, nickel and zinc, and high concentrations of polynuclear aromatics. Three phenolic compounds were also reporter at elevated concentrations in the sludge sample. The water sample collected from the lagoon was reported to contain trace amounts of nickel, 1,2-dichloroethane an bis(2-ethylhexyl)phthalate. A groundwater sample collected from the monitoring well installed downgradient of the lagoon indicated relatively low concentrations of VOCs. Only one of the soil samples collected from north of the Houghson Lagoon indicated the presence of contaminants. That sample contained 1,2-dichloroethane at a relatively low concentration.

Acid Pit (Acid Neutralization Lagoon): The RFI for the Acid Pit consisted of sampling the contents of the Lagoon, both sludge and liquid, and installing and sampling a groundwater monitoring well adjacent to the unit. The water sample collected from the lagoon was reported to contain only trace levels of nickel. The sludge samples were reported to contain elevated levels of PCBs (>10 ppm), VOCs (230 ppb), cadmium, chromium, copper and lead. Samples collected from the groundwater well installed downgradient of the lagoon did not detect contamination.

Oil Pit (Oil/Water Separator): The RFI for the Oil pit consisted of sampling the contents of the lagoon and a soil boring adjacent to the unit for priority pollutants. Priority Pollutant Organics (PPO's) were not detected in either of the water samples collected from the Oil/Water separator. However, a soil sample collected downgradient of the lagoon was reported to contain elevated levels of organics, copper and chromium.

Syms Underground Tanks: The RFI for the Underground Tanks consisted of sampling the contents of the tanks. These tanks are former chemical waste lift stations associated with an underground piping network in the area. This piping network is associated with the former Air Force Plant 68. Sludge and water samples were collected from Chemical Waste Lift Stations 7, 7A and 8. Analysis of the sludge samples revealed the presence of relatively high concentrations of metals, VOCs, Semi-volatiles and PCBs in each of the lift stations. The water sample collected from lift station 8 also was reported to contain high levels of VOCs. In 2000, the U.S. Army Corps of Engineers conducted an Interim Removal Action (IRA) on the underground tanks. The IRA consisted on removal of the sludges and liquids within the tanks.

Syms Tank Area: The RFI for the Syms Tank Area consisted of two shallow soil borings with samples analyzed for priority pollutants. The samples were reported to contain metals at concentrations below background levels in soil. PPO compounds were not present at levels above detection limits. However, cyanide was detected at 5.9 ppm in sample DA22-4-1.

The investigation of the SWMUs in the "Syms Area" indicates the presence of relatively high levels of both organic and inorganic contamination in the soil and groundwater. The source of the compounds identified in the soil and/or groundwater samples from outside the Houghson lagoon and Oil/Water Separator cannot be definitely associated with any documented waste management activities. Some of the compounds identified could have been used or handled by either the DOD or Chem-Trol/SCA. Past DOD production related and waste handling activities

are suspected as a source of the elevated concentrations of some of the organics and inorganics in the sludge samples from the Acid Neutralization Lagoon, the Houghson Lagoon and the Chemical Waste Lift Stations. The DOD is currently investigating these units and other areas of past government involvement for possible remedial measures. The NYSDEC anticipates that the Department of Defense will assume responsibility for development and implementation of appropriate corrective measures to address the Group I soil and groundwater contamination.

References

Acres International Corporation, August 1990, "Final Remedial Investigation Report, PD-8, RI/FS Former Lake Ontario Ordnance Works, Lewiston/Porter, Niagara County, New York."

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., January 1991a, "Interim Report on the Site Areas Investigation, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., January 1991b, "Interim Report on Syms Area, Model City Facility, New York," Volumes I through III.

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

Groups G & H:

Units (Group G):	Acid Neutralization Area, Filter Press Area, Leachate Storage Tank Construction Area, Tank Farm A, Surface Runoff Drainage Construction Area, Water Treatment Building 13, Underground Tank 1
Units (Group H):	Tank Farm B, Tank Farm C, Tank Farm D, Building 11, Thermal Oxidizer, Thermal Oxidation Area, Cell Area, Fractional Distillation and LUWA Areas, Tank Farm E, Drum Crusher Area

GROUPS G & H (Process Area) INVESTIGATION SUMMARY

The Group G and H RFI investigations were combined into one study encompassing the entire Process Area. The initial investigations of the Process Area included the completion of the 27 borings and one monitoring well (AT01S) shown on Figure H-2 in the RFI. Generally, these borings were terminated at about 4 feet in depth, at which point one soil sample was collected from the top of natural materials for priority pollutant analysis. Three borings (DA11-1, DA12-5,

DA20-1) were extended to the top of clay. Results of the field and laboratory analysis indicated the presence of organic compounds in each of the samples collected. In addition, Boring DA12-5 also contained Non-Aqueous Phase Liquids (NAPL).

Based upon these initial results, a Phase II investigation was conducted to evaluate the vertical and areal extent of organic compounds in the Process Area. Approximately 400 soil samples from 39 soil borings (designated PRO-# on Figure H-2 in RFI) were analyzed using the field GC. Most of the soil samples collected from the Upper Tills unit during the Phase II investigation were reported to contain target compounds. NAPL was encountered in the Upper Tills at boring PRO-9 near the Drum Crusher. In addition, target compounds were detected in samples collected from the Glaciolacustrine Silt/Sand and the Basal Red Tills units. Groundwater samples were also collected, from many of the borings. The field GC results of groundwater analyses were similar to the soil sample results. When target compounds were detected in soil samples, target compounds were also present in the groundwater.

The Department has determined that Interim Corrective Measures (ICM) are necessary for the Process Area. A groundwater interceptor trench has been constructed along the northern portion of the Process Area. This trench will intercept the flow of contaminated groundwater in the Upper Tills. Collected groundwater will be treated at the Facility's aqueous treatment facility. In addition, the former Tank Farms B, C and D were temporarily clay capped to prevent the accumulation of liquids within the secondary containment berms.

Upon system start-up, the groundwater extraction system was evaluated in order to determine its effectiveness as a remedial measure. The contamination detected in the Process Area and the Applicability of the ICM as a final corrective measure was evaluated as part of the Corrective Measures Study. Continued operation of the Central Area IRM has been selected as the final remedy for this area.

Tank Farm E The initial RFI investigation of the Tank Farm E Area consisted of soil samples collected from below fill at the five locations shown on Figure H-1 in the RFI. Collected samples were analyzed for volatile organic compounds (VOCs) using a field GC and also sent to an analytical laboratory for priority pollutant analysis. Both the field GC and the analytical results of the initial investigation of Tank Farm E indicate the presence of organic compounds. An additional investigation, consisting of six soil borings was performed to further evaluate the contamination. The borings were continuously sampled. Soil and groundwater samples were analyzed with the field GC. Two soil samples were also sent to analytical laboratory for organic analysis. The field GC results indicated the presence of low levels of VOCs. Laboratory analytical results confirmed the presence of VOCs in soils. Low levels of VOCs were detected in groundwater samples from boring TFE-2 and TFE-4. Further evaluation of the Tank Farm E Area was required as part of the Corrective Measures Study. Natural attenuation of the contamination has been selected as the final remedy. A downgradient monitoring well (GDA01S) was installed to confirm that the magnitude and extent of the groundwater contaminant plume does not increase.

Groundwater monitoring wells were installed in 2007 for a proposed landfill expansion designated Residuals Management Unit No. 2 (RMU-2). Sampling of two wells (R201S and R202S) in and near Groups G & H (Process Area) indicated the presence of VOCs. An additional radiological and chemical investigation of the proposed RMU-2 area was performed in 2008. One of the direct-push borings identified as Boring #43 (adjacent to and south of the Full Trailer Park) was observed to contain oily black soil and had very high (in excess of the meter range) OVM detections at sample depths ranging from 4.0 to 15.5 feet below grade surface (bgs), which suggests the presence of non-aqueous phase liquid (NAPL). Another direct-push borehole location identified as Boring #61 – (east of well R201S) had high OVM detections and soil concentrations of VOCs in the 100-450 ppm range at sample depths ranging from 2 to 14 feet.

Subsequently, SWMU investigations were performed for the well R201S/R202S and boring #43/61 areas in 2008. The results of the R201S and R202S investigation indicated that the areal extent of the VOCs appeared to be limited to the areas along the haul roads, while vertical VOC detections were generally concentrated in the shallow depths of the Upper Tills. The probable source of the VOCs detected in the investigation of R201S and R202S is likely due to past waste transfer operations at the site. The results of the boring #43 and #61 investigations indicated that the areal extent of the VOCs appeared to be limited to the general areas of the initial borings, while vertical VOC detections were generally concentrated in the shallow depths of the Upper Tills. The source of the VOCs detected in the investigation of the boring #43 and #61 areas is likely associated with historical waste and chemical transfer and localized operations along the old rail bed and the former Tank Farm E. The potential sources include drum storage, truck leakage, tank and container leakage and/or spills.

A combined Corrective Measures Study (CMS) was performed for the well R201S/R202S and boring #43/61 areas. The Department has determined that Corrective Measures are necessary for the well R201S/R202S and boring #43/61 areas. A groundwater interceptor trench has been constructed along the northern portion of Tank Farm E. This trench will intercept the flow of contaminated groundwater in the Upper Tills.

References

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., June 1990a, "The Tank Farm E Area Investigation, Model City TSDR Facility."

Golder Associates Inc., June 1991b, "Interim Report on Process Area Phase II Investigation, Model City TSDR Facility, Model City, New York," Volume I and II.

Golder Associates Inc., October 1991, "Letter Report on Background Trace Metal Evaluations."

Golder Associates Inc., January 1992a, "Tank Farm E Phase II Investigation, Model City TSDR Facility."

Golder Associates Inc., March 1992, "Tank 42 Area and Tanks 50 and 51 Area Initial RFI and Phase II Investigations, Model City Facility, Model City, New York," Volumes I and II.

Golder Associates Inc., March, 2009a, “Report on R201S and R202S Well Investigation Boring Program, Model City TDS Facility, New York.”

Golder Associates Inc., March, 2009b, “Report on RMU-2 Footprint Investigation Boring Program, Model City TDS Facility, New York.”

Golder Associates Inc., January, 2010, “Residuals Management Unit Two, Phase 1 Groundwater Monitoring Program, Model City TDS Facility, Model City, New York.”

Golder Associates Inc., April 2010, “Focused Corrective Measures Study, Monitoring Wells R201S and R202S and Soil Boring Areas #43 and #61.”

SCA Chemical Services, Inc., 1985, "Partial Closure of Tankage at SCA Chemical Services, Inc., Model City, New York, USEPA Facility I.D. Number NYD049836679."

SEC Donohue, June 1992, "Final Engineering Design For The Process Area Interim Measures, Model City Facility."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

URS Corporation, April 2009, “Results of Subsurface Soil and Pond Sediment Sampling for RMU-2.”

Group I:

Units: 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.

GROUP I INVESTIGATION SUMMARY

The units listed in Group I are currently being investigated for the Department of Defense by the U.S. Army Corps of Engineers. Additional information on the investigation can be found in the following documents:

- Final Remedial Investigation Report, PD-8, RI/FS Former Lake Ontario Ordnance Works, Lewiston/Porter, Niagara County, New York, August 1990, Acres International Corporation.

- Preliminary Contamination Assessment Report: Operable Unit No. 2, RI/FS Former Lake Ontario Ordnance Works, Lewiston/Porter, Niagara County, New York, December 1992, Acres International Corporation.

Based upon the information presented in those reports, the Department has determined that remediation of the Group I SWMU's is necessary. The NYSDEC anticipates that the Department of Defense will assume responsibility for development and implementation of appropriate corrective measures to address the Group I soil and groundwater contamination.

Individual SWMU Status Summary:

RCRA REGULATED UNIT

SLF 10

UNIT DESCRIPTION: Secure Landfill

STATUS: Closed, 6 NYCRR Part 373-2 Regulated Unit

PERIOD OF OPERATION: 8/82 - 12/84

TYPE OF WASTE(s): Full spectrum of wastes in drums and bulk.

CONSTITUENTS: Full Spectrum

MEDIA of CONCERN: Groundwater, Soil

STATUS OF INVESTIGATION: The RFI evaluation of this unit included an evaluation of leachate and groundwater monitoring data from the detection monitoring network . In addition, CWM investigated the source and extent of contamination detected in groundwater samples from well MW10-2S.

The investigation of MW10-2S included: Appendix 23 sampling of well MW10-2S, a geophysical survey of the area and eight continuously sampled soil borings (See Figure J-1 in RFI). The geophysical survey results did not identify any features which could be considered potential sources of the groundwater contamination. Soil sample headspace analyses performed for this investigation indicated VOCs along the roadway adjacent to the landfill and the well, **but not between the well and the landfill**.

To further evaluate VOCs detected in investigation borings west (MW10-2S-1W, MW10-2S-2W) and south (MW10-2S-1S) of well MW10-2S, two additional wells (TMW-24S , TMW-29S) were installed. Samples from borings between MW10-2S and the landfill and north of wells MW10-2S were not contaminated. The soil and groundwater contamination in the vicinity of MW10-2S has been attributed to past waste storage and handling practices at the site and **not from SLF 10**.

Alternative statistical procedures have been implemented for well MW10-2S to allow for its continued use as a detection monitoring well for SLF 10. The continued investigation monitoring of wells TW24S and TW29S is located in Appendix E-1 of this Attachment. Remedial Measures to address the contamination detected in well MW10-2S and during the investigation was evaluated as part of the Corrective Measures Study. Perpetual monitoring and maintenance of the landfill is required. Natural Attenuation of the contamination has been selected as the final corrective measure for this area.

NON-DISCERNIBLE UNIT

PIEZOMETER P 12 - 2 S

UNIT DESCRIPTION: Two inch stainless steel piezometer located on the eastern side of SLF 12.

STATUS: Active

PERIOD OF OPERATION: 1986 - Present

TYPE OF WASTE(s): Unknown

CONSTITUENTS: Carbon tetrachloride, Chloroform

MEDIA of CONCERN: Groundwater, soil

STATUS OF INVESTIGATION: Investigation of contamination detected in well P12-2S initially consisted of 9 borings as shown on Figure J-2 in the RFI. Collected samples were analyzed for Total Volatile Organic Compounds (TVOC) utilizing an Organic Vapor Analyzer. The results of the TVOC analyses indicated the presence of VOCs in borings BLF12-M1, BLF12-S1, P12-2S-S1 and P12-2S-E1. Nine additional borings were drilled to further determine the extent of contamination. Results of the second phase of the investigation detected contamination in three of the additional borings (P12-2S-E2, P12-2S-E3, and P12-2S-S3).

The VOCs identified around P12-2S were not considered to extend beneath the boundary of Landfill SLF 12. The overall conclusion of the program was that the detected VOCs would not degrade the performance of the SLF 12 groundwater monitoring program. Based on the contaminants of concern and the nature of the contamination, it is believed that the contamination in this area is associated with previous use of the area by the U.S. Air Force. Subsequent to the investigation monitoring wells TW25S and TW26S were installed to monitor the possible migration of the contamination.

Due to the magnitude of the contamination the Department determined that Interim Remedial Measures were required for this area. Continuation of the IRM shall constitute the final corrective measures for this area. The remedial program is discussed in Module II.

RCRA SOLID WASTE MANAGEMENT UNIT

Facultative Pond 4

UNIT DESCRIPTION:	Former Aqueous Waste Treatment Lagoon, 16,007,000 gal. capacity, located in the SE portion of the facility.
STATUS:	Inactive, SWMU.
PERIOD OF OPERATION:	1978 - 1980
TYPE OF WASTE(s):	Aqueous for biological treatment in lagoon
CONSTITUENTS:	Low concentrations of metals and anions
MEDIA of CONCERN:	Groundwater, Soil
STATUS OF INVESTIGATION:	The initial RFI Evaluation consisted of soil samples collected from four locations shown on Figure J-3 in the RFI. Collected samples were analyzed by an analytical laboratory for priority pollutants and in the field, using the field GC for target volatile compounds. The results of analyses indicate the presence of low levels of VOCs and arsenic in a sample from location DA31-3 and low levels of 1,2-DCA at location DA31-4. However, laboratory validation of the data identified QA/QC problems associated with these samples. In order to verify the presence of the VOCs in these samples, two additional borings (FP4-1 & FP4-2) were sampled. No target compounds were detected in the collected samples. Based on the results of the investigation it is concluded that no contamination related to past or present waste handling activities is present in the FAC Pond 4 Area. No further action is necessary.

RCRA REGULATED UNIT

West Salts Area, East Salts Area

UNIT DESCRIPTION:	Aqueous Waste Sludge Storage Lagoons West Salts area - 15,618,240 gal. capacity East Salts Area - 10,659,000 gal. capacity
STATUS:	Active, Regulated Units
PERIOD OF OPERATION:	1973 – 1988
TYPE OF WASTE(s):	WWTP Sludge
CONSTITUENTS:	PCB's, heavy metals as salts
MEDIA of CONCERN:	Groundwater, Air, Soil
STATUS OF INVESTIGATION:	The RFI evaluation of these units included groundwater monitoring, evaluation as part of a NYSDEC approved closure plan and an investigative program for well TMW-1S.

The investigation of TMW-1S included eleven soil borings (See Figure J-4 in the RFI) to evaluate the vertical and horizontal extent and possible source of the groundwater contamination. VOCs were detected in 8 of the 11 borings completed during the investigation. Due to a relatively large concentration (approximately 300 ppb) of TCE in boring TMW-1S-3N, an additional investigation was performed. This investigation consisted of fourteen additional soil borings. Field GC analyses detected VOCs in nine of the 14 soil borings. The variability in VOCs detected and the variable vertical distribution of the VOCs detected during the TMW-1S and TMW-1S-3N investigations suggest that the source of contamination in this area is a result past waste handling practices. Constituent migration from the East-West Salts area cannot be ruled out; however, based on correlation of chemical data, a source other than the East-West Salts area is a strong possibility. The contamination detected in the area was evaluated as part of the corrective measures study (CMS). Final Remedial Measures for the unit included in-situ treatment of the sludges and contaminated soils in the vicinity of the impoundments.

The requirements for development of Final Corrective Measures for this impoundment are described in Exhibit B of Schedule 1 of Module I.

RCRA SOLID WASTE MANAGEMENT UNIT

TANK 42

UNIT DESCRIPTION: 14,180 gal tank formerly located on M street

STATUS: Inactive, Removed by 1973, Exact date unknown

PERIOD OF OPERATION: Unknown

TYPE OF WASTE(s): Unknown

CONSTITUENTS: Unknown

MEDIA of CONCERN: Soil, Groundwater

STATUS OF INVESTIGATION: The initial RFI investigation of the Tank 42 Area consisted of soil samples collected from below the surficial fill at the two locations shown on Figure J-5 in the RFI. Collected samples were analyzed for target compounds using a field GC and by an analytical laboratory for priority pollutants. None of the target compounds were detected by the field GC during the initial investigation. The results of the laboratory analyses, however indicated the presence of organic compounds and metals in both borings. An additional investigation consisting of four soil borings was performed to further evaluate the contamination. The borings were continuously sampled and analyzed with the field GC. The field GC results indicated the presence of low levels of VOCs in the soils and groundwater. Analytical results confirmed the presence of VOCs and certain PCB arochlors. The vertical extent of contamination appears to be from 4 to 12 feet beneath the surface. The areal extent appears to be limited to the area east and south of borings T42-4 and T42-2 respectively. The groundwater samples did not detect target compounds.

Further evaluation of the Tank 42 Area was required as part of the Corrective Measures Study. No further action is necessary.

RCRA SOLID WASTE MANAGEMENT UNIT

TANKS 50 and 51

UNIT DESCRIPTION: Two 9,900 gal. tanks located east of Tank 58

STATUS: Inactive, Removed and disposed in SLF 11

PERIOD OF OPERATION: Unknown

TYPE OF WASTE(s): Unknown

CONSTITUENTS: Unknown

MEDIA of CONCERN: Soil, Groundwater

STATUS OF INVESTIGATION: The initial RFI investigation of the Tanks 50 & 51 Area consisted of soil samples collected from below the surficial fill at the two locations shown on Figure J-5 in the RFI. Collected samples were analyzed for target compounds using a field GC and also sent to an analytical laboratory for priority pollutant analyses. TCE was detected in boring DA 16-2 by the field GC during the initial investigation. The results of the laboratory analyses indicated the presence of organic compounds in both borings. An additional investigation consisting of four soil borings was performed to further evaluate the contamination. The borings were continuously sampled; soil and groundwater samples were analyzed with the field GC. The field GC results indicated the presence of low levels of VOCs. Laboratory analytical results confirmed the presence of VOCs, PCBs and semi-volatiles in soils. Low levels of VOCs were detected in groundwater samples from boring T50-4. The vertical extent of contamination appears to be 2 feet to 14 feet below ground surface. The areal extent appears to be limited to the areas between borings T50-1 and T50-3 respectively.

Further evaluation of the Tanks 50 & 51 Area was required as part of the Corrective Measures Study. No further action is necessary.

RCRA SOLID WASTE MANAGEMENT UNIT

TANKS 64 AND 65

UNIT DESCRIPTION:	Two 101,112 gal. tanks located west of the former Tank Farm A.
STATUS:	Partially Closed
PERIOD OF OPERATION:	Early 70's to 1990
TYPE OF WASTE(s):	Tank 64: PCB lean water/oil Tank 65: PCB leachate/water
CONSTITUENTS:	PCB oils, water soluble organics
MEDIA of CONCERN:	Air, Soil, Groundwater
STATUS OF INVESTIGATION:	Evaluation of the potential for releases to the environment from the units will be covered under an approved NYSDEC closure plan. Phase I Closure Certification (removal of tanks) was submitted on April 15, 1994. Phase II (closure of secondary containment) is pending final Department of Energy evaluation of the area. Investigation of the area was performed by the Department of Energy to evaluate the potential of radiological contamination in 1995. A 1996 report indicates the presence of radionuclides; these results are being evaluated by DOE to determine if remedial action is required.

RCRA SOLID WASTE MANAGEMENT UNIT

PCB WAREHOUSE

UNIT DESCRIPTION: Single story brick and frame structure located southeast of SLF 11 c. The floor is an eight inch thick slab with a containment berm constructed around certain areas of the floor.

STATUS: Active

PERIOD OF OPERATION: 1940'S - Present

TYPE OF WASTE(s): PCB's, solvents

CONSTITUENTS: PCB's, organics

MEDIA of CONCERN: Air, Soil, Groundwater

STATUS OF INVESTIGATION: The initial RFI investigation consisted of two soil borings (DA5-1 & DA5-2) into natural materials at locations shown on Figure J-6 in the RFI. Collected samples were analyzed for target compounds using a field GC and sent to an analytical laboratory for priority pollutant organic (PPO) analysis. In each boring staining was observed in the first sample in the natural material and therefore, a second, deeper, sample in the natural material was collected. Staining was also observed in the top portion of the second sample.

Results of the initial investigation indicated the presence of VOCs and PCBs in the soil samples. An additional investigation consisting of 17 soil borings (Designated PCBW-#) was performed to further evaluate the contamination. Collected soil and groundwater samples were analyzed for target compounds by the field GC. In addition, selected samples were obtained and analyzed by the CWM Model City laboratory for PCBs or by an off-site laboratory for PPO analyses. Of the 17 borings completed as part of the Phase II investigation, 10 borings were reported to contain target compounds in soil samples, primarily in the Upper Tills units. Only two soil samples, one each from borings PCBW-6 and PCBW-8 were reported to contain PCBs above the 5 ppm detection limit of the Model City lab. However, the reported PCB concentrations were below the 10 ppm CWM

investigative level. The groundwater samples from Phase II borings contained target compounds in seven of the 13 borings sampled.

There are primarily two subsurface areas of limited extent which appear to have been impacted by activities at the PCB Warehouse Area: the area south of the PCB Warehouse and, the area north of the PCB Warehouse. Past waste handling practices in the vicinity of the PCB Warehouse are the likely source of the organic compounds. However, past DOE and/or DOD operational practices associated with an underground storage tank (removed from the south side of the warehouse) may be partially responsible for the presence of the organic compounds detected south of the PCB Warehouse.

The contamination is addressed through installation of an IRM groundwater collection system. Continued operation of the IRM system shall constitute the final corrective measures for the area.

RCRA SOLID WASTE MANAGEMENT UNIT

DRUM STORAGE WAREHOUSE

UNIT DESCRIPTION:	Building was erected in 1982. All drums are currently stored here prior to processing.
STATUS:	Active, RCRA authorized storage area
PERIOD OF OPERATION:	1982 - present
TYPE OF WASTE(s):	Various containerized
CONSTITUENTS:	Various
MEDIA of CONCERN:	Air, Soil, Groundwater
STATUS OF INVESTIGATION:	Collection areas including trenches are inspected regularly as part of operations (Exhibit C of Schedule 1 of Module I of the Permit) Inspection results indicate that the integrity of the container storage areas is acceptable.

RCRA REGULATED UNIT

LEACHATE STORAGE TANK
(SLF 1-6)

UNIT DESCRIPTION:	Underground tank used to store leachate removed from SLF 1-6. Formerly located near the former Fire Pond.
STATUS:	Closed
PERIOD OF OPERATION:	1981 - 1995
TYPE OF WASTE(s):	Leachate
CONSTITUENTS:	Various
MEDIA of CONCERN:	Soil, Groundwater
STATUS OF INVESTIGATION:	In 1997, CWM closed the SLF 1-6 Leachate Storage Tank in accordance with an approved closure plan, as documented in a closure certification report dated June 30, 1997. Single walled lines associated with this unit were replaced with double walled piping in 1997-98, as documented in a closure certification report dated February 16, 1999.

RCRA REGULATED UNIT

LEACHATE STORAGE TANK
(SLF 7)

UNIT DESCRIPTION:	Underground tank used to store leachate removed from SLF 7.
STATUS:	Active
PERIOD OF OPERATION:	1978 - 1995
TYPE OF WASTE(s):	Leachate
CONSTITUENTS:	Various
MEDIA of CONCERN:	Soil, Groundwater
STATUS OF INVESTIGATION:	In 1997, CWM closed the SLF 7 Leachate Storage Tank in accordance with an approved closure plan, as documented in a closure certification report dated June 30, 1997. Single walled lines associated with this unit were replaced with double walled piping in 1999, as documented in a closure certification report dated October 31, 2000.

RCRA REGULATED UNIT

LEACHATE STORAGE TANK
(SLF 10)

UNIT DESCRIPTION:	Underground tank used to store leachate removed from SLF 10
STATUS:	Closed
PERIOD OF OPERATION:	1982 - 1995
TYPE OF WASTE(s):	Leachate
CONSTITUENTS:	Various
MEDIA of CONCERN:	Soil, Groundwater
STATUS OF INVESTIGATION:	In 1997, CWM closed the SLF 10 Leachate Storage Tank in accordance with an approved closure plan, as documented in a closure certification report dated June 30, 1997. Single walled lines associated with this unit were replaced with double walled piping in 1998, as documented in a closure certification report dated February 16, 1999.

RCRA REGULATED UNIT

LEACHATE STORAGE TANK
(SLF 11)

UNIT DESCRIPTION:	Underground tank used to store leachate removed from SLF 11
STATUS:	Closed
PERIOD OF OPERATION:	1984 - 1995
TYPE OF WASTE(s):	Leachate
CONSTITUENTS:	Various
MEDIA of CONCERN:	Soil, Groundwater
STATUS OF INVESTIGATION:	In 1997, CWM closed the SLF 11 Leachate Storage Tank in accordance with an approved closure plan, as documented in a closure certification report dated June 30, 1997. Single walled lines associated with this unit were replaced with double walled piping in 1999, as documented in a closure certification report dated October 31, 2000.

RCRA SOLID WASTE MANAGEMENT UNIT

SPENT CARBON PILES

UNIT DESCRIPTION:	Carbon piles (from wastewater treatment operations?) Location of this unit is near NW corner of Salts Area 7.
STATUS:	Inactive
PERIOD OF OPERATION:	Unknown
TYPE OF WASTE(s):	Unknown
CONSTITUENTS:	Unknown
MEDIA of CONCERN:	Groundwater, soil, surface water
STATUS OF INVESTIGATION:	The RFI for the Spent Carbon Piles consisted of the collection and analysis of one composite sample from the Spent Carbon Piles, and collection and analysis of two soil samples from beneath the piles after the piles were removed (See Figure J-7 in RFI). Results of analysis of the carbon detected the presence of several organic compounds. The carbon piles were removed and disposed of in SLF 12. With the exception of di-n-butyl phthalate, which is considered a sampling and analysis artifact, analysis of soil samples from beneath the piles did not detect contaminants above background levels. Based on the data collected as part of the investigation, there has been no apparent impact to the environment associated with the storage of waste carbon at that location. No further action is necessary.

RCRA SOLID WASTE MANAGEMENT AREA

TRUCK WASH

UNIT DESCRIPTION:	Building and associated sump and lines historically used for exterior washing of trucks and equipment.
STATUS:	Active
PERIOD OF OPERATION:	? - Present
TYPE OF WASTE(s):	Contaminated soils washed off trucks
CONSTITUENTS:	Various
MEDIA of CONCERN:	Groundwater, soil
STATUS OF INVESTIGATION:	Tank/Sump and lines associated with this unit are regularly inspected as described in Exhibit D of Schedule 1 of Module I Permit. Inspection results indicate that the integrity of the lines is acceptable. No further action is necessary.

NON-DISCERNIBLE UNIT

MONITORING WELL BW - 2 S

UNIT DESCRIPTION:	Background monitoring well (former) Initial sampling of well BW-2S indicated the presence of VOCs (>100 ppm). Much lower concentrations (<100 ppb) of VOCs were also detected in well BW-2D.
STATUS:	Inactive
PERIOD OF OPERATION:	1986
TYPE OF WASTE(s):	Contaminated groundwater
CONSTITUENTS:	Volatile and Semi-volatile organics
MEDIA of CONCERN:	Groundwater, soil
STATUS OF INVESTIGATION:	Initial investigation of the contamination in this area consisted of Appendix 23 sampling of well BW-2S, a geophysical survey of the area and seven continuously sampled soil borings. Additional phases to the investigation included six additional borings and the installation of two monitoring wells (TMW-21S, TMW-27S) (See Figure J-8 in RFI). Investigation of well BW-2D involved the drilling of a single boring (BW-2S-CD) which was cased from the surface to the Glaciolacustrine Clay and then augered into the Glaciolacustrine silt/sand unit. Results of the soils investigations indicated random detection of VOCs in the Upper Tills unit along the roadway adjacent to BW-2S. Analysis of samples collected from boring BW-2S-CD, indicate that no VOCs are present in the Glaciolacustrine Clay or Glaciolacustrine silt/sand unit. In addition, concentrations of VOCs in well BW-2D groundwater samples appear to be decreasing. The geophysical survey did not indicate an existing buried source. The source of the contamination in Well BW-2S is believed due to past tank or truck spills, or drum storage along the roadway. Further, it is believed that the contamination detected in well BW-2D may be due to dragdown during drilling and not representative of contamination of the Glaciolacustrine silt/sand unit.

Due to the magnitude of the contamination the Department has determined that Interim Remedial Measures were required for this area. Continued operation of the IRM groundwater collection system has been selected as the Final Remedy for this SWMU.

RCRA SOLID WASTE MANAGEMENT UNIT

STABILIZATION AREA

UNIT DESCRIPTION:	Bermed area south of SLF 7 where kiln dust is added to sludges for stabilization.
STATUS:	Closed
PERIOD OF OPERATION:	? - 1991
TYPE OF WASTE(s):	Spills
CONSTITUENTS:	Various
MEDIA of CONCERN:	Groundwater, soil
STATUS OF INVESTIGATION:	This unit has been closed in accordance with a NYSDEC approved closure plan. Confirmation samples have indicated that operations at this unit have not impacted the environment.

NON-DISCERNIBLE UNIT
SITEWIDE PCB SAMPLING

UNIT DESCRIPTION: 100 shallow soil samples collected from locations around the facility.

STATUS: N/A

PERIOD OF OPERATION: N/A

TYPE OF WASTE(s): PCB's from salts lagoons

CONSTITUENTS: PCB's

MEDIA of CONCERN: Soil

STATUS OF INVESTIGATION: The RFI for this area of concern involved the collection of a total of 114 shallow soil samples (105 initial samples, 4 duplicates, and 5 additional samples) for PCB analysis from locations shown on Figure J-9 in the RFI. PCBs were reported at concentrations above the detection limit in 98 of 109 of the initial sample. Most of those samples (74) contained PCBs at total concentrations of less than 1 part per million (ppm). PCBs were reported above the CWM 10 ppm investigative level of concern in only five of the 109 sample locations:

- In the area of former Air Force Plant 68 on the western portion of the facility (location 7);
- The Process Area (locations 48 & 56);
- Northeast of the East Salts Area (location 49);
- Northeast of the North Salts Area (location 63).

Additional samples were collected northeast of the North Salts Area and northeast of the East Salts Area to further delineate the extent of PCBs at concentrations above 10 ppm. The results of the additional investigation indicated that the extent in both areas is limited to the immediate area of the original samples. Excavation of the contaminated soils was performed as an IRM. Further evaluation of areas of PCB contamination at levels above health based standards was performed as part of the Corrective Measures Study. No further action is needed. **However, this determination shall in no way limit sampling and possible additional measures required by Condition K in Exhibit F of Schedule 1 of Module I of this Permit.**

RCRA SOLID WASTE MANAGEMENT UNIT

SURFACE WATER SWALES

UNIT DESCRIPTION: Surface water drainage for site.

STATUS: Active

PERIOD OF OPERATION: Non-specific

TYPE OF WASTE(s): Contaminated surface water

CONSTITUENTS: Unknown

MEDIA of CONCERN: Surface water, soil

STATUS OF INVESTIGATION: The RFI for this area of concern consisted of 20 sediment samples collected for priority pollutant analysis from site surface water drainage ditches (See Figure J-9 in RFI). Trace metals above the expected background levels were identified at several locations: surface water drainage course near the Syms area, north of SLF 7 and around SLF 11. Additional samples were collected around locations initially indicating the highest levels of trace metals, all of which yielded expected background results.

CWM evaluated the need for remediation of the contamination under the Corrective Measures Study. The Department has determined that remediation of the Swale is not necessary. **However, this determination shall in no way limit sampling and possible additional measures required by Condition K in Exhibit F of Schedule 1 of Module I of this Permit.**

RCRA SOLID WASTE MANAGEMENT UNIT

RMU - 1 WELL INVESTIGATIONS

UNIT DESCRIPTION:	Investigation of groundwater contamination detected in three monitoring wells , R102S, R108S & R110S installed as part of the RMU - 1 monitoring system. (See Figures J-10, J-11 and J-11 in RFI)
STATUS:	Active
PERIOD OF OPERATION:	February 1992 - Present
TYPE OF WASTE(S):	Contaminated groundwater
CONSTITUENTS:	Volatile Organic Compounds (VOCs)
MEDIA of CONCERN:	Groundwater, Soil
STATUS OF INVESTIGATION:	CWM has determined the extent of Soil and groundwater contamination been detected in the vicinity of the three wells. CWM has also installed replacement wells for use in the RMU-1 detection monitoring network. CWM evaluated the contamination as part of the Corrective Measures Study. Natural Attenuation of the groundwater contamination is included as part of the Final Remedy for the facility.

RCRA SOLID WASTE MANAGEMENT UNIT

HEAVY EQUIPMENT MAINTENANCE BUILDING WASH WATER SUMP/TANK

UNIT DESCRIPTION: 2000 Gallon Concrete Underground Storage Tank.

STATUS: Closed

PERIOD OF OPERATION: ? - 2010

TYPE OF WASTE(s): Water from floor washing and snowmelt collected by floor drains in Equipment Maintenance Building

CONSTITUENTS: Various, Petroleum

MEDIA of CONCERN: Groundwater, soil

STATUS OF INVESTIGATION: In March of 2010 CWM investigated the underground storage tank. During excavation potentially impacted soil was noted and a formal assessment plan was submitted in accordance with the 6NYCRR Part 373 permit. The tank and surrounding soils were removed as part of closure. Post-excavation samples did not indicate the presence of contamination above New York State Cleanup Objectives. This unit has been closed in accordance with a NYSDEC approved closure plan and no further action is required.

REFERENCES

CWM Chemical Services, Inc., February 1990, "PCB Surface Soil and Surface Water Drainage Course Investigation."

EnSol, Inc., August 2010, “Heavy Equipment Maintenance Building Wash Water Sump/Tank – SWMU Assessment Report, CWM Chemical Services, LLC., Model City Facility.”

Golder Associates Inc., August 1986, "Interim Report on Wells BW-2S and BW-2D Investigation, Model City TSDR Facility."

Golder Associates Inc., December 1987, "SLF 12 Ground Water Monitoring Program, Model City, New York Facility."

Golder Associates Inc., January 1988, "Interim Report on P12-2S Investigation Landfill Area, Model City TSD Facility, Model City, New York."

Golder Associates Inc., April 1988a, "MW10-2S Investigation, Model City TSD Facility, Model City, New York."

Golder Associates Inc., June 1988 and Revision 2, August 1989, "RCRA Facility Investigation Work Plan, Model City Facility, New York," Volumes I through IV.

Golder Associates Inc., April 1990b, "PCB Warehouse Investigations, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., February 1991, "Drum Storage Warehouse, Truck Wash, and Leachate Storage Tanks and Oil/Water Separator for SLF 1 through 6, SLF 7, SLF 10, and SLF 11, Model City TSDR Facility, Model City, New York."

Golder Associates Inc., October 1991, "Letter Report on Background Trace Metal Evaluations."

Golder Associates Inc., April 1992, "Final Interim Report on FAC Pond 4 Area Initial RFI and Phase II Investigations, Model City TSDR Facility," Volumes I and II.

Golder Associates Inc., June 1992b, "Final Interim Report on RMU-1 Ground Water Monitoring Program, Model City TSDR Facility; Model City, New York.:

NYSDEC, January 2001, “Selection of Final Corrective Measures, Final Statement of Basis, CWM Chemical Services, L.L.C., USEPA ID No. NYD049836679, Model City, NY 14107.”

SCA Chemical Services, Inc., 1985, "Partial Closure of Tankage at SCA Chemical Services, Inc., Model City, New York, USEPA Facility I.D. Number NYD049836679."

URS Consultants, Inc., August 1986, "Identification of Known Past and Present Waste Areas and Solid Waste Management Units."

APPENDIX E-1

Corrective Action
Groundwater Monitoring

The following Groundwater Monitoring requirements of this Appendix apply to the North Salts and the East West Salts Areas.

I. Detection Monitoring Program

The Permittee is required to maintain and follow the Detection Monitoring Program as described below:

A. Point of Compliance. The Point of Compliance for the applicable units are as follow:

1. North Salts Area: The Point of Compliance for this surface impoundment is defined as the vertical surface passing through the downgradient monitoring wells TW12S, TW13S, TW14S and TW15S.

2. East/West Salts Area: The Point of Compliance for this surface impoundment is defined as the vertical surface passing through the downgradient monitoring wells TW01S, TW02S, TW03S, TP04S and WS01S.

B. Length of Monitoring Requirements. The groundwater monitoring requirements set forth herein shall extend in perpetuity.

C. Description of Wells. The Detection Monitoring network shall consist of the following wells:

1. Upgradient.
Background monitoring wells BW01S, BW01D, BW03S, BW03D, BW04S, BW04D, BW05S, BW05D.

2. Downgradient.

Monitoring wells TW12S, TW13S, TW14S, TW15S and TW15D will be used to monitor the North Salts Area.

Monitoring wells TW01S, TW02S, TW03S, TW03D, TP04S, and WS01S will be used to monitor the East/West Salts Area.

D. Additional Monitoring. RESERVED

E. Sampling Frequency. All monitoring wells in the Detection Monitoring Program must be sampled at least semi-annually.

F. Site Specific Indicator Parameters (27 VOCs). The following parameters shall be used as indicator parameters in the Detection Monitoring Program:

Volatile Organic Compounds:

Benzene	Ethylbenzene
Bromoform	Methyl Bromide
Carbon Tetrachloride	Methyl Chloride
Chlorobenzene	Methylene Chloride
Chlorodibromomethane	1,1,2,2-Tetrachloroethane
Chloroethane	Tetrachloroethylene
1,2-Dichlorobenzene	
Toluene	
Chloroform	1,2-Trans-Dichloroethylene
Dichlorobromomethane	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethylene
1,1-Dichloroethene	Vinyl Chloride
1,2-Dichloropropane	
cis-1,3-Dichloropropylene	
trans-1,3-Dichloroproplyene	

The Permittee shall analyze all Detection Monitoring wells for the site specific indicator parameters and, exclusive of Methylene Chloride, shall statistically compare the values obtained during each sampling event with the background values of the parameters.

G. Background Values for Indicator Parameters.
To date hazardous waste constituents have not been detected in groundwater samples obtained from background monitoring wells BW01S, BW01D, BW03S, BW03D, BW04S, BW04D, BW05S and BW05D.

H. Statistical Evaluation. Whenever the Permittee determines groundwater quality at the Point of Compliance, he must determine whether there has been a statistically significant increase in any of the site specific indicator parameters, excluding Methylene Chloride when compared against the established trigger values. That determination must be made for each site specific indicator parameter and for every well.

For the Model City Facility, Poisson Prediction Limits shall be used for statistical comparison of monitoring well data. This method is appropriate for data that exhibit truncated distributions with skewed tails such as volatile organic constituents in contaminant free areas.

A statistically significant increase in the concentration of the indicator parameters, excluding Methylene Chloride shall be triggered by any one of the three mechanisms described below:

1) t-Prediction Interval (Concentration)
2) Multiple Detections
3) Persistent Detections

1. Prediction Interval (Concentration): A concentration based t-prediction interval has been developed for the Model City site. Based on data obtained from analysis of background groundwater quality, field and trip blanks, The t-prediction interval has been calculated to be a sum total of site specific indicator parameters, excluding Methylene Chloride in a single scan. The prediction interval for the specific units covered by this section is as follows:

    a) North Salts Area: For wells which comprise the Point of Compliance for the North Salts Area the prediction interval (PI) has been calculated to be 23 ug/l as a sum total concentration of site specific indicator parameters, excluding Methylene Chloride, in a single scan.

    b) East/West Salts Area:
        i) Wells TW02S, TW03S, TW03D, TP04S & WS01S: The prediction interval (PI) has been calculated to be 23 ug/l as a sum total concentration of indicator parameters, excluding Methylene Chloride in a single scan.

        ii) Well TW01S: Low level (ppb) contamination has been detected in this well. An investigation of this contamination concluded that the East/West Salts Area and past practices and spills are all potential sources of the VOCs present in the groundwater. Department has recognized that the close proximity of the above units limits the ability to determine a specific source of the contamination. However, since the East/West Salts Area cannot be eliminated as a source of contamination, its presence requires the use of an alternative statistical approach. The statistical procedure will be to total the site

specific indicator parameters (27 VOCs) (excluding methylene chloride) then compare to a modified prediction interval (PI) of 340 ug/l.

2. Multiple Detections. A Prediction Interval, based on the number of compounds detected in a single scan, has been calculated for the Model City site. The number shall be more than 3 site specific indicator parameters detected in any well in a single scan, independent of summed total concentration and excluding methylene chloride. Persistent compounds detected in wells evaluated using an "alternative statistical approach" shall not be counted when determining the number of detections in a single scan.

3. Persistent Detections. A statistically significant increase will also result if any site specific indicator parameter, excluding Methylene chloride, is detected in any well on three (3) consecutive sampling events (independent of concentration) . Persistent compounds detected in wells evaluated using an "alternative statistical approach" shall not be counted when determining persistent detections.

   Statistical Based Trigger mechanisms are outlined in Figure 2 in **Exhibit F in Schedule 1 of Module I** of this Permit.

I. Reporting Requirements. The Permittee shall report the results of all groundwater analyses which are obtained from the Detection Monitoring Network.

The results of all routine environmental monitoring that occurs during a month must be submitted to the Department within 90 days from the end of that month. The sampling data must be submitted in accordance with the requirements of Condition N of Module I.

The depth to the static water surface shall be measured to the nearest 0.01 feet each time a well is sampled prior to well purging. As a check, a duplicate water level measurement will be taken and recorded on every fifth well.

The Permittee must evaluate the data using the procedures set forth in Figure 2 in **Exhibit F in Schedule 1 of Module I** of this Permit and submit the results of the statistical comparison of the site specific indicator parameters as part of the Routine Environmental Monitoring Report. If the analyses reveal a statistically significant increase in the concentration of a indicator parameter at any well in the Detection Monitoring Network, the Permittee must:

1. If the results of analyses fail either of the first two statistical criteria, the data will have a QA/QC review of the analysis. If the results fail the third statistical criteria, the well in question will be resampled within fourteen (14) days.

2. If the QA/QC data review indicates that the analytical data is erroneous, the evaluation returns to Detection Monitoring with a statement in the annual report that indicates the reasons for the erroneous data. Otherwise, the well in question must be resampled within thirty (30) days of receipt of the original detection monitoring results.

3. Within seven (7) days of receipt of the results of the resampling, the results shall be subjected to the same statistical criteria (total concentration and multiple detections).

4. If the resampling results pass statistical criteria 1 and 2, then the well in question returns to detection monitoring with a statement in the annual report.

5. If the resampling results fail statistical criteria 1 and 2 then, within 7 days of receiving the results, the Permittee shall provide written notification of the failure of the evaluation criteria to the Department. Within thirty (30) days of receiving results of the resampling, a plan must be submitted to the Department to determine the source of the detected organic compounds. Within ninety (90) days of receiving the results of the resampling, a permit modification request must be submitted to the Department.

6. In addition to step 5, If the resampling results fail statistical criteria 1 or 2 then, Within fourteen (14) days of receiving the resampling results (for evaluations under criteria 1 and 2), the affected well and adjacent wells that monitor the regulated unit must be sampled for Appendix 33 constituents. Adjacent wells will be those wells immediately next to the well(s) with the detected compounds. For example, for a shallow (upper tills) monitoring well with detected compounds, the corresponding deep (glaciolacustrine silt/sand) well and the two shallow wells on either side will be considered adjacent wells. For a deep monitoring well, the adjacent wells would be the corresponding shallow well and the deep wells on either side. If compounds are detected in a well at which there is not a well or a well pair on one side monitoring the same regulated unit, then the number of adjacent wells will be reduced by one.

7. For wells that fail statistical criteria 3, within thirty (30) days of receiving the results of the resampling called for in step 1, the Permittee shall meet with the Department to discuss the results. Based on discussions, the Department will determine if further action is required. If further action is not required, then the consecutive count shall reset to zero, and the well returns to detection monitoring. If further action is required, a source investigation must be submitted to the Department within thirty (30) days (if required).

8. Upon approval of the source investigation plans, called for in steps 5 and 7, by the Department; an evaluation must be made to determine the source of the detected compounds.

9. If the source investigation determines that the regulated unit is not the source of the detected compounds, the Permittee must submit a permit modification application to modify the detection monitoring program. In addition, an investigation must be conducted to determine the source, rate of migration and extent of the contamination.

10. If the source investigation determines that the regulated unit is the source of the detected compounds, the Permittee must submit a permit modification application for either a compliance monitoring or corrective action program.

    The evaluation procedure is outlined in Figure 2 in **Exhibit F in Schedule 1 of Module I** of this Permit.

J. Inability to Obtain Samples. If the Permittee knows that a well or piezometer may not provide representative samples or accurate piezometric values, may be damaged in some way, or is inaccessible, the Permittee shall, within fourteen (14) days of such knowledge, attempt to remedy the problem and, when appropriate, sample the well or piezometer. Within thirty (30) days of such knowledge, the Permittee shall, through written notification to the Department, provide information which describes the nature of the problem associated with the device, and in the event of a failure to obtain a sample, the reason why a sample was not obtained.

   In addition the notification shall contain:

   1. A description of how the problem was corrected; or

   2. A schedule for the rehabilitation or replacement of the device.

   If a problem with a well prevented obtaining a sample as scheduled, a sample must be obtained within fourteen (14) days after rehabilitation or replacement of the well.

K. Well Rehabilitation. Every five (5) years, the Permittee shall inspect the Detection Monitoring Network to determine its integrity. The inspection shall be certified by a professional engineer or qualified geologist. The inspection shall include the following:

   1. A survey of all groundwater wells and piezometers in the monitoring network (performed by a New York State licensed surveyor) to the top of well casing elevation and to provide updated site plan. The survey must be accurate to within

0.01 feet of elevation and the site plan must be presented on a scale of 1 inch equals 200 feet.

2. An establishment of the ability of all wells and piezometers in the monitoring network to yield meaningful groundwater elevations when measured with an instrument accurate to within 0.01 feet. The ability of the wells to yield such information shall be based upon a comparison of the sounding of a well to its historical depth. Wells shall be considered obstructed if 10% or more of the well screen is covered or otherwise inaccessible. At a minimum, these wells must be redeveloped to remove sediments from the bottom of the well prior to the next sampling event.

3. An establishment of the ability of all groundwater wells to yield representative samples for determining the concentration of hazardous waste constituents that may be present in the groundwater. Physical examination of the well shall include removal and inspection of any dedicated sampling device to assure that the device is functioning as designed.

L. Permit Modification. If the Permittee determines that the monitoring programs required under this Permit no longer satisfy the requirements of the regulations, the Permittee shall, within ninety (90) days of such determination, submit an application for a permit modification which describes the changes that will be necessary to maintain regulatory compliance at the site. The Commissioner may require the Permittee to perform additional sampling and install additional monitoring wells, as necessary, to maintain compliance with 6NYCRR Part 373-2.6 at the site. If at any time it is determined that the groundwater monitoring network is not in compliance, the Department shall require the Permittee to take whatever actions are necessary to bring the monitoring network into compliance.

M. Additions to the Sampling Program. If hazardous waste constituents are consistently present in the Detection Monitoring wells below the statistical "trigger" levels, the Department may require the Permittee to perform additional sampling and install additional wells to determine whether the constituents originate from the Regulated Unit.

N. Sampling and Analysis. All Sampling and Analysis shall be performed in accordance with the approved CWM Groundwater Monitoring Sampling and Analysis Plan (SAP). Any modification of the approved SAP must be approved by the Department prior to its implementation.

II. Corrective Action Monitoring

The Corrective Action/Corrective Measures program pursuant to 6NYCRR Subpart 373-2.6 (k) and (l) is specified herein for the following areas:

West Drum Area
Lagoons 1,2,5,6 & 7
Area South of SLF 3
Process Area
Area South of the PCB Warehouse
BW02S Area
P1202S Area

A. Point of Compliance. The Point of Compliance for the applicable units are as follow:

1. **West Drum Area**: The point of compliance for the West Drum Area consists of aqueous sumps AQ01,AQ02,AQ03, AQ04, AQ05 AQ06 and AQ07 and monitoring wells TW19S and WDA01S.

2. **Lagoons 1, 2, 5, 6 & 7**: The point of compliance for Lagoons 1, 2, 5, 6 & 7 consists of monitoring wells LMS01S, LMS02S, LMS03S, LMS04S and TW11S, and aqueous sumps AQ13W and AQ14E.

3. **Area South of SLF 3**: The point of compliance for this area consists of monitoring wells W302S and W303S.

4. **Process Area**: The point of compliance for the Process Area consists of Aqueous Sumps AQ08, AQ09, AQ10, AQ11, AQ12 and Extraction Wells EW08, EW09, EW10, EW11, EW12, EW13 and EW14.

5. **Area South of PCB Warehouse:** The point of compliance for this area consists of monitoring well W1109S.

6. **BW02S Area:** The point of compliance for the BW02S area consists of monitoring well TW21S.

7. **P1202S Area:** The point of compliance for the P1202S area consists of monitoring well TW26S.

B. Length of Monitoring Requirements. The groundwater monitoring requirements set forth herein shall extend in perpetuity.

C. Description of Wells. The wells which comprise the corrective action monitoring program for each of the applicable areas are described in Section 220 of the Groundwater Extraction Systems (GWES) Operations and Maintenance (O&M Manual). All revisions to the O&M Manual must be approved by the NYSDEC Region 9 Hazardous Waste Engineer.

D. Additional Monitoring. Every quarter that the GWES Systems are in operation, water level measurements will be taken from selected wells and piezometers as specified in Attachment 1 of the GWES O&M Manual. In addition, DNAPL sumps will be checked for DNAPL presence as specified in Attachment 1 of the GWES O&M Manual.

E. Sampling Frequency. As specified in Section 220 of the GWES O&M Manual, selected monitoring points in the corrective action monitoring program must be sampled annually for Site Specific VOCs, semi-volatiles, metals, PCBs and pesticides. Other monitoring points are sampled semiannually for the Site Specific Priority Pollutant VOC List described in II.F of this Appendix.

F. Site Specific Indicator Parameters (27 VOCs). For selected monitoring points, the following parameters shall be used as indicator parameters in the corrective action monitoring program:

Volatile Organic Compounds:

Benzene	Ethylbenzene
Bromoform	Methyl Bromide
Carbon Tetrachloride	Methyl Chloride
Chlorobenzene	Methylene Chloride
Chlorodibromomethane	1,1,2,2-Tetrachloroethane
Chloroethane	Tetrachloroethylene
1,2-Dichlorobenzene	1,2-Trans-Dichloroethylene
Toluene	1,1,1-Trichloroethane
Chloroform	1,1,2-Trichloroethane
Dichlorobromomethane	Trichloroethylene
1,1-Dichloroethane	Vinyl Chloride
1,2-Dichloroethane	cis-1,3-Dichloropropylene
1,1-Dichloroethene	trans-1,3-Dichloroproplyene
1,2-Dichloropropane	

The Permittee shall analyze all corrective action monitoring wells for the site specific indicator parameters and shall compare the values obtained during each sampling event with the previous values of the parameters.

Modified: Dec. 2013

G. Groundwater Protection Concentration. The following hazardous constituents have been identified in the groundwater, and the corresponding concentrations have been established as Groundwater Protection Standards for the facility. The Commissioner shall review these concentrations annually to determine if there is a need to revise, add or delete a constituent and its associated protection concentration. Based upon site specific background water quality data, the Commissioner may establish site specific concentrations for certain constituents as Groundwater Protection Standards in recognition of natural background water quality.

A complete listing of groundwater protection standards is located in the Table at the beginning of **Exhibit B in Schedule 1 of Module I** of the Permit.

1. The total concentration of all organic constituents, excluding pesticides, herbicides, vinyl chloride and trihalomethanes, shall not exceed 100.0 ug/l

2. Total concentration of all trihalomethanes not to exceed 100.0 ug/l.

H. Reporting Requirements. The Permittee shall report the results of all groundwater analyses which are obtained from the Corrective Action Monitoring Network.

Chemical and physical data collected from the GWES are submitted in January, April, July and October of each year. The sampling data must be submitted in accordance with the requirements of Condition N of Module I.

Along with the sampling results, the Permittee shall submit the results of the NAPL Sump Check and the volume of NAPL removed from the DNAPL Sumps, if any, and the groundwater elevation measurements which were obtained at the time the Corrective Action Monitoring Network was sampled. In addition, the Permittee shall determine the groundwater flow rate and direction at least annually [6 NYCRR 373-2.6 (i)(5)].

The Permittee shall also submit the potentiometric surface data which were obtained at the time that the Corrective Action Monitoring Network was sampled. The depth to the static water surface shall be measured to the nearest 0.01 feet each time a well is sampled prior to well purging.

I. Inability to Obtain Samples. If the Permittee knows that a well or piezometer may not provide representative samples or accurate piezometric values, may be damaged in some way, or is inaccessible, the Permittee shall, within fourteen (14) days of such knowledge, attempt to remedy the problem and, when appropriate, sample the well or piezometer. Within thirty (30) days of such knowledge, the Permittee shall, through written notification to the Department, provide information which describes the nature of the problem associated with the device, and in the event of a failure to

obtain a sample, the reason why a sample was not obtained.

In addition the notification shall contain:

1. A description of how the problem was corrected; or

2. A schedule for the rehabilitation or replacement of the device.

If a problem with a well prevented obtaining a sample as scheduled, a sample must be obtained within fourteen (14) days after rehabilitation or replacement of the well.

J. Well Rehabilitation. Every five (5) years, the Permittee shall inspect the Corrective Action Monitoring Network to determine its integrity. The inspection shall be certified by a professional engineer or qualified geologist. The inspection shall include the following:

1. A survey of all groundwater wells and piezometers in the monitoring network (performed by a New York State licensed surveyor) to the top of well casing elevation and to provide updated site plan. The survey must be accurate to within 0.01 feet of elevation and the site plan must be presented on a scale of 1 inch equals 200 feet.

2. An establishment of the ability of all wells and piezometers in the monitoring network to yield meaningful groundwater elevations when measured with an instrument accurate to within 0.01 feet. The ability of the wells to yield such information shall be based upon a comparison of the sounding of a well to its historical depth. Wells shall be considered obstructed if 10% or more of the well screen is covered or otherwise inaccessible. At a minimum, these wells must be redeveloped to remove sediments from the bottom of the well prior to the next sampling event.

3. An establishment of the ability of all groundwater wells to yield representative samples for determining the concentration of hazardous waste constituents that may be present in the groundwater. Physical examination of the well shall include removal and inspection of any dedicated sampling device to assure that the device is functioning as designed.
4. The requirements specified in Conditions 2 and 3 above shall not apply to monitoring wells TW16S and TW17S provided no occurrences of equipment malfunction or other atypical incidents are noted during routine sampling of these wells.

K. Permit Modification. If, after review of the Corrective Action Monitoring Data, the Department determines that the Corrective Measures are not sufficiently protective of human health or the environment, The Department may require CWM to modify the design or operation of the groundwater recovery systems.

If the Department determines that a remedial technology other than groundwater extraction is needed to protect human health and the environment, the Department will initiate a Permit Modification pursuant to Part 621.

CWM may implement, without prior Department approval, adjustments to the groundwater recovery systems that will facilitate or improve groundwater control and cleanup. Other modifications to the groundwater recovery systems may only be made after receipt of written approval by the Department.

L. Sampling and Analysis. All Sampling and Analysis shall be performed in accordance with the approved CWM Groundwater Monitoring Sampling and Analysis Plan (SAP). Any modification of the approved SAP must be approved by the Department prior to its implementation.

III. Additional Corrective Action Activities

The Corrective Action/Corrective Measures program pursuant to 6NYCRR Subpart 373-2.6 (k) and (l) is specified herein for the following areas:

A. Additional Areas:

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

1. **Tank Farm D:** The Permittee shall monitor well GDA01S.

2. **Railroad Bed Investigation Area:** The Permittee shall monitor well RR01S.

3. **Area Downgradient of TW26S**: The Permittee shall monitor well W1209S.

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 the Site Specific Indicator Parameters (27 VOCs) in accordance with the approved Groundwater Sampling and Analysis Plan (GWSAP) which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. Results are to be included in the monthly monitoring reports.

B. Natural Attenuation Areas:

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 Corrective Measures. These areas include:

Drum Storage Along H Street and Mac Arthur Street
Drum Storage Along Mac Arthur Street near SLF-10
RMU-1 Investigation Wells

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. 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 **Schedule 1 of 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:

1. 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 Site Specific Indicator Parameters (27 VOCs).

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 and TW29S at least semi-annually for Site Specific Indicator Parameters (27 VOCs).

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 Site Specific Indicator Parameters (27 VOCs).

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 Schedule 1 of Module I of this Permit, to track and assess the groundwater contamination.

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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.

C. Groundwater Monitoring Requirements for Additional Corrective Action:

1. Length of Monitoring Requirements - The length of monitoring for the additional corrective action monitoring program shall be the same as required by **Condition I.B** of this appendix.

2. Sampling Frequency - All monitoring wells in the additional corrective action monitoring program must be sampled at least semi-annually, except that GDA01S, RR01S, and W1209S must be sampled at least annually.

3. Site Specific Indicator Parameters – The site specific indicator for the additional corrective action monitoring program shall be the same as required by **Condition I.F** of this appendix.

4. Background Values for Site Specific Indicator Parameters – The site specific indicator parameter background values for the additional corrective action monitoring program shall be the same as required by **Condition I.G** of this appendix.

5. Statistical Evaluation - Whenever the Permittee determines groundwater quality at the Point of Compliance, he must determine whether there has been a statistically significant increase in any of the site specific indicator parameters, excluding Methylene Chloride when compared against the established trigger values. That determination must be made for each site specific indicator parameter and for every well.

   For the Model City Facility, Poisson Prediction Limits shall be used for statistical comparison of monitoring well data. This method is appropriate for data that exhibit truncated distributions with skewed tails such as volatile organic constituents in contaminant free areas.

   A statistically significant increase in the concentration of the indicator parameters, excluding Methylene Chloride shall be triggered by any one of the three mechanisms described below:

   a. t-Prediction Interval (Concentration)
   b. Multiple Deyections
   c. Persistent Detections

a. Prediction Interval (Concentration): A concentration based t-prediction interval has been developed for the Model City site. Based on data obtained from analysis of background groundwater quality, field and trip blanks, The t-prediction interval has been calculated to be a sum total of site specific indicator parameters, excluding Methylene Chloride in a single scan. The prediction interval for the specific units covered by this section is as follows:

   i. For Additional Corrective Action Monitoring wells, except P701S and P703S, the prediction interval (PI) has been calculated to be 23 ug/l as a summed total concentration of all indicator parameters, excluding Methylene Chloride. Prediction Interval (Concentration).

   ii. Well P701S: Low levels of trichloroethylene (TCE), trans-1,2-dichloroethylene (t-DCE) have been detected in this well. The statistical procedure will be the summed total concentration of all indicator parameters, with the exception of methylene chloride, TCE and t-DCE. This value will then be compared to a modified prediction interval (PI) of 23 ug/l. The compound specific prediction intervals for trichloroethene, and trans-1,2-dichloroethene are as follows:

Trichloroethene	260 ug/l
trans-1,2-Dichloroethene	85 ug/l

   iii. Well P703S: Low levels of 1,1-dichloroethane, 1,2-dichloroethane, ethylbenzene, and chlorobenzene have been detected in this well. The statistical procedure will be the summed total concentration of all indicator parameters, with the exception of methylene chloride, 1,1-dichloroethane, 1,2-dichloroethane, ethylbenzene, and chlorobenzene. This value will then be compared to a modified prediction interval (PI) of 23 ug/l. The compound specific prediction intervals for 1,1-dichloroethane, 1,2-dichloroethane, ethylbenzene, and chlorobenzene are as follows:

1,1-Dichloroethane	23 ug/l
1,2-Dichloroethane	120 ug/l
Ethylbenzene	190 ug/l
Chlorobenzene	27 ug/l

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b. Multiple Detections: For the additional corrective action monitoring program, the procedure for evaluating multiple detections shall be the same as required by **Condition I.H.2** of this appendix.

c. Persistent Detections: For the additional corrective action monitoring program, the procedure for evaluating persistent detections shall be the same as required by **Condition I.H.3** of this appendix.

6. Reporting Requirements – The reporting requirements for the additional corrective action monitoring program shall be the same as required by **Condition I.I** of this appendix.

7. Inability to Obtain Samples – The procedure to be followed for the additional corrective action monitoring program whenever there is an inability to obtain samples shall be the same as required by **Condition I.J** of this appendix.

8. Well Rehabilitation – The well inspection and rehabilitation procedures for the additional corrective action monitoring program shall be the same as required by **Condition I.K** of this appendix.

9. Permit Modification – The modification procedures for the additional corrective action monitoring program shall be the same as required by **Condition I.L** of this appendix.

10. Additions to the Sampling Program – the requirements to perform additional sampling for the additional corrective action monitoring program shall be the same as required by **Condition I.M** of this appendix.

11. Sampling and Analysis – the sampling and analysis procedures for the additional corrective action monitoring program shall be the same as required by **Condition I.N** of this appendix.

TABLE 1
SITE SPECIFIC "APPENDIX 23" PARAMETERS
FOR
SLF 3,4,7 AND 10, EAST-WEST SALTS AREA, P 1202S AND BW02S

Site Specific Volatile Organic Compounds:

Benzene
Bromoform
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
1,2-Dichlorobenzene
Chloroform
Dichlorobromomethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
1,2-Dichloropropane
trans-1,3-Dichloroproplyene
Ethylbenzene
Methyl Bromide
Methyl Chloride
Methylene Chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,2-Trans-Dichloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Vinyl Chloride
cis-1,3-Dichloropropylene

TABLE 2
SITE SPECIFIC "APPENDIX 23" PARAMETERS FOR
LAGOONS 1,2 AND 5, SALTS AREA 7 AND WEST DRUM AREA

Site Specific Volatile Organic Compounds:

Benzene
Bromoform
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
1,2-Dichlorobenzene
Chloroform
Dichlorobromomethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
1,2-Dichloropropane
trans-1,3-Dichloroproplyene
Ethylbenzene
Methyl Bromide
Methyl Chloride
Methylene Chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,2-Trans-Dichloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Vinyl Chloride
cis-1,3-Dichloropropylene

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TABLE 2 (cont.)
SITE SPECIFIC "APPENDIX 23" PARAMETERS FOR
LAGOONS 1,2 AND 5, SALTS AREA 7 AND WEST DRUM AREA

Priority Pollutant Base/Neutral/Acid Extractable Compounds:

Acenaphthene	Acenaphthylene
Anthracene	Benzo(a)anthracene
Benzo(a)pyrene	Benzo(b)fluoroanthene
Benzo(g,h,i)perlyene	Benzo(k)fluoranthene
Bis(2-chloroethoxy)methane	Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate
4-Bromophenylphenylether	Butylbenzylphthalate
2-Chlorophthalene	4-Chlorophenylphenylether
Chrysene	Dibenzo(a,h)anthracene
1,2-Dichlorobenzene	1,3-Dichlorobenzene
1,4-Dichlorobenzene	3,3'-Dichlorobenzidine
Diethylphthalate	Dimethylphthalate
Di-n-butylphthalate	2,6-Dinitrotoluene
2,4-Dinitrotoluene	Di-n-octylphthalate
Fluoranthene	Fluorene
Hexachlorobenzene	Hexachlorobutadiene
Hexachlorocyclopentadiene	Hexachloroethane
Indolent(1,2,3-cd)pyrene	Isophrone
Naphthalene	Nitrobenzene
N-nitrosodi-n-propylamine	N-nitrosodiphenylamine
Phenanthrene	Pyrene
1,2,4-Trichlorobenzene	2-Chlorophenol
2,4-Dichlorophenol	2,4-Dimethylphenol
4,6-Dinitro-o-cresol	2,4-Dinitrophenol
2-Nitrophenol	4-Nitrophenol
p-Chloro-m-cresol	Pentachlorophenol
Phenol	2,4,6-Trichlorophenol

Aroclors (PCB) Compounds:

Aroclor 1242
Aroclor 1254
Aroclor 1260
Aroclor 1248
Aroclor 1232
Aroclor 1221
Aroclor 1016

APPENDIX E-2

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APPENDIX E-3

Newly Discovered SWMUs

A. ASSESSMENT OF NEWLY IDENTIFIED SWMU's

1. The Permittee The Permittee shall notify the Department, in writing, of any additional SWMU's 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 this Appendix.

2. Within thirty (30) days from notification of the Department, the Permittee shall prepare and submit to NYSDEC, a SWMU assessment plan and a proposed schedule of implementation and completion for any additional SWMU which is discovered subsequent to the issuance of this permit and is known or suspected to have releases of hazardous waste or releases of hazardous constituents to the environment. The plan shall include methods and specific actions as necessary to determine whether a prior or continuing release of hazardous constituents has occurred at each SWMU. The plan must also include, at a minimum, the following information for each unit:

    a. Type of unit;
    b. Location of each unit on a topographic map of appropriate scale;
    c. Dimensions and capacities;
    d. Function of unit;
    e. Dates that the unit was operated;
    f. Description of the wastes that were placed in the unit; and
    g. Description of any known releases or spills (to include groundwater data, soil analyses, and/or surface water data)

3. Upon completion of the assessment plan required by B.2. above, an assessment report shall be submitted to DEC. The assessment report shall include an RFI workplan for any SWMU which has been determined to have had a prior or continuing release. The workplan shall be implemented in accordance with the Department approved schedule of implementation. Thereafter, if requested by the Department, the Permittee shall submit a CMS. Upon approval of the CMS, the Department will modify the Permit to include any necessary corrective measures as part of the Final Corrective Measures for the facility.