RCRA POST-CLOSURE PERMIT

MODERN PLATING CORP

FREEPORT, ILLINOIS

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April, 2000

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TABLE OF CONTENTS

SECTION		PAGES
Map of Facility		Figure 1
I.	Design, Construction, Operation, & Closure of Corrective Action Management Unit	I-1 to I-10
II.	Post-Closure Care	II-1 to II-4
III.	Groundwater Monitoring	III-1 to III-12
IV.	Corrective Action	IV-1 to IV-9
V.	Standard Conditions	V-1 to V-10
VI.	Reporting and Notification Requirements	VI-1 to VI-6

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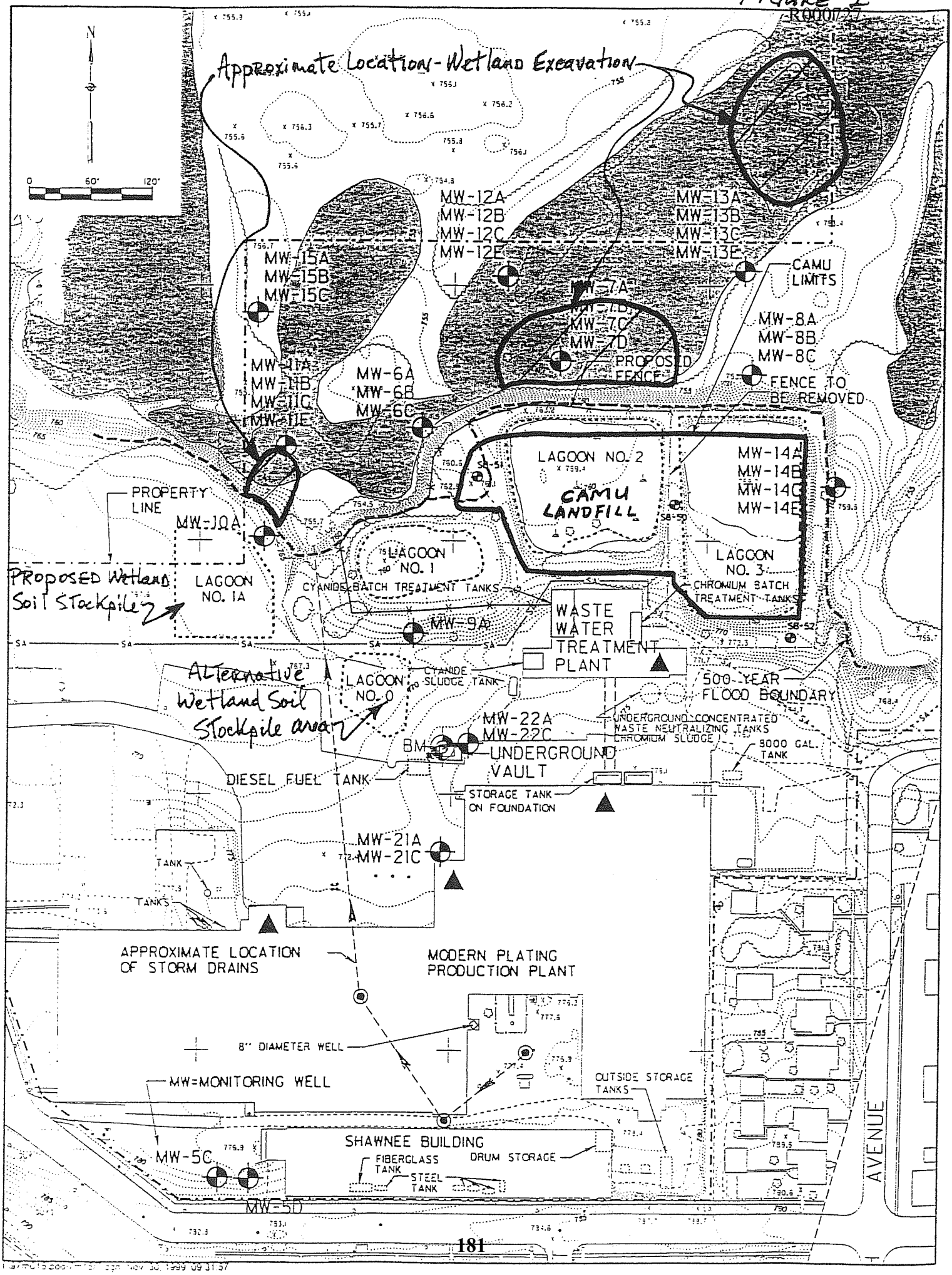
April, 2000

LIST OF ATTACHMENTS

ATTACHMENT		No. of Pages
A.	Construction Certification Form & Instructions	2
B.	Inspection Schedule	3
C.	Closure Certification Form	1
D.	Closure & Post Closure cost estimates	4
E.	Post-Closure Inspection and Maintenance Schedule	6
F.	Groundwater Monitoring Program Attachments	6
G.	Identification of Approved Permit Application	1

FIGURE 1

R000127



SECTION I

DESIGN, CONSTRUCTION, OPERATION, & CLOSURE of the CORRECTIVE ACTION MANAGEMENT UNIT

A. AUTHORIZATION OF CAMU

For the purpose of implementing remedies under 35 IAC 724.201, the Illinois EPA is designating a new unit at the Modern Plating facility as a Corrective Action Management Unit (CAMU), as defined in 35 IAC 720.110. The design, construction, operation, and maintenance of the CAMU shall be conducted in accordance with the approved permit application, the requirements contained in this permit, and the regulations at 35 IAC 724.652. Placement of remediation waste into or within a CAMU does not constitute land disposal of hazardous wastes. Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology standards.

Approval of this RCRA permit for the CAMU does not constitute approval of the closure performance standards for the surface impoundments proposed in the permit application.

B. UNIT IDENTIFICATION

The CAMU shall be located north of the waste water treatment plant. The general location of the CAMU is shown in Figure 1 of this permit. Remediation wastes from the facility will be disposed in a landfill which will be constructed in the same location that Lagoons 2 and 3 currently occupy. Remediation wastes which can not be placed directly in the landfill, shall be placed in either Lagoon 1 or 3 during construction of the landfill. The CAMU landfill will cover about 1.2 acres and will hold remediation wastes generated from the closure and remediation of hazardous waste and solid waste management units at the Modern Plating facility. The permitted volume of the landfill is 17,610 cy (cubic yards) with a maximum volume of approximately 22,800 cy.

C. WASTE IDENTIFICATION

1. The Permittee is only allowed to place the following types of wastes generated during remediation of the on-site hazardous and solid waste management units in the CAMU: Electroplating Sludge (F006), soils contaminated with cadmium, chromium, cyanide,

and trichloroethylene (F002), including soils from the Shawnee building, cyanide vault, wetlands areas, outfall pipeline areas, and any other areas where similar remediation wastes are located during the closure and corrective actions at the facility.

2. The Permittee is prohibited from placing wastes in the CAMU that are not included in Condition C.1 above without prior authorization from the Illinois EPA via a permit modification.

3. Wastes which contain free liquids as determined by the Paint Filter Liquids Test (Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846, latest edition) shall not be placed in the CAMU Landfill. The determination of whether the waste contains free liquids shall be performed before the waste is placed in the CAMU Landfill.

D. DESIGN, CONSTRUCTION, AND OPERATING REQUIREMENTS

1. The Permittee shall construct, operate, and maintain the CAMU in accordance with the plans and specifications contained in the approved permit application and the conditions in this permit. Any changes to the CAMU described in the approved permit application shall be pre-approved by the Illinois EPA before they can be implemented by the permittee.

2. The horizontal extent and location of the CAMU is identified in Figure 1 of this permit. The CAMU shall not be constructed below elevation 757.0. The sumps in the CAMU shall not be constructed below elevation 753.5. The interior side slopes in the CAMU shall not be steeper than 3:1 (3 feet horizontal to 1 foot vertical). The slopes of the final cover on the CAMU shall not be steeper than 3:1 on the perimeter slopes constructed of contaminated soils, and not steeper than 6:1 for the areas covering sludge. The CAMU landfill shall be designed and constructed to achieve a minimum static slope factor of safety greater than or equal to 1.5 and a seismic factor of safety greater than or equal to 1.3. Any modification to these design parameters shall be the subject of a permit modification.

3. Prior to placement of the bottom component of the liner system (e.g. the GCL), the subbase soils under the CAMU shall meet all of the criteria specified in the approved permit application and this permit including the following:

   a. A minimum of 1 foot of recompacted fine-grained soils.

b. The in place density of the soils shall be at least 95% of the maximum dry density as measured by the standard proctor test.

c. The moisture content of the soils shall be between -2% and +2% of the optimum moisture content (as determined by the Standard Proctor Test).

d. The surface of the subbase soils shall be rolled with a smooth drum roller to insure there are no ruts larger than 1 inch.

e. The top 6 inches of subbase soils which will be in contact with the GCL shall be free of all stones, sticks, dirt balls, or any other sharp objects larger than 1/4 inch in size.

4. The liner system on the bottom and sides of the CAMU shall be constructed of the following layers, described from the top to bottom:

- geocomposite drainage material (high density polyethylene (HDPE) drainage net sandwiched between two layers of geotextile material) with a minimum transmissivity of 3×10^{-5} m^2/sec
- 60 mil HDPE geomembrane (textured on both sides)
- HDPE drainage net (geocomposite on the sideslopes) with a minimum transmissivity of 3×10^{-5} m^2/sec
- 60 mil HDPE geomembrane (textured on both sides)
- geosynthetic clay liner (GCL)

5. The cover system on the top of the CAMU shall be constructed of the following layers, described from the top to bottom:

- 6 inches of topsoil (vegetative layer)
- 18 inches of cover soil (rooting layer)
- geocomposite drainage material (HDPE drainage net sandwiched between two layers of geotextile material)
- 40 mil HDPE geomembrane (textured on both sides)
- geosynthetic clay liner (GCL)
- 6 inches of grading/venting layer

6. The leachate collection and removal system shall be designed and operated to ensure that the depth of leachate over the liner does not exceed more than 1 foot (30 cm). The leachate collection pump shall be automatically turned on when the leachate in the

sump reaches an elevation of 757.0 feet as indicated on Drawing 11 in the approved permit application.

7. The GCL used as the bottom liner in the CAMU shall be a geotextile encased needle punched GCL that can withstand moisture adsorption without any loss of integrity.

8. The Geomembrane panels made of polyethylene resins shall be welded by double-tracked, fusion welding machines for all linear seams. Corners, butt seams and long repairs shall be fusion welded where possible. Extrusion or fusion welding shall be used for all other repairs, detail work and patches. Illinois EPA Bureau of Land Permit Section approval shall be obtained prior to use of any other welding method for either panel seaming, repairs or construction details.

9. The CAMU shall be constructed in accordance with the Construction Quality Assurance Plan in Appendix E and the Construction Specifications in Appendix Q, both in the approved permit application.

10. The Illinois EPA Bureau of Land Permit Section shall be notified anytime a deviation the design plans and specifications, or non-conforming work, is observed by the CQA personnel. This notification of the problem, its proposed resolution, and any proposed design change must be made prior to resuming work impacted by the deviation or non-conformance.

11. Remediation wastes shall be placed in the CAMU in accordance with the procedures specified in the approved permit application. Every effort shall be made to protect the liner materials on the bottom, sides and top of the CAMU during the construction, operation, and closure of the CAMU.

12. The Permittee shall provide groundwater monitoring for the CAMU in accordance with the approved permit application, and with Section III of this permit.

E. CONSTRUCTION CERTIFICATION

1. After construction of each cell, and prior to the placement of any waste in either of the two phases (cells) of the CAMU landfill, the permittee shall submit to the Illinois EPA, Bureau of Land, Permit Section and Rockford Regional Office by certified mail or hand delivery a Cell Completion Certification (CCC). The CCC shall include a completed Construction Certification Form from Attachment A of this permit, and a

certification signed by the CQA officer, using the wording at 35 IAC 702.126(d), that the CAMU was constructed in accordance with the approved CQA plan. The CCC shall also contain an exception report (with drawings as necessary) that identifies any and all changes to the design or construction of the CAMU landfill specified in the approved permit application or this permit.

2. The permittee shall inform the IEPA Rockford Regional Office (in writing or by e-mail) no less than one week prior to the date the permittee anticipates completion of each cell in the CAMU landfill. Failure to comply with this condition voids Condition I.E.3 below. If this occurs, the permittee is prohibited from placing waste in a cell unless and until written approval for this action is received from the Illinois EPA.

3. If IEPA has not inspected the new cell and found it to be incompliance with the regulations and the permit within 4 working days from the date the Cell Completion Certification (CCC) required by Condition I.E.1 is received by IEPA, then the permittee may begin placing waste in the unit.

4. If IEPA's inspection of a landfill cell or review of the Cell Completion Certification (CCC) required in Condition I.E.1 above finds a landfill cell was not properly constructed, the IEPA will notify the permittee of this finding in writing or by e-mail within 4 working days from the date the CCC is received. The permittee shall not place waste in the cell until the deficiency identified during the inspection or review is corrected to the satisfaction of the IEPA.

5. Within 30 days after completing construction and placement of all waste in the two phases (cells) of the CAMU landfill, the permittee shall submit to the Illinois EPA, Bureau of Land, Permit Section by certified mail or hand delivery a Construction Certification Report from a qualified, registered professional engineer, demonstrating that the construction of the CAMU landfill meets the requirements of 35 IAC 724.652, the requirements in this permit, and the approved permit application. This report shall contain all of the information required in Attachment A. It shall also include a certification signed by the CQA officer, using the wording at 35 IAC 702.126(d), that the CAMU was constructed in accordance with the approved CQA plan.

F. INSPECTION OF CAMU

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the Approved Permit Application and the inspection schedule in Attachment B of this permit.

2. The date of the first inspection shall be on the effective date of this permit.

3. The Permittee shall continue to follow the inspection procedures in Condition F.1 until the closure certification for the CAMU is submitted to the Illinois EPA and the conditions for the post-closure care period in Section II of this permit are implemented.

G. CONTINGENCY PLAN

1. A release of hazardous waste or hazardous constituents from the CAMU Landfill shall constitute an incident which requires implementation of the Contingency Plan.

2. When the Contingency Plan is implemented, the permittee shall immediately notify either the local government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their toll free number 800-424-8803). The following information must be provided:

   Name and telephone number of reporter;
   Name and address of facility;
   Time and type of incident (release, fire or explosion);
   Name and quantity of material involved, to the extent known;
   The extent of injuries, if any; and
   The possible hazards to human health or the environment outside the facility.

3. Within 24 hours of implementation of the Contingency Plan, the Permittee shall also contact the Illinois Emergency Management Agency (IEMA), the Bureau of Land's Regional Office in Rockford, IL and the Permit Section (in addition to the other entities identified in the permit application).

4. Any incident associated with the CAMU Landfill which requires implementation of the contingency plan shall be recorded in the facilities operating record in an incident log which is maintained separate from the facility's other operating records. The incident log must include a copy of each incident report. In addition to the information identified in the approved application, the incident report must include, the cause of the release and the measures taken to correct the situation and prevent a reoccurrence.

5. Within sixty (60) days of the effective date of this permit, the Permittee shall provide documentation to the Agency of the agreements and arrangements made with local police and fire departments, hospitals, contractors, and state and local emergency response teams to familiarize them with the facility and actions needed in case of

emergency. If necessary, documentation must be provided that any Agency identified in 35 Ill. Adm. Code 724.153(b) declined to enter an agreement or arrangement.

6. Within sixty (60) days of the effective date of this permit, the Permittee shall provide documentation (e.g. a copy of the cover letter) to the Agency that copies of the contingency plan have been sent to local police and fire departments, hospitals, contractors, and state and local emergency response teams to familiarize them with the facility and actions needed in case of emergency.

H. CLOSURE

1. The CAMU shall be closed in accordance with the approved permit application and the conditions in this permit.

2. If the cover system for the CAMU is not completed by November 1, 2000, the permittee shall submit a plan to protect the waste piles in lagoons 1 and 3 and/or the CAMU from the effects of the winter weather. This plan shall be provided as a modification to this permit no later than November 1, 2000.

3. The permittee shall prepare a survey plat indicating the location and dimensions of the CAMU and any other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat shall contain a note, prominently displayed, which states the owner's and operator's obligation to restrict disturbance of the CAMU in accordance with the applicable Subpart G regulations and shall state the following:

   a. The corrective action management unit (CAMU) contains the remediation wastes generated during the closure of hazardous waste and solid waste units at the Modern Plating facility in accordance with an Illinois EPA approved closure plan (Log No. C-259-M-8).

   b. The waste materials contained in the CAMU are considered RCRA hazardous wastes. They include electroplating sludges (F006), wastes with trichloroethylene (F002) and wastes containing cadmium, chromium, and cyanide.

   c. Any fill material removed from the CAMU during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.

The permittee shall file this survey plat with any local zoning authority, or authority with jurisdiction over local land use, and record with land titles, no later than the date the certification of closure of the CAMU is submitted to the Illinois EPA. The permittee shall submit the survey plat to the Illinois EPA Bureau of Land Permit Section with the certification of closure for the CAMU.

4. As part of the closure activities, Modern Plating shall:

   a. Record a notation on the deed to the facility property, or on some other instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

      (1) The waste material in the CAMU is considered a RCRA hazardous waste;

      (2) Use of the area is restricted; and

      (3) A survey plat and record of the type, location and quantity of waste material in the CAMU have been filed with the IEPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.

   b. Attach the survey plat specified in Condition I.H.3 above to the deed for the subject property, or on some other instrument which is normally examined during title search, which will in perpetuity notify any potential purchaser of the property of the requirements set forth in the notation on the survey plat.

   c. Submit the survey plat specified in Condition I.H.3 above to the County Recorder, any local zoning authority and any other authority over local land use.

5. When closure is complete the owner or operator shall submit to the Illinois EPA Bureau of Land Permit Section certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved permit application and the conditions in this permit. This certification must be received at the Illinois EPA within sixty (60) days after closure, or by January 1, 2001. These dates may be revised if Modern Plating finds that additional time is necessary to complete all required closure activities and demonstrates to the Illinois EPA that it is attempting to complete closure in a timely manner.

The closure certification form provided as Attachment C must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

The Professional Engineering Practice Act of 1989 (225 ILCS 325/1 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he/she is a professional engineer must be registered under the Professional Engineering Practice Act of 1989 (225 ILCS 325.4). Therefore, any certification or engineering services which are performed in the State of Illinois must be done by a professional engineer licensed in the State of Illinois.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with Section 14 of the Professional Engineering Practice Act of 1989 (225 ILCS 325.14).

As part of the closure certification, to document the closure activities at your facility, the permittee shall submit a Closure Documentation Report which includes:

a. A certification signed by the owner or operator, that the owner or operator has recorded the notation on the deed (or other instrument) as specified in Condition I.H.4 above, including a copy of the document in which the notification has been placed, to the Illinois EPA.

b. A copy of the survey plat required by Conditions I.H.3 and I.H.4 above as well as documentation indicating that the requirements of Condition I.H.4 above have been met.

c. The volume of waste placed in the CAMU. The term waste includes wastes resulting from decontamination activities.

d. Scaled drawings showing the horizontal and vertical boundaries of the CAMU.

e. A chronological summary of closure activities.

f. Color photo-documentation of closure. Document conditions before, during, and after closure.

g. Information documenting the results of all data collected as part of the Construction Quality Assurance Plan in Appendix E of the approved permit application which was not provided as part of the Construction Certification Report.

5. Under the provisions of 29 CFR 1910 (51 FR 15, 654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 24 hours of safety and health training off site plus a minimum of one day of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

I. FINANCIAL ASSURANCE

1. Within 30 days of the effective date of this permit, the permittee shall provide written documentation to the Illinois EPA Bureau of Land Permit Section which demonstrates the trust fund, or other financial mechanism as specified in 35 IAC Part 724, contains sufficient funds to meet the financial assurance requirements for closure at 35 IAC 724.243. The trust fund must contain at least $1,519,726 in order to cover the site development and closure costs identified in Attachment D of this permit.

2. As part of the closure documentation report and closure certification, the permittee shall provide to the Illinois EPA Bureau of Land Permit Section copies of the letter of credit, the standby trust, and other documentation required to meet to meet the post-closure financial assurance requirements at 35 IAC 724.245. The amount of the post-closure financial assurance shall be sufficient to cover the long term care costs of $25,840 per year as identified in Attachment D to this permit.

3. Within 30 days of the effective date of this permit, the permittee shall provide written documentation to the Illinois EPA Bureau of Land Permit Section which demonstrates that Modern Plating Company has obtained liability insurance pursuant to the requirements of 35 IAC 724.247 or attempted to obtain liability insurance within the past 180 days pursuant to Consent Decree 87-C-20315.

SECTION II

POST-CLOSURE CARE

A. SUMMARY

Hazardous waste management units where waste is left in place must receive post-closure care for at least 30 years after the unit is closed. Activities required during post-closure care include, but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, and (3) providing financial assurance for post-closure activities pursuant to 35 IAC Part 724.

B. UNIT IDENTIFICATION

The Permittee shall provide post-closure care for the following hazardous waste management unit, in accordance with the approved permit application and the conditions of this permit:

Name and Type of Unit	Approximate Capacity	Description of Wastes Contained in the Unit
CAMU	17,610 yd^3 (with a maximum volume of 22, 800 yd^3)	Electroplating Sludge (F006), soil with trichloroethylene (F002), soil with cadmium, chromium, cyanide.

C. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall implement the Post-Closure Plan contained in the Approved Permit Application. All post-closure care activities shall be conducted in accordance with the provisions of the approved permit application and the conditions in this permit.

2. The post-closure care period shall begin upon completion of closure of the unit (the date the permittee submits the certification of closure to the Illinois EPA) and continue for thirty (30) years after that date.

3. The Permittee shall maintain the components, structures, and equipment at the site in accordance with the maintenance plan in Attachment E of this permit.

4. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the unit is located.

5. The Permittee shall not allow any use of the CAMU designated in Section II.B above to be used in a manner that will disturb the integrity of the final cover, liners any components of the containment system, or function of the facility's monitoring systems during the post-closure care period unless such use is necessary to protect public health or the environment.

6. The permittee shall comply with the requirements for landfills as follows:

   a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, cracking or other events.

      Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed for whatever reason and if gas, odor, vegetative or vector problems arise, if leachate popouts or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such.

   b. Prevent run-on and run-off from eroding or otherwise damaging the final cover.

   c. Maintain and monitor the groundwater monitoring system in accordance with the approved permit application and Section III of this permit.

   d. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements.

E. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in Attachment E of this permit. The term

"major rainfall event" as used in the inspection schedule shall be defined as any storm event of ½ inch of rain or more.

2. The date of the first inspection shall be on the date the closure certification for the CAMU is submitted to the Illinois EPA Bureau of Land Permit Section.

3. The Permittee shall continue to follow the inspection procedures in Condition II.E.1 until the post-closure care period for the CAMU is ended.

F. CONTINGENCY PLAN

1. A release of hazardous waste or hazardous constituents from the CAMU Landfill shall constitute an incident which requires implementation of the Contingency Plan.

2. When the Contingency Plan is implemented, the permittee shall immediately notify either the local government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their toll free number 800-424-8803). The following information must be provided:

   Name and telephone number of reporter;
   Name and address of facility;
   Time and type of incident (release, fire or explosion);
   Name and quantity of material involved, to the extent known;
   The extent of injuries, if any; and
   The possible hazards to human health or the environment outside the facility.

3. Within 24 hours of implementation of the Contingency Plan, the Permittee shall also contact the Illinois Emergency Management Agency (IEMA), the Bureau of Land's Regional Office in Rockford, IL and the Permit Section (in addition to the other entities identified in the permit application).

4. Any incident associated with the CAMU Landfill which requires implementation of the contingency plan shall be recorded in the facilities operating record in an incident log which is maintained separate from the facility's other operating records. The incident log must include a copy of each incident report. In addition to the information identified in the approved application, the incident report must include, the cause of the release and the measures taken to correct the situation and prevent a reoccurrence.

G. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 Ill. Adm. Code Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.

2. If the Permittee or any subsequent owner or operator of the land upon which the CAMU is located wishes to remove hazardous wastes and hazardous waste residues, the liner, or contaminated soils, they must request a modification to this RCRA post-closure permit in accordance with the applicable requirements in 35 IAC Parts 703, 705 and 724. At a minimum, the owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 IAC 724.217(c).

3. No later than sixty (60) days after completion of the established post-closure care period for the CAMU, the Permittee shall submit to the Illinois EPA Bureau of Land Permit Section, by registered mail, a certification that the post-closure care for the CAMU was performed in accordance with the specifications in the approved post-closure plan in the approved permit application and the conditions in this permit. The certification must be signed by the owner and operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Illinois EPA upon request until the Illinois EPA releases the Permittee from the financial assurance requirements for post-closure care.

4. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed for the CAMU in accordance with the approved post-closure plan, the Agency shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been in accordance with the approved post-closure plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved post-closure plan.

H. FINANCIAL ASSURANCE

1. The permittee shall maintain sufficient funds in the letter of credit, the standby trust, or other approved financial instrument to meet the post-closure financial assurance requirements at 35 IAC 724.244 and 724.245.

SECTION III
GROUNDWATER CORRECTIVE ACTION PROGRAM

A. SUMMARY

Hazardous waste constituents have been detected in groundwater monitoring wells, at the MPC facility, in the vicinity of HWMUs and SWMUs above the groundwater protection standard and background values. Therefore, a corrective action program meeting the requirements of 35 Ill. Adm. Code 724.200 must be implemented at the MPC facility in Freeport, Illinois.

The groundwater corrective action program required by this Permit includes:

a. The construction of the CAMU which serves as the corrective action and subsequently the basis for the establishment of the Groundwater Management Zone (GMZ).

b. Determining the quality of groundwater, within the GMZ and in the vicinity of the MPC facility, by comparing analytical results for the specified hazardous constituents to the concentration limits that comprise the groundwater protection standard.

c. Evaluating the effectiveness of the corrective action based on the quality of groundwater within the GMZ and in the vicinity of the MPC facility.

d. The establishment and monitoring of the point of compliance at the time in which the monitoring wells in the program have attained the applicable concentration limits that comprise the groundwater protection standard and the GMZ expires.

B. DEFINITIONS

As used herein, the words or phrases set forth below shall have the following definitions:

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility. The uppermost aquifer in the vicinity of the MPC facility has been identified as the unconsolidated aquifer consisting of permeable alluvial sand and gravel.

2. "GMZ" refers to the three (3) dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site.

3. "Point of Compliance" refers to the vertical surface located at the hydraulically down-gradient limits of the waste management area (the CAMU) extending down into the uppermost aquifer underlying the regulated unit.

4. "Ft - bgs" refers to the number of feet below the ground surface.

5. "Ft-MSL" refers to the number of feet below the ground surface referenced to mean sea level.

6. "Detected" shall mean a concentration equal to or above the PQL listed in USEPA's SW-846 (Third Edition) for the applicable analytical methods specified in the approved Sampling and Analysis Procedures, which are incorporated by reference in Condition III.H of the Permit.

7. "Progressive Increase" shall mean an increase in the concentration of a constituent in successive sampling events.

8. "Stick-up" refers to the height of the reference survey datum. This point is determined within $\pm$ 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

C. IMPLEMENTATION

1. The Permittee shall begin implementation of the correction action program upon the effective date of this Permit. On that date, the groundwater monitoring and corrective action requirements set forth in this Permit shall supersede those established in the 35 Ill. Adm. Code Part 725 interim status closure and post-closure plan previously approved by the Illinois EPA.

2. The Permittee shall carry out the corrective action monitoring program specified in this Permit on the groundwater beneath the MPC facility in Freeport, Illinois. The uppermost aquifer in the vicinity of the MPC facility has been identified as the unconsolidated aquifer consisting of permeable alluvial sand and gravel.

3. Groundwater monitoring wells at the facility are identified as A through E, referring to the specific screened intervals. These are:

A: Screened in the water table in the upper portion of the unconsolidated materials

B: Screened in the lower portion of the unconsolidated materials

C: Screened at the surface of the dolomite aquifer

D: Screened 20 feet (ft) into the dolomite

E: Screened 40 ft into the dolomite

For the purposes of this Permit and in accordance with 35 Ill. Adm. Code Part 620 regulations: (1) the unconsolidated materials have been designated Class II: General Resource Groundwater; and (2) the dolomite aquifer has been designated Class I: Potable Resource Groundwater. The analytical results obtained from these groundwater monitoring wells shall be compared to the appropriate Class I or Class II concentration limits that comprise the groundwater protection standard found in Condition III.E.1.

4. At this time, the establishment of the point of compliance will be postponed until such time that the monitoring wells at the facility have attained the applicable concentration limits that comprise the groundwater protection standard found in Condition III.E.1 and the GMZ expires. At that time, MPC must submit a proposal for the establishment of a point of compliance which satisfies the regulatory requirements found in 35 Ill. Adm. Code 724, Subpart F and reflects the current conditions at the facility.

D. WELL AND SUMP LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells identified in the table below to allow for the collection of groundwater samples. The location of these wells is specified in Drawing No. 20R of the approved permit application.

IEPA Well No.	MPC Well No.	Hazardous Waste Constituents	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
"A" Groundwater Monitoring Wells					
G06S	MW-6A	V	12.5	742.1	747.1 - 742.1
G07S	MW-7A	V	12.5	740.7	745.7 - 740.7

G08S	MW-8A V	13.0	741.4	746.4 - 741.4
G09S	MW-9A I	23.0	745.8	755.8 - 745.8
G10S	MW-10A I	21.5	743.8	753.8 - 743.8
G11S	MW-11A	12.0	742.4	747.7 - 742.7
G12S	MW-12A I	12.0	741.6	746.6 - 741.6
G13S	MW-13A I	12.2	740.6	745.9 - 740.9
G14S	MW-14A I	18.5	740.1	751.6 - 741.6
G15S	MW-15A I	12.0	743.8	749.1 - 744.1
G17S	MW-17A	17.9	737.9	743.8 - 738.8
G18S	MW-18A	16.0	738.6	743.6 - 738.6
G19S	MW-19A	14.0	740.7	745.7 - 740.7
GA1S	MW-21A I	25.8	747.2	757.2 - 747.2
GA2S	MW-22A I	25.8	748.4	758.4 - 748.5

"B" Groundwater Monitoring Wells

G06U	MW-6B	27.0	727.5	737.5 - 727.5
G07U	MW-7B	27.0	726.2	736.2 - 726.2
G12U	MW-12B V	28.0	725.6	735.6 - 725.6
G13U	MW-13B V	28.0	724.8	734.8 - 724.8
G14U	MW-14B V	22.4	736.2	741.6 - 736.6
G15U*	MW-15B*VI	31.2	724.6	734.6 - 724.6
G17U*	MW-17B*VI	37.2	718.8	729.3 - 719.3
G18U*	MW-18B*VI	37.4	717.3	727.3 - 717.3
G19U	MW-19B VI	36.9	717.9	727.9 - 717.9

"C" Groundwater Monitoring Wells

G05M	MW-5C V	23.0	755.1	760.1 - 755.1
G06M	MW-6C V	43.5	710.9	715.9 - 710.9
G07M	MW-7C	40.0	713.3	718.3 - 713.3
G08M	MW-8C V	72.0	682.7	687.7 - 682.7
G11M	MW-11C V	66.3	688.0	693.8 - 688.8
G12M	MW-12C	53.0	700.6	705.6 - 700.6
G13M	MW-13C	84.0	669.0	674.0 - 669.0
G14M	MW-14C V	80.5	678.3	683.3 - 678.3
G15M*	MW-15C*VI	104.5	651.2	657.7 - 652.7
G16M*+	MW-16C*+VI	29.0	752.6	764.6 - 754.6
G17M*	MW-17C*VI	108.0	648.0	653.0 - 648.0
G19M*	MW-19C*VI	110.3	644.6	650.6 - 644.6
GA0M	MW-20C I	27.0	740.3	742.3 - 752.3

GA1M	MW-21C	57.3	715.8	772.5 - 717.5
GA2M	MW-22C	62.5	711.8	718.5 - 713.5
GA3M*	MW-23C*VI			

"D" Groundwater Monitoring Wells

G05L	MW-5D I	40.0	738.2	749.5 - 739.5
G07L	MW-7D V	50.0	703.3	713.3 - 703.3
G17L*	MW-17D*VI	121.1	634.8	644.8 - 634.8
G18L*	MW-18D*VI	146.6	608.0	615.0 - 608.0
G19L*	MW-19D*VI	149.9	604.7	616.7 - 604.7

"E" Groundwater Monitoring Wells

G11D	MW-11E	101.0	653.3	665.8 - 655.8
G12D	MW-12E	87.2	666.3	676.3 - 666.3
G13D	MW-13E	117.9	634.9	645.8 - 635.8
G14D	MW-14E	114.0	644.7	654.7 - 644.7

River Sampling Points

S201	PR-1	VI	NA	NA	NA
S102	PR-2	VI	NA	NA	NA

Notes:

1. + - Denotes Upgradient Well
2. * - Denotes GMZ Wells
3. V - Analysis of Volitile Organic Compounds listed in Condition III.E.1
4. I - Analysis of Inorganic constituents listed in Condition III.E.1
5. NA - Not applicable

Within thirty (30) days of the date that installation of groundwater monitoring well MW-23C is completed, the Permittee shall submit the following information:

1. Well Depth (ft-bgs)
2. Well Depth Elevation (ft-MSL)
3. Well Screen Interval (ft-MSL)

2. Construction of each monitoring well/piezometer must be in accordance with the diagram contained in Attachment F to this Permit or details and diagrams approved by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs as shown in Attachment F unless otherwise approved by the Illinois EPA.

3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

4. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitor well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that the installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

   Illinois Environmental Protection Agency
   Planning and Reporting Section
   Bureau of Land
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.

7. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition III.D.3.

E. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and concentration limits comprise the groundwater protection standard in the vicinity of the MPC facility. (Total (unfiltered) values, derived from the applicable USEPA SW-846 (Third Edition) method, will be used for comparison with the concentration limits)

Field Parameters	Storet	Units
pH	00400	
Specific Conductance	00094	micromos/cm
Temperature of Water Sample	00011	(^{O}F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet
Elevation of Groundwater Surface	71993	Ft MSL
Elevation of Bottom of Well #	72020	Ft MSL
Elevation of Measuring Point (Top of casing) ##	72110	Ft MSL

\# Shall be determined during the second sampling event each year
Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III.I.5.

Hazardous Waste Constituents	Storet Number	Concentration Limits (mg/l) Class I	Class II
Volatile Organic Compounds			
Tetrachloroethylene	34475	0.005	0.025

Trichloroethene	39180	0.005	0.025
Cis-1,2-Dichloroethene	77093	0.07	0.2
Vinyl Chloride	39175	0.002	0.01
Inorganics (Totals)			
Cadmium	01027	0.005	0.05
Chromium	01034	0.1	1.0
Lead	01051	0.0075	0.1
Nickel	01067	0.1	2.0

2. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment.

   a. Where a hazardous constituent has a standard in 35 Ill. Adm. Code 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act or reapply once corrective measures have been implemented pursuant to 35 Ill. Adm. Code 620.450.

   b. For those hazardous constituents without a 35 Ill. Adm. Code 620 standard, the alternative concentration limits proposed by the facility must be approved by the Illinois EPA.

3. The compliance period (post-closure period) during which the groundwater protection standard applies shall be extended until the Permittee demonstrates that the groundwater protection standard has not been exceeded at the point of compliance for three consecutive years.

F. CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the corrective action program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. Upon initiation of the corrective action program the GMZ shall be monitored and maintained. The GMZ is delineated by the groundwater monitoring wells found in Condition III.D.1.

2. The Permittee shall collect, preserve, analyze groundwater samples pursuant to Condition III.H.

3. The Permittee shall determine groundwater quality at each of the groundwater monitoring wells identified in Condition III.D.1 semi-annually during the active life (including closure and post-closure care period).

4. Samples collected during the first and third quarters shall be analyzed for the constituents identified in Condition III.E.1.

5. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition III.D.1.

6. The Permittee shall evaluate the results of the analyses required by Condition III.F.3 above and identify:

   a. The concentration of any organic constituent detected which is equal to or greater than the appropriate concentration limit listed in Condition III.E.1.

   b. The concentration of any total (unfiltered) inorganic constituent detected which is equal to or greater than the appropriate concentration limit listed in Condition III.E.1.

   c. The concentration of any constituent detected which was not detected during the previous sampling event.

   d. The concentration of any constituent which exhibits a progressive increase over two (2) consecutive sampling events.

G. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to MSL at each well each time groundwater is sampled in accordance with Condition III.I.3.

2. The Permittee shall determine the surveyed evaluation of the "stick-up" referenced to MSL once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III.I.5.

3. Elevation, as referenced to MSL, of the bottom of each monitoring well (Storet 72020) is to be reported at least annually. The mandatory measurement shall be taken during the second semi-annual sampling event each year.

H. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the techniques and procedures described in Section E of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:

1. Samples shall be collected by the techniques described in Section E of the approved permit application.

2. Samples shall be preserved, shipped, and handled in accordance with the procedures specified in Section E of the approved permit application.

3. Samples shall be analyzed according to the procedures specified in Section E of the approved permit application with the exception that SW-846 Method 8021B shall be utilized to analyze volatile organic compounds.

4. Samples shall be tracked and controlled using the chain of custody procedures specified in Section E of the approved permit application.

I. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions III.E, III.F, and III.G in the operating record.

2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III.E and III.F shall be collected and reported, as identified in the table below. The result of the analyses conducted on the groundwater quality samples shall be submitted in accordance with this schedule. All additional data collected for the groundwater monitoring program (as specified in Conditions III.E, III.F, and III.G) shall also be submitted to the Illinois EPA in accordance with this schedule.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following	Constituents
First Quarter	April 15	III.E.1
Third Quarter	October 15	III.E.1

3. Groundwater surface elevation data, measured pursuant to Condition III.G.1 shall be collected at least semi-annually and submitted to the Illinois EPA as identified in the table above.

4. The Permittee shall report the groundwater flow rate and direction in the uppermost aquifer, as required by Condition III.F.5 during the second semi-annual sampling event of each year.

5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing ("stick-up"), referenced to MSL, in accordance with the following schedule:

   a. For wells identified in Condition III.D.1 above, every five years (during the second sampling event), or at the request of the Illinois EPA, or whenever the elevation changes. The initial "re-survey" of these wells shall be conducted during the second semi-annual sampling event following the effective date of the Permit.

   b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every five years (during the second quarter sampling event) or whenever the elevation changes.

6. Elevation of the bottom of each monitoring well identified in Condition III.D.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the second quarter sampling event. (Storet 72020)

7. Information required by Conditions III.I.2, III.I.3, III.I.5, and III.I.6 shall be submitted on the chemical analysis forms (Attachment F) or in another format/media pre-approved by the Illinois EPA.

8. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.

9. The Permittee shall submit a written report to the Illinois EPA, in accordance with the schedule found in Condition III.I.2 above, which discusses the effectiveness of the corrective action program.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the corrective action monitoring program no longer satisfies the requirements of 35 Ill. Adm. Code 724.200, then within ninety (90) days, the Permittee must submit an application for a permit modification to the Bureau of Land of the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.

2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

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SECTION IV

CORRECTIVE ACTION SOLID WASTE MANAGEMENT UNITS

A. INTRODUCTION

In accordance with Section 3004 of RCRA and 35 Ill. Adm. Code 724.201, the Permittee, Modern Plating Corporation, shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents, listed in 35 Ill. Adm. Code 721. Appendix H and any solid waste management unit at their facility in Freeport, Illinois.

1. Modern Plating Corporation (MPC) has been addressing soil and groundwater contamination associated with releases from eight units at the facility: Lagoon 1, Lagoon 2, Lagoon 3, the Shawnee Building, Cyanide Treatment Vault, Lagoon 0, Lagoon 1A, and the Wetlands Area. The first four of these are RCRA hazardous waste management units and the second four are Solid Waste Management Units (SWMUs). Figure 1 shows the location of these units.

2. MPC has been carrying out RCRA closure/corrective action for the above units under USEPA's and Illinois EPA's oversight. Initially these efforts were carried out in accordance with an Illinois EPA RCRA interim status closure plan. Illinois EPA placed MPC on the Site Remedial Activities Priorities List on July 24, 1985 and then issued a 4 (q) Notice on June 20, 1986. On December 31, 1987, the USEPA issued a Administrative Order of Consent (AOC) which superseded the interim status closure plan. The efforts overseen by Illinois EPA and USEPA under these documents mainly focused on characterizing the nature and extent of soil and groundwater at the units identified above.

   In December 1996, the USEPA informed MPC that the selection and implementation of corrective action activities required at the MPC facility would be deferred to the Illinois EPA through the RCRA interim status closure plans already in place for the facility. Illinois EPA has addressed proposed remedial activities in letters to MPC dated May 23, 1997 (comments on a proposed outline for a closure plan modification request); September 15, 1997 (approval of a revised groundwater monitoring program); November 21, 1997 (comments on a proposed outline for a RCRA permit application);

March 2, 1998 (comments on a proposed RCRA closure plan modification request); June 1, 1998 (comments on a RCRA permit application); and November 18, 1998 (comments on the Revision 1 of the proposed RCRA closure plan).

A final RCRA closure plan for MPC was approved on December 2, 1999. The closure plan describes the procedures to be used to remediate waste and contaminated soil at the eight units identified above. A groundwater management zone was also established in the approved closure plan for this facility. Post-closure care of these units, including groundwater monitoring, will be established in the closure plan and this permit.

The waste and contaminated soil, removed in accordance with the approved plan, are to be placed in an on-site Corrective Action Management Unit (CAMU). Section II of this permit contains requirements associated with the design and operation **(post-closure care)** of the CAMU. Section III of this permit contains requirements associated with groundwater monitoring, and remediation if necessary, for the CAMU and the facility overall.

3. Illinois EPA has authority for imposing corrective action requirements at RCRA permitted facilities and will be responsible for overseeing future corrective activities at this facility.

4. MPC may conduct interim measures to minimize the impact of a release from any unit at the facility, provided such measures are approved in accordance with the terms and conditions of this permit.

5. The Permittee must provide corrective action, as appropriate, for any future releases from SWMUs present at the facility.

6. The Permittee must provide financial assurance for completing corrective action, as required by 35 Ill. Adm. Code 724.201.

7. The requirements of 35 Ill. Adm. Code 742 (TACO) must be met in determining remediation objectives for all corrective action activities.

B. REMEDIAL EFFORTS COMPLETED TO DATE

MPC entered a Consent Agreement and Final Order with the USEPA on November 23, 1985 which required the facility to submit: (1) a revised RCRA Part A application identifying all

hazardous waste management units at the facility including the Shawnee Building; (2) a RCRA closure plan and a RCRA interim status groundwater monitoring plans for Lagoons 1,2 and 3. The Illinois EPA approved a RCRA closure plan for Lagoons 1,2, and 3 to close as landfills on January 23, 1987.

The MPC was placed on Illinois EPA's Site Remedial Action Priorities List on July 24, 1985. On June 20, 1986 Illinois EPA issued a 4(q) Notice which required clean up of the MPC facility. An Administrative Order of Consent (AOC) was negotiated to combine Federal and State enforcement and permit actions on December 31, 1987. The AOC required MPC to perform a RCRA Facility Investigation (RFI) and Corrective Measure Study (CMS) for all the solid and hazardous waste management units at the facility and to implement corrective action.

During the RFI, it was determined through the investigations described below, that a total of eight units required remediation. These units included four hazardous waste management units (the Shawnee Building, Lagoon 1, Lagoon 2 and Lagoon 3) and four solid waste management units (Cyanide Treatment Vault, Lagoon 0, Lagoon 1A and the Wetlands Area).

In the Shawnee Building soil investigations were performed concurrently with the RFI/CMS at MPC. A RCRA closure plan for the hazardous waste storage areas (Area A, Area B and Area C) in the Shawnee Building was approved by the Illinois EPA in 1989. In 1993, soil cleanup objectives were established (compounds of concern include cadmium, cyanide, and trichloroethylene) and groundwater monitoring wells were installed. The extent of soil contamination has been defined and soil remediation has been incorporated into RCRA corrective action activities.

During RFI soil investigation soil borings BA-1A through B-6A were taken in order to verify the boundaries of the two buried lagoons, Lagoons 0 and Lagoon 1A. These results were mapped by an electromagnetic soil survey. Two (2) soil borings were completed in all five lagoons (LG-1-LG-10) to sample the depth of waste sludge. Twenty-three (23) soil samples were collected from the wetland area adjacent to the lagoons. Four (4) surface samples were taken at four of these locations to assess human exposure to soil. Soil data coupled with groundwater monitoring data described below indicated that the lagoons were the principle source of contamination.

Sediment samples taken from the Pecatonica River during the RFI indicated no measurable impact on sediment quality at the sampling stations. Surface water samples found elevated cadmium, chromium, and nickel concentrations relative to background in the meander lake.

However, the RFI environmental risk assessment performed in 1990 indicated that the potential exposure posed by the concentrations in the meander lake presented no health risk.

During the RFI, 13 additional monitoring wells were installed, 9A, 10A and well nests 17, 18 and 19 were installed. Well nests 17, 18, and 19 were installed to determine: (1) the extent of contamination in the unconsolidated and upper dolomite aquifers north of the lagoon area; and (2) the effect of the river on groundwater elevation in the aquifers near the river. Wells 9A and 10A were installed to determine: (1) groundwater contamination in the upper unconsolidated aquifer down-gradient of Lagoons 0 and Lagoon 1A; and (2) whether or not the water table was in contact with the bottoms of the lagoons.

The focus of investigation efforts from 1991 and 1993 was development of an acceptable corrective action measures study. During this time it was determined that additional soil samples and monitoring wells were necessary in order to: (1) determine if a release of hazardous waste or hazardous constituents into the soils, sediments, and/or groundwater had occurred during the operation of the underground cyanide treatment vault; and (2) to characterize the nature and extent of groundwater and soil contamination east and northeast of Lagoon 3. These investigative activities were completed in 1994.

Additional work on a corrective measures study for the facility was completed in 1995 and 1996. On December 24, 1996, USEPA sent MPC a letter stating that the AOC was terminated and the selection and implementation of a corrective action measure would be taken over by the Illinois EPA.

Illinois EPA and MPC met several times and exchanged several correspondences in 1997 and early 1998 in an effort to establish an acceptable plan for a remedial action at the eight units of concern. On June 26, 1998, Foth and Van Dyke (FVD), consultants for MPC, submitted to the Illinois EPA a report entitled "Modification to RCRA Closure Plan and Basis of Design Report (Revision 1)." This submittal contained: (1) a history of the investigative/remedial activities completed to date; (2) the anticipated steps for completing remedial activities at the eight units of concern at the site, including an evaluation of the site using the procedures in 35 Ill. Adm. Code 742 (TACO); and (3) remediation cost estimates and a post-closure care and monitoring program.

Illinois EPA indicated it could not approve the proposed closure plan in a November 18, 1998 letter and identified the deficiencies (in Attachments III through IV) found in the proposed plan. MPC/FVD submitted a series of letters in March, April and May 1999 in order to conceptually address the major issues raised in the November 18, 1998 letter from

the Illinois EPA. Illinois EPA responded to these submittals in a May 25, 1999 letter to MPC. This letter indicated that the majority of the deficiencies in the November 18, 1998 letter were adequately addressed in concept and also approved groundwater management zone. The letter also contained those items still not adequately addressed and requested a final revised RCRA closure plan.

C. CURRENT/FUTURE REMEDIAL ACTIVITIES

On July 22, 1999 Foth & Van Dyke submitted, on behalf of Modern Plating Corporation (MPC) a document entitled "Final RCRA Closure Plan and Basis Design Report" (Volume 1 and Volume II). The final RCRA closure plan stated that remediation activities for the eight units of concern must be performed in accordance with the July 22, 1999 final RCRA closure plan and is summarized below:

1. Lagoons 0, Lagoon 1, Lagoon 1A, Lagoon 2, and Lagoon 3 and the Cyanide Treatment Vault Area

   a. At Lagoons 0, 1, 1A, 2, and 3, MPC will over-excavate 1 foot of the base and 1 foot of interior side slopes. Excavated soil (an estimated 15,250 cubic yards) will be removed from the lagoons and be placed in a Corrective Action Management Unit (CAMU) to be constructed at the location of Lagoon 2 and Lagoon 3.

   b. In the Cyanide Treatment Vault Area, 2 feet of contaminated soil will be excavated from the floor and side walls of the former vault (approximately 200 cubic yards) and placed in the CAMU.

   c. After excavation activities, soil samples will be obtained in the lagoon areas and Cyanide Treatment Vault Area to define the amount of residual contamination.

   d. An engineered barrier meeting the requirements of 35 Ill. Adm. Code 724.328 will be placed over these areas. Institutional controls and 30 year post-closure monitoring will be present for all units not achieving clean closure. Clean closure is not the goal of remediation efforts at the Lagoons or the Cyanide Treatment Tank Area.

2. Shawnee Building

   At the Shawnee Building three areas were used for storage of hazardous waste. Remediation requires that soil meets 35 Ill. Adm Code 742 TACO Tier II remedial

objectives and a remedial objectives of 400 mg/kg for Lead. An estimated 30 cubic yards of soil will be removed in order to achieve these remedial objectives and meet the clean closure requirements of 35 Ill. Adm Code 725 Subpart G. Contaminated soil will be placed in the on-site CAMU.

3. Wetland Area
In the Wetland Area soil will be removed in three areas. Two of these areas are on-site areas immediately north of Lagoon 2 and one area is off-site area in the low area northeast of MW-13. Soil shall be excavated to meet 35 IAC Section 742 TACO - Tier I remedial objectives. Contaminated soil will be placed in the on-site CAMU. This effort will meet the clean closure requirements of 35 Ill. Adm Code 725 Subpart G.

4. A Groundwater Management Zone (GMZ) has been established to address contaminated groundwater at the MPC facility. The GMZ was approved in the May 25, 1999 letter from the Illinois EPA. Condition 1 and 2 of that letter were removed from the December 2, 1999 final RCRA closure plan approval. Section III also establishes the requirements for a GMZ at this facility.

5. MPC must place institutional controls meeting the requirements of 35 Ill. Adm. Code 742.1000 - Institutional Controls to restrict: (1) future land use; and (2) direct exposure in the future to soil remaining at the five (5) Lagoons and the Cyanide Treatment Vault unit.

D. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. The Permittee has prepared a cost estimate for completing the corrective action required under this permit, in order to provide financial assurance for completion of corrective action, as required under 35 IAC 724.201(b). The cost estimate was based upon the cost of contamination investigations and assessments for the SWMU(s), and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 IAC 724.201. The initial cost to complete corrective action required under this permit. was estimated to be **$1,844,700 (1999 dollars)**. A revised cost estimate must be submitted upon written Illinois EPA request.

2. The Permittee shall demonstrate continuous compliance with 35 IAC 724.201 by providing documentation of financial assurance using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition D. 1

above. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 IAC 724.251. The documentation shall be submitted to the Illinois EPA within 30 days after Illinois EPA's approval of the initial or revised cost estimates required under Condition IV.D.1 above. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that acceptable under 35 IAC 724.246 at its discretion.

E. FUTURE RELEASES FROM SWMUs

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU(s) or release from an existing SWMU discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than sixty (60) calendar days after discovery. The notification shall provide the following information, as available:

   a. The location of the newly-identified SWMU in relation to other SWMUs on a scaled map or drawing;

   b. The type and past and present function of the unit;

   c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);

   d. The period during which the unit was operated;

   e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU, to the extent available; and

   f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.

2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU, the Illinois EPA

may request in writing, that the Permittee prepare a Solid Waste Management Unit (SWMU) Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit.

3. Within 120 calendar days after receipt of the Illinois EPA request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan to Illinois EPA. The plan shall propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s) to the environment.

4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, approve with conditions or disapprove the Plan in writing. If the plan is approved, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee in writing of the Plan's deficiencies specify a due date for submittal of a revised plan.

5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan. Based upon the results of Illinois EPA's review of this submittal, it may be necessary for the Permittee to conduct further investigation, develop final remediation objectives or carry out a corrective measures program.

F. INTERIM MEASURES

At any time during the completion of remedial activities the Permittee may initiate additional interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal Corrective Measure Study.

1. Prior to implementing any interim measures beyond those specified above, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:

   a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;

   b. Design, construction, and maintenance requirements;

   c. Schedules for design and construction; and

   d. Schedules for progress reports.

2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the remedial action plan or of any other portion of the permit.

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Modern Plating Corporation
Log No. B-167

SECTION V

STANDARD CONDITIONS

GENERAL REQUIREMENTS

1. EFFECT OF PERMIT. The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 IAC 702.181)

2. PERMIT ACTIONS. This permit may be modified, reissued or revoked for cause as specified in 35 IAC 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 IAC 702.146)

3. SEVERABILITY. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 IAC 700.107)

4. PERMIT CONDITION CONFLICT. In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 IAC 702.160)

5. DUTY TO COMPLY. The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 IAC 702.141 and 703.242)

6. DUTY TO REAPPLY. If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 IAC 702.142 and 703.125)

7. PERMIT EXPIRATION. This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 IAC 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 IAC 702.125.

8. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 IAC 702.143)

9. DUTY TO MITIGATE. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 IAC 702.144)

10. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 IAC 702.145)

11. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 IAC 702.148)

12. INSPECTION AND ENTRY. The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 IAC 702.149)

13. MONITORING AND RECORDS. (35 IAC 702.150)

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 IAC 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

c. Records of monitoring information shall include:

i. The date(s), exact place, and time of sampling or measurements;

ii. The individual(s) who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. The individual(s) who performed the analyses;

v. The analytical technique(s) or method(s) used; and

vi. The result(s) of such analyses. (35 IAC 702.150)

14. REPORTING PLANNED CHANGES. The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 IAC 703.280. (35 Ill. Adm. Codes 702.152(a))

15. CONSTRUCTION CERTIFICATION. For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

b. 1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or

2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)

16. ANTICIPATED NONCOMPLIANCE. The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 Ill. Adm. Code 702.152(b))

17. TRANSFER OF PERMITS. This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 IAC 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)

18. MONITORING REPORTS. Monitoring results shall be reported at the intervals specified in the permit. (35 IAC 702.152(d))

19. COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 IAC 702.162. (35 IAC 702.152(e))

20. TWENTY-FOUR HOUR REPORTING.

    a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:

        i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

        ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.

    b. The description of the occurrence and its cause shall include:

        i. Name, address, and telephone number of the owner or operator;

        ii. Name, address, and telephone number of the facility;

        iii. Date, time, and type of incident;

        iv. Name and quantity of material(s) involved;

        v. The extent of injuries, if any;

        vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and

        vii. Estimated quantity and disposition of recovered material that resulted from the incident.

c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 IAC 702.152(f) and 703.245(b))

21. OTHER NONCOMPLIANCE. The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 16, 19, and 20, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 IAC 702.152(g))

22. OTHER INFORMATION. Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 IAC 702.152(h))

23. ANNUAL REPORT: An annual report must be submitted covering facility activities during the previous calendar year. (35 IAC 724.175)

24. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

    Illinois Environmental Protection Agency
    Bureau of Land
    Planning and Reporting Section - #24
    1021 North Grand Avenue East
    Post Office Box 19276
    Springfield, Illinois 62794-9276

25. SIGNATORY REQUIREMENT. All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 IAC 702.126. (35 IAC 702.151)

26. CONFIDENTIAL INFORMATION. Any claim of confidentiality must be asserted in accordance with 35 IAC 702.103 and 35 IAC 161.

27. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE. The Permittee shall maintain at the facility, until closure is complete, the following documents and amendments, revisions and modifications to these documents:

a. Waste analysis plan as required by 35 IAC 724.113(b) and this permit.

b. Personnel training documents and records as required by 35 IAC 724.116(d) and this permit.

c. Contingency plan as required by 35 IAC 724.153(a) and this permit.

d. Closure plan as required by 35 IAC 724.212(a) and this permit.

e. Cost estimate for facility closure as required by 35 IAC 724.242(d) and this permit.

f. Operating record as required by 35 IAC 724.173 and this permit.

g. Inspection schedules as required by 35 IAC 724.115(b) and this permit.

28. WASTE MINIMIZATION. The Permittee shall certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable, and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment, in accordance with 35 IAC 724.173(b)(9).

GENERAL FACILITY STANDARDS

29. GENERAL WASTE ANALYSIS. The Permittee shall comply with the procedures described in the approved waste analysis plan. (35 IAC 724.113)

30. SECURITY. The Permittee shall comply with the security provisions of 35 IAC 724.114(b) and (c).

31. GENERAL INSPECTION REQUIREMENTS. The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 IAC 724.115(c). Records of inspections shall be kept as required by 35 IAC 724.115(d).

32. PERSONNEL TRAINING. The Permittee shall conduct personnel training as required by 35 IAC 724.116 and shall maintain training documents and records as required by 35 IAC 724.116(d) and (e).

PREPAREDNESS AND PREVENTION

33. DESIGN AND OPERATION OF FACILITY. The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 IAC 724.131)

34. REQUIRED EQUIPMENT. The Permittee shall equip the facility with the equipment set forth in the approved contingency plan, as required by 35 IAC 724.132.

35. TESTING AND MAINTENANCE OF EQUIPMENT. The Permittee shall test and maintain the equipment specified in condition 36 as necessary to assure its proper operation in time of emergency. Such testing and maintenance activities are set forth in the approved inspection schedule. (35 IAC 724.133)

36. ACCESS TO COMMUNICATIONS OR ALARM SYSTEM. The Permittee shall maintain access to the communications or alarm system as required by 35 IAC 724.134.

37. ARRANGEMENTS WITH STATE AND LOCAL AUTHORITIES AND EMERGENCY RESPONSE CONTRACTORS. The Permittee shall attempt to make emergency response arrangements with State and local authorities and agreements with State emergency response teams and emergency response contractors and equipment suppliers as required by 35 IAC 724.137. If State or local officials refuse to enter in preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

CONTINGENCY PLAN

38. IMPLEMENTATION OF PLAN. The provisions of the contingency plan must be carried out by the Permittee immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment (35 IAC 724.151(b)). At a minimum, this includes any fire or explosion which occurs in an area where hazardous waste is being managed (treated, stored or disposed) (35 IAC 703.241). Within 15 days of any incident that requires implementation of the contingency plan, the owner or operator must submit a written report to the Illinois EPA as required by 35 IAC 724.156(j).

39. COPIES OF PLAN. A copy of the contingency plan, including any revisions, must be maintained at the facility and submitted to all local police and fire departments, hospitals and state and local emergency response teams as required by 35 IAC 724.153.

40. AMENDMENTS TO PLAN. The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 35 IAC 724.154.

41. EMERGENCY COORDINATOR. A trained emergency coordinator shall be available at all times in case of an emergency as required by 35 IAC 724.155 and 724.156.

RECORD KEEPING AND REPORTING

42. OPERATING RECORD. The Permittee shall maintain a written operating record at the facility in accordance with 35 IAC 724.173.

43. ANNUAL REPORT. The Permittee shall prepare and submit an annual report to the Illinois EPA prior to March 1st of each year in accordance with the requirements of 35 IAC 724.175.

CLOSURE

44. PERFORMANCE STANDARD. The Permittee shall close the facility as required by 35 IAC 724.211 and in accordance with the approved closure plan.

45. AMENDMENT TO CLOSURE PLAN. The Permittee must amend the closure plan whenever there is a change in the expected year of closure or whenever a change in the facility operation plans or facility design affects the closure plan pursuant to 35 IAC 724.212(c).

46. NOTIFICATION OF CLOSURE. The Permittee shall notify the Illinois EPA at least 60 days prior to the date it expects to begin closure. (35 IAC 724.212(d))

47. TIME ALLOWED FOR CLOSURE. After receiving the final volume of hazardous waste, the Permittee shall treat or remove from the site all hazardous waste and complete closure activities in accordance with the schedule(s) specified in the closure plan. (35 IAC 724.213)

48. DISPOSAL AND/OR DECONTAMINATION OF EQUIPMENT. When closure is completed, the Permittee shall decontaminate and/or dispose of all facility equipment and structures as required by the approved closure (35 IAC 724.214) plan.

49. CERTIFICATION OF CLOSURE. When closure is completed, the Permittee shall submit certification to the Illinois EPA in accordance with 35 IAC 724.215 that the facility has been closed as specified by the approved closure plans.

50. COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.242, must be:

    a. Adjusted for inflation either 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. If the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).

    b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.

    c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.242)

    d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.

51. FINANCIAL ASSURANCE FOR FACILITY CLOSURE. The Permittee shall demonstrate compliance with 35 IAC 724.243 by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.243.

52. LIABILITY REQUIREMENTS. The Permittee shall demonstrate continuous compliance with the requirements of 35 IAC 724.247 and the documentation requirements of 35 IAC 724.251.

53. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 IAC 724.248 whenever necessary.

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SECTION VI

REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

CONDITION	SUBMITTAL	DUE DATE
CAMU Construction, Operation, and Closure		
I.D.10	Notification of deviation of design plans or non-conforming work observed by CQA officer.	Prior to resuming work in the impacted area.
I.E.1	Construction Certification Report	Within 30 days after completing construction and prior to placement of waste in the CAMU.
I.G.2	Notify appropriate state and local officials	Immediately when Contingency Plan is implemented.
I.G.3	Notify appropriate IEMA and IEPA	Within 24 hours of implementing the Contingency Plan.
I.G.5	Documentation that arrangements have been made with local response teams in case of an emergency.	Within 60 days of the effective date of this permit.
I.G.6	Documentation that copies of the Contingency Plan have been provided to local response teams.	Within 60 days of the effective date of this permit.
I.H.2	Plan to protect the CAMU from winter weather.	No later than November 1, 2000 if the CAMU is not closed by that date.

1770200010
Modern Plating Corp.
RCRA Log No. B-167

April, 2000
Page VI-2 of VI-6

CONDITION	SUBMITTAL	DUE DATE
I.H.3	File the survey plat with any local zoning authority, or authority with jurisdiction over local land use, and record with land titles.	No later than the date the certification of closure of the CAMU is submitted to the Illinois EPA.
I.H.5	Certification of Closure	Within sixty (60) days after closure, or by January 1, 2001.
I.H.5.a	Certify to Illinois EPA that the notation required in I.H.4.a has been recorded.	Within 60 days after closure, or by January 1, 2001.
I.I.1	Documentation of financial assurance for closure.	Within 30 days of the effective date of this permit.
I.I.2	Documentation of financial assurance for post-closure.	As part of the closure documentation report and closure certification
I.I.3	Documentation of liability insurance.	Within 30 days of the effective date of this permit.
CAMU Post-Closure		
II.F.2	Notify appropriate state and local officials	Immediately when Contingency Plan is implemented.
II.F.3	Notify appropriate IEMA and IEPA	Within 24 hours of implementing the Contingency Plan.
II.G.3	Certify to the Illinois EPA that post-closure care was performed in accordance with the specifications.	Within 60 days after completion of the post-closure care period.
Groundwater Monitoring		

1770200010
Modern Plating Corp.
RCRA Log No. B-167

April, 2000

CONDITION	SUBMITTAL	DUE DATE
III.D.1	The Well Depth (ft-bgs), Well Depth Elevation (ft-MSL), and Well Screen Interval (ft-MSL).	Within thirty (30) days of the date installation of groundwater monitoring wells MW-20C and MW-23C is completed.
III.D.3	Notify IEPA if any of the wells identified in Condition III.C.1 are damaged or the structural integrity has been compromised.	Within thirty (30) days of the date the damage is detected.
III.D.5	Provide Illinois EPA boring logs, construction diagrams and data sheets from new or replacement wells.	Within 30 days of the date installation is complete.
III.I.2	Groundwater monitoring data required each quarter and statistical calculations.	Samples Collected During Months of: Second Quarter, Fourth Quarter — Results to Illinois EPA by: July 15, January 15
III.I.3	Semi-annual groundwater surface elevation data.	According to the table in Condition III.I.2
III.I.4	Groundwater flow rate and direction in the uppermost aquifer.	Annually during the 2nd semi-annual sampling event.
III.I.5	Surveyed elevation of the top of the well casing ("stick-up")	At time of installation for new wells. For all wells: every 5 years during the 2nd sampling event, at the request of IEPA, or when the elevation changes.
III.I.6	Elevation of the bottom of each monitoring well.	Annually during the second quarter sampling event.

1770200010
Modern Plating Corp.
RCRA Log No. B-167

April, 2000
Page VI-4 of VI-6

CONDITION	SUBMITTAL	DUE DATE
III.J.1	Apply for permit modification to modify the corrective action monitoring program.	Within 90 days of determining the program no longer meets the requirements of 35 IAC 724.200.
Corrective Action		
IV.D.1	Revised cost estimate	Upon written request by Illinois EPA.
IV.D.2	Documentation of financial assurance	Within 30 days after Illinois EPA's approval of the initial or revised cost estimates required under Condition IV.D.1.
IV.E.1	Notify Illinois EPA in writing of any newly-identified SWMU(s) or release from an existing SWMU.	No later than sixty (60) calendar days after discovery.
IV.E.3	Submit a SWMU Assessment Plan to Illinois EPA.	Within 120 calendar days after receipt of the Illinois EPA request.
IV.E.5	Submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA	In accordance with the schedule in the approved SWMU Assessment Plan.
IV.F.1	Submit detailed information regarding the proposed interim measure to the Illinois EPA for approval.	Prior to implementing any interim measures beyond those specified in this permit.
Standard Conditions		
6	Complete application for new permit.	At least 180 days prior to permit expiration.

1770200010
Modern Plating Corp.
RCRA Log No. B-167

April, 2000
Page VI-5 of VI-6

CONDITION	SUBMITTAL	DUE DATE
11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Reasonable time.
14	Notify Illinois EPA of planned physical alterations or additions.	As soon as possible.
15	Construction Certification	Upon construction of a new or modified unit.
16	Notify Illinois EPA of changes which may result in permit noncompliance.	Prior to the planned change.
17	Application for permit modification indicating permit is to be transferred.	90 days prior to the planned change of ownership.
18	Monitoring reports	The intervals specified in the permit.
19	Submission of any information required in a compliance schedule.	Within 14 days after each schedule date.
20	Report to Illinois EPA any non-compliance which may endanger health or environment. By telephone In writing	 Within 24 hours after discovery. Within 5 days after discovery.
21	Report all other instances of noncompliance.	At the time monitoring reports, as required by this permit, are submitted
23	Annual Report	March 1 of each year.

1770200010
Modern Plating Corp.
RCRA Log No. B-167

April, 2000
Page VI-6 of VI-6

CONDITION	SUBMITTAL	DUE DATE
38	Report to Illinois EPA details regarding incident which required implementation of contingency plan.	Within 15 days after event.
43	Submit annual report required by 35 IAC 724.175.	March 1 of each year.
46	Notify Illinois EPA that expecting to close.	At least 60 days prior to beginning closure.
50(a)	Adjust closure cost estimate for inflation.	Within 30 days after anniversary date.
50(b)	Revision of closure cost estimate.	As needed.
53	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.

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ATTACHMENT A

CONSTRUCTION CERTIFICATION FORM and INSTRUCTIONS

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies (four additional copies for UIC wells). Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: _____

IEPA SITE CODE: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

U.S. EPA ID NO.: IL___ ___ ___ ___ ___ ___ ___ ___ ___ ___

PART B PERMIT LOG #/UIC PERMIT #: _____

PERMIT (OR MODIFICATION) ISSUANCE DATE: _____

PERMIT CONDITION NO. REQUIRING CERTIFICATION: _____

The _____ has been constructed in accordance with the specifications in the Part B/UIC Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____
Signature of Owner/Operator Name and Title

_____ _____
Signature of Registered P.E. Name of Registered P.E. and Illinois Registration Number

_____
Date (P.E. SEAL)

This Agency is authorized to require this information under Illinois Revised Statutes, 1979. Chapter 111 ½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

DATE: February 23, 1996

TO: Facilities Permitted Under the IEPA RCRA and UIC Programs

FROM: DLPC Permit Section

SUBJECT: Certification Documentation for Construction Required by IEPA-Issued Permits

When submitting certification required by a Part B or UIC permit for construction of any newly developed areas or units, please complete the attached certification form. Modifications to the construction of UIC wells should be certified with this form, but the installation of groundwater monitoring wells does not require this certification (unless specifically required by the permit). This will help to ensure that the submittal reaches its proper destination and that the certification will meet the regulatory requirements. Sending the Field Operations Section (F.O.S.) copy directly to the Field Office is acceptable as long as all copies have a completed copy of the enclosed form attached and you advise the Permit Section, in writing, that a copy has been sent to F.O.S.

A documentation report and as-built drawings (sealed and signed by an Illinois Professional Engineer) must be included with this certification. Information necessary to document the construction of the unit or area and to support the certification must be contained within the report. This report should include a thorough description of all construction data and drawings and should be formatted in a logical and orderly manner. The construction documentation report must contain at least the following items:

1. An introduction and summary which describes the scope and purpose of the project;

2. A description of all construction activities, including quality assurance and quality control;

3. As-built drawings of the area or unit and a description of any deviations from the plans and specifications approved in the permit;

4. A description of the test methods used and justification for any deviations from standard test methods;

5. A summary of test results, identification of any samples which did not meet the specifications and the corrective action and retesting which was undertaken in response to any failing test results;

6. Any necessary information associated with construction of the area or unit to document that construction was in accordance with the plans and specifications approved by the permit;

7. Information specifically required by the permit; and

8. Any available photographs of the area or unit.

If you have any questions, please contact a member of the DLPC Permit Section at 217/782-6762.

WRW:bjh\963121S.WPD

Enclosure

ATTACHMENT B

INSPECTION SCHEDULE

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

Figure F-1

Modern Plating Corporation
CAMU Landfill
RCRA Part B Inspection Log
for Waste Pile Construction and Operation

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
F-2b(4)(c) - Wind Dispersal	Sludge Waste Piles	1. Check for visible dust generated by winds or vehicular traffic.	Weekly except daily if wind speed exceeds 10 mph. Check continually throughout the day under dry windy conditions.			
Facility Freeboard	Temporary Dewatering Sump	1. Check for proper operation and potential clogging. 2. Check dewatering sump for clogging. 3. Check dewatering pump for proper operation.	Weekly plus after each storm event of ½ inch of precipitation or more.			
F-2b(4)(a) Surface Water Management and Erosion Control Structure	Sedimentation Pond	1. Check for erosion; washouts 2. Check water and sediment depth 3. Check outfall water clarity 4. Remove sediments as required to maintain capacity.	For all semiannually and after each storm event of ½ inch or more			
	Ditches, Culverts, Spillways, etc.	1. Check for erosion, washouts 2. Check for siltation. 3. Check vegetated areas for washouts, rills, etc.	For all semiannually and after each storm event of ½ inch or more			
	Others	1. Check roads for mud tracking. 2. Check roads for washouts.	After each storm event of ½ inch or more.			

R000783

Revised Figure F-2

Modern Plating Corporation
CAMU Landfill
RCRA Part B Inspection Schedule and Log for Landfill Operations

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
F-b(7)(d) Leachate Collection System (LCS)	Side Slope Riser (SSR) Pump and Piping	1. Remove pump and clean pipeline	Annually			
		2. Check for leaks	5 days after start-up, repair leaks within			
		3. Check for leaks weekly thereafter	15 days.			
		4. Service pumps	As per manufacturer's O&M manual[1, 2]			
		5. Check pressure transducer for proper operation	As per manufacturer's O&M manual[1, 2]			
		6. Check flow meters and pump controls for proper operation	As per manufacturer's O&M manual[1, 2]			
		7. Check alarms and alarm lights, etc., for proper operation	15 days			
F-2b(7)(b) Leachate Detection System (LDS)		1. Check liquid levels and remove liquids above pumping level. Record liquid level and leachate quantity in sump.[3]	Weekly during active site life; monthly after closure.			
		2. Check liquid levels and remove liquids above pumping level. Refer to 35 IAC 724.403 for frequencies if leakage does not occur.				
		3. Check pressure transduces for proper operation.	As per manufacturer's O&M manual			
		4. Check alarm lights for proper operation.	Weekly during active site life; monthly after closure.			
Geosynthetic Clay Liner (GCL)	Soil Liner/Cap	1. Inspect as per 35 IAC 724.403 and construction CQA plan	During, prior to placement and during covering.			Construction QA/QC activity
Geomembranes	Thermo-plastic Liners	1. Inspect as per 35 IAC 724.403 and construction CQA plan.	During, prior to placement and during covering.			Construction QA/QC activity
Exterior of CAMU Landfill	Berms	1. Check for wet spots and leaks.	Semiannually			
		2. Check for settlement, slumping or sloughing	Semiannually			
		3. Check for erosion and bare sod areas.	Semiannually and after each major rainfall event			

R000784

Revised Figure F-2 *(Continued)*

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Security Devices	Means to Control Entry	1. Review condition of fencing and gates 2. Check for locks in operating order.	Semiannually Semiannually			
	Exterior Lighting	1. Check for proper light operation.	Semiannually			
F-2b(7)(a) Surface Water Management and Erosion Control Structure	Sedimentation Pond	1. Check for erosion; washouts 2. Check water and sediment depth 3. Check outfall water clarity 4. Remove sediments as required to maintain capacity.	For all semiannually and after each storm event of ½ inch or more			
	Ditches, Culverts, Spillways, etc.	1. Check for erosion, washouts 2. Check for siltation. 3. Check vegetated areas for washouts, rills, etc.	For all semiannually and after each storm event of ½ inch or more			
	Others	1. Check roads for mud tracking. 2. Check roads for washouts.	After each storm event of ½ inch or more.			
Erosion Control Devices		1. Riprap - inspect for washout and/or undercutting. 2. Erosion matting - inspect for washout and/or undercutting. 3. Erosion bales or silt fencing - inspect for washout or undercutting. 4. Ditches - inspect for erosion or siltation. 5. Velocity Breaks - Inspect for washout, undercutting, or siltation	After each storm event of ½ inch or more. After each storm event of ½ inch or more. After each storm event of ½ inch or more. After each storm event of ½ inch or more. After each storm event of ½ inch or more.			
F-2b(7)(c) Wind Dispersal	Landfilled Sludge and Contaminated Soil	1. Check for visible dust generated by winds or vehicular traffic.	Weekly except daily if wind speeds exceed 10 mph. Check continually throughout the day under dry, windy conditions.			

Signatures Date

Shift 1 Operator _____

Manager _____

[1]O&M Manual - Operations and Maintenance Manual.
[2]O&M Manual log for all mechanical equipment should be attached to this log.
[3]To be compared with the action leakage rate of 4,680 gal/day.

R000785

ATTACHMENT C

CLOSURE CERTIFICATION FORM

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

1770200010
Modern Plating Corporation
RCRA Log No. B-167

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

The Corrective Action Management Unit (CAMU) at the Modern Plating facility in Freeport, Illinois as described in RCRA permit application Log No. B-176 has been closed in accordance with the specifications and requirements in the Illinois EPA approved permit application.

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

USEPA ID Number	Facility Name
Signature of Owner	Name and Title
Signature of Operator	Name and Title
Signature of Registered P.E.	Name of Registered P.E. and Illinois Registration Number
Date	P.E. Seal and Expiration Date of License

ATTACHMENT D

CLOSURE & POST CLOSURE COST ESTIMATES

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

Modern Plating Company - CAMU Landfill

Phase 1 Site Development

By: MRS/MLR Date: 1/6/00 Checked By: Date:

Item	Units	No. of of Units (in-place)	Cost/Unit	Extension
1. Wetland Soil Removal & Stockpiling				
a. Site Clearing	acres (ac)	3	$1,800	$5,400
b. Construct berm around Lagoon No.1a	cubic yard (cy)	470	$10.00	$4,700
c. Construct berm around Lagoon No.0	cy	240	$10.00	$2,400
d. Excavate and stockpile wetland soils	cy	2,130	$23.00	$48,990
e. Install geosynthetic cover (tarp) at Lagoon No. 1a	square feet (sf)	14,000	$0.60	$8,400
f. Install geosynthetic cover (tarp) at Lagoon No. 0	sf	7,400	$0.60	$4,440
g. Construct / remove haul roads	lump sum (ls)	1	$22,300	$22,300
2. Initial Site Preparation				
a. Construct berm around temporary Lagoon No.1 storage area	cubic yard (cy)	300	$10.00	$3,000
b. Install temporary dewatering sump	lump sum (ls)	1	$1,000	$1,000
c. Excavate sludge from Lagoon 2 and place in storage area	cy	4,750	$23.00	$109,250
d. Cut/fill to subbase grades	cy	8,000	$8.00	$64,000
3. Double Liner System Construction (Phase 1)				
a. GCL installation	square feet (sf)	28,400	$0.60	$17,040
b. 60 mil HDPE secondary geomembrane (textured)	sf	28,400	$0.60	$17,040
c. Geonet secondary drainage layer	sf	8,300	$0.45	$3,735
d. Geocomposite secondary drainage layer (sideslopes)	sf	20,800	$0.82	$17,056
e. 60 mil HDPE primary geomembrane (textured)	sf	28,400	$0.60	$17,040
f. Geocomposite primary drainage layer	sf	28,400	$0.82	$23,288
4. Leachate extraction system construction				
a. Leachate extraction sump & piping	lump sum (ls)	1	$5,000	$5,000
b. Leachate pump, controls, valves & flow meter	ls	1	$10,000	$10,000
c. Leachate forcemain (double-encased)	lf	60	$25	$1,500
d. Pump building	ls	1	$15,000	$15,000
5. Filling and closure construction				
a. Excavation and placement of sludge & soil from Lagoon 3	cy	5,310	$23.00	$122,130
b. 6" grading layer (imported)	cy	300	$10.00	$3,000
c. GCL installation	sf	19,600	$0.60	$11,760
d. 40 mil HDPE geomembrane (textured)	sf	19,600	$0.60	$11,760
e. 18" rooting zone layer (imported)	cy	900	$10.00	$9,000
f. 6" topsoil layer (imported)	cy	400	$14.00	$5,600
g. Sedimentation basin construction	ls	1	$1,000	$1,000

Modern Plating Company - CAMU Landfill

Phase 1 Site Development (cont.)

By: MRS/MLR Date: 1/6/00 Checked By: Date:

Item	Units	No. of of Units (in-place)	Cost/Unit	Extension
5. Filling and closure construction (cont.)				
i. Seed, fertilizer & mulch	acre	0.45	$2,500	$1,125
j. Topsoil, seed, fertilizer & mulch areas outside berms	acre	0.40	$5,000	$2,000
6. Engineering and QA/QC (Liner and Cap)	ls	1	$87,000	$87,000
7. Contract Administration and Construction Documentation	ls	1	$24,000	$24,000
			Subtotal =	**$678,954**
			15% Contingency =	**$101,843**
			Total Estimated Phase 1 Site Development Construction Cost =	**$780,797**

Modern Plating Company - CAMU Landfill

Phase 2 Site Development

By: MRS/MLR Date: 1/6/00 Checked By: Date:

Item	Units	No. of of Units (in-place)	Cost/Unit	Extension
1. Initial Site Preparation				
a. Fill to subbase grades (imported)	cubic yard (cy)	6,070	$10.00	$60,700
2. Double Liner System Construction				
a. GCL installation	square feet (sf)	25,400	$0.60	$15,240
b. 60 mil HDPE secondary geomembrane (textured)	sf	25,400	$0.60	$15,240
c. Geonet secondary drainage layer	sf	7,700	$0.45	$3,465
d. Geocomposite secondary drainage layer (sideslopes)	sf	17,700	$0.82	$14,514
e. 60 mil HDPE primary geomembrane (textured)	sf	25,400	$0.60	$15,240
f. Geocomposite primary drainage layer	sf	25,400	$0.82	$20,828
3. Leachate extraction system construction				
a. Leachate extraction sump & piping	lump sum (ls)	1	$5,000	$5,000
b. Leachate pump, controls, valves & flow meter	ls	1	$10,000	$10,000
4. Filling and closure construction				
a. Wetland soil excavation & placement	cy	2,130	$8.00	$17,040
b. Excavation & placement of Lagoon No. 1a & 0 berm soils	cy	710	$8.00	$5,680
c. Excavation and placement of sludge from Lagoon No.1	cy	7,220	$23.00	$166,060
d. Excavation and placement of sludge from Lagoon No.1a	cy	1,840	$23.00	$42,320
e. Excavation and placement of sludge from Lagoon No.0	cy	880	$23.00	$20,240
f. Excavation and placement of soil from Shawnee Building	cy	30	$8.00	$240
g. Excavation and placement of material from cyanide vault	cy	200	$8.00	$1,600
h. 6" grading layer (imported)	cy	600	$8.00	$4,800
i. GCL installation	sf	35,700	$0.60	$21,420
j. 40 mil HDPE geomembrane (textured)	sf	35,700	$0.60	$21,420
k. 18" rooting zone layer (imported)	cy	2,100	$10.00	$21,000
l. 6" topsoil layer (imported)	cy	700	$14.00	$9,800
m. Sedimentation basin construction	ls	1	$1,000	$1,000
n. Seed, fertilizer & mulch	acre	0.82	$2,500	$2,050
o. Replacement of fill in excavated areas (lagoons 0 and 1A)	cy	710	$10.00	$7,100
p. Topsoil, seed, fertilizer & mulch areas outside berms	acre	1.6	$5,000	$8,000
q. Gas venting trench	lineal feet	200	$15.00	$3,000
r. Gas vents	each	4.0	$200	$800
s. Fencing	lineal feet	950.0	$15.00	$14,250

Modern Plating Company - CAMU Landfill

Phase 2 Site Development (cont.)

By: MRS/MLR Date: 1/6/00 Checked By: Date:

Item	Units	No. of of Units (in-place)	Cost/Unit	Extension
5. Additional Well Installation in the GMZ				
a. Well Drilling/Construction	lump sum (ls)	1	$2,300	$2,300
b. Construction Inspection & Documentation	ls	1	$1,200	$1,200
6. Engineering and QA/QC	ls	1	$87,000	$87,000
7. Contract Administration and Construction Documentation	ls	1	$24,000	$24,000
			Subtotal =	**$642,547**
			15% Contingency =	**$96,382**
			Total Estimated Phase 2 Site Development Construction Cost =	**$738,929**

Table 1-2

Annual Long-Term Care Costs Estimate
Proposed CAMU Landfill
Modern Plating Corporation

Item/Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
1. Site Inspections and Report (annual) (1 per year)	1 per yr	$1,000 ea	$1,000
2. Land Surface Care			
• Erosion Damage Repair (.9 cy/ac/yr on 2 ac)	1.8 cy	$50/cy	$90
• Revegetation and Soil Amendments (assume 10%/yr x 2.0 ac/yr)	.2 ac	$2,500/ac	$500
• Snow Plowing (assume 2 snowfall events)	2 ea	$200/ea	$400
3. Leachate Treatment[3]	44,000[5] gal/yr	$0.02/gal	$880
4. Leachate Hauling[4]	44,000 gal/yr	$0.20/gal	$8,800
5. Environmental Monitoring (semi-annually)			
• Groundwater (8 wells for metals and 14 wells for VOC, 2 times/year)	2 smpl events per year	$4,760/event	$9,520
• Leak Detection System (LDS) Monitoring (1 location, 12 times/year)	12 events	$100/event	$1,200
• Leachate Monitoring (1 location, 2 time/yr)	2 smpls	$140/smpl	$280

R000793

Table 1-2 *(Continued)*

Item/Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
• Stormwater Monitoring (2 locations, 2 times/year)	4 smpls	$40/smpl	$160
6. Mowing (2 ac per year)	2 ac	$50/ac	$100
7. Landfill Sump Pump (replace each pump every 5 yrs)	12 pumps	$1,400/ea	$560[2]
	Subtotal		$23,490
	Contingency (10%)		$2,350
	Total Cost per Year		$25,840

ac = acre
cy = cubic yard
mil = million
ea = each
ft = foot
gal = gallon
yr = year
smpl = sample

Prepared by: REM
Checked by: MRS

[1]Annual leachate volume will be estimated and cost calculated during the final design.
[2]Prorated to an annual cost over the 30-year long-term care period.
[3]Assumes treatment at a publicly owned wastewater treatment.
[4]Assumes on-site wastewater treatment plant is no longer operating and leachate must be trucked off-site.
[5]Assume leachate generation is equal to the quantity of water generated by the sludge itself.
As per Appendix N $\frac{1,300,000 \text{ gal}}{30 \text{ yrs}} \sim 44,000$ gal/yr

R000794

ATTACHMENT E

POST CLOSURE
INSPECTION & MAINTENANCE SCHEDULE

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

Revised Figure I-2a

Modern Plating Corporation
CAMU Landfill
RCRA Part B Inspection Schedule and Log for Post-Closure Period

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Leachate Collection System (LCS)	Side Slope Riser (SSR) Pump and Piping	1. Remove pump and clean pipeline	Annually			
		2. Check for leaks	5 days after start-up, repair leaks within 15 days.			
		3. Check for leaks weekly thereafter				
		4. Service pumps	As per manufacturer's O&M manual			
		5. Check pressure transducer for proper operation	As per manufacturer's O&M manual			
		6. Check flow meter and pump controls for proper operation	As per manufacturer's O&M manual			
		7. Check alarms and alarm lights for proper operation	Weekly during active life, monthly after closure			
Leachate Detection System (LDS)		1. Check liquid levels and remove liquids above pumping level. Record liquid level and leachate quantity in sump.[1]	Weekly during active site life; monthly after closure.			
		2. Check liquid levels and remove liquids above pumping level. Refer to 35 IAC 724.403 for frequencies if leakage does not occur.				
		3. Check pressure transducers for proper operation	As per manufacturer's O&M manual			
		4. Check alarms and alarm lights for proper operation	Weekly during active site life, monthly after closure			
Geosynthetic Clay Liner (GCL)	Soil Liner/Cap	1. Inspect as per 35 IAC 724.403 and construction CQA plan	During, prior to placement and during covering.			Construction QA/QC activities

250

R0000796

Revised Figure I-2a *(Continued)*

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Geomembranes	Thermo-plastic Caps	1. Inspect as per 35 IAC 724.403 and construction CQA plan.	During, prior to placement and during covering.			Construction QA/QC activity
Final Cover (completed)	Vegetation of the final surface	1. Check for distress or bare soil areas. 2. Check for erosion. 3. Check slumping, settlement, subsidence, and/or displacement	Semiannually Semiannually and after each major rainfall event. Same as above			
Exterior of CAMU Landfill	Berms	1. Check for wet spots and leaks. 2. Check for settlement, slumping or sloughing 3. Check for erosion and bare sod areas.	Semiannually Semiannually Semiannually and after each major rainfall event			
Final Cover System Function	Geocomposite	1. Check for clogging and proper function	Semiannually and after each rainfall event			
	Geomembrane	1. Check areas where settlement or slumping is evident for geomembrane damage	Semiannually and after each rainfall event			
Run-on and Run-Off Control	Erosion Control Devices	1. Riprap - inspection for washout or undercutting 2. Ditches - inspect for siltation and/or erosion 3. Erosion bales or silt fencing - inspect for washout or undercutting 4. Culverts - inspect for washout/siltation at inlet and outlet	Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event.			

R000797

Revised Figure I-2a *(Continued)*

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
	Sedimentation Basins	1. Inspect berms for erosion, scouring and slumping	Quarterly and after each major rainfall event.			
		2. Inspect pond bottom for build-up of sediment	Quarterly and after each major rainfall event.			
		3. Inspect inlet and outlet for erosion and sedimentation	Quarterly and after each major rainfall event.			
		4. Inspect trash rack and rock filter	Quarterly and after each major rainfall event.			
Final Cover Surface	Vegetation	1. Inspection for growth and overall health	Quarterly and after each major rainfall event.			
		2. Evidence of stress	Quarterly and after each major rainfall event.			
		3. Bare spots from erosion, washout or die-offs, etc.	Quarterly and after each major rainfall event.			
	Final Cover	1. Erosion resulting in rills, gullies or bare soil.	Quarterly and after each major rainfall event.			
		2. Settlement resulting in loss of grade and/or water standing on the final cover.	Quarterly and after each major rainfall event.			
		3. Slumping or sloughing of final cover.	Quarterly and after each major rainfall event.			
Security Control Devices	Fences, Gates and Locks	1. Inspection for proper function. 2. Replace and repair as required	Semiannually			
Gas Venting System	Risers	1. Inspect for plugging.	Semiannually			
Groundwater Monitoring Wells	Protective Tops	1. Inspect protective tops and seal for integrity and function	Semiannually			
	Well	2. Record well condition, including well depth, siltation, water depth, well pipe condition and water quality.	Semiannually			

R000798

Revised Figure I-2a *(Continued)*

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Horizontal and Vertical Control	Benchmarks	1. Check for disturbance and remark (i.e., flag and/or paint).	Annually			

[1] To be compared with the action leakage rate of 4,680 gal/day.

R000799

Figure I-2

Modern Plating Corporation
CAMU Landfill
Maintenance Plan
Post-Closure Periods

Equipment or Area	Description	Preventive Maintenance	Corrective Maintenance Procedures	Equipment Requirements	Material Needs
Leachate Collection System (LCS)	Side Slope Riser (SSR) Pump and Piping	1. Service pumps in accordance with the manufacturer's requirements 2. Clean pump according to the manufacturer's recommendations 3. Clean interior piping annually 4. Inspect liquid level sensor as per manufacturer's O&M manual	1. Refer to O&M manual 2. Repair leaks immediately after they are observed	1. Refer to O&M Manual 2. Refer to O&M Manual	Refer to O&M Manuals
Leachate Detection System (LDS)		1. Service pumps in accordance with the manufacturer's requirements 2. Clean pump according to the manufacturer's recommendations 3. Clean interior piping annually 4. Inspect liquid level sensor as per manufacturer's O&M manual	1. Refer to O&M manual 2. Repair leaks immediately after they are observed	1. Refer to O&M Manual 2. Refer to O&M Manual	Refer to O&M Manuals
Final Cover	Surface Water Management System	1. Clean culverts of debris	1. Correct erosion problems by installing erosion control devices	Truck, bobcat, shovel	Erosion mat, riprap, topsoil, etc.
	Cover Settlement		1. Fill settled areas and grade to drain 2. Revegetate filled areas	Truck, small bulldozer, seeder	Fill soil, topsoil, seed, fertilizer and mulch
	Vegetation Final Surface	1. Mow grass semiannually 2. Revegetate bare spots and eroded areas	1. Repair eroded areas by filling with soil to grading and adding erosion mat prior to seeding 2. Seed, fertilize and mulch	Truck, small bulldozer, seeder and mower	Fill soil, topsoil, seed, fertilizer, mulch and erosion matting

R000800

Figure 1-2 *(Continued)*

Equipment or Area	Description	Preventive Maintenance	Corrective Maintenance Procedures	Equipment Requirements	Material Needs
Berms	Exterior Berms	1. Mow grass semiannually 2. Revegetate bare spots and eroded areas	1. Repair eroded areas by filling with soil to grading and adding erosion mat prior to seeding 2. Seed, fertilize and mulch	Truck, small bulldozer, seeder	Fill soil, topsoil, seed, fertilizer, mulch and erosion matting
Environmental Monitoring Devices	Groundwater Monitoring Wells	1. Mark wells with flag to prevent damage during other maintenance.	1. Repair/replace broken protector pipes, surface seals and locks	Shovel	Protector pipes, bentonite lock/key set, PVC pipe
Security Devices	Means to Control Entry Exterior Lighting	1. Repaint rusted or scratched areas. 1. Replace burnt out bulbs.	1. Repair or replace worn or rusty fences.	Hand tools	Fence/gate parts and locks
Surface Water Management and Erosion Control Structure	Sedimentation Pond	1. Clean sediment from ponds. 2. Remove debris from pipes and trash rock.	1. Repair eroded inlet/outlet, dikes, etc. 2. Repair eroded or silted in areas. 3. Clean trash rack, inlet and outlet pipes.	Backhoe, truck, shovel	Fill soil, erosion control materials (e.g., riprap), pipes
	Ditches, Culverts, Spillways, etc.	1. Clean sediment from ditches.	1. Replace rusted culverts. 2. Repair eroded areas and install erosion control measures.	Backhoe, truck, shovels	Fill soil erosion control materials (e.g., riprap), pipes
Access Roads		1. Remove mud tracking.	1. Repair ruts, pot holes, etc.	Truck, shovels	Road gravel
Final Cover	Gas Vents	1. Clean vents.	1. Repair, replace damaged vents and surface seals.	Shovel	Piping, glue, etc.

R000801

ATTACHMENT F

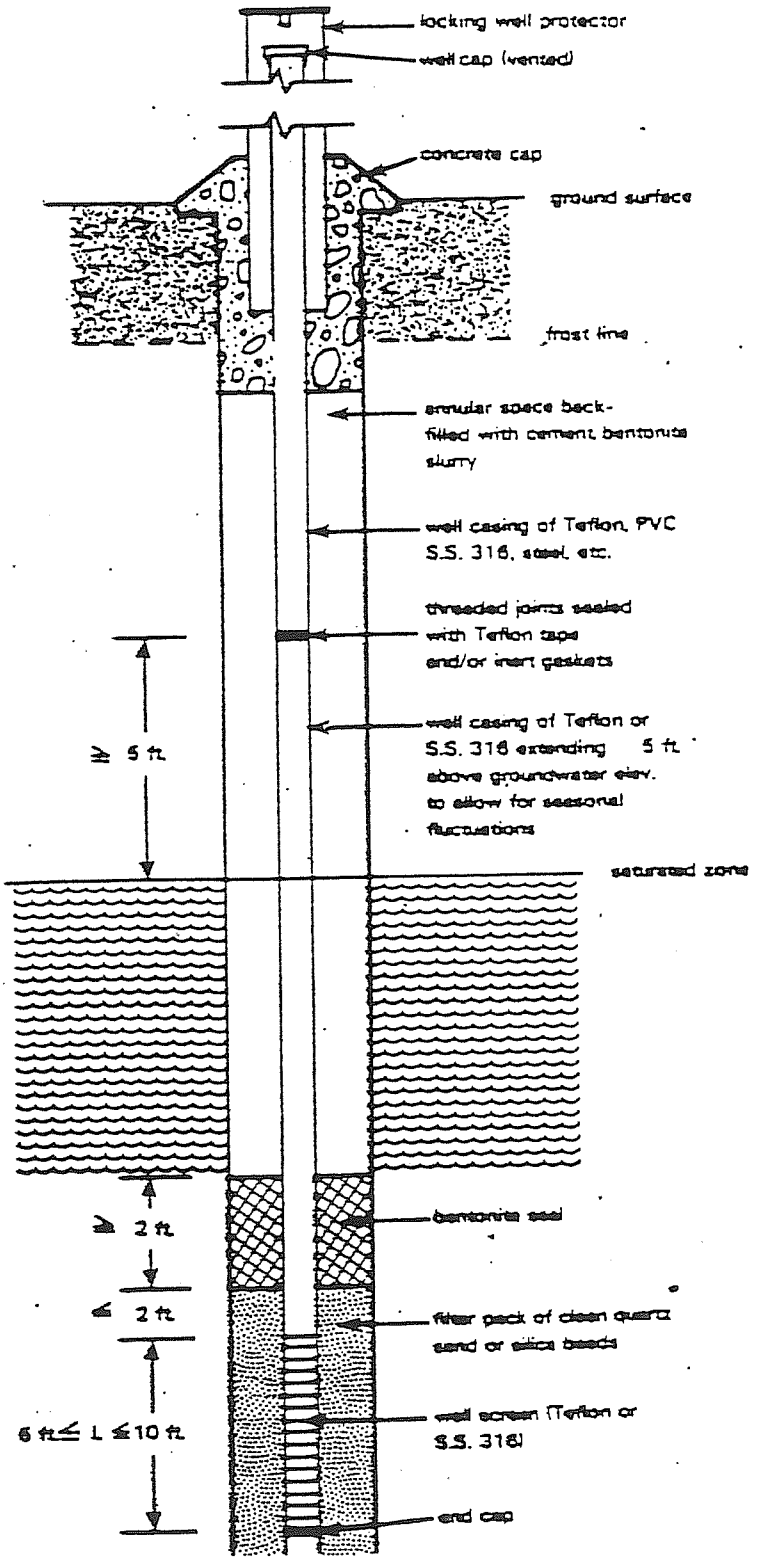
GROUNDWATER MONITORING PROGRAM ATTACHMENTS

MODERN PLATING CORPORATION

1770200010

RCRA LOG NO. B-167

Monitoring Well Diagram



Illinois Environmental Protection Agency — Field Boring Log

Site File No.: _____ County: _____ Boring No.: _____ Monitor Well No.: _____

Site File Name: _____ Surface Elevation: _____ Completion Depth: _____

Fed. ID. No.: _____ Auger Depth: _____ Rotary Depth: _____

Quadrangle: _____ Sec. ____ T. ____ R. ____ Date: Start: _____ Finish: _____

UTM (or State Plane) Coord. N.(X): _____ E.(Y): _____

Latitude ____ ' ____ ' ____ " Longitude ____ ' ____ ' ____ "

Boring Location: _____

Drilling Equipment: _____

Elev.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE NO.	SAMPLE TYPE	SAMPLE RECOVERY (%)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA or HNU READINGS	Personnel / REMARKS

Illinois Environmental Protection Agency — Well Completion Report

R000805

SITE #: _____ COUNTY: _____ WELL #: _____

SITE NAME: _____ BOREHOLE #: _____

STATE PLANE COORDINATE: X _____ Y _____ (circle) LATITUDE: _____ ° _____ ' _____ " LONGITUDE: _____ ° _____ ' _____ "

SURVEYED BY: _____ ILL. REGISTRATION #: _____

DRILLING CONTRACTOR: _____ DRILLER: _____

CONSULTING FIRM: _____ GEOLOGIST: _____

DRILLING METHOD: _____ DRILLING FLUIDS (TYPE): _____

LOGGED BY: _____ DATE STARTED: _____ DATE FINISHED: _____

REPORT FORM COMPLETED BY: _____ DATE: _____

ANNULAR SPACE DETAILS

TYPE OF SURFACE SEAL: _____

TYPE OF ANNULAR SEALANT: _____

INSTALLATION METHOD: _____

SETTING TIME: _____

TYPE OF BENTONITE SEAL - GRANULAR, PELLET, SLURRY (CIRCLE ONE)

INSTALLATION METHOD: _____

SETTING TIME: _____

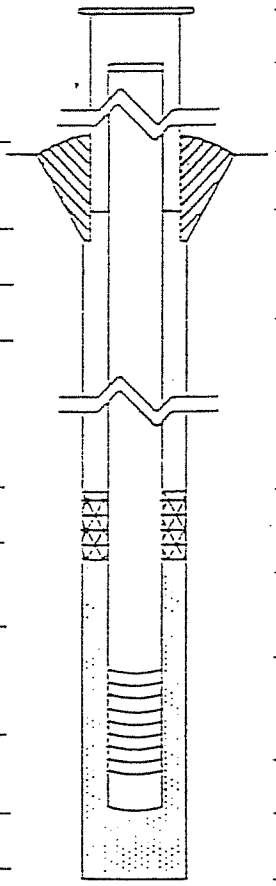
TYPE OF SAND PACK: _____

GRAIN SIZE: _____ (SIEVE SIZE)

INSTALLATION METHOD: _____

TYPE OF BACKFILL MATERIAL: _____ (IF APPLICABLE)

INSTALLATION METHOD: _____



ELEVATIONS (MSL)* DEPTHS (BGS) (.01 ft)

ELEVATIONS (MSL)*	DEPTHS (BGS)	
_____	_____	TOP OF PROTECTIVE CASING
_____	_____	TOP OF RISER PIPE
_____	_____	GROUND SURFACE
_____	_____	TOP OF ANNULAR SEALANT
_____	_____	STATIC WATER LEVEL (AFTER COMPLETION)
_____	_____	TOP OF SEAL
_____	_____	TOP OF SANDPACK
_____	_____	TOP OF SCREEN
_____	_____	BOTTOM OF SCREEN
_____	_____	BOTTOM OF WELL
_____	_____	BOTTOM OF BOREHOLE

* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM

WELL CONSTRUCTION MATERIALS (CIRCLE ONE)

PROTECTIVE CASING	SS304, SS316, PTFE, PVC OR OTHER:
RISER PIPE ABOVE W.T.	SS304, SS316, PTFE, PVC OR OTHER:
RISER PIPE BELOW W.T.	SS304, SS316, PTFE, PVC OR OTHER:
SCREEN	SS304, SS316, PTFE, PVC OR OTHER:

(SAND)

CASING MEASUREMENTS

DIAMETER OF BOREHOLE (in)	
ID OF RISER PIPE (in)	
PROTECTIVE CASING LENGTH (ft)	
RISER PIPE LENGTH (ft)	
BOTTOM OF SCREEN TO END CAP (ft)	
SCREEN LENGTH (i.e. SLOT TO LAST SLOT) (ft)	
TOTAL LENGTH OF CASING (ft)	
SCREEN SLOT SIZE **	

** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

TABLE 1

IEPA MONITOR WELL PLUGGING PROCEDURES (test boring)

Well Construction	Plugging Procedure
I-A. ...if backfilled with cement grout above bentonite seal and/or sandpack:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement) 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
I-B. ...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augered borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5' if in unstable materials and hole collapse is likely or 10' if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
I-C. ...if monitor well construction is unknown:	1. Follow procedures in I-A.
II-A. ...All bedrock monitor wells:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw tremi pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.

260

II. Bedrock Wells

R0008096

M:tk:2/6/31

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

R000807

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (35 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–13)

MONITOR POINT NUMBER _____ (see Instructions) (15–22)

REGION _____ CO. _____

DATE COLLECTED ___/___/___ (23 M D Y 28)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED ___:___ (24 Hr. Clock) (55 H M 58)

UNABLE TO COLLECT SAMPLE _____ (see Instructions) (59)

MONITOR POINT SAMPLED BY _____ (see Instructions) (60) _____ OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (143–192)

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	00011				
Q	SPEC COND (unfiltered umhos)	00094				
Q	pH (unfiltered units)	00400				
Q	ELEV OF GW SURF (ft ref MSL)	71993				
Q	DEPTH OF WATER (ft below LS)	72019				
A	BTM WELL ELEV (ft ref MSL)	72020				
Q	DEPTH TO WATER FR MEA PT (ft)	72109				

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Sections 1004 and 1005. Disclosure of this information is required. Failure to do so may result in a civil penalty of up to $25,000 for each day this failure continues and a fine up to $1,000.00 and imprisonment

IEPA/DLPC

CHEMICAL ANALYSIS FORM

Page ___ of ___

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8)

SITE INVENTORY NUMBER _ _ _ _ _ _ _ _ _ _ (9–18)

MONITOR POINT NUMBER _ _ _ _ (19–22)

CO. _____

DATE COLLECTED ___/___/___ (23 M D Y 29)

_____
FACILITY NAME

LAB _____ (29)

	LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	Remarks See Inst.	Replicate	< or >	VALUE
		_ _ _ _ _ (30–34)	(35)	(36)	(37)	_ _ _ _ _ . _ _ _ _ _ (38–47)

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility's sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

ATTACHMENT 2

Responses to Comments on the Draft RCRA POST-CLOSURE PERMIT

for

Modern Plating Corporation

1770200010
Log No. B-167

1770200010 -- Stephenson County
Modern Plating Corporation
RCRA Log No. B-167

Illinois EPA's Response to Comments on Conditions in the Draft RCRA Post-Closure Permit

Comment: Section I.C Waste Identification
Condition I.C.1: Waste Identification should be revised to incorporate the remediation wastes from the wetlands and other potential sources at the site that have similar remediation wastes.

Response:
IEPA agrees with the comment provided only remediation wastes (e.g. no production wastes) are placed in the CAMU landfill. Condition I.C.1 was revised as requested.

Comment: Section I.D Design, Construction, and Operating Requirements
Condition I.D.3.c should be revised to omit the requirement that the subbase soils under the GCL have a maximum hydraulic conductivity of 1 x 10^{-6} cm/sec.

Response:
Section D-6d(1) of the application (page D-20) stated the permeability of the subbase soils would be < 1 x 10^{-6} cm/sec. Therefore, this requirement was repeated in the permit. In discussions with F&VD, it is my understanding that the underlying concern is that they do not want to test the subbase soils for in-place permeability. In general, IEPA agrees with the comment. The GCL functions as the bottom most low permeability layer in the liner system. The function of the subbase soils is to support and provide protection for this bottom layer of the liner.

However, it is of course desirable to have subbase soils with a permeability that is as low as possible. Density and moisture content are characteristics, which when taken together, will provide a good indication of what the permeability will be in the soil. Page D-20 provides specifications for all of these parameters. Therefore, in response to F&VD's comment, the requirement for the subbase soils to have a maximum hydraulic conductivity has been replaced with the requirement for these soils to have a moisture content between -2% and +2% of the optimum moisture content.

Comment: Section I.D Design, Construction, and Operating Requirements
Condition I.D.2 states the slopes of the cover on the CAMU shall not be steeper 6:1. In order to accommodate an increase in volume without enlarging the footprint of the CAMU landfill, F&VD proposed to place contaminated soils around the inside perimeter of the landfill at slopes up to 3:1. The sludges will be place inside of these perimeter soils. The cover on the sludge will have a slope of no greater than 6:1. The comment requests Condition I.D.2 be revised to allow for the design change to the landfill needed to accommodate the additional remediation wastes from the site.

This comment also refers to the revised design for the landfill described in the revised pages to the application in Attachment 3 to the letter dated February 10, 2000.

Response:
IEPA reviewed the proposed design changes to accommodate the increased volume, and concurs that the condition needs to be revised to address the design change. In general, the revised pages that describe various aspects of the "Contingency Plan for Increased Volume" for the CAMU Landfill were found to adequately describe the proposed design changes to the landfill. The engineering justification for most of these changes is provided in Appendix OO. However, the Factor of Safety (FS) against slope failure for the worst case scenario (a 8 ft. high berm with a 3:1 slope) was 1.45. This is less than the FS required at non hazardous landfills (both inert landfills (35 IAC 811.205(a) and chemical landfills (35 IAC 811.304(d)).

To address the design changes to the landfill to accommodate the increase volume, the wording in Condition I.D.2 was revised to allow a maximum slope of 3:1 on the side slopes of the landfill and specify a minimum FS of 1.5 (static) and 1.3 (seismic). In addition, Conditions I.B and II.B were both revised to identify the permitted volume of the landfill as 17,610 cy (cubic yards) with a maximum volume of approximately 22,800 cy (as described on page D-12 and Appendix OO in the application).

Comment: Section I.E Construction Certification
Conditions I.E.1 requires submittal of a construction certification for the CAMU landfill prior to placement of any waste in it. Condition I.E.2 requires approval of the certification by IEPA prior to placement of waste in the unit. F&VD requested the conditions be modified to 1) indicate the phased construction of the landfill and 2) specify short time frames for inspection and review of the construction documents.

Response:
IEPA concurs with the proposal to specify the phased construction of the landfill in the condition. That is, a construction certification must be submitted and approved for each of the 2 phases (cells) of the landfill before waste can be placed in either cell. IEPA also acknowledges

the need for a timely review of the construction certification and documentation reports by IEPA. However, IEPA believe 48 hours is too short a time frame to schedule an inspection, and 3 days may be too short a time to review the construction documentation report. Finally, IEPA needs to be able to prohibit wastes from being placed in a cell if the inspection or review of the construction documentation finds the cell is not properly constructed.

During an April 3, 2000 phone call, Foth & Van Dyke expressed concern about being able to provide all of the information required in the construction certification report and still maintain the construction schedule required to complete the project this construction season. To address this concern, IEPA revised condition I.E.1 to require a Cell Construction Certification (CCC) be provided when a cell is completed (Condition I.E.5 now requires the full construction certification report be provided at the end of construction). The CCC will still require certifications that the cell is constructed in accordance with the requirements in the permit. The CCC will also require an exception report that will identify any (as-built) changes made to the cell. By comparing the CCC to the design in the application and permit, IEPA will be able to verify if the cell was constructed in accordance with the regulations.

To address the comment, as well as IEPA's concerns, the following revisions to this section of the permit will be made:

1. The permit will require MPC to provide an abbreviated form of a construction certification called a Cell Completion Certification (CCC) when each cell is completed

2. MPC will be required to notify IEPA's Regional Office that construction on a cell is expected to be completed at least one week prior to the anticipated completion date of each cell. If this notification is not made, IEPA will not be held to the shortened review time specified below.

3. MPC will be allowed to place waste in a cell if the unit is not inspected within 4 working days from the date the CCC is received by IEPA.

4. If the inspection or review of the closure documentation report finds the cell is not properly constructed the IEPA will notify the permittee that waste is prohibited from being placed in the cell.

5. A full construction certification report will be required within 30 days after all waste is placed in the CAMU landfill and construction is complete.

Other Comments

Cost Estimates
The revised permit application pages provided as part of the comments on the draft permit included a revised (increased) closure cost estimate for the landfill. This increase in the closure cost reflects the added costs associated with the increased volume of remediation wastes that may be placed in the landfill. Condition I.I.1 in the permit specifies the amount of financial assurance required for the CAMU landfill and refers to this closure cost estimate. However, the comments on the draft permit in the February 10, 2000 letter from F&VD did not comment on this condition.

Review of the revised permit application pages also revealed that the annual post-closure care cost estimate in Table I-2 had been revised from $25,840 down to $16,160. This change is not directly related to the design change of the landfill. Although the post-closure care cost is specified in Condition I.I.2, the proposed decrease in the post-closure cost estimate was not identified as a comment on the permit.

Response
Closure Cost Estimate: Condition I.I.1 and Attachment D of the RCRA Permit will be revised to include the new cost estimates for the construction and closure of the CAMU landfill ($1,519,726) identified in the revised Appendix DD of the application.

Post-Closure Cost Estimate: The narrative in Section I-6 (revised page I-19) still indicates that it is assumed the on-site WWTP will not be operating (therefore leachate will need to be trucked off-site for treatment). This is an acceptable part of the third party cost estimate (e.g. worst-case scenario) for post-closure care. However, a note in the revised Table I-2 states that it is assumed the on-site WWTP will be operating. This change to Table I-2, a decrease to the Post-Closure Cost Estimate from $25,840 to $16,160, is not acceptable because it no longer truly reflects the third party costs for post-closure (and it is inconsistent with the wording in Section I-6 of the application). [**Note**: Table I-2 does not include a revision date.]

Therefore, the Post-Closure Cost estimate of $25,840 in Attachment D and Condition I.I.2 of the Permit will not be revised because the revision to Table I-2 is not acceptable.

Comments Associated With Section III of the RCRA Permit Groundwater Corrective Action Program

1. FVD requests a modification to the groundwater sampling program to make the program consistent with the program approved in the RCRA Closure Plan. These modifications include:

   a. Semi-annual sampling of the groundwater monitoring wells listed in the December 2, 1999 Illinois EPA RCRA Closure Plan approval letter.

   b. Sample collection in the months of December - January and July - August with the submittal of results by the 15th of February and September, respectively. This schedule is proposed since access difficulties have routinely been encountered in sampling the wells in the spring due to high water conditions. The modification to the sampling and submittal dates would make the groundwater sampling more efficient and practical for MPC.

   Illinois EPA Comments

   a. The draft Permit reflects the current monitoring program specified in the Illinois EPA letters dated May 25, 1999 and December 2, 1999 with the exception of the change to semi-annual monitoring. Therefore, FVD is merely updating the Permit Application to reflect the current program that will be implemented upon issuance of the Permit.

   b. The guideline, for semi-annual sampling for all RCRA permitted facilities in the State, requires sampling events to occur in the second and fourth quarters of each year. This guideline was established in order to take into account the seasonal variations associated with groundwater. Due to the unique high water conditions and the difficulties accessing groundwater monitoring wells in the wetland area in the spring the Illinois EPA will approve an alternate schedule for the semi-annual sampling events at the facility. However, in order to maintain consistency with established Illinois EPA guidelines, the schedule for sampling events and submittal of results to the Illinois EPA must reflect the established guidelines. The Permit will be revised to reflect the modification to the schedule and allow the semi-annual sampling to occur in the months of January – February and July – August with the submittal of results by April 15 and October 15, respectively.

2. Page III-5 of III-11 requests that "within thirty (30) days of the date that installation of groundwater monitoring wells MW-20C and MW-23C is completed, the Permittee shall submit the following information..." FVD reports that groundwater monitoring well MW-20C is an existing well and MW-23C is the proposed well to be constructed and documented. FVD has forwarded information regarding MW-20C to the Illinois EPA. Therefore, FVD requests that the condition concerning the submittal of information on MW-20C be removed.

Illinois EPA Comments

A review of the information submitted by FVD in regard to the construction details associated with well MW-20C have been found to be adequate. Condition III.D.1 will be revised to request information associated with well MW-23C only.

3. To support the revisions requested and update the RCRA Part B Permit Application (Permit Application) the following revisions to the Permit Application are submitted as attachments:

   a. Revised Section E of the Permit Application, which includes updated Table E-1;

   b. Revised Drawing No. 20R which shows the revisions to the environmental monitoring plan; and

   c. The Illinois EPA's December 2, 1999 RCRA Closure Plan approval letter has been added to Appendix W of the RCRA Permit Application.

Illinois EPA Comments

a. A comparison of Revised Section E to the: (1) July 1, 1999 Permit Application review memorandum; and (2) December 21, 1999 draft Permit was conducted. The comparison finds that Revised Section E reflects the current monitoring program specified in the Illinois EPA letters dated May 25, 1999 and December 2, 1999 with the exception of the change to semi-annual monitoring reflected in the draft Permit. Therefore, at this time, Revised Section E of the Permit Application has been found to be adequate to update the groundwater monitoring program to reflect the current program that will be implemented upon issuance of the Permit.

b. Drawing 20R has been revised to reflect the current groundwater monitoring program. Therefore, at this time, Drawing 20R has been found to be adequate.

c. The addition of the Illinois EPA's December 2, 1999 RCRA Closure Plan approval letter to the Permit Application requires no comment from the Illinois EPA at this time.

ILLINOIS EPA RECOMMENDATIONS

Section III of the Permit has been revised to incorporate the following changes:

1. Condition III.D.1 has been revised to designate which wells are required to be sampled in regard to volatile organic compounds and/or inorganics.

2. The guideline, for semi-annual sampling for all RCRA permitted facilities in the State, requires sampling events to occur in the second and fourth quarters of each year. This guideline was established in order to take into account the seasonal variations associated with groundwater. Due to the unique high water conditions and the difficulties accessing groundwater monitoring wells in the wetland area in the spring the Illinois EPA will approve an alternate schedule for the semi-annual sampling events at the facility. However, in order to maintain consistency with established Illinois EPA guidelines, the schedule for sampling events and submittal of results to the Illinois EPA must reflect the established guidelines. The Permit will be revised to reflect a modification to the schedule and allow the semi-annual sampling to occur in the months of January – February and July – August with the submittal of results by April 15 and October 15, respectively. Condition III.F.4 has been revised to reflect the appropriate months for the semi-annual sampling events.

3. Condition II.H.3 has been revised to address the analytical method proposed for the analysis of volatile organic compounds. U.S. EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III (SW-846) removed Method 8010B from SW-846 in December of 1996 and replaced the method with Method 8021B. Therefore, SW-846 Method 8021B must be utilized for the analysis of volatile organic compounds.

4. As discussed in Item 2 above, Condition III.I.2 has been revised to reflect semi-annual sampling in the months of January – February and July – August with the submittal of results by April 15 and October 15, respectively.

5. Condition III.I.9 has been revised to remove redundant language.

WRW\mls\002693S.WPD

MASTER FILE COPY R000817
Scope 97MA015 Classification 4000
Copy To SJL, NXD, JJF1, REM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

217/782-0610

THOMAS V. SKINNER, DIRECTOR

April 13, 2000

Modern Plating Corporation
701 South Hancock Avenue
Freeport, Illinois 61032

Re: Modern Plating Corporation - Freeport
Treatment of Corrective Action Management Unit (CAMU) Landfill Leachate in Existing Pretreatment System
Log #0132-00
No Permit Required

Gentlemen:

We received your permit application and supporting documents dated January 21, 2000. We have reviewed the permit application and supporting documents and find that a permit is not required under Subtitle C, Chapter I for the proposed project. The proposed project consists of treating CAMU leachate in the existing pretreatment facility for electroplating wastewater. The project will not result in an increase in wastewater flow rates, influent pollutant concentrations to the pretreatment system, or discharge pollutant concentrations from the pretreatment system.

We thank you for submitting this information to the Agency for a determination of the need for a permit for the facilities and for seeking to comply with the Illinois Environmental Protection Act and regulations promulgated under the Act.

This notice of "No Permit Required" constitutes final action by this Agency on this submission in accordance with the Illinois Environmental Protection Act.

Very truly yours,

Thomas G. McSwiggin, P.E.
Manager, Permit Section
Division of Water Pollution Control

TGM:GCW:J:\013200

cc: Rockford FOS
Foth & Van Dyke
Freeport Water & Sewer Commission
Records
Binds
DLPC, Rob Watson

MASTER FILE COPY
Scope 971015 Classification 4000
Copy To SJLI, JSK, EAS, REM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

June 8, 2000

CERTIFIED MAIL
P 344 306 093

Mr. Craig Skolrood
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032

Re: 17702000010 — Stephenson County
Modern Plating Corporation
ILD005172325
Log No. C-259-M-11
RCRA Closure

Dear Mr. Skolrood:

This is in response to the May 5, 2000 letter from Ron Meister, P.G. of Foth and VanDyke, sent on behalf of Modern Plating Corporation (MPC), providing the results of a Phase I televised investigation and a Phase II investigation workplan for a former outfall line at the MPC facility. A site layout map showing the location of this outfall line is attached.

This investigation is being conducted as part of final RCRA closure for the four RCRA hazardous waste management units and four solid waste management units at the MPC facility. Specifically, Condition 3 of Illinois EPA's February 9, 2000 letter (Log No. C-259-M-9) to MPC approved MPC's proposal to perform a Phase I investigation of the old drainage outfall line and sanitary sewer line in order to identify: 1) line construction; 2) the locations of holes, cracks or collapse to locate potential areas of soil sampling; and 3) the actual location to optimize in the selection of sampling locations. The results of the Phase I televising and a Phase II workplan for investigation were to be submitted to the Illinois EPA.

Illinois EPA's review of the Phase I investigation results has determined that the pipelines were found to be in good condition except for areas where blockage occurred precluding further televising of the outfall pipeline. MPC's Phase II workplan to investigate for potential soil contamination along those portions of the pipeline where blockage prevented further visual inspection is hereby approved with the following conditions and modifications:

1. Except as modified herein, closure activities should be carried out in accordance with Illinois EPA's December 22, 1999 closure plan approval letter (Log C-259-M-8) the January 17, 1000 (Log No. C-259-M-10) and February 9, 2000 (Log No. C-259-M-9) closure plan modifications.

2. In the section of pipeline where blockage occurred MPC must obtain soil samples adjacent to the pipeline at the 4 locations shown in Attachment 1 to this letter. In addition, one soil sample must be taken at MH-3, also shown in Attachment 1. Soil samples should be collected using a 2-inch split-spoon sampler in accordance with procedures approved by Illinois EPA for this project. Two or three samples should be selected from each borehole position at depths ranging from 4 to 10 feet. All soil samples should be collected within 5 feet of the stacked pipeline location. Soil samples should be tested for volatile organics, using EPA Method 8260, and for cyanide, cadmium, chromium (trivalent and hexavalent), copper, lead nickel, and zinc according to SW-846 procedures.

3. Based upon the Phase I televised investigation, MPC reports that the sanitary sewer was installed in 1983 and was reported to be in excellent condition. As such further investigation of the sanitary sewer shall not be required.

4. The results from the Phase II investigation along with a copy of the televised tape should be submitted to the Illinois EPA for our review within 60 days from the date of this letter. Guidance regarding the development of the soil sampling/analysis effort report is attached.

Within 35 days of the date of mailing of the Illinois EPA's decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35 day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice, provided to the Board and the Illinois EPA, within the 35 day initial appeal period.

The attached LPC-PA18 form must accompany all submittals. In addition, work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Practice Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact Karen Nachtwey at 217/524-3273 of my staff.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:KEN\mls\002132.WPD

Attachments:

Attachment 1 - MPC Site Map showing Outfall Soil Sampling Locations
Attachment 2 – Guidance on Developing Soil Sampling/Analysis Report
Attachment 3 - LPC-PA18

cc: Foth & VanDyke – Ronald E. Meister, P.G.

R000821

10,250 E
10,500 E
10,750 E
11,000 E

10,750 N
10,500 N
10,250 N
10,000 N

LAGOON NO. 2
LAGOON NO. 1
LAGOON NO. 3
LAGOON NO. 1A
LAGOON NO. 0
UNDERGROUND VAULT
BLOCKAGE
PRODUCTION PLANT
DELEON
WATER

MH-1
MH-2
MH-3
MH-4
MH-5A
MH-6
MH-6C
MH-7

MW-1A MW-1B MW-1C MW-1E
MW-5A
MW-6A MW-6B MW-6C
MW-7A MW-7B MW-7C MW-7D
MW-8A MW-8B MW-8C
MW-9A
MW-12A MW-12B MW-12C MW-12E
MW-13A MW-13B MW-13C MW-13E
MW-14A MW-14B MW-14C MW-14E
MW-15A MW-15B MW-15C
MW-21A MW-21C
MW-22A MW-22C

N

LEGEND

- PROPERTY LI
- SA — ACTIVE DISCH GE PIPELINE
- SA — ABANDONED OL FALL PIPELINE
- TELEVISED 15" VITIFIED CLAY PIPE
- TELEVISED 10" VITIFIED CLAY PIPE
- UNTELEVISED
- ⊕ PROPOSED BORING LOCATION
- X ADDITIONAL SAMPLING POINT

MODERN PLATING CORPORATION

FIGURE 1

PHASE I OUTFALL PIPELINE INVESTIGATION

Scale: 0 50' 100'		Date: MAY, 2000	
Prepared By: Foth & Van Dyke	By: DAT	97M015	

L:\97m015\POO\m15z25.dgn 05/05/2000 09:00:08 AM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

217-524-3300

THOMAS V. SKINNER, DIRECTOR

July 25, 2000

CERTIFIED MAIL
7099 3400 0006 5938 2267

Mr. Craig Skolrood
Manager, Regulatory Compliance
Modern Plating Corporation
701 South Hancock Ave.
Freeport, IL 61032-0838

Re: 1770200010 – Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit Record

Dear Mr. Skolrood:

The Illinois EPA has completed its review of the Cell Construction Certification (CCC) for Phase 1 of the Corrective Action Management Unit (CAMU) landfill dated July 17, 2000 and received July 19, 2000.

The Illinois EPA inspected the Phase 1 construction on June 8, 14, 29, 2000 and July 12, 13, 24, 2000. The inspections revealed that Phase 1 was constructed in accordance with the approved plans. While the CCC is hereby approved, during the July 12, 2000 site visit, Illinois EPA personnel observed several conditions during the Phase 1 construction that should not be repeated in the construction of Phase 2.

1. Although the subbase soils in Phase 1 were smooth rolled prior to installation of the GCL, we observed portions of the rolled surface (particularly the slope on the north side) that were disturbed during the installation of some of the GCL panels. Foot prints and depressions in the subbase soils were observed. It is not acceptable to damage the smooth rolled surface of the subbase during construction of the liner system.

   The requirement to maintain a smooth surface on the subbase soils is also reflected in CETCO's (the GCL manufacturer) Technical Data Sheet (TR-403dn, revised 5/99), Sections 3.3 and 3.4. These sections indicate that the smooth rolled surface of the subgrade must remain in this condition throughout the installation of the GCL. It also notes that if the installation equipment causes rutting of the subbase, the subbase must be returned to its originally accepted condition before installation continues.

   The surface of the subbase was easily impacted because the soil used in the subbase appeared to be a silty sand with very little clay, or cohesion. Therefore, in order to better withstand the

installation activities, firmer, more cohesive soils (e.g. soils with a higher clay content) should be used for the subbase of Phase 2 when it is constructed in Lagoon #3.

2. We observed that GCL panels were pulled up the slope of the Phase 1 cell. This activity impacted the smooth rolled surface of the subbase soils to some extent and has the potential to damage the GCL.

   The Construction Quality Assurance Plan (CQAP) in Appendix E; Section 7.1.2 Panel Placement, item 4.f states that quality assurance monitoring for panel placement includes verifying the material is rolled, not dragged, into place. The GCL panels should be rolled down the slopes when Phase 2 is constructed.

3. We observed that several of the seams on the north slope had wrinkles in them. The Construction Quality Assurance Plan (CQAP) in Appendix E; Section 7.1.2 Panel Placement, item 4.e requires there to be monitoring and documentation to verify that there are no wrinkles > 1 inch high and wider than 6 inches. The Construction Specifications in Appendix Q; Section 02455, Section 3.4 GCL Installation, item E.2: Seam Overlap, also states the edges of GCL panels are to be smooth or free of wrinkles or creases. The edges of GCL panels should be smooth or free of wrinkles or creases when they are installed in Phase 2.

Damage to the subbase soils during the installation of the liner components in Phase 2 of the CAMU landfill could result in the requirement to remove one or more of the liners and rework the subbase soils, and/or disapproval of the Cell Construction Certification for Phase 2. Improper installation of the GCL panels may also result in disapproval of the Cell Construction Certification for Phase 2.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Joyce L. Munie, P.E.
Manager Permit Section,
Bureau of Land

JLM:WRW\mls\001592.WPD

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

Non-Compliance Advisory Letter JUL 3 1 2000

217/782-3637

July 27, 2000

Mr. Dave Serzatius
Modern Plating Corp.
P.O. Box 838
Freeport, IL 61032

Re: 20001377

Dear Mr. Serzatius

On July 20, 2000, this office received information that you or an organization that you represent were involved in an environmental incident, which occurred at or near 701 S. Hancock Ave., Freeport, IL on or before July 20, 2000. Our records currently indicate the involvement of 500-800 gallons of Chrome rinse water.

The purpose of this Non-Compliance Advisory Letter is to notify you that the information currently available indicates that violations of environmental laws or regulations may have occurred and may be ongoing. The Illinois Environmental Protection Agency needs further information to evaluate whether compliance has been or will be achieved relative to the above referenced incident or whether to proceed with enforcement. Please address the specific information requested in the enclosed Advisory 2.

A written response to this Non-Compliance Advisory Letter is expected by September 20, 2000. The incident number should be noted in all correspondence about this incident. Please submit one original to the Springfield, Illinois address listed below and one copy to the Maywood, Illinois address listed below, of your response to this Non-Compliance Advisory Letter to:

Illinois Environmental Protection Agency
Emergency Response Unit, Mail Drop #29
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Illinois Environmental Protection Agency
Emergency Response Unit
1701 First Avenue
Maywood, Illinois 60153

JUL 3 1 2000

This Non-Compliance Advisory Letter is not a violation notice as specified in Section 31(a)(1) of the Illinois Environmental Protection Act (415 ILCS 5/31(a)(1): However, if you do not adequately respond to this Non-Compliance Advisory Letter, the Illinois EPA may issue a formal violation notice pursuant to Section 31(a)(1) of the Act.

If you have any questions regarding any of the above, please contact the undersigned at 708/338-7900.

Sincerely,

Edward Osowski

Edward Osowski, Senior Emergency Responder
Emergency Response Unit
Office of Chemical Safety

cc: Incident File 20001377
Maywood ERU
G. Tod Rowe
John Waligore

JUL 3 1 2000

ADVISORY 2

For releases of any contaminant to land and/or water

The spillage of any amount of material, as listed in the cover letter, may result in environmental contamination. Such environmental contamination is a violation of the Illinois Environmental Protection Act, when: into the waters of the state [415 ILCS 5/12(a)]; onto a highway or other public property [415 ILCS 5/21(b)]; or onto land in such a manner so as to create a water pollution hazard [415 ILCS 5/12(d)]. Waters of the state include groundwater, drainage ditches and intermittent streams as well as the more obvious bodies of surface water.

Consequently the Illinois Environmental Protection Agency expects such a spill to be cleaned up by the party who was in control of the material at the time it was spilled. Cleanup criteria are found at 35 Ill. Adm. Code 742 (the Tiered Approach to Corrective Action Objectives or TACO). The complete text of TACO can be found on the internet at *http:www.ipcb.state.il.us/title/#g*.

We expect you to:

❑ **Incident Causation Investigation**

A thorough investigation by knowledgeable personnel should be initiated by the responsible party. The scope of the investigation must be sufficient to determine the root cause(s) as well as the proximate cause of the release. At a minimum the investigation should specifically address each of the following potential causal factors: equipment, procedures, personnel error, extraordinary weather conditions, actions by a third party. The investigation should result in findings and recommendations for preventive and corrective actions. In developing recommendations the following topical areas should be specifically considered: material substitutions that reduce or eliminate hazards, equipment design and installation, maintenance type and frequency, adequacy of procedures, provision of adequate secondary containment, as well as personnel training and evaluation (both initial and periodic). A prevention implementation schedule should be developed and implemented promptly.

❑ Submit a Remedial Action Completion Report by the date listed in the cover letter or propose an alternate date for submittal of a Remedial Action Completion Report. At a minimum the Remedial Action Completion Report should include the following:

1) Executive Summary. This section of the report should identify the overall objectives of the remedial action that was implemented and the technical approach utilized to meet those objectives, including:

❑A brief description of the site and surroundings area affected by the release, including the facts and circumstances about the release.

❑A statement of the scope of the problem corrected or mitigated by the remedial action.

❑The anticipated post-remediation uses of the incident site and areas immediately adjacent to the incident site property and any institutional controls that are being relied upon to set

TACO objectives for the site.

2) Field Activities. This section should provide a narrative description of the :
❑Field activities conducted during the remediation;
❑Remedial actions implemented at the incident site and the performance of each remedial technology utilized: and
❑A brief description of any unanticipated events that impacted the nature or rate of the remediation activity.

3) Confirmation Sampling. This section should demonstrate the effectiveness of the remedial action by comparing the soil and/or groundwater sample results for the chemical parameters given above to the appropriate cleanup criteria from 35 Ill. Adm. Code 742 (TACO). Appropriate sampling and analytical test methods are those promulgated by USEPA in SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"Third Edition, Final update III (Doc. # 955-001-00000-1 available from the U.S. Government Printing Office). The number and location of samples needed to verify cleanup is a site specific decision. You may submit a written sampling plan and site sketch with proposed sample locations to us for our approval or feel free to contact us by phone (217-782-3637) to discuss what we will accept under specific circumstances. For further guidance consult Table 1 below. The data should:
❑Be summarized and presented in a table or graphical format;
❑Include summary tables which should include the appropriate cleanup criteria as a column (or row as applicable);
❑Be referenced to a site map showing the locations of the confirming samples relative to the extent of contamination;

4) Special Conditions. This section should provide a description of:
❑If the appropriate cleanup criteria were not taken from the TACO tables. Then provide details (including all calculations) on how the appropriate cleanup criteria were developed;
❑Amount and types of material disposed of or treated in response to the incident. This should include name and location of disposal or treatment facility. Disposal manifests or shipping papers are acceptable documentation.

5) Conclusion. This section should:
❑ evaluate the degree of success of the remedial action in meeting the cleanup criteria.

6) Appendices. References and data sources should be incorporated in the appendices. These would likely include:
❑ Photographs,
❑ Field logs,
❑ geological boring logs,
❑ monitoring or recovery well completion reports, and
❑ reports of laboratory analyses should be organized and presented logically.

Table 1

EMERGENCY INCIDENT SAMPLING GUIDE

TO VERIFY REMEDIATION COMPLETION FOR SUDDEN SPILLS TO SOIL SURFACES

Surface Soil

The IEPA suggests, but does not require, the following process for determining the number of samples and their placement at spill sites. A grid sampling layout is suggested that uses a regular and repeated pattern of areally distributed sampling locations with the soil samples collected at the grid intersections, including the intersections along the boundaries. A circular pattern of equal spacing may also be used. The boundaries of the grid system need not be square, but may be adjusted to fit the area of study. Grid intervals may be determined using the following equation:

$$GI = [(A/\pi)^{0.5}] + 2$$

Where, "GI" is the grid interval in feet, "A" is the area to be gridded in square feet and $\pi = 3.14$.

Subsurface Soil (when native soil and not sand and/or gravel)

1. **Following Expeditious Removal** (usually less than one month after spill)

❑A minimum of two sampling locations for every 0.5 acres of contaminated area placed where migration to groundwater is most likely or if that is equivocal then at representative locations in the centroid of the contaminated area.

❑Discrete samples should be obtained at each sampling location at every two feet of depth, begining six inches below ground and continuing through the zone of contamination. If the zone of contamination is not precisely known, one of the three approaches described below may be used:

a). Direct reading field instrumentation or test kits can be used to estimate the zone of contamination contemporaneously with the collection of samples,

b). Samples can continue to be collected from the surface at every two feet of depth until groundwater is encountered, or

c). An estimate of extent can be made to limit the number of samples with the understanding that a second round of sampling may be necessary if the results of the first do not demonstrate that the extent of the zone of contamination was encountered.

2. **Following Longer Remediation** (greater than one month)

The number and placement of sampling locations should be determined as specified above for surface soil sampling. At each sampling location discrete samples should be obtained at every two feet of depth, beginning six inches below ground and continuing through the zone of contamination.

Post-Cleanup Sampling of Excavations

Use the surface soil spacing criteria to sample all walls and floor of the excavation. The usual minimum is one sample on each wall and two on the floor of an excavation deeper than two feet.

THE ABOVE SUGGESTIONS ARE PROVIDED TO HELP EXPEDITE SAMPLING OF COMMON SPILL SITUATIONS. SEE 35 ILL. ADM. CODE 742.225 REGARDING DEMONSTRATION OF COMPLIANCE WITH SOIL REMEDIATION OBJECTIVES AS WELL AS ALLOWABLE USES OF COMPOSITED SAMPLES AND AVERAGING OF SAMPLE RESULTS.

R000828

Attachment 2

Laboratory Test Data

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Job Number: 00.07828

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Modern Plating Corp./97M015

Sample Number	Sample Description	Date Taken	Date Received
589810	WWTP-1	07/20/2000	07/21/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Mary Pearson

Mary Pearson
Project Manager

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Sample No. : 589810

Job No.: 00.07828

Sample Description: WWTP-1
Modern Plating Corp./97M015

Date Taken: 07/20/2000
Time Taken: 13:20

Date Received: 07/21/2000
Time Received: 07:00

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
Solids, Total	86.7		%	0.1	07/24/2000	kmt	SM 2540
Chromium, ICP	9.9		mg/kg dw	2.3	07/25/2000	kdw	SW 6010B
Chromium, Trivalent	<12		mg/kg dw	4.6	07/25/2000	jtt	Calculation
Chromium, Hexavalent	<12		mg/kg dw	1.2	07/24/2000	jrr	SWII 3060

TestAmerica, Bartlett Division

TestAmerica INCORPORATED

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials"

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

(7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

(8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.

(9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.

(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

CHAIN OF CUSTODY RECORD

TestAmerica INCORPORATED

602 Commerce Drive / Watertown, WI 53094
Phone: (920) 261-1660 / Fax: (920) 261-8120

COMPANY: Foth & Van Dyk
ADDRESS: 2737 S. Ridge Rd., Green Bay, WI 54307
PHONE: (920) 497-2500 FAX: (920) 497-8516
PROJECT DESCRIPTION/NO.: Modern Plating Corp. / 97M015
PROJECT MANAGER: Ron Meister

REPORT TO: Ron Meister
INVOICE TO: Foth & Van Dyke
P.O. NO.:
QUOTE NO.:

SAMPLED BY: Brian Stanul
NAME
NAME

Fax Results? X QC w/Results? X

Which regulations apply?
NPDES/Wastewater ____ RCRA X UST ____
Drinking Water ____ Other ____ None ____

DATE	TIME	SAMPLE ID/DESCRIPTION	FILTERED	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	NONE	METHANOL	OTHER	ANALYSES: TRIVALENT CHROMIUM	HEXAVALENT CHROMIUM	TCLP Metals*								COMMENTS
7/20/10	13:20	WWTP-1	N	S	X						X			X	X									

287

LAB USE ONLY

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO BOTTLES SUPPLIED BY LAB? YES / NO TEMPERATURE UPON RECEIPT: 2nd 24 °C on ice

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR LAB BY:
Brian Stanul	7/20/10	15:37	Dave C. Foth 7-20-10 15:37	→	7/21/10	7:00	Mary Pearse

METHOD OF SHIPMENT:
TestAmerica Courier ✓
Client ____
Common Carrier ____

REMARKS: * TCLP Metals added 7/21 by Ron Meister dab

R000833

P.04/05
BHK 11 LHB
JUL-27-2010 10:34

R000834

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Job Number: 00.07829

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Modern Plating Corp./97M015

Sample Number	Sample Description	Date Taken	Date Received
589811	WWTP-1	07/20/2000	07/21/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Mary Pearson

Mary Pearson
Project Manager

R000835

TestAmerica
INCORPORATED

ANALYTICAL REPORT

REVISED REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Sample No. : 589811

Job No.: 00.07829

Sample Description: WWTP-1
Modern Plating Corp./97M015

Date Taken: 07/20/2000
Time Taken: 13:20

Date Received: 07/21/2000
Time Received: 07:00

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
TCLP Metals Extraction	Leached				07/22/2000	kar	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	0.20	07/24/2000	kdw	SW 6010B
TCLP-Barium, ICP	0.423		mg/L	0.020	07/24/2000	kdw	SW 6010B
TCLP-Cadmium, ICP	0.018		mg/L	0.010	07/24/2000	kdw	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	0.040	07/24/2000	kdw	SW 6010B
TCLP-Lead, ICP	<0.100	MDL	mg/L	0.200	07/24/2000	kdw	SW 6010B
TCLP-Mercury, CVAA	<0.0002		mg/L	0.0002	07/25/2000	vgm	SW 7470A
TCLP-Selenium, ICP	<0.05	MDL	mg/L	0.20	07/24/2000	kdw	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	0.050	07/24/2000	kdw	SW 6010B

MDL : Analyte reported to the Method Detection Limit.

KEY TO ABBREVIATIONS and METHOD REFERENCES

TestAmerica INCORPORATED

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
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Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
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GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
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Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

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(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

(7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

(8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.

(9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.

(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

MASTER FILE COPY
Scope 97M015 Classification 8351
Copy To REM Master file

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
Green Bay, WI 53407

07/31/2000

Job Number: 00.08077

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: 97M015; Modern Plating

Sample Number	Sample Description	Date Taken	Date Received
590612	WWTP-2 (Soil Pile)	07/27/2000	07/27/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:
Mary Pearson
Mary Pearson
Project Manager

950 W. Bartlett Rd. / Bartlett, IL 60103-1100 / 630 289 9100 / Fax 630 289 5115 / 800 279 5700

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
Green Bay, WI 53407

07/31/2000

Sample No. : 590612

Job No.: 00.08077

Sample Description: WWTP-2 (Soil Pile)
97M015; Modern Plating

Date Taken: 07/27/2000
Time Taken: 09:25

Date Received: 07/27/2000
Time Received: 13:45

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
Solids, Total	88.1		%	0.1	07/28/2000	kmt	SM 2540
Chromium, ICP	74		mg/kg dw	2.3	07/28/2000	kdw	SW 6010B

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

KEY TO ABBREVIATIONS AND METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials"

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

(7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

(8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.

(9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.

(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

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Chain of Custody Record

TESTAMERICA INC.

Page ____ of ____

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☐ Atlanta, GA (B) (770) 368-0636 ☐ Brighton, CO (D) (303) 659-0497 ☐ Charleston, SC (F) (843) 849-6550 ☐ Columbia, SC (H) (803) 796-8989 ☐ Davenport, IA (J) (319) 323-7944 ☐ Indianapolis, IN (L) (317) 842-4261 ☐ Macon, GA (N) (912) 757-0811 ☐ Orlando, FL (P) (407) 851-2560 ☐ Watertown, WI (R) (920) 261-1660

Client: FOTH & VAN DYKE	Project No.: 97M015
Report Address: 2737 S. RIDGE RD.	Invoice Address: SAME
GREEN BAY, WI 54307	
Attn: RON MEISTER	Attn:
Phone No.: (920) 497-2500	Sampled By: BRIAN STANUL
Fax No.: (920) 497-8516	P.O. No:
TURNAROUND TIME	Quote No.
☐ Standard	State Samples Collected
☒ Rush (surcharges may apply)	Date Needed: 7/28/00

REQUESTED PARAMETERS

TOTAL CHROMIUM

Is this work being conducted for regulatory compliance monitoring? Yes___ No___

Is this work being conducted for regulatory enforcement action? Yes___ No___

Which regulations apply:
RCRA X NPDES Wastewater___
UST___ Drinking Water___
Other___ None___

Sample ID	Date	Time	Comp (C) Grab (G)	Matrix	Lab Use	TOTAL CHROMIUM	# and type of containers: HCl	NaOH	HNO_3	H_2SO_4	Other	None	REMARKS
WWTP-2 (SILPILE)	7/27/00	09:25	G	S		X						1	

294

QC Deliverables: ☐ None ☐ Level 2 + Batch QC ☐ Level 3 ☐ Level 4 ☐ Other

N/A Inj Lab Temp

recd on ice Rec Lab Temp

COMMENTS:

* 24-HOUR TURN-AROUND TIME

18°C actual sample temp

R000840

Relinquished By: Brian J. Stanul	Date 7/27/00 Time 0917	Received By: Pam Hose	Date 7/28/00 Time 10:17	LAB USE ONLY:	
Relinquished By: Pam Hose	Date 7/28/00 Time 0945	Received By: B R Johnson	Date 7/28/00 Time 12		
Relinquished By: B R Johnson	Date 7/27/00 Time 1345	Received By: P Murrill	Date 7/27/00 Time 1345	Custody Seal: ☐ Yes ☐ No ☑ N/A	
Relinquished By:	Date Time	Received By:	Date Time	Bottles Supplied by TA: ☐ Yes ☑ No	

MASTER FILE COPY
R0000841
Scope 97MU15 Classification 3000
Copy To SJLI, NXD, MJCI, BJSI, JSK
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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

August 8, 2000

CERTIFIED MAIL
7099 3400 0006 5938 1604

Mr. Craig Skolrood
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032

Re: 17702000010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. C-259-M-12
RCRA Closure

Dear Mr. Skolrood:

This is in response to the July 7, 2000 letter report from Ron Meister, P.G. of Foth and VanDyke, sent on behalf of Modern Plating Corporation (MPC) providing the results of the Phase II investigation of a former outfall line at the MPC facility. A site layout map showing the location of this outfall line is attached. The investigation is being conducted as part of an approved final RCRA closure plan (Log No. C-259 and associated modifications) for four RCRA hazardous waste management units (referred to as Lagoons 1, 2 and 3 and the Shawnee Building) and four solid waste management units (referred to as Lagoons 0 and 1A, the Cyanide Treatment Vault, and the Wetlands Area) at the above-referenced facility.

Illinois EPA's February 9, 2000 letter (Log No.C-259-M-9) approved MPC's proposal to perform a Phase I investigation of an old drainage oufall line and sanitary sewer as part of RCRA closure efforts at the facility. The Illinois EPA's June 8, 2000 (Log No. 259-M-11) approval letter commented on the Phase I investigation and approved a Phase II workplan to sample soil at 5 locations along the outfall pipeline. Mr. Meister's submittal provided the soil test results for samples taken along the former outfall pipeline.

Illinois EPA's review of these results has determined that with the exception of SB-Of-05, soil along the former outfall pipeline meets 35 IAC Section 742 TACO Tier 1 industrial/commercial and construction worker ROs. In addition, MPC's proposal to excavate soil in the vicinity of SB-OF-05 in order to meet Tier I ROs is approved with the following conditions and modifications:

1. Soil in the vicinity of SB-OF-05 shall be excavated along the pipeline 15 feet on either side of SB-OF-05 to a depth of seven feet. Soil from the top of the pipe to the seven-foot depth shall be disposed of in the on-site Corrective Action Management Unit. Soil above the pipeline will be returned to the excavation and covered with clean fill from off-site.

2. Three (3) confirmation soil samples shall be taken from the excavation at 5-foot intervals and analyzed for Cyanide, Chromium, Cadmium, Lead, Nickel, Zinc and also Arsenic. The results from this analysis must be submitted to the Illinois EPA for review within 60 days from the date of this letter.

3. Closure activities completed for the former outfall pipeline must be included in the final Closure Certification/Documentation Report required for the eight units previously mentioned. This document must be prepared in accordance with Condition 8 of the Illinois EPA's December 2, 1999 final RCRA closure plan approval letter (Log No. C-259-M-8).

4. An institutional control meeting the requirements of 35 Ill. Adm. Code 742 Subpart I must be established as part of this remediation project to ensure the use of the site remains industrial/commercial in the future. A proposed institutional control meeting these requirements should be submitted to Illinois EPA for review and approval within 60 days of the date of this letter.

5. The attached LPC-PA18 Certification Form must accompany all submittals.

6. Except as modified herein, (1) RCRA closure activities must be carried out in accordance with previous Illinois EPA approval letter (Log No. C-259 and associated modifications; and (2) the RCRA corrective action provisions of the RCRA permit (Log No. B-167) issued to MPC.

Within 35 days of the date of mailing of the Illinois EPA's decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35 day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice provided to the Board and the Illinois EPA within the 35 day initial appeal period.

In addition, work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Practice Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact Karen Nachtwey at (217) 524-3273 of my staff.

Sincerely,

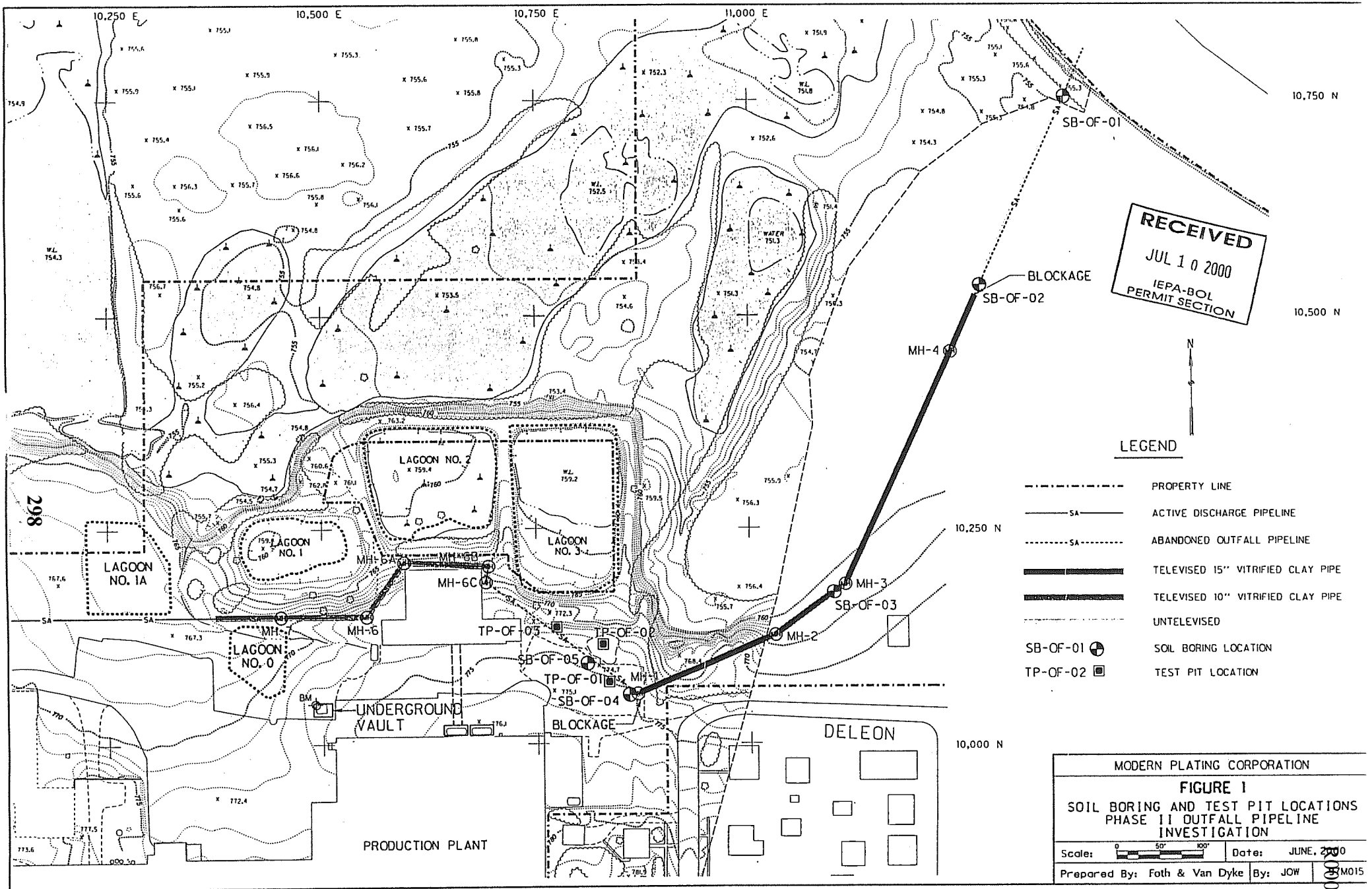
Jerry Hatchett, P.E.
for

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:KEN\mls\0015213.doc
JLM

Attachment A - Site Layout Map
Attachment B - Form LPC-PA18

cc: Foth & VanDyke - Ronald E. Meister, P.G.



MODERN PLATING CORPORATION

FIGURE 1

SOIL BORING AND TEST PIT LOCATIONS
PHASE II OUTFALL PIPELINE
INVESTIGATION

Scale: 0 50' 100' | Date: JUNE, 2000

Prepared By: Foth & Van Dyke | By: JOW | M015

L:\97m015\PLOT\m15225a.dgn 07/06/00 03:31:25 PM

R0000844

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Scope 97M015 Classification 4000
Copy To SJLI, BJSI, MJCI, NXD
REM, JSK, MASTER File

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217-524-3300

September 19, 2000

CERTIFIED MAIL
7099 3400 0006 5938 0348

Mr. Craig Skolrood
Manager, Regulatory Compliance
Modern Plating Corporation
701 South Hancock Ave.
Freeport, Illinois 61032-0838

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit File

Dear Mr. Skolrood:

The Illinois EPA has completed its review of the letter submitted on your behalf by Foth & Van Dyke (F&VD) dated August 18, 2000 and received August 21, 2000. In that letter F&VD described the July 20, 2000 release of approximately 800 gallons of chromate rinse water at the Modern Plating Company (MPC) facility in Freeport, Illinois as well as how the remediation waste from the spill was managed.

Based on the information provided in the August 18, 2000 letter, the Illinois EPA has determined that the release area would constitute a newly identified solid waste management unit (SWMU). In addition, it is acceptable to place the approximately 3 cubic yards of remediation waste that was generated during remediation of the spill in the CAMU landfill described in the RCRA Post-Closure Permit for MPC.

The issue of whether the spill was adequately remediated is the responsibility of the Illinois EPA's Emergency Response Unit (ERU). This portion of the remedial action needs to be coordinated with ERU when MPC responds to the July 31, 2000 Non-Compliance Advisory Letter regarding incident No 20001377.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Joyce L. Munie, P.E.
Manager Permit Section,
Bureau of Land

JLM:WRW:bjh\1092s.doc
JKK
WRW JSK

bcc: Bureau File
Rockford Region
Jim Moore
Jerry Kuhn
Terri Blake Myers
Rob Watson
Karen Nachtwey
G. Tod Rowe, ERU
Ed Osowski, ERU – Maywood Region

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217-524-3300

November 6, 2000

CERTIFIED MAIL
7099 3400 0002 1429 5773

Mr. Craig Skolrood
Manager, Regulatory Compliance
Modern Plating Corporation
701 South Hancock Ave.
Freeport, IL 61032-0838

1770200010 -- Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit Record

Dear Mr. Skolrood:

The Illinois EPA has completed its review of the Cell Construction Certification (CCC) for Phase 2 of the Corrective Action Management Unit (CAMU) landfill dated November 1, 2000. The certification was submitted by Foth and Van Dyke on behalf of Modern Plating Co. and certified by Marten J. Cieslik, P.E., DEE.

The Illinois EPA inspected the construction of Phase 2 on October 25, 26, 27 and 28, 2000. The pre-operational inspection was conducted on November 1, 2000. The inspections revealed that Phase 2 was constructed in accordance with the approved plans and conditions in the RCRA permit. Therefore, the CCC is hereby approved in accordance with Condition I.E.3 of your permit. The permittee must still notify the Illinois EPA Permit Section and Rockford Regional Office in writing when all the remediation waste has been placed in the CAMU landfill and prior to initiating construction of the final cover system.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Joyce L. Munie, P.E.
Manager Permit Section,
Bureau of Land

H:\MODPLATELETTERS2\CCC-2.doc

MEMORANDUM

DATE: July 16, 2001

TO: Rob Watson
BOL- RCRA Permit Unit

FROM: Karen Nachtwey
BOL-Corrective Action Unit

SUBJECT: RCRA Part B Permit Modification Request

RE: 1770200010 - Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit

This supercedes my July 2, 2001 memo to you regarding the May 17, 2000 letter from Foth and Van Dyke Consultants (FVD), sent on behalf of Modern Plating Corporation (MPC), requesting modifications to MPC's April 11, 2000 Part B Permit. Since my last memo, I have reviewed a report documenting remedial activities completed at this facility and been in contact with FVD. Based upon these additional efforts and an update of my July 2, 2001 memo is necessary.

In the May 17, 2000 letter, Attachment 1, six modifications were requested. In my July 2, 2001 memo, I provided comments on the requested modification of Section IV- Page IV-6, Item C.2 of the permit. Item C.2 of the permit stated, "At the Shawnee Building three areas were used for storage of hazardous waste. **Remediation requires that soil meet 35 Ill. Adm. Code TACO Tier II remedial *objectives and a remedial objectives of 400 mg/kg for Lead.*"**

MODIFICATION REQUEST:
On April 26, 2000 FVD called Jerry Kuhn (RCRA Permits) and stated that the language was an error that Cadmium should be inserted in C.2 instead of Lead. Subsequently a May 17, 2000 letter was sent requesting that the language be modified to read: ***"...objective and a remedial objectives of 200 mg/kg for Cadmium."*** In entirety, C.2 would read: "Remediation requires that soil meet 35 Ill. Adm. Code TACO Tier II remedial objective and a remedial objectives of 200 mg/kg for Cadmium (wrong tense noted).

JULY 2, 2001 MEMO:
I reviewed the May 17, 2000 request and recommended the following modification to the permit in my July 2, 2001 memo to you:
"...objectives as shown in Attachment H and a remedial objective of 400 mg/kg for Lead."

Attachments H was assigned as it was next in sequence in the MPC permit. Attachment H is the Tier II Remedial Objectives (Table B.2) included as Attachment 3 in the December 2, 1999 final RCRA Closure Plan approval letter and also inserted in the Part B Permit application (by an April 6, 2000 submittal from FVD). I recommended inclusion of this table to further clarify Illinois EPA's reference to TACO Tier II remedial objectives, which included Cadmium. Since the RO of 400 mg/kg for Lead was not included in this table (approved in Illinois EPA November 18, 1998 letter), it remained so that the list would include all heavy metals.

JULY 3, 2001 FVD CALL AND FAX

On July 3, 2001 I called Steve Laszewski to discuss the proposed revision. We both agreed that Lead was not a constituent of concern in the Shawnee Building. I explained why it was included. We also agreed that Cadmium was the constituent driving the remediation in both the Shawnee Building and the Wetlands area. I reviewed my proposed revision as set forth above. During our conversation, I became aware that the soil confirmation samples were taken and tested just for Cadmium. I asked how the Illinois EPA had been involved in making the determination to limit confirmation soil sampling to just cadmium as it was my understanding that soil confirmation sampling would be conducted in accordance with the final RCRA approved plan. The final RCRA closure plan stated that soil must meet Tier II remedial objectives in the Shawnee Building and Tier I in the Wetland area. Steve Laszewski said he would send supporting documentation.

On July 3, 2001, I received and reviewed a Fax from FVD containing pages from the following documentation previously submitted to the Illinois EPA; my comments regarding this information is also provided:

1. *Page 56-57 of the July 22, 1999 Final RCRA closure plan*
   Under Remedial Volumes, page 56, the asterisked section states that remediation of cadmium to the site-specific soil cleanup objective of 200 mg/kg will result in the removal of soil containing exceedances of cleanup standards for other site chemicals of concern in both the Wetland and Shawnee Building areas.
   Comment: The last paragraph on page 57 states that MPC plans to collect soil samples in each area after excavation is completed to demonstrate that remedial objectives have been attained.

2. *Page C-5 of the revised February 2000 RCRA Part B Permit Application*
   This page summarizes the conditions at contaminated wetland soils. "The site-specific remedial objectives for the wetlands are described in Section 2.5.2 of Foth and VanDyke, 1999. MPC has proposed to remediate wetland soil to the TACO industrial/commercial Tier 1 objective of 200 mg/kg cadmium which requires excavation of an estimated total volume of 2,130 cy of wetland soils from the three wetland areas.
   Comment: Section 2.5.2 refers to ROs tables for the wetlands and Shawnee Building.

3. *Page B-5a of revised April 2000 RCRA Part B Application*

This section states that soil at the former Shawnee Building must meet 35 IAC 742 TACO Tier II ROs (shown in table B-2) and a remedial objectives of 400 mg/kg Lead (crossed out to read 200 mg/kg for Cadmium).
Comment: Table B-2 - Tier II Remedial Objectives was inserted into the Part B application.

4. PROJECT PHONE CALL CONFIRMATION (one page) - discussing errors in April 11, 2000 permit;

Base upon my review of documentation provided, soil confirmation samples should have been performed to confirm that all Tier II ROs for the Shawnee Building and Tier I ROs for the Wetlands were achieved. However the necessity for additional confirmation samples to test for other constituents listed in RO tables in each area should now be re-evaluated, given the following factors:

1. Soil excavation in both the wetland areas and the Shawnee Building has already been performed;
2. Contaminated soil has been place in the on-site constructed CAMU; and
3. Extensive soil testing has been conducted during RFI investigations in both areas resulting in the development of iso-concentration maps that characterize soil contamination for all constituents listed in the Tier 1 and Tier II RO tables;

COMMENTS/RECOMMENDATION:

In accordance with the December 29, 1999 approved RCRA Closure plan for the four hazardous waste management units and four Solid Waste Management Units at MPC, Condition No. 8 requires that a Closure Documentation Report be submitted within 60 days after closure to the Illinois EPA to demonstrate that closure has been completed in accordance with the approved RCRA closure plan. It is my understanding that this was still a requirement even with the issuance of the Part B Permit. Section IV of the permit summarizes Corrective Action Activities to be implemented and stated that closure must be completed in accordance with the final RCRA closure plan.

On July 9, 2001, Illinois EPA received the CAMU Landfill Construction Documentation. Corrective action/RCRA closure activities are described in *Section 5* of this document, *Table 5-1* - Summary of Confirmation Test Results and *Appendix L* - Soil Test Results, L-1 - Sample Location Map and L-2 Laboratory Reports. For the Shawnee Building, in the one area requiring further remediation, 30 cubic yards of soil was excavated to a depth of three (3) feet. Shaw -1 through Shaw-4 were collected and tested for Cadmium (ICP) and Total Solids. In the Wetlands: Wetland No. 1, Wetland No. 1A. Wetand No. 2 and Wetland No.3 (defined by iso-concentration maps and shown in Appendix L) soils were excavated to a 2 foot depth. At Wetland No.2 additional soil was excavated based upon confirmation soil test results. All results were reported to be less than the RO for Cadmium.

The CAMU Construction Documentation Report does not provide everything required by the Closure Documentation Report described in Condition No. 8 of the approved closure plan. However, for both the Shawnee and Wetlands area, the two areas that need

to meet the clean closure requirements under RCRA, this report may serve in providing RCRA clean closure documentation if the following additional documentation is provided:

1. A closure certification statement meeting the requirements of December 29, 1999 Condition No. 8 the RCRA closure approval letter; Will be included in closure report
2. Scaled iso-concentration maps depicting contamination in both areas (these have been provided before but are now on microfilm) to support limiting confirmation soil sampling to Cadmium; (Add to Appendix of closure report) – Wetlands and Shawnee
3. A descriptive narrative including information required by Condition No. 8 of the December 2, 1999 final RCRA Closure Plan approval letter, at the very least items d, e, f, g, and to
4. Reported results of the ~~x-ray~~ fluorescent spectrometer and the ~~PID~~ that were used during excavation activities,

Need Need Need

I will be asking FVD to provide this information and once it has been reviewed and found to be acceptable, we will be able to make a determination that soils meet the clean closure requirements.

With regard to the necessary language modification to address the remediation that has occurred at MPC in both the Shawnee Building and the Wetlands area, I recommend that the following language be incorporated into the Part B Modification:

At the Shawnee Building, remediation requires that soil be removed to meet the 35 Ill. Adm. Code 742 TACO Tier II remedial objective for Cadmium of 200 mg/kgs and in doing so, soil will meet the Tier II ROs listed in Attachment H of the Part B Permit.

In the Wetlands area, soil will be excavated to meet 35 Ill. Adm. Code 742 TACO Tier I remedial objective of 200 mg/kg for Cadmium and in doing so, soil will meet the Tier I ROs listed in Attachment I of the Part B Permit.

Attachment:

July 3, 2001 FVD Fax
Attachment H - Tier II ROs for Shawnee Building
Attachment I - Tier I ROs for Wetlands Area

cc: Bureau File
Karen Nachtwey
Jim Moore

07/24/01 11:07 FAX 2175243291 IEPA LAND PERMITS 006

Table 2-22

Proposed Soil Remedial Objectives
Shawnee Building

	Pathway Remedial Objectives (mg/kg)												
	Industrial Worker (Tier 2)						Construction Worker (Tier 2)						
			Inhalation						Inhalation				
	Ingest.		Volatilization		Fug. Dst		Ingest.		Volatilization		Fug. Dst		Shawnee Remedial Objective (mg/kg)
	NC	C	NC	C	NC	C	NC	C	NC	C	NC	C	
Arsenic	613	4	—	—	—	1,300	61	83	—	—	—	28,000	4
Cadmium	2,000	—	—	—	—	3,200	200	—	—	—	—	67,000	200
Chromium (III)	10^6	—	—	—	—	—	200,000	—	—	—	—	—	200,000
Chromium (VI)	10,000	—	—	—	—	420	4,100	—	—	—	—	8,800	420
Nickel	41,000	—	—	—	—	24,000	4,100	—	—	—	—	500,000	4,100
Zinc	610,000	—	—	—	—	—	61,000	—	—	—	—	—	61,000
Cyanide	41,000	—	—	—	—	—	4,100	—	—	—	—	—	4,100
cis-1,2-Dichloroethene	20,000	—	3,700[1]	—	—	—	20,000	—	3,700[1]	—	—	—	3,700[1]
trans-1,2-Dichloroethene	41,000	—	9,300[1]	—	—	—	4,100	—	9,300[1]	—	—	—	4,100
Tetrachloroethene	20,000	110	—	790[1]	—	10^6	20,000	2,400	—	790[1]	—	10^6	110
Trichloroethene	12,000	520	4,600[1]	350	—	10^6	1,200	11,000	4,600[1]	500	—	10^6	350
Vinyl Chloride	—	3	1,900[1]	1.8	—	69,000	—	65	1,900[1]	2.5	—	10^6	1.8

[1]Soil saturation concentration (C_{sat})

Prepared by: JJA1
Checked by: [illegible]

RE000851

Attachment B

Tier II Remedial Objectives
for the Shawnee Building

07/24/01 11:08 FAX 2175243291 IEPA LAND PERMITS 007

Revised Table 2-23

Proposed Soil Remedial Objectives
Wetlands Area

	IEPA TACO Tier I Screening Levels[1]				Mean[2] Soil Background Derivation	Soil Saturation Concentration[3] (mg/kg)	Wetland Remedial Objective (mg/kg)
	Commercial/Industrial Worker		Construction Worker				
	Ingestion	Inhalation	Ingestion	Inhalation			
Arsenic	3	1,200	61	25,000	5.38	NA	3
Cadmium	2,000	2,800	200	59,000	1	NA	200
Chromium (III)	1,000,000	—	330,000	—	10.84	NA	1,000,000
Chromium (VI)	10,000	420	4,100	8,800	<0.04*	NA	420
Lead	400	—	400	—	23.4	NA	900[4]
Nickel	41,000	21,000	4,100	440,000	13.38	NA	21,000
Zinc	610,000	—	61,000	—	81.6	NA	610,000
Cyanide	41,000	—	4,100	—	0.485	NA	41,000
cis-1,2-Dichloroethene	20,000	1,200	20,000	1,200	NA	3,696	1,200
trans-1,2-Dichloroethene	41,000	3,100	41,000	3,100	NA	9,255	3,100
Tetrachloroethene	110	20	2,400	28	NA	788	20
Trichloroethene	520	8.9	1,200	12	NA	4,613	8.9
Vinyl Chloride	3	0.06	65	0.08	NA	1,856	0.06

[1]Source: 35 IAC 742 Appendix B, Table B.
[2]Derived using IEPA's procedure for determining background concentrations.
[3]Calculated utilizing equation S29, 35 IAC 742, Appendix B, Table B.
[4]Based on USEPA TRW Model as noted in Section 2.5.3.
* Based on chromium speciation analysis, Table 2-14A.

Prepared by: BLA
Checked by: SJL1

Attachment 1

Tier I Remedial Objectives for the Wetlands Area

R000852

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

815/987-7760
FAX #815/987-7005

April 10, 2003

CERTIFIED MAIL #7001 0360 0002 8644 3727
RETURN RECEIPT REQUESTED

Modern Plating Corporation
Attn: Darrell Hill
701 S. Hancock Avenue
Freeport, Illinois 61032

Re: **Violation Notice, L-2003-01064**
1770200010 -- Stephenson County
Freeport/Modern Plating Corporation
Compliance File

Dear Mr. Hill:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act, 415 ILCS 5/31(a)(1), and is based upon **an inspection** on February 18 and 19, 2003 by a representative of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of violations of environmental statutes, regulations, or permits as set forth in the attachments to this letter. The attachments include an explanation of the activities that the Illinois EPA believes may resolve the specified violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the violations cited, please be advised that resolution of the violations may require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

May 26, 2003

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. The response must address each violation specified in the attachment and include for each an explanation of the activities that will be implemented and the time schedule for the completion of that activity. Also, if a pollution prevention activity will be implemented, indicate that intention in any written response. The written response will constitute a proposed Compliance Commitment Agreement ("CCA") pursuant to Section 31 of the Act. The Illinois EPA will review the proposed CCA and will accept or reject it within 30 days of receipt.

If a timely written response to this Violation Notice is not provided, it shall be considered to be a waiver of the opportunity to respond and to meet provided by Section 31(a) of the Act, and the Illinois EPA may proceed with a referral to the prosecutorial authority.

The Illinois EPA encourages the use of pollution prevention methods to help achieve compliance with environmental requirements. By switching to non-hazardous raw materials, improving housekeeping practices or changing production processes to generate less waste, it may be possible to save money, increase efficiency and reduce regulatory requirements.

Written communications should be directed to:

Illinois EPA -- Bureau of Land
Attn: Rebecca Vershaw
4302 North Main Street
Rockford, Illinois 61103

All communications must include reference to your **Violation Notice L-2003-01064.** If you have questions regarding this matter, please contact **Rebecca Vershaw** at **815/987-7760.**

Sincerely,

David S. Retzlaff
Manager – Region 1
Field Operations Section
Bureau of Land

DSR:RV:tl

MW-17A - Not Tested (NT)
MW-17B - Below Stds (BS)
MW-17C - " "
MW-18A - NT
MW-18B - (BS)
MW-19A - NT
MW-19B (BS) Exceeds cis, 1,2 Dichloroethene vinyl chloride
MW-19C (BS)
MW-23B (BS)
MW-23C - Exceed Trichloroethene " " "

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

ATTACHMENT A

1. Pursuant to Section 12(a) of the Act, no person shall cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act.

   A violation of Section 12(a) of the [Illinois] Environmental Protection Act (415 ILCS 5/12(a)) is alleged for the following reason: **Purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.**

FG!

2. Pursuant to Section 12(d) of the Act, no person shall deposit any contaminants upon the land in such place and manner so as to create a water pollution hazard.

MW-23C

   A violation of Section 12(d) of the [Illinois] Environmental Protection Act (415 ILCS 5/12(d)) is alleged for the following reason: **Purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.**

3. Pursuant to Section 21(d)(1) of the Act, in relevant part, no person shall conduct any waste-storage, waste-treatment, or waste-disposal operation without a permit granted by the Agency or in violation of any conditions imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder.

   A violation of Section 21(d)(1) of the [Illinois] Environmental Protection Act (415 ILCS 5/21(d)(1)) is alleged for the following reason: **In contrast to RCRA Permit No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.**

4. Pursuant to Section 21(d)(2) of the Act, no person shall conduct any waste-storage, waste-treatment, or waste-disposal operation in violation of any regulations or standards adopted by the Board under this Act.

   A violation of Section 21(d)(2) of the [Illinois] Environmental Protection Act (415 ILCS 5/21(d)(2)) is alleged for the following reason: **The owner/operator is in violation of Sections 12(a), 12(d), 21(d)(1) and 21(f) of the Illinois Environmental Protection Act and 35 Ill. Adm. Code 620.115, 703.121(a), 724.115(c) and 724.197(c).**

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

5. Pursuant to Section 21(f) of the Act, no person shall conduct any hazardous waste-storage, hazardous waste-treatment or hazardous waste-disposal operation without a RCRA permit for the site issued by the Agency under subsection (d) of Section 39 of this Act, or in violation of any condition imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder.

A violation of Section 21(f) of the [Illinois] Environmental Protection Act (415 ILCS 5/21(f)) is alleged for the following reason: **In contrast to RCRA Permit No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.**

6. Pursuant to 35 Ill. Adm. Code 620.115, No person shall cause, threaten or allow a violation of the Act, the IGPA or regulations adopted by the Board thereunder, including but not limited to this Part.

A violation of 35 Ill. Adm. Code 620.115 is alleged for the following reason: **In contrast to RCRA Permit No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.**

7. Pursuant to 35 Ill. Adm. Code Section 703.121(a), no person shall conduct any hazardous waste storage, hazardous waste treatment, or hazardous waste disposal operation:
   1) Without a RCRA permit for the HWM (hazardous waste management) facility; or
   2) In violation of any condition imposed by a RCRA permit

A violation of 35 Ill. Adm. Code 703.121(a) is alleged for the following reason: **Modern Plating Corporation is in violation of conditions imposed by RCRA Permit No. B-167.**

8. Pursuant to 35 Ill. Adm. Code 724.115(c), the owner or operator shall remedy any deterioration or malfunction of equipment or structures that the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

A violation of 35 Ill. Adm. Code 724.115(c) is alleged for the following reason: **The inner casing of monitoring well GA1S is damaged. The outer casings of monitoring wells GA1S, GA1M and GA2S are inadequately sealed and allow for the infiltration of water. In addition, monitoring wells G6S and G6M have damaged surface seals.**

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

9. Pursuant to 35 Ill. Adm. Code 724.197(c), All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

MW-21A

A violation of 35 Ill. Adm. Code 724.197(c) is alleged for the following reason: **The inner casing of monitoring well GA1S is damaged.**

10. Pursuant to RCRA Permit Log No. B-167, Section III (D)(1) the Permittee shall maintain the groundwater monitoring wells identified in the table below to allow for the collection of groundwater samples.

MW-21A MW-21C MW-22A MW-21A

A violation of RCRA Permit No. B-167, Section III (D)(1) is alleged for the following reason: **The inner casing of monitoring well GA1S is damaged. The outer casings of monitoring wells GA1S, GA1M and GA2S are inadequately sealed and allow for the infiltration of water. In addition, monitoring wells G6S and G6M have damaged surface seals.**

MW-6A MW-6C

11. Pursuant to RCRA Permit No. B-167, Section III (D)(3) the Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

A violation of RCRA Permit No. B-167, Section III (D)(3) is alleged for the following reason: **The Permittee has not notified the Illinois EPA that monitoring wells GA1S, GA1M, GA2S, G6S and G6M are damaged.**

12. Pursuant to RCRA Permit No. B-167, Section III (D)(6) All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in the high traffic areas must be protected with bumper guards.

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

MW-21A

A violation of RCRA Permit No. B-167, Section III (D)(6) is alleged for the following reason: Monitoring well GA1S is not equipped with a protective lock. **Monitoring well GA1S is not equipped with a protective lock.**

13. Pursuant to RCRA Permit No. B-167, Section III (H)(1) Samples shall be collected by the techniques described in Section E of the approved permit application.

A violation of RCRA Permit No. B-167, Section III (H)(1) is alleged for the following reason: **In contrast to page E-11 of Section E of the approved permit application, purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well. Also, in contrast to page E-12 of Section E of the approved permit application, samples were not collected in a manner that would cause minimal agitation.**

SUGGESTED RESOLUTIONS

Within 60 days for receipt of this letter:

MW-21A MW-21C MW-22A MW-6A MW-6C

1. Repair monitoring wells GA1S, GA1M, GA2S, G6S and G6M.

During subsequent sampling events:

2. Purged groundwater must be drummed and stored near the well. The drums should be emptied into Modern Plating Corporation's wastewater treatment plant during the sampling event unless wet conditions limit machinery access to well locations.
3. Samples must be collected in a manner that will cause minimal agitation.

The written response to this Violation Notice must include information in rebuttal, explanation, or justification of each alleged violation and must be submitted to the Illinois EPA by certified mail, within 45 days of receipt of this Violation Notice. The written response must also include a proposed Compliance Commitment Agreement that commits to specific remedial actions, includes specified times for achieving each commitment, and may include a statement that compliance has been achieved.

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

A violation of 35 Ill. Adm. Code 703.121(a) is alleged for the following reason: **Modern Plating Corporation is in violation of conditions imposed by RCRA Permit No. B-167.**

5. Pursuant to 35 Ill. Adm. Code Section 724.651(e)(4)(A)(ii), closure of the CAMU must control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

   A violation of 35 Ill. Adm. Code 724.651(e)(4)(A)(ii) is alleged for the following reason: **Modern Plating Corporation has not qualified the collected leachate data to assure compliance with the regulations.**

6. Pursuant to 35 Ill. Adm. Code Section 724.651(e)(4)(D), post-closure care requirements as necessary to protect human health and the environment, including, for areas where wastes will remain in place, monitoring and maintenance activities and the frequency with which such activities must be performed to ensure the integrity of any cap, final cover, or other containment system.

   A violation of 35 Ill. Adm. Code 724.651(e)(4)(D) is alleged for the following reason: **Modern Plating Corporation has not qualified the collected leachate data to ensure the integrity of the cap, final cover, or other containment system.**

7. Pursuant to RCRA Permit Log No. B-167, Attachment B, F-b(7)(d) Leachate Collection System (LCS) number 6, check flow meters and pump controls for proper operation.

   A violation of RCRA Permit Log No. B-167, Attachment B, F-b(7)(d)Leachate Collection System (LCS) number 6, is alleged for the following reason: **Modern Plating Corporation did not clarify which system the leachate data is collected from.**

8. Pursuant to RCRA Permit Log No. B-167, Attachment B, F-2(b)(7)(b) Leachate Detection System (LDS) number 1, record liquid levels and remove liquids above the pumping level. Record liquid level and leachate quantity in sump (to be compared with the action leakage rate of 4,680 gal/day).

   A violation of RCRA Permit Log No. B-167, Attachment B, F-2(b)(7)(b) Leachate Detection System (LDS) number 1, is alleged for the following reason: **The recorded leachate data does not facilitate a comparison to the action leakage rate of 4,680 gal/day.**

1770200010- Stephenson County
Modern Plating Corporation
ILD005172325
Violation Notice, L-2003-01064

SUGGESTED RESOLUTIONS

Within 30 days of receipt of this letter:

1. Provide additional information to clarify which systems the leachate data are collected from.
2. Record data from the Leachate Collection System (Phases 1 and 2) in a manner that allows for a historical review of the recorded information.
3. Record the required leachate data from the Leachate Detection System (Phases 1 and 2) in a manner that facilitates a comparison to the action leakage rate of 4,680 gal/day.

The written response to this Violation Notice must include information in rebuttal, explanation, or justification of each alleged violation and must be submitted to the Illinois EPA by certified mail, within 45 days of receipt of this Violation Notice. The written response must also include a proposed Compliance Commitment Agreement that commits to specific remedial actions, includes specified times for achieving each commitment, and may include a statement that compliance has been achieved.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF LAND / FIELD OPERATIONS SECTION

RCRA INSPECTION REPORT

GENERAL FACILITY INFORMATION

USEPA ID #:	ILD005172325		**IEPA ID #:**	1770200010	
Facility Name:	Modern Plating Corporation			**Phone #:**	815/235-3111
Location	701 S. Hancock Avenue			**County:**	Stephenson
City:	Freeport	**State:**	Illinois	**Zip Code:**	61032
Region:	1 - Rockford	**Inspection Date:**	2/18/03 & 2/19/03	**Time:**	variable
Weather:	~30° F				

TYPE OF FACILITY

Notified As:	G, S,D	**Regulated As:**	G,S, D

TYPE OF INSPECTION

CEI:	☐	**CME/O&M:**	☐	**CSI:**	☒	**NRR:**	☐	**CCI:**	☐	**PIF:**	☐	**CVI:**	☐	**CSE:**	☐	**CAO:**	☐
FUI to:		**Other:**																	

NOTIFICATION INFORMATION (EPA 8700-12)

Notification Date:	8/11/80 **(initial)**	6/6/95	**(subsequent)**

PART A PERMIT INFORMATION (EPA 3510-3 OR EPA 8700-23)

Part A Date:	11/12/80	**Amended:**	12/22/87	**Withdrawn:**	

PART B PERMIT INFORMATION

(Check one if applicable) Application Submitted?	☒	**Permit Issued?**	☒	**Date:**	4/11/00

ACTIVE ENFORCEMENT

Date facility referred to:	**USEPA:**	**IAGO:**	**County State's Attorney:**

ACTIVE ENFORCEMENT ORDERS

CACO:		**CAFO:**	**Federal Court Order:**
Consent Decree:	12/31/87	**IPCB Order:**	**State Court Order:**

TSD Facility Activity Summary

Activity by Process Code	On Part A?	On Part B?	Activity ever done?	Closed?	Being done during inspection?	Exempt per 35 IAC Sec:	On Annual Report:		
SO1	☒	☐	☒	☐	☐	N/A	☐	☐	☐
SO2	☒	☐	☒	☐	☐	N/A	☐	☐	☐
SO4	☒	☐	☒	☐	☐	N/A	☐	☐	☐
D80	☒	☒	☒	☐	☒	N/A	☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐

Owner		Operator	
Name:	Modern Plating Corporation	**Name:**	Modern Plating Corporation
Address:	701 S. Hancock Avenue	**Address:**	701 S. Hancock Avenue
City:	Freeport	**City:**	Freeport
State:	IL **Zip Code:** 61032	**State:**	IL **Zip Code:** 61032
Phone #:	815/235-3111	**Phone #:**	815/235-3111

Person(s) Interviewed	Title	Phone #
Darrell Hill	Environmental Coordinator	815/235-3111
Bob Frey	Fehr-Graham sampling technician	815/235-4700
Brian Paluzzi	Fehr-Graham sampling technician	815/235-4700

Inspection Participants	Agency/Bureau	Phone #
*Rebecca Vershaw	IEPA/BOL	815/987-7760
Kaare Jacobsen	IEPA/BOL	815/987-7760

*Report prepared by this person.

RCRA TSD Facility Violations Checklist

IEPA #: 1770200010 Inspection Dates: 2/18/2003 & 2/19/2003

Section	*Area*	*V C R*	*Section*	*Area*	*V C R*	*Permit No. B-167*	*Area*	*V C R*
IEPAct §12(a)		☒☐☐	620.115		☒☐☐	Section III (D)(1)		☒☐☐
IEPAct §12(d)		☒☐☐	703.121(a)		☒☐☐	Section III (D)(3)		☒☐☐
IEPAct §21(d)(1)		☒☐☐	724.115(c)		☒☐☐	Section III (D)(6)		☒☐☐
IEPAct §21(d)(2)		☒☐☐	724.197(c)		☒☐☐	Section III (H)(1)		☒☐☐
IEPAct §21(f)		☒☐☐	724.651(e)(4)(A)(ii)		☒☐☐	Attachment B, F-b(7)(d)		☒☐☐
		☐☐☐	724.651(e)(4)(D)		☒☐☐	Attachment B, F-2b(7)(b)		☒☐☐
		☐☐☐			☐☐☐			☐

IEPA Site #1770200010- Stephenson County
Modern Plating Company
Compliance file
Dates of Inspection: 2/18/2003 & 2/19/2003
Inspector: Vershaw
Page 1 of 4

NARRATIVE

On 18 February and 19 February 2003, Kaare Jacobsen and I (Rebecca Vershaw) collected groundwater samples at Modern Plating Corporation (MPC). The purpose of this Compliance Sampling Inspection (CSI) is to evaluate the site's compliance with the groundwater monitoring program identified in permit number B-167, the action items listed in the 19 September 2002 letter from Fehr-Graham and Associates (Fehr-Graham) and to collect groundwater samples with technicians from Fehr-Graham.

I met and interviewed Bob Frey and Brian Paluzzi; sampling technicians from Fehr-Graham and Darrell Hill, MPC's environmental contact. Groundwater samples collected from monitoring wells G5M, G6S, G6M, G8M AND G8S were analyzed for VOCs (volatile organic compounds). Groundwater samples collected from monitoring wells G5L, G9S, GAOM, GA2S and GA1S were analyzed for cadmium, chromium, lead and nickel. Groundwater samples collected from monitoring wells MW23B, GA3M, G17L, G18L, G18U and G19U were analyzed for VOCs and cadmium, chromium, lead and nickel.

The well inspection form contains information on the physical integrity of the each well that I collected samples from, in addition to any other well with identified deficiencies (attachment 1). Field data forms are included in attachment 2. The following monitoring wells were not clearly labeled; MW23B, GA3M, G17U, G19L, G19S and G19U (photographs 1770200010~02182003-001, 002, 003, 008, 009 and 011, respectively). Monitoring well MW23B is not listed in the facility's Part B permit, however samples were collected from this well. Also, in accordance with RCRA Permit No. B-167, Section III, D(7) and 77 Ill. Adm. Code 920, monitoring wells should be properly constructed and maintained. However, the outer casing of monitoring well G6M was visibly rusting, thus producing several holes. In addition, the surface seals of monitoring wells G6S and G6M are damaged. Monitoring well GA1S was not equipped with a lock and the inner casing is damaged (photographs 1770200010~02192003-022 and 023). Additionally, the outer casings of monitoring wells GA1S, GA1M and GA2S are inadequately sealed and allow for the infiltration of water (photographs 1770200010~02192003-022, 021 and 020, respectively). Monitoring wells: G17L, G18L, G18U, G5M, G5L, G6S, G6M, G8M, G8S, G9S and GA0M are depicted in photographs 1770200010~02182003-004, 005, 006, 012, 013 and 1770200010~02192003-014, 015, 016, 017, 018, 019, respectively.

The following items were noted during the inspection. The depth to water indicator was decontaminated as it was removed from each well. According to Brian Paluzzi, monitoring wells G17M and G17L were redeveloped in February 2003. The dedicated bailers that had previously been stored in the wells had been removed from the wells I inspected.

Also, each monitoring well that I inspected was equipped with a 1/8" hole in the cap for venting purposes. Additionally, the following wells had visible weep holes; G18L, G18U, G5M, G5L, G6S, G6M, G9S and GA0M.

Purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well. Monitoring well G19M is shown in photographs 1770200010~02182003-007 and 010. Photograph 1770200010~02182003-010 portrays how purged groundwater was managed from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19. This was done in accordance with the memorandum in attachment 3.

The purging technique is questionable. Purging began from the bottom of the well rather than the top of the water column or the top of the screen. The wells were purged at a rate of approximately two gallons per minute. There was no device in place to control the flow rate during sampling, except for manually slowing the flow by bending the tubing, thus samples were not collected in a manner that would cause minimal agitation.

Darrell Hill supplied information on leachate generation from the CAMU (attachment 4). Additional information is needed to qualify this data and to clarify which systems the leachate data is collected from. Data from the Leachate Collection System (Phases 1 and 2) should be recorded in a manner that allows for a historical review of the recorded information. Also, the required leachate data from the Leachate Detection System (Phases 1 and 2) should be recorded in a manner that facilitates a comparison to the action leakage rate of 4,680 gal/day.

The sampling results from the facility will be examined and compared to the Agency's results and all applicable regulations and permit stipulations via a Non-financial Record Review (NRR).

Summary of Apparent Violations

1. Section 12(a) of the Illinois Environmental Protection Act: Purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.

2. Section 12(d) of the Illinois Environmental Protection Act: Purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.

3. Section 21(d)(1) of the Illinois Environmental Protection Act: In contrast to of RCRA Permit Log No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well. Also, in contrast to RCRA Permit No. B-167, Attachment B, Revised Figure F-2, the recorded leachate data does not facilitate a comparison to the action leakage rate of 4,680 gal/day.

4. Section 21(d)(2) of the Illinois Environmental Protection Act: The owner/operator is in violation of Sections 12(a), 12(d), 21(d)(1) and 21(f) of the Illinois Environmental Protection Act and 35 Ill. Adm. Code 620.115, 703.121(a), 724.115(c), 724.197(c), 724.651(c)(4)(A)(ii) and 724.651(e)(4)(D).

5. Section 21(f) of the Illinois Environmental Protection Act: In contrast to RCRA Permit No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well. Also, in contrast to RCRA Permit No. B-167, Attachment B, Revised Figure F-2, leachate data is not recorded in a manner to be compared to the action leakage rate of 4,680 gal/day.

6. 35 Ill. Adm. Code 620.115: In contrast to RCRA Permit No. B-167, Section III (H)(1), purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well.

7. 35 Ill. Adm. Code Section 703.121(a): Modern Plating Corporation is in violation of conditions imposed by RCRA Permit No. B-167.

8. 35 Ill. Adm. Code 724.115(c): The inner casing of monitoring well GA1S is damaged. The outer casings of monitoring wells GA1S, GA1M and GA2S are inadequately sealed and allow for the infiltration of water. In addition, monitoring wells G6S and G6M have damaged surface seals.

9. 35 Ill. Adm. Code 724.197(c): The inner casing of monitoring well GA1S is damaged.

10. 35 Ill. Adm. Code 724.651(e)(4)(A)(ii): Modern Plating Corporation has not qualified the collected leachate data to assure compliance with the regulations.

11. 35 Ill. Adm. Code 724.651(c)(4)(D): Modern Plating Corporation has not qualified the collected leachate data to ensure the integrity of the cap, final cover, or other containment system.

12. RCRA Permit Log No. B-167, Section III (D)(1): The inner casing of monitoring well GA1S is damaged. The outer casings of monitoring wells GA1S, GA1M and GA2S are inadequately sealed and allow for the infiltration of water. In addition, monitoring wells G6S and G6M have damaged surface seals.

13. RCRA Permit Log No. B-167, Section III (D)(3): The Permittee has not notified the Illinois EPA that monitoring wells GA1S, GA1M, GA2S, G6S and G6M are damaged.

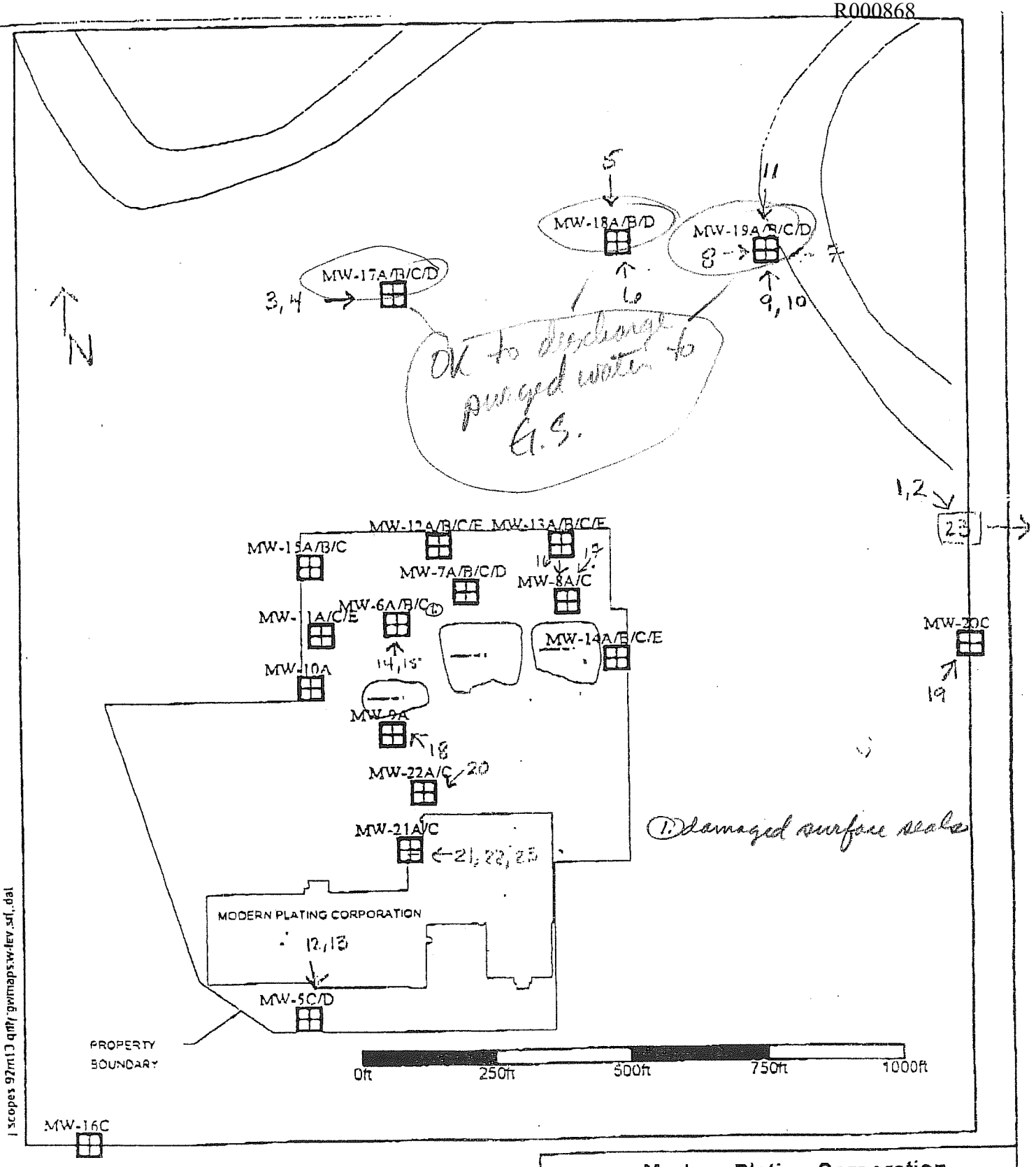
14. RCRA Permit Log No. B-167, Section III (D)(6): Monitoring well GA1S is not equipped with a protective lock.

15. RCRA Permit Log No. B-167, Section III (H)(1): In contrast to page E-11 of Section E of the approved permit application, purged groundwater from monitoring wells MW23B and GA3M, and monitoring well nests 17, 18 and 19 was disposed of on the ground near each respective well. Also, in contrast to page E-12 of Section E of the approved permit application; samples were not collected in a manner that would cause minimal agitation.

16. RCRA Permit Log No. B-167, Attachment B, F-b(7)(d): Modern Plating Corporation did not clarify which system the leachate data is collected from.

17. RCRA Permit Log No. B-167, Attachment B, F-2(b)(7)(b): The recorded leachate data does not facilitate a comparison to the action leakage rate of 4,680 gal/day.

R000868



I:\scopes 97\m13 qtr\ gwmaps\w-lev.srf, dat

MW-14: Groundwater Monitoring Well Nest
A:Upper Well Unconsolidated Aquife
B:Lower Well Unconsolidated Aquife
C:Upper Well Dolomite Aquifer
D/E:Lower Well Dolomite Aquifer

Modern Plating Corporation

Figure 2-1

Site Groundwater Monitoring Wells

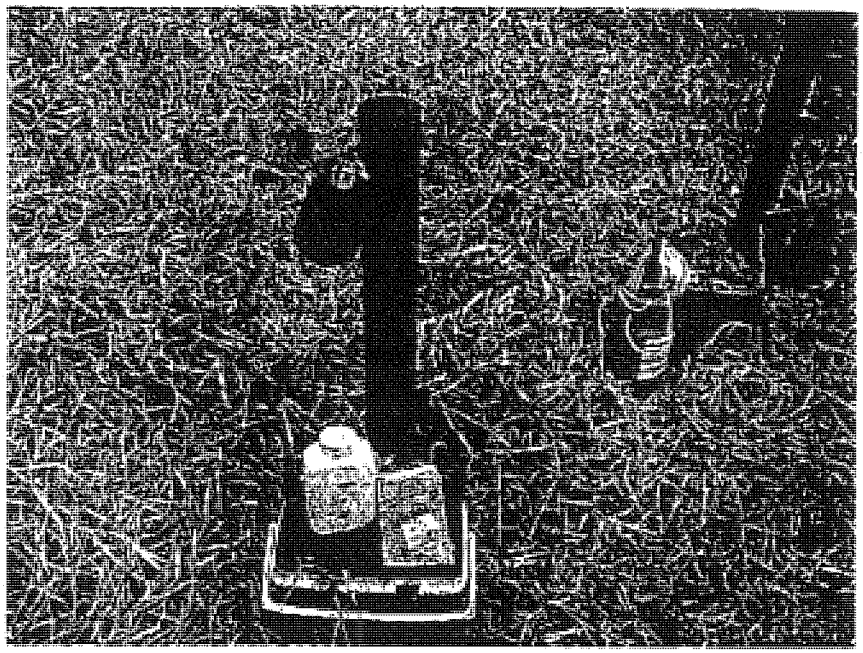
Scale: See Scale Bar	Date: May 1997
Prepared By: Foth & Van Dyke	By: SVD1

PHOTOGRAPHS ATTACHED 2-02/8 2003 -001
THROUGH 2-02/9 2003 -023

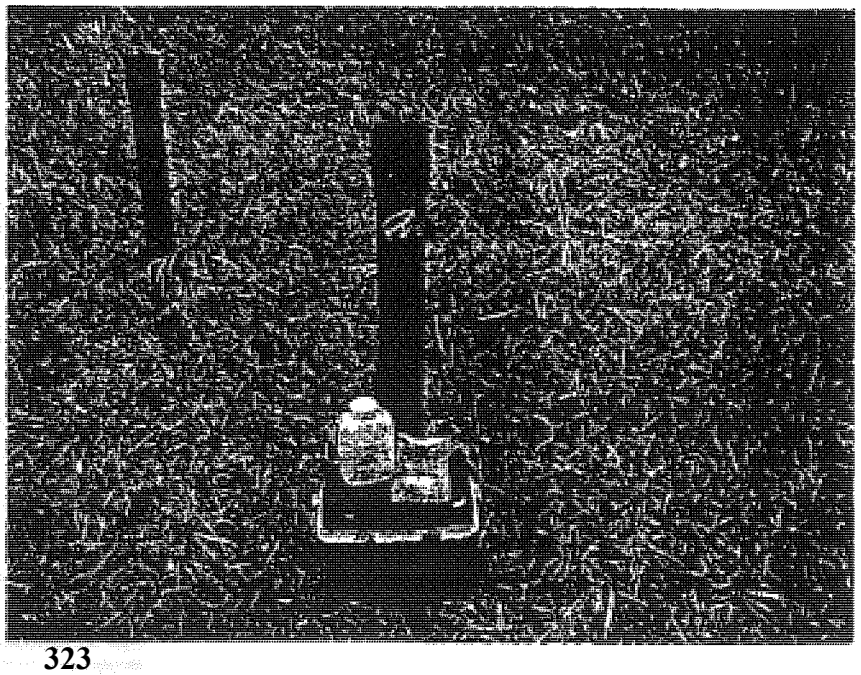
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

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COMMENTS: MW23B



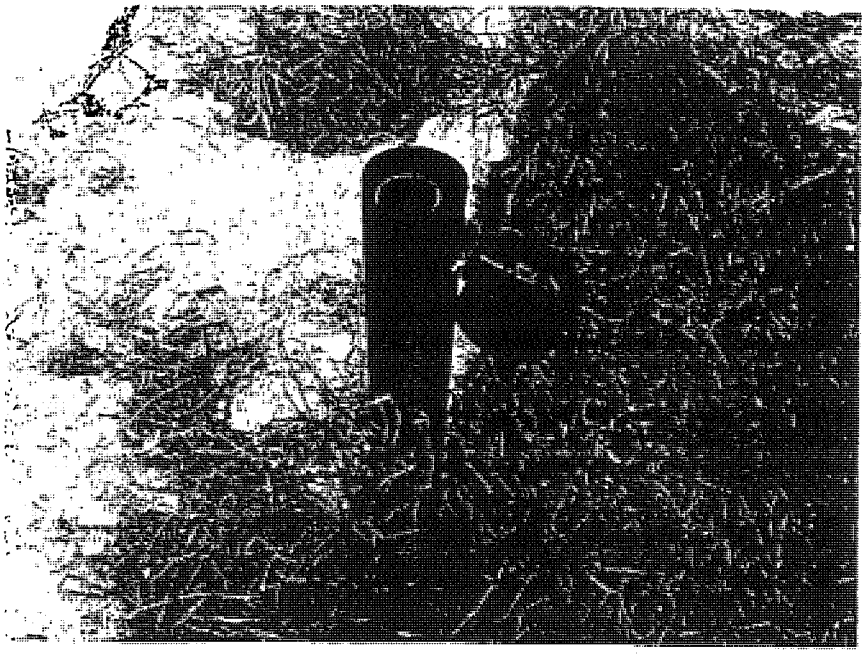
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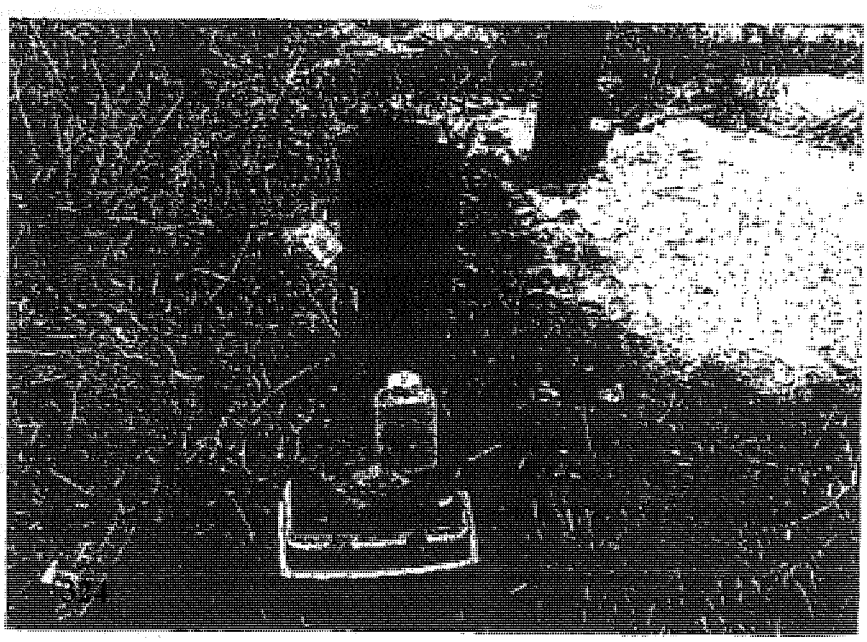
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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COMMENTS: G17U



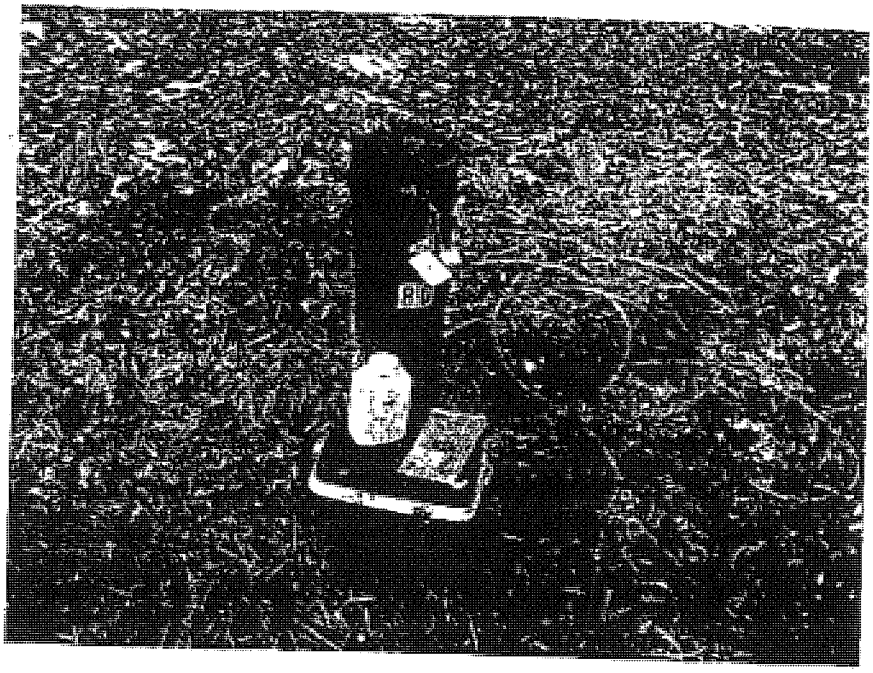
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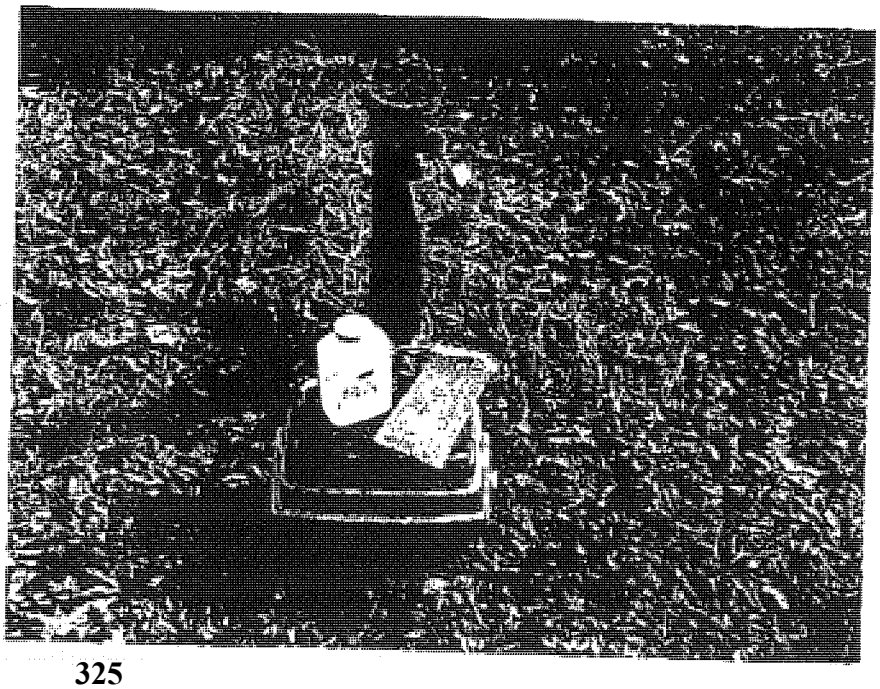
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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COMMENTS: G18L



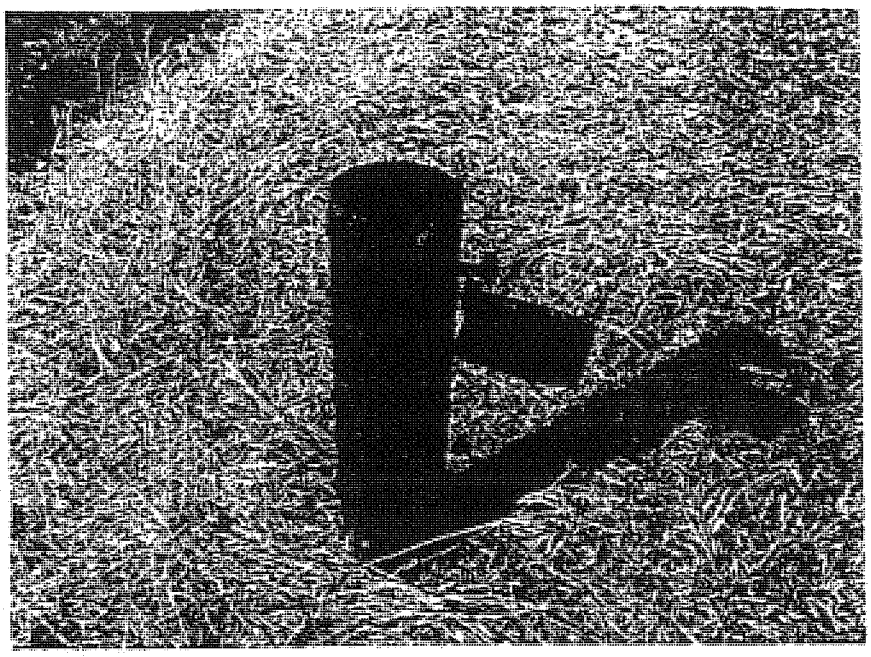
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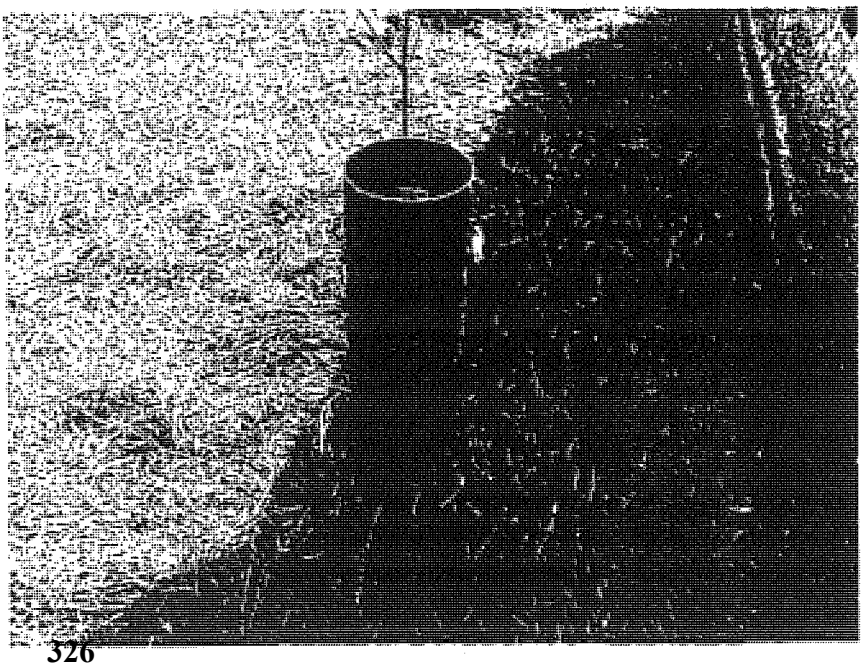
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

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COMMENTS: G19M



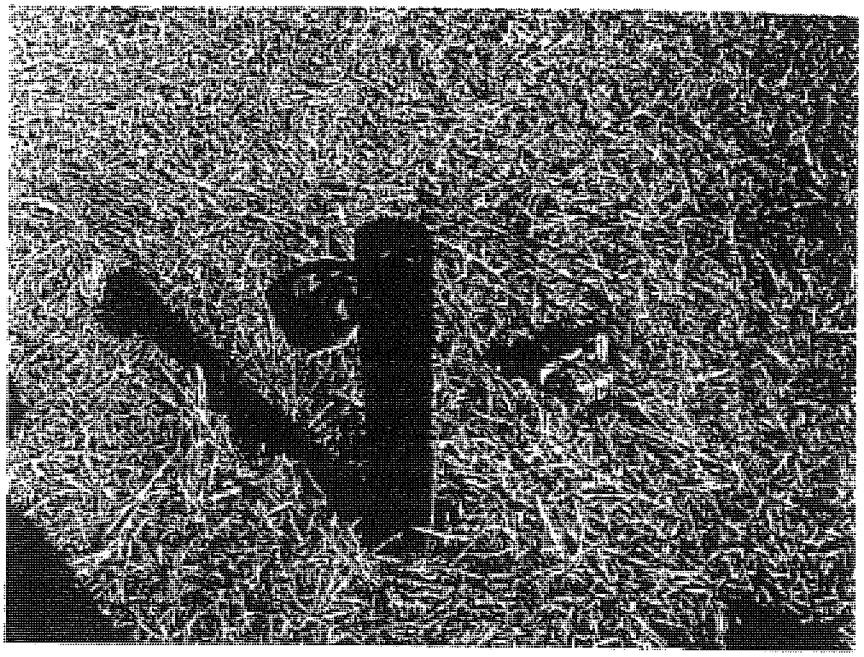
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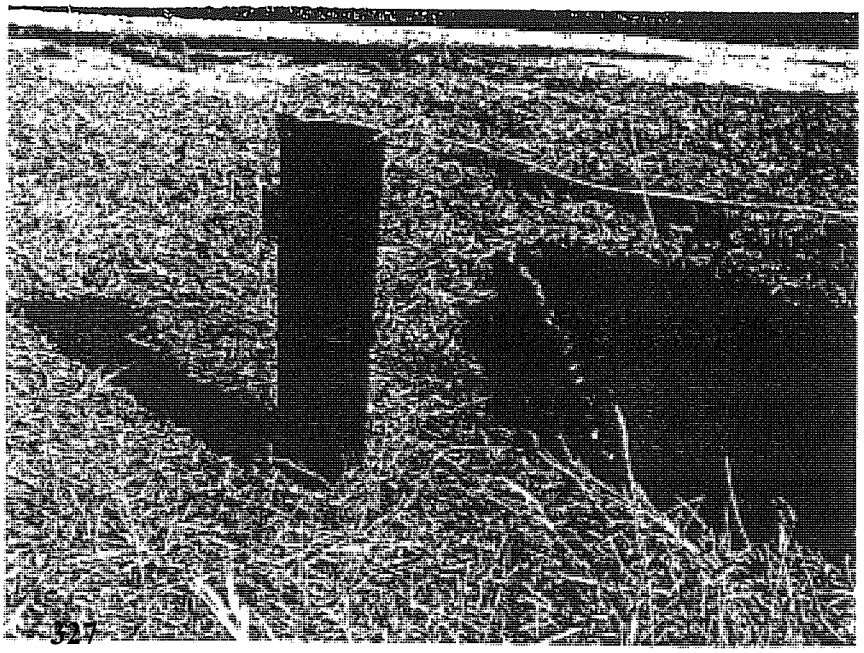
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

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PHOTO FILE NAME:
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COMMENTS: G19S



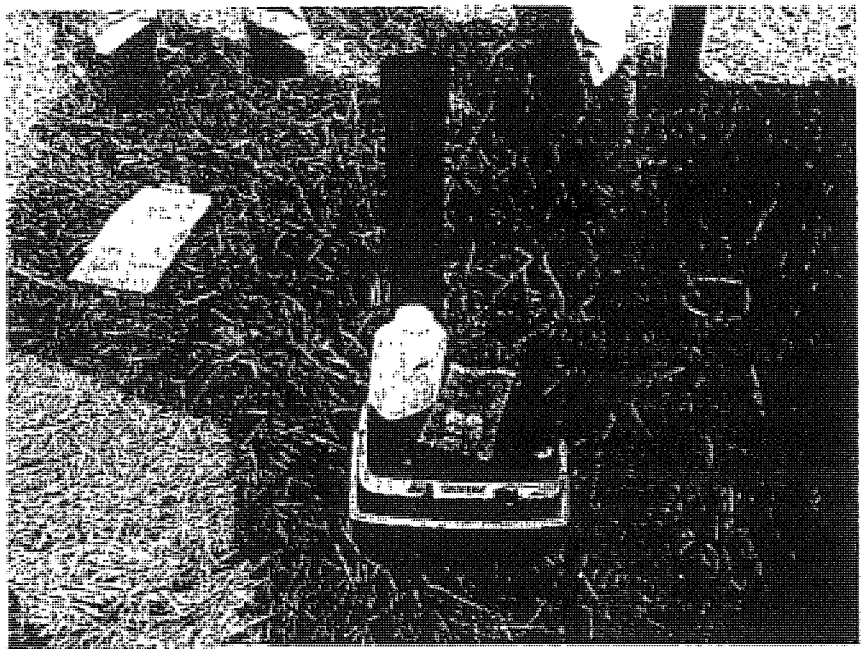
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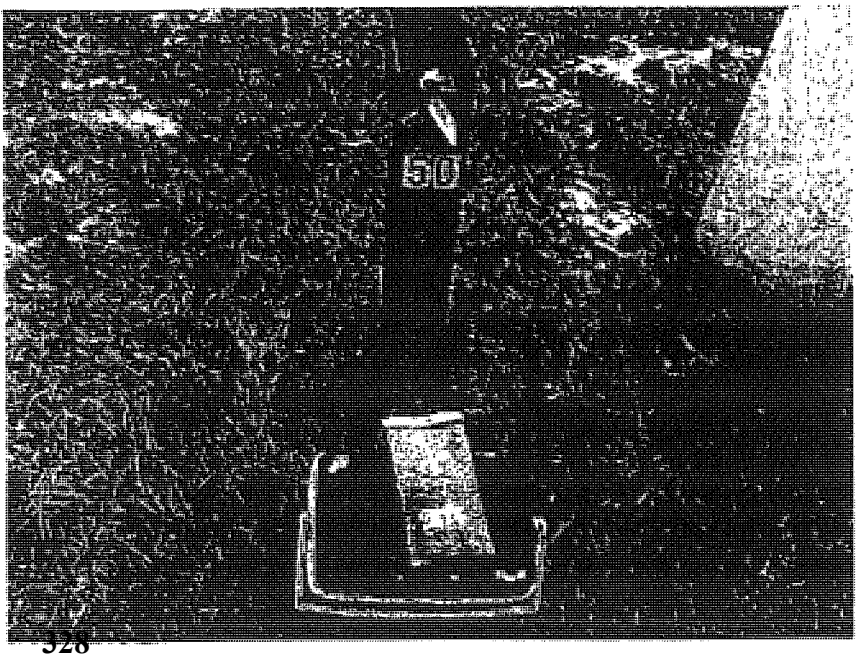
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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COMMENTS: G19U



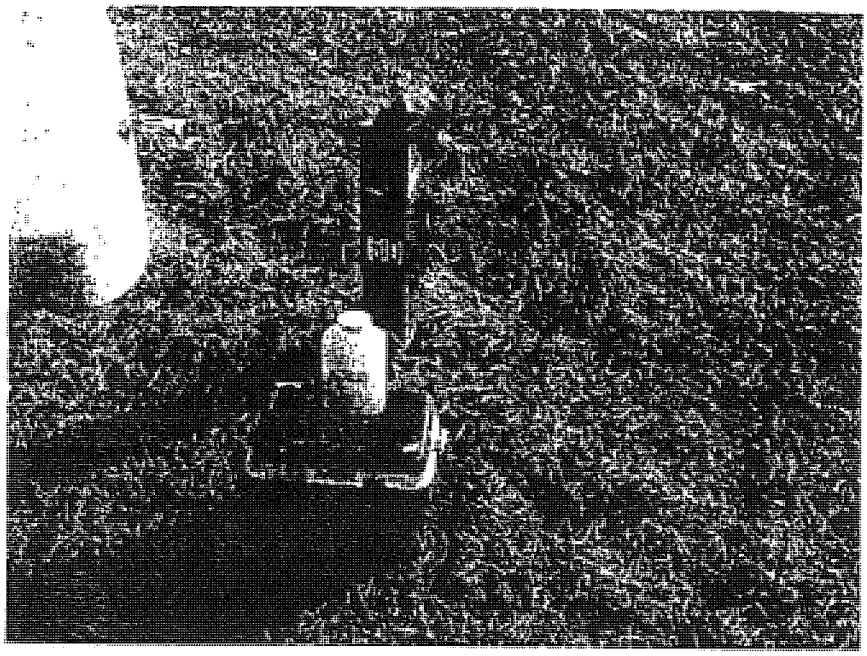
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1770200010-02182003-012
COMMENTS: G5M



I.PC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

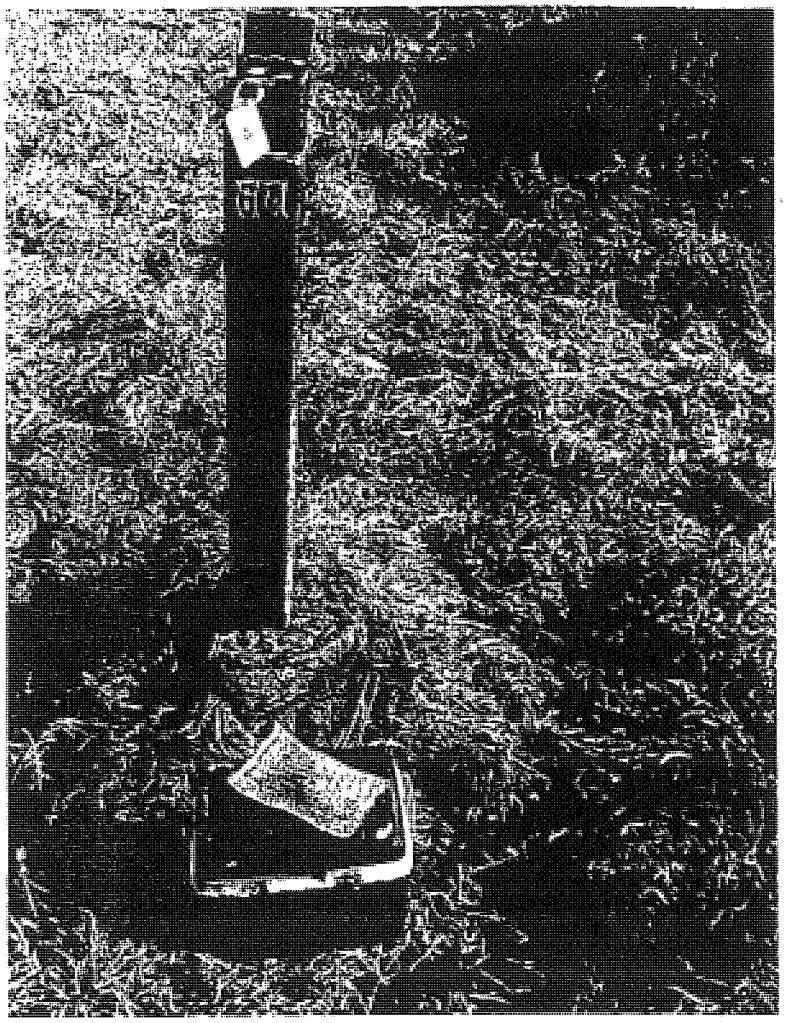
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COMMENTS: G5L



LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

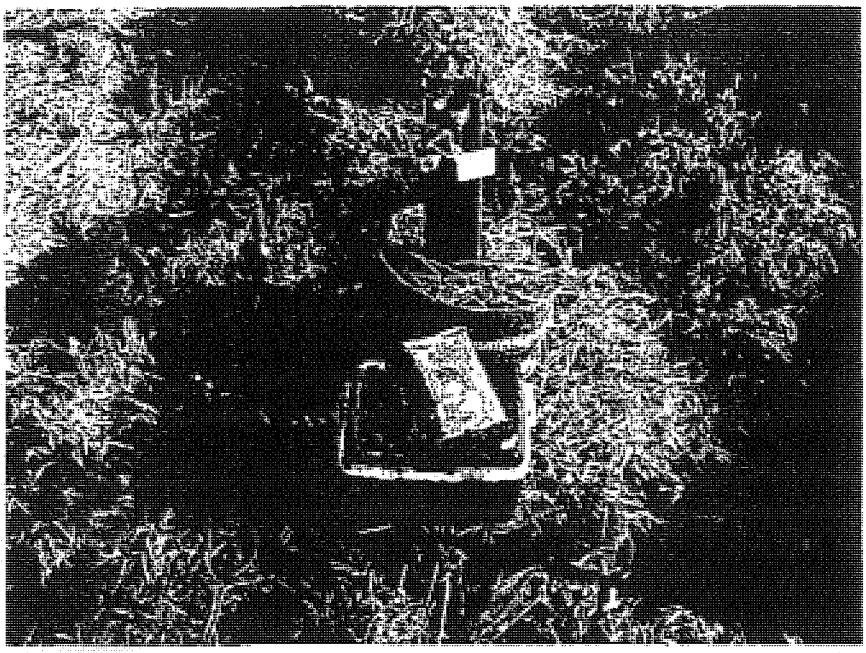
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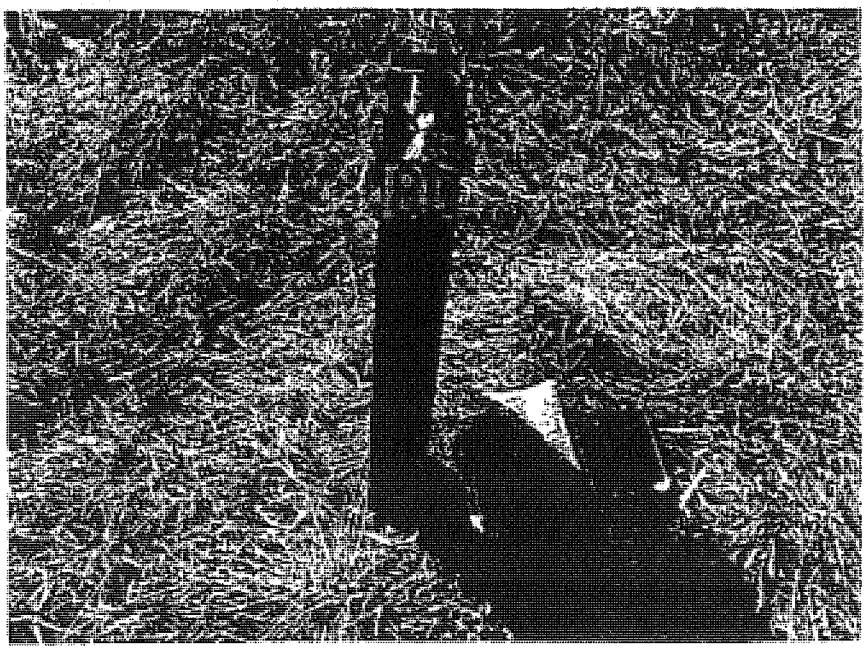
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FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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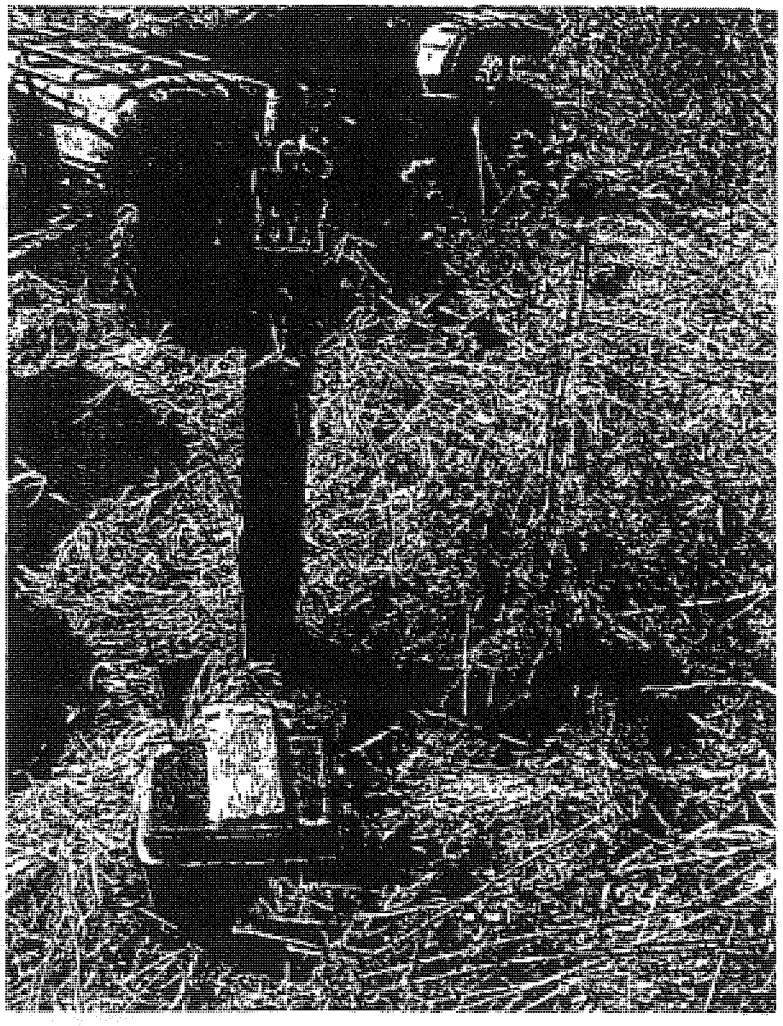
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LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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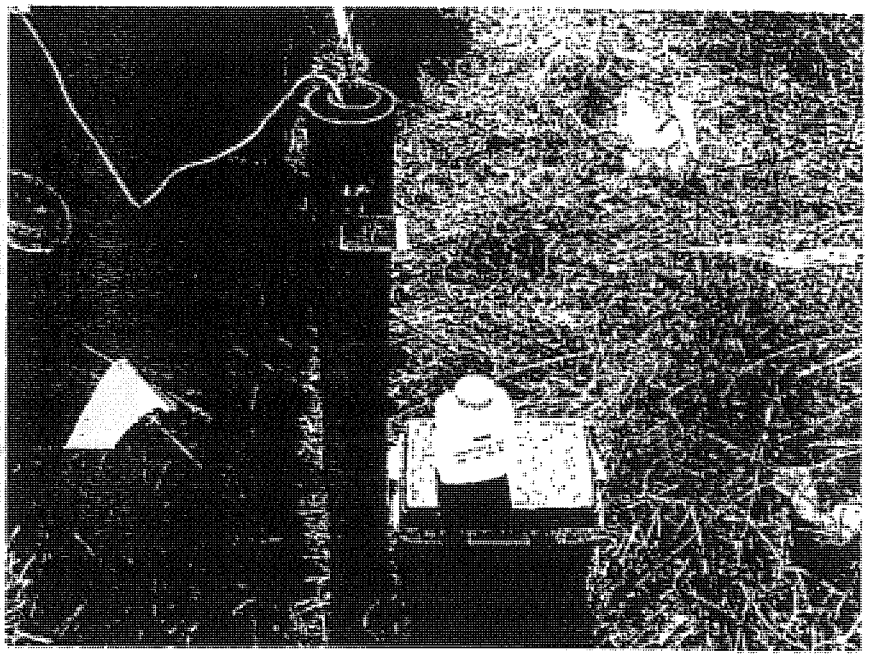
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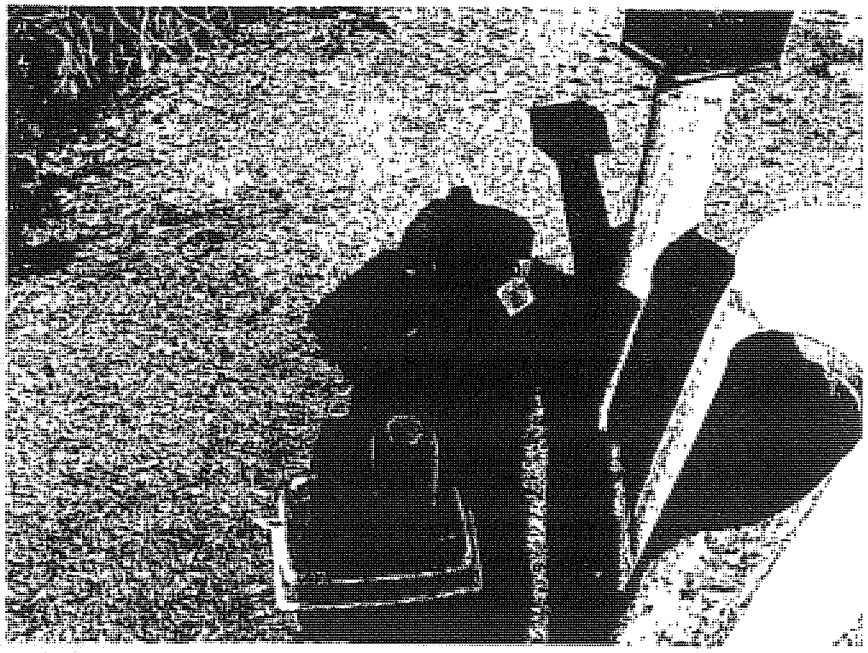
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FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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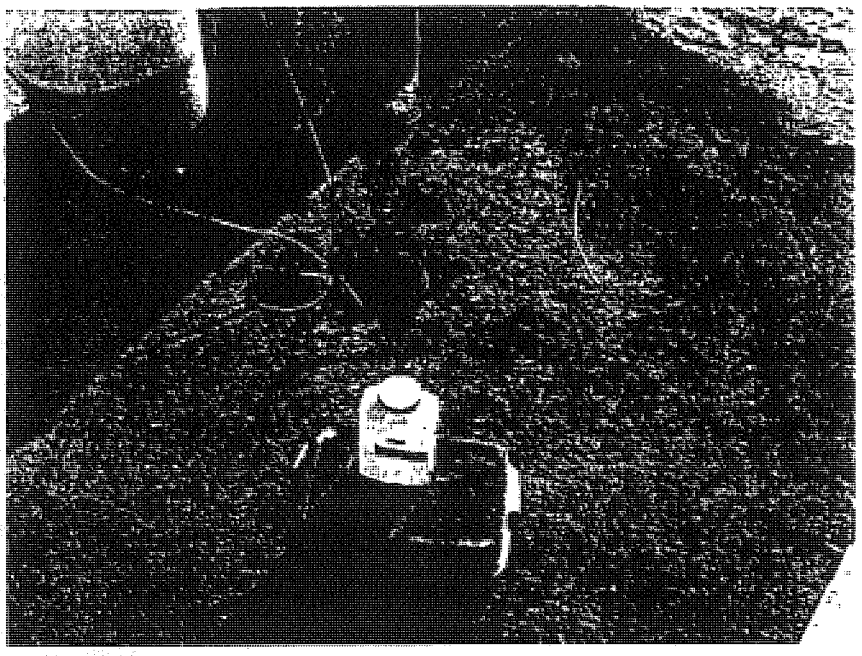
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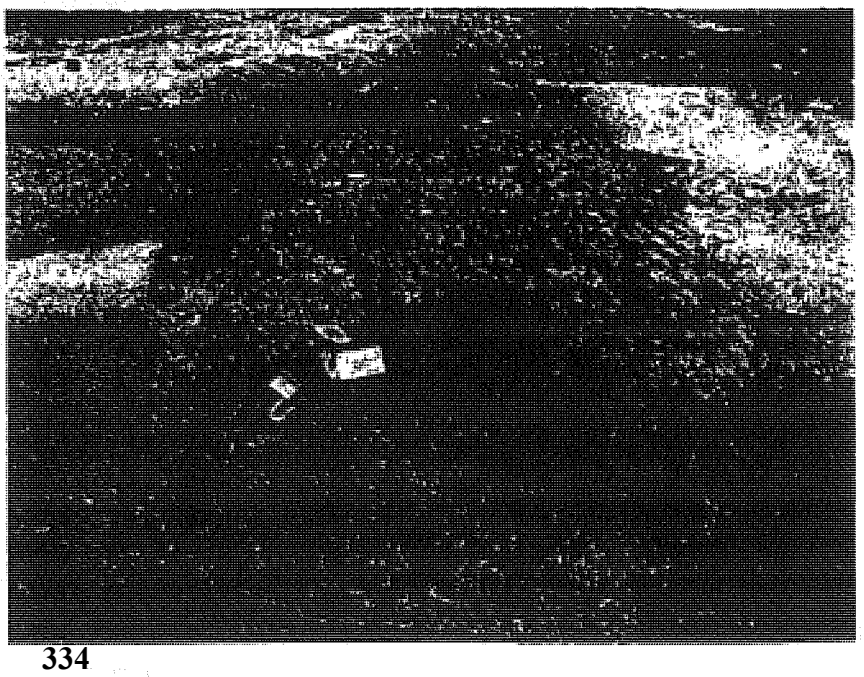
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

DIGITAL PHOTOGRAPH(S)

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COMMENTS: GA2S



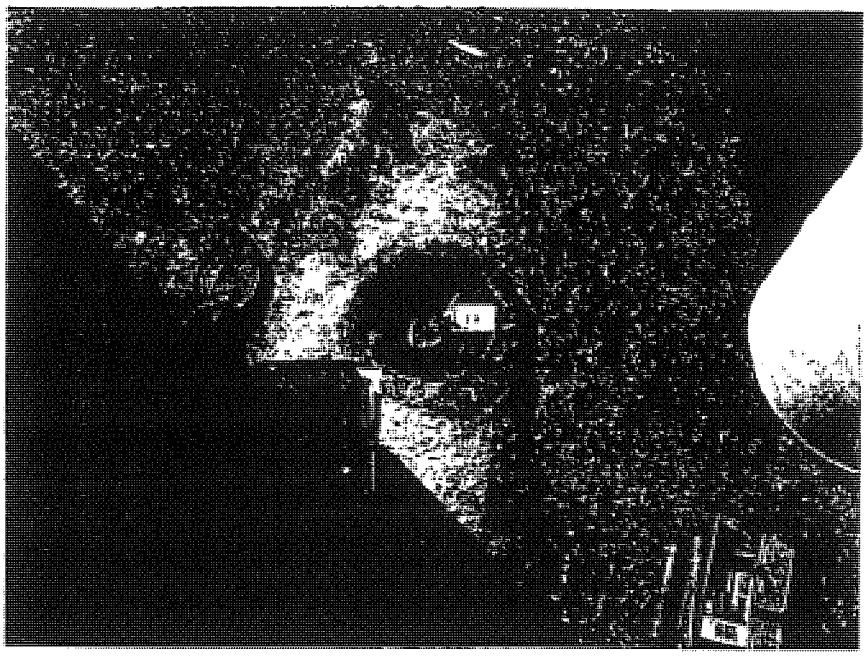
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COMMENTS: GA1M



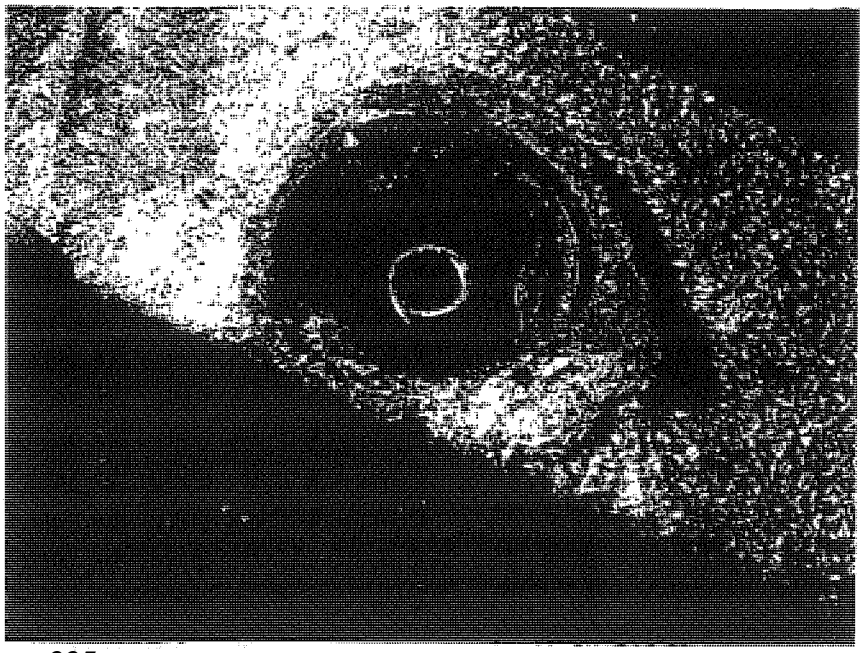
LPC #1770200010 –STEPHENSON COUNTY
FREEPORT/ MODERN PLATING CORPORATION
FOS FILE

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DATE: 19 FEB 03
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COMMENTS: GAIS



ATTACHMENT 1: IEPA MONITOR WELL INSPECTION FORM

LPC# 177020100010 County STEPHENSON

City/Site Name FREEPORT/ MODERN PLATING CORPORATION

If any problem is observed, describe in the comment section and take a photo.

Well/ Piezometer	Lock in Place Y/N	Well Clearly Labeled Y/N	Survey Mark Present Y/N	Cap Vent Y/N	Standing or Ponded Water Y/N	Drain Hole Y/N	Evidence of Collision Damage	See Permit & 620.505(a)(5)(D)(iii) Surface Seal Integrity	See Permit & 620.505(a)(5)(D)(iii) Evidence of Casing Deterioration or lack of physical integrity? (Dents, brittle, stained, loose?) Inner	Outer	Comments	Photo #
GA3M	Y	N	*	Y	N	N	N	BURIED	INTACT	INTACT		2
MW23B	Y	N	*	Y	N	N	N	BURIED	INTACT	INTACT		1
G17L	Y	Y	*	Y	N	N	N	BURIED	INTACT	INTACT		4
G17U	Y	N	*	Y	N	N	N	BURIED	INTACT	INTACT		3
G18L	Y	Y	*	Y	Y	Y	N	BURIED	INTACT	INTACT		5
G18U	Y	Y	*	Y	N	Y	N	BURIED	INTACT	INTACT		6
G19L	Y	N	*	Y	Y	N	N	BURIED	INTACT	INTACT	FROZEN; SAMPLE WAS NOT COLLECTED	8
G19S	Y	N	*	Y	N	N	N	BURIED	INTACT	INTACT		9
G19U	Y	N	*	Y	N	N	N	BURIED	INTACT	INTACT		11
G19M	Y	Y	*	Y	N	N	N	BURIED	INTACT	INTACT		7, 10
G5M	Y	Y	*	Y	Y	Y	N	INTACT	INTACT	INTACT		12

* surveyed at top of casing

ATTACHMENT 1: IEPA MONITOR WELL INSPECTION FORM

LPC# 177020100010 County STEPHENSON

City/Site Name FREEPORT/ MODERN PLATING CORPORATION

If any problem is observed, describe in the comment section and take a photo.

Well/ Piezometer	Lock in Place Y/N	Well Clearly Labeled Y/N	Survey Mark Present Y/N	Cap Vent Y/N	Standing or Ponded Water Y/N	Drain Hole Y/N	Evidence of Collision Damage	See Permit & 620.505(a)(5)(D)(iii) Surface Seal Integrity	See Permit & 620.505(a)(5)(D)(iii) Evidence of Casing Deterioration or lack of physical integrity? (Dents, brittle, stained, loose?) Inner	Outer	Comments	Photo #
G5L	Y	Y	*	Y	N	Y	N	BURIED	INTACT	INTACT	BROWN PURGED WATER	13
G6S	Y	Y	*	Y	N	Y	N	DAMAGED	INTACT	INTACT		14
G6M	Y	Y	*	Y	N	Y	Y	DAMAGED	INTACT	RUST; HOLES		15
G8S	Y	Y	*	Y	N	N	N	BURIED	LOOSE	INTACT		17
G8M	Y	Y	*	Y	N	N	N	BURIED	INTACT	INTACT		16
G9S	Y	Y	*	Y	N	Y	N	BURIED	INTACT	INTACT		18
GA0M	Y	Y	*	Y	N	Y	N	BURIED	INTACT	INTACT		19
GA2S	Y	Y	*	Y	ICE	N/A	N	INTACT	INTACT	INTACT		20
GA1S	N	Y	*	Y	ICE	N/A	N	INTACT	DAMAGED	INTACT	INNER CASING IS TOO HIGH TO EQUIP WITH LOCK AND COVER; INNER CASING HAS A CIRCULAR CRACK COVERING ¼ OF DIAMETER	22, 23
GA1M	Y	Y	*	N	ICE	N/A	N	INTACT	INTACT	INTACT		21

* surveyed at top of casing

ATTACHMENT 2

Client: Modern Plating Corporation Project: Groundwater Sampling Job No.: 43226

Date: 2-17-03 – 2-19-03 Weather: Overcast, 20 deg. F Initials: BP/BF

Comments:

Sample Number	Well Elevation	Static Level Elevation	Bot .Depth Elevation	Stick-up	Water Depth	Well Vol. Purged	pH	Temp.	Specific Cond.	Collection Time	Well Size	Purge Equip.	Sampling Equip.	Sample Characteristics
		14.46	29.92			2.52								
16959 - MW16C					15.46	7.57	6.65	10.5	0.617 uS	9:45	2-inch	C	C	Clear
16960 - MW16dup														
		2.24	67.70			10.68								
16961 - MW11C					65.46	32.05	7.08	8.4	0.740 uS	10:35	2-inch	C	C	Clear
		5.75	15.62			1.61								
16902 - MW15A					9.87	4.83	7.26	6.2	0.898 uS	11:00	2-inch	C	C	Clear
		5.66	34.30			4.67								
16903 - MW15B					28.64	14.02	7.40	5.6	0.879 uS	10:50	2-inch	C	C	Clear
			106.81			17.43								
MW 15C					105.81	52.29					2-inch	C	C	Frozen
		4.30	15.61			2.06								
16965 - MW12A					11.31	6.18	7.10	5.0	1.782 uS	11:25	2-inch	C	C	Clear
		2.71	29.87			4.43								
16966 - MW12B					27.16	13.30	6.93	9.2	1.281 uS	11:35	2-inch	C	C	Clear
		3.69	15.32			1.90								Slightly
16967 - MW13A					11.63	5.69	7.52	6.0	1.066 uS	11:50	2-inch	C	C	Turbid
		2.23	29.22			4.40								
16968 - MW13B					26.99	13.21	7.06	9.7	0.950 uS	12:00	2-inch	C	C	Clear
		7.18	22.27			2.46								
16969 - MW14A					15.09	7.39	6.90	10.5	1.121 uS	14:15	2-inch	C	C	Clear

Notes : All elevation and depth measurements are in feet. Purging/sampling equipment: A-Bladder Pump; B-Bailer; C-Submersible; D-Other (specify)

I certify that sampling procedures were in accordance with applicable EPA and Fehr-Graham & Associates protocol. All measurements and characteristics were collected and recorded on this date unless otherwise indicated.

Signature : _____ Date: _____

Client: Modern Plating Corporation Project: Groundwater Sampling Job No.: 43226

Date: 2-17-03 – 2-19-03 Weather: Overcast, 20 deg. F Initials: BP/BF

Comments:

Sample Number	Well Elevation	Static Level Elevation	Bot Depth Elevation	Stick-up	Water Depth	Well Vol. Purged	pH	Temp.	Specific Cond.	Collection Time	Well Size	Purge Equip.	Sampling Equip.	Sample Characteristics
16970 - MW14B		6.71	25.51		16.80	2.74 8.23	7.17	9.6	1.141 uS	14:05	2-inch	C	C	Clear
16971 - MW14C		7.66	82.55		74.59	12.17 36.52	7.64	8.1	0.767 uS	13:55	2-inch	C	C	Clear
16972 - MW 23B		10.75	23.39		12.64	2.06 6.19	7.52	8.6	0.710 uS	9:00	2-inch	C	C	Clear
16973 - MW 23C		10.53	37.60		27.07	4.42 13.25	7.93	8.6	0.790 uS	9:25	2-inch	C	C	Goes dry Clear
16976 - MW17B		11.02	39.83		28.81	4.70 14.11	7.17	11.0	0.811 uS	11:00	2-inch	C	C	Clear
16977 - MW 17C		10.09	111.08		100.99	16.43 49.44	7.19	10.3	0.716 uS	10:50	2-inch	C	C	Clear
16976 - MW 17D		9.90	123.56		113.68	18.55 55.66	7.65	6.8	0.832 uS	10:20	2-inch	C	C	Clear
16979 - MW18B		9.87	40.32		30.45	4.97 14.91	7.49	9.8	0.769 uS	12:10	2-inch	C	C	Clear
16980 - MW 18D		8.84	150.27		141.43	23.08 69.24	7.90	7.9	0.521 uS	11:50	2-inch	C	C	Goes dry Clear
16981 - MW19B		10.83	40.12		29.29	4.78 14.34	7.34	9.3	0.767 uS	14:20	2-inch	C	C	Clear
16982 - MW 19C		9.25	113.60		104.35	17.03 51.09	7.86	10.5	0.538 uS	14:05	2-inch	C	C	Clear
- MW 19D			153.30		153.30	25.02 75.06					2-inch	C	C	Frozen

Notes : All elevation and depth measurements are in feet. Purging/sampling equipment: A-Bladder Pump; B-Bailer; C-Submersible; D-Other (specify)

I certify that sampling procedures were in accordance with applicable EPA and Fehr-Graham & Associates protocol. All measurements and characteristics were collected and recorded on this date unless otherwise indicated.

Signature: _____ Date: _____

Client: Modern Plating Corporation Project: Groundwater Sampling Job No.: 43225

Date: 2-17-03 – 2-19-03 Weather: Overcast, 20 deg. F Initials: BP/BF

Comments:

Sample Number	Well Elevation	Static Level Elevation	Bot. Depth Elevation	Stick-up	Water Depth	Well Vol. Purged	pH	Temp.	Specific Cond.	Collection Time	Well Size	Purge Equip.	Sampling Equip.	Sample Characteristics
- PR-1													D	River frozen
- PR-2													D	River frozen
16984 - MW5C		21.73	25.58		3.85	0.63 1.88	7.04	11.6	0.755 uS	14:55	2-inch	C	C	Clear
16985 - MW5Cdup														
16986 - MW5D		21.00	39.86		18.86	3.08 9.23	7.26	11.1	0.765 uS	15:10	2-inch	C	C	Slightly turbid
16987 - MW5Ddup														
16988 - MW6A		2.31	15.56		13.25	2.16 6.49	7.17	7.3	1.215 uS	9:45	2-inch	C	C	Clear
16989 - MW6C		2.67	45.64		42.97	7.01 21.04	7.25	10.7	0.772 uS	9:55	2-inch	C	C	Clear
16990 - MW8A		9.24	20.75		11.51	1.86 5.64	7.00	11.1	0.960 uS	11:05	2-inch	C	C	Clear
16991 - MW8C		6.20	78.24		72.04	11.76 35.27	7.46	10.6	0.761 uS	10:50	2-inch	C	C	Clear
16992 - MW7A		3.72	15.46		11.74	1.92 5.75	6.73	9.7	1.711 uS	14:45	2-inch	C	C	Clear
16993 - MW7D		2.53	52.93		50.4	8.23 24.68	7.18	9.8	0.870 uS	14:35	2-inch	C	C	Clear

Notes : All elevation and depth measurements are in feet. Purging/sampling equipment: A-Bladder Pump; B-Bailer; C-Submersible; D-Other (specify)

I certify that sampling procedures were in accordance with applicable EPA and Fehr-Graham & Associates protocol. All measurements and characteristics were collected and recorded on this date unless otherwise indicated.

Signature: _____ Date: _____

Client: Modern Plating Corporation Project: Groundwater Sampling Job No.: 43226

Date: 2-17-03 – 2-19-03 Weather: Overcast, 20 deg. F Initials: BP/BF

Comments:

Sample Number	Well Elevation	Static Level Elevation	Bot. Depth Elevation	Stick-up	Water Depth	Well Vol. Purged	pH	Temp.	Specific Cond.	Collection Time	Well Size	Purge Equip.	Sampling Equip.	Sample Characteristics
16994 - MW20C		21.14	27.52		6.38	1.04 3.12	7.40	9.8	0.814 uS	13:20	2-inch	C	C	Clear
16995 - MW9A		13.34	26.09		12.75	2.08 6.24	7.30	11.3	1.262 uS	11:45	2-inch	C	C	Clear
16996 - MW21A		11.06	24.77		13.71	2.24 6.71	7.35	13.0	1.520 uS	14:20	2-inch	C	C	Clear
16997 - MW22A		13.89	25.08		11.19	1.83 5.48	7.38	15.2	1.673 uS	13:50	2-inch	C	C	Clear
16998 - MW10A		12.18	23.85		11.67	1.90 5.71	7.50	9.2	0.941 uS	11:30	2-inch	C	C	Clear

Notes: All elevation and depth measurements are in feet. Purging/sampling equipment: A-Bladder Pump; B-Bailer; C-Submersible; D-Other (specify)

I certify that sampling procedures were in accordance with applicable EPA and Fehr-Graham & Associates protocol. All measurements and characteristics were collected and recorded on this date unless otherwise indicated.

Signature: _____ Date: _____

ATTACHMENT 3

→ Rebecca R000890haw
IEPA
2-19-03

FILE MEMO:

DATE: January 07, 2000

TO: File

FROM: Brian P

RE: Meeting on Jan 05, 2000

On January 05, 2000 Brian Paluzzi of Fehr-Graham & Associates met with representatives of Foth & Van Dyke and Modern Plating. In attendance were Ron Meister, P.G. and Steve Laszewski, PhD. Of F&VD; Darrell Hill, Dave Servatius and Craig Skolrood of Modern Plating Corporation. F&VD wanted to discuss any problems/concerns encountered during sampling activities, and to review the new sampling plan which takes effect this year. Sampling frequency has been reduced to two times per year, likely to be February and September. F&VD are to install the new well (#23), and will provide FGA with the new sampling plan, revised IEPA permit and protocol for collecting samples from the Pecatonica River. It was indicated that Ms. Toni Clement of F&VD would contact FGA with information. F&VD indicated that it is ok to discharge purge waters from well nests 17, 18 and 19 to the ground surface. MPC is looking into purchasing an all-terrain vehicle to facilitate sampling and purge water removal from the swamp areas.

ATTACHMENT 4

(INCHES) READ FROM TOP SCALE DOWN

DAY 1 →

4/30/03	106 - START 32 - END 74 TOTAL	129 65 64	118 21 97	129 20 109
	28 16 12	81 20 61	32 18 14	56 21 35
	54 16 38	42 17 25	101 23 78	90 30 60
	81 30 51	129 43 86	111 24 87	81 30 51
	129 43 86	111 38 73	111 25 86	END. READ FROM BOTTOM

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026
217/524-3300

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

CERTIFIED MAIL
7002 3150 0000 1219 8445

November 7, 2003

Modern Plating Corp.
Attn: Craig Skolrood
701 S. Hancock Avenue
Freeport, IL 61032

DARREL — PLEASE SEE ME ON THIS.
11-11-03

Re: LPC #1770200010 -- Stephenson County
MODERN PLATING CORP
Subpart F

Dear Mr. Skolrood:

This letter is being sent to you because your facility currently submits reports documenting the results of routine groundwater and leachate sampling events at your facility to the Illinois EPA. At this time, the Illinois EPA is informing you that your facility must submit the data in an electronic format (please be advised this includes the 2003 Third Quarter that was recently submitted to the Illinois EPA on the old LPC160 forms dated October 15, 2003 and received by the Illinois EPA on October 17, 2003). Attached is the format that should be used. In order to assist you in this process the Illinois EPA's web site also has information associated with the formatting requirements for the electronic reporting of groundwater data. The web site address is: www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

The Illinois EPA is committed to the protection of groundwater in the State of Illinois and better management of the data submitted to measure a facility's impact on groundwaters of the State. Therefore, the Illinois EPA strongly urges your facility to begin this process so that groundwater and/or leachate data from your facility can be submitted in an electronic format beginning with the next reporting of sampling results. Thank you for your cooperation in this matter.

Should you have questions regarding the submittal of data in an electronic format, please contact Bur Filson of my staff at 217/782-6070.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:jsm

Attachment

Cc: Foth & Van Dyke

ATTACHMENT

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE: L | P | C | S | M | 0 | 1 (1–7)
TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–18)

MONITOR POINT NUMBER (see Instructions) _____ (19–22)

REGION _____ CO. _____

DATE COLLECTED ___/___/___ (23 M D Y 28)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (51)

TIME COLLECTED (24 Hr. Clock) ___:___ (55 H M 59)

UNABLE TO COLLECT SAMPLE (see Instructions) _____ (59)

MONITOR POINT SAMPLED BY (see Instructions) _____ (60)

OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (150–199)

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

ATTACHMENT
(con't.)

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

ATTACHMENT (con't.)
Formatting Requirements for the 02 Record of the Electronically Submitted Groundwater and Leachate Data (the 02 Record portion of the LPC-160 is included for example purposes)

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	00011				
Q	SPEC COND (unfiltered umhos)	00094				
Q	pH (unfilted units)	00400				
Q	ELEV OF GW SURF (ft ref MSL)	71993				
Q	DEPTH OF WATER (ft below LS)	72019				
A	BTM WELL ELEV (ft ref MSL)	72020				
Q	DEPTH TO WATER FR MEA PT (ft)	72109				

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM02
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	
Spaces 23-28	Date Collected	
Space 29	Lab	
Spaces 30-34	STORET Number	
Space 35	Remarks	
Space 36	Replicate	
Space 37	< or >	
Space 38-47	Value	

COMPLETE ELECTROPLATING SERVICE

MODERN PLATING CORP.

701 S. HANCOCK AVE., P.O. BOX 638, FREEPORT, IL 61032-0638
815/235-3111 815/968-5072 FAX: 815/235-4571

R000897

FAX

Date: 11-13-03

Number of pages including cover sheet: 5

TO: FOTH & VAN DYKE

ATTN: RON MEISTER

Phone:
Fax Phone: 1-820-497-8516
CC:

FROM: DARRELL HILL

Phone: 815/235-3111
Fax Phone: 815/235-4571

REMARKS: ☐ URGENT ☒ FOR YOUR REVIEW ☐ REPLY ASAP ☐ PLEASE COMMENT

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FOTH & VAN DYKE

James E. Meason
Attorney at Law
113 W. Main Street. Rockton. Illinois. 61072. (815) 624-6517

VIA CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 12, 2003

Ms. Joyce Munie
Manager, Permit Section
Bureau of Land
Illinois Environmental Protection Agency
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Re: RCRA Post-Closure Permit Modification Request
Modern Plating Corporation// 1770200010 – Stephenson County

Dear Ms. Munie:

With this letter, the Modern Plating Corporation (Modern Plating) respectfully applies for a modification to the RCRA Post-Closure Permit (Apr. 11, 2000) (Permit). The company submits this request pursuant to Permit § II(G)(1) and 35 Ill. Admin. Code §§ 703.280, 703.281, 703 Appendix A, and 725.245(c)(8).

Summary

Because of the passage of more than two years of the post-closure care period, the remaining potential cost of post-closure care is reduced. Consequently, Modern Plating requests that the Illinois Environmental Protection Agency (IEPA) modify the Permit to reflect the passage of time in the post-closure period and thereby annually reduce the value of the financial assurance. This mechanism would ensure that Modern Plating maintains sufficient funds in its financial assurance to meet post-closure requirements while easing the administrative burden on IEPA and Modern Plating by eliminating the need for the company to submit a RCRA Post-Closure Permit Modification Request each year and the need for the agency to review and approve such submissions.

In the alternative, Modern Plating proposes IEPA modify the Permit to reflect the passage of time in the post-closure period and reduce the value of the financial assurance based on the passage of two years. Of note, the only difference between this alternative proposal and the first proposal is the annual reduction contained in the first proposal, versus the submittal by submittal approach necessitated by the alternative proposal.

Current Permit Terms

Illinois Pollution Control Board (IPCB) regulations require facility owners or operators to establish "financial assurance for post-closure care . . ."[1] Modern Plating chose to establish a letter of credit as permitted by regulation.[2] Subsequently, IEPA issued the Permit incorporating Modern Plating's choice of financial assurance.

Specifically, under the terms of the Permit, Modern Plating must provide "financial assurance for post-closure activities" pursuant to 35 Ill. Admin. Code Part 724,[3] and the Permit requires Modern Plating to "maintain sufficient funds in the letter of credit . . . to meet the post-closure financial assurance requirements . . ."[4] The anticipated annual cost is $25,840, which includes a 10% (i.e., $2,350) contingency.[5] The post-closure care period extends for 30 years.[6] The period began to run on August 6, 2001, the date IEPA received Modern Plating's submission of its certification of closure.[7] Therefore, the 30-year post-closure period expires on August 5, 2031.

Financial Assurance Background

Prior to the agency's issuance of the Permit, Modern Plating's RCRA financial assurance for closure activities reached a maximum of $955,118.28 on December 31, 1999, through amounts held in two trust accounts (known as the "EPA" account and the "Insurance" account). However, with the issuance of the Permit, IEPA increased the financial assurance requirement to "at least $1,519,726" for site development and closure costs.[8] Subsequent discussions between the company, the financial assurance issuing bank, and John Taylor, IEPA's financial assurance representative, led to the joint decision to disregard this requirement since the closure phase would soon be completed (within months) and post-closure would begin. This saved the company approximately $30,000 in unnecessary finance charges (2% of the face amount).

Thereafter, on July 25, 2000, IEPA released $435,370.00 from the EPA account to Modern Plating. The bank transferred funds to the company from the EPA account on August 1, 2000 ($200,000) and November 6, 2000 ($235,370) totaling $435,370.00. Modern Plating paid certain contractor and engineering costs with these funds.

On December 1, 2000, IEPA released $616,742, more than the corpus of the two trusts, for payment to Modern Plating, thereby terminating the trusts. The bank transferred funds to the company from the EPA account on December 12, 2000 ($406,267.71) and from the Insurance account on December 21, 2000 ($159,129.26). The total of these transfers was $565,396.97. The company subsequently paid all contractor and engineering firm costs associated with the project.

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[1] 35 Ill. Admin. Code § 725.245.
[2] 35 Ill. Admin. Code § 725.245(c).
[3] Permit § II(A).
[4] Permit § II(H)(1).
[5] Permit Table I-2.
[6] Permit § II(C)(2).
[7] Telephone conversation with Rob Watson, IEPA (Dec. 12, 2003).
[8] Permit § I(I)(1).

On July 31, 2001, Modern Plating took out a one-year $775,200 irrevocable standby letter of credit (SLOC), payable to the Director, IEPA, for post closure activities. This amount was determined by IEPA in the Permit,[9] taking into consideration the 30 years of costs anticipated multiplied by the $25,840 anticipated annual cost.

On June 20, 2002, Modern Plating took out a $791,169.12 SLOC, which was valid through July 30, 2003. Of note, after consultations with IEPA's Beverly Anderson regarding regulatory inflation factors,[10] on February 18, 2003, Modern Plating submitted amendment number 1 to the June 20, 2002, SLOC, effectively increasing the SLOC by $19,307.88 to a total of $810,477.00. At that time Modern Plating also submitted the required documents[11] establishing a standby trust fund.[12] IEPA returned the June 20, 2002, SLOC on May 29, 2003.

On or about July 30, 2003, Modern Plating took out another one-year SLOC for $810,477.00.

Financial Assurance Proposal

IEPA must approve a decrease in the amount of the SLOC if Modern Plating demonstrates that "the amount exceeds the remaining cost of post-closure care."[13] As stated above, the anticipated annual post-closure cost is $25,840, and the post-closure period is 30 years. Presently, more than two years of this period have passed, thereby reducing the potential remaining cost of post-closure care. Consequently, Modern Plating proposes that IEPA modify the Permit to reflect the passage of time in the post-closure period and thereby annually reduce the value of the financial assurance.

Specifically, dividing the current adjusted post-closure care estimate (CCE) by the post-closure period in years (P), and multiplying that amount by the number of years completed in the post-closure period (Y), would equal the sum to subtract (SS) from CCE to determine the annual value of financial assurance (AV) for each successive year. Therefore, to solve for AV, the formulas proposed are: CCE/P x Y = SS and CCE - SS = AV. Using the current figures, one has ($810,477.00/30 x 2 = $54,031.80). $810,477 - $54,031.80 = $756,445.20. Thus, AV = $756,445.20.

IPCB regulations require one to adjust the post-closure cost estimate for inflation.[14] Therefore, Modern Plating proposes to use the Implicit Price Deflator for Gross National Product, as permitted by the regulation.[15] Applying the required inflation factor (IF) to AV would determine the annual value of financial assurance adjusted for inflation (AVI). Specifically, AV x IF = AVI.[16] Using the current figures, $756,445.20 x 1.011^{17} = $764,766.10. Thus, AVI = $764,766.10.

---

[9] Permit § I(I)(2).
[10] 35 Ill. Admin. Code § 725.244(b).
[11] 35 Ill. Admin. Code § 725.243(c)(3).
[12] 35 Ill. Admin. Code § 725.245(c)(3).
[13] 35 Ill. Admin. Code § 725.245(c)(8).
[14] 35 Ill. Admin. Code § 725.244(b).
[15] Id.
[16] 35 Ill. Admin. Code § 725.244(b)(2).

This mechanism would ensure that Modern Plating maintains "sufficient funds in the letter of credit . . . to meet the post-closure financial assurance requirements . . ."[18] while easing the administrative burden on IEPA and Modern Plating by eliminating the need for the company to submit a RCRA Post-Closure Permit Modification Request each year and the need for the agency to review and approve such submissions. Moreover, the 10% contingency would remain in place. However, should the current post-closure estimate increase to an amount greater than the SLOC during the operating life of the facility, Modern Plating must, within 60 days after the increase, either increase the amount of the credit so that it equals the current post-closure cost estimate or obtain other financial assurance, pursuant to IPCB regulations.[19]

Proposed Permit Language

II(H)(1):

The permittee shall maintain sufficient funds in the letter of credit, the standby trust, or other approved financial instrument to meet the requirements of the following formulas in solving for AVI through August 5, 2031:

CCE/P x Y = SS, CCE – SS = AV, and AV x IF = AVI, where

CCE = $810,477 (current adjusted post-closure care estimate);
P = 30 (length of post-closure period);
Y = number of years completed in post-closure period;
SS = subtraction sum;
IF = inflation factor (pursuant to 35 Ill. Admin. Code § 725.244(b));
AV = annual value of financial assurance; and
AVI = annual value of financial assurance adjusted for inflation

The permittee also shall follow the requirements at 35 Ill. Admin. Code § 725.245(c)(7) regarding post-closure cost estimate increases.

Alternative Financial Assurance Proposal

In the alternative, Modern Plating proposes IEPA modify the Permit to reflect the passage of time in the post-closure period and reduce the value of the financial assurance based on the passage of two years solving for V (value of financial assurance) using the following formulas: CCE/P x Y = SS and CCE – SS = V. Using the current figures, one has ($810,477.00/30 x 2 = $54,031.80). $810,477 - $54,031.80 = $756,445.20. Thus, V = $756,445.20.

Applying IF to V would determine the value of financial assurance adjusted for inflation (VI). Specifically, V x IF = VI. Using the current figures, $756,445.20 x 1.011 = $764,766.10. Thus, VI = $764,766.10.

---

[17] Telephone conversation with Beverly Anderson, IEPA (Dec. 12, 2003).
[18] Permit § II(H)(1).
[19] 35 Ill. Admin. Code § 725.245(c)(7).

Of note, the only difference between this alternative proposal and the first proposal is the annual reduction contained in the first proposal, versus the submittal by submittal approach necessitated by the alternative proposal.

Alternative Proposed Permit Language
II(H)(1):

The permittee shall maintain sufficient funds in the letter of credit, the standby trust, or other approved financial instrument to meet the requirements of the following formulas in solving for VI through August 5, 2031:

CCE/P x Y = SS, CCE – SS = V, and V x IF = VI, where

CCE = $810,477 (current adjusted post-closure care estimate);
P = 30 (length of post-closure period);
Y = number of years completed in post-closure period;
SS = subtraction sum;
IF = inflation factor (pursuant to 35 Ill. Admin. Code § 725.244(b));
V = value of financial assurance; and
VI = value of financial assurance adjusted for inflation

The permittee also shall follow the requirements at 35 Ill. Admin. Code § 725.245(c)(7) regarding post-closure cost estimate increases.

Permit Modification Requirements
A modification to the financial assurance requirements in a RCRA Post-Closure Permit is not explicitly addressed by IPCB regulations.[20] Therefore, Modern Plating respectfully requests IEPA determine that this permit modification request be reviewed and approved as a Class 1 modification.[21] Class 1 modifications apply:

> to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the Agency may require prior approval.[22]

Pursuant to a December 9, 2003, telephone conversation with IEPA's Robert Watson, the agency considers this permit modification request to be a Class 1* modification. Consequently, Modern Plating can make the proposed modification "only with the prior written approval of the Agency."[23]

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[20] See, 35 Ill. Admin. Code § 703 Appendix A.
[21] 35 Ill. Admin. Code § 703.280(d)(1).
[22] 35 Ill. Admin. Code § 703.280(d)(2)(A).
[23] 35 Ill. Admin. Code § 703.281(b).

Upon IEPA's approval of the permit modification request, within 90 days Modern Plating will send notice of the modification to those on the facility mailing list pursuant to IPCB regulation.[24]

Additionally, all applications, reports, or information submitted to IEPA must be signed and certified in accordance with certain regulatory requirements.[25] Therefore, Modern Plating provides such a certification as an attachment to this submission.

Conclusion

In summary, Modern Plating respectfully requests IEPA modify the Permit in accordance with the first proposal, instituting an annual reduction in the value of the financial assurance required based on the passage of years, but remaining subject to increases in the value of the financial assurance reflecting post-closure cost estimate increases and inflation factors pursuant to IPCB regulations.[26] In the alternative, Modern Plating respectfully requests IEPA modify the Permit in accordance with the alternative proposal, which in essence credits the company with the passage of two years of the 30-year post-closure care period, as well as includes the cost estimate increases and inflation factors. The agency's adoption of the former would ensure Modern Plating maintained "sufficient funds in the letter of credit . . . to meet the post-closure financial assurance requirements . . ."[27] while easing the administrative burden on the company and IEPA in terms of eliminating the need for the company to submit a RCRA Post-Closure Permit Modification Request each year and the need for the agency to review and approve such submissions. In either case, the 10% contingency would remain in place because it is calculated into the current closure estimate, which is used in both approaches.

Should you have any questions, please feel free to call me at your earliest convenience.

Respectfully yours,

James E. Meason

enclosure

cc: J. Stenberg, Modern Plating Corporation
G. Fox, Fehr-Graham & Associates, Inc.
R. Meister, Foth & Van Dyke
R. Watson, IEPA

c:\my documents\law\modern plating\financial assurance\munie ltr re permit mod

[24] 35 Ill. Admin. Code § 703.281(a)(2).
[25] 35 Ill. Admin. Code § 702.151, citing 35 Ill. Admin. Code § 702.126.
[26] 35 Ill. Admin. Code §§ 725.244(b) and .245(c)(7).
[27] Permit § II(H)(1).

Certification For RCRA Post-Closure Permit Modification Request

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

Modern Plating Corporation

By: _____ Dated: 12-12-03

James R. Stenberg
President
Owner/Operator

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

815/987-7760
FAX: 815/987-7005

March 23, 2005

Modern Plating Corporation
Attn: Mr. Darrell Hill
701 S. Hancock Avenue
Freeport, Illinois 61032

Re: LPC #1770200010 -- Stephenson County
Freeport/Modern Plating Corporation
ILD005172325
Compliance File

Dear Mr. Hill:

On March 9, 2005, a Non-financial Record Review of results from samples that were collected at the above referenced site was completed by Rebecca Vershaw. The purpose of this review was to determine the site's compliance with the Illinois Environmental Protection Act and 35 Illinois Administrative Code, Parts 620 and 724 and applicable sections of RCRA Permit Number B-167.

No violations were noted at the time of this review. For your information, a copy of the review report is enclosed. Results from samples analyzed by the Illinois EPA laboratories are included with this report.

Please contact Rebecca Vershaw at 815/987-7760 if you have any questions regarding this review.

Sincerely,

David S. Retzlaff
Manager – Region 1
Field Operations Section
Bureau of Land

DSR:RV:tl

Enclosure

cc: Bur Filson

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF LAND / FIELD OPERATIONS SECTION

RCRA INSPECTION REPORT

GENERAL FACILITY INFORMATION

USEPA ID #:	ILD005172325		**IEPA ID #:**	1770200010	
Facility Name:	Modern Plating Corporation			**Phone #:**	815/235-3111
Location	701 S. Hancock Avenue			**County:**	Stephenson
City:	Freeport	**State:**	Illinois	**Zip Code:**	61032
Region:	1 - Rockford	**Inspection Date:**	3/9/2005	**Time:**	
Weather:					

TYPE OF FACILITY

Notified As:	G,S,D	**Regulated As:**	G,(S),D

TYPE OF INSPECTION

CEI:	☐	**CME/O&M:**	☐	**CSI:**	☐	**NRR:**	☒	**CCI:**	☐	**PIF:**	☐	**CVI:**	☐	**CSE:**	☐	**CAO:**	☐
FUI to:		**Other:**															

NOTIFICATION INFORMATION (EPA 8700-12)

Notification Date:	8/11/1980 **(initial)**	6/6/1995	**(subsequent)**

PART A PERMIT INFORMATION (EPA 3510-3 OR EPA 8700-23)

Part A Date:	11/17/1980	**Amended:**		**Withdrawn:**	

PART B PERMIT INFORMATION

(Check one if applicable) Application Submitted?	☒	**Permit Issued?**	☒	**Date:**	4/11/2000

ACTIVE ENFORCEMENT

Date facility referred to:	**USEPA:**	**IAGO:**	**County State's Attorney:**

ACTIVE ENFORCEMENT ORDERS

CACO:	**CAFO:**	**Federal Court Order:**
Consent Decree:	**IPCB Order:**	**State Court Order:**

TSD FACILITY ACTIVITY SUMMARY

R000907

Activity by Process Code	On Part A?	On Part B?	Activity ever done?	Closed?	Being done during inspection?	Exempt per 35 IAC Sec:	On Annual Report:		
SO1	☒	☐	☒	☐	☐	N/A	☐	☐	☐
SO2	☒	☐	☒	☐	☐	N/A	☐	☐	☐
SO4	☒	☐	☒	☐	☐	N/A	☐	☐	☐
D80	☒	☒	☒	☐	☒	N/A	☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐
	☐	☐	☐	☐	☐		☐	☐	☐

OWNER

Name:	Modern Plating Corporation
Address:	701 S. Hancock Avenue
City:	Freeport
State:	IL **Zip Code:** 61032
Phone #:	815/235-3111

OPERATOR

Name:	Modern Plating Corporation
Address:	701 S. Hancock Avenue
City:	Freeport
State:	IL **Zip Code:** 61032
Phone #:	815/235-3111

PERSON(S) INTERVIEWED	TITLE	PHONE #

INSPECTION PARTICIPANTS	AGENCY/BUREAU	PHONE #
*Rebecca Vershaw	IEPA/BOL	815/987-7760

***Report prepared by this person.**

SUMMARY OF APPARENT VIOLATIONS

AREA	SECTION	X
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

AREA	SECTION	X
		☐
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		☐
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		☐

AREA	SECTION	X
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

X = CONTINUING VIOLATIONS

NARRATIVE

On 9 March 2005, I (Rebecca Vershaw) conducted a Non-financial Record Review (NRR) to evaluate data from groundwater samples that I collected with sampling technicians from Fehr-Graham & Associates (Fehr-Graham) during an Operation and Maintenance Inspection (O&M) at Modern Plating Corporation (MPC) in February 2004. The scope of this review is limited to a comparison of the facility's sampling results and the Illinois EPA's sampling results with the groundwater monitoring program identified in RCRA Permit Number B-167. Results from the Illinois EPA's organic and inorganic laboratories are included in attachment 1.

Reported concentrations of contaminants within samples collected by representatives from Fehr-Graham are comparable to concentrations of contaminants identified within samples collected by the Illinois EPA at monitoring wells G08S (MW-8A), G08M (MW-8C), G13U (MW-13B), G14U (MW-14B), G17M (MW-17C), G17L (MW-17D), G18L (MW-18D) and G19U (MW-19B).

Several discrepancies were identified in the facility's initial submission of the 1st quarter 2004 groundwater monitoring data. The information presented in the narrative of the report conflicted with the electronic data and the electronic data did not include results from all of the required monitoring wells. Pursuant to conversations with Bur Filson (Illinois EPA – Permit Section), I discussed the discrepancies with the facility and subsequently Stephen Lehrke (Foth & Van Dyke and Associates, Inc.) submitted revised electronic data.

There are 49 wells (34 of which are sampled) identified in the facility's permit. The 1st quarter 2004 electronic dataset includes information for the following 69 wells; G05D, G05L, G05M, G06D, G06M, G06S, G06U, G07L, G07M, G07S, G07U, G08D, G08M, G08S, G08U, G09S, G10S, G11D, G11L, G11M, G11S, G11U, G12D, G12L, G12M, G12S, G12U, G13D, G13L, G13M, G13S, G13U, G14D, G14L, G14M, G14S, G14U, G15L, G15M, G15S, G15U, G16M, G16S, G17L, G17M, G17S, G17U, G18L, G18M, G18S, G18U, G19L, G19M, G19S, G19U, G20M, G21M, G21S, G22M, G22S, G23L, G23M, GA0M, GA1S, GA1M, GA2S, GA2M, GA3M and GA3U. The March 2004 revised semi-annual report (attachment 2) includes data for 39 wells; MW-5C, MW-5D, MW-6A, MW-6B, MW-6C, MW-7C, MW-8A, MW-8C, MW-9A, MW-10A, MW-11C, MW-11E, MW-13B, MW-13E, MW-14A, MW-14B, MW-14C, MW-14E, MW-15A, MW-15B, MW-15C, MW-16C, MW-17A, MW-17B, MW-17C, MW-17D, MW-18A, MW-18E, MW-18D, MW-19B, MW-19C, MW-19D, MW-20C, MW-21A, MW-21C, MW-22A, MW-22C, MW-23B and MW-23C.

Please note that monitoring wells G05D, G06D, G08D, G08U, G11L, G11U, G12L, G13L, G14L, G15L, G16S, G18M, G20M, G21M, G21S, G22M, G22S, G23L, G23M, GA3U, MW-18E and MW-23B are not included in the permitted groundwater monitoring program.

A comparison of the revised electronic dataset with the revised report included in attachment 2 resulted in numerous discrepancies. There were several duplicate entries and naming convention issues with the revised data, possibly because the data were uploaded to the Illinois EPA's system twice. Also, the electronic data were submitted using the Illinois EPA's naming conventions for the wells, while the facility's revised report includes only the facility's naming conventions for the wells. Monitoring wells GA0M, GA1S, GA2S, GA1M and GA2M are included in the electronic submission, however similar data are also included for monitoring wells; G20M, G21S, G22S, G21M and G22M (which are not included in the permitted groundwater monitoring program).

Furthermore, electronic data were reported for monitoring wells GA3M (MW-23C), GA3U, G23M and G23L. The facility's revised report includes data for monitoring wells MW-23B and MW-23C. Concentrations of contaminants included in the facility's revised report for monitoring well MW-23B are identical to the concentrations of contaminants included in the electronic datasets for monitoring wells GA3U and G23M. Concentrations of contaminants included in the facility's revised report for monitoring well MW-23C (GA3M) are identical to the concentrations of contaminants included in the electronic datasets for monitoring wells GA3M and G23L. (Monitoring wells MW-23B, GA3U, G23M and G23L are not included in the permitted groundwater monitoring program.)

The following table identifies discrepancies between the electronically reported data and the facility's revised report for monitoring well G09S (MW-9A):

Reported monitoring well name:	G09S	G09S (replicate)	MW-9A	MW-9A Dup.
Cadmium (ug/L)	250	230	230	230
Chromium (ug/L)	18	17	17	17
Lead (ug/L)	<1.5	<1.5	<1.5	<1.5
Nickel (ug/L)	400	410	410	410

Concentrations of the above listed contaminants from the electronically reported data are also included in attachment 3.

Electronic data were reported for monitoring wells G15L, G15M (MW-15C), G15S (MW-15A) and G15U (MW-15B).

Monitoring wells G15S (MW-15A), G15U (MW-15B), G15M (MW-15C) are included in the permitted groundwater monitoring program and data were included in the facility's revised report for monitoring wells MW-15A, MW-15B and MW-15C.
However, concentrations of contaminants included in the facility's revised report for monitoring well MW-15A are identical to the concentrations of contaminants included in the electronic dataset for monitoring well G15U (MW-15B). Also, concentrations of contaminants included in the facility's revised report for monitoring well MW-15B are identical to the concentrations of contaminants included in the electronic dataset for monitoring well G15M (MW-15C) and concentrations of contaminants included in the facility's revised report for monitoring well MW-15C are identical to the concentrations of contaminants included in the electronic dataset for monitoring well G15L. Monitoring well G15L is not included in the permitted groundwater monitoring program.

Electronic data were reported for monitoring wells G18L (MW-18D), G18M, G18S (MW-18A) and G18U (MW-18B). Monitoring wells G18S (MW-18A), G18U (MW-18B), and G18L (MW-18D) are included in the permitted groundwater monitoring program. Data are included in the facility's revised report for monitoring wells MW-18A, MW-18E and MW-18D. However, concentrations of contaminants included in the facility's revised report for monitoring well MW-18E are identical to the concentrations of contaminants included in the electronic dataset for monitoring well G18U (MW-18B). Monitoring wells G18M and MW-18E are not included in the permitted groundwater monitoring program.

No apparent violations were identified during this review.

ATTACHMENT 1

Illinois Environmental Protection Agency
DLPC/FOS Chain of Custody Document (Analysis Request and Receipt for Samples)
Page 1 of 1

Fund [10]	LPC #	County	Locality
LP41	1770200010	Stephenson	Freeport
Section [14]	**USEPA ID#**	**Site Name [19]**	**File (circle one) Groundwater/Subpart F**
F	ILD005172325	Modern Plating Corporation	

Project Manager's Name/Address/Phone #:
Rebecca Vershaw, c/o IEPA
4302 N. Main Street
Rockford, IL 61103
815/987-7272
Case # (if applicable)

IEPA Laboratory (circle one)
Inorganic: 2125 S. First Street, Champaign, IL 61820, 217/278-5858
Organic: 825 N. Rutledge Street, Springfield, IL 62702, 217/782-9780

Other Laboratory Name, Address, and Phone #

Delivered by [23]: UPS

Lab Sample # [01]	Parameter Group [03] & Other Analytes: GWTOT							Field Sample # [15]	Legal Hold?	Split?	# Bottles	Volume (oz)	Date Collected & Sealed [20]	Time Collected (24 hr clk) [21]	Time Sealed (24 hr clk)	Sampler's Initials [22]	Collector or Laboratory Comments [24] Do not include personal identifier information for samples collected on private residential property.	Seal Intact ? (y/n)
C1B1223	X							G17M		X	1	8	2/18/04	10:25	11:60	RAV	analyze for GWTOT- metals only	
C1B1224	X							G17L		X	1	8	2/18/04	10:40	11:60	RAV	"	
C1B1225	X							G18L		X	1	8	2/18/04	12:85 14:45	[illegible]	RAV	"	
C1B1226	X							G19L		X	1	8	2/18/04	14:45 [illegible]	15:05	RAV	"	
366																		

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Receipt for Samples: Collection of the above-listed sample(s) at the indicated site is hereby acknowledged.
Split(s) Offered? (y) / n Accepted? (y) / n
Signature/Title of Facility Representative, Date Pat Dixon (FEA) for MPC

Samplers (printed names and signatures)
Rebecca Vershaw Rebecca a Vershaw

Sealer: I certify that I sealed the samples listed above and I wrote my initials, the date, and the time on the seal(s).
Sealer's Signature & Initials (RAV) Rebecca a Vershaw Date 18 FEB 04 Time (24 hr clk) 17:02

Carriers: I certify that I received the container(s) holding the above sample(s) with the seal(s) intact and the sealer's initials and sealing date written on the seal(s).
Relinquished by (Sealer) Rebecca a Vershaw Date 19 FEB 04 Time (24 hr clk) 8:06
Received by Date -/0 Time (24 hr clk)
☒ To Container for Shipment

IL 532-2311
LPC 525
REV. 2/2003

Laboratory Custodian: I certify that I received the container holding the above sample(s) with the seal integrity as indicated above and the sealer's initials and the date written on the seal(s). After being received, this/these same sample(s) will be retained by laboratory personnel at all times or locked in a secured area.
Printed Name, Signature, and Initials [07] Pat Dixon Date [05] FEB 20 2004 Time [06] (24 hr clk) 0900 Sample Temp. (°C)
Supervisor releasing results (signature): Date: 4/21/04

R000912

Illinois Environmental Protection Agency Laboratory

2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received: 20-Feb-04 08:51

Client Sample ID: **G17M**
Matrix: Water-RCRA

Lab Sample ID: **C4B1223-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 200 Series Methods

Method: 200.8
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 21-Apr-04 13:26

Analyte	Result	Reporting Limit	Qualifier
Mercury, Total SW846	ND	0.10	O

Metals by EPA 6000/7000 Series Methods

Method: 6020
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 22-Mar-04 13:26

Analyte	Result	Reporting Limit	Qualifier
Antimony, Total	ND	2.0	
Calcium, Total	**110000**	500	
Arsenic, Total	**5.6**	0.50	
Magnesium, Total	**48000**	500	
Lead, Total	ND	5.0	
Sodium, Total	**24000**	500	
Selenium, total	ND	2.0	
Potassium, Total	ND	2000	
Aluminum, Total	**330**	100	
Thallium, total	ND	2.0	
Barium, Total	**130**	5.0	
Boron, Total	**110**	50	
Beryllium, Total	ND	1.0	
Cadmium, Total	ND	3.0	
Chromium, Total	**5.0**	5.0	

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Champaign IEPA Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.NELAP Compliant Accredition #E37644

Reported:
20-Jul-04 14:24

Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received : 20-Feb-04 08:51

Client Sample ID: **G17M**
Matrix: Water-RCRA

Lab Sample ID: **C4B1223-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 6000/7000 Series Methods

Method: 6010
Units: ug/l

Prepared: 06-Apr-04 14:25
Analyzed: 12-Apr-04 14:35

Analyte	Result	Reporting Limit	Qualifier
Cobalt, Total	**6.6**	5.0	
Copper, Total	ND	5.0	
Iron, Total	**3500**	50	
Lead, Total	**5.1**	5.0	
Manganese, Total	**91**	5.0	
Nickel, Total	ND	5.0	
Silver, Total	ND	5.0	
Strontium, Total	**160**	5.0	
Vanadium, total	ND	5.0	
Zinc, Total	**10**	10	

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AGENCY STATE OF ILLINOIS

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Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received : 20-Feb-04 08:51

Client Sample ID: **G17L**
Matrix: Water-RCRA

Lab Sample ID: **C4B1224-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 200 Series Methods

Method: 200.8
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 21-Apr-04 13:31

Analyte	Result	Reporting Limit	Qualifier
Mercury, Total SW846	ND	0.10	Q

Metals by EPA 6000/7000 Series Methods

Method: 6020
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 22-Mar-04 13:30

Analyte	Result	Reporting Limit	Qualifier
Antimony, Total	ND	2.0	
Calcium, Total	**120000**	500	
Arsenic, Total	**6.9**	0.50	
Magnesium, Total	**52000**	500	
Sodium, Total	**23000**	500	
Lead, Total	ND	5.0	
Potassium, Total	ND	2000	
Selenium, total	ND	2.0	
Thallium, total	ND	2.0	
Aluminum, Total	ND	100	
Barium, Total	**150**	5.0	
Boron, Total	**150**	50	
Beryllium, Total	ND	1.0	
Cadmium, Total	ND	3.0	

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AGENCY STATE OF ILLINOIS

Champaign IEPA Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.NELAP Compliant Accredition #E37644

369

Reported:
20-Jul-04 14:24

Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received: 20-Feb-04 08:51

Client Sample ID: **G17L**
Matrix: Water-RCRA

Lab Sample ID: **C4B1224-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 6000/7000 Series Methods

Method: 6010
Units: ug/l

Prepared: 06-Apr-04 14:25
Analyzed: 12-Apr-04 14:47

Analyte	Result	Reporting Limit	Qualifier
Chromium, Total	ND	5.0	
Cobalt, Total	ND	5.0	
Copper, Total	**13**	5.0	
Iron, Total	**4100**	50	
Lead, Total	**6.8**	5.0	
Manganese, Total	**69**	5.0	
Nickel, Total	ND	5.0	
Silver, Total	ND	5.0	
Strontium, Total	**170**	5.0	
Vanadium, total	ND	5.0	
Zinc, Total	**15**	10	

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AGENCY STATE OF ILLINOIS

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.NELAP Compliant Accredition #E37644

370

Reported:
20-Jul-04 14:24

Illinois Environmental Protection Agency Laboratory

2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received : 20-Feb-04 08:51

Client Sample ID: **G18L**
Matrix: Water-RCRA

Lab Sample ID: **C4B1225-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 200 Series Methods

Method: 200.8
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 21-Apr-04 13:44

Analyte	Result	Reporting Limit	Qualifier
Mercury, Total SW846	ND	0.10	Q

Metals by EPA 6000/7000 Series Methods

Method: 6010
Units: ug/l

Prepared: 06-Apr-04 14:25
Analyzed: 12-Apr-04 14:54

Analyte	Result	Reporting Limit	Qualifier
Calcium, Total	**76000**	500	
Antimony, Total	ND	2.0	
Arsenic, Total	ND	0.50	
Magnesium, Total	**33000**	500	
Lead, Total	ND	5.0	
Sodium, Total	**5500**	500	
Selenium, total	ND	2.0	
Potassium, Total	**2100**	2000	
Aluminum, Total	ND	100	
Thallium, total	ND	2.0	
Barium, Total	**280**	5.0	
Boron, Total	ND	50	
Beryllium, Total	ND	1.0	
Cadmium, Total	ND	3.0	

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AGENCY STATE OF ILLINOIS

Champaign IEPA Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.NELAP Compliant Accredition #E37644

Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received: 20-Feb-04 08:51

Client Sample ID: **G18L**
Matrix: Water-RCRA

Lab Sample ID: **C4B1225-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 6000/7000 Series Methods

Method: 6010
Units: ug/l

Prepared: 06-Apr-04 14:25
Analyzed: 12-Apr-04 14:54

Analyte	Result	Reporting Limit	Qualifier
Chromium, Total	**6.2**	5.0	
Cobalt, Total	**5.9**	5.0	
Copper, Total	**12**	5.0	
Iron, Total	**340**	50	
Lead, Total	ND	5.0	
Manganese, Total	**170**	5.0	
Nickel, Total	**13**	5.0	
Silver, Total	ND	5.0	
Strontium, Total	**120**	5.0	
Vanadium, total	ND	5.0	
Zinc, Total	**11**	10	

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Champaign IEPA Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.NELAP Compliant Accredition #E37644

Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received: 20-Feb-04 08:51

Client Sample ID: **G19U**
Matrix: Water-RCRA

Lab Sample ID: **C4B1226-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 200 Series Methods

Method: 200.8
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 21-Apr-04 13:49

Analyte	Result	Reporting Limit	Qualifier
Mercury, Total SW846	ND	0.10	Q

Metals by EPA 6000/7000 Series Methods

Method: 6020
Units: ug/l

Prepared: 20-Feb-04 08:51
Analyzed: 22-Mar-04 13:38

Analyte	Result	Reporting Limit	Qualifier
Antimony, Total	ND	2.0	
Calcium, Total	**130000**	500	
Arsenic, Total	**3.3**	0.50	
Magnesium, Total	**62000**	500	
Sodium, Total	**76000**	500	
Lead, Total	**5.8**	5.0	
Potassium, Total	ND	2000	
Selenium, total	ND	2.0	
Thallium, total	ND	2.0	
Aluminum, Total	**360**	100	
Barium, Total	**160**	5.0	
Boron, Total	**340**	50	
Beryllium, Total	ND	1.0	
Cadmium, Total	ND	3.0	
Chromium, Total	**6.9**	5.0	

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Illinois Environmental Protection Agency Laboratory

2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: MODERN PLATING CORPORATION
Project/Facility Number: 1770200010
Funding Code: LP41

Received By: Lou Due
Date/Time Received : 20-Feb-04 08:51

Client Sample ID: **G19U**
Matrix: Water-RCRA

Lab Sample ID: **C4B1226-01**
Date/Time Collected: 18-Feb-04 00:00

Metals by EPA 6000/7000 Series Methods

Method: 6010
Units: ug/l

Prepared: 06-Apr-04 14:25
Analyzed: 12-Apr-04 15:45

Analyte	Result	Reporting Limit	Qualifier
Cobalt, Total	ND	5.0	
Copper, Total	**37**	5.0	
Iron, Total	**11000**	50	
Lead, Total	ND	5.0	
Manganese, Total	**560**	5.0	
Nickel, Total	**17**	5.0	
Silver, Total	ND	5.0	
Strontium, Total	**140**	5.0	
Vanadium, total	ND	5.0	
Zinc, Total	**31**	10	

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Champaign IEPA Laboratory

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Illinois Environmental Protection Agency Laboratory
2125 S. First Champaign, Illinois 61820 217.278.5858

LABORATORY RESULTS

Name: **MODERN PLATING CORPORATION**

Project/Facility Number: 1770200010

Funding Code: LP41

Received By: Lou Due

Date/Time Received : 20-Feb-04 08:51

Notes and Definitions

Q	This sample was analyzed outside the EPA recommended holding time.
*	Non-NELAP accredited analyte
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
Dry	Sample results reported on a dry weight basis

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S400578

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Fund [10]	LPC #	County	Locality
LP41	1770200010	Stephenson	Freeport
Section [14]	**USEPA ID#**	**Site Name [19]**	**File (circle one) Groundwater/Subpart F**
F	ILD005172325	Modern Plating Corporation	

Project Manager's Name/Address/Phone #:
Rebecca Vershaw, c/o IEPA
4302 N. Main Street
Rockford, IL 61103
815/987-7272
Case # (if applicable)

IEPA Laboratory (circle one)
Inorganic: 2125 S. First Street, Champaign, IL 61820, 217/278-5858
Organic: 825 N. Rutledge Street, Springfield, IL 62702, 217/782-9780

Other Laboratory Name, Address, and Phone #

Delivered by [23]: UPS

Lab Sample # [01]	Parameter Group [03] & Other Analytes: VOCs	Field Sample # [15]	Legal Hold?	Split?	# Bottles	Volume (oz)	Date Collected & Sealed [20]	Time Collected (24 hr clk) [21]	Time Sealed (24 hr clk)	Sampler's Initials [22]	Collector or Laboratory Comments [24] (Do not include personal identifier information for samples collected on private residential property.)	Seal Intact ? (y/n)
S400578 01	☒	G13U	☐	☒	3	4	2/17/04	10:25	12:45	RAV	RECEIVED	Y
-01	☒	G13U-QC	☐	☒	3	4	2/17/04	10:25	12:45	RAV	MAR 17 2004	Y
-02	☒	G8S	☐	☒	3	4	2/17/04	11:55	12:45	RAV	ROCKFORD REGIONAL ENVIRONMENTAL PROTECTION AGENCY STATE OF ILLINOIS	Y
-03	☒	G8M	☐	☒	3	4	2/17/04	12:15	12:45	RAV		Y
-04	☒	G14U	☐	☒	3	4	2/17/04	14:47	16:10	RAV		Y
-05	☒	TRIP BLANK	☐	☐	2	2.7	2/17/04	—	16:10	RAV	RECEIVED	Y
-06	☒	G17M	☐	☒	3	4	2/18/04	10:25	11:00	RAV	MAR 16 2004	Y
-07	☒	G17L	☐	☒	3	4	2/18/04	10:40	11:00	RAV	IEPA-DLPC	Y
-08	☒	G18L	☐	☒	3	4	2/18/04	12:55	13:15	RAV		Y
-09	☒	G19U	☐	☒	3	4	2/18/04	14:45 RAV	15:05	RAV		Y

376

Receipt for Samples: Collection of the above-listed sample(s) at the indicated site is hereby acknowledged.

Signature/Title of Facility Representative, Date: [illegible] (FGA) for IEPA — Split(s) Offered? (y) / n Accepted? (y) / n

Samplers (printed names and signatures): Rebecca Vershaw — Rebecca a Vershaw

Sealer: I certify that I sealed the samples listed above and I wrote my initials, the date, and the time on the seal(s).
Sealer's Signature & Initials: (RAV) Rebecca a Vershaw — Date: 18 FEB 04 — Time (24 hr clk): 17:00

Carriers: I certify that I received the container(s) holding the above sample(s) with the seal(s) intact and the sealer's initials and sealing date written on the seal(s).

Relinquished by (Sealer)	Date	Time (24 hr clk)	Received by	Date	Time (24 hr clk)
Rebecca a Vershaw	19 FEB 04	7:38			

☒ To Container for Shipment

IL 532-2311
LPC 525
REV. 2/2003

Laboratory Custodian: I certify that I received the container holding the above sample(s) with the seal integrity as indicated above and the sealer's initials and the date written on the seal(s). After being received, this/these same sample(s) will be retained by laboratory personnel at all times or locked in a secured area.

Printed Name, Signature, and Initials [07]: Michelle Hussey, Michelle Hussey — Date [05]: FEB 20 2004 — Time [06] (24 hr clk): 0900-UPS — Sample Temp. (°C): 5

Supervisor releasing results (signature): [signature] — Date: 3/5/04

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Fund [10]	LPC #	County	Locality
LP41	1770200010	Stephenson	Freeport
Section [14]	**USEPA ID#**	**Site Name [19]**	**File (circle one) Groundwater/Subpart F**
F	ILD005172325	Modern Plating Corporation	

Project Manager's Name/Address/Phone #:
Rebecca Vershaw, c/o IEPA
4302 N. Main Street
Rockford, IL 61103
815/987-7272
Case # (if applicable)

IEPA Laboratory (circle one)
Inorganic:
2125 S. First Street
Champaign, IL 61820, 217/278-5858
Organic:
825 N. Rutledge Street
Springfield, IL 62702, 217/782-9780

Other Laboratory Name, Address, and Phone #

Delivered by [23]
UPS

Lab Sample # [01]	Parameter Group [03] & Other Analytes: VOCs							Field Sample # [15]	Legal Hold?	Split?	# Bottles	Volume (oz)	Date Collected & Sealed [20]	Time Collected (24 hr clk) [21]	Time Sealed (24 hr clk)	Sampler's Initials [22]	Collector or Laboratory Comments [24] Do not include personal identifier information for samples collected on private residential property.	Seal Intact ? (y/n)
3400578-10	☒	☐	☐	☐	☐	☐	☐	TRIP BLANK	☐	☐	2	2.7	2/19/04	—	15:05	RAV		Y
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								
	☐	☐	☐	☐	☐	☐	☐		☐	☐								

Receipt for Samples: Collection of the above-listed sample(s) at the indicated site is hereby acknowledged.

Split(s) Offered? (y) / n Accepted? (y) / n

Signature/Title of Facility Representative, Date Geologist (FCA) for MPC 2/18/04

Samplers (printed names and signatures)
Rebecca Vershaw Rebecca a Vershaw

Sealer: I certify that I sealed the samples listed above and I wrote my initials, the date, and the time on the seal(s).
Sealer's Signature & Initials (RAV) Rebecca a Vershaw Date 18 FEB 04 Time (24 hr clk) 17:02

Carriers: I certify that I received the container(s) holding the above sample(s) with the seal(s) intact and the sealer's initials and sealing date written on the seal(s).

Relinquished by (Sealer)	Date	Time (24 hr clk)	Received by	Date	Time (24 hr clk)
Rebecca a Vershaw	19 FEB 04	7:38			

☒ To Container for Shipment

IL 532-2311
LPC 525
REV. 2/2003

Laboratory Custodian: I certify that I received the container holding the above sample(s) with the seal integrity as indicated above and the sealer's initials and the date written on the seal(s). After being received, this/these same sample(s) will be retained by laboratory personnel at all times or locked in a secured area.

Printed Name, Signature, and Initials [07] Michael K. Heaney, Michael Heaney MH

Date [05] FEB 21 2004

Time [06] (24 hr clk) 0900 LPC

Sample Temp. (°C) 5°

Supervisor releasing results (signature): Date: 3/15/04

R2000923

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G13U & G13U-QC	Lab Sample ID:	S400578-01
Matrix:	Water	Date/Time Collected:	02/17/04 10:25

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 14:47

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**6.8**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	**50**	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

IEPA Springfield Organic Laboratory

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Reported:
03/15/04 10:55

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G13U & G13U-QC	Lab Sample ID:	S400578-01
Matrix:	Water	Date/Time Collected:	02/17/04 10:25

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 14:47

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	**9.1**	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G8S	Lab Sample ID:	S400578-02
Matrix:	Water	Date/Time Collected:	02/17/04 11:55

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 15:18

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	**40**	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	**2.8**	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	**15**	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	**3.1**	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**620**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	**370**	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

IEPA Springfield Organic Laboratory

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Reported:
03/15/04 10:55

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G8S	Lab Sample ID:	S400578-02
Matrix:	Water	Date/Time Collected:	02/17/04 11:55

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 15:18

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	**4.8**	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G8M	Lab Sample ID:	S400578-03
Matrix:	Water	Date/Time Collected:	02/17/04 12:15

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/24/04 09:21
Units:	ug/l	Analyzed:	02/24/04 12:13

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**9.1**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		J
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	**21**	2.0		J
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

IEPA Springfield Organic Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Test results meet all requirements of NELAC.

Reported:
03/15/04 10:55

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G8M	Lab Sample ID:	S400578-03
Matrix:	Water	Date/Time Collected:	02/17/04 12:15

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/24/04 09:21
Units:	ug/l	Analyzed:	02/24/04 12:13

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	**2.9**	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Test results meet all requirements of NELAC.

Reported:
03/15/04 10:55

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	**G14U**	Lab Sample ID:	**S400578-04**
Matrix:	Water	Date/Time Collected:	02/17/04 14:47

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 16:20

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**10**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	**63**	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	**G14U**	Lab Sample ID:	**S400578-04**
Matrix:	Water	Date/Time Collected:	02/17/04 14:47

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 16:20

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	**3.1**	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	VOC TRIP BLANKS	Lab Sample ID:	S400578-05
Matrix:	Water	Date/Time Collected:	02/17/04 00:00

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 16:51

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	ND	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received:	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	VOC TRIP BLANKS	Lab Sample ID:	S400578-05
Matrix:	Water	Date/Time Collected:	02/17/04 00:00

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 16:51

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G17M	Lab Sample ID:	S400578-06
Matrix:	Water	Date/Time Collected:	02/18/04 10:25

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 17:22

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**14**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G17M	Lab Sample ID:	S400578-06
Matrix:	Water	Date/Time Collected:	02/18/04 10:25

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 17:22

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G17L	Lab Sample ID:	S400578-07
Matrix:	Water	Date/Time Collected:	02/18/04 10:40

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 17:53

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**15**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G17L	Lab Sample ID:	S400578-07
Matrix:	Water	Date/Time Collected:	02/18/04 10:40

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 17:53

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G18L	Lab Sample ID:	S400578-08
Matrix:	Water	Date/Time Collected:	02/18/04 12:55

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 18:24

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	ND	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G18L	Lab Sample ID:	S400578-08
Matrix:	Water	Date/Time Collected:	02/18/04 12:55

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 18:24

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	**G19U**	Lab Sample ID:	**S400578-09**
Matrix:	Water	Date/Time Collected:	02/18/04 14:45

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 18:56

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	**6.1**	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	**170**	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	G19U	Lab Sample ID:	S400578-09
Matrix:	Water	Date/Time Collected:	02/18/04 14:45

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 18:56

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	**VOC TRIP BLANKS**	Lab Sample ID:	**S400578-10**
Matrix:	Water	Date/Time Collected:	02/18/04 00:00

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 12:11

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
Chloromethane	ND	2.0		
Vinyl chloride	ND	2.0		
Bromomethane	ND	2.0		
Chloroethane	ND	2.0		
Trichlorofluoromethane	ND	2.0		
Acetone	ND	10		
1,1-Dichloroethene	ND	2.0		
Methylene chloride	ND	5.0		
Carbon disulfide	ND	2.0		
trans-1,2-Dichloroethene	ND	2.0		
Methyl tert-butyl ether	ND	2.0		
1,1-Dichloroethane	ND	2.0		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	ND	2.0		
Bromochloromethane	ND	2.0		
Chloroform	ND	2.0		
2,2-Dichloropropane	ND	2.0		
1,2-Dichloroethane	ND	2.0		
1,1,1-Trichloroethane	ND	2.0		
1,1-Dichloropropene	ND	2.0		
Carbon tetrachloride	ND	2.0		
Benzene	ND	2.0		
Dibromomethane	ND	2.0		
1,2-Dichloropropane	ND	2.0		
Trichloroethene	ND	2.0		
Bromodichloromethane	ND	2.0		
cis-1,3-Dichloropropene	ND	2.0		
4-Methyl-2-pentanone (MIBK)	ND	2.0		
trans-1,3-Dichloropropene	ND	2.0		

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LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		
Client Sample ID:	VOC TRIP BLANKS	Lab Sample ID:	S400578-10
Matrix:	Water	Date/Time Collected:	02/18/04 00:00

Volatiles Organic Compounds by Purge and Trap GC/MS

Method:	8260	Prepared:	02/23/04 07:40
Units:	ug/l	Analyzed:	02/23/04 12:11

Analyte	Result	Reporting Limit	Regulatory Level	Qualifier
1,1,2-Trichloroethane	ND	2.0		
Toluene	ND	2.0		
1,3-Dichloropropane	ND	2.0		
2-Hexanone (MBK)	ND	2.0		
Dibromochloromethane	ND	2.0		
1,2-Dibromoethane	ND	2.0		
Tetrachloroethene	ND	2.0		
1,1,1,2-Tetrachloroethane	ND	2.0		
Chlorobenzene	ND	2.0		
Ethylbenzene	ND	2.0		
m-Xylene/p-Xylene	ND	2.0		
Bromoform	ND	2.0		J
Styrene	ND	2.0		
1,1,2,2-Tetrachloroethane	ND	2.0		
o-Xylene	ND	2.0		
Xylenes, total	ND	2.0		
1,2,3-Trichloropropane	ND	2.0		
Isopropylbenzene	ND	2.0		
Bromobenzene	ND	2.0		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Test results meet all requirements of NELAC.

Illinois Environmental Protection Agency Laboratory
825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	MODERN PLATING CORPORATION	Received By:	Michelle Hussey
Project/Facility Number:	1770200010	Date/Time Received :	02/20/04 09:00
Funding Code:	LP41		

Notes and Definitions

J	Estimated value; value may not be accurate.
*	Non-NELAP accredited analyte
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
Dry	Sample results reported on a dry weight basis

IEPA Springfield Organic Laboratory

Gary Germann
Laboratory Manager (Acting)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Test results meet all requirements of NELAC.

Reported:
03/15/04 10:55

ATTACHMENT 2

Foth & Van Dyke

RECEIVED
OCT 01 2004
ROCKFORD REGION
ENVIRONMENTAL PROTECTION
AGENCY STATE OF ILLINOIS

September 29, 2004

Ms. Terri Blake Myers
Permit Section #33
Illinois Environmental Protection Agency
1021 N. Grande Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Myers:

RE: Errata for March 2004 Groundwater/Semi-Annual Report
Modern Plating Corporation

On behalf of the Modern Plating Corporation (MPC) of Freeport, Illinois, Foth & Van Dyke is submitting this errata for the March 2004 Groundwater/Semi Annual Report (March 2004 Report). This letter amends information provided in the March 2004 Report.

The last sentence of the first paragraph of the March 2004 Report did not contain a complete listing of the wells that Fehr-Graham and Associates reported frozen at the time of sampling. The last sentence of the first paragraph should read as follows: *Monitoring wells MW-7A, MW-7B, MW-7D, MW-11A, MW-11B, MW-12A, MW-12B, MW-12C, MW-12E, MW-13A and MW-13C were not sampled because they were frozen at the time of the sampling event.*

The last sentence in the second paragraph of the March 2004 Report states that *no samples of the Pecatonica River were taken*. This statement is in error. Pecatonica River Samples, PR-1 and PR-2 were obtained during the March 2004 sampling event. The results are posted in revised Attachment 1.

Attachment 1 (Groundwater Results) of the March 2004 Report contained errors. The electronic data for the wells did not match the data presented in Attachment 1. A revised Attachment 1 is included.

If you have any questions, please contact the undersigned.

Sincerely,
Foth & Van Dyke and Associates, Inc.

Ronald E. Meister, LPG
Lead Geologist

Attachments

cc: Mr. Dave Servatius, Modern Plating Corporation
Mr. Steve Laszewski, Foth & Van Dyke
Ms. Rebecca Vershaw, IEPA, Rockford, IL

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2737 South Ridge Road · P.O. Box 19012 · Green Bay, WI 54307-9012 · 920-497-2500 · Fax: 920-497-8516

Revised Attachment 1
March 2004 Groundwater/Semi-Annual Report

Groundwater Quality Results - Feb. 16-19 2004

Modern Plating Corporation

Parameter	Units	MW-5C	MW-5C Dup.	MW-5D	MW-5D Dup.	MW-6A	MW-6B	MW-6C	MW-7A	MW-7B	MW-7C	MW-7D	MW-8A	MW-8C	MW-9A
pH	S.U.	7.5	-	7.45	-	6.94	-	7.6	-	-	-	-	7.53	7.24	7.63
Temperature	Degrees C	8.4	-	9.7	-	9.2	-	7.2	-	-	-	-	9	12.5	10.6
Conductivity	umhos/cm	449	-	161.4	-	130.1	-	128.5	-	-	-	-	158.5	142.2	134.7
G.W. Elevation	MSL(Feet)	762.54	-	762.54	-	755.47	755.81	756.93	-	-	756.43	-	755.52	756.58	763.36
Cyanide (E-335.4)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (E-206.2)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (E-213.2)	ug/l	-	-	1.8	2.5	-	-	-	-	-	-	-	-	-	-
Chromium (E-218.2)	ug/l	-	-	4000	14000	-	-	-	-	-	-	-	-	-	230
Copper (E-220.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Lead (E-239.2)	ug/l	-	-	26	34	-	-	-	-	-	-	-	-	-	-
Nickel (E-249.1)	ug/l	-	-	6000	8700	-	-	-	-	-	-	-	-	-	< 1.5
Zinc (E-289.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	410
Bromobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,2-Dichloroethene	ug/l	< 1.0	< 1.0	-	-	130	-	< 1.0	-	-	-	-	760	9	-
trans 1,2-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/l	4.5	6.6	-	-	< 1.0	-	5.9	-	-	-	-	< 1.0	2.4	-
1,1,1-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/l	2	2.8	-	-	< 1.0	-	4.5	-	-	-	-	410	19	-
Trichlorofluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/l	< 1.0	< 1.0	-	-	160	-	< 1.0	-	-	-	-	29	< 1.0	-
Methylene Chloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volatiles Analyzed By EPA Method 8021B

Prepared by: LJS Checked by: TLB1

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R000948

Groundwater Quality Results - Feb. 16-19 2004
Modern Plating Corporation

Parameter	Units	MW-9A Dup.	MW-10A	MW-11A	MW-11B	MW-11C	MW-11E	MW-12A	MW-12B	MW-12C	MW-12E	MW-13A	MW-13B	MW-13C	MW-13E
pH	S.U.	-	7.52	-	-	7.73	-	-	-	-	-	-	7.44	-	-
Temperature	Degrees C	-	10.2	-	-	7.6	-	-	-	-	-	-	9.8	-	-
Conductivity	umhos/cm	-	146.8	-	-	84.1	-	-	-	-	-	-	172.1	-	-
G.W. Elevation	MSL(Feet)	-	757.41	-	-	755.94	757.49	-	-	-	-	-	754.94	-	749.73
Cyanide (E-335.4)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (E-206.2)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (E-213.2)	ug/l	230	< 0.72	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (E-218.2)	ug/l	17	16	-	-	-	-	-	-	-	-	-	-	-	-
Copper (E-220.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (E-239.2)	ug/l	< 1.5	< 1.5	-	-	-	-	-	-	-	-	-	-	-	-
Nickel (E-249.1)	ug/l	410	< 40	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (E-289.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,2-Dichloroethene	ug/l	-	-	-	-	12	-	-	-	-	-	-	6.5	-	-
trans 1,2-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/l	-	-	-	-	< 1.0	-	-	-	-	-	-	8.4	-	-
1,1,1-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/l	-	-	-	-	< 1.0	-	-	-	-	-	-	45	-	-
Trichlorofluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/l	-	-	-	-	5.2	-	-	-	-	-	-	1.4	-	-
Methylene Chloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volatiles Analyzed By EPA Method 8021B

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Prepared by: LJS Checked by: TLB1

R000949

Groundwater Quality Results - Feb. 16-19 2004

Modern Plating Corporation

Parameter	Units	MW-14A	MW-14B	MW-14C	MW-14E	MW-15A	MW-15B	MW-15C	MW-16C	MW-16C Dup.	MW-17A	MW-17B	MW-17C	MW-17D	MW-18A	MW-18E
pH	S.U.	7.07	7.76	7.51	-	7.45	7.3	7.72	7.66	-	-	7.07	7.88	7.19	-	7.91
Temperature	Degrees C	10.3	8.3	8.4	-	5.2	8.9	7.2	10.7	-	-	7.8	9	9.4	-	7.4
Conductivity	umhos/cm	171.6	176.3	146	-	100.2	92	95.8	46.1	-	-	154.2	457	164	-	152.7
G.W. Elevation	MSL(Feet)	757.13	756.23	755.12	750.99	755.52	755.49	754.76	770.7	-	750.89	749.56	749.11	749.04	748.51	748.45
Cyanide (E-335.4)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (E-206.2)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (E-213.2)	ug/l	0.67	-	-	-	1.1	1.1	1.4	1.4	1.8	-	< 0.5	< 0.5	< 0.5	-	0.54
Chromium (E-218.2)	ug/l	6.6	-	-	-	860	7.7	17	120.0	240	-	< 2.0	< 2.0	< 2.0	-	4.9
Copper (E-220.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (E-239.2)	ug/l	< 1.5	-	-	-	< 1.5	< 2.5	4.9	100	190.0	-	< 1.5	< 1.5	< 1.5	-	5.9
Nickel (E-249.1)	ug/l	< 40	-	-	-	150	< 40	< 40	76	130	-	< 40	< 40	< 40	-	< 40
Zinc (E-289.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,2-Dichloroethene	ug/l	-	7.3	2.0	-	-	< 1.0	11	< 1.0	< 1.0	-	3.7	12	13	-	24
trans 1,2-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/l	-	3.1	< 1.0	-	-	< 1.0	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-	< 1.0
1,1,1-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/l	-	58	2.7	-	-	< 1.0	< 1.0	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-	< 1.0
Trichlorofluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/l	-	< 1.0	< 1.0	-	-	< 1.0	2.2	< 1.0	< 1.0	-	< 1.0	< 1.0	< 1.0	-	1.4
Methylene Chloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volatiles Analyzed By EPA Method 8021B

Prepared by: LJS Checked by: TLB1

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R000950

Groundwater Quality Results - Feb. 16-19 2004

Modern Plating Corporation

Parameter	Units	MW-18D	MW-19A	MW-19B	MW-19C	MW-19D	MW-20C	MW-21A	MW-21C	MW-22A	MW-22C	MW-23B	MW-23B Dup.	MW-23C	PR1	PR2
pH	S.U.	7.38	-	7.68	7.43	7.25	7.45	7.83	-	8.06	-	7.7	-	7.2	-	-
Temperature	Degrees C	8.5	-	5.9	7.5	9.5	9.3	8.5	-	9.1	-	9.7	-	8.3	-	-
Conductivity	umhos/cm	134	-	147.7	136	129.4	185.9	166.8	-	489	-	192.4	-	179.3	-	-
G.W. Elevation	MSL(Feet)	748.41	-	747.28	748.76	747.99	748.8	765.03	761.32	764.5	758.26	747.22	-	747.64	-	-
Cyanide (E-335.4)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (E-206.2)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (E-213.2)	ug/l	< 0.5	-	2	< 0.5	< 0.5	0.5	20	-	160	-	< 0.5	-	0.66	< 0.5	< 0.5
Chromium (E-218.2)	ug/l	3	-	5.0	< 2.0	< 2	3500	22	-	31	-	890	-	15	< 2	< 2
Copper (E-220.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (E-239.2)	ug/l	< 1.5	-	2	< 1.5	< 1.5	5.2	< 1.5	-	7	-	< 1.5	-	7	< 1.5	< 1.5
Nickel (E-249.1)	ug/l	< 40	-	< 40	< 40	< 40	200	55	-	720	-	< 40	-	42	< 40	< 40
Zinc (E-289.1)	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,2-Dichloroethene	ug/l	< 1.0	-	180	< 1.0	< 1.0	-	-	-	-	-	< 1.0	-	140	< 1.0	< 1.0
trans 1,2-Dichloroethene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans 1,3-Dichloropropene	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/l	< 1.0	-	< 5.0	< 1.0	< 1.0	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/l	< 1.0	-	< 5.0	< 1.0	< 1.0	-	-	-	-	-	< 1.0	-	17	< 1.0	< 1.0
Trichlorofluoromethane	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	ug/l	< 1.0	-	< 5	< 1.0	< 1.0	-	-	-	-	-	< 1.0	-	< 1.0	< 1.0	< 1.0
Methylene Chloride	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Volatiles Analyzed By EPA Method 8021B

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Prepared by: LJS Checked by: REM

R000951

Groundwater Quality Results - Feb. 16-19 2004
Modern Plating Corporation

Parameter	Units	Field Blank 1	Field Blank 2	Field Blank 3	Field Blank 4
pH	S.U.	-	-	-	-
Temperature	Degrees C	-	-	-	-
Conductivity	umhos/cm	-	-	-	-
G.W. Elevation	MSL(Feet)	-	-	-	-
Cyanide (E-335.4)	ug/l	-	-	-	-
Arsenic (E-206.2)	ug/l	-	-	-	-
Cadmium (E-213.2)	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (E-218.2)	ug/l	< 2	< 2	< 2	< 2
Copper (E-220.1)	ug/l	-	-	-	-
Lead (E-239.2)	ug/l	6.9	< 1.5	< 1.5	< 1.5
Nickel (E-249.1)	ug/l	< 40	< 40	< 40	< 40
Zinc (E-289.1)	ug/l	-	-	-	-
Bromobenzene	ug/l	-	-	-	-
Bromodichloromethane	ug/l	-	-	-	-
Bromoform	ug/l	-	-	-	-
Bromomethane	ug/l	-	-	-	-
Carbon Tetrachloride	ug/l	-	-	-	-
Chlorobenzene	ug/l	-	-	-	-
Chloroethane	ug/l	-	-	-	-
Chloroform	ug/l	-	-	-	-
Chloromethane	ug/l	-	-	-	-
Dibromochloromethane	ug/l	-	-	-	-
Dibromomethane	ug/l	-	-	-	-
1,2-Dichlorobenzene	ug/l	-	-	-	-
1,3-Dichlorobenzene	ug/l	-	-	-	-
1,4-Dichlorobenzene	ug/l	-	-	-	-
Dichlorodifluoromethane	ug/l	-	-	-	-
1,1-Dichloroethane	ug/l	-	-	-	-
1,2-Dichloroethane	ug/l	-	-	-	-
1,1-Dichloroethene	ug/l	-	-	-	-
cis 1,2-Dichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
trans 1,2-Dichloroethene	ug/l	-	-	-	-
1,2-Dichloropropane	ug/l	-	-	-	-
cis 1,3-Dichloropropene	ug/l	-	-	-	-
trans 1,3-Dichloropropene	ug/l	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/l	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/l	-	-	-	-
Tetrachloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	ug/l	-	-	-	-
1,1,2-Trichloroethane	ug/l	-	-	-	-
Trichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	ug/l	-	-	-	-
Vinyl Chloride	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	ug/l	-	-	-	-

Volatiles Analyzed By EPA Method 8021B

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R000952

Foth & Van Dyke
consultants · engineers · scientists
2737 South Ridge Road
P.O. Box 19012
Green Bay, WI 54307-9012

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4302 N MAIN STREET
ROCKFORD IL 61103

R000953

ATTACHMENT 3

Site ID	Well ID	Date Collected	Full	<Q>	Result	Replicate
1770200010	G09S	2/18/2004	TEMPERATURE, WATER (DEGREES CENTIGRADE)		10.6	
1770200010	G09S	2/18/2004	SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)		134.7	
1770200010	G09S	2/18/2004	PH (STANDARD UNITS)		7.63	
1770200010	G09S	2/18/2004	NICKEL, TOTAL (UG/L AS NI)		400	
1770200010	G09S	2/18/2004	LEAD, TOTAL (UG/L AS PB)	<	1.5	
1770200010	G09S	2/18/2004	ELEVATION OF TOP MONITOR WELL CASING AB MSL FEET		772.59	
1770200010	G09S	2/18/2004	ELEVATION OF GRD WATER WITH REF.TO MEAN SEA L FT		755.72	
1770200010	G09S	2/18/2004	ELEVATION IN FEET ABOVE MEAN SEA LEVEL		746.49	
1770200010	G09S	2/18/2004	DEPTH TO WATER LEVEL FROM A MEASURING POINT (FEET)		9.23	
1770200010	G09S	2/18/2004	CHROMIUM, TOTAL (UG/L AS CR)		18	
1770200010	G09S	2/18/2004	CADMIUM, TOTAL (UG/L AS CD)		250	
1770200010	G09S	2/18/2004	NICKEL, TOTAL (UG/L AS NI)		410	2
1770200010	G09S	2/18/2004	LEAD, TOTAL (UG/L AS PB)	<	1.5	2
1770200010	G09S	2/18/2004	CHROMIUM, TOTAL (UG/L AS CR)		17	2
1770200010	G09S	2/18/2004	CADMIUM, TOTAL (UG/L AS CD)		230	2

R000955

June 2, 2009

Ms. Amy Boley
Illinois Environmental Protection Agency
Environmental Geologist
1021 N. Grande Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Boley:

RE: Groundwater Management Zone Re-evaluation
RCRA Post-Closure Permit IEPA#1770200010
Modern Plating Corporation, Freeport, Illinois

On behalf of Modern Plating Corporation (MPC) of Freeport, Illinois, Foth Infrastructure & Environment, LLC (Foth) is submitting Groundwater Management Zone (GMZ) information for the referenced permit. This submittal is based on the IEPA requirement to establish a GMZ in accordance with 35 Ill. Administrative Code (Adm.Code) Part 620 and your instructions.

Please find a completed RCRA Corrective Action Certification form in Attachment 1. A report addressing the re-evaluation of the GMZ at this site is presented in Attachment 2. The format of this report follows instructions found on the Illinois Environmental Protection Agency (IEPA) website, as provided in the guidance titled *Re-Evaluation of Groundwater Management Zones at RCRA Facilities*, (April 6, 2006).

If you have any questions or comments concerning this letter report, please call any of the undersigned at (920) 497-2500.

Sincerely,

Foth Infrastructure & Environment, LLC

Ronald E. Meister, P.G.
Project Manager

Andrea K. Martin, P.E.
Lead Environmental Engineer

Attachments

cc: Mr. Dave Servatius, Modern Plating Corporation
Mr. Steve Laszewski, Foth I&E

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2737 South Ridge Road, Suite 600 • P.O. Box 12326 • Green Bay, WI 54307-2326 • (920) 497-2500 • Fax: (920) 497-8516

Attachment 1

RCRA Corrective Action Certification Form

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Modern Plating Corporation
County: Stephenson
Street Address: 701 S. Hancock Avenue
Site No. (IEPA): 1770200010
City: Freeport
Site No. (USEPA): ILD 005172325

2.0 OWNER INFORMATION

Name: Ms. Lucille Miller
Mailing Address: Modern Plating Corporation
701 S. Hancock Avenue
Freeport IL 61032
Contact Name: Mr. Dave Servatius
Contact Title:
Phone No.: 815 235 3111

3.0 OPERATOR INFORMATION

Mr. James R. Stenberg
Modern Plating Corporation
701 S. Hancock Avenue
Freeport IL 61032

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Re-evaluation of GMZ
Date of Submittal June 1, 2009

IEPA Permit Log No. _____
Date of Last IEPA Letter on Project _____
Log No. of Last IEPA Letter on Project _____
Does this submittal include groundwater information: ☐ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Documentation of the GMZ is being submitted in accordance with IEPA requirements and instructions.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

One document entitled GMZ Re-evaluation, RCRA Post-Closure Permit IEPA # 1770200010, Modern Plating Corporation, Freeport, Illinois, addressed to Ms. Amy Boley and dated June 2, 2009 is the submittal. This form is in Attachment 1, the GMZ evaluation is in Attachment 2.

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

IEPA RCRA Corrective Action Certification
For: Modern Plating Corporation, Freeport IL
Date of Submission: June 2, 2009
Page 2

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Lucille F. Miller 6-1-09 (Date)

Title: _____

Operator Signature: _____ 6-1-09 (Date)

Title: PRESIDENT / CEO

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: Ronald E Meister 06/02/09 Date:

Professional's Name: Ronald Erwin Meister Professional's Seal:

Professional's Address: 2737 S. Ridge Road License No. 196.000321
P.O. Box 19012
Green Bay, WI 54307-9012

Professional's Phone No.: 920/496-6829

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

JM:bjh\RCRA-CORRECTIVE-ACTION-CERTIFICATION-FORM.DOC

Attachment 2

Re-Evaluation of a Groundwater Management Zone

Re-Evaluation of Groundwater Management Zones at RCRA Facilities

Modern Plating Corporation, Freeport IL

Prepared by Foth Infrastructure & Environment, LLC
Prepared: May 31, 2009

Purpose

This document has been prepared and formatted to the outline provided in instructions of the Illinois Environmental Protection Agency (IEPA) addressing Re-evaluation of Groundwater Management Zones (GMZ) at RCRA Facilities (IEPA, 2002).

1 General Information

a. Facility Name
Modern Plating Corporation (MPC)

b. Facility Address
701 South Hancock Avenue
Freeport, IL 61032

c. County
Stephenson County

d. Identification Numbers
Illinois EPA Number: 1770200010
Bureau of Land Number: n/a
USEPA Identification Number: ILD 005172325

e. General Description
MPC performs electroplating operations on various metals parts. Materials used in operations include zinc, tin, nickel, iron, and phosphate. The facility is located in the town of Freeport, Illinois as shown on Figure 1.

Operations take place within 105,000 ft^2 facilities. MPC employs 50 people.
Standard Industrial Code (SIC Code): 3471

f. GMZ Approved Units
Prior to remediation, the site included five sludge storage lagoons. The lagoons received electroplating wastes from 1968 to 1983. Lagoons No. 1, No. 2, and No.3 were regulated RCRA units and Lagoons No.0 and No. 1A were non-RCRA-regulated solid waste management units. Wastes (primarily electroplating sludge) from the lagoons listed and the contaminated soils from the former cyanide vault; soils below the former Shawanee building; and soils identified in the wetlands north of the lagoons were disposed of in a

Corrective Action Management Unit (CAMU) Landfill. The CAMU was constructed and closed per RCRA Part B standards. The CAMU is located at the former locations of Lagoons No. 2 and No. 3. The CAMU is shown on Figure 2.

The GMZ is approved to monitor the CAMU which is designed to remediate the primary sources of contamination which included the lagoons listed above, the Shawanee Building, the cyanide vault, and contaminated soils. By isolating and managing the sources of contamination the CAMU will promote groundwater improvements through natural attenuation.

It is important to remember that the IEPA has recognized that the remediation activities completed including the construction of the CAMU do not meet the clean closure requirements of 35 Ill. Adm. Code 725, Subpart G.

g. Maps

The facility location can be found on Figure 1 along with the USGS topographic information.

Figure 2 is more detailed site specific topographic information within the facility boundaries. The five former lagoons and the CAMU appear in Figure 2. The township, section and range information is included on Figure 2, Note 1.

h. Geology and Hydrogeology

General Geology of the Surrounding Area

The facility location is within the Rock River Hill Country of the Till Plains Section of the Central Lowlands Province. The area was glaciated, however, drift is thin in many areas and the major uplands and valleys are controlled mainly by the bedrock surface. The area is characterized by rolling hills considered to be in the stage of late youth to early maturity.

Summary of Geology of Unconsolidated Materials within the GMZ

The MPC facility is located adjacent to the floodplain of the Pecatonica River. The Quaternary deposits in the floodplain consist of Cahokia Alluvium, which is comprised mostly of poorly sorted sand, silt or clay which contains local deposits of sandy gravel. This alluvium is approximately 50 to 100-feet thick in the site area. The upland area consists of Illinoian age till, specifically, the Ogle Till Member of the Glasford Formation. It is composed of thin and discontinuous, tan to grayish-brown sandy, silty till and interbedded sand and gravel which rests directly on bedrock.

In general, there are four major strata at the site: organic clay, alluvial sand and gravel, lacustrine clay and the dolomite bedrock. The organic clay stratum ranges in thickness from 3 to 18-feet. The stratum consists of dark brown clay with silt and is classified as an OL or CL. The grain size analysis of the stratum averages 0% gravel, 8% sand, 62% silt, and 30% clay. The liquid limit averages 44.2 and the plastic index averages 22. The laboratory permeability of the stratum ranged from 3.3×10^{-8} cm/sec to 6.8×10^{-4} cm/sec.

The stratum underlying the organic clay is the alluvial sand and gravel. The sand and gravel ranges in thickness from about 5 to 30-feet. The stratum consists of dark brown to light brown fine to coarse sand with gravel and is classified as SP, SP-SM, and SM. The grain analyses range from 0-38% gravel, 41-98% sand, and 7-50% P200 (grains ≤ 0.075 mm). The soil is non-plastic, and laboratory permeabilities ranged from 5.1×10^{-7} cm/sec to 2.8×10^{-3}.

The organic clay and alluvial sand and gravel comprise the unconsolidated aquifer. Underlying the alluvial sand and gravel is the Lacustrine clay. The Lacustrine clay acts as an aquitard (confining unit) between the unconsolidated aquifer and the bedrock aquifer. An aquitard is characterized by low permeability that does not readily permit water to pass through it despite the fact that it stores large quantities of water. The clay ranges in thickness from about 7-feet to over 70-feet. The Lacustrine clay was not encountered in upland borings outside of the flood plain. This stratum consists of dark green brown to dark green grey clay with silt to grey silt with clay and is classified as a CL. The grain size analyses indicate the soil contains 0% gravel, less than 1% sand, 42–68% silt, and 32-58% clay. The liquid limit averages 41 and the plastic index averages 22. The laboratory permeability of the clay ranges from 8.5×10^{-8} cm/sec to 1.2×10^{-7} cm/sec.

Summary of Bedrock Geology within the GMZ

The bedrock at the facility is Ordovician Age Galena and Platteville Group dolomites which are underlain by Ancel Group Sandstone. The Galena and Platteville Group dolomites form the uppermost bedrock unit throughout most of the area. In most of northern Illinois, the Galena Group consists of dolomite formations overlying the Platteville Group. The Platteville Group is finely crystalline, dense, partially argillaceous dolomite that is frequently cherty in the upper part and sandy in the lower. The Galena Group dolomite is medium to coarse grained and partly cherty and overlies the Platteville Group. Both of these units yield groundwater through joints, bedding planes, fractures, solution channels, etc. The depth to the dolomite bedrock at the MPC facility ranges from 17-feet at location 5 to approximately 125-feet near the Pecatonica River. Based on the site borings, the dolomite bedrock is at least 40-feet thick in the vicinity of the site.

The Ancel Group sandstone which underlies the dolomite includes both the St. Peter Sandstone and Glenwood Formation. The S. Peter Sandstone is an occasionally silty, fine- to medium-grained, well sorted, well rounded, with frosted grains of quartz sand, and averages 270-feet thick. The Glenwood Formation consists of interbedded dolomite, sandstone and shale, which is 5 to 60-feet thick. Neither of these formations were encountered during drilling programs at the facility.

Hydrogeological Summary within the GMZ

The following is a summary of key points pertaining to the hydrogeologic conditions at the site:

- Two aquifers were identified at the Modern Plating Corporation (MPC) site including an upper aquifer consisting of permeable alluvial sand and gravel and the lower bedrock aquifer consisting of Ordovician age Galena and Platteville Group dolomites.

- Two aquifers are separated by a clay aquitard that is thin to absent near the bedrock high in the vicinity of the sludge lagoons and increases to over 70-feet thick near the Pecatonica River.

- Groundwater flow in both aquifers is north northeast with a relatively uniform flow field exhibited in the unconsolidated aquifer and more divergent flow in the dolomite aquifer. Horizontal gradients are approximately 0.005 ft/ft in the unconsolidated aquifer and range from approximately 0.01 ft/ft to 0.006 ft/ft in the dolomite aquifer.

- Vertical hydraulic gradients within the unconsolidated aquifer are upwards near the Pecatonica River and downward near the sludge lagoons.

- The unconsolidated aquifer is permeable with an average measured field permeability of 3.17×10^{-3} cm/sec. Similarly the dolomite aquifer exhibits an average field permeability of 4.27×10^{-3} cm/sec.

- The permeability of the clay aquitard as measured by lab permeameter tests ranges from 8.5×10^{-8} cm/sec to 1.2×10^{-7} cm/sec.

- Water exchange between the two aquifers primarily occurs where the clay aquitard is absent. Where the clay aquitard is present, water exchange is restricted due to the low permeability of the clay.

i. Groundwater Classification at the Site

The classification of groundwater per 35 IAC 620 has been an issue of historical discussion on this project. During a meeting with IEPA and USEPA on September 25, 1997, the issue of groundwater classification was discussed and concluded that groundwater at the site would be classified as Class I groundwater per the provisions of 35 IAC 620.220. However, during a project meeting with IEPA on September 25, 1997 and in the September 15, 1997 approval letter, IEPA notified MPC that the Class II designation of groundwater at the site may be appropriate for the unconsolidated aquifer but a Class I designation would apply to groundwater in the dolomite aquifer. Based on an interpretation of 35 IAC 620.210 and 620.220, the groundwater in the unconsolidated aquifer is typically less than 10-feet below ground surface and thus meets the Class II designation. Based on the permeability and depth of the dolomite aquifer, the Class I designation to the dolomite aquifer applies.

j. Description of Releases

The source of the description of the releases which follows is from the report titled *Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit,* December 1999 prepared by Foth & Van Dyke and Associates, Inc., (Foth, 1999).

Modern Plating Corporation purchased the site from the Rockwell Charitable Trust in 1963 and began operation in 1964. In 1964 and 1965, Modern Plating Corporation removed much of Rockwell's equipment and began major building reconstruction, including new roofs, walls, and floors. A used plating machine (Stevens nickel-chrome) was purchased. The unsegregated flow, which consisted of nickel, hexavalent, and trivalent chromium, was directed through the pipe in a newly-constructed tunnel to the northeast wall of the plant to connect with the existing cooling water discharge line. The

Freeport Water and Sewer Commission treatment plant apparently had insufficient capacity to accept MPC flow. In 1965-66, MPC planned to prepare for waste treatment in the area northeast of the plant, taking advantage of natural grade. As additional plating lines were installed (VIP-1 zinc barrel plater in 1966; nickel-chrome hoist line and bronze-brass hoist line in 1967; zinc hoist line and phosphate line in 1968; hard chrome, barrel nickel, pan line in 1969, etc.), discharges from these lines were piped to the tunnel. Sometime in 1967-1969, three separate discharge lines were created for cyanide, chrome, and acids and alkalis.

In 1968-1969, a large excavation was made at the north wall and an underground room (20-feet x 15-feet x 12-feet deep) was created (the cyanide vault). In this underground room, a wastewater treatment system with cyanide oxidation, chromate reduction, and neutralization of acid and alkali, was installed. There was no waste solids separation, but a consistent pH was produced (to protect the file discharge line) with little cyanide or hexavalent chromium present. This system was operated manually with little or no instrumentation.

During the 1965-1970 period, three separate environmental projects were undertaken. First, several acres to the north of the facility were filled in to present grade. A significant amount of clay, clayey loam, and clayey sand were brought to the site (purchased) and/or excavated from the site. Second, engineering plans were produced for a large wastewater treatment plant on the present site. The IEPA was heavily involved in this process of design, principally because no National Pollution Discharge Elimination System (NPDES) discharger in Standard Industrial Classification (SIC) Code 3471 apparently existed at that time. The past practice in metal finishing had been to rinse untreated sludges (bottom sludge, etc) to the sewer. MPC's approach was to eliminate this practice and commence storing in an impoundment. As a result, in 1968 or 1969, a clay-lined impoundment constructed in clay soils (Lagoon No. 0), using 2-feet to 3-feet of partially compacted clay was created northwest of the office. The "lagoon" was approximately 50-feet x 50-feet x 15-feet deep and the above-ground berm extended 3 to 4-feet above grade with a ramp for adding materials. The nature of the materials added is in dispute. However, it is acknowledged that various cyanide sludges and zinc, cadmium, and copper stripping were added, as well as limited amounts of alkaline sludge (cleaner bottom sludge, nickel filter cake, etc.) There may have been trichloroethylene (TCE)-containing waste added to Lagoon No. 0. Sufficient solid waste was added such that some liquids could be added without reducing viscosity. Around the summer of 1970, a decision was made to close the lagoon. A large amount of Oil Dry and lime mixture was added for solidification, as well as several loads of sand. Several feet of clay were used to cover the lagoon and the adjoining land was filled to match the mound caused by lagoon closure.

In May of 1971, the current wastewater treatment plant was put into operation with simultaneous closure of the underground treatment system. The contents of the room (sludges in the cyanide treatment basin, chromium treatment basin and acid-alkali neutralization basin) were pumped through the new wastewater treatment plant; IEPA personnel were present during this process.

Following the closure of Lagoon No. 0, there was no further disposal, either on-or off-site, of untreated wastes. In the spring of 1971, before the treatment plant was in operation, the west lagoon (Lagoon No. 1) was constructed in a clay soil environment. A pipe (4-inch or 6-inch) was laid from the sludge thickening basin of the treatment plant to Lagoon No. 1. The initial clarifier sludge (bottom blowdown) was apparently quite low in solids, as primitive flocculate and polymers were used. The lagoon filled quite rapidly and, by mid-1972, was overflowing. The overflow was reportedly clear liquid. Pumps were installed to transfer topwater to either the wastewater treatment plant or to the final sewer line. During the 1972-1973 winter, this pumping was impractical. In the spring of 1973, the center lagoon (Lagoon No. 2) was constructed in a clay soil environment and immediately put into service. Topwater was pumped out of Lagoon No.1. Spring floods of 1973 caused erosion to the back berms of both lagoons. Collapse of the Lagoon No. 1 back berm was considered imminent. A contract was issued to chemically fix the contents of Lagoon No. 1 (approximately 1,850 cy), place the "cemented" product in a new pit (Lagoon No. 1A), and reconstruct the Lagoon No.1 floor and berms. This work, performed by Chemfix, Inc. in the summer of 1973, was permitted under IEPA Permit 83-316 and observed by IEPA personnel.

From 1973 through 1979, the waste treatment sludge was alternately discharged into each of the two lagoons. The freeboard rule was not applied. Each lagoon was filled to overflowing before switching discharges, the topwater was pumped off. Solids content increased steadily during this period. Plans were made for a third lagoon to be constructed in 1979-1980.

In 1978, quality problems resulted from operating an "open-air" treatment plant for several months. Compounding the problem was the deterioration of the wastewater segregation systems, which necessitated a multi-year reconstruction of this system. During 1979-1980, there were repeated instances of lagoon overtopping. An Illinois Pollution Control Board case (PCB 78-226) resulted from the discharge of effluents containing several heavy metals to the Pecatonica River. A settlement was reached with MPC. They were fined $125,000.

Lagoon No. 3 was constructed in a clay soil environment in the spring of 1980 and was immediately utilized. Materials were removed from Lagoon No. 1 and No. 2 in the summer of 1980, and the discharge lines to those lagoons were sealed.

During the 1977-1980 period, vegetative growth around the lagoons became very well established. Initially, the areas were mowed, but later a decision was made to cease mowing and to spray the growth with trichloroethylene (TCE). TCE was used at MPC for industrial cleaning applications. The TCE was bought from an unknown distributor. The amount of TCE used has been reported by various MPC employees as two to four drums. The application(s) of TCE on the weeds most likely took place during mid-summer of 1979 and 1980. A firm was hired to apply an environmentally safe herbicide to the lagoon areas in 1981 and 1982. Subsequently, no chemicals have been used, and mowing or hand-cutting has been performed.

In 1980/1981, faced with the need for a significant addition to the waste treatment plant in order to meet NPDES limits, MPC obtained permission from the Freeport Water and Sewer Commission (FWSC) and the IEPA (January, 1982) to connect to the FWSC plant.

The discharge line from the MPC wastewater treatment plant to the Pecatonica River was sealed. As one condition, MPC agreed to install (by June 1, 1982), solids dewatering equipment and to cease, at that point, discharge into the lagoons. The sludge discharge line to Lagoon No. 3 was therefore sealed. This action was completed on May 27, 1983. The dewatering capacity of the first pressure filter was inadequate, and a second unit was purchased and installed in October of 1983. MPC overlooked a discharge pipe from a sump in an underground vault in front of the treatment plant. This vault was used to contain two tanks used in MPC's process. Precipitation and runoff occasionally seeped into the vault and were pumped into the lagoons. This flow resulted in a minimal overtopping condition in the winter of 1985/1986. This line was sealed in March 1986. All discharge routes to the lagoons have now been sealed.

2 Information Regarding the Release

a. Chemical Constituents Released to the Groundwater;

Sources of release to the groundwater at this site include the lagoons and on-site soil contamination. This section contains a description of each RCRA and non-RCRA regulated unit at the MPC facility.

Sludge Lagoons

Lagoons No. 1, No. 2, and No. 3 are regulated as RCRA units. Lagoons No. 0 and No. 1A are non-RCRA regulated SWMUs.

An estimated 15,250 cubic yards (cy) of electroplating sludge were contained in the five lagoons. The sludge is classified as an F006 listed waste. In addition, Lagoons No. 0 and No. 3 also contain trichloroethene (TCE). Lagoons No. 0 and No. 3 carry an additional F002 listing.

Summary of Conditions at Sludge Lagoons

Inorganic and organic constituents-of-concern in the sludge waste that were contained in Lagoons No. 0, No. 1A, No. 1, No. 2, and No. 3 have been previously detailed. The chemical and physical data from the lagoons, coupled with site groundwater monitoring data indicate that the lagoons are the principal source of contamination of the environment at the site. As such, removal or environmental isolation of the lagoons in a CAMU, is a critical component of remedial action at the MPC site.

Summary of Soil Contamination Data

Soil contamination contours based on RFI data were developed and presented in previous reports. Appendix E of Foth & Van Dyke, September 1997 report titled *Modifications to the RCRA Closure Plan and Basis of Design Report* contains copies of previously presented soil contour plots. Examination of these plots show soil contamination centered immediately north of Lagoons No. 2 and No. 3.

b. Groundwater Constituents Above Applicable Standards

The current groundwater monitoring program addresses the following parameters of concern:

Volatile Organic Compounds	Metals
Tetrachloroethene	Cadmium
Trichloroethene	Chromium
Cis-1,2-dichloroethene	Lead,
Vinyl chloride	Nickel

c. Description of Site Investigation

A comprehensive description of the historical site investigation and remedial activities appears in:

RCRA Part B Permit Application for Proposed Corrective Action Management Unit, as modified. Prepared by Foth & Van Dyke, December, 1999, (Foth, 1999).

d. Description of Groundwater Monitoring Program

A thorough description of the historical site investigation and associated groundwater monitoring program appears in:

RCRA Part B Permit Application for Proposed Corrective Action Management Unit, as modified. Prepared by Foth & Van Dyke, December, 1999, (Foth, 1999).

Additional information on ongoing groundwater monitoring appears in the most recently completed semi-annual report dated October 13, 2008, that can be found in Attachment 3 of this document. Groundwater monitoring is presently being completed in accordance with the April 11, 2000 *IEPA RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit (CAMU)*, (IEPA, 2000).

e. Groundwater Monitoring Network and Sampling Protocols

Monitoring well locations are shown in Figure 2. The sampling protocol was prepared as part of the permit application (Foth, 1999) in accordance with Title 35 Ill. Admin. Code Subtitle G, Chapter I, Parts 703.185(h)(4), 724.192, 724.200(d) and is summarized below:

The groundwater monitoring program for the MPC facility, with respect to wells and parameters, is based on the April 11, 2000 *IEPA RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit (CAMU)*, (IEPA, 2000). The program is summarized below with Title 35 Ill Adm. Code Subtitle G *Chapter I Part 703 RCRA Permit Program, Part 724 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities* references in parentheses:

1 General Monitoring Requirements (703.185(e), 724.197)

The groundwater monitoring program is patterned after a program approved by the IEPA dated September 15, 1997. It has been modified as the program has been implemented as described below. All modifications have been approved by IEPA.

2 Groundwater Monitoring System

The groundwater monitoring system with respect to well construction information, boring logs, and well completion reports have been documented and submitted previously to IEPA.

3 Description of Sampling and Analysis Procedures

Groundwater monitoring takes place in wells shown in Figure 2 for parameters indicated under 2b.

Field parameters will also be collected from all wells sampled for metals and VOCs (PCE, TCE, cis-1,2-DCE, and VC). Field parameters include pH, specific conductance, temperature of water sample, turbidity, depth to water below land surface, and depth to water from top of well casing. The elevation of the top of well casing, ground surface elevation, and well bottom elevation will also be recorded and reported. Wells not sampled for organic or inorganic parameters will be measured for depth to groundwater to acquire additional data on groundwater elevation and aid in the development of potentiometric surface maps.

For wells which are to be sampled for metals and/or VOCs, the following procedures will be followed:

- The inner diameter (I.D.) of the well casing will be measured and recorded.
- The static water level and depth of the well will be measured with an electronic water level indicator. The electronic water level indicator will be lowered into the water slowly to prevent splashing and the depth to water recorded to within 0.01 feet. The electronic water level indicator will once again be lowered into the well to determine the total depth of the well within 0.01 feet. The point of reference for both measurements will be a mark on the top of the well casing with the locking cap off. Between wells, the water level indicator will be decontaminated with a non-phosphate detergent wash and deionized water rinse. The indicator will then be allowed to air dry. The time of the depth to water reading, point of reference, depth to water level, and depth of the well will be recorded.
- From the information collected in 2, the number of linear feet of static water in the well will be calculated (total depth of well – depth to water = number of linear feet of water).
- The static water volume will be calculated using the following formula:

  $v = r^2h\ (0.163)$, where:

  v = Static volume of water in well in gallons,

  r = Inside radius of well casing in inches,

  h = Length of water column in feet, and

  0.163= A constant conversion factor which compensates for the conversion of the casing radius from inches to feet, the conversion of cubic feet to gallons, and pi.

For 2-inch wells, 6-feet of water column is equivalent to almost one gallon.

After static water volume is calculated, each well will be purged of three times the volume of water in the monitoring well, or to dryness, using a stainless steel bailer, a submersible pump, or dedicated stainless steel bailers. Detailed field logs of purging procedures will be maintained. Stabilized (<5 percent fluctuation) readings or the removal of three well volumes will be required prior to sample collection. Temperature, pH, and specific conductivity measurements will be taken and recorded initially and after the removal of each well volume if stabilized readings are used for purging. The volume of water purged will be drummed and stored near the well. The drums will be emptied into MPC's wastewater treatment plant during the sampling event unless wet conditions limit machinery access to the well locations. If wet conditions are encountered, the drums will be emptied into MPC's wastewater treatment plant within 90 days, or as soon as conditions permit.

As soon as the wells have recovered, samples will be removed for pH (field) and specific conductance (field), VOCs and/or metals. If the wells are purged to dryness, samples being tested for VOCs, specific conductivity and pH will be collected first upon recovery. The remaining samples will be collected in the order of their descending volatility (i.e., metals) as soon as a sufficient volume is available for each parameter.

The submersible pump and stainless steel bailer will be cleaned between sample locations using the following procedure: the pump or bailer will be washed with non-phosphate detergent and then rinsed with deionized water, and air-dried before being placed into the wells. Nylon rope, for stainless steel bailer retrieval, will be changed after each use.

Temperature, conductivity and pH readings will be performed at the well head. A pH/conductivity meter will be used to perform these readings. The meter will be calibrated for pH and conductivity per manufacturer's recommendations. The meter will be decontaminated between samples by rinsing with pH 7 water for pH probe and deionized water for conductivity probe per manufacturer's recommendations.

The water samples will be poured into the proper containers which have been specifically prepared for the given parameter(s). Samples will be poured directly from the stainless steel bailer, filling the VOC vials first, and the bottles for metals last.

VOC samples will be placed in the sample containers with all headspace eliminated. When pouring the water from the bailer to the sample container, the sample will be exposed a minimum amount of time to the air. The sample will be purged so as to cause minimal agitation. The holding time for VOC samples is seven days from the date of sampling.

The metals sample will not be filtered and will be analyzed for total recoverable metals. This sample will also be acidified with nitric acid to a pH less than 2.0.

After the appropriate sample bottles have been filled, another sample will be collected from the well to confirm consistency in pH, temperature, and specific conductivity readings. If full recovery exceeds two hours, the samples will be collected as soon as sufficient volume is available.

One field blank will be collected for each day of sampling. A blank will be made for each type of sample matrix.

Each day of a sampling event, one sample point will be selected at random to be a full duplicate sample. Field duplicate samples will be subject to the full complement of analyses for that sample point. Results will be used to evaluate possible matrix problems.

Each sample bottle will be sealed with chain of custody tape and labeled with the following information:

- Tag number
- Lab ID number
- Station number
- Station Description
- Date of Collection
- Client identification
- Preservative
- Sampler's signature(s)
- Sample type (grab or composite)

A field log will be maintained by the field sampler. The following will be documented on these forms.

- Well number and location
- Well depth
- Depth to static water level and measurement technique
- Well yield
- Well evacuation procedure and equipment
- Sample collection date and time
- Well sampling sequence
- Types of sample containers used and sample identification numbers
- Preservatives used
- Parameters requested for analysis
- Field analysis data and methods
- Sample distribution and transport (2)
- Name of sample collector

After collection and identification, the samples will be maintained under Chain-of-Custody procedures. The field sampler will be personally responsible for the care and custody of the samples until they are transferred or properly dispatched. Samples will be properly packaged with sample labels for shipment with a separate signed Custody Record enclosed in each sample box or cooler. The laboratories and any other person receiving the samples will sign and date the Custody Record. A sample analysis request sheet will accompany the samples to the laboratory. A laboratory log book will be maintained at the laboratory. All pertinent information about the samples will be recorded in this book. All other pertinent information about the sampling event will be recorded in the field log book.

4 Background Quality (724.197(g), 724.199)

The background groundwater monitoring point for the MPC facility will be groundwater monitoring well MW-16C. Recently, that well has been taken out of service as noted in the October 2008 semi-annual monitoring report (Attachment 3). This has been reported to the IEPA via telephone as well.

5 Statistical Evaluations

The following procedures are used to evaluate the groundwater quality monitoring data and are consistent with historical practice at the MPC facility which was established at the direction of the IEPA. An example of the semi-annual report from October 2008 is included in Attachment 3. The procedures used are as follows:

- Trends and changes in specific parameters and overall groundwater quality will be presented on graphs.
- A tabular evaluation of contaminant levels in the groundwater with respect to established clean up levels.
- A graphical evaluation of the groundwater surface data from wells (hydrographs) accompanied with annual potentiometric surface maps of the facility and surrounding area.

6 Evaluation of Groundwater Surface (724.197(f), 724.199 (e))

Annually during the fall sampling event, the groundwater surface is evaluated via hydrographs and the development of a potentiometric surface map. The groundwater flow rate and direction is also evaluated during the fall event.

7 Extension of Compliance Period (724.200(f))

The compliance period during which groundwater monitoring applies shall be extended until MPC demonstrates that the groundwater quality standards established by the IEPA per 35 IAC 724.192 have been attained. Given that a groundwater management zone has been established and that groundwater remediation is not required per 35 IAC 742.925 it is our understanding that groundwater at the site will need to be monitored until such time that the groundwater quality standards of 35 IAC 620.410 and 620.420 have not been exceeded for a period of three consecutive years.

8 Effectiveness of Corrective Action (724.200(g))

As part of the semi-annual monitoring program and reporting requirements, MPC will also provide an assessment of the corrective action program with the focus being concentration trends and progress towards attaining the 35 IAC 620.410 standards for the dolomite aquifer and the 35 IAC 620.420 standards for the unconsolidated aquifer.

9 Evaluation of Corrective Action Program (724.200(h))

If it is determined that the corrective action program no longer satisfies the requirements of 35 IAC 724.200, an application for permit modification to make any appropriate changes to the program will be submitted to the IEPA within 90 days.

f. Groundwater Monitoring Schedule

Groundwater monitoring schedule is performed on a semi-annual basis. This includes groundwater sampling for parameters listed in Section 2b and field parameters as described in the permit. Groundwater monitoring is performed in accordance with the requirements described in Permit Section III.

g. Groundwater Monitoring Results Summary

Information on historical and ongoing groundwater monitoring including identification of monitoring wells, chemical constituents analyzed, and concentrations for each well appears in the most recently completed semi-annual report dated October 13, 2008 that can be found in Attachment 3 of this document.

3 Scaled drawings identifying the horizontal and vertical boundaries of the GMZ

Figure 2 shows the horizontal boundary of the GMZ at the site. The lower vertical boundary is defined by the lowermost monitoring well depths in the Dolomite Aquifer:

Monitoring Well	Well Depth (ft-bgs)[1]
MW-11E	101.0
MW-12E	87.2
MW-13E	117.9
MW-14E	114.0

[1]ft-bgs – feet below ground surface.

4 Information regarding the approved remedial action

a. Approved Remedial Actions

Remedial action was approved by the IEPA with the issuing of the *RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit(CAMU)* on April 11, 2000 (IEPA, 2000). MPC constructed, operated, and closed a CAMU receiving remediation waste generated from the closure and corrective actions taken at several hazardous waste management units and solid waste management units at the facility. Construction of all units was done in accordance with IEPA approved design, construction, and operating requirements including liner systems, cover systems, leachate collection and removal systems, and groundwater monitoring requirements as described in the permit.

Closure of the Shawnee Building, Wetlands Area, Wastewater Release Area, Lagoons 0, 1, 1A, 2, and 3 and the Cyanide Treatment Vault have received certification of Completed Closure with conditions as outlined in the permit. Ongoing groundwater monitoring is continuing in accordance with the permit.

b. Impact of Approved Remedial Actions

Progression of the remedial efforts is documented in the most recently completed semi-annual report dated October 13, 2008 that can be found in Attachment 3.

c. Operation and Maintenance of Approved Remedial Action

The current permit dated April 11, 2000 and a pending permit update dated May 7, 2009 describe how the remedial action continues to be operated and maintained. Semi-annual sample collection and groundwater field testing is performed by Fehr-Graham & Associates, Freeport IL in accordance with the permit and good practice. Semi-annual reports are submitted to the IEPA per the requirements outlined in the permit by Foth Infrastructure & Environment LLC.

d. Schedule for Completion of Remediation

Testing is proceeding on the schedule described under 2f. Projected completion of remediation is not available at this time since completion is tied to natural attenuation.

e. IEPA Permits for the Remedial Action

The current permit for the remedial action at this site is:

RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, Log No. B-B167, issued April 11, 2000, update pending addressing RCRA Log Nos. B-167-M-1 through M-8, dated May 7, 2009.

f. Post Remediation Groundwater Monitoring

Upon reaching prescribed remediation goals at the site, monitoring will be performed in accordance with IEPA instructions and applicable regulations.

g. Adequacy of On-Going Control and Management of the GMZ

Efforts at the site have achieved the reduction of groundwater contamination as documented in ongoing semi-annual reports submitted to IEPA. Of the remaining parameters being monitored, reduction in groundwater concentrations, are documented in the October 2008 semi-annual report found in Attachment 3. Remediation efforts at the site have followed approved methods and have coincided with contamination reductions at the site. This is one indication of the adequacy of the ongoing controls and continued management of the GMZ. MPC has proceeded with and will continue to pursue remediation and monitoring activities at this site under IEPA approved permits.

h. Future Activities

In accordance with IEPA expectations on GMZs as described in *Re-evaluation of Groundwater Management Zones at RCRA Facilities* (IEPA, 2002), Modern Plating will submit a report to IEPA describing the status of the GMZ and requesting any appropriate modifications. IEPA will review the GMZ every 5 years along with determination of adequacy of on-going controls and continued management of the GMZ. Upon reaching prescribed remediation goals at the site, monitoring will be performed in accordance with IEPA instructions and applicable regulations.

5 Point of Compliance

MPC will continue to abide by the IEPA approved permit requirements until the IEPA deems the GMZ compliant with applicable standards and regulations. MPC will follow IEPA requirements after compliance with applicable standards has been demonstrated.

References

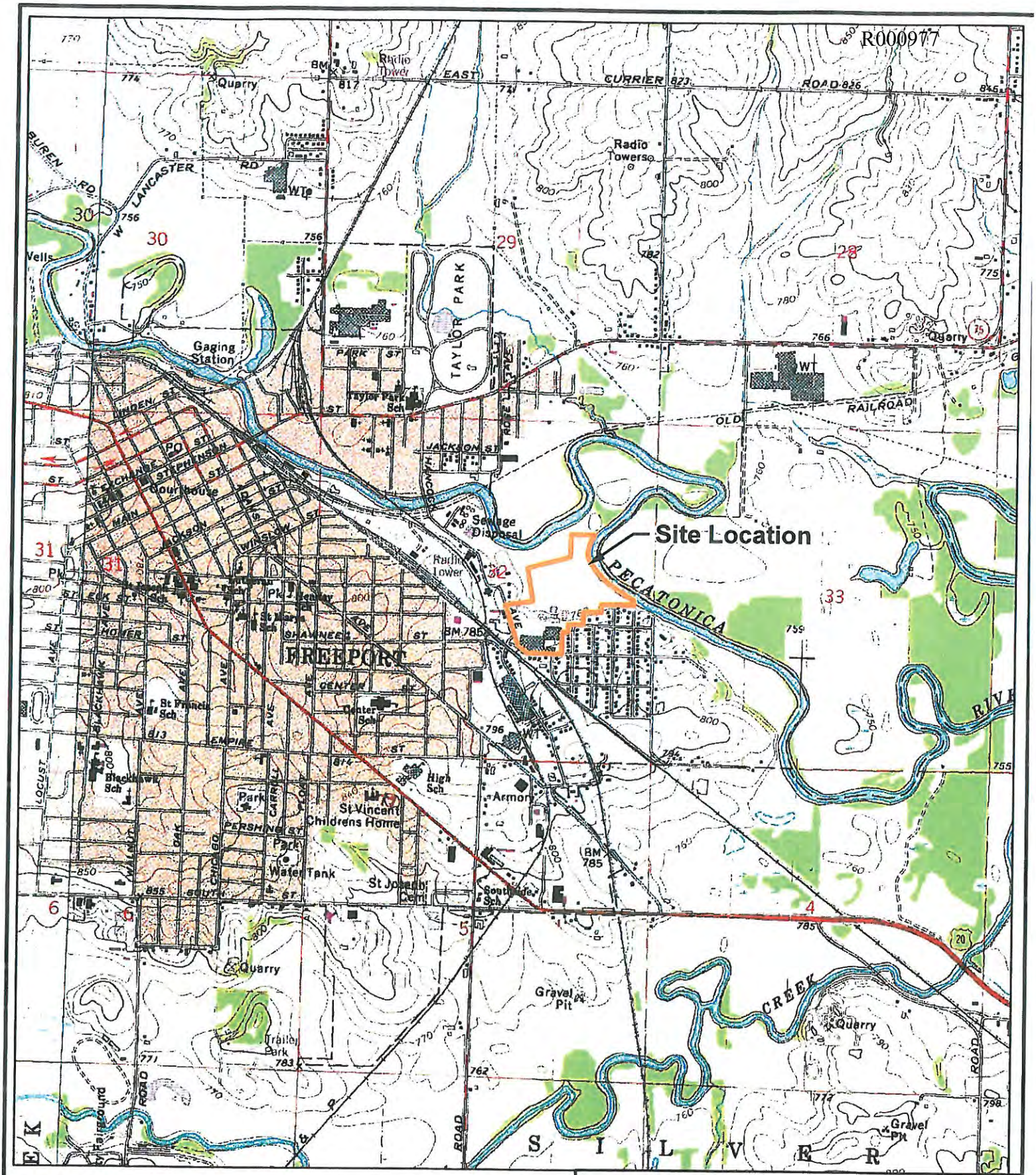
Foth & Van Dyke, 1999. RCRA Part B Permit Application for Proposed Corrective Action Management Unit, as modified. December, 1999.

Illinois Environmental Protection Agency, 2000. RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, Log No. B-B167, issued April 11, 2000, update pending addressing RCRA Log Nos. B-167-M-1 through M-8, dated May 7, 2009.

Illinois Environmental Protection Agency, Re-evaluation of Groundwater Management Zones at RCRA Facilities. http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/reevaluation-of-groundwater-management-zone.html. April 6, 2002.

Figures

R000977



This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

Source: USDA Geospatial Data Gateway
Date of 1:24K DRG: 2000

Foth
Foth Infrastructure & Environment, LLC

N

MODERN PLATING CORPORATION

FIGURE 1 - SITE LOCATION MAP
MODERN PLATING CORPORATION
701 S. HANCOCK AVE
FREEPORT, IL 61032

Scale: 0 1,000 2,000 Feet	Date: MAY, 2009	
Drawn By: BJW1	Checked By: AKM	Scope: 09M043

Attachment 3

October 2008 Groundwater/Semi-Annual Report

Foth

October 13, 2008

Stephen F. Nightingale
Illinois Environmental Protection Agency
Permit Section Manager
Bureau of Land/Permit Section #33
1021 N. Grande Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Mr. Nightingale:

RE: October 2008 Groundwater/Semi-Annual Report
Modern Plating Corporation

Introduction

On behalf of Modern Plating Corporation (MPC) of Freeport, Illinois, Foth Infrastructure & Environment, LLC (Foth) is submitting this semi-annual report evaluating groundwater quality data at the above referenced site. Groundwater sampling was performed on August 19-21, 2008 by Fehr-Graham and Associates of Freeport, Illinois (Fehr-Graham). The monitoring wells which were sampled are those defined in the monitoring system described in the April 11, 2000 IEPA RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit (CAMU) landfill. The exception is monitoring well G16M, the background well located on private property. The new homeowner removed this well without MPC's authorization. On behalf of MPC on August 13, 2008 Fehr-Graham informed Rebecca Demay of IEPA that this well was removed. We are presently determining the best way to proceed to address this situation.

Please note that the raw data used to prepare this report is on the attached diskette prepared in the prescribed Illinois EPA format. The *RCRA Facility Groundwater, Leachate and Gas Reporting Form* follows this cover letter.

The groundwater samples were analyzed by PDC Laboratories, Inc of Peoria, Illinois. PDC's laboratory analysis, along with Fehr-Graham's field assessments of pH, temperature, conductivity, and groundwater elevation are summarized in Attachment 1.

Evaluation of Cleanup Objectives

Concentration levels measured in August 2008 are shown as a percentage of the cleanup objectives (Class I and Class II Groundwater Quality Standards from Part 620 of 35 Ill. Adm. Code 3031) for the site in Attachment 2. A "N.D." in Attachment 2 represents a compound which was not detected. A "-" (dash) indicates no sample result. Values exceeding the

2737 South Ridge Road, Suite 600 • P.O. Box 12326 • Green Bay, WI 54307-2326 • (920) 497-2500 • Fax: (920) 497-8516

groundwater cleanup objectives (i.e., greater than 100%) have been shaded in the tables. Note that we have provided data trends in Attachment 3 from the previous 12 years to illustrate recent trends in the parameter concentrations.

The metal constituents exceeding the Class I groundwater standards during the September 2008 sampling event are chromium (MW-5D, MW-20C and MW-23C), lead (MW-5D and MW-23C) and nickel (MW-5D and MW-20C). The metal constituent exceeding the Class II Groundwater Standards is cadmium (MW-9A and MW-22A).

The volatile organic compounds (VOCs) that exceeded Class I groundwater standards are tetrachloroethene (PCE) (MW-7D), trichloroethene (TCE) (MW-7D, MW-8C and MW-23C) and vinyl chloride (MW-11C and MW-15C). The VOCs that exceeded the Class II groundwater standards are *cis*-1, 2-dichloroethene (MW-8A), TCE (MW-8A) and vinyl chloride (MW-6A, MW-7A, MW-8A and MW-19B).

Evaluation of Concentration Trends

Historical concentrations, since 1995, of the primary constituents for this site (four metal constituents and four VOC constituents) are illustrated graphically in the color plots provided in Attachment 3 (Figures 3-1 through 3-8). The metal constituents included are: cadmium, chromium, lead and nickel, and the VOC constituents included are: ~~tetra~~chloroethene (PCE), trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE) and vinyl chloride. Non-detected results in the plots are represented by a "<". Exceedances for metals continue at MW's 5D, 9A, 20C, 22A, and 23C. Exceedances for VOC continue at MW's 6A, 7A, 7D, 8A, 11C, 16C, 19B, and 23C.

Groundwater Flow and Transport

Since this is the second semi-annual sampling event, the groundwater flow and direction is reported as required by permit condition Section III., I, 3 and 4. Groundwater elevations were measured at the Modern Plating Facility site in August 2008. Attachment 4, Figures 4-1, 4-2, 4-3, and 4-4 show contours of the potentiometric surface of the unconsolidated and dolomite aquifers during August 2008. The potentiometric surface maps are consistent with historical conditions. In the unconsolidated aquifer, rather uniform hydraulic gradients exist across the site. Under the influence of the local hydraulic gradient, groundwater in the unconsolidated aquifer flows from the site and discharges to the Pecatonica River. Compared to the unconsolidated aquifer, groundwater flow in the dolomite aquifer is more variable. Hydraulic gradients within the dolomite vary across the site, with divergent flow in the vicinity of the waste lagoons.

Overall, the groundwater flow characteristics such as the magnitude and direction of the Darcy flux are consistent with historical trends. Thus the pattern of advective and dispersive transport of contaminants at the site remains unchanged.

Work Completed On-Site and Expected Impacts

The construction of the CAMU landfill is completed and the entire CAMU landfill has received final cover and is closed. It is too early to expect that the CAMU construction and closure has had substantial impacts on the groundwater quality. However, we do expect to see improvements in groundwater quality with time.

Conclusion

The Class II groundwater exceedances occurred for cadmium, *cis*-1, 2-DCE, TCE and vinyl chloride in the unconsolidated aquifer wells near the lagoons and property boundary. The majority of the Class I exceedances occurred for chromium, lead, nickel, PCE, TCE and vinyl chloride.

The next monitoring event is scheduled for February 2009 which will be reported on or before March 15, 2009.

If you have any questions or comments concerning this letter report, please call any of the undersigned at (920) 497-2500.

Sincerely,

Foth Infrastructure & Environment, LLC

Daniel A. Tilly
GIS Specialist/Data Analyst

Ronald E. Meister, P.G.
Project Manager

Attachments

cc: Mr. Dave Servatius, Modern Plating Corporation
Mr. Steve Laszewski, Foth I&E

Illinois
Environmental
Protection Agency

Bureau of Land
1021 North Grand Avenue East
Box 19276
Springfield, IL 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: Modern Plating Corporation Site ID #: 1770200010 – Stephenson Co
Facility Address: 701 South Hancock Ave
Freeport, IL 61032-0838 Fed ID #: ILD 005172325

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

___ LPC-160 Forms

Groundwater

___ Quarterly – Indicate one: 1 2 3 4
✓ Semi-Annual
___ Annual
___ Biennial

Leachate

___ Quarterly – Indicate one: 1 2 3 4
___ Semi-Annual
___ Annual
___ Biennial

___ Groundwater Data (without LPC-160 Forms)
___ Quarterly – Indicate one: 1 2 3 4
___ Annual ___ Semi-Annual ___ Biennial

___ Well Construction Information
___ Well Construction Forms, Boring Logs and/or Abandonment Forms
___ Well Survey Data (e.g., Stick-up Elevation Data)

___ Notice of Statistically Significant Evidence of Groundwater Contamination (35 Ill. Adm. Code 724.198)

___ Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))

___ Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 Ill. Adm. Code 724.199(i))

___ Gas Monitoring Reports

___ Other (identify) _____

Attachment 1

Groundwater Results

Groundwater Quality Results - Aug. 19 - Aug. 21, 2008
Modern Plating Corporation

Parameter	Units	MW-05C G05M	MW-05D G05L	MW-06A G06S	MW-06B G06U	MW-06C G06M	MW-07A G07S	MW-07B G07U	MW-07C G07M	MW-07D G07L	MW-08A G08S	MW-08C G08M	MW-09A G09S	MW-10A G10S	MW-11A G11S	MW-11B G11U	MW-11C G11M	MW-11E G11D	MW-12A G12S
pH	S.U.	7.74	7.77	7.36	-	7.54	7.48	-	-	7.49	7.50	7.53	7.48	7.64	-	-	7.45	-	7.45
Temperature	Degrees F	60.8	58.5	63.7	-	65.1	66.0	-	-	64.4	66.4	63.3	65.5	60.8	-	-	18.7	-	68.4
Conductivity	umhos/cm	385	401	904	-	630	654	-	-	556	639	509	707	551	-	-	494	-	590
G.W. Elevation	MSL(Feet)	764.70	764.72	754.79	754.92	756.30	753.66	754.44	756.07	756.29	754.09	755.98	757.76	755.90	755.23	755.12	755.93	755.69	753.68
Well Dpth. Elev.	MSL(Feet)	755.18	739.82	743.12	728.85	711.45	740.64	726.49	719.58	703.54	741.67	618.77	746.77	744.00	742.04	727.87	689.47	654.99	741.14
Cadmium (E-213.2)	ug/l	-	1.3	-	-	-	-	-	-	-	-	-	250	<1	-	-	-	-	<1
Chromium (E-218.2)	ug/l	-	350	-	-	-	-	-	-	-	-	-	120	<4	-	-	-	-	5.1
Lead (E-239.2)	ug/l	-	7.6	-	-	-	-	-	-	-	-	-	<1	<1	-	-	-	-	1.4
Nickel (E-249.1)	ug/l	-	180	-	-	-	-	-	-	-	-	-	360	<5	-	-	-	-	17
cis 1,2-Dichloroethene	ug/l	<0.5	-	9	-	<0.5	6	-	-	1	650	2	-	-	-	-	13	-	-
Tetrachloroethene	ug/l	0.9	-	<0.5	-	4	<0.5	-	-	7	4	2	-	-	-	-	<0.5	-	-
Trichloroethene	ug/l	0.3	-	<0.2	-	4	<0.2	-	-	10	200	10	-	-	-	-	<0.2	-	-
Vinyl Chloride	ug/l	<0.2	-	32	-	<0.2	30	-	-	<0.2	56	<0.2	-	-	-	-	13	-	-

Volatiles Analyzed By Method SW8260B

Prepared By: SGL Checked by: DAT

R000984

J:\scopes\05M119\QRTRLY\TABLES\Oct 2008\Aug2008.xls

Groundwater Quality Results - Aug. 19 - Aug. 21, 2008
Modern Plating Corporation

Parameter	Units	MW-12B G12U	MW-12C G12M	MW-12E G12D	MW-13A G13S	MW-13B G13U	MW-13C G13M	MW-13E G13D	MW-14AF G14S	MW-14B G14U	MW-14C G14M	MW-14E G14D	MW-15A G15S	MW-15B G15U	MW-15B Dup. G15U	MW-15C G15M	MW-16C G16M	MW-17A G17S
pH	S.U.	7.50	-	-	7.49	7.43	-	-	7.46	7.47	7.54	-	7.53	7.51	-	7.51	O	-
Temperature	Degrees F	62.6	-	-	60.1	64.6	-	-	58.1	59.7	59.7	-	63.9	63.9	-	66.4	w	-
Conductivity	umhos/cm	712	-	-	528	440	-	-	637	563	503	-	544	580	-	428	n	-
G.W. Elevation	MSL(Feet)	754.17	755.93	755.96	753.68	754.01	755.55	751.92	754.71	754.78	755.19	753.74	754.55	754.57	-	755.22	e	752.31
Well Dpth. Elev.	MSL(Feet)	726.80	701.00	666.18	741.05	725.52	668.95	642.50	738.34	736.69	678.36	647.71	743.70	727.57	-	652.24	r	739.78
																	R	
Cadmium (E-213.2)	ug/l	-	-	-	<1	-	-	-	<1	-	-	-	2.4	<1	1.1	<1	e	-
Chromium (E-218.2)	ug/l	-	-	-	6.6	-	-	-	5.8	-	-	-	17	10	11	4.4	m	-
Lead (E-239.2)	ug/l	-	-	-	1.8	-	-	-	<1	-	-	-	4	5	8.1	3.5	o	-
Nickel (E-249.1)	ug/l	-	-	-	18	-	-	-	23	-	-	-	120	12	13	7.1	v	-
																	e	
cis 1,2-Dichloroethene	ug/l	16	-	-	-	1	-	-	-	<0.5	2	-	-	2	2	3	d	-
Tetrachloroethene	ug/l	<0.5	-	-	-	6	-	-	-	9	<0.5	-	-	<0.5	<0.5	<0.5	-	-
Trichloroethene	ug/l	0.6	-	-	-	11	-	-	-	12	3	-	-	1	1	<0.2	-	-
Vinyl Chloride	ug/l	4	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	0.2	4	-	-

Volatiles Analyzed By Method SW8260B

Prepared By: SGL Checked by: DAT

R000985

Groundwater Quality Results - Aug. 19 - Aug. 21, 2008
Modern Plating Corporation

Parameter	Units	MW-17B G17U	MW-17C G17M	MW-17C Dup. G17M	MW-17D G17L	MW-18A G18S	MW-18B G18U	MW-18D G18L	MW-19A G19S	MW-19B G19U	MW-19B Dup. G19U	MW-19C G19M	MW-19D G19L	MW-20C GA0M	MW-21A GA1S	MW-21C GA1M	MW-22A GA2S
pH	S.U.	7.61	7.64	-	7.66	-	7.60	7.77	-	7.64	-	7.78	7.76	7.69	7.61	-	7.84
Temperature	Degrees F	60.4	62.6	-	61.5	-	58.5	57.4	-	55.2	-	58.1	57.7	59.0	62.2	-	65.7
Conductivity	umhos/cm	523	417	-	495	-	1734	353	-	559	-	402	364	714	647	-	929
G.W. Elevation	MSL(Feet)	751.05	751.67	-	751.66	750.28	750.27	752.71	749.44	749.67	-	751.37	750.87	750.88	758.52	760.47	758.76
Well Dpth. Elev.	MSL(Feet)	719.27	647.31	-	635.32	743.57	717.05	607.05	740.59	717.72	-	644.08	604.27	741.56	748.00	718.36	748.83
Cadmium (E-213.2)	ug/l	<1	<1	<1	<1	-	<1	<1	-	<1	<1	<1	<1	1.5	6.4	-	400
Chromium (E-218.2)	ug/l	4.1	41	32	10	-	5	8.9	-	4.9	4.2	8.9	<4	3400	77	-	37
Lead (E-239.2)	ug/l	1.7	<1	<1	1.8	-	3	<1	-	1.1	2	3.6	<1	6.4	1.9	-	11
Nickel (E-249.1)	ug/l	11	9.6	10	6.8	-	13	16	-	15	12	6.9	6	540	38	-	290
cis 1,2-Dichloroethene	ug/l	2	3	2	2	-	30	<0.5	-	140	98	<0.5	<0.5	-	-	-	-
Tetrachloroethene	ug/l	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Trichloroethene	ug/l	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	-
Vinyl Chloride	ug/l	<0.2	<0.2	<0.2	<0.2	-	3	<0.2	-	17	19	<0.2	<0.2	-	-	-	-

Volatiles Analyzed By Method SW8260B

Prepared By: SGL Checked by: DAT

R000986

Groundwater Quality Results - Aug. 19 - Aug. 21, 2008
Modern Plating Corporation

Parameter	Units	MW-22C GA2M	MW-23B GA3U	MW-23C GA3M	PR-1 S201	PR-2 S102	Field Blank 1 FB01	Field Blank 2 FB02	Field Blank 3 FB03	Trip Blank 1 TB01
pH	S.U.	-	7.59	7.60	7.99	8.00	-	-	-	-
Temperature	Degrees F	-	60.3	58.6	72.0	72.1	-	-	-	-
Conductivity	umhos/cm	-	474	546	381	379	-	-	-	-
G.W. Elevation	MSL(Feet)	757.49	749.74	750.27	-	-	-	-	-	-
Well Dpth. Elev.	MSL(Feet)	715.62	734.49	720.34	-	-	-	-	-	-
Cadmium (E-213.2)	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1
Chromium (E-218.2)	ug/l	-	250	230	5.7	5.4	4.2	<4	<4	<4
Lead (E-239.2)	ug/l	-	1.3	23	8.2	6.9	<1	<1	<1	2.2
Nickel (E-249.1)	ug/l	-	18	65	8.8	8	<5	<5	<5	5.6
cis 1,2-Dichloroethene	ug/l	-	5	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	ug/l	-	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	ug/l	-	1	11	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	ug/l	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Volatiles Analyzed By Method SW8260B

Prepared By: SGL Checked by: DAT

R000987

Attachment 2

Groundwater Results as a Percentage of the Cleanup Objective

Groundwater Quality Results (ug/l)

Modern Plating Corporation
Aug. 2008

Monitoring Well	Cadmium (Total)	Chromium (Total)	Lead (Total)	Nickel (Total)	cis-1,2-Dichloroethene	Tetra-chloroethene	Trich-chloroethene	Vinyl Chloride
Class II Clean-Up Objective (ug/l)	50	1000	100	2000	200	25	25	10
MW-06A	-	-	-	-	9	<0.5	<0.2	32
MW-07A	-	-	-	-	6	<0.5	<0.2	30
MW-08A	-	-	-	-	650	4	200	56
MW-09A	250	120	<1	360	-	-	-	-
MW-10A	<1	<4	<1	<5	-	-	-	-
MW-12A	<1	5.1	1.4	17	-	-	-	-
MW-12B	-	-	-	-	16	<0.5	0.6	4
MW-13A	<1	6.6	1.8	18	-	-	-	-
MW-13B	-	-	-	-	1	6	11	<0.2
MW-14AR	<1	5.8	<1	23	-	-	-	-
MW-14B	-	-	-	-	<0.5	9	12	<0.2
MW-15A	2.4	17	4	120	-	-	-	-
MW-15B	<1	10	5	12	2	<0.5	1	<0.2
MW-17B	<1	4.1	1.7	11	2	<0.5	<0.2	<0.2
MW-18B	<1	5	3	13	30	<0.5	<0.2	3
MW-19B	<1	4.9	1.1	15	140	<0.5	<0.2	17
MW-21A	6.4	77	1.9	38	-	-	-	-
MW-22A	400	37	11	290	-	-	-	-
MW-23B	<1	250	1.3	18	5	<0.5	1	<0.2
Class I Clean-Up Objective (ug/l)	5	100	7.5	100	70	5	5	2
MW-05C	-	-	-	-	<0.5	0.9	0.3	<0.2
MW-05D	1.3	350	7.6	180	-	-	-	-
MW-06C	-	-	-	-	<0.5	4	4	<0.2
MW-07D	-	-	-	-	1	7	10	<0.2
MW-08C	-	-	-	-	2	2	10	<0.2
MW-11C	-	-	-	-	13	<0.5	<0.2	13
MW-14C	-	-	-	-	2	<0.5	3	<0.2
MW-15C	<1	4.4	3.5	7.1	3	<0.5	<0.2	4
MW-17C	<1	41	<1	9.6	3	<0.5	<0.2	<0.2
MW-17D	<1	10	1.8	6.8	2	<0.5	<0.2	<0.2
MW-18D	<1	8.9	<1	16	<0.5	<0.5	<0.2	<0.2
MW-19C	<1	8.9	3.6	6.9	<0.5	<0.5	<0.2	<0.2
MW-19D	<1	<4	<1	6	<0.5	<0.5	<0.2	<0.2
MW-20C	1.5	3400	6.4	540	-	-	-	-
MW-23C	<1	230	23	65	44	1	11	<0.2

- : No Sample Result
<: Value Less Than The Reporting Limit

Groundwater Quality Results as a Percentage of the Cleanup Objective (ug/l)

Modern Plating Corporation
Aug. 2008

Monitoring Well	Cadmium (Total)	Chromium (Total)	Lead (Total)	Nickel (Total)	cis-1,2-Dichloroethene	Tetra-chloroethene	Trich-chloroethene	Vinyl Chloride
Class II Clean-Up Objective (ug/l)	50	1000	100	2000	200	25	25	10
MW-06A					5%	ND	ND	320%
MW-07A					3%	ND	ND	300%
MW-08A					325%	16%	800%	560%
MW-09A	500%	12%	ND	18%				
MW-10A	ND	ND	ND	ND				
MW-12A	ND	1%	1%	1%				
MW-12B					8%	ND	2%	40%
MW-13A	ND	1%	2%	1%				
MW-13B					1%	24%	44%	ND
MW-14AR	ND	1%	ND	1%				
MW-14B					ND	36%	48%	ND
MW-15A	5%	2%	4%	6%				
MW-15B	ND	1%	5%	1%	1%	ND	4%	ND
MW-17B	ND	0%	2%	1%	1%	ND	ND	ND
MW-18B	ND	1%	3%	1%	15%	ND	ND	30%
MW-19B	ND	0%	1%	1%	70%	ND	ND	170%
MW-21A	13%	8%	2%	2%				
MW-22A	800%	4%	11%	15%				
MW-23B	ND	25%	1%	1%	3%	ND	4%	ND
Class I Clean-Up Objective (ug/l)	5	100	7.5	100	70	5	5	2
MW-05C					ND	18%	6%	ND
MW-05D	26%	350%	101%	180%				
MW-06C					ND	80%	80%	ND
MW-07D					1%	140%	200%	ND
MW-08C					3%	40%	280%	ND
MW-11C					19%	ND	ND	650%
MW-14C					3%	ND	60%	ND
MW-15C	ND	4%	47%	7%	4%	ND	ND	200%
MW-17C	ND	41%	ND	10%	4%	ND	ND	ND
MW-17D	ND	10%	24%	7%	3%	ND	ND	ND
MW-18D	ND	9%	ND	16%	ND	ND	ND	ND
MW-19C	ND	9%	48%	7%	ND	ND	ND	ND
MW-19D	ND	ND	ND	6%	ND	ND	ND	ND
MW-20C	30%	3400%	85%	540%				
MW-23C	ND	230%	367%	65%	63%	20%	220%	ND

ND : Compound Not Detected
- : No Sample Result

Prepared by: SGL
Checked by: DAT

R0000989

Attachment 3

Groundwater Trend Graphics

R000991

100+00 E
105+00 E
110+00 E
115+00 E
110+00 N
105+00 N
100+00 N
95+00 N

PECATONICA RIVER
PECATONICA RIVER

PR-1
PR-2

MW-17A
MW-17B
MW-17C
MW-17D
MW-18A
MW-18B
MW-18D
MW-19A
MW-19B
MW-19C
MW-19D
MW-12A
MW-12B
MW-12C
MW-12E
MW-13A
MW-13B
MW-13C
MW-13E
MW-15A
MW-15B
MW-15C
MW-7A
MW-7B
MW-7C
MW-7D
MW-8A
MW-8B
MW-8C
MW-11A
MW-11B
MW-11C
MW-11E
MW-6A
MW-6B
MW-6C
MW-10A
MW-14A
MW-14B
MW-14C
MW-14E
MW-23B
MW-23C
MW-20C
MW-9A
MW-22A
MW-22C
MW-21A
MW-21C
MW-5C
MW-5D
MW-16C

LAGOON NO. 1A
LAGOON NO. 0
LAGOON NO. 1
LAGOON NO. 2
LAGOON NO. 3

EXISTING CAMU
GMZ
APPROXIMATE PROPERTY BOUNDARY
CYANIDE VAULT
BM
BUILDING
SHAWNEE BUILDING
HANCOCK AVENUE
OPEN STORAGE
WATER

(SEE NOTE 5)

N

LEGEND

- EXISTING BUILDING
- EXISTING GROUND CONTOUR
- EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- MARSH/SWAMP SYMBOL
- WATER BOUNDARY
- EXISTING FENCE
- MW-9A — MONITORING WELL
- BM — CONTROL MONUMENT
- APPROXIMATE PROPERTY LINE
- APPROXIMATE BOUNDARY OF FORMER SLUDGE LAGOONS
- CAMU BOUNDARY
- WETLAND AREA
- APPROXIMATE LIMITS OF PROPOSED GROUNDWATER MANAGEMENT ZONE (GMZ)
- APPROXIMATE LIMITS OF NOVEMBER 28, 1986 TOPOGRAPHICAL MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WI.
- ▲ PR-1 — PECATONICA RIVER SAMPLING POINT NUMBER AND LOCATION

NOTES:

1. SITE LOCATION: SE 1/4 OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS
2. AREA INSIDE DASHED LINE IS TOPOGRAPHIC BASE MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986. AREA OUTSIDE DASHED LINE SCANNED AND DIGITIZED BY FOTH & VAN DYKE FROM AIR PHOTOS BY THE SIDWELL CO., 1992 AND CONTOURS ON THE FREEPORT EAST U.S.G.S 7.5 MINUTE TOPOGRAPHIC QUADRANGLE.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE NW CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0 AT ELEVATION 773.82 FEET.
4. GMZ BOUNDARY WELLS ARE MW-15B, MW-15C, MW-16C, MW-17B, MW-17C, MW-17D, MW-18B, MW-18D, MW-19C, MW-19D, MW-23B, MW-23C.
5. MW-16C IS OFF OF THE MPC PROPERTY AND IS NO LONGER IN SERVICE.

Foth
Foth Infrastructure & Environment, LLC

MODERN PLATING CORPORATION FACILITY

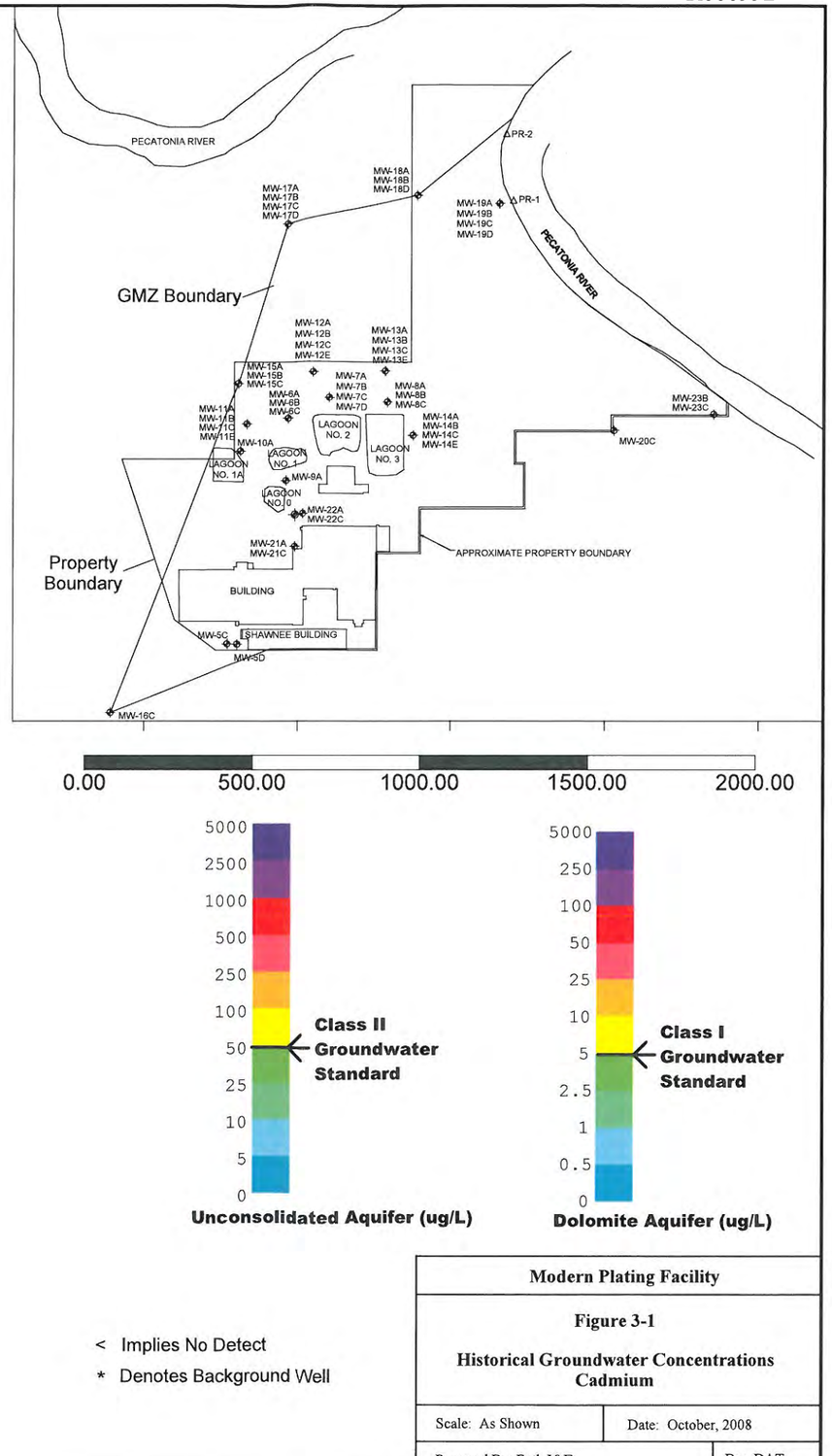
FIGURE 2

GROUNDWATER MANAGEMENT ZONE

Scale: 0 100' 200'	Date: MAY, 2009	
Prepared By: JOW	Checked By: AKM	09M043

X:\GB\IE\2009\09M043\cad\figures\9m43_rcra_fl.dgn
5/27/2009 jow





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* Denotes Background Well

Modern Plating Facility

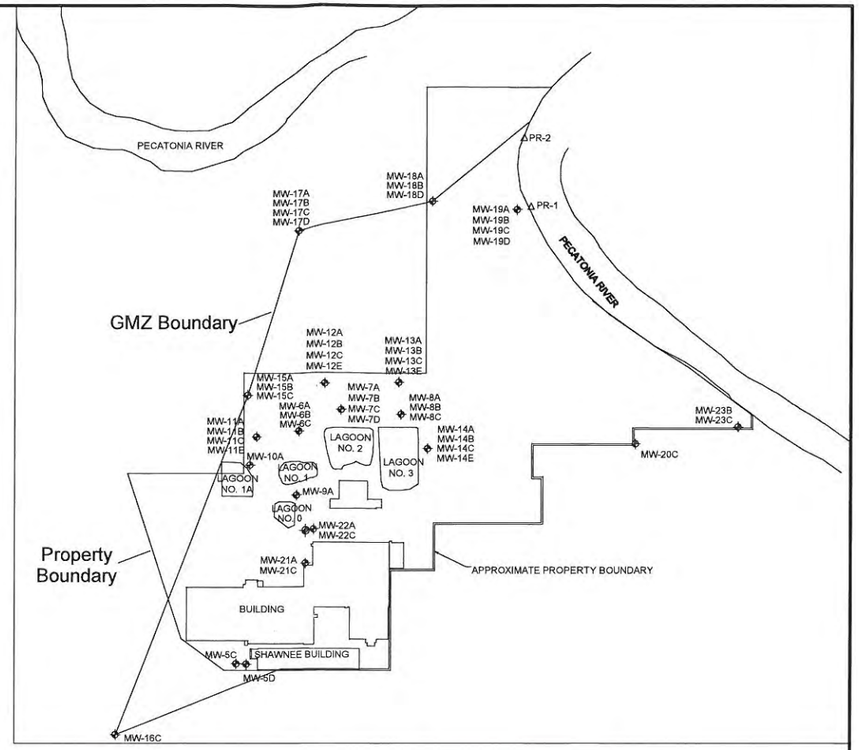
Figure 3-1

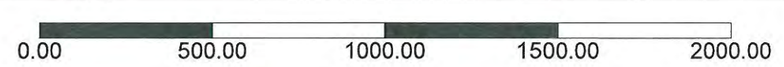
Historical Groundwater Concentrations Cadmium

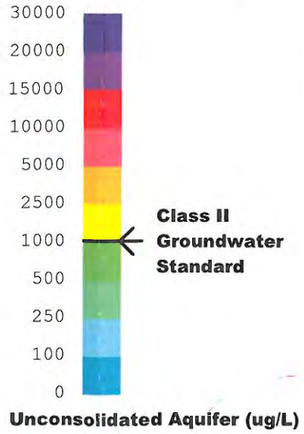
Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT

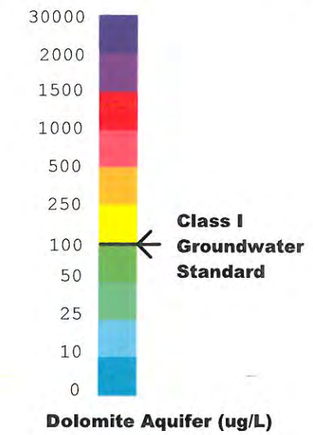
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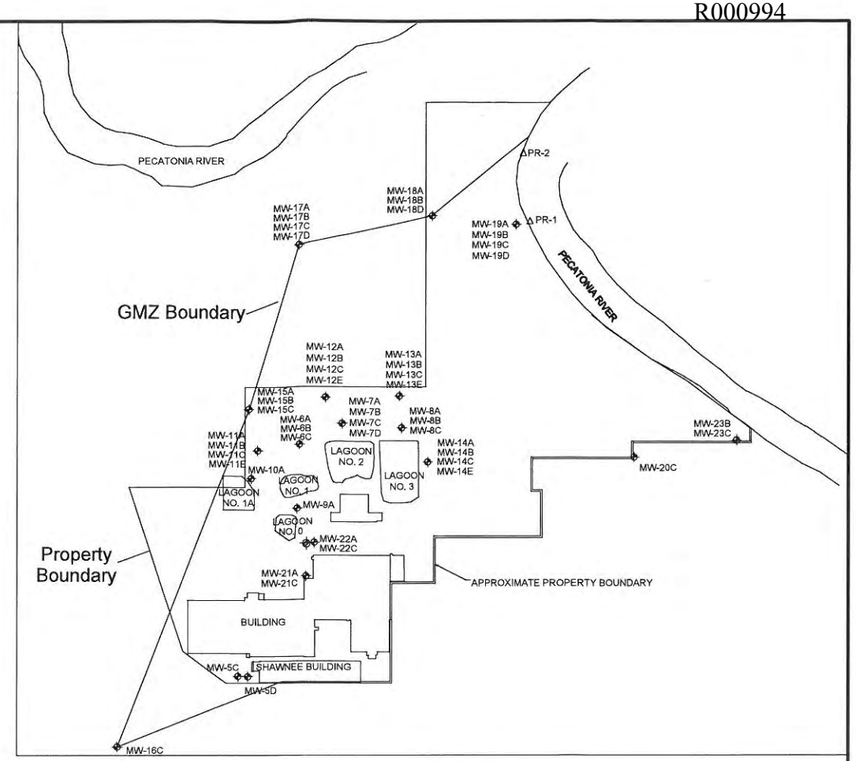
Modern Plating Facility

Figure 3-2

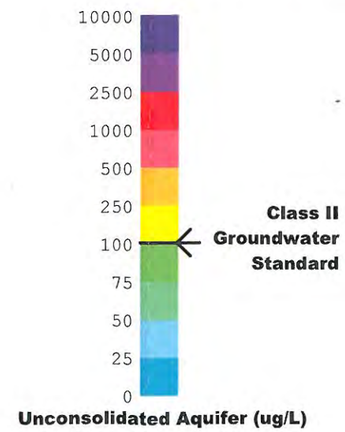
Historical Groundwater Concentrations Chromium

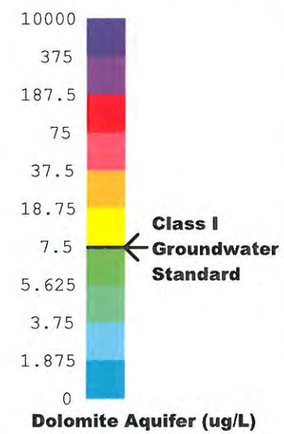
Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT











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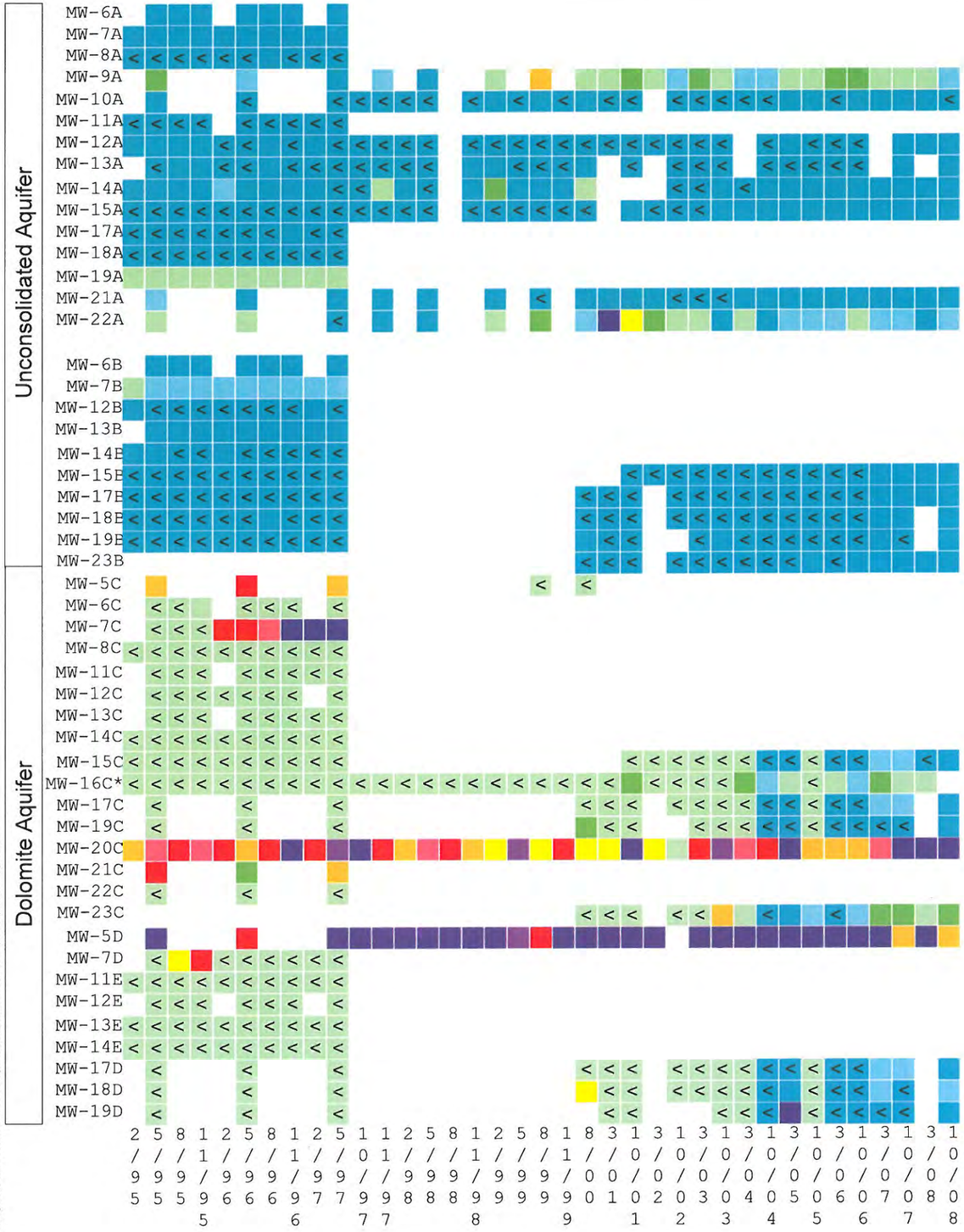
Modern Plating Facility

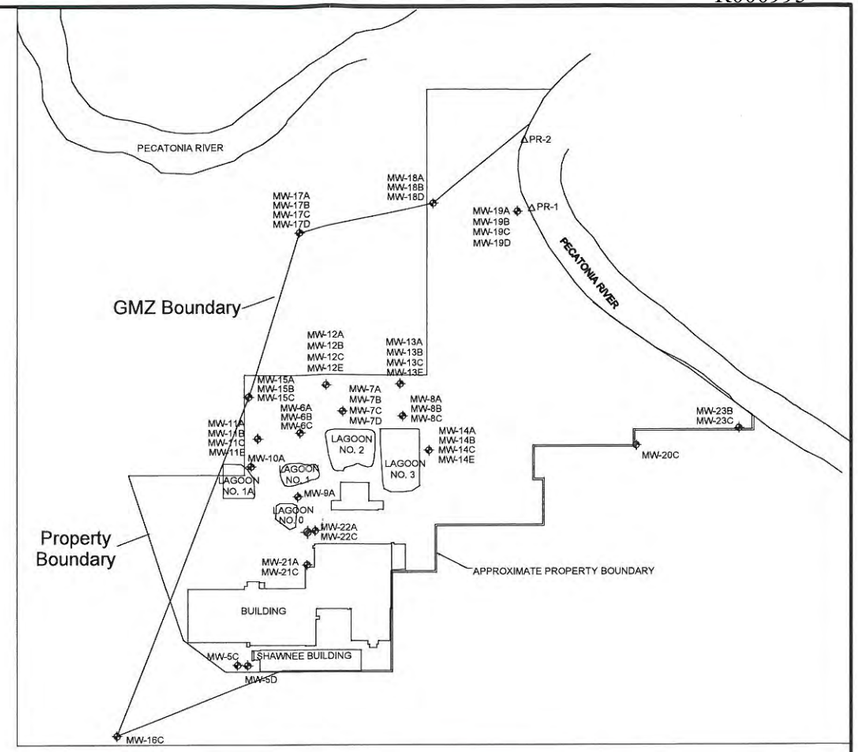
Figure 3-3

Historical Groundwater Concentrations Lead

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT

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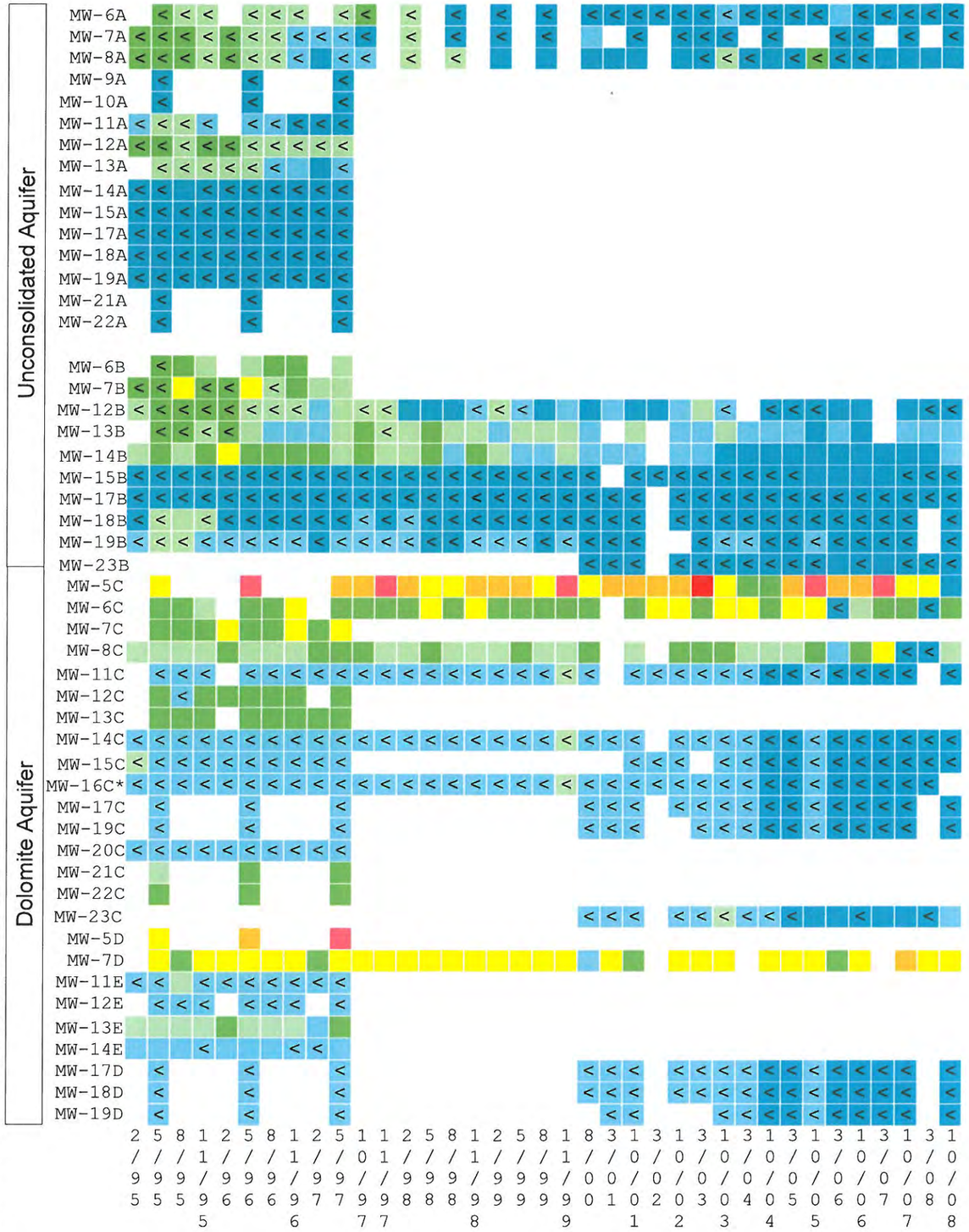
Modern Plating Facility

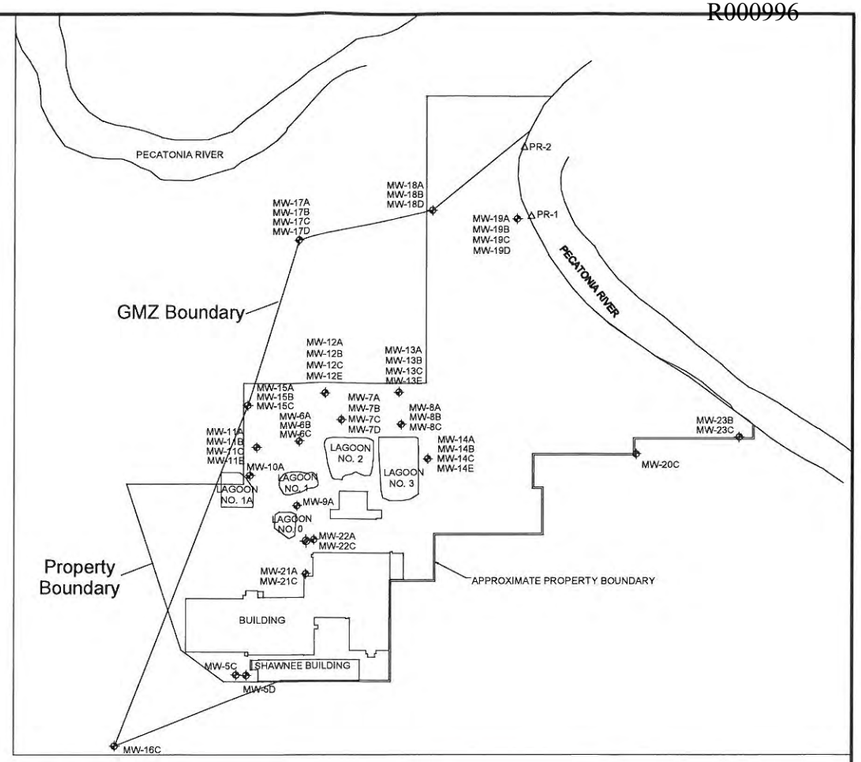
Figure 3-4

Historical Groundwater Concentrations Nickel

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT

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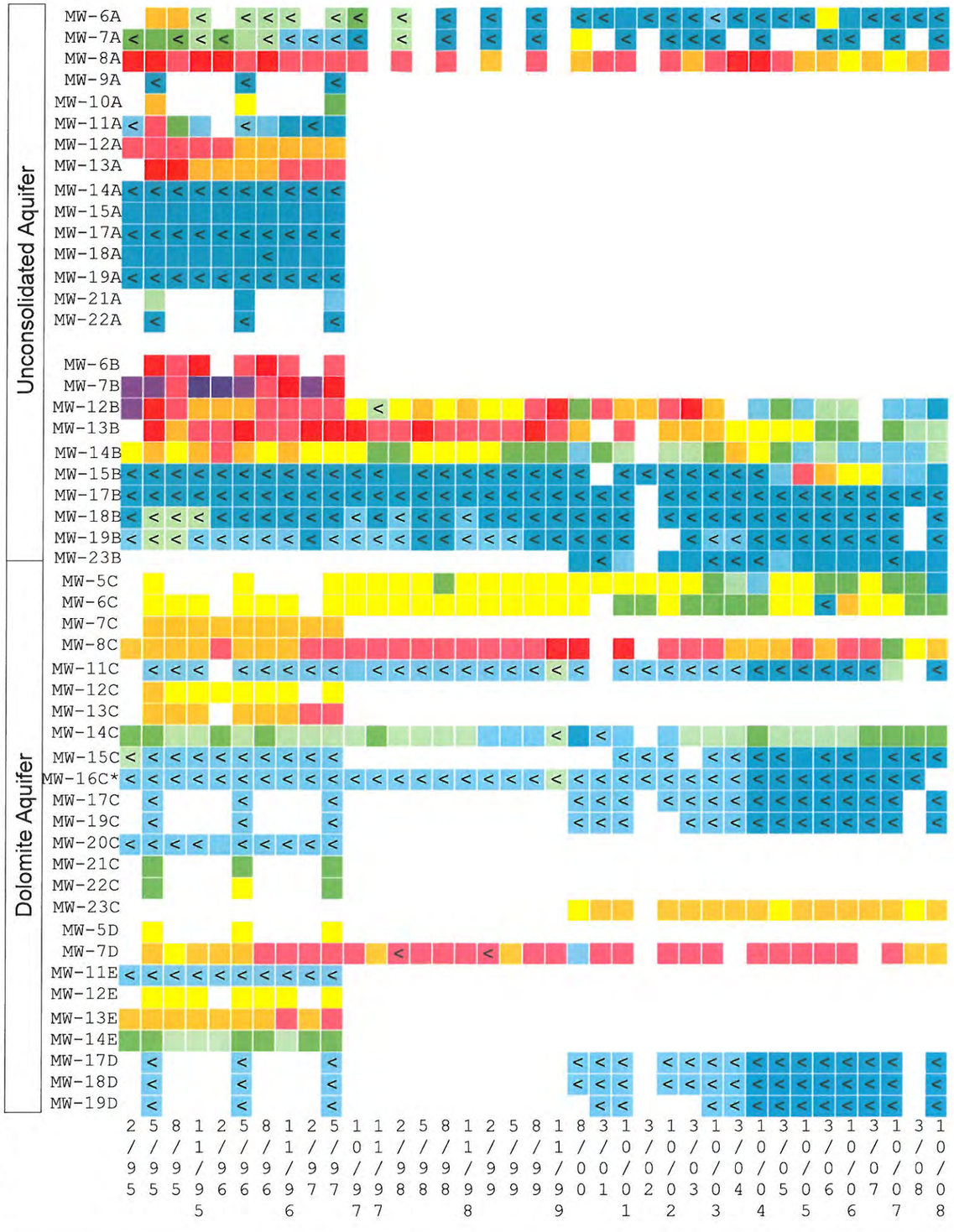
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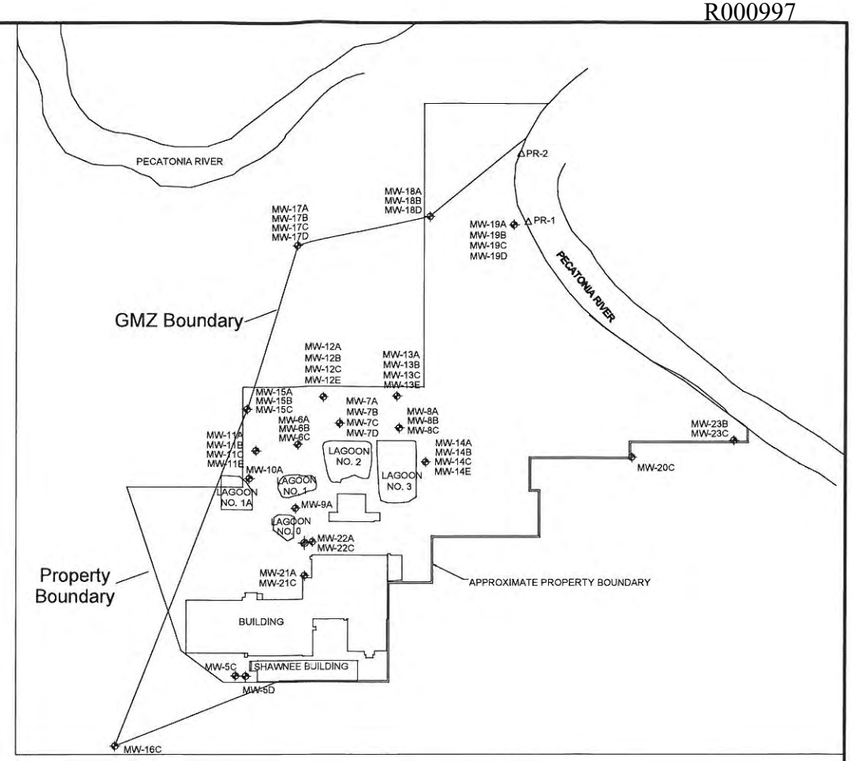
Modern Plating Facility

Figure 3-5

Historical Groundwater Concentrations Tetrachloroethene

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT





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* Denotes Background Well

Modern Plating Facility

Figure 3-6

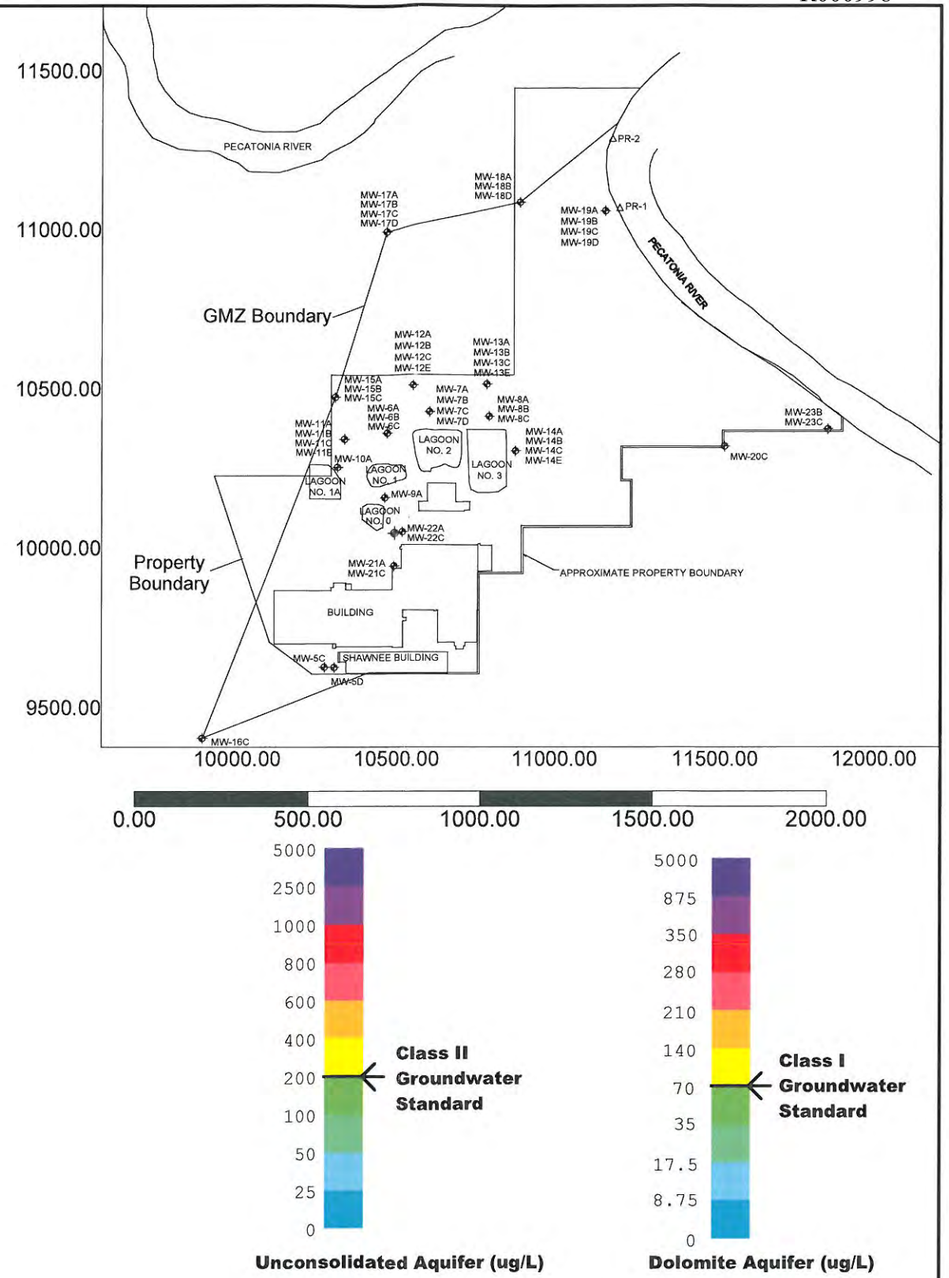
Historical Groundwater Concentrations Trichloroethene

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT

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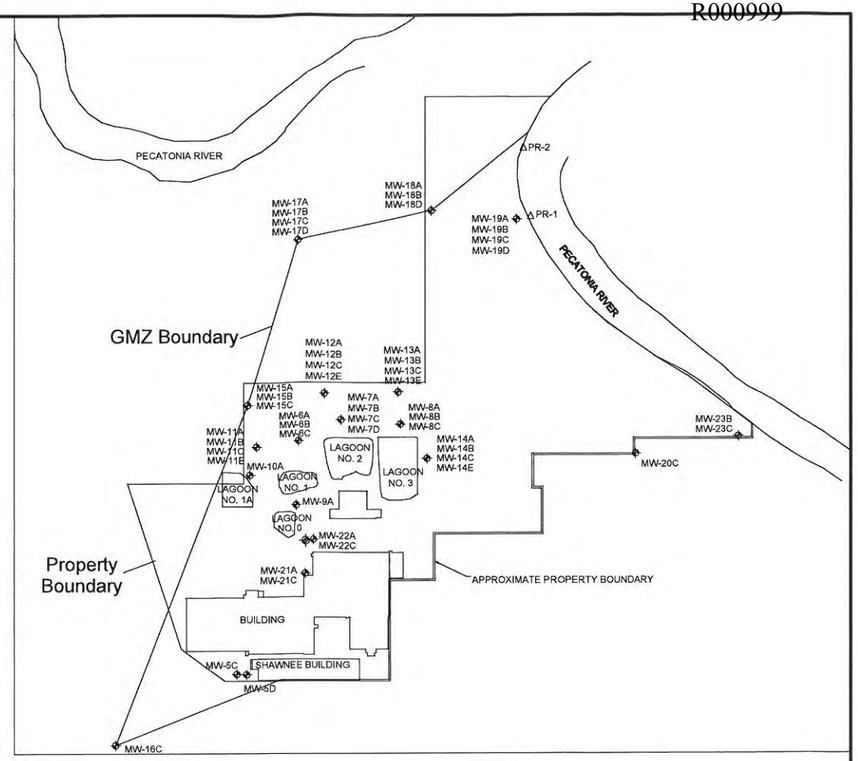
Modern Plating Facility

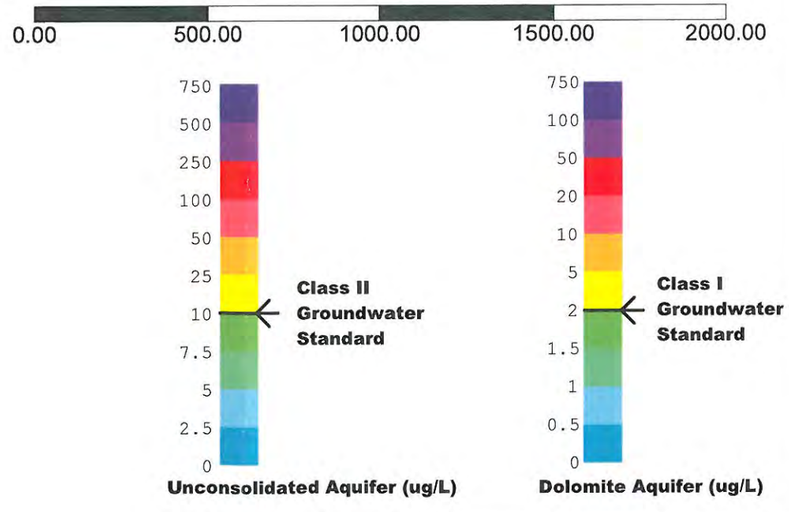
Figure 3-7

Historical Groundwater Concentrations cis-1,2-Dichloroethene

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT







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* Denotes Background Well

Modern Plating Facility

Figure 3-8

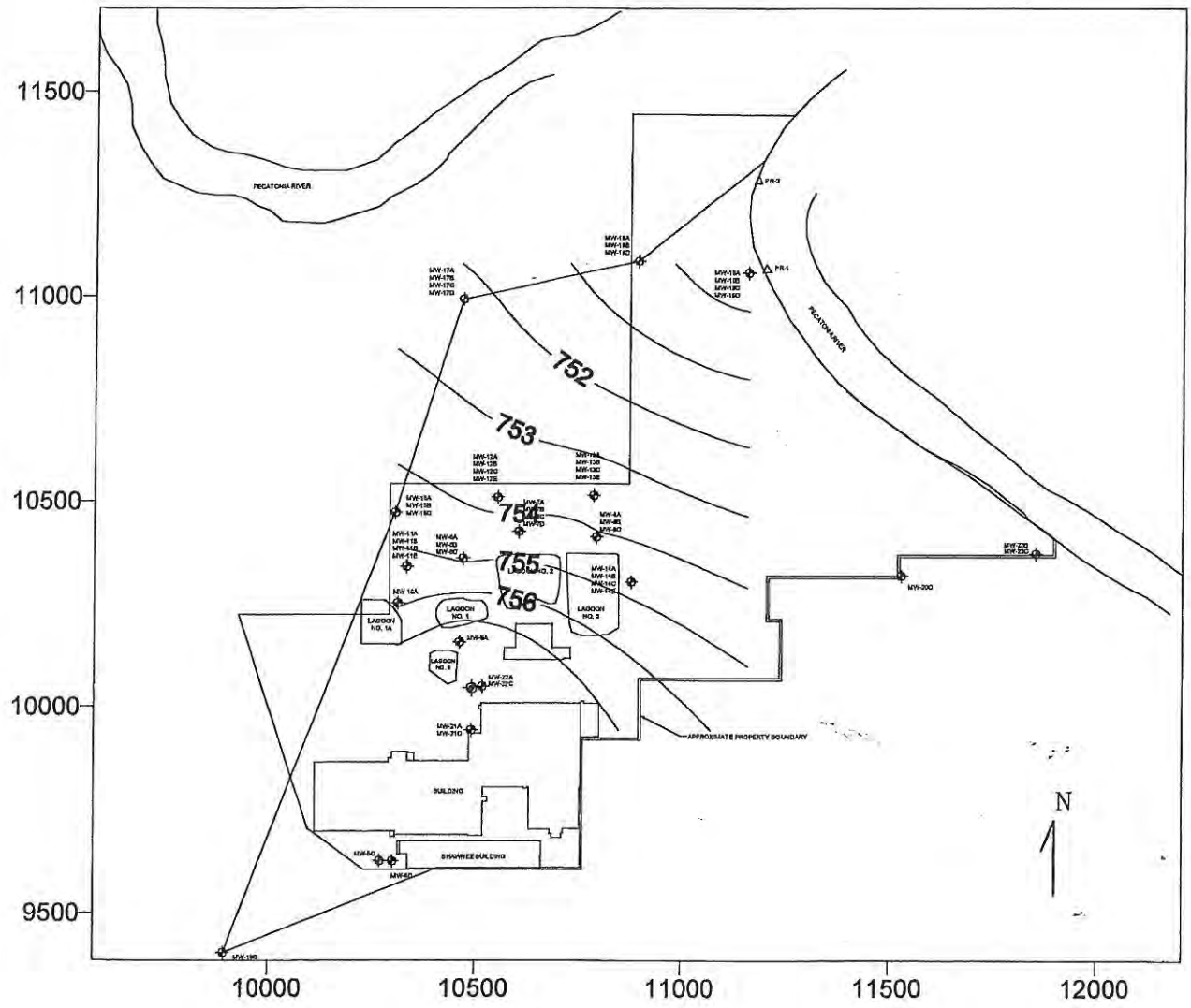
Historical Groundwater Concentrations Vinyl Chloride

Scale: As Shown	Date: October, 2008
Prepared By: Foth I&E	By: DAT

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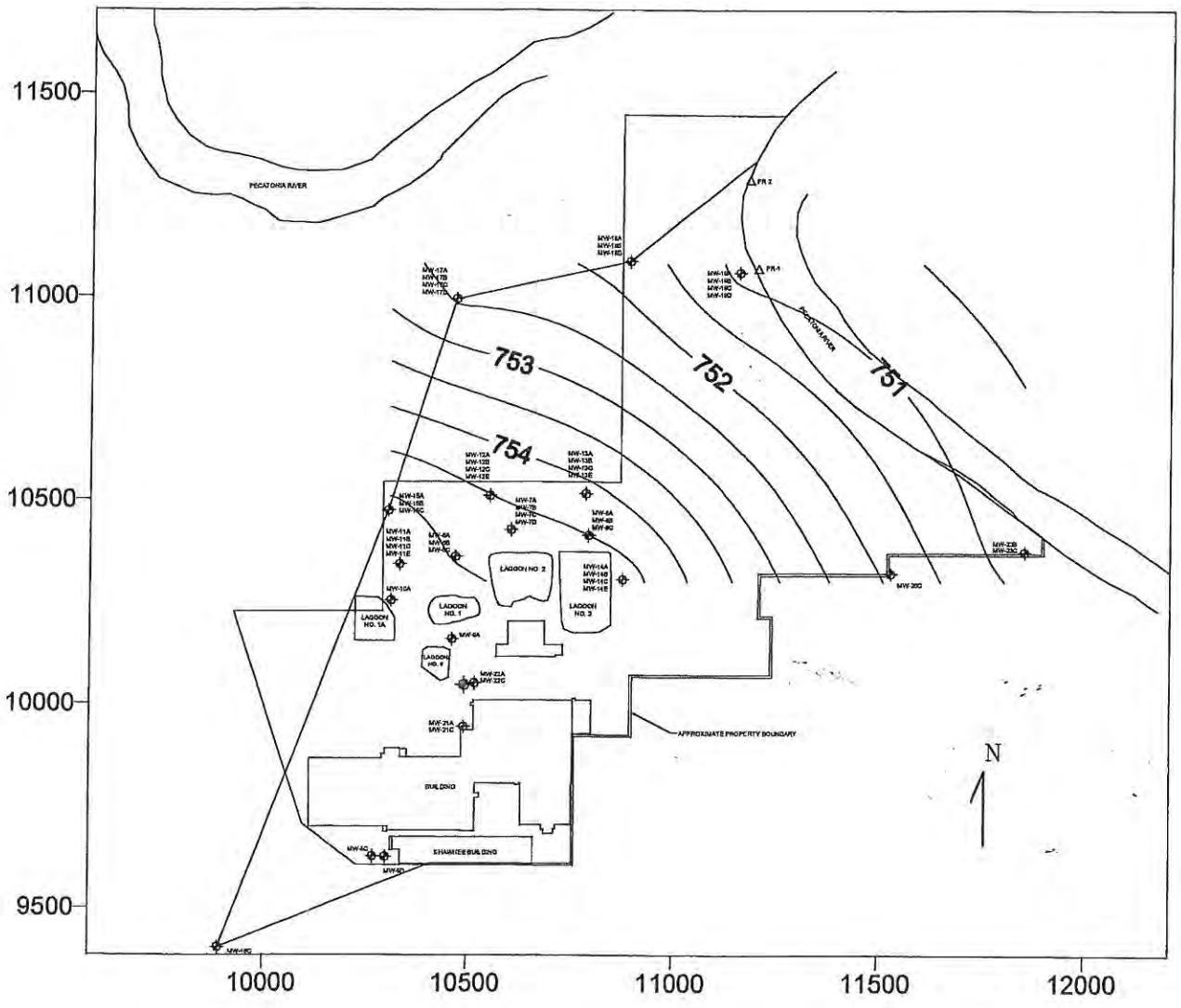
Attachment 4

Groundwater Potentiometric Surface Maps



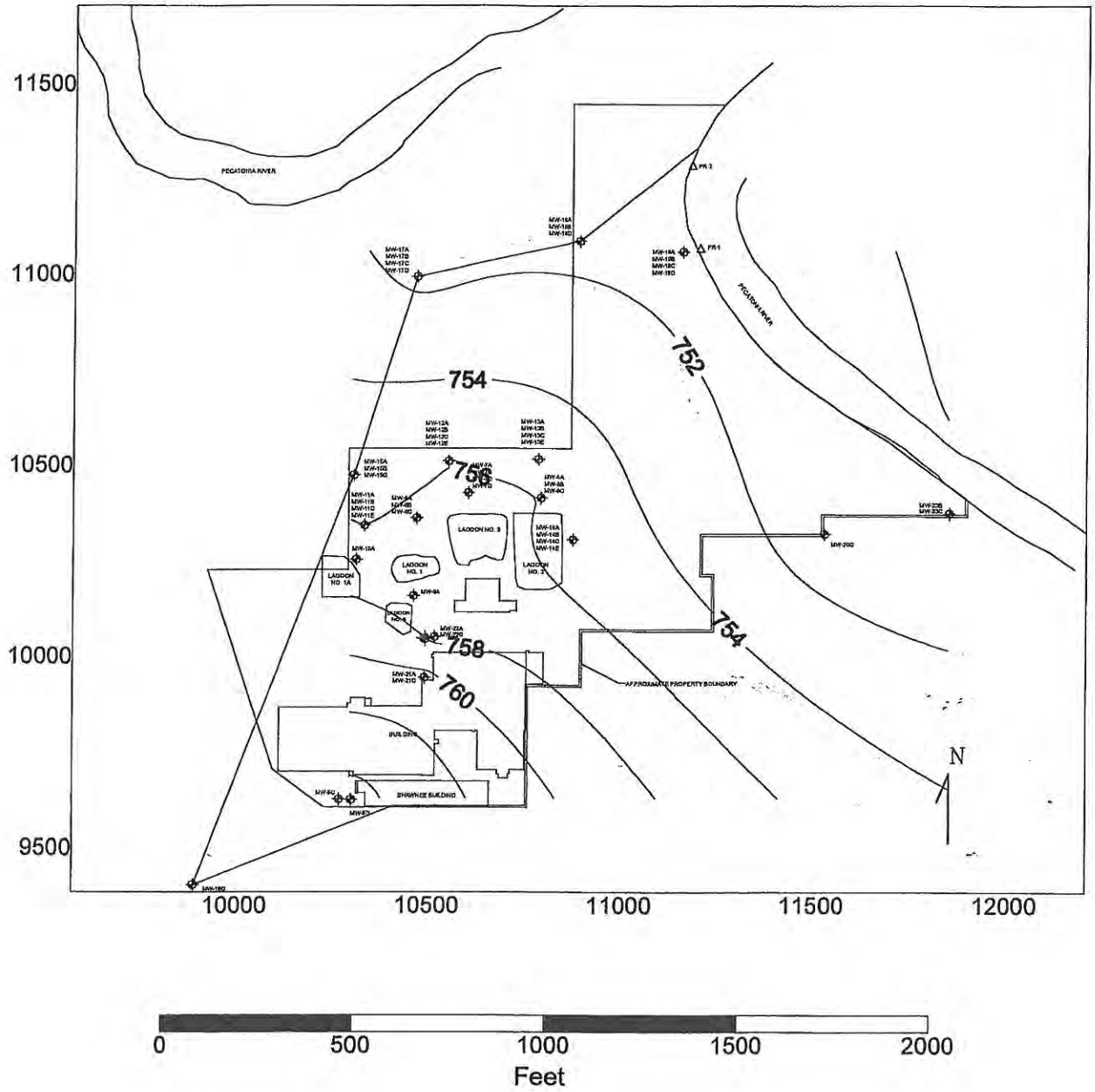
Modern Plating Facility	
Figure 4-1 **Upper Unconsolidated Aquifer** **Water Level Contour Map (A Wells),** **August 19 - 21, 2008**	
Scale: As Shown	**Date: October, 2008**
Prepared By: Foth I & E	**By: DAT**

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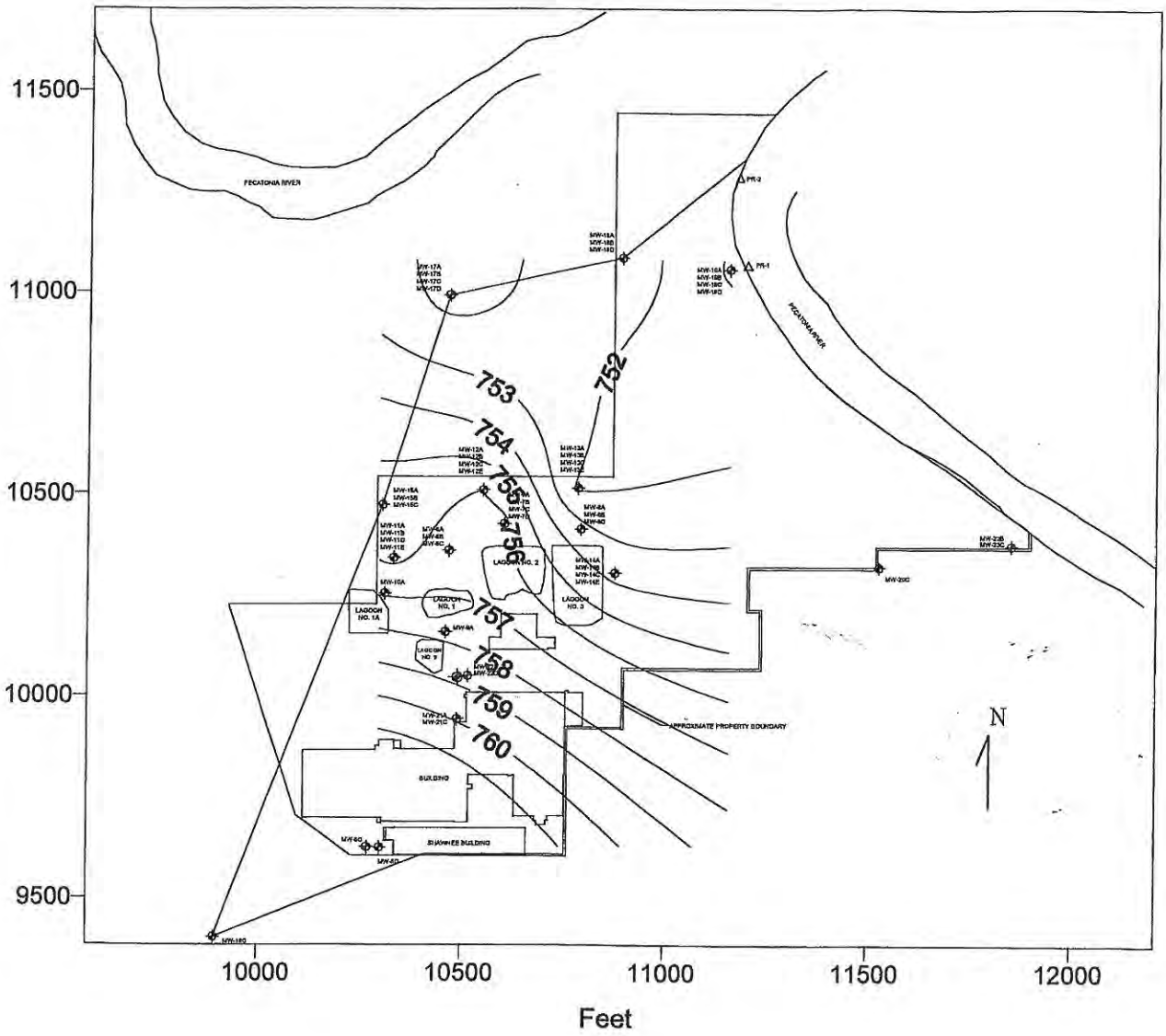
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Modern Plating Facility	
Figure 4-2 **Lower Unconsolidated Aquifer** **Water Level Contour Map (B Wells)** **August 19 - 21, 2008**	
Scale: As Shown	**Date: October, 2008**
Prepared By: Foth I & E	**By: DAT**



J:/scopes/05M119/QRTRLY/GWMAPS/Oct2008/oct08c.dat,.grd,.srf,basemap2.bln

Modern Plating Facility	
Figure 4-3 **Upper Dolomite Aquifer** **Water Level Contour Map (C Wells),** **August 19 - 21, 2008**	
Scale: As Shown	**Date: October, 2008**
Prepared By: Foth I & E	**By: DAT**



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Modern Plating Facility		
Figure 4-4 **Lower Dolomite Aquifer** **Water Level Contour Map (D & E Wells)** **August 19 - 21, 2008**		
Scale: As Shown	**Date: October, 2008**	
Prepared By: Foth I & E		**By: DAT**

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

May 3, 2010

Certified Mail
7004 2510 0001 8625 7091

Modern Plating Corporation
Attention: Mr. James R. Stenberg
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032-0838

MASTER FILE COPY
Source 09M043 Classification 4000
Copy To REM, AKM

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. B-167-CA-2
Received: April 1, 2010
RCRA Permit

Dear Mr. Stenberg:

This is in response to the draft Environmental Land Use Control (ELUC) contained in Appendix N of a March 30, 2010 document prepared by Foth Infrastructure and Environment LLC on behalf of the Modern Plating Corporation (MPC) facility in Freeport, Illinois. This submittal was made in an effort to bring remediation of the soils at the following units to completion: Cyanide Treatment Vault, Lagoons 0, 1, 1A, 2, 3 and the Outfall Piping Area. A drawing showing the location of these units within the facility is attached. Modern Plating has completed a substantial amount of investigation and remedial activities to date at these units.

Illinois EPA has completed a review of the draft ELUC mentioned above and hereby approves it as a request to modify the overall RCRA corrective action program at the MPC facility subject to the following conditions and modifications.

1. The draft Environmental Land Use Control (ELUC) for the MPC facility located at 701 South Hancock Avenue in Freeport, Illinois in Stephenson County (Parcel Index Numbers 14-32-251-011; 14-32-276-001; 14-32-402-004; 14-32-426-003; and 14-32-402-019) is hereby approved subject to the following conditions and modifications:

   a. A notation must be placed on Exhibit B-1 Property Description and Remediation Areas that the property boundary and parcel 14-32-402-004 and 14-32-251-011 are the legal boundaries for which the ELUC applies and a bold line encompassing this entire area specifying that this is the area for which the ELUC has been established must be indicated in this exhibit.

b. The final ELUC filed with the Office of the Recorder or Registrar of Titles for Stephenson County must include a dated and notarized signature of the property owner.

c. Section three of the ELUC must indicate that the facility may only be used for commercial/industrial activities in the future;

d. Section Three of the ELUC must indicate that the groundwater under the Property may not be used as a potable supply of water;

e. Section Three of the ELUC must indicate the engineered barriers described in Exhibit B-3 for Lagoon 1 (12 feet of compacted clay), Lagoon 2 (composite final cover), Lagoon 3 (composite final cover), Lagoon 0 (15 feet compacted clay), Lagoon 1A (5 feet of compacted clay), Shawnee Building (3 feet of compacted clay), Cyanide Vault Area (12 of compacted clay), Wetlands Areas I, IA, II, III (2 feet of wetland soils in the excavated areas) and the Outfall Piping (6 feet of compacted clay) must be inspected according to the RCRA Part B Inspection Schedule for erosion and settlement and as necessary, be maintained to meet original engineered barrier thickness specifications.

f. Section Three of the ELUC must require that: (1) a site safety plan, meeting the requirements of 29 CFR 1910 and 1926, be developed and implemented any time construction/excavation work takes place beneath the engineered barriers identified in Condition 1.b. above; and (2) any soil removed from beneath the subject engineered barriers be properly managed in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.

2. The draft ELUC being approved herein places the following restrictions on the subject facility:

a. The facility may only be used for commercial/industrial activities in the future;

b. An engineered barrier must be maintained over the Cyanide Treatment Vault, the Outfall Piping Area and Lagoons 0, 1, 1A, 2 and 3;

c. The groundwater under the facility may not be used as a potable supply of water;

d. A site safety plan meeting the requirements of 29 CFR 1910 and 1926 must be developed and implemented any time construction/excavation work takes place beneath the engineered barriers mentioned above;

e. Any soil removed from beneath the engineered barriers mentioned above must be properly managed in accordance with 35 Ill. Admin. Code, Subtitle G: Waste Disposal.

3. Within forty-five days of the date of the this letter, the ELUC approved herein must be fully executed, notarized and recorded in the chain of title for the subject property in the Office of the Recorder or Registrar of Titles for Stephenson County, along with the instrument memorializing the Illinois EPA's no further action determination. The approved ELUC will not become effective until officially recorded in the chain of custody for the subject property.

4. Within 30 days after filing the approved ELUC in accordance with Condition 3 above, a certified true copy of the filed ELUC, along with certification for the Office of the Recorder or Registrar of Titles for Stephenson County that the ELUC was properly filed, must be submitted to Illinois EPA.

5. Failure to comply with the limitations or requirements of an ELUC may result in voidance of an Agency no further remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.

6. The limitations or requirements of the ELUC apply in perpetuity or until:

a. The Illinois EPA issues a new no further remediation determination approving modification or removal of the limitation/requirement; and

b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.

7. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new no further action determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.

8. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 IAC 742.

9. Corrective action activities at the subject facility must continue to be carried out in accordance with: (1) 35 Ill. Admin. Code 724.201; (2) the facility's RCRA permit; and (3) Illinois EPA letters regarding the activities.

10. A completed RCRA Corrective Action Certification must accompany all submittals made to Illinois EPA regarding corrective action efforts at this facility. To allow the submitted information to be adequately reviewed, two copies of the submittal should be provided to Illinois EPA along with the original.

This action shall constitute Illinois EPA's final action on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact Karen Nachtwey at 217-524-3233 of my staff.

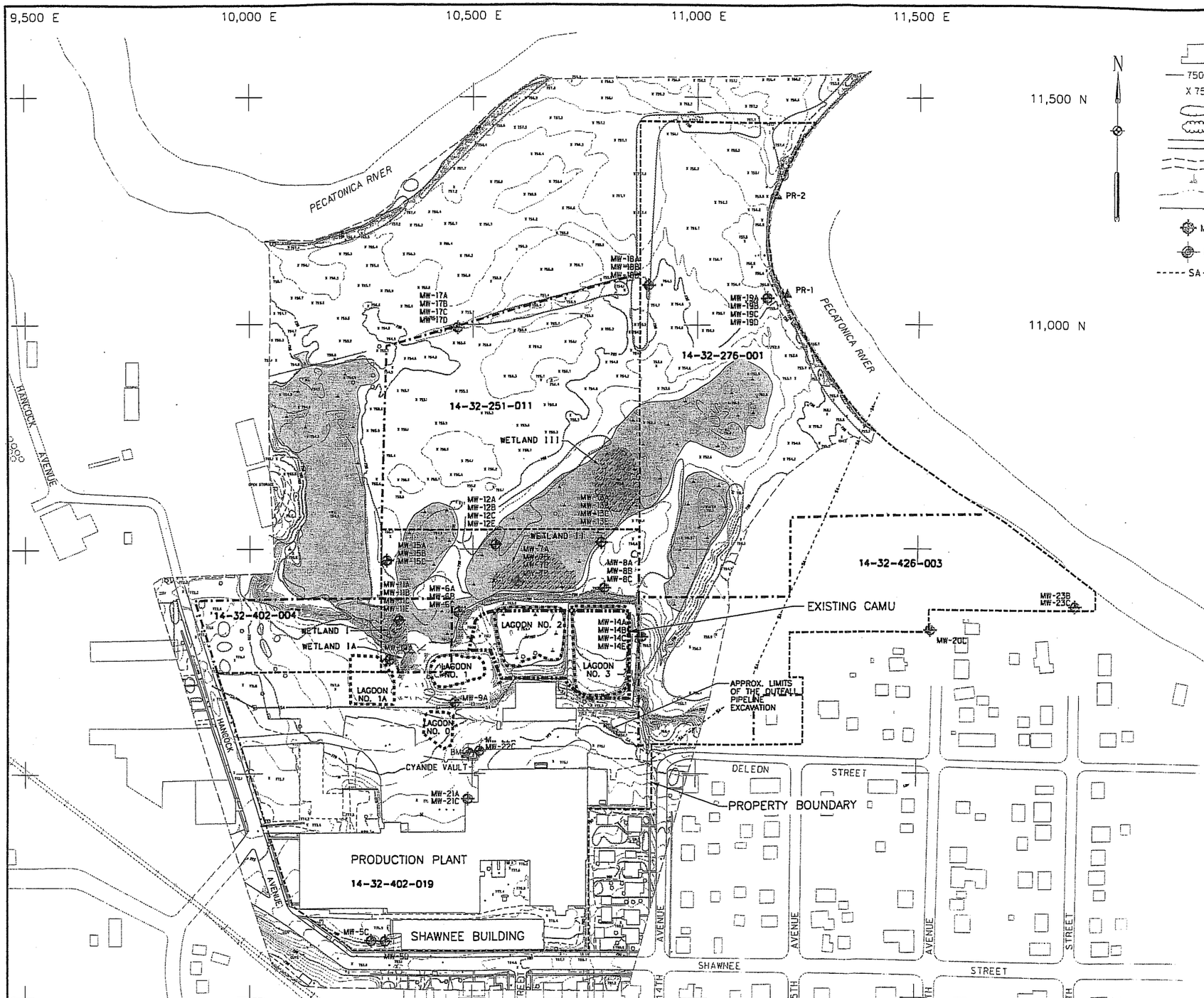
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:KEN/mls/102613s.doc
JKM

Attachment: Site Layout Map

cc: Foth Infrastructure & Environment, LLC



LEGEND

- EXISTING BUILDING
- 750 — EXISTING GROUND CONTOUR
- X 759.4 EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- MARSH/SWAMP SYMBOL
- WATER BOUNDARY
- EXISTING FENCE
- MW-9A MONITORING WELL
- BM CONTROL MONUMENT
- SA ABANDONED OUTFALL PIPELINE
- AREA EXCAVATED ' 10' (WIDTH AT EXCAVATION BASE) X 30' (LENGTH) X 7' (DEPTH)
- PIPELINE PLUG NOT IN A MANHOLE
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF FORMER SLUDGE LAGOONS
- CAMU BOUNDARY
- WETLAND AREA
- APPROXIMATE LIMITS OF NOVEMBER 28, 1986. TOPOGRAPHICAL MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WI.
- 14-32-402-004 PARCEL BOUNDARY NUMBER AND LOCATION
- APPROXIMATE LIMITS OF WETLAND AREAS REMEDIATED

NOTES:

1. SITE LOCATION: SE ¼ OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS
2. AREA INSIDE DASHED LINE IS TOPOGRAPHIC BASE MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986. AREA OUTSIDE DASHED LINE SCANNED AND DIGITIZED BY FOTH & VAN DYKE FROM AIR PHOTOS BY THE SIDWELL CO., 1992 AND CONTOURS ON THE FREEPORT EAST U.S.G.S 7.5 MINUTE TOPOGRAPHIC QUADRANGLE.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE NW CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0 AT ELEVATION 773.82 FEET.
4. GMZ BOUNDARY WELLS ARE MW-15B, MW-15C, MW-16C, MW-17B, MW-17C, MW-17D, MW-18B, MW-18D, MW-19C, MW-19D, MW-23B, MW-23C.
5. Property Description:

Lots 4, 5 and 6 in Block 4 in Gund's Second Addition to the City of Freeport, Illinois; also a part of Outlot 2 of Arcade Addition to the City of Freeport described as follows, to-wit, commencing at the Northwest corner of said Outlot 2, thence easterly long the North line of said Outlot 2 to a point where the west line of the alley in Block 8 in said Arcade Addition produced Northerly would intersect said North line of said Outlot 2, thence South to a point where the North line of Lot 7 in Block 4 in Gund's Second Addition to the City of Freeport would intersect the West line of the Alley in Block 8 in said Arcade Addition produced Northerly, thence Westerly on a line which would be an extension of said North line of Lot 7 in Block 4 in Gund's Second Addition aforesaid to the point where the North line of said Lot 7 intersects said West line of said Outlot 2, thence North along the Wet line of said Outlot 2 of said Arcade Addition to the place of beginning, excepting therefrom the following: Beginning at the Northwest corner of Lot 4 in Block 4 in Gund's Second Addition to the City of Freeport, thence East a distance of 420 feet, thence South to the South line of Lot 6 in Block 4 in Gund's Second Addition, thence West on and along the South line of said Lot 6 to the Southwest corner of said Lot 6, thence Northwesterly on and along the Westerly boundary of Lots 6, 5 and 4 in Block 4 in Gund's Second Addition to the place of beginning; provided porty of the second part, her administrators, executors, heirs and assigns shall have an easement for the purpose of ingress and egress from Hancock Avenue to the premises herein to be conveyed over the North 11 feet of that part of said Lot 4 in Block 4 in Gund's Second Addition which is excepted as aforesaid, situated in the City of Freeport.

That part of Outlot 2 in Arcade Addition to the City of Freeport, which lies East of the West line of South Fourteenth Avenue (formerly Second Street) produced Northerly across said Outlot 2; Outlot 3; Outlot 5, and Outlot 4, of said Arcade addition to the City of Freeport, except that part of said Outlot 4 which lies South of the North line of Lot Number 8 in Block Number 1 in said Arcade Addition, extended West to the West line of said Outlot 4, situated in the City of Freeport, County of Stephenson, Illinois.

ALSO:

The West half of the Northerly 150 feet of 15th Avenue located westerly of Block 1 of Arcade Addition, Township 27 North, Range 8 East of the Fourth Principal Meridian. Situated in the City of Freeport, Stephenson County, Illinois.

Foth
Foth Infrastructure & Environment, LLC

MODERN PLATING CORPORATION FACILITY

EXHIBIT B-1

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

July 22, 2010

Certified Mail
7008 1830 0001 4713 3501

MASTER FILE COPY
Scope 09M043 Classification 4000
Copy To REM

Modern Plating Corporation
Attention: Mr. James R. Stenberg
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032-0838

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. B-167-CA-3
Received: June 15, 2010
RCRA Permit

Received 7-26-2010

Dear Mr. Stenberg:

This is in response to the copy of the Environmental Land Use Control (ELUC) filed with the Stephenson County Clerk/Recorder contained in your June 10, 2010 letter to Illinois EPA from the Modern Plating Corporation (MPC) facility in Freeport, Illinois. This submittal was made in an effort to bring remediation of the soils at the following units to completion: Cyanide Treatment Vault, Lagoons 0, 1, 1A, 2, 3 and the Outfall Piping Area. A drawing showing the location of these units within the facility is attached. Modern Plating has completed a substantial amount of investigation and remedial activities to date at these units.

The Modern Plating facility in Freeport, Illinois (PIN 14-32-251-011; 14-32-276-001; 14-32-402-004; 14-32-426-003; 14-32-402-019) is subject to an Environmental Land Use Control recorded with the Stephenson County Clerk/Recorder on June 1, 2010 as Document Number 201000111587. This ELUC shall apply in perpetuity to the facility and shall not be released until: (1) Illinois EPA determines that there is no longer a need for this ELUC; (2) Illinois EPA, upon written request from the property owner and in accordance with 35 Ill. Adm. Code 742.1010, issues an amended certification of closure or a permit modification approving modification/elimination of the ELUC requirements; and (3) a release or modification of the ELUC is filed on the chain of title for the Property.

1. The filed ELUC places the following restrictions on the subject facility:

   a. The facility may only be used for commercial/industrial activities in the future;

b. An engineered barrier must be maintained over the Cyanide Treatment Vault, the Outfall Piping Area and Lagoons 0, 1, 1A, 2 and 3;

c. The groundwater under the facility may not be used as a potable supply of water;

d. A site safety plan meeting the requirements of 29 CFR 1910 and 1926 must be developed and implemented any time construction/excavation work takes place beneath the engineered barriers mentioned above;

e. Any soil removed from beneath the engineered barriers mentioned above must be properly managed in accordance with 35 Ill. Admin. Code, Subtitle G: Waste Disposal.

2. Failure to comply with the limitations or requirements of an ELUC may result in voidance of an Agency no further remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.

3. The limitations or requirements of the ELUC apply in perpetuity or until:

a. The Illinois EPA issues a new no further remediation determination approving modification or removal of the limitation/requirement; and

b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.

4. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new no further action determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.

5. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 IAC 742.

6. Corrective action activities at the subject facility must continue to be carried out in accordance with: (1) 35 Ill. Admin. Code 724.201; (2) the facility's RCRA permit; and (3) Illinois EPA letters regarding the activities.

7. A completed RCRA Corrective Action Certification must accompany all submittals made to Illinois EPA regarding corrective action efforts at this facility. To allow the submitted information to be adequately reviewed, two copies of the submittal should be provided to Illinois EPA along with the original.

This action shall constitute Illinois EPA's final action on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact Karen Nachtwey at 217-524-3233 of my staff.

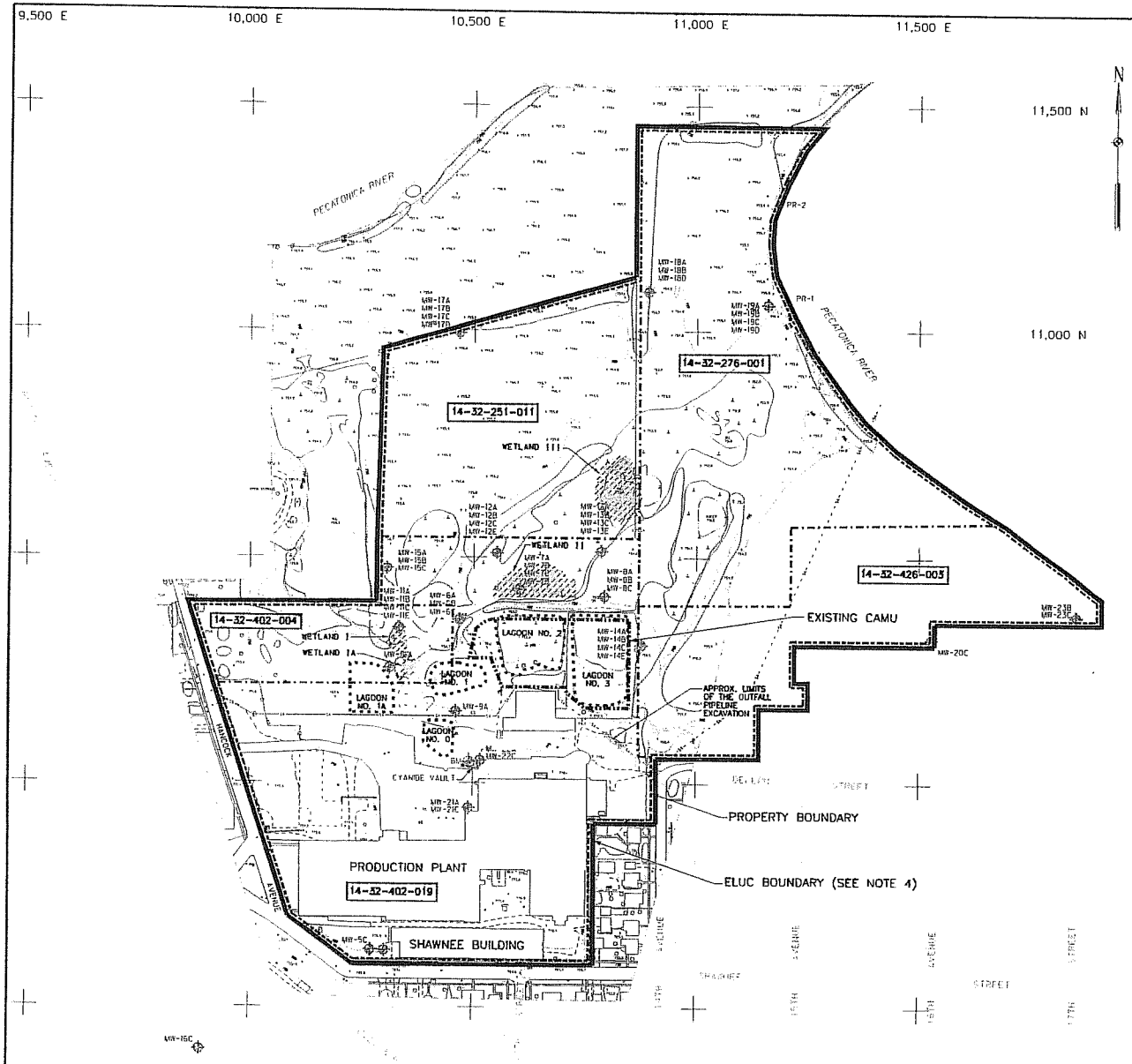
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

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JKN

Attachment: Site Layout Map

cc: Foth Infrastructure & Environment, LLC



LEGEND

- EXISTING BUILDING
- EXISTING GROUND CONTOUR
- EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- MARSH/SWAMP SYMBOL
- WATER BOUNDARY
- EXISTING FENCE
- MONITORING WELL
- CONTROL MONUMENT
- ABANDONED OUTFALL PIPELINE
- AREA EXCAVATED '10' (WIDTH AT EXCAVATION BASE) x 30' (LENGTH) x 7' (DEPTH)
- PIPELINE PLUG NOT IN A MANHOLE
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF FORMER SLUDGE LAGOONS
- CAMU BOUNDARY
- WETLAND AREA
- APPROXIMATE LIMITS OF NOVEMBER 28, 1986, TOPOGRAPHICAL MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WI.
- 14-32-402-004 PARCEL BOUNDARY NUMBER AND LOCATION
- APPROXIMATE LIMITS OF WETLAND AREAS REMEDIATED
- ELUC BOUNDARY (SEE NOTE 4)

NOTES:

1. SITE LOCATION: SE ¼ OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS
2. AREA INSIDE DASHED LINE IS TOPOGRAPHIC BASE MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986. AREA OUTSIDE DASHED LINE SCANNED AND DIGITIZED BY FOTH & VAN DYKE FROM AIR PHOTOS BY THE SIDWELL CO., 1992 AND CONTOURS ON THE FREEPORT EAST U.S.G.S 7.5 MINUTE TOPOGRAPHIC QUADRANGLE.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE NW CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0 AT ELEVATION 773.82 FEET.
4. THE ELUC APPLIES TO PARCELS 14-32-251-011, 14-32-276-001, 14-32-402-004, 14-32-402-019, AND 14-32-426-019, WITHIN BOLD LINE.
5. Property Description:

Lots 4, 5 and 6 in Block 4 in Gund's Second Addition to the City of Freeport, Illinois; also a part of Outlot 2 of Arcade Addition to the City of Freeport described as follows, to-wit, commencing at the Northwest corner of said Outlot 2, thence easterly long the North line of said Outlot 2 to a point where the west line of the alley in Block 8 in said Arcade Addition produced Northerly would intersect said North line of said Outlot 2, thence South to a point where the North line of Lot 7 in Block 4 in Gund's Second Addition to the City of Freeport would intersect the West line of the Alley in Block 8 in said Arcade Addition produced Northerly, thence Westerly on a line which would be an extension of said North line of Lot 7 in Block 4 in Gund's Second Addition aforesaid to the point where the North line of said Lot 7 intersects said West line of said Outlot 2, thence North along the Wet line of said Outlot 2 of said Arcade Addition to the place of beginning, excepting therefrom the following: Beginning at the Northwest corner of Lot 4 in Block 4 in Gund's Second Addition to the City of Freeport, thence East a distance of 420 feet, thence South to the South line of Lot 6 in Block 4 in Gund's Second Addition, thence West on and along the South line of said Lot 6 to the Southwest corner of said Lot 6, thence Northwesterly on and along the Westerly boundary of Lots 6, 5 and 4 in Block 4 in Gund's Second Addition to the place of beginning; provided party of the second part, her administrators, executors, heirs and assigns shall have an easement for the purpose of ingress and egress from Hancock Avenue to the premises herein to be conveyed over the North 11 feet of that part of said Lot 4 in Block 4 in Gund's Second Addition which is excepted as aforesaid, situated in the City of Freeport.

That part of Outlot 2 in Arcade Addition to the City of Freeport, which lies East of the West line of South Fourteenth Avenue (formerly Second Street) produced Northerly across said Outlot 2; Outlot 3; Outlot 5, and Outlot 4, of said Arcade addition to the City of Freeport, except that part of said Outlot 4 which lies South of the North line of Lot Number 8 in Block Number 1 in said Arcade Addition, extended West to the West line of said Outlot 4, situated in the City of Freeport, County of Stephenson, Illinois.

ALSO:

The West half of the Northerly 150 feet of 15th Avenue located westerly of Block 1 of Arcade Addition, Township 27 North, Range 8 East of the Fourth Principal Meridian. Situated in the City of Freeport, Stephenson County, Illinois.

Foth
Foth Infrastructure & Environment, LLC

MODERN PLATING CORPORATION FACILITY

REVISED EXHIBIT B-1

PROPERTY DESCRIPTION AND REMEDIATION AREAS

R00101313

Scale: 0 120' 240'	Date: MAY, 2010	
Prepared By: JOW	Checked By: AKM	09M043

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5/17/2010 blk

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026
PAT QUINN, GOVERNOR

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

RCRA POST-CLOSURE PERMIT

IEPA #1770200010 -- Stephenson County
Modern Plating Corporation
ILD #005 172 325
RCRA Permit File
RCRA Log Nos. B-167R

Issue Date: June 9, 2011
Effective Date: July 7, 2011
Expiration Date: July 7, 2021

Owner
Lucille Miller
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032-0838

Operator
James R. Stenberg
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032-0838

A RCRA post-closure permit renewal is hereby granted for Modern Plating Corporation (MPC) to provide post-closure maintenance for a corrective action management unit (CAMU). Only remediation wastes generated during RCRA closure and/or corrective action activities at the Modern Plating facility were placed in the CAMU. Modern Plating Corporation is located at 701 South Hancock Avenue in Freeport, Illinois.

This permit is issued pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code (35 Ill. Adm. Code) Subtitle G. This permit consists of the conditions contained herein (including those in any attachments). The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the permit application, and any subsequent amendments (hereafter referred to as the approved permit application). Any inaccuracies found in this information may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action.

Approved Permit Application

The permit application approved by this permit consists of the documents listed below:

DOCUMENT	DATED	RECEIVED
Groundwater Management Zone Re-Evaluation (Logged as B-167-CA-1)	June 2, 2009	June 5, 2009
Renewal Application	November 17, 2009	December 7, 2009
Response to 1st Completeness NOD	March 30, 2010	April 1, 2010
Updated Post-Closure Cost Estimates (Logged as B-167-M-10)	September 30, 2010	October 5, 2010
Water Well Survey	January 25, 2011	January 31, 2011

If you have any questions regarding this permit, please contact Mark L. Crites, P.E. at 217/524-3269.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

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cc: Dale Meyer, U.S. EPA – Region V
Ron Meister, Foth & Van Dyke
Gene Fox, Fehr-Graham & Associates
Jim Meason

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

TABLE OF CONTENTS

SECTION		PAGES
I.	Design, Construction, Operation, & Closure of Corrective Action Management Unit	I-1 to I-4
II.	Post-Closure Care	II-1 to II-7
III.	Groundwater Monitoring	III-1 to III-14
IV.	Corrective Action Attachment IV.1 Extent of Areas Remediated Attachment IV.2 Remediation and Closure of HWMUs and SWMUs Attachment IV.3 Property Description and Remediation Areas	IV-1 to IV-9
V.	Standard Conditions	V-1 to V-8
VI.	Reporting and Notification Requirements	VI-1 to VI-3

FIGURES

1.	Map of Facility	I

ATTACHMENT

A.	Post Closure cost estimates	2
B.	Post-Closure Inspection and Maintenance Schedule	5
C.	Groundwater Monitoring Program Attachments	9
D.	Leachate Analytical Parameters	

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

SECTION I

DESIGN, CONSTRUCTION, OPERATION, AND CLOSURE OF THE CORRECTIVE ACTION MANAGEMENT UNIT

A. AUTHORIZATION OF CAMU

For the purpose of implementing remedies under 35 IAC 724.201, the Illinois EPA designated a new unit at the Modern Plating facility as a permanent Corrective Action Management Unit (CAMU), as defined in 35 IAC 720.110. The design, construction, operation, and maintenance of the CAMU shall be conducted in accordance with the approved permit application, the requirements contained in this permit, and the regulations at 35 IAC 724.652. Placement of remediation waste into or within a CAMU does not constitute land disposal of hazardous wastes. Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology standards.

B. UNIT IDENTIFICATION

The general location of the permanent CAMU is shown in Figure 1 of this permit. The CAMU is located north of the wastewater treatment plant and was constructed in the same location that Lagoons 2 and 3 used to occupy. The CAMU is about 1.2 acres in size and holds remediation wastes generated from the closure and remediation of hazardous waste and solid waste management units at the Modern Plating facility. The permitted volume of the landfill was 17,610 cy (cubic yards) with a maximum volume of approximately 22,800 cy. The total in-place volume of sludge and soil actually in the CAMU is approximately 14,500 cy.

C. WASTE IDENTIFICATION

1. The Permittee was only allowed to place the following types of remediation wastes in the CAMU: Electroplating Sludge (F006) and soils contaminated with cadmium, chromium, cyanide, and trichloroethylene (F002). This included soils from the lagoons, shawnee building, cyanide vault, wetlands areas, outfall pipeline areas, and any other areas where similar remediation wastes were located during the closure and corrective actions at the facility.

2. The Permittee is prohibited from placing wastes in the CAMU that are not included in Condition C.1 above without prior authorization from the Illinois EPA via a permit modification.

D. DESIGN, CONSTRUCTION, AND OPERATING REQUIREMENTS

1. The Permittee constructed, operated, and maintained the CAMU in accordance with the plans and specifications contained in the approved permit application and the conditions in this permit. Any changes to the CAMU described in the approved permit application and this permit shall be pre-approved by the Illinois EPA before they can be implemented by the permittee.

2. The horizontal extent and location of the CAMU is identified in Figure 1 of this permit. The CAMU was constructed above elevation 757.0. The sumps in the CAMU were constructed above elevation 753.5. The interior side slopes in the CAMU are not steeper than 3:1 (3 feet horizontal to 1 foot vertical). The slopes of the final cover on the CAMU are not steeper than 3:1 on the perimeter slopes constructed of contaminated soils, and not steeper than 6:1 for the areas covering sludge. The CAMU was designed and constructed to achieve a minimum static slope factor of safety greater than or equal to 1.5 and a seismic factor of safety greater than or equal to 1.3. Any modification to these design parameters shall be the subject of a permit modification.

3. The liner system on the bottom and sides of the CAMU was constructed of the following layers, described from the top to bottom:
   - Geocomposite drainage material (high density polyethylene (HDPE) drainage net sandwiched between two layers of geotextile material) with a minimum transmissivity of 3×10^{-5} m^2/sec
   - 60 mil HDPE geomembrane (textured on both sides)
   - HDPE drainage net (geocomposite on the side slopes) with a minimum transmissivity of 3×10^{-5} m^2/sec
   - 60 mil HDPE geomembrane (textured on both sides)
   - Geosynthetic clay liner (GCL)

4. The cover system on the top of the CAMU was constructed of the following layers, described from the top to bottom:
   - 6 inches of topsoil (vegetative layer)
   - 18 inches of cover soil (rooting layer)
   - Geocomposite drainage material (HDPE drainage net sandwiched between two layers of geotextile material)

- 40 mil HDPE geomembrane (textured on both sides)
- Geosynthetic clay liner (GCL)
- 6 inches of grading/venting layer

5. The leachate collection and removal system is designed and operated to ensure that the depth of leachate over the liner does not exceed more than 1 foot (30 cm).

6. The Permittee shall provide groundwater monitoring for the CAMU in accordance with the approved permit application, and with Section III of this permit.

E. CLOSURE

1. The CAMU was closed in accordance with the approved permit application and the conditions in this permit. The closure of the CAMU was documented in the Closure Documentation Report dated August 3, 2001 and received August 6, 2001 (Log No. B-167-M-3). The approval of permit modification B-167-M-3 constitutes approval of the certification of closure for the CAMU.

2. A survey plat indicating the location and dimensions of the CAMU and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes on the plat state the owner's and operator's obligation to restrict disturbance of the CAMU in accordance with the applicable Subpart G regulations. These notes state:

   a. The CAMU contains remediation wastes generated during the closure of hazardous waste and solid waste units at the Modern Plating facility in accordance with an Illinois EPA approved closure plan (Log No. C-259-M-8).

   b. The waste materials contained in the CAMU are considered RCRA hazardous wastes. They include electroplating sludges (F006), wastes with trichloroethylene (F002), and wastes containing cadmium, chromium, and cyanide.

   c. Any fill material removed from the CAMU during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.

   d. The use of this area is restricted.

3. The Plat of Survey (PIN 18-14-32-402-019) and Drawing No. 2 provided in Appendix J of the August 2001 Closure Documentation Report were filed with the Stephenson County Recorders Office in Freeport, IL on July 26, 2001. The record data is Document

No. 200100016096, Box 15, pages 111-116 (each 11" x 17" drawing was recorded as 3 separate 8.5" x 11" pages).

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

(a) The waste material in the CAMU is considered a RCRA hazardous waste;

(b) Use of the area is restricted; and

(c) A survey plat and record of the type, location and quantity of waste material in the CAMU was filed with the IEPA and the County Recorder.

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SECTION II

POST-CLOSURE CARE

A. SUMMARY

A hazardous waste management unit where waste is left in place must receive post-closure care for at least 30 years after the unit is closed. Activities required during post-closure care include, but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, and (3) providing financial assurance for post-closure activities pursuant to 35 IAC Part 724.

B. UNIT IDENTIFICATION

The Permittee shall provide post-closure care for the Corrective Action Management Unit (CAMU) in accordance with the approved permit application and the conditions of this permit. The capacity of the CAMU is approximately 14,500 cubic yards and contains electroplating sludge (F006), soil contaminated with trichloroethylene (F002), and soils contaminated with cadmium, chromium and cyanide.

C. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall implement the Post-Closure Plan contained in the Approved Permit Application. All post-closure care activities shall be conducted in accordance with the provisions of the approved permit application and the conditions in this permit.

2. The post-closure care period shall begin on August 6, 2001, the date of completion of closure of the unit listed in Condition II.B of this permit (the date the permittee submitted the certification of closure to the Illinois EPA) and continue for thirty (30) years after that date.

3. The Permittee shall maintain the components, structures, and equipment at the site in accordance with the maintenance plan in Attachment B of this permit.

4. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After administrative and judicial challenges to such

restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the unit is located.

5. The Permittee shall not allow any use of the CAMU listed in Condition II.B of this permit that could disturb the integrity of the final cover system, any component of the containment system, or the function of the facility's monitoring systems during the post-closure care period unless such use is necessary to protect public health or the environment.

6. The permittee shall comply with the requirements for landfills at the CAMU as follows:

   a. Maintain the integrity and effectiveness of the final cover system, including making repairs as necessary to correct the effects of settling, subsidence, erosion, cracking or other events.

      Corrective action shall be taken if ponding water is observed, if cracks or erosion channels greater than one inch wide have formed for whatever reason, if gas, odor, vegetative or vector problems arise, if leachate popouts or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such.

   b. Prevent run-on and run-off from eroding or otherwise damaging the final cover system.

   c. Maintain and monitor the groundwater monitoring system in accordance with the approved permit application and Section III of this permit.

   d. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements.

   e. The leachate collection and removal system for the CAMU shall be operated and maintained such that the depth of leachate over the liner in Phase 1 and Phase 2 of the CAMU does not exceed more than 1 foot (30 cm).

   f. The leachate collection system pumps for the CAMU shall be operated and maintained such that they automatically turn on if leachate in the Phase 1 or Phase 2 sumps reaches an elevation of 757.0 feet as indicated on Drawing 11 in the approved permit application.

g. The leachate collection system for the CAMU shall be operated and maintained such that the leachate pump alarms in Phase 1 and Phase 2 of the CAMU are activated if the leachate in either of the sumps reaches an elevation of 758.0 feet.

h. Representative samples of leachate from Phases 1 and 2 shall be collected from sample ports indicated in Appendix M, Drawing 12 of the Approved Permit Application annually and analyzed individually for the constituents listed in Attachment D. These samples shall be collected during the first quarter inspections. The results of these analyses shall be submitted to the Illinois EPA by June 1 each year.

i. The Permittee must evaluate the leachate analytical parameter list contained in Attachment D to determine whether any parameters contained in 35 Ill. Adm. Code 724, Appendix I that are not included in Attachment D could potentially be present in the leachate. Any Appendix I parameters identified during this evaluation that could potentially be present in the leachate must be added to the leachate analytical parameter list. This evaluation, along with any additional parameters that should be added to the leachate analytical parameter list must be submitted to Illinois EA within 90 days of the effective date of this permit.

j. Information required by Condition II.C.6.h must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C. Additional guidance regarding the submittal of the information in an electronic format can be found at http://www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html.

k. The following leachate withdrawal points will be used in leachate analysis required by Condition I.C.6.h. For purposes of electronic reporting, the points will be renamed as shown below.

Name in Application	Name for Electronic Reporting
Phase 1 Sample Port	L301
Phase 2 Sample Port	L302

l. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting form (LPC 592), as a cover sheet for all leachate reports for identification purposes. The form is not be used for permit modification requests.

D. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment associated with the CAMU listed in Condition II.B of this permit in accordance with the inspection schedule in Attachment B of this permit. The term "major rainfall event" as used in the inspection schedule shall be defined as any storm event of ½ inch of rain or more.

2. The date of the first inspection was on August 6, 2001; the date the Closure Documentation Report for the CAMU was submitted to the Illinois EPA Bureau of Land Permit Section.

3. The Permittee shall continue to follow the inspection procedures in Condition II.D.1 above until the post-closure care period for the CAMU listed in Condition II.B of this permit has ended.

E. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 Ill. Adm. Code Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.

2. If the Permittee or any subsequent owner or operator of the land upon which the CAMU listed in Condition II.B above is located wishes to remove hazardous waste, hazardous waste residue, the liner, or contaminated soil, they must request a modification to this RCRA post-closure permit in accordance with the applicable requirements in 35 IAC Parts 703, 705 and 724. At a minimum, the owner or operator must demonstrate that the removal of such material will satisfy the criteria of 35 IAC 724.217(c).

3. No later than sixty (60) days after completion of the established post-closure care period for the CAMU listed in Condition II.B of this permit, the Permittee shall submit to the Illinois EPA Bureau of Land Permit Section by registered mail, a certification that the post-closure care for the CAMU was performed in accordance with the specifications in the approved post-closure plan in the approved permit application and the conditions in this permit. The owner and operator and an independent registered professional engineer must sign the certification. Documentation supporting the independent registered professional engineer's certification must be furnished to the Illinois EPA upon request until the Illinois EPA releases the Permittee from the financial assurance requirements for post-closure care.

4. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed for the CAMU listed in Condition II.B of this permit in accordance with the approved post-closure plan, the Agency shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been in accordance with the approved post-closure plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved post-closure plan.

5. Within 90 days of the modification date of this permit, the permittee shall notify persons on the facility mailing list of the changes to the permit. Within 120 days of the modification date, the permittee shall provided documentation to the Illinois EPA Bureau of Land Permit Section that the required notification was made as specified above. At a minimum, this documentation shall include a copy of the letter sent and a copy of the facility mailing list of all people who received the notification.

F. FINANCIAL ASSURANCE

1. The permittee shall maintain financial assurance for post-closure care of the CAMU of at least $335,080 (in 2010 dollars). The annual cost estimate for post-closure care, and calculations for the amount of financial assurance required for this facility are shown in Attachment A to this permit. The amount of the post-closure financial assurance shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724.244 and 724.245.

2. The volume of leachate used in the post-closure care cost estimate in Attachment A of this permit shall be based on a 3 year rolling average of the total volume of leachate generated from the CAMU during the previous three years.

3. On or before October 1st of each year the permittee shall submit a permit modification to update the post-closure cost estimate and amount of financial assurance by incorporating the volume of leachate generated in the past year into the 3 year rolling average. The submittal needs to identify the volume of leachate generated in both Phase I and Phase II of the CAMU for each year. The annual amount of leachate generated from the CAMU shall be totaled on September 1st of each year. The leachate data from 2003 through the current year shall be submitted with the permit modification request. A discussion of trends in annual leachate generation totals shall accompany this submittal. This discussion shall identify potential reasons for upward or downward trends and propose any corrective actions or maintenance that might be deemed necessary to optimize the operation of the leachate collection system.

4. The permittee is allowed to calculate the amount of financial assurance that is required each year by multiplying the number of years remaining in the post-closure care period by the annual post-closure cost estimate that is revised each year per Conditions II.G.2 and G.3 above. If the permittee chooses to modify the financial assurance in this way, a permit modification request to do so must be submitted on or before October 1st of each year with the updated post-closure cost estimate and financial assurance required in Condition II.G.3 above.

G. 39i Certification Forms

1. The permittee is required to complete and provide the following 39i Certification forms to the Illinois EPA Bureau of Land:

   a. A 39i (legal entity) certification form must be filled out for the legal entity (i.e. Company) that appears on the permit application being submitted, and

   b. A 39i (individual) form must be filled out for the individual that signs the 39i (legal entity) certification form, and

   c. A 39i (individual) form must be filled out for each individual who signs the permit application.

   Note: If the applicant wants additional staff to be able to send in future modifications, certifications, etc. those individuals should also send in an individual 39i certification form.

2. The permittee shall submit the necessary 39i certification form(s) and supporting documentation within 30 days of any of the following events:

   a. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has violated federal, State, or local laws, regulations, standards, or ordinances in the operation of waste management facilities or sites; or

   b. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has been convicted in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court; or

   c. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has committed an act

of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

a. A new person is associated with the owner or operator who can sign the permit application or who has control over operating decisions regarding the facility, such as a corporate officer or a delegated employee.

The 39i certification must describe the violation(s), convictions, carelessness, or incompetence as outlined in (a), (b), or (c) above and must include the date that a new person as described in (d) above began employment with the applicant.

The 39i certification form and supporting documentation shall be submitted to the address specified below:

Illinois Environmental Protection Agency
Bureau of Land #33 – 39i Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

[The 39i certification forms will be treated as confidential by the Agency. The applicant may also request the information on the 39i certification form be maintained confidential in accordance with 2 IAC 1828.]

H. SPECIAL CONDITIONS

The Permittee must submit a legal description of the property to be inserted into the application within 60 days of the effective date of this permit.

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SECTION III

GROUNDWATER CORRECTIVE ACTION PROGRAM

A. SUMMARY

Hazardous waste constituents have been detected in groundwater monitoring wells, at the MPC facility, in the vicinity of HWMUs and SWMUs above the groundwater protection standard and background values. Therefore, a corrective action program meeting the requirements of 35 Ill. Adm. Code 724.200 must be implemented at the MPC facility in Freeport, Illinois.

The groundwater corrective action program required by this Permit includes:

1. The construction of the CAMU which serves as the corrective action and subsequently the basis for the establishment of the Groundwater Management Zone (GMZ).

2. Determining the quality of groundwater, within the GMZ and in the vicinity of the MPC facility, by comparing analytical results for the specified hazardous constituents to the concentration limits that comprise the groundwater protection standard.

3. Evaluating the effectiveness of the corrective action based on the quality of groundwater within the GMZ and in the vicinity of the MPC facility.

4. The postponement of the establishment and monitoring of the point of compliance until the monitoring wells in the program have attained the applicable concentration limits that comprise the groundwater protection standard and the GMZ expires. The compliance period (post-closure period) during which the groundwater protection standard applies shall be extended until it can be demonstrated that the groundwater protection standard has not been exceeded at the point of compliance for three consecutive years.

B. DEFINITIONS

As used herein, the words or phrases set forth below shall have the following definitions:

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility. The uppermost aquifer in the vicinity of

the MPC facility has been identified as the unconsolidated aquifer consisting of permeable alluvial sand and gravel.

2. "GMZ" refers to the three (3) dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site.

3. "Point of Compliance" refers to the vertical surface located at the hydraulically down-gradient limits of the waste management area (the CAMU) extending down into the uppermost aquifer underlying the regulated unit.

4. "Ft – bgs" refers to the number of feet below the ground surface.

5. "Ft-MSL" refers to the number of feet below the ground surface referenced to mean sea level.

6. "Detected" shall mean a concentration equal to or above the PQL listed in USEPA's SW-846 (Third Edition) for the applicable analytical methods specified in the approved Sampling and Analysis Procedures, which are incorporated by reference in Condition III.H of the Permit.

7. "Progressive Increase" shall mean an increase in the concentration of a constituent in successive sampling events.

8. "Stick-up" refers to the height of the reference survey datum. This point is determined within $\pm$ 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

9. "Compliance period" is the number of years equal to the active life of the waste management area, including any waste management activity prior to permitting, and the closure period.

C. IMPLEMENTATION

1. The Permittee shall carry out the corrective action monitoring program specified in this Permit on the groundwater beneath the MPC facility in Freeport, Illinois. The uppermost aquifer in the vicinity of the MPC facility has been identified as the unconsolidated aquifer consisting of permeable alluvial sand and gravel.

2. Groundwater monitoring wells at the facility are identified as A through E, referring to the specific screened intervals. These are:

A: Screened in the water table in the upper portion of the unconsolidated materials

B: Screened in the lower portion of the unconsolidated materials

C: Screened at the surface of the dolomite aquifer

D: Screened 20 feet (ft) into the dolomite

E: Screened 40 ft into the dolomite

For the purposes of this Permit and in accordance with 35 Ill. Adm. Code Part 620 regulations: (1) the unconsolidated materials have been designated Class II: General Resource Groundwater; and (2) the dolomite aquifer has been designated Class I: Potable Resource Groundwater. The analytical results obtained from these groundwater monitoring wells shall be compared to the appropriate Class I or Class II concentration limits that comprise the groundwater protection standard found in Condition III.E.1.

4. At this time, the establishment of the point of compliance will be postponed until such time that the monitoring wells at the facility have attained the applicable concentration limits that comprise the groundwater protection standard found in Condition III.E.1 and the GMZ expires. At that time, MPC must submit a proposal for the establishment of a point of compliance which satisfies the regulatory requirements found in 35 Ill. Adm. Code 724, Subpart F and reflects the current conditions at the facility.

D. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells identified in the table below to allow for the collection of groundwater samples. The location of these wells is specified in Figure C-5 of the approved permit application.

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

IEPA Well No.	MPC Well No.	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
"A" Groundwater Monitoring Wells				
G06S	MW-6A V	11.6	742.1	747.1 - 742.1
G07S	MW-7A V	13.1	740.7	745.7 - 740.7
G08S	MW-8A V	17.0	741.7	746.4 - 741.4
G09S	MW-9A I	22.3	746.8	755.8 - 745.8
G10S	MW-10A I	21.1	744.0	753.8 - 743.8
G11S	MW-11A	13.2	742.0	747.7 - 742.7
G12S	MW-12A I	12.6	741.1	746.6 - 741.6
G13S	MW-13A I	12.0	741.1	745.9 - 740.9
G14S	MW-14A I	19.8	738.3	751.6 - 741.6
G15S	MW-15A I	12.5	743.7	749.1 - 744.1
G17S	MW-17A	16.7	739.8	743.8 - 738.8
G18S	MW-18A	11.7	743.9	743.6 - 738.6
G19S	MW-19A	14.7	740.6	745.7 - 740.7
GA1S	MW-21A I	24.4	748.0	757.2 - 747.2
GA2S	MW-22A I	24.6	748.8	758.4 - 748.5
"B" Groundwater Monitoring Wells				
G06U	MW-6B	25.7	728.9	737.5 - 727.5
G07U	MW-7B	27.3	726.5	736.2 - 726.2
G12U	MW-12B V	27.4	727.9	735.6 - 725.6
G13U	MW-13B V	27.6	725.5	734.8 - 724.8
G14U	MW-14B V	22.2	736.7	741.6 - 736.6
G15U*	MW-15B*VI	28.5	727.8	734.6 - 724.6
G17U*	MW-17B*VI	37.4	719.3	729.3 - 719.3
G18U*	MW-18B*VI	38.3	717.0	727.3 - 717.3
G19U	MW-19B VI	37.7	717.7	727.9 - 717.9
GA3U	MW-23B VI	20.4	734.6	745.0 - 735.0
"C" Groundwater Monitoring Wells				
G05M	MW-5C V	23.6	755.2	760.1 - 755.1
G06M	MW-6C V	43.0	711.4	715.9 - 710.9
G07M	MW-7C	34.4	719.6	718.3 - 713.3
G08M	MW-8C V	75.2	681.8	687.7 - 682.7

G11M	MW-11C V	65.5	689.5	693.8 - 688.8
G12M	MW-12C	52.9	701.0	705.6 - 700.6
G13M	MW-13C	84.4	669.0	674.0 - 669.0
G14M	MW-14C V	80.5	678.4	683.3 - 678.3
G15M*	MW-15C*VI	103.8	652.2	657.7 - 652.7
G16M*+	MW-16C*+VI	29.0	752.6	764.6 - 754.6
G17M*	MW-17C*VI	108.6	647.9	653.0 - 648.0
G19M*	MW-19C*VI	111.3	644.1	650.6 - 644.6
GA0M	MW-20C I	25.6	741.6	742.3 - 752.3
GA1M	MW-21C	54.5	718.4	772.5 - 717.5
GA2M	MW-22C	58.6	715.6	718.5 - 713.5
GA3M*	MW-23C*VI	34.7	720.3	725.9 - 720.9

"D" Groundwater Monitoring Wells

G05L	MW-5D I	38.6	739.9	749.5 - 739.5
G07L	MW-7D V	50.3	703.5	713.3 - 703.3
G17L*	MW-17D*VI	121.0	635.4	644.8 - 634.8
G18L*	MW-18D*VI	148.0	607.1	615.0 - 608.0
G19L*	MW-19D*VI	150.9	604.3	616.7 - 604.7

"E" Groundwater Monitoring Wells

G11D	MW-11E	100.1	655.0	665.8 - 655.8
G12D	MW-12E	87.5	666.2	676.3 - 666.3
G13D	MW-13E	110.7	642.5	645.8 - 635.8
G14D	MW-14E	111.1	647.7	654.7 - 644.7

River Sampling Points

S201	PR-1 VI	NA	NA	NA
S102	PR-2^{+} VI	NA	NA	NA

Notes:

1. + - Denotes Upgradient Well
2. * - Denotes GMZ Wells
3. V - Analysis of Volatile Organic Compounds listed in Condition III.E.1
4. I - Analysis of Inorganic constituents listed in Condition III.E.1
5. NA - Not applicable

2. Construction of each monitoring well/piezometer must be in accordance with the diagram contained in Attachment C to this Permit or details and diagrams approved by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs as shown in Attachment C unless otherwise approved by the Illinois EPA.

3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

4. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitor well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that the installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

   Illinois Environmental Protection Agency
   Bureau of Land #33
   Permit Section
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.

7. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition III.D.3.

E. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and concentration limits comprise the groundwater protection standard in the vicinity of the MPC facility. (Total (unfiltered) values, derived from the applicable USEPA SW-846 (Third Edition) method, will be used for comparison with the concentration limits)

Field Parameters	Storet	Units
pH	00400	
Specific Conductance	00094	micromos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet
Elevation of Groundwater Surface	71993	Ft MSL
Elevation of Bottom of Well #	72020	Ft MSL
Elevation of Measuring Point (Top of casing) ##	72110	Ft MSL

\# Shall be determined during the second sampling event each year
Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III.J.5.

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Hazardous Waste Constituents	Storet Number	Groundwater Concentration Limits (mg/l)# Class I	Class II
Volatile Organic Compounds			
Tetrachloroethylene	34475	0.005	0.025
Trichloroethene	39180	0.005	0.025
Cis-1,2-Dichloroethene	77093	0.07	0.2
Vinyl Chloride	39175	0.002	0.01
Inorganics (Totals)			
Cadmium	01027	0.005	0.05
Chromium	01034	0.1	1.0
Lead	01051	0.0075	0.1
Nickel	01067	0.1	2.0

Hazardous Waste Constituents	Storet Number	Surface Water Quality Standards for the Pecatonica River (mg/l)#, 1, 2 Acute	Chronic	Human Health
Volatile Organic Compounds				
Tetrachloroethylene	34475	1.2	0.15	None
Trichloroethene	39180	12	0.94	0.025
Cis-1,2-Dichloroethene	77093	14*	1.1*	None*
Vinyl Chloride	39175	22	1.7	0.002
Inorganics (Totals)				
Cadmium	01027	0.0371	0.0029	None
Chromium	01034	4.5824	0.5462	None
Lead	01051	0.4325	0.0907	None
Nickel	01067	0.2249	0.0136	None

Notes: # = milligrams per liter
* = Illinois EPA Bureau of Water (BOW) established values for 1,2-dichloroethylene applicable to cis,1-2-dichloroethene.
1 = 35 Ill. Adm. Code 302.208(e) contains values for inorganics.
2 = 35 Ill. Adm. Code 302.210, Subpart F contains values for organics.

2. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment.

   a. Where a hazardous constituent has a standard in 35 Ill. Adm. Code 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act.

   b. For those hazardous constituents without a 35 Ill. Adm. Code 620 standard, the alternative concentration limits proposed by the facility must be approved by the Illinois EPA.

3. The compliance period (post-closure period) during which the groundwater protection standard applies shall be extended until the Permittee demonstrates that the groundwater protection standard has not been exceeded at the point of compliance for three consecutive years.

F. CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the corrective action program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. The GMZ shall be monitored and maintained. The GMZ is delineated by the designated groundwater monitoring wells found in Condition III.D.1.

   a. The results of monitoring the GMZ shall be submitted to the Illinois EPA semi-annually in accordance with the schedule found in Condition III.J.2.

   b. The GMZ expires when all groundwater monitoring wells within the GMZ have attained the appropriate Class I or Class II concentration limits that comprise the groundwater protection standard found in Condition III.E.1.

      i. The appropriate Class I or Class II concentration limits shall be considered attained when groundwater monitoring results meet the appropriate concentration limit for two (2) consecutive years.

ii. In accordance with Condition III.C.3, the unconsolidated material has been designated as Class II: General Resource Groundwater.

iii. In accordance with Condition III.C.3, the dolomite aquifer has been designated Class I: Potable Resource Groundwater.

c. In accordance with Condition III.C.4, at this time, the establishment of the point of compliance will be postponed until such time as the monitoring wells at the facility have attained the appropriate concentrations limits that comprise the groundwater protection standard found in Condition III.E.1 and the GMZ expires.

i. At the time the GMZ expires in accordance with Condition III.F.1.b, the Permittee shall submit a proposal for the establishment a point of compliance which satisfies the regulatory requirements found in 35 Illinois Adm. Code 724, Subpart F and reflects the current conditions at the site.

ii. At the time the GMZ expires in accordance with Condition III.F.1.b, the Permittee may request that the Illinois EPA consider corrective action complete. The Petition should include a demonstration that all releases of hazardous waste or hazardous constituents to groundwater have been remediated to meet the applicable Class I or Class II concentration limits that comprise the groundwater protection standard found in Condition II.E.1 of the Permit, and shall also describe how release will be prevented in the future.

d. Unless otherwise noted in the Permit the GMZ at the facility will be managed in accordance with 35 Illinois Adm. Code Part 620.

2. The Permittee shall collect, preserve, analyze groundwater samples pursuant to Condition III.H.

3. The Permittee shall determine groundwater quality at each of the groundwater monitoring wells identified in Condition III.D.1 semi-annually during the active life (including closure and post-closure care period).

4. Samples collected during the first and third quarters shall be analyzed for the constituents identified in Condition III.E.1.

5. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition III.D.1.

6. In order for the GMZ to remain in effect, the facility shall submit a determination within ninety (90) days of the effective date of the Renewal Permit to address the continued groundwater exceedances of Class I GQSs at well MW-20C. The determination must be submitted as a Class 1* modification request and include proposals for additional investigation or corrective action if determined to be necessary to meet 35 Ill. Adm. Code Part 620 regulations.

G. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to MSL at each well each time groundwater is sampled in accordance with Condition III.J.3.

2. The Permittee shall determine the surveyed evaluation of the "stick-up" referenced to MSL once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III.J.5.

3. Elevation, as referenced to MSL, of the bottom of each monitoring well (Storet 72020) is to be reported at least annually. The mandatory measurement shall be taken during the second semi-annual sampling event each year.

H. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the techniques and procedures described in Section C.8.4.3 of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:

1. Samples shall be collected by the techniques described in Section C.8.4.3 of the approved permit application.

2. Samples shall be preserved, shipped, and handled in accordance with the procedures specified in Section C.8.4.3 of the approved permit application.

3. Samples shall be analyzed according to the procedures specified in Section C.8.4.3 of the approved permit application and/or USEPA's SW-846 Methods (latest version).

4. Samples shall be tracked and controlled using the chain of custody procedures specified in Section C.8.4.3 of the approved permit application.

I. STATISTICAL METHODS

1. The Permittee shall evaluate the results of the analyses required by Condition III.F.3 above and identify:

   a. The concentration of any organic constituent detected which is equal to or greater than the appropriate concentration limit listed in Condition III.E.1.

   b. The concentration of any total (unfiltered) inorganic constituent detected which is equal to or greater than the appropriate concentration limit listed in Condition III.E.1.

   c. The concentration of any constituent detected which was not detected during the previous sampling event.

   d. The concentration of any constituent which exhibits a progressive increase over two (2) consecutive sampling events.

J. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions III.E, III.F, III.G, and III.I in the operating record.

2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III.E, III.F, III.G, and III.I shall be collected and reported, as identified in the table below. The result of the analyses conducted on the groundwater quality samples shall be submitted in accordance with this schedule. All additional data collected for the groundwater monitoring program (as specified in Conditions III.E, III.F, III.G, and III.I) shall also be submitted to the Illinois EPA in accordance with this schedule.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following	Constituents
First Quarter	April 15	III.E.1
Third Quarter	October 15	III.E.1

3. Groundwater surface elevation data, measured pursuant to Condition III.G.1 shall be collected at least semi-annually and submitted to the Illinois EPA as identified in the table above.

4. The Permittee shall report the groundwater flow rate and direction in the uppermost aquifer, as required by Condition III.F.5 during the second semi-annual sampling event of each year.

5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing ("stick-up"), referenced to MSL, in accordance with the following schedule:

   a. For wells identified in Condition III.D.1 above, every five years (during the second sampling event), or at the request of the Illinois EPA, or whenever the elevation changes. The initial "re-survey" of these wells shall be conducted during the second semi-annual sampling event following the effective date of the Permit.

   b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every five years (during the second quarter sampling event) or whenever the elevation changes.

6. Elevation of the bottom of each monitoring well identified in Condition III.D.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the second quarter sampling event. (Storet 72020)

7. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the Permit for identification purposes. Only one copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) of each notice or report you submit to the Illinois EPA. The form is not to be used for Permit modification requests.

8. Information required by Conditions III.J.2, III.J.3, III.J.5, and III.J.6 shall be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C in accordance with the schedule found in Condition III.J.2. Additional guidance regarding the submittal of information in an electronic format can be found at www.epa.state.il.us/land .

9. Statistical evaluations, as required by Condition III.I.1, shall be submitted to the Illinois EPA as a part of the first and third quarter reports as identified in Condition III.J.2.

10. The Permittee shall report all information to the Illinois EPA in a form that can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.

11. The Permittee shall submit a written report to the Illinois EPA, in accordance with the schedule found in Condition III.J.2 above, which discusses the effectiveness of the corrective action program.

K. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the corrective action monitoring program no longer satisfies the requirements of 35 Ill. Adm. Code 724.200, then within ninety (90) days, the Permittee must submit an application for a permit modification to the Bureau of Land of the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.

2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information that would have justified the application of different permit conditions at the time of issuance, and new regulations.

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SECTION IV

CORRECTIVE ACTION ON HAZARDOUS WASTE AND SOLID WASTE MANAGEMENT UNITS

A. INTRODUCTION

In accordance with Section 3004 of RCRA and 35 Ill. Adm. Code 724.201, the Permittee, Modern Plating Corporation, shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents, listed in 35 Ill. Adm. Code 721 Appendix H and any solid waste management unit at its facility in Freeport, Illinois.

1. Modern Plating Corporation (MPC) has addressed soil and groundwater contamination associated with RCRA closure and/or corrective action needed at the MPC facility.

   a. On May 7, 2009 Illinois EPA approved a Closure Documentation Report that addressed closure of the following hazardous waste management units (HWMUs): (1) the CAMU; (2) Lagoons 1, 2, 3 and: (3) the Shawnee Building. The approved closure documentation report also addressed completion of corrective action at the following solid waste management units (SWMUs) and/or areas of concern (AOCs): (1) Lagoons 0 and 1A; (2) Cyanide Treatment Vault; (3) the Wetlands; (4) Outfall Pipe; and (5) Wastewater Release Area. Attachment IV-I Location of SWMUs and AOC, shows the location of these units within the facility.

   b. Groundwater at the facility is being addressed under the requirements of Section IV of this permit.

2. The Permittee must provide corrective action, as appropriate, for any newly-identified SWMUs discovered at the facility.

3. The requirements of 35 Ill. Adm. Code, Subtitle G: Waste Disposal and 35 Ill. Admin. Code 620 Objectives (TACO) must be met in carrying out all aspects of the RCRA corrective action program at this facility.

B. COMPLETED REMEDIAL ACTIVITIES

Remediation activities for the four HWMUs (Lagoon 1 Lagoon 2, Lagoon 3, the Shawnee Building); four SWMUs (Lagoon 0, Lagoon 1A, Cyanide Treatment Vault and Wetlands

Areas) and two Areas of Concern (the Outfall Pipe and Wastewater Release Area) were performed in accordance with the final RCRA closure plan dated December 2, 1999 and subsequent modifications. A CAMU was established at the former location of Lagoons 2 and 3 for the placement of contaminated soil generated by remediation activities MPC in accordance with this permit. Remediation efforts were performed as described in the July 2001 CAMU Landfill Construction Documentation Report and the final August 2001 Closure Documentation Report identified in Condition IV.A.1 above (both these documents were approved by Illinois EPA on May 7, 2009). A summary of the completed activities follows.

✓ **1. <u>Lagoon 0, Lagoon 1, Lagoon 1A, Lagoon 2 , Lagoon 3</u>**

a. Waste sludges in the lagoons were dried, solidified and/or treated. After removal of waste, at least 1 foot of the base and 1 foot of the interior side slopes were excavated. Additional excavation occurred at the lagoons shown in Attachment IV-I and as described in the summary table provided in Attachment IV-II. The table summarizes for each lagoon, the type of wastes removed, the remedial removal and excavation activities and the remediation quantities.

b. The sludge/soil removal effort described above first started in Lagoons 2 and 3. The removed sludge/soil was temporarily placed in one of the other lagoons. Once the sludge/soil was removed from Lagoons 2 and 3, a CAMU was constructed within the footprint of these lagoons. The excavated sludge/soil from the lagoons was placed in the CAMU.

c. The concentrations of contaminants remaining (if any) in the soil left in-place were reported in the Modern Plating CAMU Landfill Construction Document Report dated July 2001, Table 5.1.

d. After waste was removed from Lagoons 0, 1 and 1A, each area was backfilled with clean soils compacted in lifts and the surface graded to drain.

e. A Groundwater Management Zone (GMZ) was established to address contaminated groundwater at the MPC facility. The requirements for the GMZ are specified in Section III of this permit.

2. <u>Cyanide Treatment Vault Area</u>

a. In the Cyanide Treatment Vault Area, 2 feet of contaminated soil was excavated from the floor and sidewalls of the former vault (approximately 200 cubic yards) and placed in the CAMU.

b. After excavation activities, soil samples were obtained in the lagoon areas and Cyanide Treatment Vault Area to define the amount of residual contamination.

c. After waste was removed, this area was backfilled with clean soil, compacted in lifts and the surface graded to drain.

d. An engineered barrier was placed over these areas.

✓ **3.** **Shawnee Building**

Three areas at the Shawnee Building were used for storage of hazardous waste. As part of closure, an estimated 30 cubic yards of contaminated soil were removed and placed in the on-site CAMU. This remedial action achieved the remedial objectives and met the closure requirements of 35 Ill. Adm. Code 725 Subpart G. After waste was removed, this area was backfilled with clean soil compacted in lifts and the surface graded to drain.

✓ **4.** **Wetland Area**

Approximately 2,905 cubic yards of contaminated soils were removed from four areas in the Wetland Area and placed in the on-site CAMU. Wetland 1 and 1A are off-site in the low area northeast of monitoring well MW-13 and Lagoon 1A . Wetland II and Wetland III are located on-site immediately north of Lagoon 2. Additional excavation occurred in the areas shown in Attachment IV-1 and described in Attachment IV-II. The remedial action achieved the remedial objectives and met the requirements of 35 Ill. Adm. 724.201. The wetland areas were returned to their previous grade by backfilling. No further action is necessary in the Wetland Area.

✓ **5.** **Outfall Pipe**

An abandoned outfall pipe from the wastewater treatment plant (WWTP) to the Pecatonica River was investigated as a result of a condition in Illinois EPA's December 2, 1999 closure plan approval letter. The investigation lead to the excavation of an area 30 feet long, 10 feet wide and 10 feet deep. Contaminated soil from this area was placed in the CAMU. Remediation efforts were determined to be adequate in Illinois EPA's August 8, 2000 letter with the condition that an institutional control be placed restricting future land use at the facility to commercial/industrial activities.

✓ **6.** **Wastewater Release**

During construction of the CAMU, a pipeline that transfers wastewater from the manufacturing plant to the WWTP ruptured (IEMA Incident No. 20001377). Approximately 3 cubic yards of soil were contaminated as a result of the spill and

contaminated soil was removed and placed in the CAMU. Remediation efforts were determined to be adequate to address this incident.

C. Environmental Land Use Control (ELUC) Requirements

The Modern Plating facility in Freeport, Illinois (PIN 14-32-251-011; 14-32-276-001; 14-32-402-004; 14-32-426-003; 14-32-402-019) is subject to an Environmental Land Use Control recorded with the Stephenson County Clerk/Recorder on June 1, 2010 as Document Number 201000111587. A drawing showing the boundary of the ELUC is provided in Attachment IV-III. This ELUC shall apply in perpetuity to the facility and shall not be released until: (1) Illinois EPA determines that there is no longer a need for this ELUC; (2) Illinois EPA, upon written request from the property owner and in accordance with 35 Ill. Adm. Code 742.1010, issues an amended certification of closure or a permit modification approving modification/elimination of the ELUC requirements; and (3) a release or modification of the ELUC is filed on the chain of title for the Property.

1. The filed ELUC places the following restrictions on the subject facility:

   a. The facility may only be used for commercial/industrial activities in the future;

   b. An engineered barrier must be maintained over the Cyanide Treatment Vault, the Outfall Piping Area and Lagoons 0, 1, 1A, 2 and 3;

   c. The groundwater under the facility may not be used as a potable supply of water;

   d. A site safety plan meeting the requirements of 29 CFR 1910 and 1926 must be developed and implemented any time construction/excavation work takes place beneath the engineered barriers mentioned above;

   e. Any soil removed from beneath the engineered barriers mentioned above must be properly managed in accordance with 35 Ill. Admin. Code, Subtitle G: Waste Disposal.

2. Failure to comply with the limitations or requirements of an ELUC may result in voidance of an Agency no further remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.

3. The limitations or requirements of the ELUC apply in perpetuity or until:

   a. The Illinois EPA issues a new no further remediation determination approving modification or removal of the limitation/requirement; and

   b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.

4. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new no further action determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.

5. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 IAC 742.

6. Corrective action activities at the subject facility must continue to be carried out in accordance with: (1) 35 Ill. Admin. Code 724.201; (2) the facility's RCRA permit; and (3) Illinois EPA letters regarding the activities.

D. FUTURE RELEASES FROM SWMUs

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU(s) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than sixty (60) calendar days after discovery. This requirement of this section is in accordance with 35 Illinois Admin Code 724.201-Corrective Action for Solid Waste Management Units. Additional corrective action investigation may be required at a later date should new information or additional analysis indicate that there is or may be a release from a SWMU that poses a threat to human health and the environment. The notification shall provide the following information, as available:

   a. The location of the newly-identified SWMU in relation to other SWMUs on a scaled map or drawing;

   b. The type and past and present function of the unit;

c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);

d. The period during which the unit was operated;

e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU, to the extent available; and

f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.

2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU, the Illinois EPA may request in writing, that the Permittee prepare a Solid Waste Management Unit (SWMU) Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit.

3. Within 120 calendar days after receipt of the Illinois EPA request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan to Illinois EPA. The plan shall propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s) to the environment.

4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall approve, approve with conditions, or disapprove the Plan in writing. If the plan is approved, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee in writing of the Plan's deficiencies specify a due date for submittal of a revised plan.

5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall

describe all results obtained from the implementation of the approved SWMU Assessment Plan. Based upon the results of Illinois EPA's review of this submittal, it may be necessary for the Permittee to conduct further investigation, develop final remediation objectives or carry out a corrective measures program.

6. The Permittee must comply with the requirements of Subsection E below relative to the development of cost estimates and establishment of financial assurance.

E. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. The Permittee must prepare a cost-estimate for the completion of any corrective measure(s) required under Subsection D. above in order to provide financial assurance for completion of corrective action, as required under 35 Ill. Code 724.201(b). Such cost-estimate will be based upon the cost of contamination investigations and assessments for SWMUs, and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 Ill. Adm. Code 724.201 and this permit. The cost-estimate must be submitted to the Illinois EPA with each submittal required by Subsection D above.

2. Once a cost-estimate has been approved in accordance with Condition E.1 above, the Permittee must demonstrate continuous compliance with 35 Ill. Adm. Code 724.201 by providing documentation of financial assurance using a mechanism specified in 35 Ill. Adm. Code 724.243.

3. Currently, the facility has completed all required corrective action, except for implementation of the groundwater corrective action program required by Section III of this permit. Thus, no financial assurance is necessary unless the Permittee must address a release from a newly-identified SWMU in accordance with Subsection D above.

F. INTERIM MEASURES

At any time during the completion of remedial activities for a newly-identified SWMU, the Permittee may initiate additional interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal Corrective Measure Study.

1. Prior to implementing any interim measures beyond those specified above, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:

   a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;

   b. Design, construction, and maintenance requirements;

   c. Schedules for design and construction; and

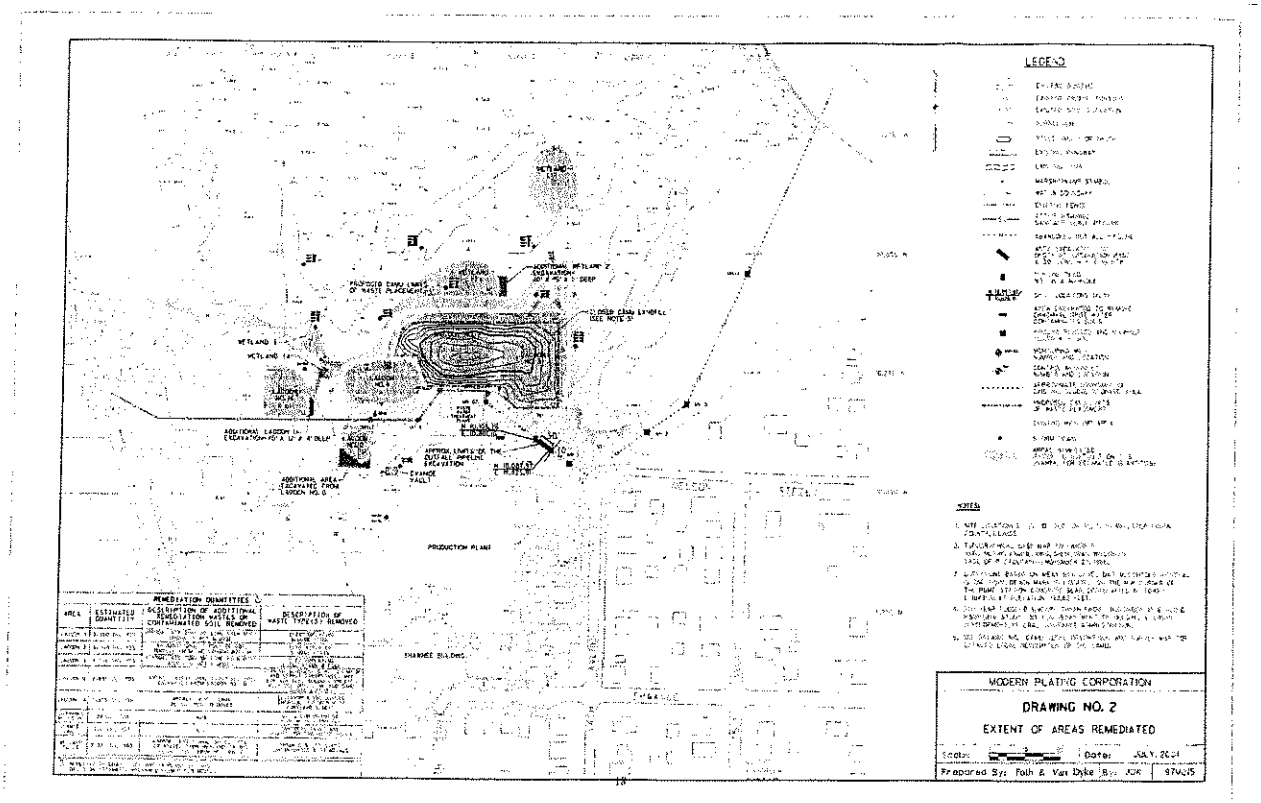
   d. Schedules for progress reports.

2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the remedial action plan or of any other portion of the permit.

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Modern Plating Corp.
RCRA Log No. B-167R

Attachment IV-1



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Modern Plating Corp.
RCRA Log No. B-167R

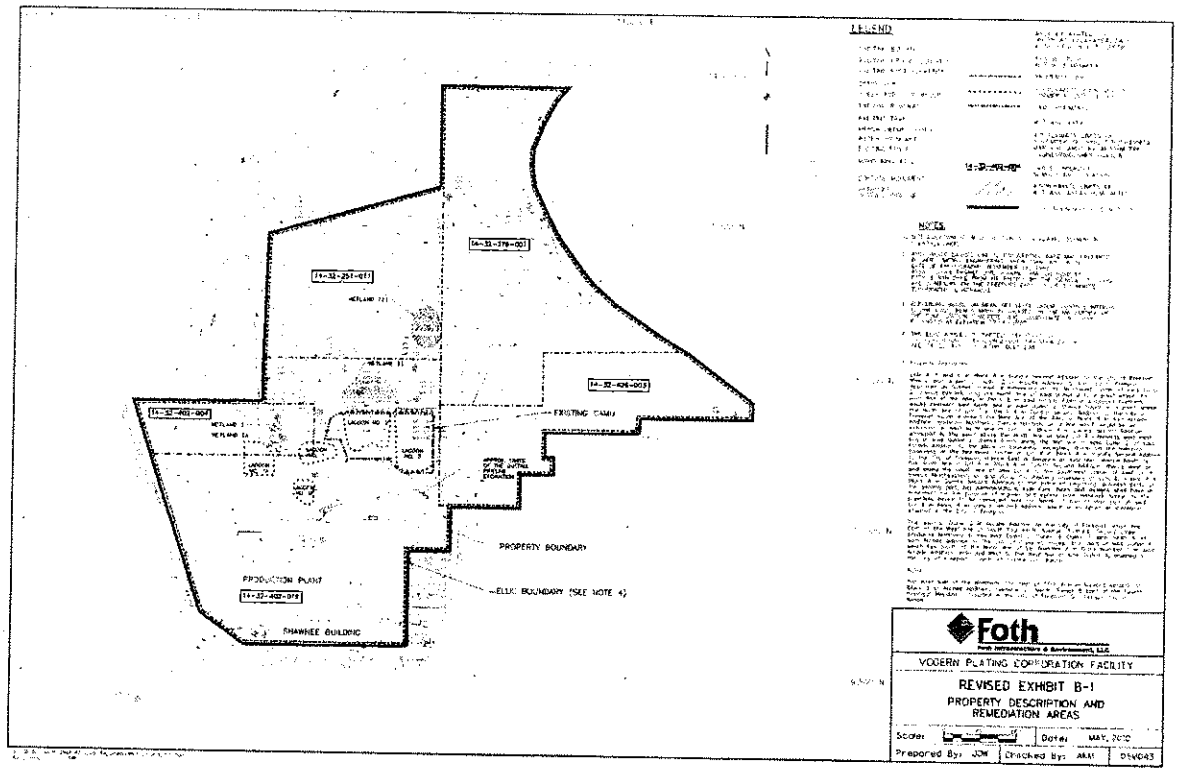
Attachment IV-2

Remediation and Closure of HWMUs and SWMUs

Type of Unit	Year of Operation	Location	Estimated Quantity (in-place)	Description of Additional Remediation Wastes or Contaminated Soil Removed	Description of Waste Type(s) Removed	Additional Soil Removal	Final Cover
HWMU	1971 – 1973	Lagoon 1	3,760 c.y.	Approx. 125 tons of lime kiln dust added to wet sludges	Electroplating Sludge (F006)	Excavated 1 foot below the base and interior sideslopes	~12 feet of compacted clay soil
HWMU	1972 – 1979	Lagoon 2	4,750 c.y.	An additional 1 foot of soil removed from the lagoon bottom	Electroplating Sludge (F006)	Excavated 1 foot below the base and interior sideslopes	CAMU Constructed
HWMU	1980 – 1983	Lagoon 3	4,750 c.y.	Approx. 125 tons of fine kiln dust added to wet sludges	Electroplating Sludge (F006 & F002)	Excavated 1 foot below the base and interior sideslopes	CAMU Constructed
HWMU	1969 - 1970	Lagoon 0	2,880 c.y.	Approx. additional 2,000 c.y. excavated from Lagoon No. 0	Cyanide Sludges, Zinc, Cadmium, and Copper stripping, may contain TCE, sludges treated with oil dry, lime and sand (F006 & F002)	Excavated 1 foot below the base and interior sideslopes	~15 feet of compacted clay soil
SWMU	1973	Lagoon 1A	1,910 c.y.	Approx. additional 70 c.y. removed	Electroplating sludge chemically fixed with Portland cement	Excavated 1 foot below the base and interior sideslopes	~5 feet of compacted clay soil
HWMU	1964 - 1991	Shawanee Building	30 c.y.	N/A	Soils contaminated with metals and TCE	Excavated to 200 mg/kg residual cadmium	~3 feet of compacted clay soil
SWMU	1969 - 1983	Cyanide Vault	200 c.y.	N/A	Concrete vault and cyanide contaminated soils	Excavated 2 feet below the floor and interior sideslopes	~12 feet of compacted clay soil
SWMU	NA	Wetland Soils	2,225 c.y.	Approx. additional 95 c.y. excavated from Wetland 1A and 45 c.y. from Wetland 2	Organic silty clays contaminated with metals	Excavated to 200 mg/kg residual cadmium	~2 feet of wetland soil
	NA	Outfall Pipeline	111 c.y.	Contaminated soil fill & clay soil excavated	Contaminated soil with construction debris and clayey soil	Excavated to 200 mg/kg residual cadmium	~6 feet of compacted clay soil

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RCRA Log No. B-167R

Attachment IV-3



SECTION V

SECTION NUMBER : STANDARD CONDITIONS FOR POST-CLOSURE CARE

GENERAL REQUIREMENTS

1. EFFECT OF PERMIT. The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)

2. PERMIT ACTIONS. This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)

3. SEVERABILITY. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)

4. PERMIT CONDITION CONFLICT. In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)

5. DUTY TO COMPLY. The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)

6. DUTY TO REAPPLY. If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)

7. PERMIT EXPIRATION. This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.

8. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)

9. DUTY TO MITIGATE. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)

10. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)

11. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)

12. INSPECTION AND ENTRY. The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

c. Records of monitoring information shall include:

i. The date(s), exact place, and time of sampling or measurements;

ii. The individual(s) who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. The individual(s) who performed the analyses;

v. The analytical technique(s) or method(s) used; and

vi. The result(s) of such analyses. (35 Ill. Adm. Code 702.150)

14. REPORTING PLANNED CHANGES. The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Codes 702.152(a))

15. CONSTRUCTION CERTIFICATION. For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

b. 1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or

2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)

16. ANTICIPATED NONCOMPLIANCE. The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 Ill. Adm. Code 702.152(b))

17. TRANSFER OF PERMITS. This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)

18. MONITORING REPORTS. Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))

19. COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))

20. TWENTY-FOUR HOUR REPORTING.

    a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:

        i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

        ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.

    b. The description of the occurrence and its cause shall include:

        i. Name, address, and telephone number of the owner or operator;

        ii. Name, address, and telephone number of the facility;

        iii. Date, time, and type of incident;

        iv. Name and quantity of material(s) involved;

        v. The extent of injuries, if any;

        vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and

        vii. Estimated quantity and disposition of recovered material that resulted from the incident.

c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))

21. OTHER NONCOMPLIANCE. The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 14, 15, and 16, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))

22. OTHER INFORMATION. Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))

23. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

Illinois Environmental Protection Agency
Bureau of Land
Planning and Reporting Section - #24
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

24. SIGNATORY REQUIREMENT. All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)

25. CONFIDENTIAL INFORMATION. Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.

26. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE. The Permittee shall maintain at the facility, until post-closure is complete, the following documents and amendments, revisions and modifications to these documents:

a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.

b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.

c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.

d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

GENERAL FACILITY STANDARDS

27. GENERATOR REQUIREMENTS. Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.

28. SECURITY. The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).

29. GENERAL INSPECTION REQUIREMENTS. The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).

PREPAREDNESS AND PREVENTION

30. DESIGN AND OPERATION OF FACILITY. The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

RECORD KEEPING

31. OPERATING RECORD. The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

POST-CLOSURE

32. CARE AND USE OF PROPERTY. The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.

33. AMENDMENT TO POST-CLOSURE PLAN. The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the

post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).

34. COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:

a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year.

b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of closure.

c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)

35. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE. The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Agency pursuant to 35 Ill. Adm. Code 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

36. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

WRW/mls/053443s.doc

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

SECTION VI

REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

CONDITION	SUBMITTAL	DUE DATE
CAMU Post-Closure		
II.C.6.h	Submit Results of leachate analysis.	June 1
II.E.2	Notify appropriate state and local officials	Immediately when Contingency Plan is implemented.
II.E.3	Notify appropriate IEMA and IEPA	Within 24 hours of implementing the Contingency Plan.
II.F.3	Certify to the Illinois EPA that post-closure care was performed in accordance with the specifications.	Within 60 days after completion of the post-closure care period.
II.F.5	Notify the people on the facility mailing list of changes to the permit. Submit documentation to IEPA that the notification required above was performed.	Within 90 days of the effective date of the permit. Within 120 days of the effective date of the permit.
II.G.3	Submit an annual permit modification to update the post-closure cost estimate and financial assurance.	October 1
II.G.4	Submit an annual permit modification to revise the amount of financial assurance required. (optional)	October 1
II.H.2	Submit revised 39i certification forms.	Within 30 days of any of the events cited in Condition II.H.2.
Groundwater Monitoring		
III.D.3	Notify IEPA if any of the wells identified in Condition III.D.1 are damaged or the	Within thirty (30) days of the date the damage is

CONDITION	SUBMITTAL	DUE DATE
	structural integrity has been compromised.	detected.
III.D.5	Provide Illinois EPA boring logs, construction diagrams and data sheets from new or replacement wells.	Within thirty (30) days of the date installation is complete.
III.J.2	Reporting of groundwater monitoring data and statistical calculations are required semi-annually.	April 15 and October 15
III.J.3	Semi-annual groundwater surface elevation data.	April 15 and October 15
III.J.4	Groundwater flow rate and direction in the uppermost aquifer.	October 15
III.J.5	Surveyed elevation of the top of the well casing ("stick-up")	October 15 every 5 years beginning in 2006
III.J.6	Elevation of the bottom of each monitoring well.	October 15
III.K.1	Apply for permit modification to modify the corrective action monitoring program.	Within ninety (90) days of determining the program no longer meets the requirements of 35 Ill. Adm. Code 724.200.
Corrective Action		
IV.C.1	Provide a draft ELUC for the facility.	Within 60 days of the modification date of this permit.
IV.D.1	Notify Illinois EPA in writing of any newly-identified SWMU(s) or release from an existing SWMU.	No later than sixty (60) calendar days after discovery.
IV.D.3	Submit a SWMU Assessment Plan to Illinois EPA.	Within 120 calendar days after receipt of the Illinois EPA request.
IV.D.5	Submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA	In accordance with the schedule in the approved SWMU Assessment Plan.
IV.F.1	Submit detailed information regarding the	Prior to implementing

CONDITION	SUBMITTAL	DUE DATE
	proposed interim measure to the Illinois EPA for approval.	any interim measures beyond those specified in this permit.
Standard Conditions		
6	Complete application for new permit.	At least 180 days prior to permit expiration.
11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Reasonable time.
14	Notify Illinois EPA of planned physical alterations or additions.	As soon as possible.
15	Construction Certification	Upon construction of a new or modified unit.
16	Notify Illinois EPA of changes that may result in permit noncompliance.	Prior to the planned change.
17	Application for permit modification indicating permit is to be transferred.	90 days prior to the planned change of ownership.
18	Monitoring reports	The intervals specified in the permit.
19	Submission of any information required in a compliance schedule.	Within 14 days after each schedule date.
20	Report to Illinois EPA any non-compliance that may endanger health or environment. By telephone In writing	 Within 24 hours after discovery. Within 5 days after discovery.
21	Report all other instances of noncompliance.	At the time monitoring reports, as required by this permit, are submitted

FIGURES

Figure 1: Map of Facility With Extent of Areas Remediated and CAMU Boundaries

MODERN PLATING CORP

RCRA Post-Closure Permit

IEPA No. ID #1770200010

USEPA ID No. 005172325

Log No. B-167R

ATTACHMENT A

POST – CLOSURE COST ESTIMATE

MODERN PLATING CORP

RCRA Post-Closure Permit

IEPA No. ID #1770200010

USEPA ID No. 005172325

Log No. B-167R

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Post-Closure Care Cost Estimate
for
MODERN PLATING CORP

RCRA Post–Closure Permit
IEPA No. ID #1770200010
USEPA ID No. 005172325
Log No. B-167R

	Item / Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
1.	Site Inspections and Report (annual) (1 per year)	1 per yr	$1,000 each	$1,000
2.	Land Surface Care			
	♦ Erosion Damage Repair (0.9 cy/acres/yr on 2 acres)	1.8 cy	$50/cy	$90
	♦ Revegetation and Soil Amendments (Assume 10%/yr x 2.0 acres/yr)	0.2 acres	$2,500/acre	$500
	♦ Snow Plowing (Assume 2 snowfall events)	2 each	$200/each	$400
3.	Leachate Treatment [1]	6,461 [3] gal/yr	$0.02/gal	$129
4.	Leachate Hauling [2]	6,461 gal/yr	$0.20/gal	$1,292

R001066

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	Item / Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
5.	Environmental Monitoring (semi-annually)			
	♦ Groundwater (8 wells for metals & 14 wells for VOC, 2 times/year)	2 sample events per yr	$4,760/event	$9,520
	♦ Leak Detection System (LDS) Monitoring (1 location, 12 times/year)	12 events	$100/event	$1,200
	♦ Leachate Monitoring (1 location, 2 times/year)	2 samples	$140/sample	$280
	♦ Surface water Monitoring (2 locations, 2 times/year)	4 samples	$40/sample	$160
6.	Mowing (2 acres per year)	2 acres	$50/acre	$100
7.	Landfill Sump Pump (Replace each pump every 5 yrs)	12 pumps	$1,400/pump	$560 [4]
			Subtotal	**$15,231**
			Contingency (10%)	**$1,523**
			Total Cost per Year	**$16,754**

[1] Assumes treatment at a publicly owned wastewater treatment and pretreatment at the MPC wastewater treatment plant
[2] Assumes on-site wastewater treatment plant (WTP) is no longer operating and leachate must be trucked off-site.
[3] Leachate volume is the average of the total amount of leachate generated in the last 3 years (2005-2007)
[4] Prorated to an annual cost over the 30-year long-term care period.

R001067

ATTACHMENT B

POST-CLOSURE
INSPECTION & MAINTENANCE SCHEDULE

MODERN PLATING CORP

RCRA Post – Closure Permit

IEPA No. ID #1770200010

USEPA ID No. 005172325

Log No. B-167R

Post-Closure Inspection Schedule and Log

Modern Plating Corporation
CAMU

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Leachate Collection System (LCS)	Side slope Riser (SSR) Pump and Piping	1. Check for leaks. 2. Check for leaks weekly thereafter. 3. Service pumps. 4. Check pressure transducer for proper operation. 5. Check flow meter and pump controls for proper operation. 6. Clean paddlewheel on liquid flow sensors 7. Check alarms and alarm lights for proper operation (press down lights on control panel).	Annually 5 days after start-up, repair leaks within 15 days. As per manufacturer's O&M manual. As per manufacturer's O&M manual. As per manufacturer's O&M manual. As needed for trouble free operation Weekly during active life, monthly after closure.			
Leachate Detection System (LDS)		1. Check liquid levels and remove liquids above pumping level. Record liquid level and leachate quantity in sump.[1] 2. Check liquid levels and remove liquids above pumping level 3. Check pressure transducers for proper operation. 4. Check alarms and alarm lights for proper operation.	Weekly during active site life; monthly after closure. Monthly record gallons pumped from LCS and LDS for each phase. Refer to 35 IAC 724.403 for frequencies if leakage does not occur. As per manufacturer's O&M manual. Weekly during active site life, monthly after closure.			

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Post-Closure Inspection Schedule & Log

Modern Plating Co. CAMU

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
Exterior of CAMU Landfill	Berms	1. Check for wet spots and leaks. 2. Check for settlement, slumping or sloughing. 3. Check for erosion and bare sod areas.	Semiannually Semiannually Semiannually and after each major rainfall event (i.e., greater than 1/2 inch).			Walk final cover semi-annually. Check site rain gauge.
Run-on and Run-Off Control	Erosion Control Devices	1. Riprap-inspection for washout or undercutting. 2. Ditches-inspect for siltation and/or erosion. 3. Erosion bales or silt fencing-inspect for washout or undercutting. 4. Culverts-inspect for washout/siltation at inlet and outlet.	Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event.			Walk ditches and sedimentation basin after rainfall greater than 1/2 inch.
	Sedimentation Basins	1. Inspect berms for erosion, scouring and slumping. 2. Inspect pond bottom for build-up of sediment. 3. Inspect inlet and outlet for erosion and sedimentation. 4. Inspect trash rack and rock filter.	Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event.			Inspect after rainfall event greater than 1/2 inch.
Final Cover Surface	Vegetation	1. Inspection for growth and overall health. 2. Evidence of stress. 3. Bare spots from erosion, washout or die-offs, etc.	Quarterly and after each major rainfall event. Quarterly and after each major rainfall event. Quarterly and after each major rainfall event.			Inspect after rainfall event greater than 1/2/ inch.
	Final Cover	1. Erosion resulting in rills, gullies or bare soil.	Quarterly and after each major rainfall event.			Inspect after rainfall event greater than 1/2 inch.

R0010070

Post-Closure Inspection Schedule & Log

Modern Plating Co. CAMU

Equipment or Area	Description	Activity Description	Frequency	Date	Time	Comments
		2. Settlement resulting in loss of grade and/or water standing on the final cover. 3. Slumping or sloughing of final cover.	Quarterly and after each major rainfall event. Quarterly and after each major rainfall event.			
Security Control Devices	Fences, Gates and Locks	1. Inspection for proper function. 2. Replace and repair as required.	Semiannually			
Gas Venting System	Risers	1. Inspect for plugging.	Semiannually			
Groundwater Monitoring Wells	Protective Tops Well	1. Inspect protective tops and seal for integrity and function. 2. Record well condition, including well depth, siltation, water depth, well pipe condition and water quality.	Semiannually Semiannually			Record results of annual well inspection.
Horizontal and Vertical Control	Benchmarks	1. Check for disturbance and remark (i.e., flag and/or paint).	Annually			
Groundwater Monitoring Wells	Survey	1. Survey stick-up once every five (5) years. 2. Report elevation of the bottom of each monitoring well (Storet 72020).	Every five (5) years. Annually			Report during second quarter sampling event.

[1] To be compared with the action leakage rate of 2,434 gal/day per phase.

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Post-Closure Maintenance Plan

Modern Plating Corporation
CAMU

Equipment or Area	Description	Preventive Maintenance	Corrective Maintenance Procedures	Equipment Requirements	Material Needs
Leachate Collection System (LCS)	Side Slope Riser (SSR) Pump and Piping	1. Service pumps in accordance with the manufacturer's requirements. 2. Clean pump according to the manufacturer's recommendations. 3. Clean interior piping annually. 4. Inspect liquid level sensor as per manufacturer's O&M manual.	1. Refer to O&M manual. 2. Repair leaks immediately after they are observed.	1. Refer to O&M Manual. 2. Refer to O&M Manual.	Refer to O&M Manuals.
Leachate Detection System (LDS)		1. Service pumps in accordance with the manufacturer's requirements. 2. Clean pump according to the manufacturer's recommendations. 3. Clean interior piping annually. 4. Inspect liquid level sensor as per manufacturer's O&M manual.	1. Refer to O&M manual. 2. Repair leaks immediately after they are observed.	1. Refer to O&M Manual. 2. Refer to O&M Manual.	Refer to O&M Manuals.
Final Cover	Surface Water Management System	1. Clean culverts of debris.	1. Correct erosion problems by installing erosion control devices.	Truck, bobcat, shovel.	Erosion mat, riprap, topsoil, etc.
	Cover Settlement		1. Fill settled areas and grade to drain. 2. Revegetate filled areas.	Truck, small bulldozer, seeder.	Fill soil, topsoil, seed, fertilizer and mulch.
	Vegetation Final Surface	1. Mow grass semiannually. 2. Revegetate bare spots and eroded areas.	1. Repair eroded areas by filling with soil to grading and adding erosion mat prior to seeding. 2. Seed, fertilize and mulch.	Truck small bulldozer, seeder and mower.	Fill soil, topsoil, seed, fertilizer, mulch and erosion matting.

R001072

Post-Closure Maintenance Plan

Modern Plating Corporation
CAMU

Equipment or Area	Description	Preventive Maintenance	Corrective Maintenance Procedures	Equipment Requirements	Material Needs
Berms	Exterior Berms	1. Mow grass semiannually. 2. Revegetate bare spots and eroded areas.	1. Repair eroded areas by filling with soil to grading and adding erosion mat prior to seeding. 2. Seed, fertilize and mulch.	Truck, small bulldozer, seeder	Fill soil, topsoil, seed, fertilizer, mulch and erosion matting.
Environmental Monitoring Devices	Groundwater Monitoring Wells	1. Mark wells with flag to prevent damage during other maintenance.	1. Repair/replace broken protector pipes, surface seals and locks.	Shovel	Protector pipes, bentonite lock/key set, PVC pipe
Security Devices	Means to Control Entry Exterior Lighting	1. Repaint rusted or scratched areas. 2. Replace burnt out bulbs.	1. Repair or replace worn or rusty fences.	Hand tools	Fence/gate parts and locks
Surface Water Management and Erosion Control Structure	Sedimentation Pond	1. Clean sediment from ponds. 2. Remove debris from pipes and trash rock.	1. Repair eroded inlet/outlet, dikes, etc. 2. Repair eroded or silted in areas. 3. Clean trash rack, inlet and outlet pipes.	Backhoe, truck, shovel	Fill soil, erosion control materials (e.g., riprap), pipes
	Ditches, Culverts, Spillways, etc.	1. Clean sediment from ditches.	1. Replace rusted culverts. 2. Repair eroded areas and install erosion control measures.	Backhoe, truck, shovels	Fill soil erosion control materials (e.g., riprap), pipes
Access Roads		1. Remove mud tracking.	1. Repair ruts, pot holes, etc.	Truck, shovels	Road gravel
Final Cover	Gas Vents	1. Clean vents.	1. Repair, replace damaged vents and surface seals.	Shovel	Piping, glue, etc.

ATTACHMENT C

GROUNDWATER MONITORING PROGRAM ATTACHMENTS

MODERN PLATING CORP

RCRA Post – Closure Permit

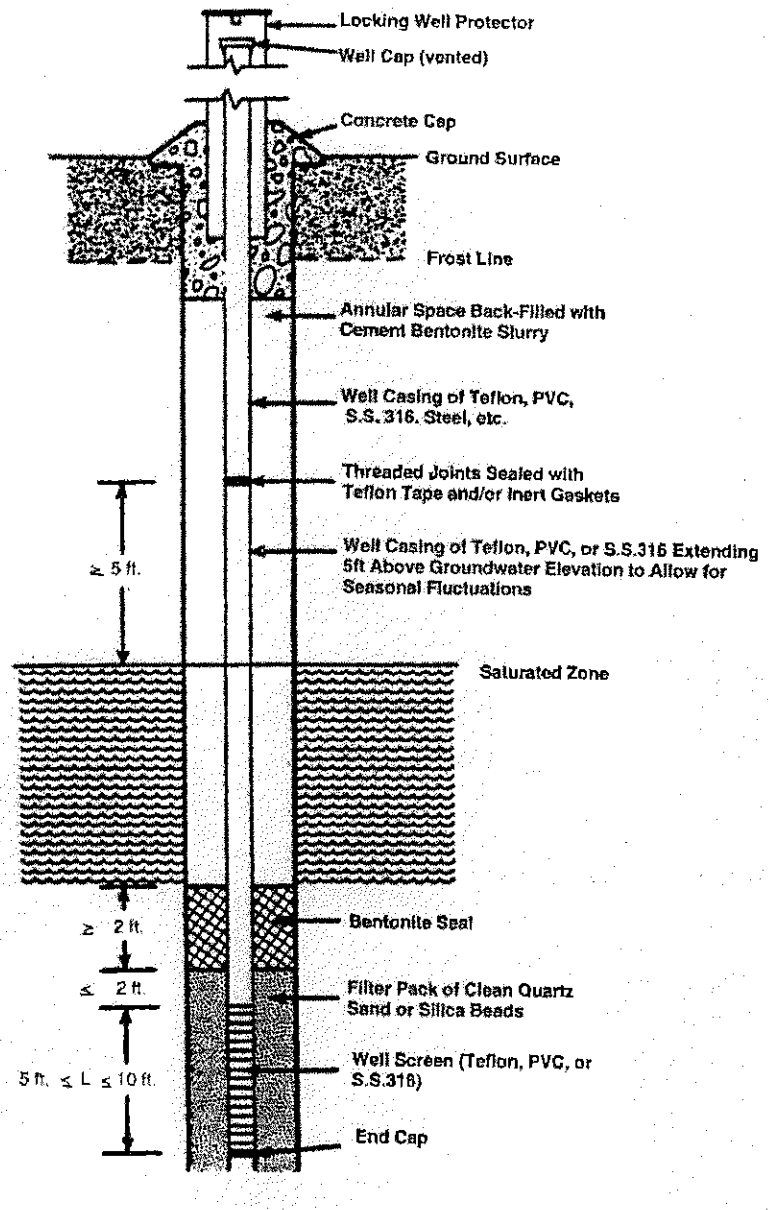
IEPA No. ID #1770200010

USEPA ID No. 005172325

Log No. B-167R

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Monitoring Well Diagram



1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Illinois Environmental Protection Agency

Field Boring Log Page ____ of ____

Site ID No. _____ Federal ID No. _____

Site Name: _____

Quadrangle: _____ Sec. _____ T. _____ R. _____

UTM (or State Plane) Coord. N. (X) _____ E. (Y) _____

Latitude: ____ ____ ____ Longitude: ____ ____ ____

Boring Location: _____

Drilling Equipment: _____

County: _____

Boring No. _____ Monitoring Well No. _____

Surface Elevation: _____ Completion Depth: _____

Auger Depth: _____ Rotary Depth: _____

Date: Start: _____ Finish: _____

Elev.	Description of Material	Graphic Log	Depth In Feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (X)	Penetrometer	N Values (Blow Counts)	OVA or HNU Readings	Personnel: G - D - H - H - / REMARKS

Field Boring Log (revised 02/02/04

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Illinois Environmental Protection Agency — **Well Completion Report**

Site Number: _____ County: _____

Site Name: _____ Well #: _____

State Plane Coordinate: X _____ Y _____ (or) Latitude: ____ ____ ____ Longitude: ____ ____ ____ Borehole #: _____

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: _____ Driller: _____

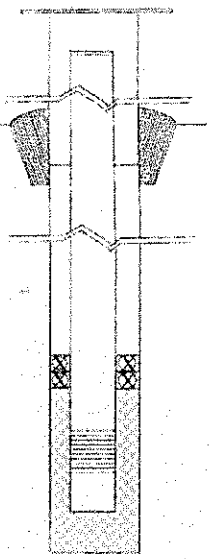
Consulting Firm: _____ Geologist: _____

Drilling Method: _____ Drilling Fluid (Type): _____

Logged By: _____ Date Started: _____ Date Finished: _____

Report Form Completed By: _____ Date: _____

ANNULAR SPACE DETAILS



Type of Surface Seal: _____

Type of Annular Sealant: _____

Installation Method: _____

Setting Time: _____

Type of Bentonite Seal - - Granular, Pellet, Slurry (Choose One)

Installation Method: _____

Setting Time: _____

Type of Sand Pack: _____

Grain Size: _____ (Sieve Size)

Installation Method: _____

Type of Backfill Material: _____ (if applicable)

Installation Method: _____

	Elevations (MSL)*	Depths (BGS)	(.01ft.)
	_____	_____	Top of Protective Casing
	_____	_____	Top of Riser Pipe
	_____	_____	Ground Surface
	_____	_____	Top of Annular Sealant
	_____	_____	Static Water Level (After Completion)
	_____	_____	Top of Seal
	_____	_____	Top of Sand Pack
	_____	_____	Top of Screen
	_____	_____	Bottom of Screen
	_____	_____	Bottom of Well
	_____	_____	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASURMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1" slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size **	

**Hand-Slotted Well Screens are Unacceptable

Well Completion Form (revised 02/06/02)

ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

	Well Construction		Plugging Procedure
I. Unconsolidated Sediment Wells	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack;	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through temi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack;	1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construciton is unknown;	1. Follow procedures in I-A.
II. Bedrock Wells	II-A	...All bedrock monitor wells;	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.

Well Plugging Procedures (revised 02/06/02)

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE: L P C S M 0 1 (1–7) | TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (35 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–18)

MONITOR POINT NUMBER (see Instructions) _____ (19–27)

REGION _____ CO. _____

DATE COLLECTED ___/___/___ ___ (23 M D Y 28)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB ____ (29)

DATE RECEIVED ___/___/___ ___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED (24 Hr. Clock) ___:___ (55 H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) _____ (59)

MONITOR POINT SAMPLED BY (see Instructions) _____ (60) _____ OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (150–199)

IL 532 1213
LPC 160 01-90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

Formatting Requirements for the 02 Record of the Electronically Submitted Groundwater and Leachate Data (the 02 Record portion of the LPC-160 is included for example purposes)

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	00011				
Q	SPEC COND (unfiltered umhos)	00094				
Q	pH (unfilted units)	00400				
Q	ELEV OF GW SURF (ft ref MSL)	71993				
Q	DEPTH OF WATER (ft below LS)	72019				
A	BTM WELL ELEV (ft ref MSL)	72020				
Q	DEPTH TO WATER FR MEA PT (ft)	72109				

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

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***Only Keypunch with Data in Column 35 or Columns 38-47**

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM02
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	
Spaces 23-28	Date Collected	
Space 29	Lab	
Spaces 30-34	STORET Number	
Space 35	Remarks	
Space 36	Replicate	
Space 37	< or >	
Space 38-47	Value	

Well Survey Procedures at RCRA Facilities

All RCRA facilities pursuing risk-based closure pursuant to 35 Ill. Adm. Code Part 742 (TACO) must identify potable water supply wells and regulated recharge areas to ensure the protection of potable water supplies. This includes situations where the facility has determined that contamination has migrated beyond a property boundary or is predicted to migrate beyond a property boundary.

In order to meet these requirements, the facility in question must submit maps with the locations of all on-site and off-site injection wells, as well as withdrawal wells and recharge areas within at least 2,500 feet of the most downgradient point of contamination (map scale must be no less than one inch equals 200 feet). The facility must submit a certification form that states that all of the above source have been contacted. This information shall be obtained by the facility, by contacting all of the following sources:

Illinois State Geological Survey;
Illinois State Water Survey;
Illinois EPA Division of Public Water Supply;
Illinois Department of Public Health;
County and Municipal Health Departments; and
Local water supply entity (i.e., public water districts, public water supply companies).

If it is determined that groundwater contamination has or is modeled to migrate off-site exceeding the Tier 1 remediation objectives of 35 Ill. Adm. Code 742, the area of the survey of water supply wells is extended based on the actual and modeled groundwater plume.

Documentation of the results of the survey of water supply wells must include the following information:

- Map(s) to appropriate scale showing the location of community water supply wells and other potable water supply wells including the setback zones of the wells identified in the survey (within applicable distances as defined by the appropriate program regulations, including all potable wells on the site). The location of the measured and modeled contamination plume, as appropriate based on the phase of remediation being conducted, shall also be shown on the map(s) if the measured or modeled plume extends off-site. In addition, the location of any regulated recharge areas, well head protection areas and delineated recharge areas of any community water supply well or other potable water supply well identified that are available from the Illinois EPA, Division of Public Water Supplies (http://il.water.usgs.gov/factsheets/);

- Table(s) indicating the setback zone for each community water supply well and potable water supply well identified;

- Narrative to supplement the map(s) and table(s) identified above. This includes the person(s) contacted as part of the survey, that person's title, sources of information used, field observations, etc.; and

- Certification by a Licensed Professional Engineer that the entities listed above have been contacted as part of the well survey and the information obtained is included in the map(s), table(s) and narrative.

Illinois EPA may require additional investigation of potable water supply well locations on a case-by-case basis if site-specific conditions warrant. These conditions include, but would not be limited to:

- The local water supply entity does not bill a residence/business located within the search area, and the other record searches do not show a potable well on the property; or

- The well survey identifies a few private or semi-private potable wells near the site. Because this does not account for all the residences or businesses in the same area near the site, questions should be raised as to where the other homes/businesses obtain their potable water.

Additional investigation may include a physical well survey (e.g. face-to-face interviews with property owners, a windshield survey looking for wellheads, distribution of door hangers requesting information about the existence of potable wells on the property, etc.) when data sources identified above do not appear to have adequately identified the location of potable wells (i.e. the two examples immediately above). This physical survey will include, at a minimum, the placement of written information at properties within the measured or modeled distance of the groundwater plume.

NOTE: If contamination at a remediation site cannot be modeled due to geology constraints (i.e. bedrock), the information requested above shall be collected at a distance to be determined by the Illinois EPA on a site-by-site basis.

WRW:AMB:mls/053443s.doc

ATTACHMENT D

LEACHATE ANALYTICAL PARAMETERS

MODERN PLATING CORP

RCRA Post – Closure Permit

IEPA No. ID #1770200010

USEPA ID No. 005172325

Log No. B-167R

1770200010
Modern Plating Corp.
RCRA Log No. B-167R

TABLE 1

Sample Parameters

Parameter	Cas No.	ICP/MS	Reporting Units
Boron	7440-42-8	EPA-6020A	mg/L
Cadmium	7440-43-9	EPA-6020A	mg/L
Chromium	7440-47-3	EPA-6020A	mg/L
Cobalt	7440-48-4	EPA-6020A	mg/L
Cooper	7440-50-8	EPA-6020A	mg/L
Iron	7439-89-6	EPA-6020A	mg/L
Lead	7439-92-1	EPA-6020A	mg/L
Manganese	7439-96-5	EPA-6020A	mg/L
Magnesium	7439-95-4	EPA-6020A	mg/L
Mercury	7439-97-6	EPA-6020A	mg/L
Nickel	7440-02-0	EPA-6020A	mg/L
Potassium	7440-09-7	EPA-6020A	mg/L
Silver	7440-22-4	EPA-6020A	mg/L
Sodium	7646-69-7	EPA-6020A	mg/L
Thallium	7440-28-0	EPA-6020A	mg/L
Zinc	7440-66-6	EPA-6020A	mg/L
Total Metals	--	EPA-6020A	mg/L
VOC Scan	--	EPA-8260	ug/L
PaHs	--	EPA-550	ug/L
Chloride	--	325.2/325.3	mg/L
Fluoride	--	340.1/340.2	mg/L
Nitrate	--	353.2/353.4	mg/L
Sulfate	--	375.4/375.2	mg/L
Cyanide	57-12-5	SM4500CN C/SW9012A	mg/L
BOD	--	SM5210B	mg/L
TSS	--	SM2540D	mg/L
pH	--	150.1/150.2	S.U.
Alkalinity	--	EPA-310.2	

*Some parameters may be combined in a sample bottle determined by the analytical lab.

MLC:mls/053443s.doc

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

R601084

217/524-3300

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7018 1830 0000 5290 2350

JAN 3 0 2020

Mr. Dave Servatius
701 S. Hancock Avenue
Freeport, IL 61032

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Date Received: June 6, 2019 and September 17, 2019
Log No. B-167R-CA-1
RCRA Permit
Permit CA

Dear Mr. Servatius:

This letter is in response to your June 6 and September 17, 2019 submittals to Illinois EPA prepared and submitted on your behalf by Richard L. Panosh, P.G. of Foth Infrastructure & Environment, LLC. This letter addresses the Groundwater Management Zone (GMZ) Re-evaluation required to be submitted to the Illinois EPA every five years. The submittals were assigned Log No. B-167R-CA-1.

The GMZ Re-evaluation cannot be approved at this time. The following conditions and modifications must be addressed:

1. The current GMZ, a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site, is inadequate. The facility reported increasing trends in several groundwater monitoring wells including the GMZ boundary wells. The increasing trends are likely due to a continuing source from the former waste lagoons or the regulated Corrective Action Management Unit (CAMU).

2. Groundwater monitoring wells MW-23C, MW-20C, MW-17C, and MW-15C located at or near the property boundary were reported exceeding the applicable 35 Ill. Adm. Code 620, Groundwater Quality Standards.

3. It appears the current selected corrective action, the CAMU, is not effective in remediating the groundwater contamination and as a result several wells indicate increasing trends and several monitoring wells at the property boundary are above the approved 35 Ill. Adm. Code 620, Groundwater Quality Standards, indicating off-site contamination or the potential for off-site contamination.

4. An investigation must be conducted to determine the source or sources of contamination at the facility. This investigation must also determine the vertical and horizontal extent of groundwater contamination, including any off-site groundwater contamination.

5. The facility must revise the "Re-evaluation of the Groundwater Management Zones at RCRA Facilities" submittal and include a proposal for an effective corrective action plan capable of addressing and mitigating the groundwater contamination at the MPC facility and submit to the Illinois EPA for review and approval.

6. The revised GMZ Re-Evaluation must include all the components recommended in the attached guidance document as well as: (1) an explanation of the presented groundwater monitoring results; (2) the proposed corrective action; and (3) the revised GMZ boundary which includes a three-dimensional region containing groundwater being managed to mitigate impairment cause by the release of contaminants from the site. The proposed GMZ must include within the three-dimensional region, all groundwater monitoring wells proposed to be managed to mitigate impairment caused by the release of contaminants from the MPC site.

7. Any off-site property owner must concur in writing to the establishment of the GMZ on their property. This concurrence, if necessary, must be provided to the Illinois EPA for review and approval.

8. The information required by Conditions 4 through 7 must be submitted to the Illinois EPA for review and approval within ninety (90) days of the date of this letter, at the following address:

    Illinois Environmental Protection Agency
    Bureau of Land - #33
    Permit Section
    1021 North Grand Avenue East
    Post Office Box 19276
    Springfield, Illinois 62794-9276

9. Modern Plating Corporation must submit an Illinois EPA RCRA Corrective Action Certification Form with any request to modify corrective action activities. To aid in proper review of submitted information, two copies must accompany the original of all corrective action related information.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276

Mr. Dave Servatius
B-167R-CA-1

Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding groundwater-related issues associated with this project, please contact Paula Stine at 217/557-8770; questions regarding all other aspects of this project should be directed to Mark Crites at 217/524-3269.

Sincerely,

Kenn Smith, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

Attachments: Re-evaluation of Groundwater Management Zones at RCRA Facilities

KES:PMS:1770200010--RCRA-167R-CA-1

Re-evaluation of Groundwater Management Zones at RCRA Facilities

April 6, 2002

I. Introduction:

35 Ill. Adm. Code Part 620.250 allows for the establishment of a Groundwater Management Zone (GMZ) within any class of groundwater. A GMZ is a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. A GMZ expires upon the Illinois EPAs receipt of appropriate documentation which confirms the achievement of applicable standards set forth in 35 Ill. Adm. Code Part 620, Subpart D.

The establishment of a GMZ, associated with RCRA closure activities, must have been approved by the Illinois EPA under an existing corrective action process. The Illinois EPA will review the on-going adequacy of the controls and continued management of the GMZ at the site, if concentrations of chemical constituents, as specified in 35 Ill. Adm. Code Part 620.450(a)(4)(B), remain in groundwater at the site. This review will take place no less than every five (5) years after the establishment of the GMZ and be submitted to the Illinois EPA for review in a written report.

II. Procedures:

The written report will be reviewed by the Illinois EPA to evaluate the information provided in order to determine the adequacy of on-going controls and continued management of the GMZ at the site. The items below must be addressed thoroughly, and if appropriate, both historical and current information associated with the GMZ discussed. After review by the Illinois EPA, the Illinois EPA will issue a letter in regard to the: (1) on-going adequacy of the GMZ; (2) the continued management of the GMZ; and (3) conditions necessary to ensure that the requirements of 35 Ill. Adm. Code Part 620 continue to be met.

III. Format to be Utilized in a Re-Evaluation of a GMZ:

The report addressing the evaluation of a GMZ must include, but need not be limited to, the following:

1. General information regarding the facility:

    a. Facility name;

    b. Facility address;

c. County in which facility is located;

d. Illinois EPA, Bureau of Land, and USEPA Identification Numbers;

e. A general description of the type of industry, products manufactured, raw materials used, location and size of the facility, including SIC codes;

f. An identification of specific units (operating or closed) present at the facility for which the GMZ was approved;

g. A USGS topographic or county map showing the location of the site and a more detailed scaled map of the facility with each waste management unit identified in Item 1.f above. Map scale must be specific and the location of the facility must be provided with respect to Township, Section, and Range;

h. A description of the geology and hydrogeology within the GMZ and the surrounding area;

i. Groundwater classification at the site;

j. A description of the circumstances under which the release from each waste management unit identified in Item 1.f above, to groundwater was identified.

2. Information Regarding the Release, including:

a. The chemical constituents released to the groundwater;

b. Identification of the chemical constituents detected in groundwater that are above the applicable standard in 35 Ill. Adm. Code Part 620;

c. A description of how the site has been investigated to determine the source or sources of the release;

d. A description of how groundwater has been monitored to determine the rate and extent of the release;

e. A description of the groundwater monitoring network and groundwater sampling protocols in place at the facility;

f. The schedule for monitoring of the groundwater; and

g. A summary of the results of groundwater monitoring associated with the release at each waste management unit identified in Item 1.f above. The summary of groundwater results should provide the following information:

i. Dates of sampling;

ii. Identification of monitoring wells;

iii. Chemical constituents analyzed and concentrations in parts per million (ppm) for each monitoring well identified in Item 2.g.ii above;

3. Scaled drawings identifying the horizontal and vertical boundaries of the GMZ.

4. Information regarding the approved remedial action including:

   a. A description of the approved remedial action;

   b. A description of how the approved remedial action has impacted the release;

   c. A description of how the approved remedial action is operated and maintained;

   d. A projected schedule for completion of remediation;

   e. An identification of any and all permits obtained from the Illinois EPA for the remedial action;

   f. A description of how groundwater at the facility will be monitored following the future completion of the remedy to ensure that the groundwater quality standards have been attained;

   g. A discussion addressing the adequacy of on-going controls and continued management of the GMZ at the site; and

   h. Course of action for future activities and/or request for modification in regards to the GMZ at the site.

5. Point of Compliance:

   In any GMZ, the goal is remediation of the groundwater to the level of the standards applicable to that class of groundwater. This goal does not mean all groundwater within the GMZ must be returned to the groundwater standard. On the other hand, groundwater within the GMZ that is beyond the point of compliance as established under 35 Ill. Adm. Code Part 620.505(a) is to be remediated to the level applicable to that groundwater class. However, groundwater contamination within the three-dimensional zone between the compliance point wells and the waste management unit could still exceed the applicable standards at completion of the corrective action. If this is the case, post-remediation monitoring may be necessary.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR
JOHN J. KIM, DIRECTOR

R001094

217/524-3300

CERTIFIED MAIL
7018 1830 0000 5290 5610

MAY 05 2020

Mr. Dave Servatius
701 S. Hancock Avenue
Freeport, IL 61032

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Date Received: April 9, 2020
Log No. B-167R-CA-2
RCRA Permit
Permit CA

Dear Mr. Servatius:

This letter is in response to your April 3, 2020 letter, received by the Illinois EPA on April 9, 2020 and prepared and submitted on your behalf by Richard L. Panosh, P.G. of Foth Infrastructure & Environment, LLC. This letter requests an extension of sixty (60) days of the date required by Condition 8 of the Illinois EPA's January 30, 2020 letter, Log No. B-167R-CA-1.

The Illinois EPA hereby approves the extension request at this time. The following conditions must be met:

1. Information required by Conditions 4 through 7 of the Illinois EPA's January 30, 2020 letter, Log No. B-167R-CA-1, must be submitted to the Illinois EPA at the address below no later than June 30, 2020:

   Illinois Environmental Protection Agency
   Bureau of Land - #33
   Permit Section
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

2. Modern Plating Corporation must submit an Illinois EPA RCRA Corrective Action Certification Form with any request to modify corrective action activities. To aid in proper review of submitted information, two copies must accompany the original of all corrective action related information.

For information regarding the request for an extension, please contact:

Mr. Dave Servatius
B-167R-CA-2

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding groundwater-related issues associated with this project, please contact Paula Stine at 217/557-8770; questions regarding all other aspects of this project should be directed to Mark Crites at 217/524-3269.

Sincerely,

Kenneth E. Smith

Kenneth E. Smith, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

KES:PMS:1770200010--RCRA-167R-CA2

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

2061096

217/524-3300

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7020 0090 0000 7312 8003

OCT 16 2020

Mr. Dave Servatius
701 S. Hancock Avenue
Freeport, IL 61032

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Date Received: June 25, 2020 and September 3, 2020
Log No. B-167R-CA-3
RCRA Permit CA

Dear Mr. Servatius:

This letter is in response to your June 23 and August 28, 2020 submittal, received by the Illinois EPA on June 25, 2020 and September 3, 2020 and prepared and submitted on your behalf by Richard L. Panosh, P.G. of Foth Infrastructure & Environment, LLC. This letter addresses the Revised Groundwater Management Zone (GMZ) Re-evaluation. The original GMZ Re-evaluation received by the Illinois EPA on June 6 and September 17, 2019 was not approved.

The Illinois EPA hereby approves the Revised GMZ Re-evaluation at this time subject to the following conditions and modifications:

1. Low flow sampling techniques shall be implemented during the next semi-annual sampling event to determine the impact of turbidity on sampling analysis. If it is determined that low-flow sampling will result in a less turbid sample the Illinois EPA recommends that low-flow sampling techniques continue to be used during the semi-annual sampling events. Results of the use of the low-flow sampling techniques must be provided to the Illinois EPA in a report which must include the facility's conclusions and proposals.

2. The GMZ must be revised to include monitored natural attenuation parameters which include, ethene/ethane/methane parameters as well as oxidation-reduction potential and dissolved oxygen. Monitoring and analysis of these parameters must be included in the semi-annual sampling event.

3. If concentrations of contaminants of concern continue to exceed the 620 Ill. Adm. Code 620 Groundwater Quality Standards in wells at or near the GMZ boundary, the

facility must submit a proposal to address the contamination extending beyond the GMZ boundary.

4. Within 90 days of obtaining laboratory data gathered from the use of low-flow sampling techniques and monitoring of natural attenuation parameters, submit to the Illinois EPA a report as a Corrective Action modification request. This report must include the following:

    a. Analytical data from low-flow sampling techniques and natural attenuation parameters;

    b. Groundwater monitoring data for the last 8 sampling events;

    c. Conclusions drawn from the data gathered; and

    d. A proposal to continue use of low-flow sampling techniques, if applicable, continued monitoring of natural attenuation parameters, and corrective action to address contamination extending beyond the GMZ boundary, if applicable.

5. Pursuant to 35 Ill. Adm. Code Section 620.250(c), a groundwater management zone expires upon the Agency's receipt of appropriate documentation which confirms the completion of the action taken pursuant to subsection (a) and which confirms the attainment of applicable standards as set forth in Subpart D. In addition, this section requires, at a minimum of one every five years, re-evaluation of the on-going adequacy of controls and management provided by the GMZ.

6. Modern Plating Corporation must submit an Illinois EPA RCRA Corrective Action Certification Form with any request to modify corrective action activities. To aid in proper review of submitted information, two copies must accompany the original of all corrective action related information.

The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Mr. Dave Servatius
B-167R-CA-3

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding groundwater-related issues associated with this project, please contact Paula Stine at 217/557-8770; questions regarding all other aspects of this project should be directed to Mark Crites at 217/524-3269.

Sincerely,

Kenneth E. Smith

Kenneth E. Smith, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

KES:PMS:1770200010--RCRA-167R-CA3

WRW kar

bcc: Bureau File
Rockford Region
Rob Watson
Kimberly Rawe
Mark Crites
Paula Stine

Attachment 2

APPENDIX M

Appendix M

CAMU Pumping Log

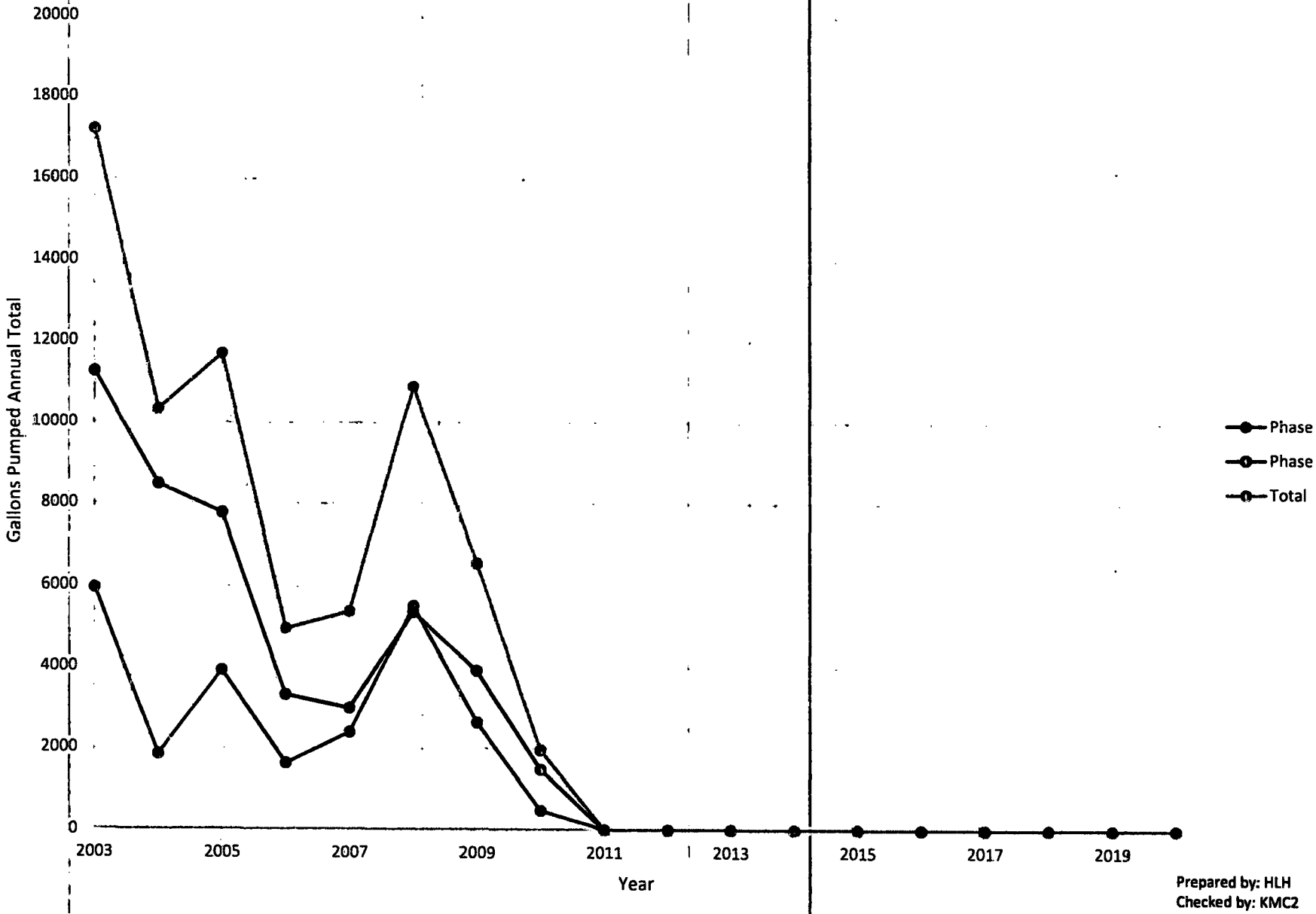
Modern Plating Corporation

Daily CAMU Pumping

Year	Time Period	Gallons Pumped		
		Phase I	Phase II	Total
2003	1-1-03 through 12-31-03	5947	11247	17194
2004	1-1-04 through 12-31-04	1849	8477	10326
2005	1-1-05 through 12-31-05	3918	7769	11687
2006	1-1-06 through 12-31-06	1624	3331	4955
2007	9-1-06 through 8-31-07	2383	2987	5370
2008	9-1-07 through 8-31-08	5501	5378	10879
2009	9-1-08 through 8-31-09	2628	3918	6546
2010	9-1-09 through 8-31-10	469	1488	1957
2011	9-1-10 through 8-31-11	0	0	0
2012	9-1-11 through 8-31-12	0	0	0
2013	9-1-12 through 8-31-13	0	0	0
2014	9-1-13 through 8-31-14	0	0	0
2015	9-1-14 through 8-31-15	0	0	0
2016	9-1-15 through 8-31-16	0	0	0
2017	9-1-16 through 6-30-17	0	0	0
2018	9-1-17 through 6-30-18	0	0	0
2019	9-1-18 through 6-30-19	0	0	0
2020	9-1-19 through 6-30-20	0	0	0

Prior 3-year average (2018 through 2020): **0 gallons/year**

Modern Plating Freeport IL RCRA Part B Permit Application
Lechate Collection System Annual Pumping Totals 2003-2020



Prepared by: HLH
Checked by: KMC2

Attachment 2

APPENDIX N

Appendix N

Post Closure Care Cost Estimate

Updated Post Closure Care Cost Estimate
For Modern Plating Corporation

RCRA Post-Closure Permit
IEPA ID No.: #1770200010
USEPA ID No.: ILD005172325

	Item/Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
1.	Site Inspections and Report (annual) (1 per year)	1 per year	$1,193 each	$1,193
2.	Land Surface Care • Erosion Damage Repair (0.9 cy/acres/yr on 2 acres)	1.8 cy	$65.08/cy	$117
	• Revegetation and Soil Amendments (Assume 10%/yr x 2.0 acres/yr)	0.2 acres	$2,820/acre	$564
	• Snow Plowing (Assume 2 snowfall events)	2 each	$217 each	$434
3.	Leachate Treatment[1]	0[3] gal/yr	$0.03/gal	$0.00
4.	Leachate Hauling[2]	0 gal/yr	$0.21/gal	$0.00
5.	Environmental Monitoring (semi-annually) • Groundwater (8 wells for metals & 14 wells for VOC, 2 times/year)	2 sample events per yr	$3,496/event	$6,992
	• Personnel For Sample Collection	2 sample events per yr	$3,362/event	$6,724
	• Preparation & submittal of semi-annual groundwater monitoring report	2/yr	$3,526/event	$7,052

	Item/Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
	• Leachate Detection System (LDS) Monitoring (1 location, 12 times/year)	12 events	$108/event	$1,296
	• Leachate Monitoring (no leachate produced) (1 location, 2 times/year)	0 samples	$0.00/sample	$0.00
	• Preparation & submittal of 5-year minimum GMZ evaluation (includes 5-yr well elevation surveying)	1/5 yrs	$5,349	$1,070
	• Surface Water Monitoring (2 locations, 2 times/year)	4 samples	$43.67/sample	$175
6.	Well Maintenance	1/yr	$407/yr	$407
7.	Mowing (2 acres per year)	2 acres	$98/acre	$196
8.	Landfill Sump Pump (No leachate being produced and none expected)			
			Subtotal	**$26,220**
			Contingency (10%)	**$2,622**
			Total Cost per Year	**$28,840**

[1] Assumes treatment at a publicly owned wastewater treatment and pretreatment at the MPC wastewater treatment plant
[2] Assumes on-site wastewater treatment plant (WTP) is no longer operating and leachate must be trucked off-site
[3] Leachate volume is the average of the total amount of leachate generated in the 3 years prior to this submittal

Attachment 2

APPENDIX O

Appendix O

CAMU Financial Assurance

Modern Plating Corporation

CAMU Financial Assurance

Annual Maintenance Cost $ 28,840

	Years Remaining	Financial Assurance Amount
2021	10	$ 288,400
2022	9	$ 259,560
2023	8	$ 230,720
2024	7	$ 201,880
2025	6	$ 173,040
2026	5	$ 144,200
2027	4	$ 115,360
2028	3	$ 86,520
2029	2	$ 57,680
2030	1	$ 28,840

Attachment 2

APPENDIX P

Appendix P

Letter of Credit from Amcore Bank

IRREVOCABLE STANDBY LETTER OF CREDIT

Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62702

Dear Sir or Madam:

We hereby establish our irrevocable Standby Letter of Credit No. 3712 (1) in your favor, at the request and for the account of Modern Plating Corporation, 701 S. Hancock Ave, Freeport, Il 61032 (2) up to the aggregate amount of ** see below (3) U.S. dollars ($ 339,960.00 (4)), available upon presentation of

1. your sight draft, bearing reference to this letter of credit No. 3712 (5) and
2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Environmental Protection Act, 415 ILCS 5/1 et seq., as amended."

This letter of credit is effective as of February 24, 2020 (6) and shall expire on February 24, 2021 (7) but such expiration date shall be automatically extended for a period of one year (8) on February 24, 2021 (9) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and Modern Plating Corporation (10) by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft until the later of the following dates:

1. the expiration date of this letter of credit; or
2. 120 days after the date of receipt of the notice by both you and Modern Plating Corporation (11), as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of Modern Plating Corporation (12) in accordance with your instructions.

See Instruction (13)

Signature	Signature
Typed Name James Stenberg	Typed Name Michael Murray
Title President and CEO	Title CFO and Controller
Date 3-5-2020	Date March 5, 2020

First National Bank and Trust Co, 345 E. Grand Ave, Beloit WI 53511
Name and address of issuing institution.

This credit is subject to the Uniform Customs and Practice for Documentary Credits (hereinafter called the "UCP") as most recently published by the International Chamber of Commerce (ICC) shall in all respects be deemed a part hereof as fully as if incorporated herein and shall to the Cre

The Agency is authorized to require, pursuant to Illinois Compiled Statutes, 1994, Chapter 415, Act 5, Section 21(f) (as amended), that this information be submitted to the Agency by the owner or operator of a hazardous waste storage, treatment or disposal site. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information by any person may constitute a Class 4 felony, and may also carry a fine for the first offense of not to exceed $25,000 per day. This form has been approved by the Forms Management Center.

IL 532 1202
LPC 150 Rev June 02

**Three hundred thirty nine thousand nine hundred sixty and no/100s.

Attachment 2

APPENDIX Q

Appendix Q

CAMU Landfill Construction Documentation

Report

Modern Plating Corporation
CAMU Landfill Construction Documentation

Scope ID: 97M015

Modern Plating Corporation
Freeport, Illinois

July 2001

July 5, 2001

Ms. Joyce L. Munie, P.E.
Manager, Permit Section Bureau of Land
Illinois Environmental Protection Agency
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794 - 9276

Dear Ms. Munie:

Re: Construction Certification for Modern Plating Corporation, CAMU Landfill Phases 1 and 2

The purpose of this letter is to provide the construction certification required by the April 11, 2000 RCRA Part B Permit Condition No. Section I, Condition E. 1. and 2. Foth & Van Dyke has completed the construction, quality control and quality assurance testing of the liner, leak detection and leachate collection systems for Phases 1 and 2 of the CAMU Landfill.

The CAMU construction was started in early June, 2000 and completed in February, 2001. Representatives from the Illinois Environmental Protection Agency (IEPA) including Ms. Kari Hanson, Ms. Kathy Geyer and Mr. Rob Watson, P.E., visited the site for several days during the liner construction for both Phases 1 and 2. Ms. Hanson, Ms. Geyer and Mr. Watson were kept up to date on the ongoing construction activities during all phases of the construction.

RCRA Part B permit Section I Condition E.1. requires that an exception report identify any changes made to the design during construction. The changes are discussed in Section 4 of the attached report.

Attachment 1 contains the Construction Certification form which must accompany this cell certification as per the RCRA Part B Permit Section I, Condition E. 1. which is signed and stamped by the certifying engineer, Mr. Marten J. Cieslik, P.E. and signed by operator, Mr. Craig Skolrood. The following is the wording of the Illinois Administrative Code 35 IAC 702.126(d) which certifies that Phase 2 of the CAMU Landfill was constructed in accordance with the June 11, 2000 IEPA RCRA Part B approval letter and the plans and specifications for the construction.

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

We respectfully request your review and approval of the attached construction documentation information. If you have any questions or require additional information, feel free to contact the undersigned.

Sincerely,

Foth & Van Dyke

Brian J. Stanul

Brian J. Stanul, P.E.
Resident Engineer

Ronald E. Meister

Ronald E. Meister, P.G.
Project Manager

Marten J. Cieslik

Marten J. Cieslik, P.E., DEE
Certifying Engineer

Attachment

cc: Ms. Kathy Geyer, IEPA, Rockford, IL
Mr. Rob Watson, P.E., IEPA, Springfield, IL
Mr. Craig Skolrood, MPC
Mr. Steve Laszewski, Foth & Van Dyke

Attachment 1

Construction Certification Form

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies (four additional copies for UIC wells). Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: Modern Plating Corporation - CAMU Landfill

IEPA SITE CODE: 1 7 7 0 2 0 0 0 1 0

U.S. EPA ID NO.: IL D 0 0 5 1 7 2 3 2 5

PART B PERMIT LOG #/UIC PERMIT #: Log No. B-167

PERMIT (OR MODIFICATION) ISSUANCE DATE: April 11, 2000

PERMIT CONDITION NO. REQUIRING CERTIFICATION: I, E.

The CAMU Landfill has been constructed in accordance with the specifications in the Part B/UIC Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

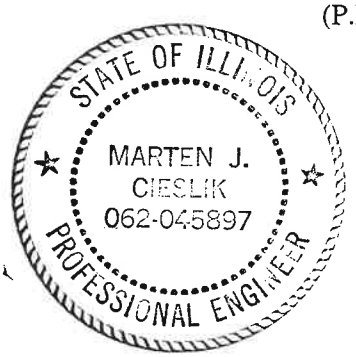
Mr. Craig Skolrood
Name and Title

Signature of Registered P.E.

Mr. Marten J. Cieslik, P.E.
Name of Registered P.E. and
Illinois Registration Number # 062-045897

6-26-01
Date

(P.E. SEAL)



This Agency is authorized to require this information under Illinois Revised Statutes, 1979. Chapter 111 ½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency · P.O. Box 19276, Springfield, IL 62794-9276

RCRA INTERIM STATUS CLOSURE AND POST-CLOSURE CARE PLANS GENERAL FORM
LPC-PA18

THIS FORM MUST ACCOMPANY ANY RCRA INTERIM-STATUS CLOSURE AND/OR POST-CLOSURE CARE PLANS OR MODIFICATION REQUEST SUBMITTED TO THE DIVISION OF LAND POLLUTION CONTROL. THE ORIGINAL AND TWO COPIES OF ALL DOCUMENTS SUBMITTED MUST BE PROVIDED.

FACILITY IDENTIFICATION (Information about the facility where the units are located which are addressed in this closure plan)

Name: MODERN PLATING CORPORATION
County: STEPHENSON
Street Address: 701 SOUTH HANCOCK AVE
PO BOX 838
Site # (IEPA): 1 7 7 0 2 0 0 0 1 0
City: FREEPORT, IL 61032
Site No. (USEPA): I L D 0 0 5 1 7 2 3 2 5

	OWNER INFORMATION	OPERATOR INFORMATION
Name:	MODERN PLATING CORPORATION	MODERN PLATING CORPORATION
Mailing Address:	701 SOUTH HANCOCK AVENUE PO BOX 838 FREEPORT, IL 61032	701 SOUTH HANCOCK AVENUE PO BOX 838 FREEPORT, IL 61032
Contact Name:	MR. CRAIG SKOLROOD	MR. CRAIG SKOLROOD
Contact Title:	PRESIDENT	PRESIDENT
Phone #:	(815) 235-3111	(815) 235-3111

TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

_____ Original (New) Closure Plan
_____ Original (New) Post-Closure Plan
_____ Response to Disapproval letter
_____ Modification Request
X Additional Information for ____ / ____ / ____ Submittal (Log No. _____ if known)

Log No. of Most Recent Agency Approval/Disapproval Letter _____
Date of Most Recent Agency Approval/Disapproval Letter _____
AOC (DOCKET NO. V-W-88R-101)

DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted)

CONSTRUCTION DOCUMENTATION REPORT FOR THE CONSTRUCTION OF PHASE I AND II OF THE CAMU LANDFILL AND REMEDIATION OF LAGOON NO. 0, 1A, 1, 2 AND 3. THE CYANIDE VAULT, THE SHAWANEE BUILDING, THE OUTFALL PIPELINE AND THE WETLANDS.

LIST OF DOCUMENTS SUBMITTED (identify all documents in this submittal, including the cover letter)

COVER LETTER AND CONSTRUCTION DOCUMENTATION REPORT WHICH INCLUDES TABLES, FIGURES, APPENDICES AND DRAWINGS BOUND UNDER A SEPARATE COVER.

UNITS UNDERGOING CLOSURE (please identify what type of units are addressed in the plan, their capacities and whether they are on the RCRA Part A for the facility)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Storage:				
Container (barrel, drum, etc.)	S01			
Tank	S02			
Waste Pile	S03			
Surface Impoundment	S04	3 (LOG #C-259) LAGOONS 1, 2 AND 3	~ 11,730 CY	Y

Modern Plating Corporation
CAMU Landfill Construction Documentation

Scope ID: 97M015

Prepared for
Modern Plating Corporation
Freeport, Illinois

Prepared by
Foth & Van Dyke and Associates Inc.

July 2001

REUSE OF DOCUMENTS

This document has been developed for a specific application and not for general use; therefore, it may not be used without the written approval of Foth & Van Dyke and Associates. Unapproved use is at the sole responsibility of the unauthorized user.

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2737 S. Ridge Road, P.O. Box 19012, Green Bay, Wisconsin 54304, 920/497-2500, FAX: 920/497-8516

Modern Plating Corporation
CAMU Landfill Construction Documentation

Contents

Page

1 Certification 1
1.1 Purpose 1
1.2 Construction Certification 1
1.3 Response to IEPA Comments on CAMU Phase 1 Construction 1
1.4 Quality Assurance Personnel Summary 2

2 Introduction 4
2.1 Project Background 4
2.2 Purpose and Scope 6

3 Summary of Construction Activities 8
3.1 General 8
3.2 Health and Safety Monitoring 8

4 Deviations From Plans and Specifications or Permit Conditions 10

5 Remediation Activities and Soil Confirmation Test Results 12
5.1 Lagoon No. 1 (HWMU) 12
5.2 Lagoon No. 2 (HWMU) 13
5.3 Lagoon No. 3 (HWMU) 13
5.4 Shawnee Building (HWMU) 15
5.5 Lagoon No. 0 (SWMU) 15
5.6 Lagoon No. 1A (SWMA) 16
5.7 Cyanide Vault (SWMU) 16
5.8 Wetlands (SWMU) 17
5.8.1 Wetland No. 1 17
5.8.2 Wetland No. 1A 17
5.8.3 Wetland No. 2 17
5.8.4 Wetland No. 3 18
5.9 Outfall Pipeline 18
5.9.1 General 18
5.9.2 Outfall Pipe Line Excavation 18
5.10 Remediation of the Wastewater Treatment Plant Pipeline Spill 19
5.11 Summary of Remediation Activities 19
5.11.1 Permit Requirements 19

6 Subbase Preparation (Phases 1 and 2) 27
6.1 General 27

6.2 Subbase Preparation 27
6.3 Subbase Soils - Quality Assurance Testing 30
6.4 Record Elevations 30

7 GCL Construction (Phases 1 and 2) 43
7.1 General 43
7.2 Panel Layout and Seaming 43
7.3 GCL Material Property Testing 43

8 Secondary Geomembrane Liner (Phases 1 and 2) 48
8.1 General 48
8.2 Material Conformance Testing and Inspection 48
8.3 Preproduction Weld Testing 48
8.4 Geomembrane Panel Deployment and Seaming 48
8.5 Non-Destructive Seam Testing 49
8.6 Destructive Seam Testing 49
8.7 Repair Documentation 50

9 Leak Detection System (Geocomposite and Geonet - Phases 1 and 2) 54
9.1 General 54
9.2 Panel Layout and Seaming 54
9.3 Geocomposite Conformance Testing 54
9.4 Leak Detection Layer Sump 54

10 Primary Geomembrane Liner (Phases 1 and 2) 56
10.1 General 56
10.2 Material Conformance Testing and Inspection 56
10.3 Preproduction Weld Testing 56
10.4 Geomembrane Panel Deployment and Seaming 56
10.5 Non-Destructive Seam Testing 57
10.6 Destructive Seam Testing 57
10.7 Repair Documentation 58

11 Leachate Drainage Layer (Geocomposite - Phases 1 and 2) 59
11.1 General 59
11.2 Panel layout and Seaming 59
11.3 Geocomposite Conformance Testing 59

12 Leachate Collection/Leak Detection System (Phases 1 and 2) 60
12.1 General 60
12.2 Leachate/Leak Detection Sump and Side Slope Riser Pipes 60
12.3 Leachate/Leak Detection Piping/Pumping 60
12.4 Pipe Cleaning 61

13 Conclusion and Desired Response 62

Tables

Table 1-1	Foth & Van Dyke Quality Assurance Personnel	3
Table 5-1	Summary of Soil Confirmation Test Results (Remediated Units)	21
Table 6-1	Summary of Other Subbase Soils Test Results	28
Table 6-2	Summary of Density/Moisture Test of Subbase Soils (Phases 1 and 2)	31
Table 7-1	GCL Laboratory Testing Summary	45
Table 8-1	Summary of Laboratory Results - Secondary Geomembrane Conformance Testing (Phase 1 and 2)	51
Table 8-2	Destructive Seam Laboratory Test Results (Primary and Secondary Liner - Phases 1 and 2)	53
Table 9-1	Summary of Laboratory Results - Geocomposite and Geonet	55
Table 9-2	Summary of Laboratory Results - Leachate/Leak Detection Sump Stone	55

Appendices

Appendix A	Correspondence
Appendix B	Construction Observation Photographs
Appendix C	Subbase Fill Test Results
	C1 - Field Tests
	C2 - Laboratory Test Reports
Appendix D	GCL Material Information
	D1 - GCL Manufacturer's QC Data and Product Information
	D2 - GCL Laboratory Test Results
	D3 - GCL Panel Placement Forms
Appendix E	Geomembrane Material Information
	E1 - Geomembrane Roll Inventory Form
	E2 - Manufacturer's Roll Test Data Reports
	E3 - Manufacturer's Resin Quality Assurance Test Results
	E4 - Supplemental Quality Assurance Test Results
Appendix F	Geomembrane Conformance Laboratory Test Results
Appendix G	Geomembrane Installation Forms
	G1 - Daily Geomembrane Installation Field Reports
	G2 - Preproduction Weld Logs
	G3 - Subgrade Acceptance Forms
	G4 - Panel Placement Summary Forms
	G5 - Panel Seaming Summary Forms
	G6 - Non-Destructive Seam Test Summary Forms
	G7 - Destructive Seam Sample Summary Forms
	G8 - Repair Summary Forms
Appendix H	Geomembrane Destructive Seam Laboratory Test Results
Appendix I	Geocomposite Material Information
	I1 - Geocomposite Manufacturer's Information
	I2 - Geocomposite Laboratory Test Results
Appendix J	Granular Material Laboratory Test Results - Leachate Leak Detection System

Appendix K	Manufacturer's Information
	K1 - Leachate/Leak Detection System
	K2 - Pump Building
	K3 - Electrical Drawings
Appendix L	Soil Confirmation Test Results
	L1 - Sample Location Maps
	L2 - Laboratory Reports

Drawings

Drawing No. 1	Title Sheet
Drawing No. 2	Existing Site Conditions Prior to Construction
Drawing No. 3	Subbase Density Test Locations (Phases I and II Subbase grades)
Drawing No. 4	GCL Phases I and II Panel Layout/Test Locations
Drawing No. 5	Secondary Geomembrane Phases I and II Panel Layout and Test Locations
Drawing No. 6	Primary Geomembrane Panel Layout and Test Locations
Drawing No. 7	Final Construction Grades - Phases I and II
Drawing No. 8	Remediated Extent of Areas
Drawing No. 9	Details
Drawing No. 10	Details
Drawing No. 11	Details

1 Certification

1.1 Purpose

The purpose of this construction documentation report is to provide the certification required by 35 IAC 702.126(d), 35 IAC 724.652 and comply with Section I, Condition E.5 of the April 11, 2000 RCRA Part B Permit. This report contains all the information required by Attachment A of the referenced permit.

1.2 Construction Certification

As per permit condition Section I, Conditions E.5., the following is the construction certification which contains the wording required in 35 IAC 702.126(d). Appendix A contains the construction certification form which must accompany the certification which is signed and stamped by the certifying engineer, Mr. Marten J. Cieslik, P.E., DEE and signed by the site operator, Mr. Craig Skolrood.

The following is the wording from 35 IAC 702.126(d) which certifies that the Corrective Action Management Unit (CAMU) Landfill was constructed in accordance with the April 11, 2000 RCRA Part B application approvals and the Foth & Van Dyke plans and specifications for the construction.

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

Note that prior to placing waste in Phases 1 or 2, a similar certification was provided for each phase. In a letter from Foth & Van Dyke dated July 17, 2000, Phase 1 of the CAMU was certified prior to filling while on November 1, 2000 a similar certification was provided for Phase 2 of the CAMU.

1.3 Response to IEPA Comments on CAMU Phase 1 Construction

On July 25, 2000, IEPA provided comments numbered 1 through 3 regarding the construction of Phase 1 of the CAMU. These comments were addressed by modifying the construction of Phase 2 of the CAMU. The numbered responses address the numbered comments from the July 25, 2000 IEPA letter.

1. The subgrade of Phase 2 was constructed with silty clay, clayey silt and/or sandy silt as discussed in Section 6.2 of this report. The subgrade is discussed in more detail and soil gradation are referenced in Section 6 of this report. The results were that rutting and wheel marks in the subgrade were kept to a minimum and the Geosynthetic Clay Liner (GCL) was placed on a smooth drum-rolled surface.

2. The GCL panels placed in Phase 2 of the CAMU were primarily placed by rolling the GCL down the slope and dragging the GCL panels up or across the slope was done only when absolutely necessary.

3. The GCL panels placed in Phase 2 of the CAMU were placed with additional care to assure that wrinkles in the panels were kept to a minimum.

1.4 Quality Assurance Personnel Summary

Table 1-1, Quality Assurance Personnel identifies each professional engineer or qualified technician who performed quality assurance during the construction; which aspects of construction each person provided on-site quality assurance for and the role each played on the preparation of the construction documentation report.

Table 1-1

Foth & Van Dyke Quality Assurance Personnel
CAMU Landfill Construction

Construction Task	BJS1	MJC1, *P.E.	REM, L.P.G.	JRL	JCF1	STS	JOW
Remediation of lagoons, wetlands and other areas.	X	X	X	–	–	–	–
CAMU Phase 1 and 2 subgrade preparation.	X	X	X	X	–	–	–
CAMU Phase 1 and 2 liner leak detection and leachate collection system construction.	X	X	X	X	X	–	–
Construction and start-up of the leachate collection and leak detection system.	X	X	–	–	–	–	–
Preparation of the construction documentation report includes tables and appendices.	X	X	X	–	–	–	–
Preparation of the construction documentation "as-built" drawings	X	X	X	–	–	X	X

*P.E. = Certifying Professional Engineer
L.P.G. = Professional Geologist
BJS1 = Brian J. Stanul
MJC1 = Marten J. Cieslik
REM = Ronald J. Meister
JRL = James R. Logan
JCF1 = John C. Favorite
STS = Secret T. Strobl
JOW = John O. Whitstone

2 Introduction

2.1 Project Background

The RCRA Corrective Action and Closure process for the Modern Plating Corp. (Modern) facility dates back to the mid 1980s and has involved, at various points in time, regulatory oversight authority under both the U.S. EPA and the IEPA.

In November 1980, a RCRA Part A permit application was submitted. In July 1984, a RCRA Part B permit application was submitted. Compliance inspections and groundwater sampling of the Modern facility were conducted by the IEPA between September 1981 and June 1987.

In March 1984, Modern received a hazardous ranking system score of 22.4. In July 1985, Modern was placed on the Illinois Remedial Action Priorities list. The U.S. EPA issued a Complaint and Compliance Order dated June 18, 1985, which specified the U.S. EPA's determination of violations by Modern of the Resource Conservation and Recovery Act as amended. Modern entered into a Consent Agreement and Final Order with the U.S. EPA on November 23, 1985. On September 3, 1986, the U.S. EPA approved the Assessment Monitoring Program for Modern's RCRA lagoons.

The approved Assessment Monitoring Program was implemented in September 1986, and reported in 1987 (Foth & Van Dyke, 1987a). Twelve groundwater monitoring well locations (labeled MW-5C, MW-5D, MW-6A, MW-6B, MW-6C, MW-7A, MW-7B, MW-7C, MW-7D, MW-8A, MW-8B, and MW-8C), were installed and developed.

A second phase of assessment monitoring and well installation was performed during August and September 1987 (Foth & Van Dyke, 1987b). Twenty additional groundwater monitoring wells and well nests (labeled MW-11A, MW-11B, MW-11C, MW-11E, MW-12A, MW-12B, MW-12C, MW-12E, MW-13A, MW-13B, MW-13C, MW-13E, MW-14A, MW-14B, MW-14C, MW-14E, MW-15A, MW-15B, MW-15C, and MW-16C) were installed at six locations.

In November 1986, a revised partial closure/post-closure care plan was submitted to the IEPA. This plan was approved by the IEPA on January 23, 1987, with several conditions. An addendum to the plan was submitted to the IEPA on March 20, 1987, and the plan modification was approved by the IEPA on June 19, 1987.

Previously, the IEPA issued a Notice Pursuant to Section 4 (q) of the Environmental Protection Act on June 20, 1986. As a result of this notice, a situation/preliminary report was submitted to the IEPA on September 18, 1986. Comments on the report were addressed on October 30, 1986. In addition, in December 1986, a remedial investigation work plan was submitted to the IEPA. An amended remedial investigation work plan was submitted to the IEPA in 1987. The amended work plan was not reviewed because Modern requested negotiations for a Consent Order to combine Federal and State actions. Negotiations between Modern and the U.S. EPA resulted in a

Consent Order signed by the U.S. EPA on December 31, 1987, which became effective on January 15, 1988.

In February 1988, a RCRA Facility Investigation (RFI) work plan was submitted to the U.S. EPA and the IEPA. A revised RFI work plan was submitted to the U.S. EPA and the IEPA in June 1988. A second revised RFI work plan was submitted in September 1988. The U.S. EPA approved the RFI work plan on December 31, 1988. In February 1988, a Description of Current Conditions report was submitted to the U.S. EPA. A revised Description of Current Conditions was submitted in June 1988.

The RFI program constituted the third hydrogeologic investigation at the Modern facility. Hydrogeological, soil, surface water, and sludge characterization work was reported in the February 1990 RFI (Foth & Van Dyke 1990). In May 1991, a report titled *Final Corrective Measures Study (CMS) for the Modern Plating Facility - Part II, Volumes I and II*, presented Modern's preferred alternative for remediation of soil, groundwater and electroplating sludge at the facility.

Four subsequent CMS reports addressed the U.S. EPA's and the IEPA's comments on Modern's preferred alternative. Those reports were titled:

- *Final Corrective Measures Response to U.S. EPA Comments* (October 1991)
- *Final Corrective Measures Study, Response to U.S. EPA Comments, Response No. 2*, July 1992
- *Corrective Measures Study, Soil sampling Plan*, March 1993
- *Modern Plating Corporation - Response to July 21, 1993 Letter*

As a result of the reports, studies, review, and investigations, Modern submitted a Final Corrective Measures Study-Compendium Report on May 3, 1995. This report addressed IEPA and U.S. EPA comments and concerns regarding the RCRA Closure Plan for all RCRA and non-RCRA-regulated units, and provided final remedy selection. The Compendium Report recommended the phased excavation, treatment and off-site disposal of site wastes in addition to a phased implementation of a groundwater recovery system for remediating contaminated groundwater at the site.

In a September 4, 1996 letter, the U.S. EPA formally approved the CMS. In an October 17, 1996 IEPA letter to the U.S. EPA, the State of Illinois formally requested oversight of the Modern site for implementation of the corrective action. The U.S. EPA granted the IEPA's request and also terminated the Administrative Order on Consent.

On March 19, 1997, Modern met with the IEPA to discuss modifications to the RCRA Closure Plan. As a result of this meeting and the transfer of regulatory oversight from the U.S. EPA to

the IEPA, it was agreed that Modern would submit a revised RCRA Closure Plan that provides a comprehensive summary of the site history, a Tiered Approach to Corrective Action Objectives (TACO) analysis for soil and groundwater cleanup objectives, remediation cost estimates, and a post-closure care and monitoring plan.

On September 25, 1997, Foth & Van Dyke and Modern met with members of IEPA review staff to discuss the RCRA Closure Plan and contents of a RCRA Part B Permit Application (Part B Application). At the September 25, 1997 meeting an outline of the Part B Application and list of items felt to be inapplicable were presented to the IEPA staff for review. In a letter dated November 20, 1997, included in Appendix A, IEPA responded with comments regarding the outline and provided comments on the proposed landfill design.

Foth & Van Dyke, on behalf of Modern, submitted the final RCRA closure plan for the facility on July 22, 1999 titled *Final RCRA Closure Plan and Basis Design Report (Volume I and Volume II)*. The closure plan addressed remediation of both the RCRA-regulated units (Lagoon No.1, Lagoon No.2, Lagoon No. 3, and Shawnee Building soils), and non-RCRA-regulated units which included Lagoon No. O, Lagoon No. 1A, the cyanide treatment vault, and impacted wetland soils.

The Part B Permit Application submitted in December, 1999 addresses separate but related issues that are addressed in the RCRA Closure Plan Log No. C-472-M-10 (Foth & Van Dyke, 1997). The Closure Plan provides a review and presentation of data on the environmental conditions at the Modern facility. These data provide the basis for establishment of cleanup goals and remedy selection. Specifically, the closure plan addresses the material that will be remediated, and material that will not be remediated. The closure plan also presents a conceptual approach to the design of the CAMU landfill. The Part B permit relates to the RCRA Closure Plan by presenting detailed design plans for disposing and containing the wastes that are targeted for cleanup as described in the RCRA Closure Plan Log No. C-472-M-10.

2.2 Purpose and Scope

The purpose and scope of this report is to document the RCRA closure work of the management units specified in the final RCRA closure plan for the Modern facility and to document that the materials and methods used in the construction of the CAMU landfill meet the RCRA Part B permit conditions and conform to the requirements of the plans and specifications.

The construction certification requirements for the CAMU are located in the April 11, 2000 RCRA part B permit for the CAMU landfill in Section I, E. Items 1 through 5 and Attachment A. Attachment A of the April 11, 2000 permit contains a list of the items which must be contained in the construction documentation. Attachment A of the April 11, 2000 permit is provided in Appendix A for reference. The report which follows provides the data necessary to certify that the CAMU landfill was constructed according to the RCRA Part B permit and the plans and specifications.

This report is submitted in conjunction with the report titled *Construction Observation Report, CAMU Landfill Closure, Modern Plating Corporation* (Closure Report) which documents the CAMU landfill closure and site restoration. The Closure Report will be submitted under separate cover at a later date.

3 Summary of Construction Activities

3.1 General

In accordance with the July 22, 1999 final RCRA closure plan submitted to the IEPA, the following remedial activities were performed:

- The over-excavation to a minimum depth of 1 foot of the base and interior side slopes of Lagoons No. 0, 1, 1A, 2, and 3.
- Removal of the Cyanide Vault and 2 feet of contaminated soils from the bottom and side walls of the excavation.
- Excavation to a depth of 3 feet of contaminated soil from beneath the floor of the former Shawnee Building.
- Excavation of soil to a depth of 2 feet below the ground surface at Wetlands No. 1, 2, and 3.
- The collection of confirmation soil samples and the submission of the samples to an analytical laboratory.
- Converting Lagoons No. 2 and 3 into a CAMU including a compacted subbase, secondary geomembrane, leak detection system, primary geomembrane, and leachate collection system.
- Placement of the contaminated soils and sludges in the CAMU.

The locations of the site remediation activities are shown on Drawing No. 2. Photographs of the remediation activities are included in Appendix B. The general contractor for the remedial activities was Terra Engineering and Construction, Inc. (Terra) of Madison, Wisconsin. Foth & Van Dyke acted as Modern's construction representative and documented the remedial construction activities, collected confirmatory soil samples, performed health and safety monitoring for the duration of the project and collected geosynthetic and soil samples for quality assurance testing. Confirmatory soil samples were analyzed by TestAmerica, Inc.'s Bartlett, Illinois laboratory. Geosynthetic testing was completed by Precision Geosynthetic Laboratories, Inc., Anaheim, California. Giles Engineering of Madison, Wisconsin provided soil testing services for the engineering properties of the soils and aggregates used to construct the CAMU.

3.2 Health and Safety Monitoring

All project personnel working in contaminated areas completed health and safety training for hazardous waste operations in accordance with OSHA Standard 29 CFR 1910.120.

During the excavation, hauling, placement, and compaction of the contaminated sludges and soils, the breathing zone in the working areas was monitored a minimum of twice daily by the Foth & Van Dyke Resident Project Representative for Volatile Organic Compounds (VOCs) using a Photoionization Detector (PID). A T80 Personal Meter was used to monitor for the presence of Hydrogen Cyanide (HCN) in the breathing zone. The air monitoring results were recorded in the project field book.

The health and safety director for Terra sampled for heavy metals in the air by placing air filtering equipment directly on machinery during sludge excavation activities and submitted the filters for laboratory analysis.

No readings above action levels for VOCs, HCN, or metals were detected during the remediation activities. Therefore, all personnel involved in the remediation activities utilized Level D (protective coveralls, boots with steel toe and shank, hard hat, and safety glasses) personal protective equipment (PPE).

4 Deviations From Plans and Specifications or Permit Conditions

When deviations from the plans and specifications or permit conditions occurred during the project, Rob Watson, P.E., the IEPA project environmental engineer, was contacted by telephone and given an explanation of the proposed modifications and an explanation of the rationale for the implementation of the modifications. The following is a list of minor deviations to project plans and specifications which were implemented in the field as a response to field conditions.

- The bottom depth of the Phase 1 sump was raised 1 foot due to groundwater seepage encountered during construction. The surface area of the sump was increased to maintain the original design volume. Refer to Section 6.5 of this report for details.

- An additional layer of GCL panels was placed in the Phase 1 sump area to add an additional protective layer due to the potential for hydration of the GCL from moisture encountered in the sump area during the construction of the subbase. Refer to Section 7.2 of this report for details.

- Pipe boots were installed around the Phase 1 and 2 leak detection pipes where they penetrated the primary geomembrane to prevent runoff from infiltrating the leak detection system. Refer to Section 13.3 of this report for details.

- Due to difficulties in handling the Lagoon No. 3 sludge, the sequence for excavation and disposal of the sludge in the CAMU was changed. The Lagoon No. 2 sludge was excavated and placed in the CAMU first, followed by the Lagoon No.3 and Lagoon No. 1 sludges. Refer to Sections 5.1, 5.4, and 5.6 for a more detailed explanation.

- A portion of Lagoon No. 3 and Lagoon No. 1 sludges were stabilized with lime kiln dust (LKD) to improve their stability, shear strength and bearing capacity as described in Sections 5.4 and 5.6.

- Additional sludge and bottom liner materials were excavated from Lagoons No. 0, 1A, and 2 as described in Sections 5.1, 5.5, and 5.7.

- Additional soils were excavated from the east side of Wetland No. 2 and from the drainage ditch directly south of Wetland No. 1 (referred to as Wetland No. 1A). Refer to Section 5.8 for details.

- Approximately 65 cubic yards of contaminated soils were excavated from along the abandoned outfall pipeline and disposed in the CAMU. Refer to Section 5.9 for details.

- Chromium wastewater was accidently spilled during the repair of a wastewater force main at the Modern wastewater treatment plant. The spill resulted in the contamination of approximately 3 cy of soil. Approval for placing the waste in the CAMU was provided by IEPA in a letter dated September 19, 2000.

- The stainless steel risers and steel protective covers on monitoring wells MW-8A, 8B, and 8C were extended to maintain a minimum of a 2-foot elevation above the ground surface after the berm for Sedimentation Basin No.1 was constructed. MW-8A was extended 5 feet, while MW-8B and 8C were extended 2.5 feet. The monitoring wells will be re-surveyed along with the other site monitoring wells to fulfill the post-construction survey document conditions of the RCRA permit

- A 2-foot thick bridging layer was installed in the subbase of Phase 1 and 2 of the CAMU due to high groundwater encountered during excavations. Refer to Section 6.2 for details.

- The outer 6" HDPE pipe running from outside the limits of waste from Phase 1 and 2 was replaced with 6-inch flex hose. Also, the 1 ¼-inch HDPE and 6-inch HDPE pipes running from the pump building to the Modern wastewater treatment building were installed above ground. Refer to Section 12.3 for details.

5 Remediation Activities and Soil Confirmation Test Results

This section details the remediation activities which were performed on each of the RCRA Hazardous Waste Management Units (HWMU) and non-RCRA Solid Waste Management Units (SWMU). In addition, the analytical results of the soil confirmation samples collected following the completion of the removal of the contaminated soil or sludge are presented in Table 5-1.

The volumes of sludge and contaminated soil excavated from each HWMU and SWMU are shown on Drawing No. 9. The total volume of soil and sludge excavated was 19,800 cy. The total volume of sludge and soil placed in the CAMU was approximately 14,500 cy (based on surveys performed on the CAMU liner and top of sludge grades). The difference in volumes is attributed to dewatering of the sludges and soils prior to placement in the CAMU and compaction and consolidation of sludges and soils once placed in the CAMU.

Section IV, C of the RCRA Post-Closure Permit details the remediation objectives for the eight units. In summary, at Lagoons 0, 1, 1A, 2 and 3 overexcavation was required to 1 ft below the base of the existing lagoons and 1 ft of the interior sideslopes of the existing lagoons. In the cyanide treatment vault area, 2 ft of contaminated soil was to be excavated from the floor and side walls of the former vault. At the Shawnee building and wetland soils, excavation was required in the permit to meet a soil cadmium objective of 200 mg/kg.

This section of the report details how Modern met the permit requirements, described above, for the HWMU and SWMU.

5.1 Lagoon No. 1 (HWMU)

Lagoon No. 1 sludge was excavated and transferred directly to the west end of Phase 1 of the CAMU using a backhoe. Sludge which was uncovered along the bottom of the north side of Lagoon No. 1 was determined to contain too much liquid to be placed in the CAMU and was stabilized using lime kiln dust (LKD). The LKD was applied to the sludge in the same manner as described for Lagoon No. 3 (Section 5.4). After the LKD application, the sludge was stacked at the east end of the lagoon and lifted into the CAMU using a backhoe. A bulldozer was used to grade the stabilized sludge in Phase 1 and 2 of the CAMU.

In compliance with permit conditions, Lagoon No. 1 was excavated to a depth of 1 foot below the liner on the lagoon bottom and sideslopes. Eight confirmatory samples (LG1-1 through LG1-8) were collected, for informational purposes only, from a depth of 1 ft below the clay liner on the lagoon sidewalls and bottom. These samples were analyzed for arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide (Table 5-1). Field observations found that the bottom and sidewalls of Lagoon No.1 were constructed of clayey soils with construction debris fill.

Water which collected in the excavation due to groundwater seepage or runoff from rain events was collected in a temporary sump and pumped to the Modern wastewater treatment plant for

cyanide and metals removal prior to be discharged into the City of Freeport wastewater treatment facility.

5.2 Lagoon No. 2 (HWMU)

The sludge was excavated from Lagoon No.2 using a backhoe which initially placed the sludge in a stockpile on Lagoon No.1. Sludge samples were periodically tested for free liquids using the Paint Filter Test (EPA Method 9095A) prior to their placement in the Lagoon No. 1 stockpile. No free liquids were detected. Water which collected in the Lagoon No. 2 excavation due to groundwater seepage or runoff from rain events was collected in a temporary sump and pumped to the Modern wastewater treatment plant for cyanide and metals removal prior to be discharged into the City of Freeport wastewater treatment facility.

Remediation permit objectives for Lagoon No. 2 were accomplished through overexcavation of 1 ft of the base and 1 ft of the interior sideslopes. Eighteen confirmatory samples were collected, for informational purposes only, from the lagoon base and sidewalls and were analyzed for arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide. The laboratory data is summarized in Table 5-1. The laboratory test data from Test America along with sketches showing the location of each sample are included in Appendix L.

Analytical results from the first 10 samples indicated that the majority of the contaminated sludge and soils were removed from the lagoon sidewalls, however, levels of cadmium, nickel, zinc, and cyanide remained at a depth of 1 ft below the top of the clay liner in the base of the lagoon. Since the permit remediation objectives (1 ft overexcavation) were met, Modern was under no requirement to excavate further. However, based on laboratory analysis of samples collected at 2 and 4 ft below the top of the clay liner (refer to Table 5-1), Modern elected to remove an additional 2 ft of the lagoon liner. Table 5-1 shows that samples collected from soil 2 ft below clay liner contained higher metal concentrations than samples at 4 ft below excavation. Table 5-1 shows samples from 2 ft below base (LG2-11, LG2-13, LG2-15 and LG2-17) and 4 ft below the clay liner (LG2-12, LG2-14, LG2-16 and LG2-18). Note that Table 5-1 includes the mean, standard deviation, maximum and minimum values of the sludges in the lagoons for reference.

After drying the Lagoon No. 2 sludges in the Lagoon No. 1 stockpile, the sludge was placed into Phase 1 of the CAMU. The Lagoon No. 2 sludge was placed in Phase 1 of the CAMU instead of Phase 2 (as specified in the original design) due to the fact that the Lagoon No. 2 sludge had dried considerably while in Lagoon No. 1. The original design called for the Lagoon No. 3 sludges to be placed in Phase 1. Lagoon No. 3 sludges were too wet at this time and required dewatering as described in Section 5.3 of this report.

5.3 Lagoon No. 3 (HWMU)

The excavation of the Lagoon No. 3 sludge was initiated using a backhoe to remove the upper approximate 2 ft of soil which had a water content and consistency suitable for disposal. Following removal of the top 2 ft, aerating and stacking of the remaining sludge was attempted.

While attempting to stack the sludge, it became apparent that the Lagoon No. 3 sludge was too wet to be handled by loading directly from the lagoon into Phase 1. As a result, the contractor used three methods to remove the sludge: 1) excavation and direct loading of the drier sludge in the south end of the lagoon into Phase 1, 2) excavation and loading of wet sludge into an off-road truck and storage in the Lagoon No. 1 stockpile, and 3) the stabilization of sludge which was too wet to excavate with LKD. Water which collected in the excavation due to groundwater seepage or runoff from rain events was collected in a temporary sump and pumped to the Modern wastewater treatment plant for cyanide and metals removal prior to be discharged into the City of Freeport wastewater treatment facility.

The drier sludge located in the southern one-third of Lagoon No. 3 was excavated using a crane equipped with a drag-line bucket. The crane and drag-line bucket combination was able to load the drier sludge directly from the lagoon into the southeast end of Phase 1.

Wet sludge which was accessible to the contractor's equipment was excavated using a backhoe and the crane and drag-line bucket combination and loaded into an off-road truck and placed into the Lagoon No. 1 stockpile for additional drying. Storage space was made available in the Lagoon No. 1 stockpile by placing the Lagoon No. 2 sludge previously stored there into Phase 1 (refer to Section 5.1). Approximately 200 cubic yards of Lagoon No. 3 sludge was also diverted to a stockpile created on the south end of Lagoon No. 1A when the storage capacity of the Lagoon No. 1 stockpile was exhausted. This sludge was placed in the CAMU during Lagoon No. 1A remedial activities (Refer to Section 5.5).

The approximately 1,000 cy of the Lagoon No. 3 sludge which was too wet to be excavated or transported was stabilized in the north end of Lagoon No. 3 using LKD. The LKD was applied to the sludge by connecting a pressurized feeder truck which contained the LKD to a backhoe bucket (onto which the injector tube was mounted) using a hose. The backhoe then submerged the injector and feeder hose assembly and bucket into the sludge and the LKD was simultaneously applied and mixed into the sludge. Additional mixing of the sludge and LKD was accomplished by blading the mixture with a low ground pressure (LGP) bulldozer. The sludge was stacked in the northwest end of the lagoon, allowed to dry, and then loaded into the northeast corner of Phase 1 using the backhoe and crane and drag-line combination.

Lagoon No. 3 sludge staged in the Lagoon No.1 stockpile was also stabilized with LKD using the techniques described in the previous paragraph when it was determined that air drying would not achieve the stability required to place the sludge in Phase 1 or 2 of the CAMU.

Lagoon No. 3, in accordance with the permit requirements, was excavated to a depth of 1 ft below the clay liner on the lagoon bottom and sideslopes. Ten confirmatory samples (LG3-1 through LG3-10) were collected, for informational purposes only, from the sidewalls and bottom of the excavation and submitted for analysis of arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide (Table 5-1). Field observations indicated that the Lagoon No. 3 clay liner was in good condition.

5.4 Shawnee Building (HWMU)

Approximately 30 cy of contaminated soil was excavated in the vicinity of the former Shawnee building on the south side of the Modern property. The remediation was completed by cutting and removing a section of the concrete slab measuring approximately 25 ft by 35 ft and excavating the soil below to a depth of approximately 3 ft. No water was encountered during the excavation activities. The concrete and soil were then staged at the west end of the Lagoon No. 1 stockpile.

After the excavation was completed, four confirmation samples (Shaw-1 through Shaw-4) were collected and submitted to the laboratory for cadmium analysis. Laboratory results (Table 5-1) indicated that the permit required soil cadmium clean-up level (less than 200 mg/kg) was achieved at the Shawnee building.

The concrete and soil generated during the remediation of the Shawnee building vault was placed in the approximate center of Phase 1 of the CAMU on top of approximately 6 to 8 feet of sludge and then covered with sludge to protect the CAMU liner and cap system from puncture.

5.5 Lagoon No. 0 (SWMU)

The remediation of Lagoon No. 0 included stripping and stockpiling the topsoil and clay cap and excavating the contaminated fill soils and sludge and water which collected in the excavation due to groundwater seepage or runoff from rain events was collected in a temporary sump and pumped to the Modern wastewater treatment plant for cyanide and metals removal prior to be discharged into the City of Freeport wastewater treatment facility.

Lagoon No. 0 remediation included removal of an approximately 5-foot thick layer of contaminated fill consisting of construction debris, filter bags, and empty barrels and other debris. This fill material was underlain by a 10-foot thick sludge layer to the bottom of the lagoon. The contaminated fill and sludge were excavated using a backhoe and transported to Phase 2 of the CAMU. The contractor placed the debris and rubble fill in the approximate center of Phase 2 of the CAMU on top of approximately 6 to 8 feet of in-place sludge. This debris and rubble was then covered with sludge to isolate this fill from potential contact with the final cover.

In compliance with the permit, the bottom and sidewalls of Lagoon No. 0 were excavated to a depth of 1 ft beyond the limits of waste. The bottom appeared to have a clay liner while construction debris and fill soils were observed on the sidewalls. Excavation along the north interior side wall of Lagoon No. 0 was halted as the manhole and sewer line connecting the Modern WTP to the Freeport WTP were in danger of being undermined.

Six confirmatory samples (LG0-1 through LG0-6) were collected, for informational purposes only, from the sidewalls and bottom of the excavation and submitted for analysis of arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide (Table 5-1).

5.6 Lagoon No. 1A (SWMA)

The remediation at Lagoon No. 1A included excavating and stockpiling the topsoil, clay cap, and berm soils and excavating the sludge. The original uncontaminated cover soils were stripped by the contractor using bulldozers and staged to the west of the lagoon. The approximately 5-ft thick layer of sludge in Lagoon No. 1A was excavated using a backhoe.

After the sludge was removed, and in compliance with the permit, 1 ft of soil was excavated from the sidewalls and bottom of the lagoon with a bulldozer. The sludge and contaminated soils were transported to Phases 1 and 2 of the CAMU using the off-road truck. An additional volume of approximately 90 cy of Lagoon No. 1A sludge was discovered underneath the east berm beyond the staked limits of excavation. This additional sludge was excavated and transported to Phase 2 of the CAMU. As part of the Lagoon No. 1A remediation, Lagoon No. 3 sludge stockpiled in the south end of Lagoon No. 1A was excavated and transported to Phase 2 of the CAMU. During excavation and undercutting of Lagoon No. 1A groundwater was not encountered and it was observed that the lagoon was constructed of fill soils mixed with construction debris and industrial fill.

Eight confirmatory samples (LG1A-1 through LG1A-8) were collected, for informational purposes only, from the Lagoon No. 1A sidewalls and bottom and analyzed for arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide (Table 5-1).

5.7 Cyanide Vault (SWMU)

The cyanide vault consists of a structure approximately 20 ft long by 15 ft wide by 12 ft deep underground storage tank with 12-in thick reinforced concrete walls, cover and floor. The vault was remediated by breaking up and removing the vault using a jackhammer and backhoe. To meet permit conditions, approximately 2 ft of the soils on the sidewalls and bottom of the vault were overexcavated using a backhoe. The contaminated concrete and soils were staged at the west end of the Lagoon No.1 stockpile. Water which collected in the excavation due to groundwater seepage or runoff from rain events was collected in a temporary sump and pumped to the Modern wastewater treatment plant for cyanide and metals removal prior to being discharged to the City of Freeport wastewater treatment facility.

Four confirmatory samples (CV-1 through CV-4) were collected, for informational purposes only, (two from the bottom, and two from the sideslopes) from the excavation and analyzed for arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide. Table 5-1 summarizes the analytical results.

The reinforced concrete and soil generated during the remediation of the cyanide vault was placed in the approximate center of Phase 1 of the CAMU on top of approximately 6 to 8 feet of sludge and then later covered with sludge.

5.8 Wetlands (SWMU)

Four wetland areas (Wetland No.1, Wetland No. 1A, Wetland No.2, and Wetland No. 3) were excavated during remediation activities on the Modern property. Drawing No. 2 shows the approximate location of the wetland areas excavated.

A field investigation and analytical testing completed as part of the Corrective Measures Study (CMS) determined that permit objectives could be met by removing the upper 2 ft of soil from the contaminated wetland areas and testing for cadmium. Sufficient remediation of wetlands would occur on removal of soils to cadmium concentrations of 200 mg/kg or less. The suspected contaminated areas were staked in the field based on the cadmium iso-concentration maps prepared for the CMS. The staked areas were then excavated and the base and limits of the excavation sampled to determine if the remediation goals were met. Due to an unusually wet spring and summer, water typically entered the wetland excavation after excavation was completed.

5.8.1 Wetland No. 1

Wetland No. 1 was excavated to a depth of 2 feet below the ground surface using a backhoe. The soils were then hauled to a stockpile on the north end of Lagoon No. 1A using an off-road truck. The soil stockpile was covered with a tarp until it was excavated and placed in the CAMU as part of the Lagoon No. 1A remediation. Three confirmatory samples were collected from the sides and bottom of the excavation and submitted for cadmium analysis (Table 5-1). In compliance with the permit, the samples contained less than 200 mg/kg of cadmium.

5.8.2 Wetland No. 1A

Wetland No. 1A includes a portion of the drainage ditch which runs from the Modern parking lot into the wetlands between Lagoon No. 1 and 1A and a wetland area immediately below the drainage ditch outlet to the southeast and adjoining Wetland No. 1. Drawing No. 2 shows the location of Wetland No. 1A. Wetland No. 1A, including the ditch down stream of Lagoon No. 1A was excavated to a depth of 2 ft using a backhoe. The contaminated soils, riprap and wetland soils were placed in the west end of the Lagoon No. 1 stockpile and placed in the CAMU during Lagoon No. 1 remedial activities. Two soil samples (one from the ditch and one from the wetland) were collected and submitted for cadmium analysis. Table 5-1 includes laboratory results which indicated the soil samples were less than 200 mg/kg for cadmium.

5.8.3 Wetland No. 2

Wetland No. 2 was excavated to a depth of 2 feet using a backhoe. The backhoe then stacked the soil at the south end of the excavation to dry prior to placing the soil in the north side of Phase 1 of the CAMU. Seven soil samples (WT2-1 through WT2-7) were collected from the sides and bottom of the excavation and submitted for analysis of cadmium. Table 5-1 contains the cadmium results. One sample collected from the east end of the excavation (WT2-5) indicated

the presence of cadmium in excess of the 200 mg/kg cleanup objective. To further remediate this area, an additional excavation, approximately 40 ft by 15 ft by 2 ft deep, was required in the vicinity of the soil sample. Following this additional excavation, an eighth confirmatory soil sample (WT2-8) was collected with results of cadmium concentration of 1.3 mg/kg which is below the 200 mg/kg cleanup objective. As such, permit clean-up conditions were met at wetland No. 2

5.8.4 Wetland No. 3

Wetland No. 3 was excavated and stockpiled using the same methodology as Wetland No.2. The soil was hauled from Wetland No. 3 to Phase 2 of the CAMU using an off-road truck and placed in the CAMU using a bulldozer. Eight soil samples (WT3-1 through WT3-8) were collected from the sides and bottom of the excavation and submitted for analysis of cadmium (Table 5-1). Results indicate that the permit conditions, cadmium clean-up objective of residual concentrations of 200 mg/kg was achieved.

5.9 Outfall Pipeline

5.9.1 General

In a letter dated February 9, 2000, the IEPA requested that Modern complete a Phase 1 and Phase 2 investigation along the abandoned outfall pipeline from the Modern wastewater treatment plant to the Pecatonica River. The Phase 1 investigation included televising the outfall, locating manholes and any holes, cracks or collapses in the outfall line. The results of the Phase 1 investigation were reported to the IEPA in a letter dated May 5, 2000 which contained the results of the televising of the outfall line along with a proposal for a field investigation at locations which were suspected as having a potential for releasing industrial waste to the environment. The borings for the field investigation were completed on May 23, 2000 and reported to the IEPA in a letter dated July 7, 2000. The field investigation discovered limited contamination in the vicinity of soil boring SB-0F-05 located just southeast of the Modern wastewater treatment plant as shown on Drawing No. 2. The July 7, 2000 letter recommended that an area 15 ft either side of SB-0F-05 be excavated and the soil below the pipeline disposed of in the CAMU. Based on a verbal approval from IEPA representative, the impacted area was excavated and sampled as described below.

5.9.2 Outfall Pipe Line Excavation

Based on the results of the outfall pipeline investigation, a 30-ft by 10-ft by 10-ft deep area of soil along the outfall pipeline route to the southeast of the Modern wastewater treatment plant was remediated. The outfall pipeline was remediated by excavating the soil with a backhoe. The top 4 feet of soils and aggregate were stockpiled adjacent to the excavation and were re-used as backfill. The fill from a depth of 4 to 10 ft below the ground surface was excavated by the backhoe, loaded into an off-road truck and placed in the west end of the Lagoon No. 1 stockpile. Field observations during excavation indicated the presence of construction debris from 4 to 9 ft

below the ground surface. Below 9 ft, native clay was observed. Upon completion of the excavation and confirmation soil sampling, the excavated area was filled with clayey soils from an off-site source.

Three confirmatory samples (Outfall-1 through Outfall-3) were collected from the bottom of the excavation and submitted to the laboratory for analysis of arsenic, cadmium, chromium, lead, nickel, zinc, and cyanide. Sample results were below the TACO industrial/commercial ingestion and inhalation remedial objectives and an order of magnitude below the 200 mg/kg cadmium level. Therefore, the clean-up goals for the outfall pipeline were met.

5.10 Remediation of the Wastewater Treatment Plant Pipeline Spill

On July 20, 2000 Modern was performing repairs on the pipeline corridor which transfers wastewater from the manufacturing plant to the wastewater treatment plant (WWTP). In the course of the repair work, a containment seal on the pipeline failed resulting in the discharge of 500 to 800 gallons of chromate rinse water, all of which was contained in the excavation for the pipeline repair. The released wastewater was immediately pumped directly to the Modern WWTP and approximately 3 cy of soil which had come in contact with the chromate rinse water was excavated, hauled, and temporarily stored in Lagoon No. 1. On the same day, Modern reported the incident to the Illinois Environmental Protection Agency Emergency Response Unit which assigned an incident number of 20001377 to the spill. In a letter dated August 18, 2000, Modern replied to comments made by IEPA concerning the incident and provided justification for disposal of the chromate rinse water contaminated soils in the CAMU landfill. In a letter dated September 19, 2000, IEPA approved the disposal of approximately 3 cy of chromate rinse water contaminated soil in the CAMU landfill. The disposal of these contaminated soils was accomplished in conjunction with the remediation of Lagoon No. 1 as described in Section 5.6 of this report.

5.11 Summary of Remediation Activities

5.11.1 Permit Requirements

Modern met the permit requirements regarding clean-up objectives for the lagoons, Shawnee building, wetland soils, and cyanide vault. Specifically, for the lagoons and cyanide vault, the permit required overexcavation of the base and sidewalls of the lagoons. For the Shawnee building and wetland soils, Modern achieved remediation to a cadmium level of 200 mg/kg or less. The specific areas which were remediated are illustrated on Drawing No. 2, along with the additional areas which were excavated horizontally or vertically beyond the RCRA Part B permit requirements. Modern conducted remedial activities beyond the RCRA permit at the following locations:

- The sludge in Lagoon No. 3 was treated with LKD to stabilize the sludge for disposal in the CAMU landfill.

- The sludges in Lagoon No. 1 (which included some Lagoon No. 3 sludges) were stabilized with LKD prior to disposal in the CAMU landfill.

- The excavation of Lagoons No. 0, 1A and 2 were extended beyond 1 ft below the top of clay liner grade (as required by the permit) in an effort to remove additional contaminated soil materials.

- Excavation of larger than proposed areas for Lagoons 0 and 1A as shown on Drawing No. 2.

- Excavation of approximately 65 cy of contaminated soils from the abandoned outfall pipeline area southeast of the WWTP as shown on Drawing No. 2.

- Excavation of additional contaminated soils from the area south of Wetland No. 1 which is identified on Drawing No. 2 as Wetland No. 1A.

The above list of remediation activities completed by Modern were beyond what was proposed in the RCRA Part B application and required in the RCRA Part B permit.

Table 5-1

Summary of Soil Test Results (Remediated Units)
Modern Plating Corp.
CAMU Landfill Construction

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
Lagoon Chemical Analysis (Sludge) [1]							
Mean	7.9	10,217	150	8,150	52,167	332	15,100
Standard Deviation	3.8	6,068	80	5,299	36,493	333	9607
Maximum	11	20,000	250	16,000	107,000	938	32,000
Minimum	2.7	3,800	83	3,500	14,000	9	6,700
Lagoon No. 1							
LG1-1 (1' BCL/IBS)	<12	<0.60	11	11	63	<0.30	19
LG1-2 (1' BCL/B)	<14	29	79	503	3,400	147	1,350
LG1-3 (1' BCL/B)	<12	5.0	9.6	14	72	2.32	23
LG1-4 (1' BCL/B)	<14	6.8	16	41	110	4.6	53
LG1-5 (1' BCL/IBS)	<14	40	41	31	313	15.5	100
LG1-6 (1' BCL/B)	<14	<0.70	21	28	140	<0.35	45
LG1-7 (1' BCL/B)	<14	<0.71	23	62	142	<0.36	38
LG1-8 (1' BCL/IBS)	<14	1.1	50	28	227	<0.35	47

Table 5-1 *(Continued)*

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
Lagoon No.2							
LG2-9 (1' BCL/IBS)	<11	294	16	193	906	0.86	----
LG2-6 (1' BCL/B)	51	10,600	110	13,100	75,800	646	----
LG2-5 (1' BCL/B)	62	12,500	430	21,900	106,000	3,710	----
LG2-8 (1' BCL/B)	<45	14,400	120	18,000	81,100	896	----
LG2-7 (1' BCL/B)	<51	14,100	140	18,700	80,800	1,300	----
LG2-4 (1' BCL/IBS)	<10	14	163	30	95	1.17	----
LG2-10 (1' BCL/IBS)	<14	1,170	45	1,010	10,700	86	----
LG2-3 (1' BCL/B)	<59	11,200	140	13,400	88,800	1,700	----
LG2-2 (1' BCL/B)	<67	12,800	210	18,100	114,000	3,000	----
LG2-1 (1' BCL/IBS)	<13	21	25	155	181	1.64	----
LG2-11 (2' BCL/B)	<67	10,000	310	12,700	153,000	2,830	----
LG2-12 (4' BCL/B)	<13	1.8	16	18	110	0.74	----
LG2-13 (2' BCL/B)	<54	9,190	160	11,400	7,570	2,100	----
LG2- 14 (4' BCL/B)	<14	2.1	16	25	100	<0.34	----
LG2-15 (2' BCL/B)	75	14,300	460	17,700	109,000	4,280	----
LG2-16 (4' BCL/B)	<13	9.8	14	33	170	<0.33	----
LG2-17 (2' BCL/B)	<43	9,440	180	13,300	68,700	841	----
LG2-18 (4' BCL/B)	<13	6.6	9.6	27	130	0.52	----

Table 5-1 *(Continued)*

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
Lagoon No. 3							
LG3-1 (1' BCL/B)	9.6	3.9	13	79	62	<0.32	31
LG3-2 (1' BCL/B)	4.1	<1.2	12	13	38	0.63	17
LG3-3 (1' BCL/B)	6.8	8.2	15	23	95	0.33	30
LG3-4 (1' BCL/B)	5.9	141	25	97	552	2.2	142
LG3-5 (1' BCL/B)	8.8	8.1	15	25	90	11	35
LG3-6 (1' BCL/B)	<12	16	12	32	100	20	29
LG3-7 (1' BCL/IBS)	6.3	782	33	454	2,640	64	757
LG3-8 (1' BCL/IBS)	6.3	152	14	197	554	1.9	100
LG3-9 (1' BCL/IBS)	6.6	155	15	195	942	1.7	50
LG3-10 (1' BCL/IBS)	<1.2	39	10	47	230	19	68
Shawnee Building							
SHAW-1 (NE~3' B/T/O/S)	----	<0.63	----	----	----	----	----
SHAW-2 (SE~3' B/T/O/S)	----	<0.63	----	----	----	----	----
SHAW-3 (SW~3' B/T/O/S)	----	<0.64	----	----	----	----	----
SHAW-4 (NW~3' B/T/O/S)	----	0.64	----	----	----	----	----
Lagoon No. O							
LGO-1 (1' BCL/B)	<13	0.81	17	77	95	11	320
LGO-2 (1' BCL/B)	<14	49	23	432	5,470	11	68
LGO-3 (1' BCL/IBS)	<12	2.0	37	23	172	38	50

Table 5-1 *(Continued)*

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
LGO-4 (1' BCL/IBS)	<13	44	120	436	2,250	225	198
LGO-5 (1' BCL/B)	<14	285	19	2,140	5,980	1.9	2,710
LGO-6 (1' BCL/IBS)	<13	48	11	189	1,010	0.68	31
Lagoon No. 1A							
LG1A-1 (1' BCL/IBS)	<12	4.4	52	44	226	1.5	32
LG1A-2 (1' BCL/B)	<12	4.2	69	16	187	0.85	20
LG1A-3 (1' BCL/B)	<13	2.5	84	65	164	1.4	120
LG1A-4 (1' BCL/IBS)	<10	1.0	14	17	58	0.61	20
LG1A-5 (1' BCL/B)	<11	27	261	42	414	33	90
LG1A-6 (1' BCL/B)	<12	85	37	110	696	26	171
LG1A-7 (1' BCL/B)	<13	253	240	773	2,400	88	813
LG1A-8 (1' BCL/IBS)	<12	210	61	284	1,610	93	433
Wetland No. 1							
MP-1-6-2.5	----	0.73	----	----	----	----	----
MP-1-10-2.5	----	2.7	----	----	----	----	----
MP-1-13-2.5	----	56	----	----	----	----	----
Wetland No. 1A							
WT1A-1 (2' ditch)	----	7.4	----	----	----	----	----
WT1A-2 (2' bottom)	----	36	----	----	----	----	----

Table 5-1 *(Continued)*

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
Cyanide Vault							
CV-1 (west sideslope~14')	<11	5.1	50	34	182	18	43
CV-2 (north bottom~14')	<11	5.0	27	31	100	19	51
CV-3 (east sideslope~14')	<11	1.2	19	22	61	0.39	34
CV-4 (south bottom~14')	<47	3.2	248	696	1,530	0.35	58
Wetland No. 2							
WT2-1 (2' west center)	----	4.1	----	----	----	----	----
WT2-2 (2' east center)	----	2.6	----	----	----	----	----
WT2-3 (2' west boundary)	----	3.1	----	----	----	----	----
WT2-4 (2' north boundary)	----	14	----	----	----	----	----
WT2-5 (2' east boundary)	----	3,860	----	----	----	----	----
*WT2-8 (2' southeast boundary)	----	1.3	----	----	----	----	----
WT2-6 (2' south boundary)	----	120	----	----	----	----	----
WT2-7 (2' south boundary)	----	59	----	----	----	----	----
Wetland No. 3							
WT3-1 (2' north boundary)	----	1.4	----	----	----	----	----
WT3-2 (2' north center)	----	0.87	----	----	----	----	----
WT3-3 (2' northwest boundary)	----	1.8	----	----	----	----	----
WT3-4 (2' center)	----	4.3	----	----	----	----	----
WT3-5 (2' northeast boundary)	----	4.7	----	----	----	----	----

Table 5-1 *(Continued)*

Excavation Confirmatory Sampling Data/Depth/Location [2]	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)	Chromium (mg/kg)
WT3-6 (2' southeast boundary)	----	2.0	----	----	----	----	----
WT3-7 (2' southwest boundary)	----	130	----	----	----	----	----
WT3-8 (2' south center)	----	28	----	----	----	----	----
Outfall Pipeline							
OUTFALL-1 (10' north)	<12	44	11	16	303	182	18
OUTFALL-2 (9' center)	<12	12	6.0	28	85	53	10
OUTFALL-3 (9' south)	<12	<0.62	14	26	359	173	15

Prepared By: REM
Checked By: CAC1

[1] Source: FVD, 1999. *RCRA Part B Permit Application - Modern Plating Corporation.*

[2] Locations
- IBS - Interior Berm Slope
- B - Bottom
- BCL - Below Clay Liner
- B/T/O/S - Below top of slab

* Re-sample of WT2-5 area, following additional excavation.

--- Parameter not tested for.

6 Subbase Preparation (Phases 1 and 2)

6.1 General

As part of remediation activities, Lagoons No. 2 and 3 were converted into Phases 1 and 2, respectively, of the CAMU landfill. This section describes the construction activities including the quality assurance (QA) and quality control (QC) completed on Phases 1 and 2 of the CAMU landfill. The construction is described in the sequence it was completed for Phase 1 or 2 i.e., from the initial construction of the subgrade to the construction of the leachate collection system. The liner and other elements of both Phase 1 and 2 are described together as if the Phase 1 and 2 liners, etc. were constructed simultaneously. This was not the case since Phase 1 was constructed then filled with waste followed by the construction and filling of Phase 2.

6.2 Subbase Preparation

The subbase for Phases 1 and 2 of the CAMU landfill were constructed with fine-grained soils. Table 6-1 contains a summary of the soil laboratory testing completed on the subbase soil which includes classification tests and standard proctors. Appendix C contains the laboratory reports. Two sources of off-site fill material were used. The samples in Table 6-1 labeled MPC-WWTF-1, etc. are sand soils excavated from the WWTP construction project taking place at the city of Freeport WWTP site. The samples labeled MPC-CIVIL-1, etc. soils are from the Civil Constructors quarry. The soils from the Civil Constructors quarry generally are classified using the unified soil classification (USCS) as CL, CL-ML, ML or SM, having USCS group names ranging from silty clays to silty sand. The soils from the City of Freeport WWTP excavation are generally silty sands with USCS classifications of SM or SP. The Foth & Van Dyke project representative inspector used the maximum dry density test results listed in Table 6-1 that were appropriate for each soil classification.

To prepare the Lagoon No. 2 and 3 excavations for the construction of the subbase, a 2-foot thick bridging layer was required for both Phase 1 and Phase 2 due to wet site conditions resulting from unseasonal rainfall during the construction. The groundwater table at the site was elevated due to several heavy rain events during the summer which caused groundwater infiltration into both the Phase 1 and Phase 2 excavations. This infiltration made it impossible to achieve the specified compaction and moisture values for the initial 1-foot thick lift for each phase. It was decided in the field to install the bridging layer to provide a dry and stable base on which to construct the subbase.

The bridging layer was installed using off-site soils placed in a 2-foot lift using a bulldozer. The top of the bridging layer was compacted to a 95% standard proctor value at +/- 2% of optimum moisture content using a Dynapac CA15 sheepsfoot compactor and proof rolled using a Dynapac CA15 drum roller.

Table 6-1

Summary of Testing on Subbase Soils
Modern Plating Corp.
CAMU Landfill Construction

Sample No.	USCS Soil Classification (ASTM D2488)	USCS Soil Group Name (ASTM D2488)	Standard Proctor (ASTM D698)
MPC-CIVIL-1	ML	Sandy Silt with Gravel	128.4 pcf @ 9.5%
MPC-CIVIL-2	CL-ML	Silty Clay with Sand	109.0 pcf @ 16.9%
MPC-CIVIL-1-A	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-1-B	ML	Sandy Silt with Gravel	n/a
MPC-CIVIL-1-C	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-1-D	ML	Sandy Silt with Gravel	n/a
MPC-CIVIL-1-E	SM	Silty Sand with Gravel	n/a
MPC-CIVIL-1-F	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-1-H	ML	Sandy Silt with Gravel	n/a
MPC-CIVIL-1-I	ML	Sandy Silt with Gravel	n/a
MPC-WWTF-1	SM	Silty Sand	120.0 pcf @ 11.0%
MPC-WWTF-2	SP	Sand with trace Silt	114.7 pcf @ 9.3%
MPC-WWTF-1-A	SM	Silty Sand	n/a
MPC-WWTF-1-B	SM	Silty Sand with Gravel	n/a
MPC-WWTF-1-C	SM	Silty Sand with Gravel	n/a
MPC-WWTF-1-D	SP-SM	Sand with Silt	n/a
MPC-CIVIL-3	CL	Silty Clay with Gravel	112.2 pcf @ 16.2%
MPC-CIVIL-3-A	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-3-B	SC	Clayey Sand with Gravel	n/a
MPC-CIVIL-3-C	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-3-D	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-3-E	CL	Sandy Clay with Gravel	n/a

Table 6-1 *(Continued)*

Sample No.	USCS Soil Classification (ASTM D2488)	USCS Soil Group Name (ASTM D2488)	Standard Proctor (ASTM D698)
MPC-CIVIL-3-F	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-3-G	CL	Sandy Clay with Gravel	n/a
MPC-CIVIL-3-H	CL	Sandy Lean Clay	n/a

Prepared By: BJS1
Checked By: MJP

The subbase was installed and tested in 1-foot thick lifts using a Troxler Model 3440 moisture/ density gauge. The compacted subbase soils placed in Phase 1 of the CAMU ranged from approximately 3 ft thick at the sump area to approximately 7 feet thick at the northwest end of the phase. The subbase thickness of Phase 2 ranged from 5 ft at the sump to 10 ft at the northeast end of the phase.

The bottom elevation for the Phase 1 sump was raised from 753.5 ft to 754.5 ft prior to the liner installation because of high groundwater conditions which resulted from the unusually wet whether which occurred during construction. The area of the sump was increased by moving the slope intercept approximately 7 feet to the northwest to maintain the original design volume. This modification was discussed with IEPA and verbally approved prior to implementation.

The top layer of the subbase was proof rolled using a Dynapac CA15 drum roller to remove ruts larger than 1 in. All stones and other protruding objects larger than ¼-in were removed by hand or using a mechanical lawn rake mounted on a Bobcat.

6.3 Subbase Soils - Quality Assurance Testing

Samples of the subbase soils were collected from off-site stockpiles prior to their use as subbase materials. Samples from the stockpile were analyzed for grain size (ASTM D422), USCS Soil Classification (ASTM D2487), and Standard Proctor (ASTM D698) by Giles Engineering Services, Inc. of Madison, Wisconsin. Results of the laboratory analyses are summarized in Table 6-1. The laboratory reports are included in Appendix C2.

Moisture and density tests were performed at a depth of 6- and 12-in on a 50-ft grid pattern using a Troxler Model 3440 nuclear density gauge in accordance with ASTM D3017 and ASTM D2922, respectively. Moisture/density tests for Phases 1 and 2 are summarized in Table 6-2. Test locations are shown on Drawing No. 3. All density test values exceeded the 95% of maximum dry density and moisture contents in general were above or slightly below the optimum moisture content.

6.4 Record Elevations

The record elevations for the top of subbase grades for Phases 1 and 2 were surveyed by a Foth & Van Dyke Registered Land Surveyor (RLS) prior to the installation of liner materials. The subbase record elevations for Phases 1 and 2 are shown on Drawing No. 3. The GCL was placed directly on these grades as described in the section which follows.

Table 6-2

Summary of Density/Moisture Tests of Subbase Soils - Phases 1 & 2
Modern Plating Corp.
CAMU Landfill Construction

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
Phase 1									
1	N102+75, E105+70	755	6"	137.3	10.1	9.5	128.4	124.7	97.1
2	N102+75, E105+70	755	12"	137.7	9.9	9.5	128.4	125.3	97.6
3	N103+25, E105+70	755	6"	137.0	11.6	9.5	128.4	122.8	95.6
4	N013+25, E105+70	755	12"	142.6	11.6	9.5	128.4	127.7	99.5
5	N102+40, E105+70	755	6"	136.7	11.3	9.5	128.4	122.8	95.6
6	N102+40, E105+70	755	12"	136.4	11.3	9.5	128.4	122.6	95.5
7	N103+25, E106+00	755	6"	136.1	10.4	9.5	128.4	123.3	96.0
8	N103+25, E106+00	755	12"	137.8	11.1	9.5	128.4	124.0	96.6
9	N102+75, E106+00	755	6"	136.2	11.3	9.5	128.4	122.3	95.3
10	N102+75, E106+00	755	12"	137.4	11.6	9.5	128.4	123.0	95.8
11	N102+40, E106+00	755	6"	138.6	10.5	9.5	128.4	125.4	97.7
12	N102+40, E106+00	755	12"	138.9	10.8	9.5	128.4	125.4	97.7
13	N103+25, E106+50	755	6"	140.9	11.0	9.5	128.4	126.9	98.8

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
14	N103+25, E106+50	755	12"	141.2	10.7	9.5	128.4	127.6	99.4
15	N102+75, E106+00	755	12"	137.6	12.6	9.5	128.4	122.3	95.2
16	N102+75, E106+00	755	6"	137.6	10.3	9.5	128.4	124.7	97.1
17	N102+75, E106+70	755	6"	143.0	10.2	9.5	128.4	129.7	101.1
18	N102+75, E106+70	755	12"	140.3	10.2	9.5	128.4	127.3	99.2
19	N103+00, E106+80	755	6"	143.5	8.3	9.5	128.4	132.4	103.1
20	N103+00, E106+80	755	12"	145.3	8.3	9.5	128.4	134.2	104.5
21	N103+25, E106+80	755	6"	139.0	10.6	9.5	128.4	125.7	97.9
22	N103+25, N106+80	755	12"	139.3	10.0	9.5	128.4	126.6	98.6
23	N103+10, E105+80	756	6"	139.9	11.5	9.5	128.4	125.5	97.7
24	N102+60, E105+80	756	6"	135.2	10.7	9.5	128.4	122.1	95.1
25	N102+60, E106+25	756	6"	136.0	11.2	9.5	128.4	122.3	95.3
26	N103+10, E106+25	756	6"	139.2	9.7	9.5	128.4	126.9	98.8
27	N103+10, E106+65	756	6"	135.5	11.1	9.5	128.4	121.9	95.0
28	N102+60, E106+65	756	6"	136.9	11.5	9.5	128.4	122.8	95.7
29	N103+25, E106+00	757	6"	138.4	11.2	9.5	128.4	124.5	97.0
30	N102+75, E106+00	757	6"	140.2	11.2	9.5	128.4	126.1	98.2

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
31	N102+40, E106+50	757	6"	139.0	10.3	9.5	128.4	125.9	98.1
32	N102+75, E106+50	757	6"	139.3	10.4	9.5	128.4	126.2	98.3
33	N103+25, E106+50	757	6"	139.7	11.1	9.5	128.4	125.8	97.9
34	N103+45, E105+65	758	6"	140.7	10.0	9.5	128.4	127.9	99.6
35	N103+45, E106+05	758	6"	141.8	11.2	9.5	128.4	127.5	99.3
36	N103+45,107+00	758	6"	137.5	10.6	9.5	128.4	124.9	96.9
37	N102+90, E105+15	758	6"	141.7	10.6	9.5	128.4	128.1	99.8
38	N103+35, E105+15	758	6"	136.2	10.6	9.5	128.4	123.1	95.9
39	N103+25, E105+40	758	6"	137.8	10.2	9.5	128.4	125.0	97.3
40	N103+00, E107+00	758	6"	136.8	11.5	9.5	128.4	122.7	95.5
41	N102+65, E107+00	758	6"	136.0	11.5	9.5	128.4	122.0	95.0
42	N103+40, E106+50	759	6"	137.5	10.6	9.5	128.4	124.9	96.9
43	N103+40, E105+75	759	6"	139.3	10.8	9.5	128.4	125.7	97.9
44	N103+00, E105+50	759	6"	137.1	10.3	9.5	128.4	124.2	96.8
45	N102+75, E106+90	759	6"	136.6	11.2	9.5	128.4	122.8	95.7
46	N103+20, E106+90	759	6"	138.0	11.5	9.5	128.4	123.8	96.4
47	N103+25, E105+10	759	6"	138.9	11.5	9.5	128.4	124.6	97.0

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
48	N103+50, E105+35	760	6"	137.5	11.1	9.5	128.4	123.8	96.4
49	N103+50, E106+00	760	6"	135.8	11.1	9.5	128.4	122.2	95.2
50	N103+50, E106+80	760	6"	137.4	11.0	9.5	128.4	123.8	96.4
51	N103+50, E105+60	761	6"	136.0	11.3	9.5	128.4	122.2	95.2
52	N103+50, E106+10	761	6"	135.3	10.8	9.5	128.4	122.1	95.1
53	N103+30, E105+30	760	6"	138.2	10.8	9.5	128.4	124.7	97.2
54	N103+00, E105+00	760	6"	140.0	8.5	9.5	128.4	129.0	100.5
55	N102+75, E105+25	760	6"	135.3	10.1	9.5	128.4	122.9	95.7
56	N102+65, E104+40	760	6"	136.3	10.2	9.5	128.4	123.7	96.3
57	N102+30, E106+15	760	6"	135.4	8.8	9.5	128.4	124.4	96.9
58	N102+30, E106+50	760	6"	136.5	10.0	9.5	128.4	124.1	96.6
59	N103+50, E106+90	761	6"	130.2	10.8	11.0	120.0	117.5	97.9
60	N103+10, E107+00	760	6"	126.8	9.6	11.0	120.0	115.7	96.4
61	N102+75, E107+00	760	6"	124.9	9.5	11.0	120.0	114.2	95.1
62	N102+90, E105+00	761	6"	128.6	10.7	11.0	120.0	116.2	96.9
63	N103+40, E105+15	761	6"	127.0	11.2	11.0	120.0	114.2	95.2
64	N103+00, E105+10	762	6"	118.9	8.2	10.0	115.0	109.9	95.6

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
65	N103+50, E105+30	762	6"	124.4	8.3	10.0	115.0	114.9	99.9
66	N103+50, E105+70	762	6"	120.7	8.0	10.0	115.0	111.8	97.2
67	N103+60, E106+25	762	6"	120.5	8.2	10.0	115.0	111.4	96.9
68	N103+50, E106+95	762	6"	125.2	10.8	10.0	115.0	113.0	98.3
69	N103+25, E106+95	761	6"	133.0	9.0	10.0	115.0	122.0	106.1
70	N102+90, E106+95	761	6"	122.1	9.6	10.0	115.0	111.4	96.9
71	N102+50, E106+95	761	6"	128.2	9.3	10.0	115.0	117.3	102.0
72	N103+70, E105+50	763	6"	124.0	9.5	10.0	115.0	113.3	98.5
73	N103+70, E106+00	763	6"	120.2	8.0	10.0	115.0	111.3	96.8
74	N103+70, E107+15	763	6"	122.3	8.0	10.0	115.0	113.3	98.5
75	N103+25, E107+00	762	6"	127.5	8.2	10.0	115.0	117.8	102.5
76	N102+75, E107+00	762	6"	126.4	8.1	10.0	115.0	116.9	101.6
77	N103+35, E105+15	763	6"	121.0	10.6	10.0	115.0	109.5	95.2
78	N102+85, E105+10	763	6"	119.6	8.7	10.0	115.0	110.0	95.7
79	N102+50, E107+00	763	6"	127.1	8.8	10.0	115.0	116.8	101.6
80	N103+00, E107+00	763	6"	126.1	8.9	10.0	115.0	115.7	100.6
81	N103+50, E105+75	764	6"	125.4	9.1	10.0	115.0	115.0	100.0

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
82	N103+50, E106+25	764	6"	122.3	9.5	10.0	115.0	111.7	97.2
83	N103+50, E106+70	764	6"	127.6	11.5	10.0	115.0	114.4	99.5
84	N102+75, E105+60	762	6"	120.3	8.4	10.0	115.0	111.0	96.5
85	N102+80, E105+40	764	6"	121.5	9.9	10.0	115.0	110.6	96.2
86	N103+00, E105+00	764	6"	125.3	10.2	10.0	115.0	113.7	98.9
87	N103+40, E105+00	764	6"	125.5	10.5	10.0	115.0	113.5	98.7
88	N103+55, E105+60	765	6"	119.6	8.0	10.0	115.0	110.7	96.3
89	N103+55, E106+10	765	6"	123.5	8.6	10.0	115.0	113.7	98.9
90	N103+55, E106+60	765	6"	119.3	8.4	10.0	115.0	110.1	95.7
91	N102+50, E107+00	765	6"	123.9	9.2	10.0	115.0	113.5	98.7
92	N103+00, E107+00	765	6"	123.1	8.9	10.0	115.0	113.0	98.2
93	N102+70, E105+45	765	6"	118.6	8.3	10.0	115.0	109.5	95.2
94	N102+80, E105+00	765	6"	123.6	8.5	10.0	115.0	113.9	99.0
95	N103+35, E105+15	765	6"	118.2	8.0	10.0	115.0	109.4	95.1
96	N103+45, E107+00	765	6"	120.6	8.1	10.0	115.0	111.6	97.0
97	N103+00, E107+00	765	6"	121.5	8.2	10.0	115.0	112.3	97.7
98	N102+50, E107+00	765	6"	118.2	8.2	10.0	115.0	109.2	95.0

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
99	N103+55, E106+85	766	6"	121.2	9.7	10.0	115.0	110.5	96.1
100	N103+55, E106+00	766	6"	122.9	8.8	10.0	115.0	112.9	98.2
101	N102+30, E105+55	766	6"	119.3	8.9	10.0	115.0	109.5	95.2
102	N102+80, E105+40	766	6"	125.1	8.6	10.0	115.0	115.2	100.2
103	N103+10, E105+00	766	6"	121.4	8.1	10.0	115.0	112.3	97.7
104	N103+55, E105+10	766	6"	128.3	8.2	10.0	115.0	118.6	103.1
105	N102+75, E105+00	766	6"	126.5	8.4	10.0	115.0	116.7	101.5
106	N102+65, E105+50	766	6"	128.4	8.6	10.0	115.0	118.2	102.8
107	N103+50, E105+30	766	6"	118.9	8.4	10.0	115.0	109.7	95.4
108	N103+25, E107+10	766	6"	118.5	8.2	10.0	115.0	110.5	96.1
109	N102+75, E107+10	766	6"	120.3	8.2	10.0	115.0	111.1	96.6
110	N103+15, E106+50	758	6"	123.1	8.3	10.0	115.0	113.7	98.8
111	N103+15, E106+00	759	6"	124.7	8.8	10.0	115.0	114.7	99.7
112	N103+15, E105+50	759	6"	118.4	8.3	10.0	115.0	109.3	95.1
113	N102+30, E106+00	762	6"	119.9	8.9	10.0	115.0	110.1	95.7
114	N102+80, E106+50	762	6"	122.7	10.1	10.0	115.0	111.4	96.9
115	N102+65, E106+00	758	6"	129.9	10.8	10.0	115.0	117.3	102.0

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
116	N102+65, E106+45	758	6"	129.1	11.1	10.0	115.0	116.2	101.0
Phase 2									
117	N102+50, E108+00	751	6"	131.0	14.6	16.0	111.0	114.3	103.0
118	N102+50, E108+00	751	12"	129.4	17.0	16.0	111.0	110.6	99.6
119	N103+00, E108+00	751	6"	132.2	15.1	16.0	111.0	114.8	103.4
120	N103+00, E108+00	751	12"	128.3	17.6	16.0	111.0	109.1	98.3
121	N103+00, E107+50	751	6"	131.1	15.2	16.0	111.0	113.8	102.5
122	N103+00, E107+50	751	12"	125.4	15.8	16.0	111.0	108.3	97.6
123	N102+50, E107+50	751	6"	132.9	15.5	16.0	111.0	115.1	103.7
124	N102+50, E107+50	751	12"	125.0	16.2	16.0	111.0	107.6	96.9
125	N102+75, E108+20	752	6"	136.1	15.2	16.2	112.2	118.1	105.3
126	N103+25, E107+75	752	6"	134.8	15.0	16.2	112.2	117.2	104.5
127	N102+75, E107+40	752	6"	126.6	15.2	16.2	112.2	109.9	98.0
128	N102+75, E107+75	752	6"	135.8	14.9	16.2	112.2	118.2	105.4
129	N102+65, E108+00	753	6"	132.1	14.3	16.2	112.2	115.6	103.1
130	N103+15, E108+00	753	6"	134.1	14.3	16.2	112.2	117.3	104.6
131	N102+65, E107+50	753	6"	135.3	14.5	16.2	112.2	118.2	105.3

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
132	N103+15, E107+50	753	6"	136.3	14.5	16.2	112.2	119.0	106.1
133	N102+75, E108+20	754	6"	136.3	10.9	9.5	128.4	122.9	95.7
134	N103+35, E107+75	754	6"	140.3	10.5	9.5	128.4	127.0	98.9
135	N102+75, E107+35	754	6"	137.0	11.5	9.5	128.4	122.9	95.7
136	N102+50, E107+75	754	6"	135.8	11.3	9.5	128.4	122.0	95.0
137	N103+25, E108+30	757	6"	134.5	14.6	16.2	112.2	117.4	104.7
138	N103+75, E108+30	757	6"	136.5	11.0	9.5	128.4	123.0	95.8
139	N103+40, E107+75	757	6"	137.7	11.2	9.5	128.4	123.8	96.4
140	N103+00, E107+50	755	6"	137.8	11.5	9.5	128.4	123.6	96.3
141	N102+50, E107+50	755	6"	136.6	11.6	9.5	128.4	122.4	95.3
142	N102+50, E108+00	755	6"	137.1	11.2	9.5	128.4	123.3	96.0
143	N103+00, E108+00	755	6"	135.9	11.2	9.5	128.4	122.2	95.2
144	N102+00, E107+40	758	6"	137.9	14.5	16.2	112.2	120.4	107.4
145	N102+50, E108+30	758	6"	135.3	14.6	16.2	112.2	118.1	105.3
146	N103+00, E108+00	758	6"	133.5	14.7	16.2	112.2	116.4	103.7
147	N103+45, E108+00	758	6"	139.5	10.8	9.5	128.4	125.9	98.1
148	N103+45, E107+50	758	6"	139.8	11.5	9.5	128.4	125.4	97.7

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
149	N102+25, E108+30	759	6"	136.9	11.5	9.5	128.4	122.8	95.6
150	N102+75, E108+30	759	6"	136.3	11.7	9.5	128.4	122.0	95.0
151	N103+25, E108+30	759	6"	136.4	11.6	9.5	128.4	122.2	95.2
152	N102+65, E107+75	756	6"	137.4	11.7	9.5	128.4	123.0	95.8
153	N103+00, E108+20	756	6"	133.5	14.2	16.2	112.2	116.9	104.2
154	N103+30, E107+75	756	6"	134.7	14.2	16.2	112.2	117.9	105.1
155	N103+00, E107+35	756	6"	135.8	14.9	16.2	112.2	118.3	105.4
156	N103+40, E107+50	759	6"	134.9	14.9	16.2	112.2	117.4	104.6
157	N103+40, E108+00	759	6"	135.1	14.9	16.2	112.2	117.6	104.8
158	N102+75, E108+30	761	6"	136.0	14.2	16.2	112.2	119.1	106.1
159	N103+25, E108+30	761	6"	134.8	14.3	16.2	112.2	117.9	105.1
160	N103+40, E107+80	760	6"	132.6	15.3	16.2	112.2	115.0	102.3
161	N103+40, E107+35	760	6"	136.1	14.2	16.2	112.2	119.2	106.2
162	N102+00, E107+45	759	6"	135.9	14.5	16.2	112.2	118.7	105.8
163	N103+15, E107+85	757	6"	133.9	14.5	16.2	112.2	116.9	104.2
164	N102+50, E108+30	761	6"	138.3	14.7	16.2	112.2	120.6	107.4
165	N103+00, E108+30	761	6"	138.8	14.8	16.2	112.2	120.9	107.7

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
166	N103+40, E108+00	761	6"	133.9	14.5	16.2	112.2	116.9	104.2
167	N103+40, E107+50	761	6"	134.7	14.3	16.2	112.2	117.9	105.0
168	N102+50, E107+50	758	6"	137.3	14.8	16.2	112.2	119.6	106.6
169	N103+00, E107+50	758	6"	138.4	14.2	16.2	112.2	121.2	108.0
170	N103+00, E108+00	757	6"	134.5	14.3	16.2	112.2	117.7	104.9
171	N102+50, E108+00	757	6"	134.9	14.4	16.2	112.2	117.9	105.1
172	N103+40, E107+30	762	6"	128.6	17.8	16.2	112.2	109.2	97.4
173	N103+40, E107+80	762	6"	131.5	15.2	16.2	112.2	114.2	101.8
174	N103+15, E108+30	762	6"	127.6	18.1	16.2	112.2	108.0	96.3
175	N102+65, E108+30	762	6"	126.6	17.6	16.2	112.2	107.6	95.9
176	N102+15, E108+30	762	6"	126.2	17.6	16.2	112.2	107.3	95.6
177	N102+75, E108+30	763	6"	134.2	14.4	16.2	112.2	117.3	104.5
178	N103+25, E108+30	763	6"	136.3	11.5	9.5	128.4	122.2	95.2
179	N103+45, E108+00	763	6"	133.9	14.4	16.2	112.2	117.1	104.3
180	N103+45, E107+50	763	6"	130.7	16.2	16.2	112.2	112.5	100.3
181	N103+25, E107+50	759	6"	135.5	14.3	16.2	112.2	118.5	105.6
182	N103+25, E108+00	759	6"	134.4	14.2	16.2	112.2	117.7	104.9

Table 6-2 *(Continued)*

Test No.	Location	Approx. Elevation (ft)	Depth of Probe	Wet Density (pcf)	Moisture Content (%)	Optimum Moisture Content (%)	Max. Dry Density (pcf)	Dry Density (pcf)	Percent Compaction
183	N102+50, E108+30	764	6"	136.5	14.2	16.2	112.2	119.5	106.5
184	N103+00, E108+30	764	6"	133.8	15.4	16.2	112.2	115.9	103.3
185	N103+40, E107+80	764	6"	136.0	14.2	16.2	112.2	119.1	106.2
186	N103+40, E107+30	764	6"	135.4	14.3	16.2	112.2	118.5	105.6
187	N102+20, E108+45	765	6"	130.0	14.5	16.2	112.2	113.5	101.1
188	N102+70, E108+45	765	6"	130.4	14.6	16.2	112.2	113.8	101.4
189	N103+20, E108+45	765	6"	131.2	14.2	16.2	112.2	114.9	102.4
190	N103+55, E108+00	765	6"	132.9	14.4	16.2	112.2	116.1	103.5
191	N103+55, E107+50	765	6"	137.4	14.2	16.2	112.2	120.3	107.3
192	N102+25, E108+45	766	6"	137.2	11.2	9.5	128.4	123.4	96.1
193	N102+75, E108+45	766	6"	136.8	11.5	9.5	128.4	122.7	95.6
194	N103+25, E108+45	766	6"	136.7	14.2	16.2	112.2	119.7	106.7
195	N103+55, E108+00	766	6"	134.2	15.2	16.2	112.2	116.5	103.8
196	N103+55, E107+50	766	6"	137.6	14.3	16.2	112.2	120.4	107.3

Prepared By: BJS1
Checked By: MJP

7 GCL Construction (Phases 1 and 2)

7.1 General

The GCL for Phases 1 and 2 was installed by Midessa Industrial Vinyl Co. of Odessa, Texas (Midessa). The installation was documented by Foth & Van Dyke field personnel. Prior to the placement of the GCL panels for Phases 1 and 2, written acceptance of the subbase was obtained from the Midessa field supervisor. The GCL rolls installed were Bentomat manufactured by CETCO, Inc. of Arlington Heights, Illinois (CETCO). The manufacturer's QC data and product information are included in Appendix D1.

7.2 Panel Layout and Seaming

During the GCL panel placement, the length, panel location, and time of deployment were recorded on a Panel Placement Form. Copies of these forms are included in Appendix D3. Panel installation was observed to assure that the proper side of the GCL panels faced upward, the GCL rolls were handled properly, wrinkles larger than 1-in high and 6-in long were removed, and that there were no visible defects in the GCL rolls. Panel thicknesses were measured in the field using a micrometer at 5 locations per GCL roll. A field drawing was maintained showing the panel locations and numbers. A CADD version of this drawing is included as Drawing No. 4 of the record drawing set. GCL seams were installed with a minimum 8-in overlap between panels. Bentonite was placed between each panel overlap at a minimum rate of ¼ -pound per lineal foot of seam. Immediately after deployment, the GCL was covered by the secondary geomembrane to provide protection from moisture.

An additional layer of GCL panels was placed in the Phase 1 sump area to add an additional protective layer due to the potential for hydration of the GCL from moisture encountered in the sump area during the construction of the subbase.

7.3 GCL Material Property Testing

Conformance samples were collected prior to the GCL installation for Phases 1 and 2 and submitted to Precision Geosynthetic Laboratories, Inc. of Anaheim, California (Precision) for analysis of Free Swell (ASTM D5890), Fluid Loss (ASTM D5891), Bentonite Mass Per Unit Area (ASTM D5993), Tensile Strength (ASTM D4632), Index Flux (ASTM D5887), Internal Shear Strength (ASTM D3080), Moisture Content (ASTM D4643), Permeability (ASTM D5084-90), Peel Strength (ASTM D4632), and Thickness (ASTM D D1777). An additional 1-ft by 1-ft sample was collected from each GCL roll during installation activities and submitted to Precision for Bentonite Mass Per Unit Area and Thickness analyses. Results of the GCL laboratory testing are summarized in Table 7-1. Laboratory data is included in Appendix D2.

All GCL material property conformance tests met the project specifications with the exception of moisture values in excess of 12%. The moisture content test result reflect the fact that the GCL rolls were stored outside before placement. It is not unreasonable to expect the moisture content

of the rolls to increase slightly during the time between shipment from the factory and installation. Foth & Van Dyke interpreted the specified moisture content to apply as the material left the factory. Midessa and Foth & Van Dyke received assurance from CETCO that the moisture values observed were well within normal standards and that the GCL could be installed.

Table 7-1

GCL Laboratory Conformance Testing Summary
Modern Plating Corp.
CAMU Landfill Construction

Sample No.	Free Swell (mL/2g)	Fluid Loss (mL)	Mass Per Unit Area (lbs/ft^2)	Tensile Strength (lbs) MD/TD	Index Flux (m^3/m^2/sec)	Internal Shear Strength (deg.)	Moisture Content (%)	Permeability (cm/sec)	Peel Strength (lbs) MD/TD	Thickness (in)
	>24	<18	>0.75	>70	<5.0 x 10^{-8}	>18	<12	<5.0 x 10^{-9}	>15	>0.25
Specification Requirements										
GCL-PH1-1	30.0	16.2	0.94	370/358	2.2 x 10^{-9}	31	15.7	3.9 x 10^{-9}	58/56	0.332
GCL-PH1-2	29.0	14.2	0.90	338/337	3.5 x 10^{-9}	26	15.1	3.6 x 10^{-9}	42/61	0.332
GCL-1	n/a	n/a	1.06	n/a	n/a	n/a	n/a	n/a	n/a	0.381
GCL-2	n/a	n/a	0.94	n/a	n/a	n/a	n/a	n/a	n/a	0.357
GCL-3	n/a	n/a	0.87	n/a	n/a	n/a	n/a	n/a	n/a	0.355
GCL-4	n/a	n/a	0.92	n/a	n/a	n/a	n/a	n/a	n/a	0.350
GCL-5	n/a	n/a	0.82	n/a	n/a	n/a	n/a	n/a	n/a	0.342
GCL-6	n/a	n/a	0.88	n/a	n/a	n/a	n/a	n/a	n/a	0.348
GCL-7	n/a	n/a	0.89	n/a	n/a	n/a	n/a	n/a	n/a	0.331
GCL-8	n/a	n/a	0.82	n/a	n/a	n/a	n/a	n/a	n/a	0.347
GCL-9	n/a	n/a	0.81	n/a	n/a	n/a	n/a	n/a	n/a	0.343

Table 7-1 *(Continued)*

Sample No.	Free Swell (mL/2g)	Fluid Loss (mL)	Mass Per Unit Area (lbs/ft^2)	Tensile Strength (lbs) MD/TD	Index Flux (m^3/m^2/sec)	Internal Shear Strength (deg.)	Moisture Content (%)	Permeability (cm/sec)	Peel Strength (lbs) MD/TD	Thickness (in)
GCL-10	n/a	n/a	1.01	n/a	n/a	n/a	n/a	n/a	n/a	0.355
GCL-11	n/a	n/a	0.94	n/a	n/a	n/a	n/a	n/a	n/a	0.351
GCL-12	n/a	n/a	0.94	n/a	n/a	n/a	n/a	n/a	n/a	0.339
GCL-13	n/a	n/a	0.90	n/a	n/a	n/a	n/a	n/a	n/a	0.359
GCL-14	n/a	n/a	0.93	n/a	n/a	n/a	n/a	n/a	n/a	0.357
GCL-PH2-3	27.0	12.8	0.88	289/372	3.1×10^{-9}	27	16.5	1.8×10^{-9}	48/63	0.325
GCL-15	n/a	n/a	0.96	n/a	n/a	n/a	n/a	n/a	n/a	0.351
GCL-16	n/a	n/a	0.86	n/a	n/a	n/a	n/a	n/a	n/a	0.323
GCL-17	n/a	n/a	0.92	n/a	n/a	n/a	n/a	n/a	n/a	0.333
GCL-18	n/a	n/a	0.93	n/a	n/a	n/a	n/a	n/a	n/a	0.335
GCL-19	n/a	n/a	0.88	n/a	n/a	n/a	n/a	n/a	n/a	0.344
GCL-20	n/a	n/a	0.99	n/a	n/a	n/a	n/a	n/a	n/a	0.355
GCL-21	n/a	n/a	0.91	n/a	n/a	n/a	n/a	n/a	n/a	0.344
GCL-22	n/a	n/a	0.94	n/a	n/a	n/a	n/a	n/a	n/a	0.360
GCL-23	n/a	n/a	0.81	n/a	n/a	n/a	n/a	n/a	n/a	0.315
GCL-24	n/a	n/a	0.88	n/a	n/a	n/a	n/a	n/a	n/a	0.342

Table 7-1 *(Continued)*

Sample No.	Free Swell (mL/2g)	Fluid Loss (mL)	Mass Per Unit Area (lbs/ft^2)	Tensile Strength (lbs) MD/TD	Index Flux (m^3/m^2/sec)	Internal Shear Strength (deg.)	Moisture Content (%)	Permeability (cm/sec)	Peel Strength (lbs) MD/TD	Thickness (in)
GCL-25	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	0.335
GCL-26	n/a	n/a	0.90	n/a	n/a	n/a	n/a	n/a	n/a	0.339

Prepared by: BJS1
Checked by: MJP

8 Secondary Geomembrane Liner (Phases 1 and 2)

8.1 General

The secondary geomembrane installation was also performed by Midessa and documented by Foth & Van Dyke. Field reports written by the Foth & Van Dyke representative during the liner installation are included in Appendix G1. The material used in the installation of the secondary geomembrane was Solmax 460T, a 60-mil textured High Density Polyethylene (HDPE) geomembrane manufactured by Solmax International, Inc. (Solmax) of Varennes, Quebec, Canada. The geomembrane material information is included in Appendix E. The secondary geomembrane was installed over the GCL immediately after the GCL sampling and seaming was completed. The subgrade acceptance forms are included in Appendix G3.

8.2 Material Conformance Testing and Inspection

Prior to the installation of the secondary geomembrane on Phases 1 and 2, conformance samples were submitted to Precision for analyses of Thickness (ASTM D 5994), Asperity Height (GM12), Tensile Strength (ASTM D638), Tear Resistance (ASTM D1004), Puncture Resistance (ASTM D4833), Carbon Black Content (ASTM D1603), Carbon Black Dispersion (ASTM D5596), Melt Flow Index (ASTM D1238), and Resin Density (ASTM D1505). The results of the conformance tests met project specifications. Results of the tests are summarized in Table 8-1 and the laboratory data from Precision is included in Appendix F.

8.3 Preproduction Weld Testing

Prior to the seaming of the secondary geomembrane panels, trial welds were performed at the beginning of each seaming period and at least once every four hours for each seaming apparatus (fusion or extrusion welder) used that day. Each seamer made at least one trail seam each day. Four samples were cut from each of the trial welds and field tested for shear and peel.

Foth & Van Dyke observed the trial welding procedures and recorded the machine number, ambient temperature, machine speed, technician identification, date, time and field shear and peel test results on the trial weld test forms. The trial weld test forms are located in Appendix G2. When the trial welds met project specifications, the technician and machine were allowed to begin welding the geomembrane.

8.4 Geomembrane Panel Deployment and Seaming

The secondary geomembrane panels were deployed simultaneously with the GCL panels to protect the GCL panels from the elements. Foth & Van Dyke field personnel documented the secondary geomembrane panel installation including the observation of panel defects, tears, or other deformities, measuring panel thicknesses at a minimum of five locations per roll, measuring panel dimensions, and recording panel numbers and locations. Field forms recording the panel deployment are included in Appendix G4.

Panel seaming was performed by Midessa using a hot wedge welder to complete fusion welds on the panel seams. Documentation of the fusion welded seams including seam number, seaming crew identification, welder number, date and time of seam construction, and ambient temperature was performed by Foth & Van Dyke field personnel and recorded on field forms. The panel seaming summary forms are located in Appendix G5. The panel seam locations were recorded as part of the documentation survey performed by Foth & Van Dyke. Seam locations recorded during the documentation survey are shown on Drawing No. 5.

8.5 Non-Destructive Seam Testing

Non-destructive seam testing was performed on every fusion welded seam. The seams were field tested by air channel or vacuum box methods and documented by Foth & Van Dyke field personnel. Non-destructive seam testing forms are located in Appendix G6.

Air channel tests were performed by sealing both ends of the test seam, installing a manometer, and pumping the air channel to a minimum of 30 pounds per square inch (psi) using an air compressor. The maximum allowable loss in pressure for a seam was 4 psi in the five minute test. The intervals tested and test results were marked on each seam and recorded by the Foth & Van Dyke resident project representative or assistant. Any welds not meeting the air channel test requirements were marked for repair.

Vacuum box tests were performed on fusion welded seams. The vacuum box testing was performed by trimming excess sheet overlap on the seams, wetting the test area with a soap/water solution, placing the vacuum box over the test area, and applying a vacuum to the seam for a minimum of 15 seconds while observing the test area for the presence of soap bubbles. Soap bubbles indicated the presence of a leak in the seam. Test intervals were marked on seams. All leaks detected during vacuum box testing were marked for repair. Repair areas identified by air channel or vacuum box tests were repaired and then retested with the vacuum box. The record of vacuum box test results are provided in Appendix G6.

8.6 Destructive Seam Testing

Destructive seam tests were performed on the fusion welded seams at a minimum rate of one per 500 lineal feet of welded seam at locations determined by Foth & Van Dyke field personnel. Destructive test locations were recorded as part of the documentation survey performed by Foth & Van Dyke. Destructive seam test locations are shown on Drawing No. 5.

A destructive sample 12-in wide by 48-in long was cut by the installer and split into four 12-in by 12-in samples. The four samples were distributed as follows: one sample for field testing, one sample to be submitted to the testing laboratory, one sample for the installer's archive, and one sample for the owner's archive.

The field testing portion of the seam samples were analyzed for shear and peel tests on-site by the installer. Test results were recorded by Foth & Van Dyke field personnel. Field forms are included in Appendix G7.

The laboratory samples were submitted to Precision's Georgia laboratory for shear and peel analyses. Laboratory results of the destructive seam test samples met project specifications. Results of the laboratory tests are summarized in Table 8-2. The laboratory test results are included in Appendix H.

8.7 Repair Documentation

Repairs were made by applying patches and extrusion welding the patches in place at locations where leaks and seaming imperfections were detected, panel imperfections were observed and at destructive test locations. Each repair was assigned a number and recorded in a repair log. Appendix G8 contains the repair summary forms. The location of all repairs was recorded as part of the documentation survey performed by Foth & Van Dyke. Repair locations are shown on Drawing No. 5.

Table 8-1

Summary of Laboratory Test Results - Geomembrane Conformance Testing
(Phases 1 and 2)
Modern Plating Corp.
CAMU Landfill Construction

Property	Units	60 mil Textured HDPE Required Value	Phase 1 Roll No. 17308-1	Phase 2 Roll No. 17316-1
A. Sheet Properties				
1. Thickness (min. avg.)	mil	57	61.6	64.2
a. Lowest Ind. for 8 Out of 10 Values	mil	54	61.0	63.0
b. Lowest Ind. for Any of 10 Values	mil	51	60.0	61.0
2. Asperity Height (min. avg.)	mil	10	18.1	NA
3. Tensile Properties (each direction)				
a. Yield Strength (MD/TD)	lb/in.	126 min.	173/170	189/182
b. Break Strength (MD/TD)	lb/in.	90 min.	181/177	200/167
c. Elongation at Yield (MD/TD)	%	12 min.	19.7/18.4	18.5/18.3
d. Elongation at Break (MD/TD)	%	100 min.	442/463	495/418
4. Tear Resistance (MD/TD)	lb	42 min.	57/56	60/57
5. Puncture Resistance	lb	90 min.	133	144
6. Carbon Black Content	% Range	2-3%	2.48	2.55
7. Carbon Black Dispersion	Rating			
8 out of 10		category 1 or 2	1	1

Table 8-1 *(Continued)*

Property	Units	60 mil Textured HDPE Required Value	Phase 1 Roll No. 17308-1	Phase 2 Roll No. 17316-1
All 10		category 1,2 or 3	1	1
B. Resin Properties				
1. Melt Flow Index	g/10 min.	0.4 max.	0.2110	0.1942
2. Resin Density	g/cm^3	0.94 min.	0.9462	0.9485

Prepared By: BJS1
Checked By: MJP

Table 8-2

Summary of Destructive Seam Laboratory Test Results (Primary and Secondary Liner - Phases 1 and 2)
Modern Plating Corp.
CAMU Landfill Construction

		Peel				Shear			
		Maximum Tension							
Sample No.	Seam No.	Inside (lb/in.)	Outside (lb/in.)	Peel Incursion (%)	Failure Mode	Maximum Tension (lb/in.)	Elongation @ Break (%)	Failure Mode	Sample Pass/Fail
DS-1	P11/P12	132	141	<10	FTB	171	>50	FTB	Pass
DS-2	P14/P19	112	148	<10	FTB	190	>50	FTB	Pass
DS-3	P26/P27	129	128	<10	FTB	171	>50	FTB	Pass
DS-4	P38/P39	143	138	<10	FTB	185	>50	FTB	Pass
DS-5	P33/P34	141	142	<10	FTB	191	>50	FTB	Pass
DS-6	P50/P51	154	139	<10	FTB	190	>50	FTB	Pass
DS-7	P67/P68	145	149	<10	FTB	187	>50	FTB	Pass
DS-8	P71/P72	146	117	<10	FTB	186	>50	FTB	Pass
DS-9	P77/P78	133	129	<10	FTB	183	>50	FTB	Pass
DS-10	P91/P92	128	139	<10	FTB	184	>50	FTB	Pass
DS-11	P96/P97	140	140	<10	FTB	182	>50	FTB	Pass
DS-12	P103/P104	135	138	<10	FTB	190	>50	FTB	Pass
DS-13	P91/P39	134	148	<10	FTB	189	>50	FTB	Pass
Project Specifications:									
Minimum		90(F)/78(E)	90(F)/78(E)	---	FTB	120	---	FTB	—
Maximum		---	---	10	---	---	---	---	---

Notes:

1. FTB = Film Tear Bond
2. F = Fusion Weld
3. E = Extrusion Weld

9 Leak Detection System (Geocomposite and Geonet - Phases 1 and 2)

9.1 General

The leak detection system, consisting of a layer of geonet and geocomposite and leak detection sump was installed over the secondary geomembrane. The purpose of the layer was to provide a preferential flow path for any liquids which get past the primary geomembrane (installed immediately above the leak detection layer) and to allow for their collection in the leak detection sump. Evergreen Technologies, Inc. (ETI) of Evergreen, Alabama supplied the geocomposite and geonet. The geocomposite used for the construction of the leak detection system was DC4200AA geonet drainage composite. The geonet used was NS1300 150-mil genet.

The manufacturer's information for the geocomposite is included in Appendix I1.

9.2 Panel Layout and Seaming

Geocomposite panels were placed on the slopes and geonet was placed on the bottom of Phases 1 and 2 as shown on Drawing No. 10, Detail 1. The geonet and the geonet component of the geocomposite panels were installed by placing plastic ties at a maximum 5-ft interval along the length of seams. Any cross seams had plastic ties placed at 1-ft intervals. The fabric component of the geocomposite was lystered (heat bonded) together using a heat gun.

9.3 Geocomposite Conformance Testing

Prior to the geocomposite installation, conformance samples were submitted to Precision for analysis of Density (ASTM D792 or D1505), Melt Flow Index (ASTM D1238), Carbon Black Content (ASTM D1603), and Transmissivity (ASTM D4716) for the geonet properties; and Transmissivity (ASTM D4716) and Ply Adhesion (ASTM D413) for the geocomposite properties.

Results of the laboratory analysis met project specifications. The results are summarized in Table 9-1 and the laboratory data is included in Appendix I2.

9.4 Leak Detection Layer Sump

A 1-ft thick layer of ¾-in coarse aggregate was placed in the leak detection sump as shown on Drawing No. 11, Detail 2. Prior to the installation of the aggregate, a sample was submitted to Giles for a sieve analysis. Results are summarized in Table 9-2 and the laboratory data is included in Appendix J.

Table 9-1

Summary of Laboratory Results - Geocomposite and Geonet Conformance Testing Modern Plating Corp. CAMU Landfill Construction

Property	Units	Project Specifications	Test	Conformance Test Frequency	Phase 1	Phase 2
	Geonet Properties					
Density	g/cu cm	0.90 min	ASTM D792 or D1505	100,000 sf	0.9585	0.9562
Melt Flow Index	g/10 min	1.0 max	ASTM D1238	100,000 sf	0.796	0.365
Carbon Black Content	percent	2-3 range	ASTM D1603	100,000 sf	2.38	2.57
Transmissivity	m^2/sec	$1x10^{-4}$	ASTM D4716	100,000 sf	6.55×10^{-3}	5.93×10^{-3}
	Geocomposite Properties					
Transmissivity	m^2/sec	$3x10^{-5}$	ASTM D4716	100,000 sf	5.17×10^{-3}	6.87×10^{-3}
Ply Adhesion	lb/in	2.0	ASTM D413	100,000 sf	2.3 (MD) 2.9 (TD)	2.8 (MD) 3.3 (TD)

Prepared By: BJS1
Checked By: MJP

MD = Machine Direction
TD = Transverse Direction

Table 9-2

Summary of Laboratory Results - Leachate/Leak Detection Sump Stone Modern Plating Corp. CAMU Landfill Construction

Sample No.	USCS Description (ASTM D2488)	% Gravel/P200/Cu	USCS Soil Classification
MPC-STONE-1	Poorly Graded gravel	98.9/0/1.92	GP
MPC-STONE-2	Poorly graded gravel	97.8/0/2.16	GP

Prepared By: BJS1
Checked By: MJP

10 Primary Geomembrane Liner (Phases 1 and 2)

10.1 General

The primary geomembrane installation was also performed by Midessa and documented by Foth & Van Dyke. The material used in the installation of the secondary geomembrane was Solmax 460T, textured 60-mil High Density Polyethylene (HDPE) geomembrane manufactured by Solmax International, Inc. (Solmax) of Varennes, Quebec, Canada.

10.2 Material Conformance Testing and Inspection

Prior to the installation of the primary geomembrane on Phases 1 and 2, conformance samples were submitted to Precision for analyses of Thickness (ASTM D 5994), Asperity Height (GM12), Tensile Strength (ASTM D638), Tear Resistance (ASTM D1004), Puncture Resistance (ASTM D4833), Carbon Black Content (ASTM D1603), Carbon Black Dispersion (ASTM D5596), Melt Flow Index (ASTM D1238), and Resin Density (ASTM D1505). The results of the conformance tests met project specifications. Results of the tests are summarized in Table 8-1 and the laboratory data are presented in Appendix F.

10.3 Preproduction Weld Testing

Prior to the seaming of the primary geomembrane panels, trial welds were performed at the beginning of each seaming period and at least once every four hours for each seaming apparatus (fusion or extrusion welder) used that day. Each seamer made at least one trail seam each day. Four samples were cut from each of the trial welds and field tested for shear and peel.

Foth & Van Dyke observed the trial welding procedures and recorded the machine number, ambient temperature, machine speed, seamer identification, machine number, date, time and field shear and peel test results on the trial weld test forms. The trial weld test forms are located in Appendix G2. When the trial welds met project specifications, the seamers were allowed to begin welding the geomembrane.

10.4 Geomembrane Panel Deployment and Seaming

The primary geomembrane panels were installed by Midessa and Foth & Van Dyke field personnel documented the primary geomembrane panel installation including the observation of panel defects, tears, or other deformities, measuring panel thicknesses at a minimum of five locations per roll, measuring panel dimensions, and recording panel numbers and locations. Field forms recording the panel deployment data are included in Appendix G4.

Panel seaming was performed by Midessa using a hot wedge welder to complete fusion welds on the panel seams. Documentation of the fusion welded seams including seam number, seaming crew identification, welder number, date and time of seam construction, and ambient temperature was performed by Foth & Van Dyke field personnel and recorded on field forms. The panel

seaming summary forms are located in Appendix G5. The panel seam locations were recorded as part of the documentation survey performed by Foth & Van Dyke. Seam locations are shown on Drawing No. 6.

10.5 Non-Destructive Seam Testing

Non-destructive seam testing was performed on every field welded seam. The seams were field tested by air channel or vacuum box methods and documented by Foth & Van Dyke field personnel. Non-destructive seam testing forms are located in Appendix G6.

Air channel tests were performed by sealing both ends of the test seam, installing a manometer, and pumping the air channel to a minimum of 30 pounds per square inch (psi) using an air compressor. The maximum allowable loss in pressure for the seam was 4 psi in the five minute test. The intervals tested and test results were marked on each seam and recorded by the Foth & Van Dyke resident project representative or assistant. Any welds not meeting the air channel test requirements were marked for repair.

Vacuum box tests were also performed on fusion welded seams. The vacuum box testing was performed by trimming excess sheet overlap on the seams, wetting the test area with a soap/water solution, placing the vacuum box over the test area, and applying a vacuum to the seam for a minimum of 15 seconds while observing the test area for the presence of soap bubbles. Soap bubbles indicated the presence of a leak in the seam. Test intervals were marked on seams. All leaks detected during vacuum box testing were marked for repair.

10.6 Destructive Seam Testing

Destructive seam tests were performed on the fusion welded seams at a minimum rate of one per 500 lineal feet of welded seam at locations determined by Foth & Van Dyke field personnel. Destructive test locations were recorded as part of the documentation survey performed by Foth & Van Dyke. Destructive seam test locations are shown on Drawing No. 6.

A destructive sample 12-in wide by 48-in long was cut by the installer and split into four 12-in by 12-in samples. The four samples were distributed as follows: one sample for field testing, one sample to be submitted to the testing laboratory, one sample for the installer's archive, and one sample for the owner's archive.

The field testing samples were analyzed for shear and peel tests on-site by the installer. Test results were recorded by Foth & Van Dyke field personnel. Field forms are included in Appendix G7.

The laboratory samples were submitted to Precision's Georgia laboratory for shear and peel analyses. Laboratory results of the destructive seam test samples met project specifications. Results of the laboratory tests are summarized in Table 8-2.

10.7 Repair Documentation

Repairs were made by applying patches and extrusion welding the patches in place at locations where leaks and seaming imperfections were detected, panel imperfections were observed and at destructive test locations. Each repair was assigned a number and recorded in a repair log. Appendix G8 contains the repair summary forms. The location of all repairs was recorded as part of the documentation survey performed by Foth & Van Dyke. Repair locations are shown on Drawing No. 6.

11 Leachate Drainage Layer (Geocomposite - Phases 1 and 2)

11.1 General

The leachate drainage layer primary geomembrane. The purpose of the layer was to provide a preferential flow path for any liquids which leach out of the waste placed in the CAMU to allow for their collection in the leachate collection sump. ETI supplied the DC4200AA geocomposite used to construct the leachate drainage layer.

11.2 Panel layout and Seaming

Geocomposite panels were placed on the slopes and the bottom of Phases 1 and 2. The geocomposite panels were installed by placing plastic ties at a maximum 5-foot interval along the length of seams. Any cross seams had plastic ties placed at 1-ft intervals. The fabric component of the geocomposite was lystered (heat bonded) together using a heat gun.

11.3 Geocomposite Conformance Testing

Prior to the geocomposite installation, conformance samples were submitted to Precision for analysis of Density (ASTM D792 or D1505), Melt Flow Index (ASTM D1238), Carbon Black Content (ASTM D1603), and Transmissivity (ASTM D4716) for the geonet properties; and Transmissivity (ASTM D4716) and Ply Adhesion (ASTM D413) for the geocomposite properties.

Results of the laboratory analysis provides documentation that the installed geocomposite met project specifications. The results are summarized in Table 9-1 and the laboratory data is included in Appendix I.

12 Leachate Collection/Leak Detection System (Phases 1 and 2)

12.1 General

The CAMU landfill consists of two separate fluid management systems: the leachate collection system and the leak detection system. The leak detection/leachate transfer system plan and profile are shown on Drawing No. 8.

The leachate collection system is designed to collect all liquids which leach out of the waste placed in the CAMU. The downward percolation of the leachate is stopped by the primary geomembrane. The leachate flows toward the leachate collection sump through the primary geocomposite which was placed on top of the primary geomembrane. Leachate which collects in the rock-filled sump is pumped from the CAMU via leachate collection pipes to the pump building constructed adjacent to Phases 1 and 2 of the CAMU. From the pump building, the leachate is transported to the Modern wastewater treatment plant for removal of metals and cyanide.

The leak detection system, which was constructed under the primary geomembrane, is designed to collect any liquids which leak through the primary liner. The leak detection system was constructed in the same manner as the leachate collection system.

12.2 Leachate/Leak Detection Sump and Side Slope Riser Pipes

The leachate collection and leak detection sumps were constructed of ¾-inch coarse aggregate. A 12 oz./sq. yd. non-woven geotextile was placed over the aggregate for both the leachate collection and leak detection sumps. The leak detection sump was constructed with an approximate depth of 1 ft, while the leachate collection sump was constructed to be 2 ft deep. The bottom elevations of the Phase 1 sumps were raised approximately 1 ft due to groundwater seepage encountered during construction. The surface area of the sumps was increased in the field to maintain the original design volume. Refer to Section 6.5 of this report for details. Details of the sumps are shown on Drawing No. 11, Detail 2.

The leachate collection and leak detection pipes were constructed of 6-inch diameter HDPE SDR 17 pipe. The piping used in the construction was PLEXCO PE3408 HDPE pipe manufactured by Chevron. The manufacturer's information is included in Appendix K1. The HDPE pipe sections were thermal butt fused together in the field. The section of the pipe in the sump was perforated. Riser pipe locations were surveyed as part of the documentation of the CAMU landfill liner installations. The pipe details are shown on Drawing No. 11, Details 1 and 2.

12.3 Leachate/Leak Detection Piping/Pumping

To remove the leachate, a 1¼-in SDR 17 PE suction pipe was installed in both the leachate collection and leak detection riser pipes and connected to a Gorman-Rupp Model 11 self priming

centrifugal stainless steel pump. Two pumps, one for Phase 1 and one for Phase 2, were installed in an insulated pump building. The manufacturer's information for the pumps is provided in Appendix K1. The manufacturer's information for the pump building is included in Appendix K2. The layout of the pump building and pumping system is shown on Drawing No.12. Electrical information for the pump building and controls is included in Appendix K3.

The pipe connections running from Phases 1 and 2 of the CAMU to the pump building and from the pump building to the Modern wastewater treatment building were modified from the plan and specifications during construction. The outer 6-in HDPE pipe running from outside the limits of waste from Phases 1 and 2 was replaced with 6-in flex hose because the angle from the CAMU to the pump building was too sharp to install or weld the HDPE pipe. Also, the 1¼-in HDPE and 6-in HDPE pipes running from the pump building to the Modern wastewater treatment building were installed above ground to allow for easier maintenance of the pipes and because making the transition from the below ground piping to the Modern wastewater treatment building was too difficult to weld.

All above ground leachate/leak detection piping was pressure tested prior to operation to assure that all fittings were properly sealed. Results of the pressure testing are included in Appendix K1.

12.4 Pipe Cleaning

The leachate and leak detection pipes will be cleaned annually with a high pressure water jetting system.

13 Conclusion and Desired Response

This report documents the remediation of the eight management units specified in the RCRA Part B Application for Corrective Action Work and also documents the CAMU landfill construction at the Modern Plating Corporation Facility located at 701 South Hancock Street, Freeport, Illinois. This report, in conjunction with the report titled *Construction Documentation Report, CAMU Landfill Closure, Modern Plating Corporation, 2001,* which documents the CAMU landfill closure and site restoration, provide the basis for the IEPA to grant closure for the appropriate units at the facility.

Therefore, Foth & Van Dyke, on behalf of Modern, respectfully requests that the IEPA review and approve the attached construction documentation and closure work at Modern.

Appendix A

Correspondence

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies (four additional copies for UIC wells). Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: _____

IEPA SITE CODE: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

U.S. EPA ID NO.: IL___ ___ ___ ___ ___ ___ ___ ___ ___ ___

PART B PERMIT LOG #/UIC PERMIT #: _____

PERMIT (OR MODIFICATION) ISSUANCE DATE: _____

PERMIT CONDITION NO. REQUIRING CERTIFICATION: _____

The _____ has been constructed in accordance with the specifications in the Part B/UIC Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____
Signature of Owner/Operator Name and Title

_____ _____
Signature of Registered P.E. Name of Registered P.E. and Illinois Registration Number

_____
Date (P.E. SEAL)

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

DATE: February 23, 1996

TO: Facilities Permitted Under the IEPA RCRA and UIC Programs

FROM: DLPC Permit Section

SUBJECT: Certification Documentation for Construction Required by IEPA-Issued Permits

When submitting certification required by a Part B or UIC permit for construction of any newly developed areas or units, please complete the attached certification form. Modifications to the construction of UIC wells should be certified with this form, but the installation of groundwater monitoring wells does not require this certification (unless specifically required by the permit). This will help to ensure that the submittal reaches its proper destination and that the certification will meet the regulatory requirements. Sending the Field Operations Section (F.O.S.) copy directly to the Field Office is acceptable as long as all copies have a completed copy of the enclosed form attached and you advise the Permit Section, in writing, that a copy has been sent to F.O.S.

A documentation report and as-built drawings (sealed and signed by an Illinois Professional Engineer) must be included with this certification. Information necessary to document the construction of the unit or area and to support the certification must be contained within the report. This report should include a thorough description of all construction data and drawings and should be formatted in a logical and orderly manner. The construction documentation report must contain at least the following items:

1. An introduction and summary which describes the scope and purpose of the project;
2. A description of all construction activities, including quality assurance and quality control;
3. As-built drawings of the area or unit and a description of any deviations from the plans and specifications approved in the permit;
4. A description of the test methods used and justification for any deviations from standard test methods;
5. A summary of test results, identification of any samples which did not meet the specifications and the corrective action and retesting which was undertaken in response to any failing test results;
6. Any necessary information associated with construction of the area or unit to document that construction was in accordance with the plans and specifications approved by the permit;
7. Information specifically required by the permit; and
8. Any available photographs of the area or unit.

If you have any questions, please contact a member of the DLPC Permit Section at 217/782-6762.

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Enclosure

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

December 2, 1999

CERTIFIED MAIL
P 344 335 449

Mr. Craig Skolrood
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. C-259-M-8
RCRA Closure

Dear Mr. Skolrood:

The *Final RCRA Closure Plan and Basis of Design Report*, dated July 22, 1999, prepared and submitted by Foth & Van Dyke on behalf of Modern Plating Corporation has been reviewed. Your final RCRA Closure plan to close four RCRA hazardous waste management units (HWMUs) - *Lagoon 1, Lagoon 2, Lagoon 3 and Shawnee Building*; and four solid waste management units (SWMUs) - *Lagoon 0, Lagoon 1A, Cyanide Treatment Vault and Wetlands Area* at the Modern Plating Corporation (MPC) in Freeport, Illinois is hereby approved subject to the following conditions and modifications:

1. The closure activities required by this RCRA closure plan approval letter address the extent, type and execution of physical remediation to be performed at *Lagoon 0, Lagoon 1A, Lagoon 1, Lagoon 2, Lagoon 3, the Cyanide Treatment Vault, the Shawnee Building and the Wetlands Area* at the MPC facility. These units are shown in Attachment 1 - Site Map of HWMUs and SWMUs. An application for a RCRA permit for this facility is currently under review by Illinois EPA; the permit eventually issued in response to this application should address MPC's long-term management plan for these units (including groundwater management) and operation/post-closure care of a Corrective Management Unit (CAMU) for waste generated from remediation efforts at the eight aforementioned units. Investigation and remediation of these units was initially required by December 31, 1987 Administrative Order of Consent enforced by USEPA.

2. Overall closure and corrective action requirements at this facility must meet the requirements of 35 Ill. Adm. Code 620, 724, 725 and 742.

3. Remediation activities required by the final RCRA closure plan for the eight units of concern must be performed in accordance with the July 22, 1999 final RCRA closure plan plan as summarized below. A characterization and a description of the former operations for these eight units is provided in Attachment 2 to this letter.

   a. Lagoons 0, 1A, 2, and 3 and Cyanide Treatment Vault Area

      (1) At Lagoons 0, 1A, 2, and 3, MPC will over-excavate 1 foot of the base and 1 foot of interior side slopes. Excavated soil (an estimated 15,250 cubic yards) will be removed from the lagoons and be placed in a Corrective Action Management Unit (CAMU) to be constructed at the location of Lagoon 2 and Lagoon 3.

      (2) In the Cyanide Treatment Vault Area, 2 feet of contaminated soil will be excavated from the floor and side walls of the former vault (approximately 200 cubic yards) and placed in the CAMU.

      (3) After excavation activities, soil samples will be obtained in the lagoon areas and Cyanide Treatment Vault Area to define the amount of residual contamination.

      (4) An engineered barrier meeting the requirements of 35 Ill. Adm. Code 724.328 will be placed over these areas. Institutional controls and 30 year post-closure monitoring will be present for all units not achieving clean closure. Clean closure is not the goal of remediation efforts at the Lagoons or the Cyanide Treatment Tank Area.

   b. Shawnee Building

      Three areas were used for storage of hazardous waste in the former Shawnee Building. Soil at the former Shawnee Building must meet 35 Ill. Adm Code 742 TACO Tier II remedial objectives (shown in Attachment 3) and a remedial objectives of 400 mg/kg for Lead. It is estimated that 30 cubic yards of soil will be removed in order for soil to meet these remedial objectives. This effort will meet the clean closure requirements of 35 Ill. Adm Code 725 Subpart G. Contaminated soil will be placed in the on-site CAMU.

   c. Wetland Area

      Soil will be removed in the Wetlands Area, in three areas. Two of these areas are on-site areas immediately north of Lagoon 2 and one area is off-site area in the low area northeast of MW-13. These areas are shown in a map provided in Attachment 4. Soil

shall be excavated to meet 35 IAC Section 742 TACO - Tier I remedial objectives shown in Attachment 5. Contaminated soil will be placed in the on-site CAMU. This effort will meet the clean closure requirements of 35 Ill. Adm Code 725 Subpart G.

4. A Groundwater Management Zone (GMZ) has been established to address contaminated groundwater at the MPC facility. The boundaries of the GMZ, defined by the Pecatonica River and monitoring wells in compliance with the water quality standards specified for the MPC site, are in shown in Attachment 6. The GMZ was approved in the May 25, 1999 letter from the Illinois EPA and is hereby modified in accordance with the conditions specified in Attachment 7 Groundwater Monitoring Program.

5. MPC must place institutional controls meeting the requirements of 35 Ill. Adm. Code 742.1000 - Institutional Controls to restrict: (1) future land use; and (2) direct exposure in the future to soil remaining at the five (5) Lagoons and the Cyanide Treatment Vault unit.

6. Several tanks, listed below, were shown in Drawing No. 2 (Revised): Existing Conditions of MPC's final RCRA closure plan. In order for the Illinois EPA to have a comprehensive understanding of site operations at the MPC facility and understand how these tanks relate or do not relate to meeting the goal of final RCRA closure at the MPC facility, the Illinois EPA requests additional information regarding the tanks: (1) physical characteristics - material of construction, age, capacity, etc; (2) function; and (3) type of waste and/or product contained. This information should be provided to the Illinois EPA by February 1, 2000.

   a. Outside Storage Tanks (East of Shawnee Building);

   b. Five Tanks (Northwest of Production Plant);

   c. 8000 Gallon Tank (Northeast of Production Building);

   d. Storage Tank on Foundation (North of Production Building);

   e. Diesel Fuel Tank (North of Production Building); and

   f. Cyanide Sludge Tank, Chromium Batch Treatment Tanks and Underground Concentrated Waste Neutralizing Tanks Chromium Sludge (all in/outside the Wastewater Treatment Plant).

7. In Section 2.2 - Site History and Description of Facility of the final RCRA closure plan, it is stated that in the 1940's a large 24" discharge line was installed to the Pecatonica River. It was also stated that a secondary sanitary sewer line was also installed during this time. In

1964 MPC began operation. MPC's plating wastes were directed through a pipe in a newly-constructed tunnel through the northeast wall of the plant to connect with the existing cooling water discharge line. MPC also stated that no records are available to show the location of the cooling water discharge line. Drawing 2 (Revised) of the July 22, 1999 final RCRA closure plan shows the location of the sanitary sewer line.

Given the above, the potential exists for a release (s) of heavy metals waste/wastewater along these lines (the secondary sanitary sewer and 24" discharge line) prior to the operation and construction of the wastewater treatment. The Illinois EPA would like to rule out this possibility. MPC is therefore requested to submit and implement an investigative plan for these pathways. The goal of this plan would be to locate these lines and sample soil along these lines for heavy metal constituents and volatile organics that were used during MPC operations. Soil should be sampled from the point(s) of line connection to the Pecatonica River. This plan should be submitted to the Illinois EPA by February 1, 2000.

8. When closure is complete a certification must be submitted to Illinois EPA by the owner/operator and an independent professional engineer that the hazardous waste management units at the facility have been closed in accordance with the specifications in the approved closure plan. This certification should be received at the Illinois EPA within sixty (60) days after closure. These dates may be revised if Modern Plating Corporation finds that additional time is necessary to complete all required closure activities and Modern Plating Corporation demonstrates to the Illinois EPA that it is attempting to complete closure in a timely manner.

   The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

   The Professional Engineering Practice Act (225 Illinois Compiled Statutes 325/1-325/49) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be licensed under that Act. Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.

   Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with Paragraph 325/14 of the Professional Engineering Practice Act.

As part of the closure certification, to document the closure activities at your facility in accordance with 35 Ill. Adm. Code 725.215, a Closure Documentation Report must be developed and submitted to Illinois EPA along with the closure certification statement which includes the following:

a. Background information about the facility overall and the overall closure project.

b. A description of the unit(s) closed (include scaled maps showing location of unit(s) within facility and layout of unit(s), information related to construction of the unit(s), identification of wastes managed in the unit(s)).

c. A general discussion of all completed closure activities and what was accomplished as a result of completing these activities.

d. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.

e. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.

f. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:

(1) identification of the reason for the sampling/analysis effort and the goals of the effort;

(2) a summary in tabular form of all analytical data, including all quality assurance/quality control data;

(3) a scaled drawing showing the horizontal location from which all soil samples were collected;

(4) identification of the depth and vertical interval from which each sample was collected;

(5) a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;

(6) identification of the test method used and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;

(7) copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates;

(8) visual classification of each soil sample in accordance with ASTM D-2488;

(9) a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and

(10) a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.

g. Color photo documentation of closure. Document conditions before, during and after closure.

h. A chronological summary of closure activities and the cost involved.

i. Survey plat showing location of disposal units (required by 35 Ill. Adm. Code, Subtitle G (725.216 and 725.219).

j. A copy of the document (notation in deed or other document examined during title searches) in which the notification required under 35 Ill. Adm. Code 725.219(b).

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Illinois EPA by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

9. The following procedure must be utilized in the collection of all required soil samples:

a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

1. the procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

c. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs;

d. All soil samples which will be analyzed for volatile organic compounds must be collected in accordance with Attachment A of the Illinois EPA's Guidance for Preparing RCRA Closure Plans (November 1994).

e. All other soil samples must be collected in accordance with the procedures set forth in Test Methods for Evaluating Solid Wastes (SW-846), Third Edition and Finalized Updates;

f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

10. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts.

11. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with USEPA's Test Methods for Evaluating Solid Wastes (SW-846), Third Edition and Finalized Updates. When a SW-846 analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Illinois EPA. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. If possible, your sampling program should be extensive enough to determine the lateral and vertical extent of contamination to the detection limit (PQLs) referenced above.

12. The attached form entitled RCRA Interim Status Closure and Post-Closure Care Plans General Form (LPC-PA18) must be completed and accompany all information submitted to the Illinois EPA associated with the closure activities described in this letter. As noted on this form, two copies must accompany the original of all submittals, so that the information submitted can be distributed, as necessary to Illinois EPA personnel and regional offices.

13. If the Illinois EPA determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code 725.211, the Illinois EPA reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

14. Under the provisions of 29 CFR 1910, cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

15. Under the provisions of 29 CFR 1910, cleanup operations must meet the applicable - requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

16. All hazardous wastes that result from this project are subject to annual reporting as required in 35 IAC 722.141 and shall be reported to the Illinois EPA by March 1 of the following year for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. All non-hazardous special wastes that are shipped to a facility located outside the State of Illinois that result from this project are subject to annual reporting as required in Section 22.01 of the Illinois Environmental Protection Act and 35 Ill. Adm. Code 809.601(g) and shall be reported to Illinois EPA by February 1 of the following year. Additional information and appropriate report forms may be obtained from the Illinois EPA by contacting:

Administrative Compliance Unit
Division of Land Pollution Control #24
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Within 35 days after the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Terri Blake Myers, LPG (217) 524-3284; questions regarding other aspects of this project should be directed to Karen Nachtwey (217) 524-3273.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:KEN:bjh\99431S.WPD

cc: USEPA Region V - Harriet Croke
Foth and VanDyke - Steven J. Laszewski, Ph.D.

Attachment 1 - RCRA and SWMU Unit Locations at MPC
Attachment 2 - Description of RCRA and SWMU Units at MPC
Attachment 3 - Tier II Remedial Objectives for the Shawnee Building
Attachment 4 - Map of Areas to be Remediated in the Wetlands Area
Attachment 5 - Tier I Remedial Objectives for the Wetlands Area
Attachment 6 - Groundwater Management Zone Boundaries
Attachment 7 - Groundwater Monitoring Program

Foth & Van Dyke
consultants · engineers · scientists

December 22, 1999

Ms. Karen Natchwey
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Ms Natchwey:

Re: Response to Items 6 and 7
Final RCRA Closure Plan and Basis of Design Review Letter -
Work Plan for Investigation of Old Outfall and Sanitary Sewer Line
Modern Plating Corporation

On behalf of Modern Plating Corporation (MPC), Foth and Van Dyke is pleased to present this letter report, containing responses to Items 6 and 7 of the December 2, 1999 review letter for the *Final RCRA Closure Plan and Basis of Design Report.* These responses include the documentation of available information, as well as, confirmation from MPC personnel.

Item 6

Item 6 of the *Final RCRA Closure Plan and Basis of Design* review letter requested additional information on a number of aboveground (ASTs) and underground storage tanks (USTs) displayed on the existing conditions drawing included in the *Plan of Operation for the Corrective Action Management Unit at the MPC Facility.* The letter specifically requested 1) physical characteristics-material of construction, age, capacity, etc., 2) function, and 3) type of waste/product stored in the tanks.

These tanks were located on the drawing by historical records and air photos. The available details are included below and the tank documentation, where available, is included in Attachment 1.

a) Outside Storage Tanks (East of Shawnee Building): According to MPC personnel these were not actually tanks, but vats/troughs that were used in the interior of the Production Plant in MPC processes. These vats/troughs were cleaned prior to deactivation and removal from the building. The vats/troughs were then placed east of the Shawnee Building for temporary storage prior to disposal. No records on the contents or capacity of the former vats/troughs is available.

2737 South Ridge Road · P.O. Box 19012 · Green Bay, WI 54307-9012 · 920-497-2500 · Fax: 920-497-8516

b) Five Tanks (Northwest of Production Plant): These tanks are no longer in existence, according to MPC personnel, and no records of their contents or construction are available.

c) 8,000-gallon Tank (Northeast of Production Building): According to MPC personnel it is believed that this is a plastic tank previously used to store sulfuric acid for plant processes. The tank has been empty and unused for a number of years. The tank remains only for emergency storage purposes. No records exist to correlate the tank on the drawing to the aforementioned tank, but according to information from MPC personnel this appears to be the most likely scenario.

d) Storage Tank on Foundation (North of Production Plant): This location contains two ASTs which are currently in use. These tanks are located outside the north wall of Building 24. These are 6,000-gallon tanks most likely made of steel and lined with either glass or rubber. They are equipped with secondary containment consisting of a concrete base and dike with drainage to the WWTP in the event of a spill/release. These AST's are currently used to store hydrochloric acid.

e) Diesel Fuel Tank (North of Production Building): This location is the old tank pit for a 1,000-gallon gasoline and 2,000-gallon USTs. These tanks were reported as both being 1,000-gallon in the Plan for Closure, but review of documents indicates the diesel tank was a 2,000-gallon UST. These tanks were removed from the facility during December 1987 and January 1989. Documentation indicates both tanks were made of steel. The age of these tanks was not available. Closure documentation indicated the tanks had not leaked. This documentation is included in Attachment 1.

f) Cyanide Sludge Tank, Chromium Batch Treatment Tanks and Underground Concentrated Waste Neutralizing-Chromium Sludge (all in/outside the WWTP): These tanks are or where related to the treatment of MPC's waste stream. Much of this description is taken from the Part B RCRA Application. The cyanide batch treatment tanks consist of two 25,000-gallon poured concrete, epoxy lined, Flexicore covered tanks. These tanks have 12- in minimum thickness on the floors and walls. Further details on these tanks are included in Attachment 1.

The cyanide sludge tank located inside the WWTP was removed according to MPC personnel. No records of this tank are available.

The chromium batch treatment tanks consist of two 6,000-gallon epoxy lined concrete tanks with 12- in floors and walls. Further details on these tanks are available in Attachment 1. Both the cyanide and chromium batch tanks are lined with "Trowelon 411-50" .

The two underground concentrated waste neutralizing tanks located just south of the WWTP were made of fiberglass and removed during December 1991. Soil sampling was conducted during the removal. At the time of removal no indication of leakage or spillage was indicated, as well as, no potential impact from VOC related compounds. Details are included in Attachment 1.

Item 7

Item 7 concerns the existence of an old outfall line to the Pecatonica River and a sanitary sewer line as potential pathways for release of heavy metals waste/wastewater to the soil prior to operation of the WWTP. No records are available for the construction or location of these lines. However, it is believed that they are the same lines as those shown on Drawing No. 2 (Attachment 2). Due to the uncertainty in location and construction a two-phased investigation is proposed for these lines.

MPC personnel visually field checked the outfall line location to aid in determining a course of action for investigating potential release areas. A manhole was discovered along the outfall line approximately two-thirds of the distance to the river. However, at this time it is not confirmed if this manhole is part of the outfall line. The manhole is approximately 15-ft deep and the line appeared to be constructed of clay tile. The discharge end of the outfall line at the Pecatonica River is collapsed.

Investigation-Phase I

The first phase of the proposed investigation consists of locating and identifying the outfall and old sanitary sewer lines. A sewer televising contractor will be used to televise the lines. Televising the lines will accomplish several objectives: first, to help identify the line construction; second, to identify locations of holes, cracks, or collapse to better locate potential areas for soil sampling along the outfall line; third, the televised line route can be marked on the ground surface to optimize in the selection of sampling locations. At this time, unless evidence is found of potential contaminant release, such as obvious visual contamination in the pipe, cracks or breaks in the pipe, sampling along the sanitary sewer line is not planned. Foth & Van Dyke will have a person on-site to observe the line televising. A sewer televising contractor has been contacted and the plan is to proceed with this portion of the investigation in early January 2000.

Investigation-Phase 2

The second phase of the investigation will consist of soil sampling along the outfall line. A geoprobe will be used to collect soil samples along the path of the outfall line. The exact

location and number of geoprobe holes will be dependant upon the results of the line televising. The geoprobe method provides continuous samples with minimal disturbance. All soil samples will be classified in accordance with ASTM D-2488 by a qualified geologist or soil scientist and field screened with a photo ionization detector (PID).

At this time we anticipate five geoprobe hole locations. Soil samples for analytical analysis will be selected from near the base of the outfall, below the base of the outfall and/or in areas of suspected impact. Two to three soil samples per geoprobe hole will be collected for analysis. Selected samples will be analyzed for cadmium, chromium, copper, lead, nickel, and zinc according to SW-846 and for volatile organic compounds (VOC's) using EPA Method 8260.

All sampling equipment will be decontaminated between sampling events and geoprobe hole locations. Decontamination will consist of a non-phosphatic soap wash and double rinse. All geoprobe holes will be abandoned with bentonite upon completion.

Report

Upon receipt of the laboratory results a letter report will be prepared. The report will provide the methods and results of the outfall and sanitary sewer line investigation.

MPC would like to move ahead expeditiously on implementing the sewer televising and soil sampling. Therefore, we will call you in the near future to discuss this letter. If you have any questions regarding this letter please contact Erik Silvola at 651-452-4396 or Janis Kesy at 920-497-2500.

Sincerely,

Foth & Van Dyke

Erik A. Silvola, P.G.
Lead Hydrogeologist/Geologist

Janis Schallhorn Kesy, P.G.
Senior Project Manager

EAS:JSK:lmc

cc: Mr. Craig Skolrood, Modern Plating Corporation
Mr. Jim Moore, IEPA
Mr. Ronald Meister, Foth & Van Dyke
Mr. Steve Laszewski, Foth & Van Dyke

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

February 9, 2000

CERTIFIED MAIL
P 344 306 003

Mr. Craig Skolrood
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
Log No. C-259-M-10
Date Received:
RCRA Closure

Dear Mr. Skolrood:

This is in response to the January 17, 2000 closure plan modification request regarding the "Wetlands Area" submitted by Foth & Van Dyke (FVD) on behalf of Modern Plating Corporation (MPC). On December 2, 1999 the Illinois EPA approved a final RCRA closure modification approval letter to close four RCRA hazardous waste management units - *Lagoon 1, Lagoon 2, Lagoon 3*, and *Shawnee Building*; and four solid waste management units - *Lagoon 0, Lagoon 1A, Cyanide Treatment Vault and Wetlands Area* at the Modern Plating Corporation in Freeport, Illinois.

With regard to the Wetland Area, the approved plan required that excavation of impacted wetlands soils to meet 35 IAC Section 742 TACO- Tier I remedial objectives. Contaminated wetland soils were to be placed directly into the on-site Corrective Management Unit (CAMU) for which the Illinois EPA will issue a draft RCRA permit. Construction of the CAMU is scheduled to begin in the Spring of 2000.

The subject submittal requests that MPC be allowed to: 1) perform wetland excavation activities ahead of schedule, during the winter of 2000; and 2) store excavated impacted wetland soils in a Temporary Storage Unit (TSU) at the location of former Lagoon 1A and Lagoon 0 (if needed). The procedures for carrying out this effort were also described in the subject submittal.

The proposed construction/operation of a Temporary Storage Unit (TSU) for storage of excavated wetland soil as set forth in the January 17, 2000 submittal is hereby approved as a request to modify the afore-mentioned RCRA closure plan, subject to the following conditions and modifications:

1. Except as modified, RCRA closure must be completed in accordance with the conditions and modification of the December 2, 1999 RCRA Closure Plan (Log No. C-259-M-8) approval letter from the Illinois EPA and Illinois EPA's letter approving with conditions and modifications a December 22, 1999 closure plan modification request (Log No. C-259-M-9);

2. Permits must be obtained form the U.S. Army Corps of Engineers and Illinois EPA Water Pollution Division regarding the excavation activities in the wetlands area; DONE

3. The TSU shall be in operation for a time frame not to exceed 8 months;

4. Construction of the TSU will require the excavation of an existing 2 feet of low permeability clay cover over the lagoon. Clay will still remain to act as a liner. The 2 feet of clay will be placed and compacted around the perimeter of lagoon 1A to raise the exterior berms to a minimum of 3 feet;

5. Excavated wetland soil placed in the TSU Unit shall be covered at the end of each day with a 12- mil impermeable geosynthetic cover/tarp and anchored with sand bags or tires;

6. The TSU constructed at the location of former Lagoon 1A shall accommodate a total of no more than 2,500 cubic yards of impacted wetlands soils;

7. Construction of an additional TSU at Lagoon 0, in the same manner as described in the subject submittal for Lagoon 1A shall be allowed if volume capacity is exceeded at Lagoon 1A;

8. Stormwater which accumulates in the TSU drainage ditch during the 1-2 week stockpiling will be pumped to the MPC on-site WTP. After final placement of the tarp, drainage of stormwater from the tarp surface will gravity drain from within each bermed area and discharge via a lined spillway to the wetland north of the lagoon as shown on Figure 3 (Lagoon 1A) and Figure 4 (Lagoon 0) of the subject submittal;

9. The perimeter berm and tarps must be inspected immediately after a rainfall event of ½ inch or more. Containment structures shall be maintained and repaired as necessary to their effectiveness.

The attached form entitled RCRA Interim Status Closure and Post-Closure Care Plans General Form (LPC-PA18) must be completed and accompany all information submitted to the Illinois EPA associated with the closure activities described in this letter. As noted on this form, two copies must accompany the original of all submittals, so that the information submitted can be distributed, as necessary to Illinois EPA personnel and regional offices.

This action shall constitute Illinois EPA's final decision on the subject submittals.

Within 35 days of the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

All submittals must be accompanied by the attached Illinois Corrective Action Certification form. In addition, work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

If you have any questions regarding this letter please contact Karen Nachtwey at (217) 524-3273.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:KEN:bjh\3273S.WPD

Attachment: LPC-PA18 Form
Corrective Action Certification Form

cc: Foth and VanDyke - Ron E. Meister, P.G.
Steve Laszewski, Ph.D.
Nandakumaran Paruvakat, Ph.D., P.E.

Foth & Van Dyke
consultants · engineers · scientists

May 17, 2000

Ms. Joyce L. Munie, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East, P.O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Munie:

Re: Request for Revised RCRA Part B Permit for the Modern Plating Corporation
1770200010– Stephenson County
Modern Plating Corporation
Log No. B-167

As per our recent telephone conversation with Mr. Jerry Kuhn, P.E. of your office, we are requesting a "revised" RCRA Part B Permit document which contains the revisions which are listed in Attachment 1 to this letter. The requested revisions are largely typographical in nature, yet we feel they are important in order to ensure that the permit record is accurate and complete.

The intent of this request is to have a single RCRA Part B Permit on file which is consistent with past conversations with IEPA regulators. Implementation of the RCRA Part B Permit will begin on May 16, 2000 when the selected contractor, TERRA Engineering and Construction, Inc of Madison, Wisconsin begins the Remediation and CAMU Landfill construction work. As such, final modifications to this permit will trail implementation of the permit.

It is our understanding that IEPA is in agreement with the modifications listed in Attachment 1 and ask that these be incorporated into the final RCRA Part B Permit for the final record. If you have any questions or require additional information, please feel free to call the undersigned.

LAJ\J:\scopes\97M015\l-munie revised rcra part b.wpd

Sincerely,

Foth & Van Dyke

Steven J. Laszewski, Ph.D.
Technical Director

Ronald E. Meister, P.G.
Project Manager

SJL1:REM:laj

Attachment

cc: Mr. Craig Skolrood, Modern Plating Corporation

LAJ\J:\scopes\97M015\l-munie revised rcra part b.wpd

Attachment 1

Modification to April 11, 2000 RCRA Part B Permit

Modification to April 11, 2000
RCRA Part B Permit

Section	Page	Item No.	Modification
I	I-10	G.5.	There are two "G.5."; The "G.5." on page I-10 should be designated as G.6.
I	I-5	E.3.	The first sentence should read "in compliance".
III	III-1	A.d.	Please reword item d. to clarify this condition. We suggest that the condition be reworded so that it is consistent with page III-8, E.3. and page III-3, C.4.
IV	IV-6	C.2.	The remedial objective is incorrectly stated starting on page IV-6. This item should read as follows: "....objective and a remedial objectives of 200 mg/kg for Cadmium."
IV	IV-6	D.1.	The cost to complete the corrective action is not consistent with the cost listed on page I-10 I.1. or the estimates in Attachment D. The internal cost to complete the corrective action should be listed as **$1,519,726.00**
VI	VI-3	III.I.2.	Condition III.I.2. has incorrect groundwater sample collection dates which should be as follows: Samples Collected During Months of — Results to Illinois EPA By Second Quarter — April 15 Fourth Quarter — October 15

RECEIVED
MAY 19 2000
FOTH & VAN DYKE

bcc: Mr. Marty Cieslik, Foth & Van Dyke - Madison, WI
Mr. Brain Stanul, Foth & Van Dyke - Madison, WI
Mr. Nandu Paruvakat, Foth & Van Dyke - Green Bay, WI

LAJ\J:\scopes\97M015\l-munie revised rcra part b.wpd

Foth & Van Dyke
consultants · engineers · scientists

June 2, 2000

Jeffery W. Sniadach
Project Manager
U.S. Army Corps of Engineers- Rock Island District
Clock Tower Building- P.O. Box 2004
Rock Island, IL 61204-2004

Dear Mr. Sniadach:

Re: CEMVR-RD-383470- Modern Plating Corporation Wetland Remediation

The purpose of this letter is to update you on the status of the wetland remediation and to request a modification to the permit conditions.

Project Status

An early spring and spring thaw prevented us from completing the excavation of the wetland areas as originally anticipated. Only the small northwestern most wetland referred to as Wetland I has been excavated and the contaminated soils temporarily stored as proposed (refer to Attachment A). The remaining two contaminated wetland areas are scheduled to be excavated in the late summer or early fall of 2000. The contaminated soils will be disposed of directly in the CAMU Landfill and as a result temporary storage will not be required. We are delaying the excavation of the remaining two areas until late summer or early fall to take advantage of the dry conditions which should exist in the wetland areas at that time.

Modification Request

We are proposing two modifications to our original proposal which we request that you review and approve. The two modifications can generally be explained as follows:

1. After careful review of the alternatives of leaving the wetland excavation as water filled depressions versus filling the areas back to the original grade with wetland soils. We have determined that refilling the wetlands is the best option. Our primary reason for making this determination is due to the concern for wildlife coming into contact with potential residual contamination if water is allowed to pond over the excavated areas. We have located a nearby source of contaminated free wetland soils which will be used for backfill. The backfilled areas will then be seeded, fertilized (if required) and mulched after refilling is completed.

2737 South Ridge Road · P.O. Box 19012 · Green Bay, WI 54307-9012 · 920-497-2500 · Fax: 920-497-8516

2. As part of the clearing and grubbing of the project site, the trees and brush have been chipped and the wood chips are now piled on the site. The contractor has proposed to use these wood chips to construct the temporary haul road to access the eastern most wetland, Wetland III which is located north of Lagoon No. 3 (refer to the sketch in Attachment A). The road will be constructed in a slightly elevated area outside the areas mapped as wetland. The temporary road will be approximately 15-ft wide at the top and will have a total length of approximately 220 ft. The final approximately 20 ft of the road will be in a mapped wetland. We propose to leave the wood chips in-place in all areas except those mapped as wetland. The area where the wood chips are to be removed is shown on Attachment 1.

Note that on June 1, 2000 Mr. Mike Mc Cauley of the Illinois Department of Natural Resources was contacted concerning the above modification. At that time Mr. Mc Cauley expressed no objection to our proposal to leave the woodchips in-place in all areas except for the mapped wetland areas.

Since construction is presently in progress, your prompt attention to this matter would be appreciated. Based on our recent telephone conversation we understand that you are amendable to allowing us to proceed with the modifications discussed in this letter. We request that you contact us by phone to confirm your concurrence.

Sincerely,

Foth & Van Dyke

Ronald E. Meister, P.G.
Project Manager

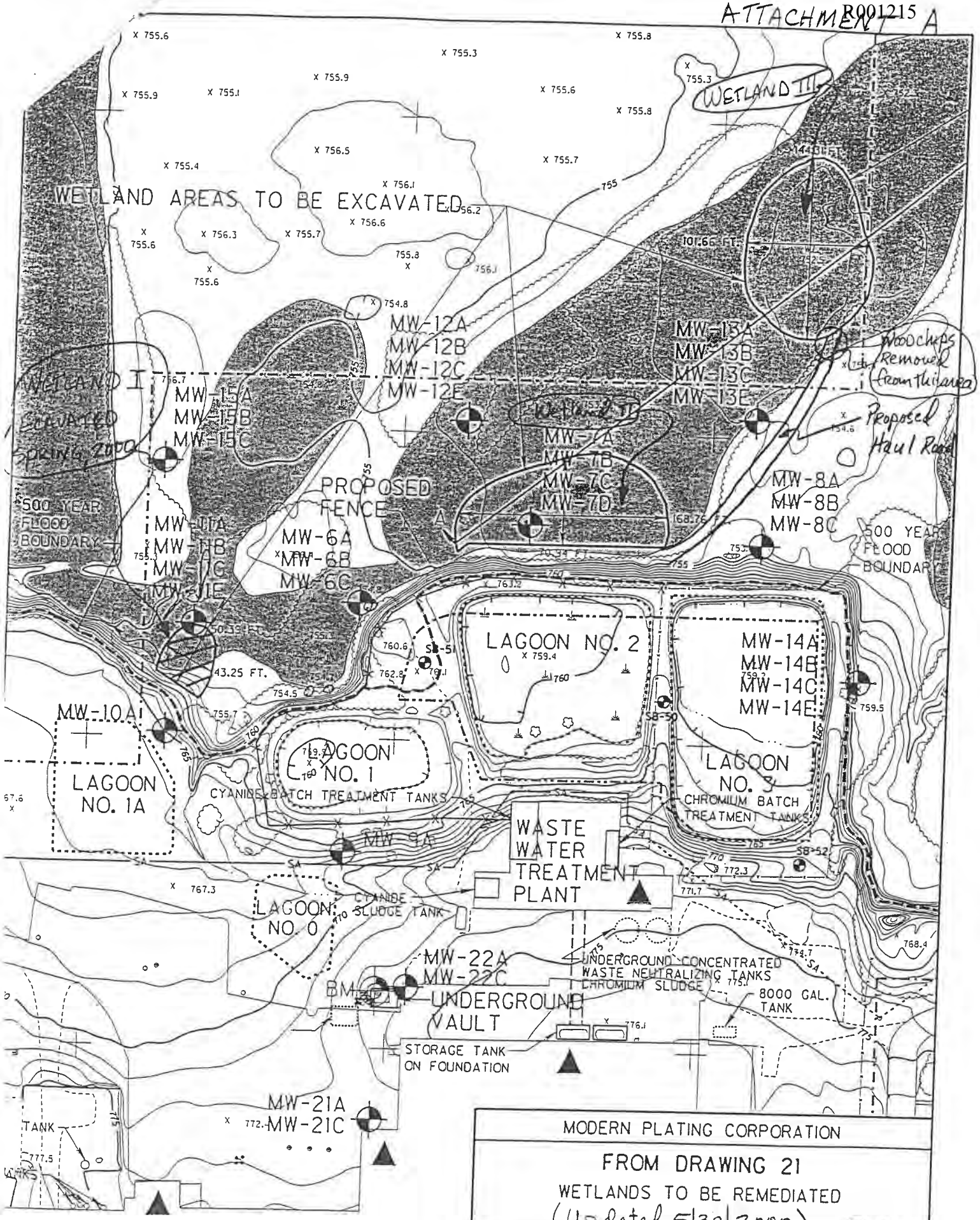
REM:lmc

Attachment

cc: Mr. Mike Mc Cauley, Illinois DNR
Mr. Jim Allison, Illinois EPA
Mr. Craig Skolrood, Modern Plating Corp.
Mr. Nandu Paruvakat, Foth & Van Dyke
Mr. Steve Laszewski, Foth & Van Dyke

LMC\J:\scopes\97M015\l-sniadach wetland remed.wpd\4000

ATTACHMENT A R001215



MODERN PLATING CORPORATION

FROM DRAWING 21

WETLANDS TO BE REMEDIATED

(Updated 5/30/2000) REM

Scale: 0 50' 100'	Date: DECEMBER 1999	
Prepared By: Foth & Van Dyke	By: DAT	97M015

mu1\pool\m1\97m015a.dgn Dec. 10, 1999 13:17:23

Foth & Van Dyke
consultants · engineers · scientists

July 17, 2000

Ms. Joyce L. Munie, P.E.
Manager, Permit Section, Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East, P.O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Munie:

Re: Construction Certification For Modern Plating Corporation Phase 1 CAMU Landfill,17702000010-Stephenson County, Log No. B-167, RCRA Part B Permit

The purpose of this letter is provide the construction certification required by the April 11, 2000 RCRA Part B Permit Condition No. Section I, E. 1. and 2. We have completed the construction, quality control and quality assurance testing of the liner, leak detection and leachate collection systems for Phase 1 of the CAMU Landfill. The liner and associated work was started on Tuesday, July 11, 2000 and completed on Saturday July, 15, 2000. As you may be aware, representatives from the Illinois Environmental Protection Agency (IEPA) including Ms. Keri Hanson and Mr. Rob Watson, P.E. visited the site for several days during the liner construction. During the construction activities we kept Ms. Hanson and Mr. Watson up to date on the ongoing construction activities.

Condition No. Section I, E. 1. requires that an exception report identify any changes to the design or construction. The only change which was made was in the leachate collection\ leak detection sump (sump). When excavated to the correct design grade (i.e. 753.5) we encountered what was believed to be perched or mounded groundwater. We believe this groundwater came from recent rain water which became trapped behind the Phase 1 south berm. To remedy this situation we raised the subgrade elevation at the sump to approximate 754.5 and moved the slope intercept for the top of the sump out to the northwest approximately 5 feet to compensate for the sump volume lost. We have completed survey of record elevations for Phase 1 and will present the plan and section views of the completed sump with the final construction documentation report which will be submitted approximately 30 days after Phase 2 of the CAMU Landfill is completed.

Attachment 1 contains the Construction Certification form which must accompany this cell certification as per Section I, E. 1. which is signed and stamped by the certifying engineer, Mr. Marten Cieslik, P.E. and the operator, Mr. Craig Skolrood. The following is the wording of Illinois Administrative Code 35 IAC 702.126(d) which certifies that Phase 1 of

406 Science Drive, Suite 400 · Madison, WI 53711-1068 · 608-238-4761 · Fax: 608-238-4633

the CAMU Landfill was constructed in accordance with the June 11, 2000 IEPA approval letter and the plans and specifications for the construction.

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

As you are aware, time is of the essence with respect to receiving approval for the CAMU Phase 1 construction since placement of waste can not proceed until IEPA Certification has been received. We respectfully ask that the required approvals be faxed or e-mailed to us at the earliest possible date so that the remediation project including the CAMU Landfill construction, filling and closure can be completed during the 2000 construction season.

Should you have and questions or wish to discuss this construction certification feel free to call either of the undersigned.

Sincerely,

Foth & Van Dyke

Marten J. Cieslik

Marten J. Cieslik, P.E., DEE
Certifying Engineer

Ronald E. Meister /MJC

Ronald E. Meister, P.G.
Project Manager

Attachment

cc: Ms. Kari Hanson, IEPA, Rockford, IL
Mr. Craig Skolrood, MPC
Mr. Scott Zimmerman, TERRA Construction and Engineering, Inc.
Mr. Nandu Paruvakat, Foth & Van Dyke
Mr. Steve Laszewski, Foth & Van Dyke
Mr. Brian Stanul, Foth & Van Dyke
Mr. Marty Sturzl, Foth & Van Dyke

REM\LMC\CAC1\97M015\L-MUNIE CONST CERT.wpd\10000

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies (four additional copies for UIC wells). Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: Modern Plating Corporation - Phase 1 CAMU Landfill

IEPA SITE CODE: 1 7 7 0 2 0 0 0 1 0

U.S. EPA ID NO.: IL D 0 0 5 1 7 2 3 2 5

PART B PERMIT LOG #/UIC PERMIT #: B-167

PERMIT (OR MODIFICATION) ISSUANCE DATE: April 11, 2000

PERMIT CONDITION NO. REQUIRING CERTIFICATION: Section I, E.1. and 2.

The CAMU Landfill Phase 1 has been constructed in accordance with the specifications in the Part B/UIC Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

MJC 7/17/00

Signature of Owner/Operator

Craig Skolrood, Pres.

Craig Skolrood, President

Name and Title

Signature of Registered P.E.

Marten J. Cieslik, PE #062-045897

Name of Registered P.E. and Illinois Registration Number

July 17, 2000

Date

(P.E. SEAL)

STATE OF ILLINOIS
MARTEN J.
CIESLIK
062-045897

This Agency is authorized to require this information under Illinois Revised Statutes, 1979. Chapter 111 ½, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

217-524-3300 THOMAS V. SKINNER, DIRECTOR

July 25, 2000

CERTIFIED MAIL
7099 3400 0006 5938 2267

Mr. Craig Skolrood
Manager, Regulatory Compliance
Modern Plating Corporation
701 South Hancock Ave.
Freeport, IL 61032-0838

Re: 1770200010 – Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit Record

Dear Mr. Skolrood:

The Illinois EPA has completed its review of the Cell Construction Certification (CCC) for Phase 1 of the Corrective Action Management Unit (CAMU) landfill dated July 17, 2000 and received July 19, 2000.

The Illinois EPA inspected the Phase 1 construction on June 8, 14, 29, 2000 and July 12, 13, 24, 2000. The inspections revealed that Phase 1 was constructed in accordance with the approved plans. While the CCC is hereby approved, during the July 12, 2000 site visit, Illinois EPA personnel observed several conditions during the Phase 1 construction that should not be repeated in the construction of Phase 2.

1. Although the subbase soils in Phase 1 were smooth rolled prior to installation of the GCL, we observed portions of the rolled surface (particularly the slope on the north side) that were disturbed during the installation of some of the GCL panels. Foot prints and depressions in the subbase soils were observed. It is not acceptable to damage the smooth rolled surface of the subbase during construction of the liner system.

   The requirement to maintain a smooth surface on the subbase soils is also reflected in CETCO's (the GCL manufacturer) Technical Data Sheet (TR-403dn, revised 5/99), Sections 3.3 and 3.4. These sections indicate that the smooth rolled surface of the subgrade must remain in this condition throughout the installation of the GCL. It also notes that if the installation equipment causes rutting of the subbase, the subbase must be returned to its originally accepted condition before installation continues.

   The surface of the subbase was easily impacted because the soil used in the subbase appeared to be a silty sand with very little clay, or cohesion. Therefore, in order to better withstand the

installation activities, firmer, more cohesive soils (e.g. soils with a higher clay content) should be used for the subbase of Phase 2 when it is constructed in Lagoon #3.

2. We observed that GCL panels were pulled up the slope of the Phase 1 cell. This activity impacted the smooth rolled surface of the subbase soils to some extent and has the potential to damage the GCL.

   The Construction Quality Assurance Plan (CQAP) in Appendix E; Section 7.1.2 Panel Placement, item 4.f states that quality assurance monitoring for panel placement includes verifying the material is rolled, not dragged, into place. The GCL panels should be rolled down the slopes when Phase 2 is constructed.

3. We observed that several of the seams on the north slope had wrinkles in them. The Construction Quality Assurance Plan (CQAP) in Appendix E; Section 7.1.2 Panel Placement, item 4.e requires there to be monitoring and documentation to verify that there are no wrinkles > 1 inch high and wider than 6 inches. The Construction Specifications in Appendix Q; Section 02455, Section 3.4 GCL Installation, item E.2: Seam Overlap, also states the edges of GCL panels are to be smooth or free of wrinkles or creases. The edges of GCL panels should be smooth or free of wrinkles or creases when they are installed in Phase 2.

Damage to the subbase soils during the installation of the liner components in Phase 2 of the CAMU landfill could result in the requirement to remove one or more of the liners and rework the subbase soils, and/or disapproval of the Cell Construction Certification for Phase 2. Improper installation of the GCL panels may also result in disapproval of the Cell Construction Certification for Phase 2.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Joyce L. Munie, P.E.
Manager Permit Section,
Bureau of Land

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R001221
Scope 9 1 M 0 1 5 Classification 4000
Copy To SJL, NXD, MJC1, BJS, ASK
REM. MASTER FILE

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

RECEIVED
AUG 16 2000
FOTH & VAN DYKE

August 8, 2000

CERTIFIED MAIL
7099 3400 0006 5938 1604

Mr. Craig Skolrood
Modern Plating Corporation
701 South Hancock Avenue
P.O. Box 838
Freeport, Illinois 61032

Re: 17702000010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. C-259-M-12
RCRA Closure

Dear Mr. Skolrood:

This is in response to the July 7, 2000 letter report from Ron Meister, P.G. of Foth and VanDyke, sent on behalf of Modern Plating Corporation (MPC) providing the results of the Phase II investigation of a former outfall line at the MPC facility. A site layout map showing the location of this outfall line is attached. The investigation is being conducted as part of an approved final RCRA closure plan (Log No. C-259 and associated modifications) for four RCRA hazardous waste management units (referred to as Lagoons 1, 2 and 3 and the Shawnee Building) and four solid waste management units (referred to as Lagoons 0 and 1A, the Cyanide Treatment Vault, and the Wetlands Area) at the above-referenced facility.

Illinois EPA's February 9, 2000 letter (Log No.C-259-M-9) approved MPC's proposal to perform a Phase I investigation of an old drainage oufall line and sanitary sewer as part of RCRA closure efforts at the facility. The Illinois EPA's June 8, 2000 (Log No. 259-M-11) approval letter commented on the Phase I investigation and approved a Phase II workplan to sample soil at 5 locations along the outfall pipeline. Mr. Meister's submittal provided the soil test results for samples taken along the former outfall pipeline.

Illinois EPA's review of these results has determined that with the exception of SB-Of-05, soil along the former outfall pipeline meets 35 IAC Section 742 TACO Tier 1 industrial/commercial and construction worker ROs. In addition, MPC's proposal to excavate soil in the vicinity of SB-OF-05 in order to meet Tier I ROs is approved with the following conditions and modifications:

1. Soil in the vicinity of SB-OF-05 shall be excavated along the pipeline 15 feet on either side of SB-OF-05 to a depth of seven feet. Soil from the top of the pipe to the seven-foot depth shall be disposed of in the on-site Corrective Action Management Unit. Soil above the pipeline will be returned to the excavation and covered with clean fill from off-site.

2. Three (3) confirmation soil samples shall be taken from the excavation at 5-foot intervals and analyzed for Cyanide, Chromium, Cadmium, Lead, Nickel, Zinc and also Arsenic. The results from this analysis must be submitted to the Illinois EPA for review within 60 days from the date of this letter.

3. Closure activities completed for the former outfall pipeline must be included in the final Closure Certification/Documentation Report required for the eight units previously mentioned. This document must be prepared in accordance with Condition 8 of the Illinois EPA's December 2, 1999 final RCRA closure plan approval letter (Log No. C-259-M-8).

4. An institutional control meeting the requirements of 35 Ill. Adm. Code 742 Subpart I must be established as part of this remediation project to ensure the use of the site remains industrial/commercial in the future. A proposed institutional control meeting these requirements should be submitted to Illinois EPA for review and approval within 60 days of the date of this letter.

5. The attached LPC-PA18 Certification Form must accompany all submittals.

6. Except as modified herein, (1) RCRA closure activities must be carried out in accordance with previous Illinois EPA approval letter (Log No. C-259 and associated modifications; and (2) the RCRA corrective action provisions of the RCRA permit (Log No. B-167) issued to MPC.

Within 35 days of the date of mailing of the Illinois EPA's decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35 day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice provided to the Board and the Illinois EPA within the 35 day initial appeal period.

In addition, work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Practice Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding this matter, please contact Karen Nachtwey at (217) 524-3273 of my staff.

Sincerely,

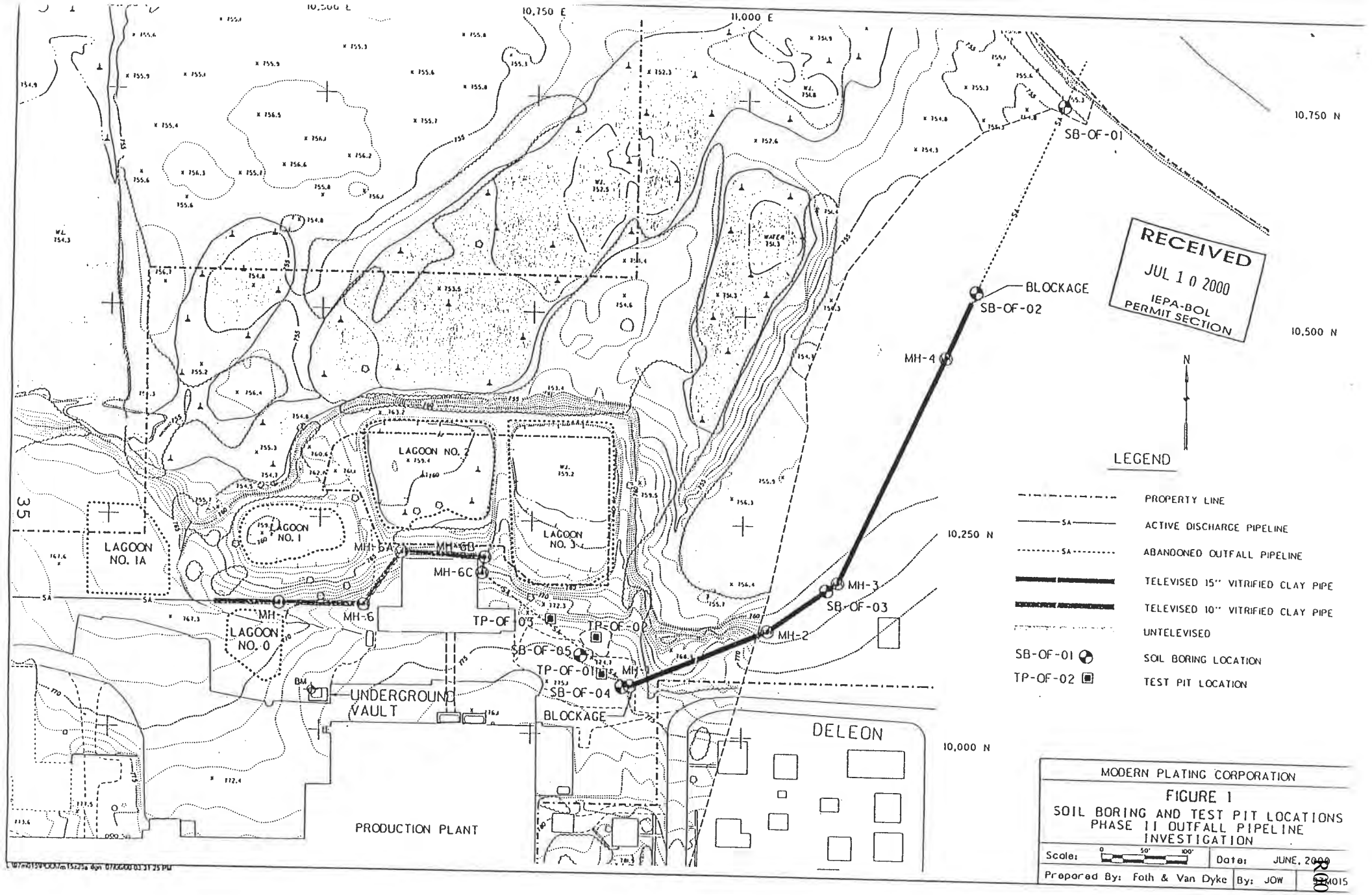
Jerry Hatchett, P.E.
for

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

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Attachment A - Site Layout Map
Attachment B - Form LPC-PA18

cc: Foth & VanDyke - Ronald E. Meister, P.G.



RECEIVED
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IEPA-BOL
PERMIT SECTION

MODERN PLATING CORPORATION

FIGURE 1
SOIL BORING AND TEST PIT LOCATIONS
PHASE II OUTFALL PIPELINE
INVESTIGATION

Scale: 0 50' 100' | Date: JUNE, 2000

Prepared By: Foth & Van Dyke | By: JOW | 24015

R001224

Foth & Van Dyke
consultants · engineers · scientists

August 18, 2000

Mr. W. Robert Watson, P.E.
Environmental Protection Engineer
Illinois Environmental Protection Agency
1001 North Grand Avenue East, P.O. Box 19276
Springfield , IL 62794-19276

Dear Rob:

Re: Response to IEPA Request for Information Concerning Disposal in the CAMU Landfill of Remediation Waste from a Recent Release at the Modern Plating Corporation

The purpose of this letter is to provide the information and justification requested by the Illinois Environmental Protection Agency (IEPA) received via an e-mail dated July 28, 2000, regarding a proposal by Modern Plating Corporation (Modern) to place a small volume of remediation waste in the CAMU landfill.

The e-mail from Mr. Rob Watson (IEPA) listed three items needed for IEPA to consider the disposal of the remediation waste from the recent release in the CAMU Landfill. This letter responds to the numbered items in this letter by repeating the numbered item from the e-mail in *italics* which is followed by our responses typed in regular font.

1. *Provide a detailed description of the incident and how it was remediated. Include a scale drawing of the facility that shows the location and extent of the incident. Also provide the incident number from IEMA and Illinois EPA Emergency Response Unit, and copies of the notification required by the Contingency Plan and Section IV. E. 1 in the RCRA permit.*

Response No. 1.

On July 20, 2000, Modern was performing repairs on the pipeline corridor which transfers wastewater from the manufacturing plant to the wastewater treatment plant. At approximately 10:30 AM, during the course of the repair work, the contractor, Fisher Excavating, discovered that the containment seal at the end of the wastewater pipeline just south of the wastewater treatment plant had failed. Due to this failure, a release of approximately 500 to 800 gallons of chromate rinse water occurred, which was contained within the excavation made for the pipeline repair. The location of this incident is shown on Figure 1. The flow was shut down immediately and the released wastewater was

2737 South Ridge Road · P.O. Box 19012 · Green Bay, WI 54307-9012 · 920-497-2500 · Fax: 920-497-8516

pumped directly to the wastewater treatment plant. At 1:15 p.m. approximately 3 cubic yards of soil which had come in contact with the wastewater was excavated, hauled and temporarily placed in Lagoon No. 1. On the same day, July 20, 2000, Modern reported the incident to the Illinois Environmental Protection Agency Emergency Response Unit.

The IEMA incident number is 20001377. A copy of the Non-Compliance Advisory Letter received from the IEPA Emergency Response Unit is included as Attachment 1. The notification requested, which is required by RCRA Part B Permit Section IV E. 1, is contained in the responses in this letter.

Brian Stanul, a Foth & Van Dyke on-site construction engineer present at the site at the time conducting oversight work associated with the construction of the CAMU, observed the excavation of the contaminated soil. The release was contained in an area approximately 7 ft long and 3 ft wide. This area was excavated to a depth of approximately 4 ft and soil which appeared wet from contact due to the release was removed and placed in Lagoon No. 1.

2. *Describe how representative samples of the waste and the excavation were collected and analyzed. Demonstrate that the USEPA and/ or ASTM approved sampling and analytical methodologies were followed. Also provide copies of the analytical results.*

Response No. 2

Following the IEPA emergency incident sampling guidelines, Mr. Stanul collected a confirmatory sample after excavation of the contaminated soils was completed. Since the area impacted was small (i.e. ~ 21 sq ft), one sample was field judged to be adequate to evaluate whether the soil contaminated with the chromate rinse water had been sufficiently removed. Mr. Stanul collected the soil sample from the bottom of the excavation using a decontaminated trowel and placed the soil sample in two 4-ounce sterile plastic containers.

As requested by the IEPA environmental protection specialist, Ms. Kari Hanson, the soil sample from the release area was tested for TCLP RCRA metals, hexavalent chromium, trivalent chromium and total chromium. The sample was handled under chain-of-custody procedures and delivered by Mr. Stanul to the Rockford office of TestAmerica Inc. The laboratory test results, laboratory methods, and the chain-of-custody forms are contained in Attachment 2. In addition, on July 22, 2000 Mr. Stanul used the same methodology to obtain a sample of the contaminated soil stockpiled in Lagoon No. 1. The test results for this sample are also included in Attachment 2.

The soil sample taken from the base of the excavation of the contaminated soils shows low levels of chromium compounds as follows:

- Total Chromium- 9.9 mg/kg which is below the mean site-specific background of 10.6 mg/kg, the IEPA background of 52 mg/kg, and the IEPA TACO Industrial Commercial Standard of 420 mg/kg (Source : Foth & Van Dyke , 1999 *Final RCRA Closure Plan and Basis of Design, Modern Plating Corporation, Freeport, IL).*

- Chromium, Trivalent- <12 mg/kg (IEPA TACO Construction Worker Standard 330,000 mg/kg).

- Chromium, Hexavalent- <12 mg/kg (IEPA TACO Industrial Commercial Standard of 420 mg/kg).

Similarly, the TCLP on the RCRA metals resulted in values which were below the IEPA TACO standards as shown in Table 1.

Table 1

Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties TCLP Results

Chemical Name	Excavated Confirmation Sample (mg/l)	Class II Soil Component of Groundwater Standards (mg/l)
Arsenic	<0.20	0.2
Barium	0.423	2.0
Cadmium	0.018	0.05
Chromium	<0.040	1.0
Lead	<0.100	0.1
Mercury	<0.0002	0.01
Selenium	<0.05	0.05
Silver	<0.050	0.05

A sample of the excavated soil, also tested for chromium, produced a result of 74 mg/kg total chromium. IEPA's TACO Industrial Commercial Standard is 420 mg/kg.

3. *Identify the conditions and criteria in the RCRA permit for placing waste in the CAMU Landfill and demonstrate how this material meets these criteria.*

Response No. 3

Section I, C. 1. Of the RCRA Part B Permit reads as follows: " The Permittee is only allowed to place the following types of wastes generated during remediation of the on-site hazardous and solid waste management units in the CAMU: Electroplating Sludge (F006), soil contaminated with cadmium, chromium and cyanide and trichloroethylene (F002), including soils from the Shawnee building, cyanide vault, wetland areas, and any other areas where similar remediation wastes are located during the closure and corrective actions at the facility."

We maintain that the contaminated soil resulting from the chromium rinse water release is remediation waste, specifically soil contaminated with chromium. As such, the Permittee is allowed to place this type of waste in the CAMU. This remediation waste, is located on the facilities property, and can be placed in the CAMU consistent with the intent of a CAMU in a manner which is protective, reliable and cost effective. Since this waste was generated during the repair of pollution control facilities at the site, it is therefore part of the greater effort to remediate the solid and hazardous waste units used in the past.

In addition we maintain that the remediation waste quantity is small (i.e., approximately 3 cu yd) and the concentration of chromium low (i.e., 74 mg/kg). As a result the placement of the waste in the CAMU does not have an impact on the volumes to be disposed of in the CAMU nor will disposal of this remediation waste have any overall impact on the quantity of contaminants placed in the CAMU landfill.

Based on our interpretation of the referenced section of the RCRA Part B Permit, we request that IEPA grant us approval to place the remediation wastes generated from the chromium release in the CAMU Landfill.

Should you have any questions *or* wish to discuss this matter, please feel free to call the undersigned at (920) 497-2500.

Sincerely,

Foth & Van Dyke

Ronald E. Meister, P.G.
Project Manager

Steven J. Laszewski, Ph.D.
Technical Director

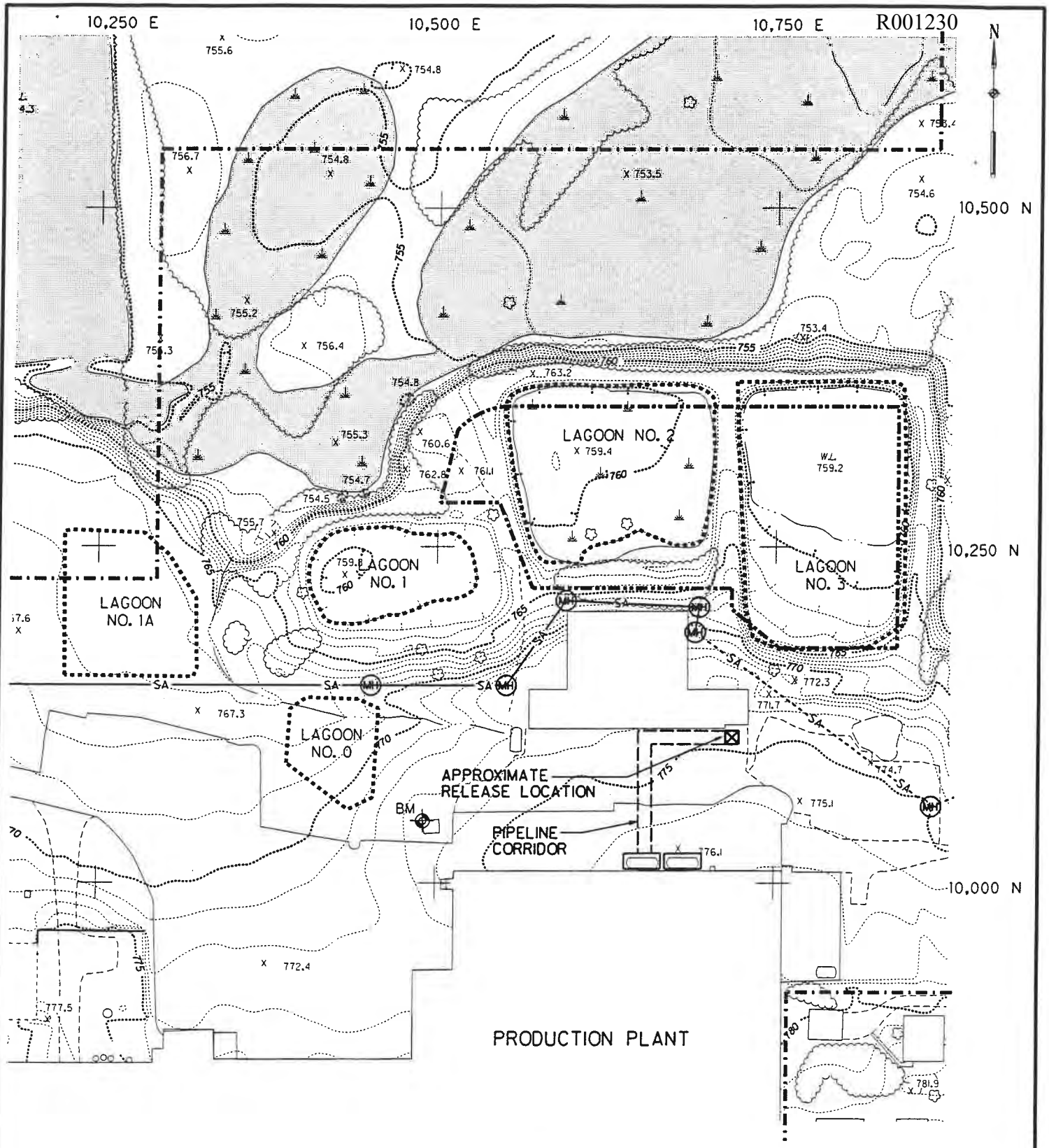
lmc

REM:SJL1:lmc

Attachments

cc: Mr. Craig Skolrood, Modern Plating Corporation
Mr. Darrell Hill, Modern Plating Corporation
Mr. Gene Fox, Fehr-Graham Associates
Mr. Marten Cieslik, Foth & Van Dyke
Mr. Brian Stanul, Foth & Van Dyke
Ms. Janis Kesy, Foth & Van Dyke

LMC\J:\scopes\97M015\l-watson spill.wpd\4000



LEGEND

- PROPERTY LINE
- SA — ACTIVE DISCHARGE PIPELINE
- SA — ABANDONED OUTFALL PIPELINE

MODERN PLATING CORPORATION

FIGURE 1

MODERN PLATING REMEDIATION RELEASE LOCATION

Scale: 0 50' 100'		Date: AUGUST, 2000	
Prepared By: Foth & Van Dyke	By: JOW	97M015	

I:\97m015\P00\7m15225c.dgn 08/16/2000 09:37:32 AM

Attachment 1

IEPA Non-Compliance Advisory Letter Dated July 27, 2000

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

Non-Compliance Advisory Letter JUL 3 1 2000

217/782-3637

July 27, 2000

Mr. Dave Serzatius
Modern Plating Corp.
P.O. Box 838
Freeport, IL 61032

Re: 20001377

Dear Mr. Serzatius

On July 20, 2000, this office received information that you or an organization that you represent were involved in an environmental incident, which occurred at or near 701 S. Hancock Ave., Freeport, IL on or before July 20, 2000. Our records currently indicate the involvement of 500-800 gallons of Chrome rinse water.

The purpose of this Non-Compliance Advisory Letter is to notify you that the information currently available indicates that violations of environmental laws or regulations may have occurred and may be ongoing. The Illinois Environmental Protection Agency needs further information to evaluate whether compliance has been or will be achieved relative to the above referenced incident or whether to proceed with enforcement. Please address the specific information requested in the enclosed Advisory 2.

A written response to this Non-Compliance Advisory Letter is expected by September 20, 2000. The incident number should be noted in all correspondence about this incident. Please submit one original to the Springfield, Illinois address listed below and one copy to the Maywood, Illinois address listed below, of your response to this Non-Compliance Advisory Letter to:

Illinois Environmental Protection Agency
Emergency Response Unit, Mail Drop #29
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Illinois Environmental Protection Agency
Emergency Response Unit
1701 First Avenue
Maywood, Illinois 60153

JUL 3 1 2000

This Non-Compliance Advisory Letter is not a violation notice as specified in Section 31(a)(1) of the Illinois Environmental Protection Act (415 ILCS 5/31(a)(1): However, if you do not adequately respond to this Non-Compliance Advisory Letter, the Illinois EPA may issue a formal violation notice pursuant to Section 31(a)(1) of the Act.

If you have any questions regarding any of the above, please contact the undersigned at 708/338-7900.

Sincerely,

Edward Osowski

Edward Osowski, Senior Emergency Responder
Emergency Response Unit
Office of Chemical Safety

cc: Incident File 20001377
Maywood ERU
G. Tod Rowe
John Waligore

JUL 3 1 2000

ADVISORY 2

For releases of any contaminant to land and/or water

The spillage of any amount of material, as listed in the cover letter, may result in environmental contamination. Such environmental contamination is a violation of the Illinois Environmental Protection Act, when: into the waters of the state [415 ILCS 5/12(a)]; onto a highway or other public property [415 ILCS 5/21(b)]; or onto land in such a manner so as to create a water pollution hazard [415 ILCS 5/12(d)]. Waters of the state include groundwater, drainage ditches and intermittent streams as well as the more obvious bodies of surface water.

Consequently the Illinois Environmental Protection Agency expects such a spill to be cleaned up by the party who was in control of the material at the time it was spilled. Cleanup criteria are found at 35 Ill. Adm. Code 742 (the Tiered Approach to Corrective Action Objectives or TACO). The complete text of TACO can be found on the internet at *http:www.ipcb.state.il.us/title/#g*.

We expect you to:

❑ **Incident Causation Investigation**

A thorough investigation by knowledgeable personnel should be initiated by the responsible party. The scope of the investigation must be sufficient to determine the root cause(s) as well as the proximate cause of the release. At a minimum the investigation should specifically address each of the following potential causal factors: equipment, procedures, personnel error, extraordinary weather conditions, actions by a third party. The investigation should result in findings and recommendations for preventive and corrective actions. In developing recommendations the following topical areas should be specifically considered: material substitutions that reduce or eliminate hazards, equipment design and installation, maintenance type and frequency, adequacy of procedures, provision of adequate secondary containment, as well as personnel training and evaluation (both initial and periodic). A prevention implementation schedule should be developed and implemented promptly.

❑ Submit a Remedial Action Completion Report by the date listed in the cover letter or propose an alternate date for submittal of a Remedial Action Completion Report. At a minimum the Remedial Action Completion Report should include the following:

1) Executive Summary. This section of the report should identify the overall objectives of the remedial action that was implemented and the technical approach utilized to meet those objectives, including:

❑A brief description of the site and surroundings area affected by the release, including the facts and circumstances about the release.

❑A statement of the scope of the problem corrected or mitigated by the remedial action.

❑The anticipated post-remediation uses of the incident site and areas immediately adjacent to the incident site property and any institutional controls that are being relied upon to set

TACO objectives for the site.

2) Field Activities. This section should provide a narrative description of the :
- ❑Field activities conducted during the remediation;
- ❑Remedial actions implemented at the incident site and the performance of each remedial technology utilized: and
- ❑A brief description of any unanticipated events that impacted the nature or rate of the remediation activity.

3) Confirmation Sampling. This section should demonstrate the effectiveness of the remedial action by comparing the soil and/or groundwater sample results for the chemical parameters given above to the appropriate cleanup criteria from 35 Ill. Adm. Code 742 (TACO). Appropriate sampling and analytical test methods are those promulgated by USEPA in SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"Third Edition, Final update III (Doc. # 955-001-00000-1 available from the U.S. Government Printing Office). The number and location of samples needed to verify cleanup is a site specific decision. You may submit a written sampling plan and site sketch with proposed sample locations to us for our approval or feel free to contact us by phone (217-782-3637) to discuss what we will accept under specific circumstances. For further guidance consult Table 1 below. The data should:
- ❑Be summarized and presented in a table or graphical format;
- ❑Include summary tables which should include the appropriate cleanup criteria as a column (or row as applicable);
- ❑Be referenced to a site map showing the locations of the confirming samples relative to the extent of contamination;

4) Special Conditions. This section should provide a description of:
- ❑If the appropriate cleanup criteria were not taken from the TACO tables. Then provide details (including all calculations) on how the appropriate cleanup criteria were developed;
- ❑Amount and types of material disposed of or treated in response to the incident. This should include name and location of disposal or treatment facility. Disposal manifests or shipping papers are acceptable documentation.

5) Conclusion. This section should:
- ❑ evaluate the degree of success of the remedial action in meeting the cleanup criteria.

6) Appendices. References and data sources should be incorporated in the appendices. These would likely include:
- ❑ Photographs,
- ❑ Field logs,
- ❑ geological boring logs,
- ❑ monitoring or recovery well completion reports, and
- ❑ reports of laboratory analyses should be organized and presented logically.

Table 1

EMERGENCY INCIDENT SAMPLING GUIDE

TO VERIFY REMEDIATION COMPLETION FOR SUDDEN SPILLS TO SOIL SURFACES

Surface Soil

The IEPA suggests, but does not require, the following process for determining the number of samples and their placement at spill sites. A grid sampling layout is suggested that uses a regular and repeated pattern of areally distributed sampling locations with the soil samples collected at the grid intersections, including the intersections along the boundaries. A circular pattern of equal spacing may also be used. The boundaries of the grid system need not be square, but may be adjusted to fit the area of study. Grid intervals may be determined using the following equation:

$$GI = [(A/\pi)^{0.5}] + 2$$

Where, "GI" is the grid interval in feet, "A" is the area to be gridded in square feet and $\pi = 3.14$.

Subsurface Soil (when native soil and not sand and/or gravel)

1. Following Expeditious Removal (usually less than one month after spill)

- ☐ A minimum of two sampling locations for every 0.5 acres of contaminated area placed where migration to groundwater is most likely or if that is equivocal then at representative locations in the centroid of the contaminated area.
- ☐ Discrete samples should be obtained at each sampling location at every two feet of depth, begining six inches below ground and continuing through the zone of contamination. If the zone of contamination is not precisely known, one of the three approaches described below may be used:
  - a). Direct reading field instrumentation or test kits can be used to estimate the zone of contamination contemporaneously with the collection of samples,
  - b). Samples can continue to be collected from the surface at every two feet of depth until groundwater is encountered, or
  - c). An estimate of extent can be made to limit the number of samples with the understanding that a second round of sampling may be necessary if the results of the first do not demonstrate that the extent of the zone of contamination was encountered.

2. Following Longer Remediation (greater than one month)

The number and placement of sampling locations should be determined as specified above for surface soil sampling. At each sampling location discrete samples should be obtained at every two feet of depth, beginning six inches below ground and continuing through the zone of contamination.

Post-Cleanup Sampling of Excavations

Use the surface soil spacing criteria to sample all walls and floor of the excavation. The usual minimum is one sample on each wall and two on the floor of an excavation deeper than two feet.

THE ABOVE SUGGESTIONS ARE PROVIDED TO HELP EXPEDITE SAMPLING OF COMMON SPILL SITUATIONS. SEE 35 ILL. ADM. CODE 742.225 REGARDING DEMONSTRATION OF COMPLIANCE WITH SOIL REMEDIATION OBJECTIVES AS WELL AS ALLOWABLE USES OF COMPOSITED SAMPLES AND AVERAGING OF SAMPLE RESULTS.

TOTAL P.06

R001236

Attachment 2

Laboratory Test Data

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Job Number: 00.07828

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Modern Plating Corp./97M015

Sample Number	Sample Description	Date Taken	Date Received
589810	WWTP-1	07/20/2000	07/21/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Mary Pearson

Mary Pearson
Project Manager

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

JUL-27-2000 16:33 BARTLETT LAB P.01/08

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Sample No. : 589810

Job No.: 00.07828

Sample Description: WWTP-1
Modern Plating Corp./97M015

Date Taken: 07/20/2000
Time Taken: 13:20

Date Received: 07/21/2000
Time Received: 07:00

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
Solids, Total	86.7		%	0.1	07/24/2000	kmt	SM 2540
Chromium, ICP	9.9		mg/kg dw	2.3	07/25/2000	kdw	SW 6010B
Chromium, Trivalent	<12		mg/kg dw	4.6	07/25/2000	jtt	Calculation
Chromium, Hexavalent	<12		mg/kg dw	1.2	07/24/2000	jrr	SWII 3060

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

JUL-27-2000 16:33 BARTLETT LAB P.02/08

TestAmerica Bartlett Division
TestAmerica INCORPORATED

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials"

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

(7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

(8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.

(9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.

(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

P.04/08

CHAIN OF CUSTODY RECORD

TestAmerica INCORPORATED

602 Commerce Drive / Watertown, WI 53094
Phone: (920) 261-1660 / Fax: (920) 261-8120

COMPANY: FOTH & VAN DYK
ADDRESS: 2737 S. RIDGE RD., GREEN BAY, WI 54307
PHONE: (920) 497-2500 FAX: (920) 497-8516
PROJECT DESCRIPTION/NO.: MODERN PLATING CORP. / 97M015
PROJECT MANAGER: RON MEISTER

REPORT TO: RON MEISTER
INVOICE TO: FOTH & VAN DYKE

P.O. NO.:
QUOTE NO.:

SAMPLED BY:
BRIAN STANUL
NAME

NAME

Fax Results? X QC w/Results? X

Which regulations apply?
NPDES/Wastewater ____ RCRA X UST ____
Drinking Water ____ Other ____ None ____

DATE	TIME	SAMPLE ID/DESCRIPTION	FILTERED	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	NONE	METHANOL	OTHER	ANALYSES: TRIVALENT CHROMIUM	HEXAVALENT CHROMIUM	TCLP Metals *							COMMENTS
7/20/00	13:20	WWTP-1	N	S	X						X			X	X	X							

LAB USE ONLY

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO BOTTLES SUPPLIED BY LAB? YES / NO TEMPERATURE UPON RECEIPT: 2nd 24 °C ONICE

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR LAB BY:
Brian Stanul	7/20/00	15:37	Dave C. Foth 7-20-00 1537	→	7/21/00	7:00	Mary Pearse

METHOD OF SHIPMENT:
TestAmerica Courier ✓
Client ____
Common Carrier ____

REMARKS:
* TCLP Metals added 7/21 by Ron Meister dab

BARTLETT LAB 25
JUL-27-2000 16:34
R001241

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Job Number: 00.07829

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Modern Plating Corp./97M015

Sample Number	Sample Description	Date Taken	Date Received
589811	WWTP-1	07/20/2000	07/21/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Mary Pearson
Project Manager

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

ANALYTICAL REPORT

REVISED REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
P.O. Box 19012
Green Bay, WI 54307

07/25/2000

Sample No. : 589811

Job No.: 00.07829

Sample Description: WWTP-1
Modern Plating Corp./97M015

Date Taken: 07/20/2000
Time Taken: 13:20

Date Received: 07/21/2000
Time Received: 07:00

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
TCLP Metals Extraction	Leached				07/22/2000	kar	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	0.20	07/24/2000	kdw	SW 6010B
TCLP-Barium, ICP	0.423		mg/L	0.020	07/24/2000	kdw	SW 6010B
TCLP-Cadmium, ICP	0.018		mg/L	0.010	07/24/2000	kdw	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	0.040	07/24/2000	kdw	SW 6010B
TCLP-Lead, ICP	<0.100	MDL	mg/L	0.200	07/24/2000	kdw	SW 6010B
TCLP-Mercury, CVAA	<0.0002		mg/L	0.0002	07/25/2000	vgm	SW 7470A
TCLP-Selenium, ICP	<0.05	MDL	mg/L	0.20	07/24/2000	kdw	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	0.050	07/24/2000	kdw	SW 6010B

MDL : Analyte reported to the Method Detection Limit.

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

KEY TO ABBREVIATIONS and METHOD REFERENCES

TestAmerica INCORPORATED

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ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
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Method References

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(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

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(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

MASTER FILE COPY
R001243
Scope 97M015 Classification 8351
Copy To REM Master file

TestAmerica
INCORPORATED

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
Green Bay, WI 53407

07/31/2000

Job Number: C0.08077

IEPA Cert. No.: 100221
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: 97M015; Modern Plating

Sample Number	Sample Description	Date Taken	Date Received
590612	WWTP-2 (Soil Pile)	07/27/2000	07/27/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:
Mary Pearson
Mary Pearson
Project Manager

830 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Ron Meister
FOTH & VAN DYKE
2737 S. Ridge Road
Green Bay, WI 53407

07/31/2000

Sample No. : 590612

Job No.: 00.08077

Sample Description: WWTP-2 (Soil Pile)
97M015; Modern Plating

Date Taken: 07/27/2000
Time Taken: 09:25

Date Received: 07/27/2000
Time Received: 13:45

Parameter	Result	Flag	Units	Reporting Limit	Date Analyzed	Analyst Initials	Analytical Method
Solids, Total	88.1		%	0.1	07/28/2000	kmc	SM 2540
Chromium, ICP	74		mg/kg dw	2.3	07/28/2000	kdw	SW 6010B

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

TestAmerica
INCORPORATED

KEY TO ABBREVIATIONS AND METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
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ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	:	These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials"

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

(7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

(8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.

(9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.

(10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986

850 W. Bartlett Rd. / Bartlett, IL 60103-4400 / 630-289-3100 / Fax: 630-289-5445 / 800-378-5700

Chain of Custody Record

TESTAMERICA INC.

☐ Asheville, NC (A) (828) 254-5169 ☒ Bartlett, IL (C) (630) 289-3100 ☐ Cedar Falls, IA (E) (319) 277-2401 ☐ Charlotte, NC (G) (704) 392-1164 ☐ Dayton, OH (I) (937) 294-6856 ☐ Lumberton, NC (K) (910) 738-6190 ☐ Nashville, TN (M) (615) 726-0177 ☐ Pontiac, MI (O) (248) 332-1940 ☐ Rockford, IL (Q) (815) 874-2171

☐ Atlanta, GA (B) (770) 368-0636 ☐ Brighton, CO (D) (303) 659-0497 ☐ Charleston, SC (F) (843) 849-6550 ☐ Columbia, SC (H) (803) 796-8989 ☐ Davenport, IA (J) (319) 323-7944 ☐ Indianapolis, IN (L) (317) 842-4261 ☐ Macon, GA (N) (912) 757-0811 ☐ Orlando, FL (P) (407) 851-2560 ☐ Watertown, WI (R) (920) 261-1660

Client: FOTH & VAN DYKE

Report Address: 2737 S. RIDGE RD.

GREEN BAY, WI 54307

Attn: RON MEISTER

Phone No.: (920) 497-2500

Fax No.: (920) 497-8516

Project No.: 97M015

Invoice Address: SAME

Attn:

Sampled By: BRIAN STANUL

P.O. No:

Quote No.

State Samples Collected

TURNAROUND TIME

☐ Standard

☒ Rush (surcharges may apply)

Date Needed: 7/28/00

REQUESTED PARAMETERS

TOTAL CHROMIUM

Is this work being conducted for regulatory compliance monitoring? Yes___ No___

Is this work being conducted for regulatory enforcement action? Yes___ No___

Which regulations apply:
RCRA X NPDES Wastewater___
UST___ Drinking Water___
Other___ None___

Sample ID	Date	Time	Comp (C) Grab (G)	Matrix	Lab Use	TOTAL CHROMIUM	# and type of containers: HCl	NaOH	HNO_3	H_2SO_4	Other	None	REMARKS
WWTP-2 (SILPILE)	7/27/00	09:25	G	S		X						1	

QC Deliverables: ☐ None ☐ Level 2 + Batch QC ☐ Level 3 ☐ Level 4 ☐ Other

N/A Inb Lab Temp

recd on ice Rec Lab Temp

COMMENTS:

* 24-HOUR TURN-AROUND TIME

18°C actual sample temp

Relinquished By: Brian J. Stanul	Date 7/27/00 Time 10:17	Received By: Paul E. Hoss	Date 7/27/00 Time 10:17	LAB USE ONLY:	
Relinquished By: Paul E. Hoss	Date 7/27/00 Time 10:25	Received By: B R Johnson	Date 7/27 Time 12		
Relinquished By: B R Johnson	Date 7/27 Time 13 45	Received By: P Murrill	Date 7/27/00 Time 1345	Custody Seal: ☐ Yes ☐ No ☑ N/A	
Relinquished By:	Date Time	Received By:	Date Time	Bottles Supplied by TA: ☐ Yes ☑ No	

59

R0001248

MASTER FILE COPY 0001249 WRW

Scope 97M015 Classification 4000
Copy To BJLI BJSI MJCI NKD
REM, JSK, MASTER File

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217-524-3300

RECEIVED
OCT 5 2000
FOTH & VAN DYKE

September 19, 2000

CERTIFIED MAIL
7099 3400 0006 5938 0348

Mr. Craig Skolrood
Manager, Regulatory Compliance
Modern Plating Corporation
701 South Hancock Ave.
Freeport, Illinois 61032-0838

Re: 1770200010 -- Stephenson County
Modern Plating Corporation
Log No. B-167
RCRA Permit File

Dear Mr. Skolrood:

The Illinois EPA has completed its review of the letter submitted on your behalf by Foth & Van Dyke (F&VD) dated August 18, 2000 and received August 21, 2000. In that letter F&VD described the July 20, 2000 release of approximately 800 gallons of chromate rinse water at the Modern Plating Company (MPC) facility in Freeport, Illinois as well as how the remediation waste from the spill was managed.

Based on the information provided in the August 18, 2000 letter, the Illinois EPA has determined that the release area would constitute a newly identified solid waste management unit (SWMU). In addition, it is acceptable to place the approximately 3 cubic yards of remediation waste that was generated during remediation of the spill in the CAMU landfill described in the RCRA Post-Closure Permit for MPC.

The issue of whether the spill was adequately remediated is the responsibility of the Illinois EPA's Emergency Response Unit (ERU). This portion of the remedial action needs to be coordinated with ERU when MPC responds to the July 31, 2000 Non-Compliance Advisory Letter regarding incident No 20001377.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Joyce L. Munie, P.E.
Manager Permit Section,
Bureau of Land

JLM:WRW:bjh\1092s.doc
JHK
WRW JSK

bcc: Bureau File
Rockford Region
Jim Moore
Jerry Kuhn
Terri Blake Myers
Rob Watson
Karen Nachtwey
G. Tod Rowe, ERU
Ed Osowski, ERU – Maywood Region

Foth & Van Dyke
consultants · engineers · scientists

RECEIVED
DEC 7 2000
FOTH & VAN DYKE

December 6, 2000

Mr. Rob Watson, P.E.
Environmental Protection Engineer
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Mr. Watson:

Re: Status of Construction of the Modern Plating Corporation CAMU Landfill

The purpose of this letter is to document our telephone conversation of December 6, 2000 concerning the status of the CAMU Landfill construction at the Modern Plating remediation project and the submittal of the required documentation reports. As we discussed, we expect that all the wastes placement and grading will be completed by Monday, December 11, 2000. At that time we will begin the placement of the sand venting layer portion of the final cover. We expect that placement of the Geosynthetics and other components of the final cover will begin on or after December 13, 2000 and be completed in about two weeks, weather permitting. As you are aware, at this point in time the pumps for the leachate collection system (LCS) and leak detection system (LDS) have not been permanently installed nor are the pumps fully operational. Thus, at this time the filling of the CAMU Landfill is completed but the construction is not.

We expect that the construction will be completed by the end of the year and will keep you informed as to when the LCS and LDS are operational. When this occurs the major components of the CAMU Landfill, including the final cover, will be completed and we will prepare and submit the construction documentation report within 30 days as required under RCRA Part B Permit Condition I., E., 5. The final cover documentation report will be submitted as required in Condition I., H. 5. within 60 days after the closure is completed. We anticipate no problems in meeting this schedule.

Sincerely,

Foth & Van Dyke

Ronald E. Meister

Ronald E. Meister, P.G.
Project Manager

REM:lmc

cc: Mr. Craig Skolrood, MPC
Ms. Kathy Geyer, IEPA Rockford Office
Mr. Steve Laszewski, Foth & Van Dyke
Mr. Marty Cieslik, Foth & Van Dyke
Mr. Brain Stanul, Foth & Van Dyke

REM\LMC\J:\scopes\97M015\liepacdrschdl.wpd\4000

2737 South Ridge Road · P.O. Box 19012 · Green Bay, WI 54307-9012 · 920-497-2500 · Fax: 920-497-8516

Appendix B

Construction Observation Photographs



Photograph 1 May 24, 2000
Description: Excavating sludge from Lagoon No. 2.



Photograph 2 July 12, 2000
Description: Installing GCL and secondary geomembrane in Phase 1 of the CAMU.



Photograph 3 July 15, 2000
Description: Completed double liner on Phase 1 of the CAMU.



Photograph 4 August 25, 2000
Description: Excavating contaminated soil from Wetland No. 2.



Photograph 5 September 28, 2000
Description: Applying lime kiln dust to Lagoon No. 3 sludge.



Photograph 6 October 18, 2000
Description: Completed subbase for Phase 2 of the CAMU



Photograph 7 October 26, 2000
Description: Installing secondary geomembrane on Phase 2 of the CAMU



Photograph 8 November 11, 2000
Description: Excavating sludge from Lagoon No. 0.



Photograph 9 November 8, 2000
Description: Placing sludge in Phase 2 of the CAMU.



Photograph 10 March 30, 2001
Description: Leachate/leak detection pump building.

Appendix C

Subbase Fill Test Results

Appendix C1

Field Tests

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, 78°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
2' BRIDGING LAYER

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
1	N102+75, E105+70	6"	~755'	MAC-CIVIL-1	137.3	10.1	124.7	97.1	
2	N102+75, E105+70	12"			137.7	9.9	125.3	97.6	
3	N103+25, E105+70	6"			137.0	11.6	122.8	95.6	
4	N103+25, E105+70	12"			142.6	11.6	127.7	99.5	
5	N102+40, E105+70	6"			136.7	11.3	122.8	95.6	
6	N102+40, E105+70	12"			136.4	11.3	122.6	95.5	
7	N103+25, E106+00	6"			136.1	10.4	123.3	96.0	
8	N103+25, E106+00	12"			137.8	11.1	124.0	96.6	
9	N102+75, E106+00	6"			136.2	11.3	122.3	95.3	
10	N102+75, E106+00	12"			137.4	11.6	123.0	95.8	
11	N102+40, E106+00	6"			138.6	10.5	125.4	97.7	
12	N102+40, E106+00	12"			138.9	10.8	125.4	97.7	
13	N103+25, E106+50	6"			140.9	11.0	126.9	98.8	
14	N103+25, E106+50	12"			141.2	10.7	127.6	99.4	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MAC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2805 Moisture: 701

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M01559
Project: CAMU LANDFILL CONSTRUCTION Page: 1 OF 2
Prepared by: BJS1 Date: 6/21/00
Checked by: Date:

FORM CE5011 (1/91)

R001259

2

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, 78°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
2' BRIDGING LAYER

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
15	N102+75, E106+00	12"	~755'	MAC-CIVIL-1	137.6	12.6	122.3	95.2	
16	N102+75, E106+00	6"			137.6	10.3	124.7	97.1	
17	N102+75, E106+70	6"			143.0	10.2	129.7	101.1	
18	N102+75, E106+70	12"			140.3	10.2	127.3	99.2	
19	N103+00, E106+80	6"			143.5	8.3	132.4	103.1	
20	N103+00, E106+80	12"			145.3	8.3	134.2	104.5	
21	N103+25, E106+80	6"			139.0	10.6	125.7	97.9	
22	N103+25, E106+80	12"			139.3	10.0	126.6	98.6	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MAC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2805 Moisture: 701

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 2 OF 2
Prepared by: BJS1 Date: 6/21/00
Checked by: Date:

R0012260

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, 80°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 1

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
23	N103+10, E105+80	6"	~756'	MPC-CIVIL-1	139.9	11.5	125.5	97.7	
24	N102+60, E105+80	6"	↓	↓	135.2	10.7	122.1	95.1	
25	~~N103+10~~ N102+60, E106+25	6"			136.0	11.2	122.3	95.3	
26	N103+10, E106+25	6"			139.2	9.7	126.9	98.8	
27	N103+10, E106+65	6"			135.5	11.1	121.9	95.0	
28	N102+60, E106+65	6"			136.9	11.5	122.8	95.7	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

R001261

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2808 Moisture: 702

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS1 Date: 6/22/00
Checked by: Date:

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, 80°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 2

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
29	N103+25, E106+00	6"	~757	MPC-CIVIL-1	138.4	11.2	124.5	97.0	
30	N102+75, E106+00	↓	↓	↓	140.2	11.2	126.1	98.2	
31	N102+40, E106+50				139.0	10.3	125.9	98.1	
32	N102+75, E106+50				139.3	10.4	126.2	98.3	
33	N103+25, E106+50				139.7	11.1	125.8	97.9	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2808 Moisture: 702

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS Date: 6/22/00
Checked by: Date:

5

R001262

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, 82°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: LIFT 3 - PHASE I
NORTH & WEST BERMS

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
34	N103+45, E105+65	6"	~760	MRC-CIVIL-1	140.7	10.0	127.9	99.6	
35	N103+45, E106+05				141.8	11.2	127.5	99.3	
36	N103+45, E107+00				137.5	10.6	124.9	96.9	
37	N102+90, E105+15				141.7	10.6	128.1	99.8	
38	N103+35, E105+15				136.2	10.6	123.1	95.9	
39	N103+25, E105+40				137.8	10.2	125.0	97.3	
40	N103+00, E107+00				136.8	11.5	122.7	95.5	
41	N102+65, E107+00				136.0	11.5	122.0	95.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MRC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2816 Moisture: 703

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJSI Date: 6/23/00
Checked by: Date:

R001263

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, 82°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 4
NORTH BERM

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
42	N103+40, E106+50	6"	~761	MPC-CIVIL-1	137.5	10.6	124.9	96.9	
43	N103+40, E105+75	↓	↓	↓	139.3	10.8	125.7	97.9	
44	N103+00, E105+50	↓	↓	↓	137.1	10.3	124.2	96.8	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2816 Moisture: 703

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 2
Prepared by: BJSI Date: 6/23/00
Checked by: Date:

R001264

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, 75°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 4
EAST & WEST BERMS

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
45	N102+75, E106+90	6"	~761	MPC-CIVIL-1	136.6	11.2	122.8	95.7	
46	N103+20, E106+90	↓	↓	↓	138.0	11.5	123.8	96.4	
47	N103+25, E105+10	↓	↓	↓	138.9	11.5	124.6	97.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2801 Moisture: 704

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 6/27/00
Checked by: Date:

8

R001265

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, 75°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 5
NORTH BERM

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
48	N103+50, E105+35	6"	~762'	MPC-CIVIL-1	137.5	11.1	123.8	96.4	
49	N103+50, E106+00	↓	↓	↓	135.8	11.1	122.2	95.2	
50	N103+50, E106+80	↓	↓	↓	137.4	11.0	123.8	96.4	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2801 Moisture: 704

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 6/27/00
Checked by: Date:

R001266

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, 75°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 6
NORTH BERM

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
51	N103+50, E105+60	6"	LIFT 6	MAC-CIVIL-1	136.0	11.3	122.2	95.2	
52	N103+50, E106+10	↓	↓	↓	135.3	10.8	122.1	95.1	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MAC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2800 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSJ Date: 6/30/00
Checked by: Date:

10

R001267

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, 75°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: LIFT 5 – PHASE I
WEST & SOUTH BERMS

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
53	N103+30, E105+30	6"	LIFT 5	MPC-CIVIL-1	138.2	10.8	124.7	97.2	
54	N103+00, E105+00	↓	↓	↓	140.0	8.5	129.0	100.5	
55	N102+75, E105+25				135.3	10.1	122.9	95.7	
56	N102+65, E104+40				136.3	10.2	123.7	96.3	
57	N102+30, E106+15				135.4	8.8	124.4	96.9	
58	N102+30, E106+50				136.5	10.0	124.1	96.6	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2800 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 6/30/00
Checked by: Date:

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: CLOUDY, HUMID, 80°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
NORTH BERM
LIFT 6

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
59	N103+50, E106+90	6"	LIFT 6	FREEPORT	130.2	10.8	117.5	97.9	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
FREEPORT WWTF	SP-SM	120.0	11.0	9.5

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2795 Moisture: 697

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSJ Date: 7/5/00
Checked by: Date:

12

R001269

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather:

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
EAST BERM
LIFT 5

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
60	N103+10, E107+00	6"	LIFT 5	FREEPORT	126.8	9.6	115.7	96.4	
61	N102+75, E107+00	6"	LIFT 5	FREEPORT	124.9	9.5	114.2	95.1	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
FREEPORT WWTF	SP-SM	120.0	11.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2795 Moisture: 697

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.:
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 7/5/00
Checked by: Date:

13

R0012270

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: CLOUDY, HUMID, 80°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
WEST BERM
LIFT 6

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
62	N102+90, E105+00	6"	LIFT 6	FREEPORT	128.6	10.7	116.2	96.9	
63	N103+40, E105+15	6"	LIFT 6	FREEPORT	127.0	11.2	114.2	95.2	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
FREEPORT WOTF	SP-SM	120.0	11.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2795 Moisture: 697

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 7/5/00
Checked by: Date:

R001271

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, HUMID, 85°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 7
WEST & NORTH BERMS

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
64	N103+00, E105+10	6"	LIFT 7	TEMP	118.9	8.2	109.9	95.6	
65	N103+50, E105+30				124.4	8.3	114.9	99.9	
66	N103+50, E105+70				~~120.7~~ 111.8	8.0	111.8	97.2	
67	N103+60, E106+25				~~120.5~~ 122.1	~~8.3~~ 9.6	~~111.4~~ 122.1	~~96.9~~ 96.9	9
68	N103+50, E106+95				125.2	10.8	~~111~~ 113.0	~~102~~ 98.3	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP*		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2804 Moisture: 703

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 7/6/00
Checked by: Date:

* ESTIMATED STANDARD PROCTOR & MOISTURE BASED ON 1 PT PROCTOR

CT

R0012272

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST

Compaction Equipment: DYNAPAC CA15 SHEEPFOOT COMPACTOR
DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, HUMID, 85°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 6
EAST BERM

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
69	N103+25, E106+95	6"	LIFT 6	TEMP	133.0	9.0	122.0	106.1	
70	N102+90, E106+95	↓	↓	↓	122.1	9.6	111.4	96.9	
71	N102+50, E106+95	↓	↓	↓	128.2	9.3	117.3	102.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP*		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2804 Moisture: 703

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONST. Page:
Prepared by: BJSJ Date: 7/6/00
Checked by: Date:

*ESTIMATED STADARD PROCTOR BASED ON 1 PT. PROCTOR

16

R0011273

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, 80°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I

NORTH BERM / WEST BERM / EAST BERM

LIFT 8

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
72	N103+70, E105+50	6"	LIFT 8	TEMP	124.0	9.5	113.3	98.5	
73	N103+70, E106+00	↓	↓	↓	120.2	8.0	111.3	96.8	
74	N103+70, E107+15	↓	↓	↓	122.3	8.0	113.3	98.5	
	N103+35, E105+15								
77	~~N102+75, E105+60~~	6"	LIFT 8	TEMP	121.0	10.6	109.5	95.2	
78	N ~~102+75~~ 102+85, E ~~105+40~~ 105+10	↓	↓	↓	119.6	8.7	110.0	95.7	
79	N102+50, E ~~103+25~~ 107+00	↓	↓	↓	127.1	8.8	116.8	101.6	
80	N103+00, E107+00	↓	↓	↓	126.1	8.9	115.7	100.6	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER

Model: 3440 Serial No.: 25921

Standard Counts:

Density: 2799 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97MD164

Project: CAMU LANDFILL CONSTRUCTION Page:

Prepared by: VBJS1 Date: 7/7/00

Checked by: Date:

17

R001274

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 ~~SHEEP~~ DRUM ROLLER

Weather:

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
LIFT 7
EAST BERM/WEST BERM

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
75	N103+~~40~~ 2.5, E106+~~50~~ 107+00	6"	LIFT 7	TEMP	127.5	8.2	117.8	102.5	
76	N102+75, E106+~~50~~ 107+00	6"	LIFT 7	TEMP	126.4	8.1	116.9	101.6	
84	N102+75, E105+60	6"	LIFT 7	TEMP	120.3	8.4	111.0	96.5	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: ~~699~~ 2799 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSJ Date: 7/7/00
Checked by: Date:

18

R0012275

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, 80°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
NORTH/WEST/EAST BERMS
LIFT 9

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
81	N103+50, E105+75	6"	LIFT 9	TEMP	125.4	9.1	115.0	100.0	
82	N103+50, E106+25	↓	↓	↓	122.3	9.5	111.7	97.2	
83	N103+50, E106+75				127.6	11.5	114.4	99.5	
85	N102+80, E105+40	6"	LIFT 9	TEMP	121.5	9.9	110.6	96.2	
86	N103+00, E105+00	↓	↓	↓	125.3	10.2	113.7	98.9	
87	N103+40, E105+00				125.5	10.5	113.5	98.7	
91	N102+50, E107+00	6"	LIFT 9	TEMP	123.9	9.2	113.5	98.7	
92	N103+00, E107+00	↓	↓	↓	123.1	8.9	113.0	98.2	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2799 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97MO15
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS1 Date: 7/7/00
Checked by: Date:

R001276

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP-563C SHEEPFOOT COMPACTOR
DYNAPAC DRUM ROLLER

Weather: PARTLY CLOUDY, 80°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
NORTH/WEST/EAST BERMS
LIFT 10

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
88	N103+55, E105+60	6"	LIFT 10	TEMP	119.6	8.0	110.7	96.3	
89	N103+55, E106+10	↓	↓	↓	123.5	8.6	113.7	98.9	
90	N103+55, E106+60	↓	↓	↓	119.3	8.4	110.1	95.7	
93	N102+70, E105+45	6"	LIFT 10	TEMP	118.6	8.3	109.5	95.2	
94	N102+80, E105+~~25~~00	↓	↓	↓	123.6	8.5	113.9	99.0	
95	N103+35, E105+15	↓	↓	↓	118.2	8.0	109.4	95.1	
96	N103+45, E107+00	6"	LIFT 10	TEMP	120.6	8.1	111.6	97.0	
97	N103+00, E107+00	↓	↓	↓	121.5	8.2	112.3	97.7	
98	N102+50, E107+00	↓	↓	↓	118.2	8.2	109.2	95.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2799 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSJ Date: 7/7/00
Checked by: Date:

R001277

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather:

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I NORTH LIFT 11

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
99	N103+55, E106+85	6"	LIFT 11	TEMP	121.2	9.7	110.5	96.1	
100	N103+55, E106+00	↓	↓	↓	122.9	8.8	112.9	98.2	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2799 Moisture: 699

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSI Date: 7/7/00
Checked by: Date:

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, HUMID, 85°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
WEST/NORTH/EAST BERMS
LIFT ~~2~~ 11

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
101	N102+30, E105+55	6"	LIFT ~~2~~ 11	TEMP	119.3 ~~122.6~~	8.9 ~~8.5~~	109.5 ~~113.0~~	95.2	
102	N102+80, E105+40	↓	↓	↓	125.1	8.6	115.2	100.2	
103	N103+10, E105+00	↓	↓	↓	121.4	8.1	112.3	97.7	
104	N103+35, E105+10	↓	↓	↓	128.3	8.2	118.6	103.1	
107	N103+50, E105+30	6"	LIFT 11	TEMP	118.9	8.4	109.7	95.4	
108	N103+25, E107+10	↓	↓	↓	118.5	8.2	110.5	96.1	
109	N102+75, E107+10	↓	↓	↓	120.3	8.2	111.1	96.6	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2806 Moisture: 705

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS1 Date: 7/8/00
Checked by: Date:

R0012279

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, WINDY, HUMID, 85°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I WEST BERM / BOTTOM LIFT 12'

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
105	N102+75, E105+00	6"	LIFT 12	TEMP	126.5	8.4	116.7	101.5	
106	N102+65, E105+50	↓	↓	↓	128.4	8.6	118.2	102.8	
110	N103+15, E106+50	6"	LIFT 12	TEMP	123.1	8.3	113.7	98.8	
111	N103+15, E106+00	↓	↓	↓	124.7	8.8	114.7	99.7	
112	N103+15, E105+50	↓	↓	↓	118.4	8.3	109.3	95.1	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2806 Moisture: 705

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M0180
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS1 Date: 7/8/00
Checked by: Date:

R001280

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: PARTLY CLOUDY, HUMID, 78°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
SOUTH SLOPE
LIFT 11

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
~~113~~ 114 ~~115~~	N102+30, E106+00	6"	LIFT 11	TEMP	~~119.9~~ ~~122.7~~	~~8.9~~ ~~10.1~~	~~110.1~~ ~~111.4~~	95.7	
	N102+30, E106+50	↓	↓	↓	122.7	10.1	111.4	96.9	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2806 Moisture: 701

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJSJ Date: 7/10/00
Checked by: Date:

R001281

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 DRUM ROLLER

Weather: SUNNY, 80°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE I
BOTTOM
LIFT 12

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
115	N102+65, E106+00	6"	LIFT 12	TEMP	129.9	10.8 ~~12.7~~	117.3	102.0	
116	N102+65, E106+45	↓	↓	↓	129.1	11.1	116.2	101.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
TEMP		115.0	10.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: ~~692~~ 2779 Moisture: 692

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJS1 Date: 7/11/00
Checked by: Date:

25

R001282

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP563C COMPACTOR

Weather: SUNNY, 60°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
BOTTOM
LIFTS 3,4

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
129	N102+65, E108+00	6"	~~753~~ ~752'	MPC-CIVIL-3	132.1	14.3	115.6	103.1	
130	N103+15, E108+00	↓	↓	↓	134.1	14.3	117.3	104.6	
131	N102+65, E107+50				135.3	14.5	118.2	105.3	
132	N103+15, E107+50				136.3	14.5	119.0	106.1	
	N102+75, E108+20								
133	~~N103+35, E107+75~~	6"	~754	MPC-CIVIL-1	136.3	10.9	122.9	95.7	
134	N103+35, E107+75	↓	↓	↓	140.3	10.5	127.0	98.9	
135	N102+75, E107+35				137.0	11.5	122.9	95.7	
136	N102+50, E107+75				135.8	11.3	122.0	95.0	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	112.2	16.2	95
MPC-CIVIL-1	ML	128.4	9.5	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2778 Moisture: 712

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page:
Prepared by: BJST Date: 10/9/00
Checked by: Date:

R001283

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP563C COMPACTOR

Weather: SUNNY, 50°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2 BOTTOM LIFT 2

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
125	N102+75, E108+20	6"	~752	MPC-CIVIL-3	136.1	15.2	118.1	105.3	
126	N103+25, E107+75	6"	↓	↓	134.8	15.0	117.2	104.5	
127	N102+75, E107+40	6"			~~135.8~~ 126.6	~~14.9~~ 15.2	~~118.2~~ 109.9	~~105.4~~ 98.0	
128	N102+35, E107+75	6"			135.8	14.9	118.2	105.4	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2768 Moisture: 691

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/6/00
Checked by: Date:

27

R001284

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP563C SHEEPFOOT COMPACTOR

Weather: CLOUDY, LIGHT RAIN, 50°F

Method of Test:

☒ Nuclear Meter (ASTM: D2922)

☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
BOTTOM
BRIDGING LAYER

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
117	N102+50, E108+00	6"	~751	MPC-CIVIL-3	131.0	14.6	114.3	103.6	
118	N102+50, E108+00	12"	↓	↓	129.4	17.0	110.6	99.6	
119	N103+00, E108+00	6"			132.2	15.1	114.8	103.4	
120	N103+00, E108+00	12"			128.3	17.6	109.1	98.3	
121	N103+00, E107+50	6"			131.1	15.2	113.8	102.5	
122	N103+00, E107+50	12"			125.4	15.8	108.3	97.6	
123	N102+50, E107+50	6"			132.9	15.5	115.1	103.7	
124	N102+50, E107+50	12"			125.0	16.2	107.6	96.9	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	111.0	16.0	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2772 Moisture: 706

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/5/00
Checked by: Date:

R001285

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CR563C COMPACTOR
DYNAPAC CA15 ROLLER

Weather: SUNNY, 65°F

Method of Test:
- ☒ Nuclear Meter (ASTM: D2922)
- ☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFTS 5, 6, 7

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
137	N103+25, E108+30	6"	~757' 4	MPC-CIVIL-3	134.5	14.6	117.4	104.7	
138	N103+75, E108+30	↓	↓	MPC-CIVIL-1	136.5	11.0	123.0	95.8	
139	N103+40, E107+75	6"	~757' 5	MPC-CIVIL-1	137.7	11.2	123.8	96.4	
140	N103+00, E107+50		~755'		137.8	11.5	123.6	96.3	
141	N102+50, E107+50				136.6	11.6	122.4	95.3	
142	N102+50, E108+00				137.1	11.2	123.3	96.0	
143	N103+00, E108+00	↓	↓	↓	135.9	11.2	122.2	95.2	
144	N102+00, E107+40	6"	~758' 7	MPC-CIVIL-3	137.9	14.5	120.4	107.4	
145	N102+50, E108+30		~758'		135.3	14.6	118.1	105.3	
146	N103+00, E108+30	↓	↓	↓	133.5	14.7	116.4	103.7	
147	N103+45, E108-100	6"	~758' 6	MPC-CIVIL-1	139.5	10.8	125.9	98.1	
148	N103+45, E107+50	↓	↓	↓	139.8	11.5	125.4	97.7	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2767 Moisture: 702

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/10/00
Checked by: Date:

R001286

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP563C COMPACTOR
DYNAPAC CA15 ROLLER

Weather: 70°F, SUNNY

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFT 8

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
149	N102+25, E108+30	6"	~759' 8	MPC-CIVIL-1	136.9	11.5	122.8	95.6	
150	N102+75, E108+30	↓	↓	↓	136.3	11.7	122.0	95.6	
151	N103+25, E108+30	↓	↓	↓	136.4	11.6	122.2	95.2	
152	N102+65, E107+75	6"	~756'6	MPC-CIVIL-1	137.4	11.7	123.0	95.8	
153	N103+00, E108+~~80~~20	↓	↓	MPC-CIVIL-3	133.5	14.2	116.9	104.2	
154	N103+30, E107+75	↓	↓	↓	134.7	14.2	117.9	105.1	
155	N103+00, E107+35	↓	↓	↓	135.8	14.9	118.3	105.4	
156	N103+40, E107+50	6"	~759' 7	MPC-CIVIL-3	134.9	14.9	117.4	104.6	
157	N103+40, E108+00	↓	↓	↓	135.1	14.9	117.6	104.8	
158	N102+75, E108+30	6"	~761' 9	MPC-CIVIL-3	136.0	14.2	119.1	106.1	
159	N103+25, E108+30	↓	↓	↓	134.8	14.3	117.9	105.1	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2761 Moisture: 707

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/11/00
Checked by: Date:

R001187

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: CAT CP563C COMPACTOR
DYNAPAC CA15 ROLLER

Weather: SUNNY, 70°F

Method of Test:
- ☒ Nuclear Meter (ASTM: D2922)
- ☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFT 8, 7

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
160	N103+40, E107+80	6"	~760' 8	MPC-CIVIL-3	132.6	15.3	115.0	102.3	
161	N103+40, E107+35	↓	↓	↓	136.1	14.2	119.2	106.2	
162	N102+00, E107+45	6"	~759' 8	MPC-CIVIL-3	135.9	14.5	118.7	105.8	
163	N103+15, E107+85	6"	~757' 7	MPC-CIVIL-3	133.9	14.5	116.9	104.2 ~~104.2~~	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2761 Moisture: 707

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONST. Page: 1
Prepared by: BJS1 Date: 10/11/00
Checked by: Date:

R001288

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR & CONST.

Compaction Equipment: DYNAPAC CA15 COMPACTOR
DYNAPAC CA15 ROLLER

Weather: SUNNY, WINDY, 70°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFTS 8, 9, 10, 11

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
164	N102+50, E108+30	6"	~761' 10	MPC-CIVIL-3	138.3	14.7	120.6	107.4	
165	N103+00, E108+30		↓		138.8	14.8	120.9	107.7	
166	N103+40, E108+00		~761' 9		133.9	14.5	116.9	104.2	
167	N103+40, E107+50		↓		134.7	14.3	117.9	105.0	
168	N102+50, E107+50		~758' 8		137.3	14.8	119.6	106.6	
169	N103+00, E107+50		↓		138.4	14.2	121.2	108.0	
170	N103+00, E108+00		~757'		134.5	14.3	117.7	104.9	
171	N102+50, E108+00		↓		134.9	14.4	117.9	105.1	
172	N103+40, E107+30		~762' 10		128.6	17.8	109.2	97.4	
173	N103+40, E107+80		↓		131.5	15.2	114.2	101.8	
174	N103+15, E108+30		~762 11		127.6	18.1	108.0	96.3	
175	N102+65, E108+30		↓		126.6	17.6	107.6	95.9	
176	N102+15, E108+30		↓		126.2	17.6	107.3	95.6	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2780 Moisture: 707

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97MO15
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/12/00
Checked by: Date:

R001289

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 COMPACTOR
DYNAPAC CA15 ROLLER

Weather: SUNNY, WINDY, 70°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFTS 9, 11, 12

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
177	N102+75, E108+30	6"	~763' 12	MPC-CIVIL-3	134.2	14.4	117.3	104.5	
178	N103+25, E108+30	↓	↓	MPC-CIVIL-1	136.3	11.5	122.2	95.2	
179	N103+45, E108+00	6"	~763' 11	MPC-CIVIL-3	133.9	14.4	117.1	104.3	
180	N103+45, E107+50	↓	↓	↓	130.7	16.2	112.5	100.3	
181	N103+25, E107+50	6"	~759' 9	MPC-CIVIL-3	135.5	14.3	118.5	105.6	
182	N103+25, E108+00	↓	↓	↓	134.4	14.2	117.7	104.9	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2780 Moisture: 707

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 2
Prepared by: BJS1 Date: 10/12/00
Checked by: Date:

R0012290

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 COMPACTOR
DYNAPAC CA15 ROLLER

Weather: SUNNY, 75°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFTS 12, 13

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
183	N102+50, E108+30	6"	~764' 13	MPC-CIVIL-3	136.5	14.2	119.5	106.5	
184	N103+00, E108+30				133.8	15.4	115.9	103.3	
185	N103+40, E107+80		12		136.0	14.2	119.1	106.2	
186	N103+40, E107+30				135.4	14.3	118.5	105.6	
187	N102+20, E108+45		~765' 14		130.0	14.5	113.5	101.1	
188	N102+70, E108+45				130.4	14.6	113.8	101.4	
189	N103+20, E108+45				131.2	14.2	114.9	102.4	
190	N103+55, E108+00		~765' 13		132.9	14.4	116.1	103.5	
191	N103+55, ~~E108+00~~ E107+50				137.4	14.2	120.3	107.3	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: ~~3430~~ 3440 Serial No.: 25921
Standard Counts:
Density: 2770 Moisture: 708

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJSL Date: 10/3/00
Checked by: Date:

R001291

DENSITY TESTS OF COMPACTED FILL

Contractor: TERRA ENGR. & CONST.

Compaction Equipment: DYNAPAC CA15 COMPACTOR
DYNAPAC CA15 ROLLER

Weather: CLOUDY, 65°F

Method of Test:
☒ Nuclear Meter (ASTM: D2922)
☐ Sand Cone (ASTM: D1556)

Area/Location Tested: PHASE 2
LIFTS 14, 15

Report Number:

Test No.	Test Location	Depth of Probe	Elevation	Proctor Used	Wet Density (pcf)	Moisture Content (%)	Dry Density (pcf)	Percent Compaction	Remarks
192	N102+25, E108+45	6"	~766' 15	MPC-CIVIL-1	137.2	11.2	123.4	96.1	
193	N102+75, E108+45	↓	↓	↓	136.8	11.5	122.7	95.6	
194	N103+25, E108+45	↓	↓	MPC-CIVIL-3	136.7	14.2	119.7	106.7	
195	N103+55, E108+00	6"	~766' 14	MPC-CIVIL-3	134.2	15.2	116.5	103.8	
196	N103+55, E107+50	↓	↓	↓	137.6	14.3	120.4	107.3	

Proctor No.	Soil Classification	Max. Dry Density (pcf)	Moisture Content (%)	Compaction Spec. (%)
MPC-CIVIL-1	ML	128.4	9.5	95
MPC-CIVIL-3	ML	112.2	16.2	95

General Note:
Density test results are valid only at the locations and elevations tested.

Nuclear Meter Used: TROXLER
Model: 3440 Serial No.: 25921
Standard Counts:
Density: 2777 Moisture: 697

Foth & Van Dyke

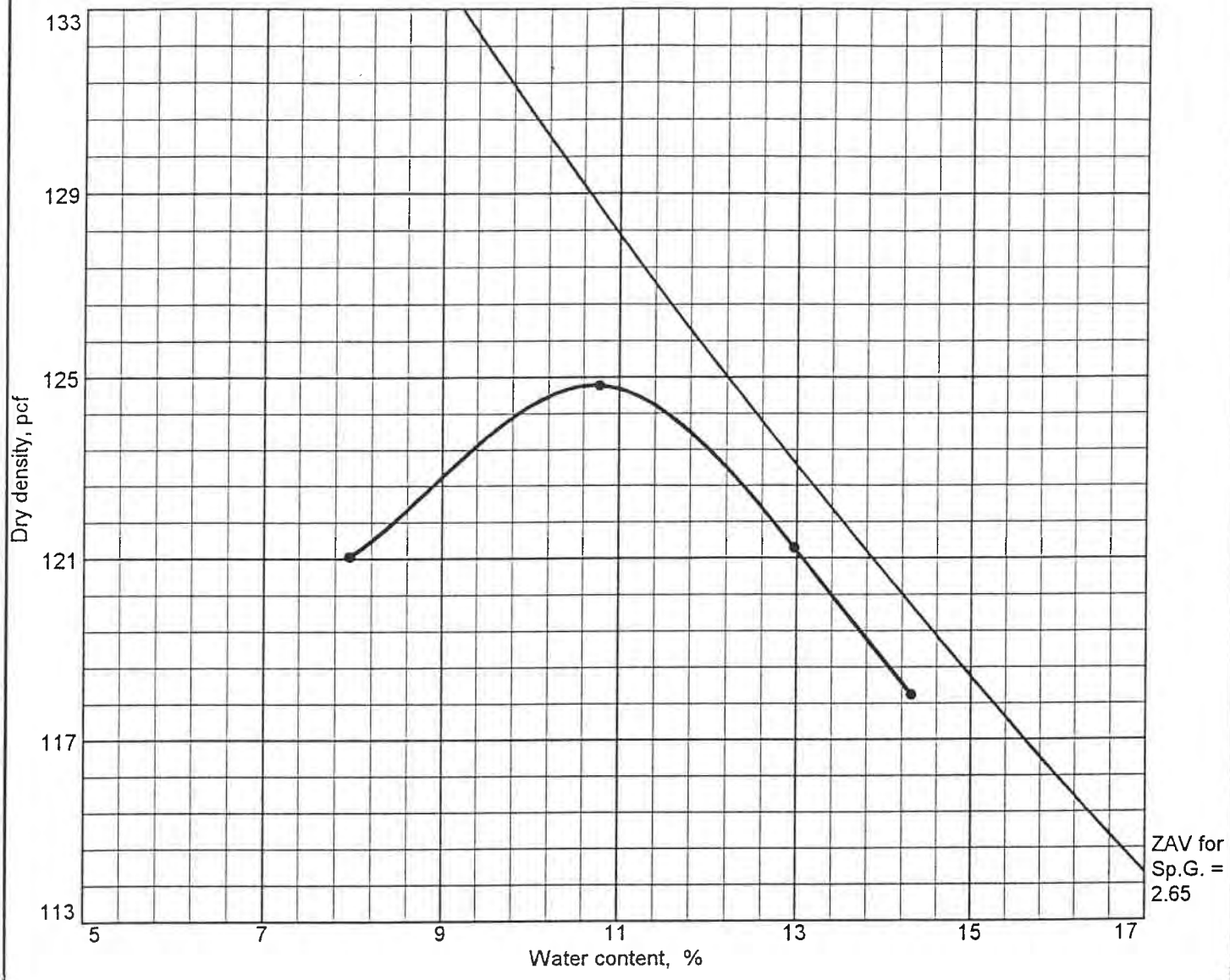
Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/16/00
Checked by: Date:

R001292

Appendix C2

Laboratory Test Reports

COMPACTION TEST REPORT



Test specification: ASTM D 698-91 Procedure A Standard
Oversize correction applied to final results

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	ML	A-4(0)		2.65			11.3	52.8

TEST RESULTS

Maximum dry density = 128.4 pcf

Optimum moisture = 9.5 %

MATERIAL DESCRIPTION

Brown Silt and fine Sand, little Gravel, trace medium and coarse Sand

Project No. 5M-0004006 **Client:** Foth & Van Dyke

Project: Modern Plating Corporation

Freeport, Illinois

• **Location:** Civil Constructors Quarry

Remarks:

Assumed specific gravity
Sample No. 5MS-00026
Sample I.D. MPC-Civil-1

COMPACTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

MASTER FILE COPY
R001295
Scope 97M015 Classification 8350
Copy To B351 MJCI REM
MASTER FILE

GILES ENGINEERING ASSOCIATES, INC.

GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

- Atlanta, GA
- Dallas, TX
- Los Angeles, CA
- Madison, WI
- Milwaukee, WI
- Washington, D.C.

October 17, 2000

Foth & Van Dyke
2737 South Ridge Road
P.O. Box 19012
Green Bay, WI 54307-9012

Attention: Mr. Ron Meister

Subject: Soil Sample Classification
Modern Plating Corporation
701 South Hancock
Freeport, Illinois
Project No.: 5M-0004006

Dear Mr. Meister:

As you requested, the following soil samples that were sampled and delivered by Mr. Brian Stanul of Foth & Van Dyke have been visually identified and described in accordance with ASTM D-2488 (Visual-Manual Procedure). The following table is a summary of our classifications:

Foth & Van Dyke Sample No.	USCS Group Symbol	USCS Group Name
MPC-CIVIL-1-A	CL	Sandy Clay with Gravel
MPC-CIVIL-1-B	ML	Sandy Silt with Gravel
MPC-CIVIL-1-C	CL	Sandy Clay with Gravel
MPC-CIVIL-1-D	ML	Sandy Silt with Gravel
MPC-CIVIL-1-E	SM	Silty Sand with Gravel
MPC-CIVIL-1-F	CL	Sandy Clay with Gravel
MPC-CIVIL-1-H	ML	Sandy Silt with Gravel
MPC-CIVIL-1-I	ML	Sandy Silt with Gravel
MPC-WWTF-1-A	SM	Silty Sand
MPC-WWTF-1-B	SM	Silty Sand with Gravel
MPC-WWTF-1-C	SM	Silty Sand with Gravel

If you have any questions on the above soil identifications, contact us at any time.

Very truly yours,

GILES ENGINEERING ASSOCIATES, INC.

Scott Breen
Staff Engineer II

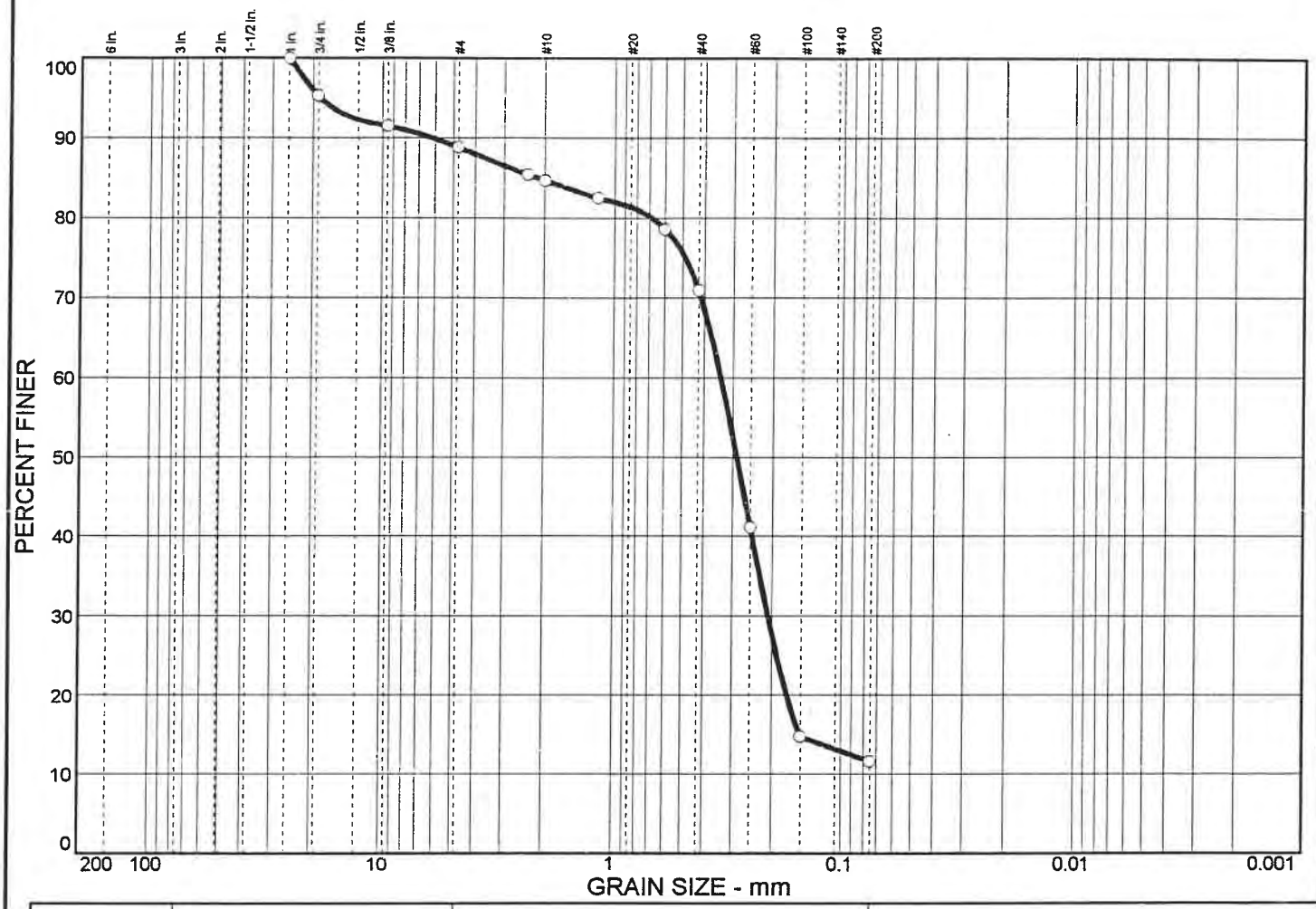
Martin H. Kemps, P.E.
Branch Manager

Distribution: Foth & Van Dyke (Madison)
ATTN: Mr. Marty Cieslik

5m0004006-ltr10-13/lco10-13

2830 Agriculture Drive • Madison, WI 53718
608/223-1853 • Fax 608/223-1854 • E-Mail madison@gilesengr.com

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	4.7	6.5	4.1	13.8	59.3	11.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.15	0.339	0.287	0.209	0.151			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	A-2-4(0)

Project No. 5M-0004006 **Client:** Foth & Van Dyke

Project: Modern Plating Corporation

Freeport, Illinois

○ **Source:** **Sample No.:** 5MS-00087 **Elev./Depth:**

Remarks:

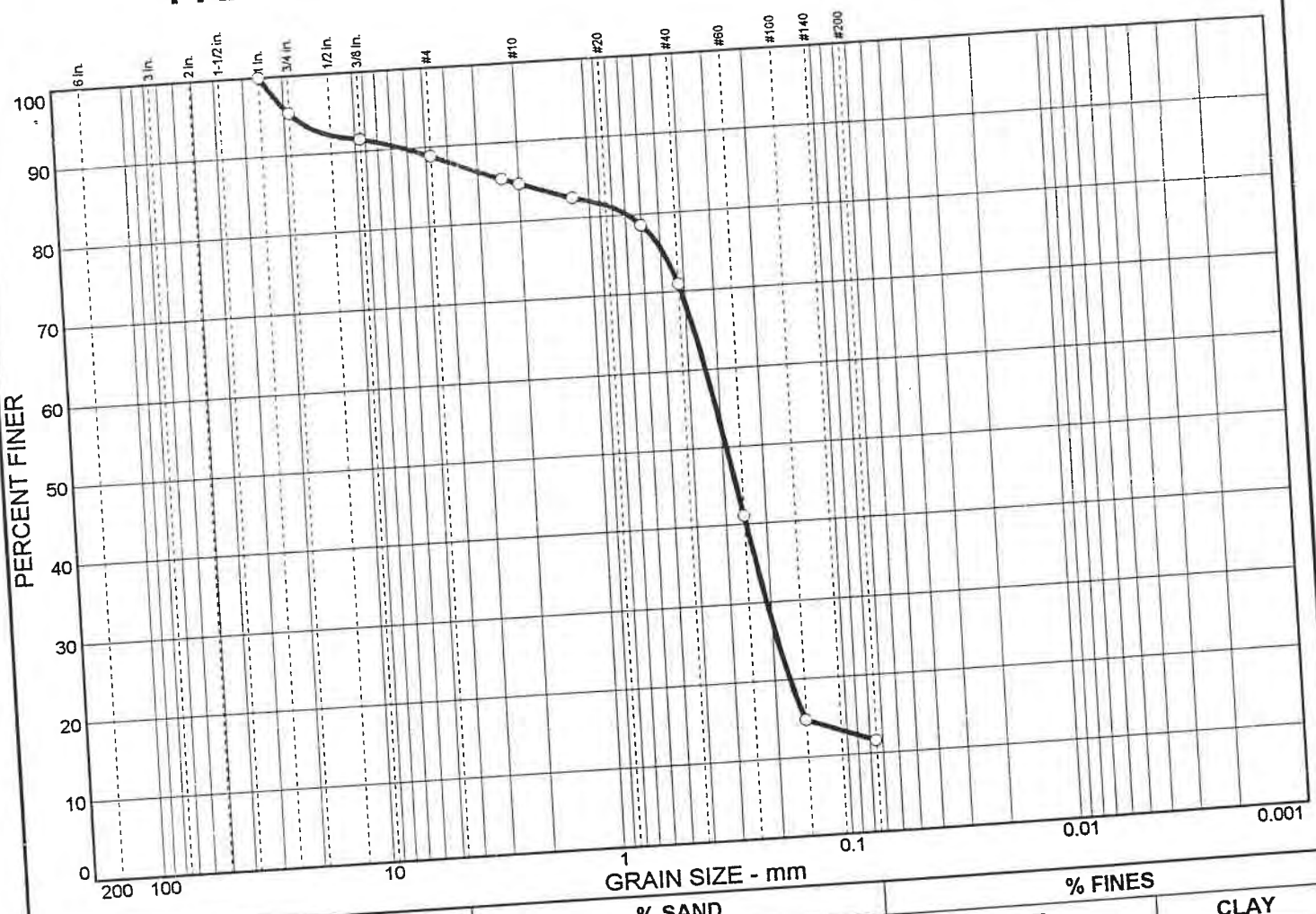
○ MPC-WWTF-HD

PARTICLE SIZE DISTRIBUTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

R001297

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	4.7	6.5	4.1	13.8	59.3	11.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
☒			2.15	0.339	0.287	0.209	0.151			

MATERIAL DESCRIPTION	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	A-2-4(0)

Project No. 5M-0004006 **Client:** Foth & Van Dyke

Project: Modern Plating Corporation

Freeport, Illinois

○ **Source:** **Sample No.:** 5MS-00087 **Elev./Depth:**

Remarks:

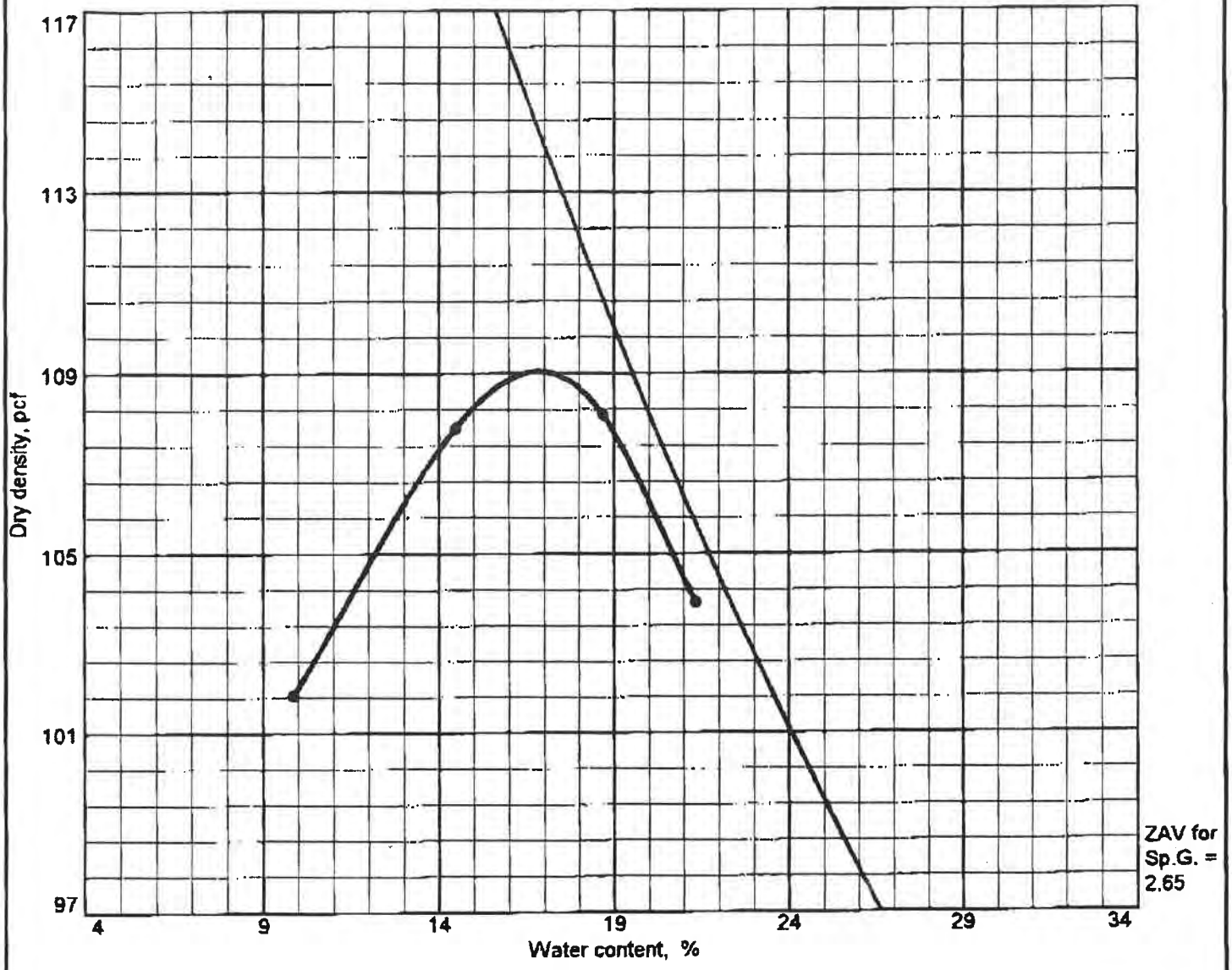
○

PARTICLE SIZE DISTRIBUTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

R001298

COMPACTION TEST REPORT



Test specification: ASTM D 698-78 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
				2.65				40.2

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 109.0 pcf Optimum moisture = 16.9 %	Brown Silty Clay, some fine and medium Sand

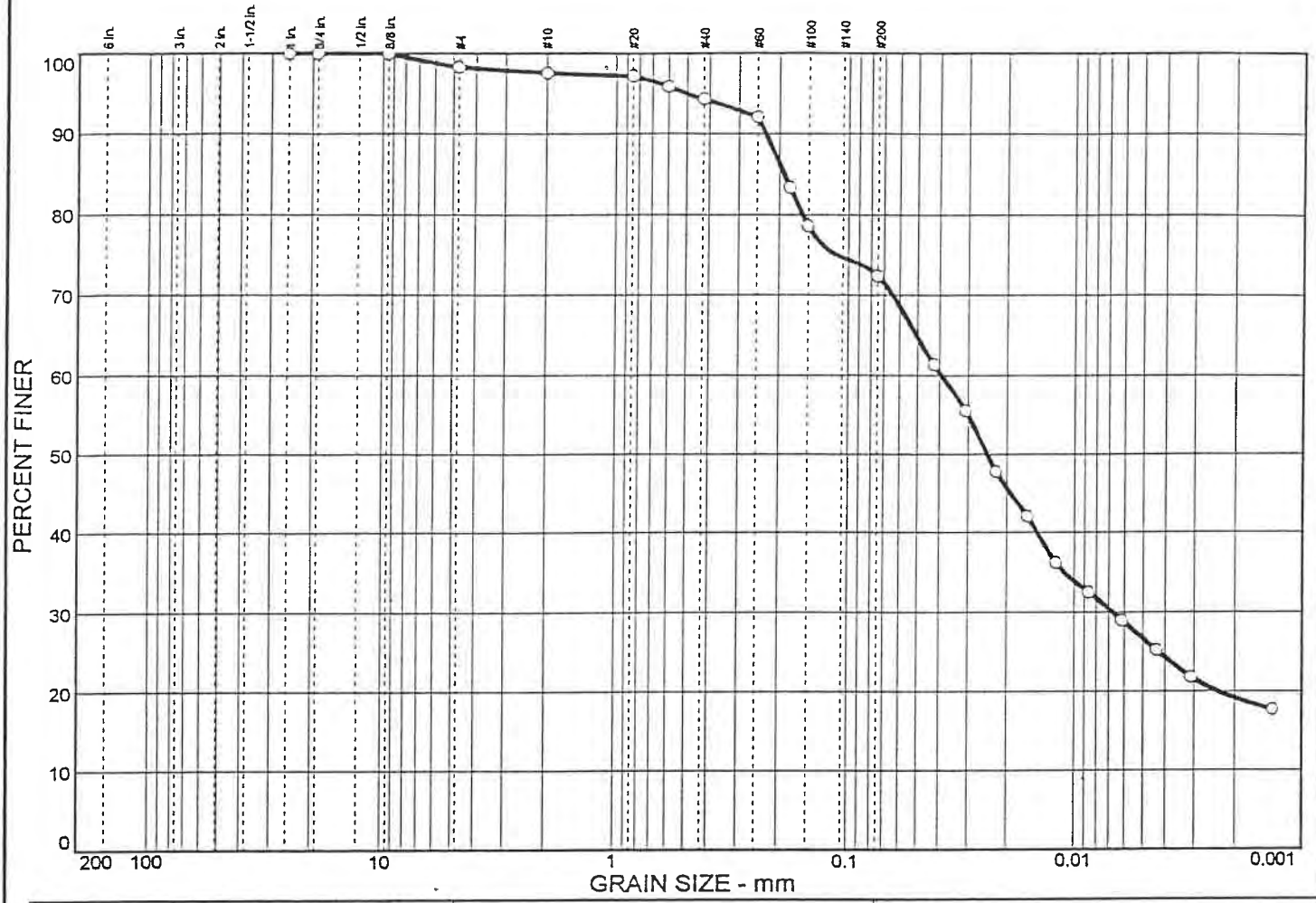
Project No. 5M-0004006 **Client:** Foth & Van Dyke
Project: Modern Plating Corporation
Freeport, Illinois
• **Location:** Civil Constructors Quarry

Remarks:
Assumed specific gravity
Sample No. 5MS-00025
Sample I.D. MPC-CIVIL-2

COMPACTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	1.7	0.7	3.2	22.0	45.8	26.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.191	0.0395	0.0247	0.0068				

MATERIAL DESCRIPTION	USCS	AASHTO
○ Brown Silty Clay, little fine Sand, trace Gravel,	CL-ML	A-4(0)

Project No. 5M-0004006 **Client:** Foth & Van Dyke

Project: Modern Plating Corporation

Freeport, Illinois

○ **Location:** Civil Constructors Quarry

Remarks:

○ Sample No. 5MS-00025

PARTICLE SIZE DISTRIBUTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

R001300

CGC, Inc.

DATE: 6/5/00
PROJECT NO. C94009-40

RECEIVED
JUN 06 2000
TERRA ENGINEERING

TO: Mr. Scott Zimmerman
ADDRESS: Terra Engineering
2201 Vondron Road
Madison, WI 53704-6795

TRANSMITTAL LETTER

☒ Enclosed	☐ Copy of Letter	☐ Drilling Logs	☐ Approved
☐ Under Separate Cover	☐ Prints	☒ Test Results	☐ Approved as Noted
☐ Messenger	☐ Photos	☐ Documents	☐ Resubmit
☐ First Class Mail	☐ Specifications	☐ Purchase Order	☐ Return Corrected Prints
☐ Special Delivery	☐ Samples	☐ For Your Use	☐ For Comments
☐ Air Mail	☐ _____	☐ As Requested	☐ _____

No. of Copies	DESCRIPTION	DATE
1	Grain Size Distribution Test Report	6/5/00
1	Modfied Proctor Test Report	5/31/00
	For: Modern Plating	

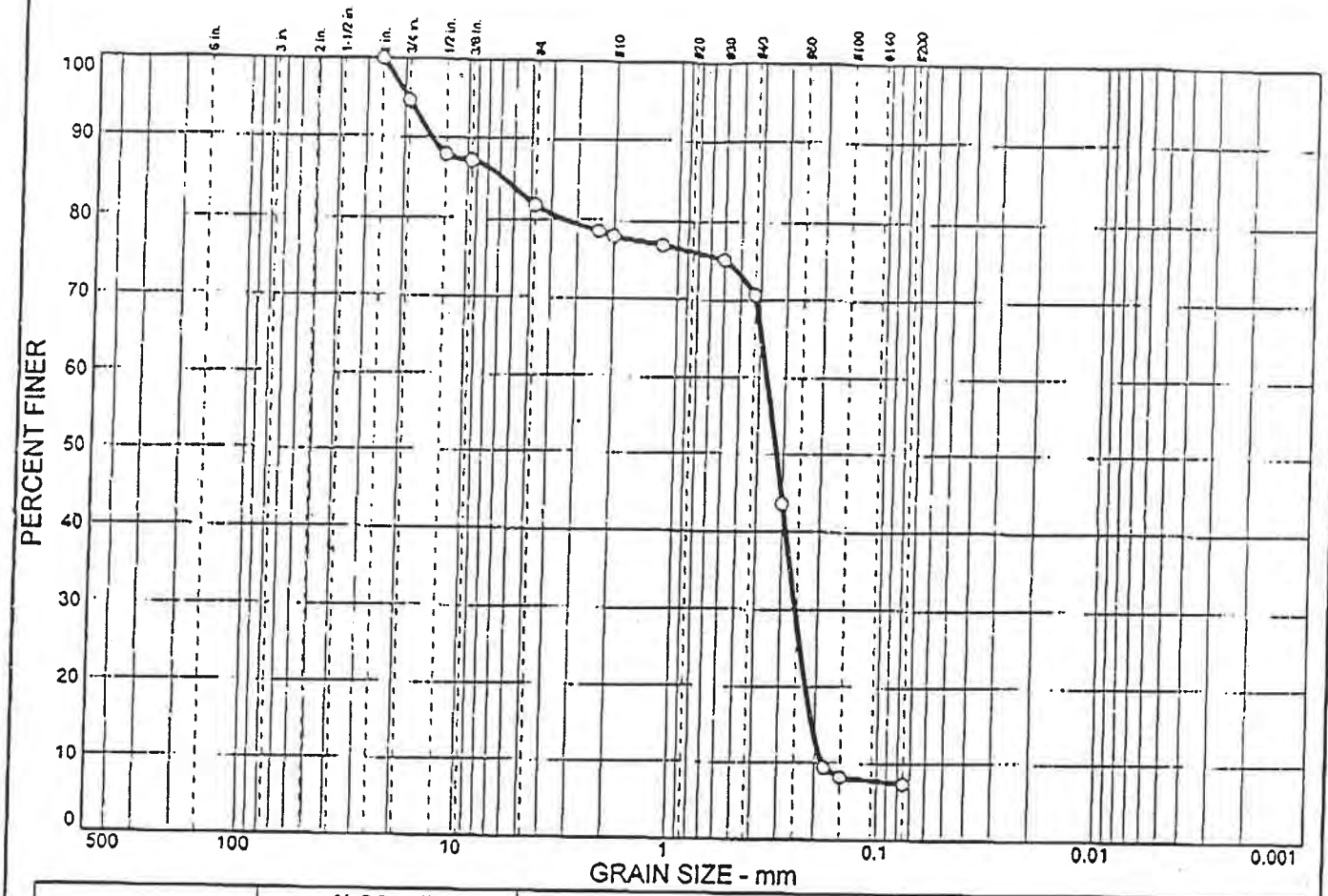
REMARKS: _____

Copy to: _____

From: Kim J Lewis
CGC, Inc.
Kim J. Lewis

3011 Perry Street
Madison, WI 53713 • 608/288-4100 • FAX: 608/288-7887

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	5.4	12.8	3.8	7.3	63.4	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	94.6		
1/2 in.	87.9		
3/8 in.	87.2		
#4	81.8		
#8	78.6		
#10	78.0		
#16	76.9		
#30	75.2		
#40	70.7		
#50	43.6		
#80	9.4		
#100	8.1		
#200	7.3		

* (no specification provided)

Soil Description

Brown Fine to Coarse Sand, Some Gravel and Little Silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.73 D_{60}= 0.368 D_{50}= 0.324
D_{30}= 0.255 D_{15}= 0.207 D_{10}= 0.184
C_u= 2.00 C_c= 0.96

Classification

USCS= SP-SM AASHTO= A-3

Remarks

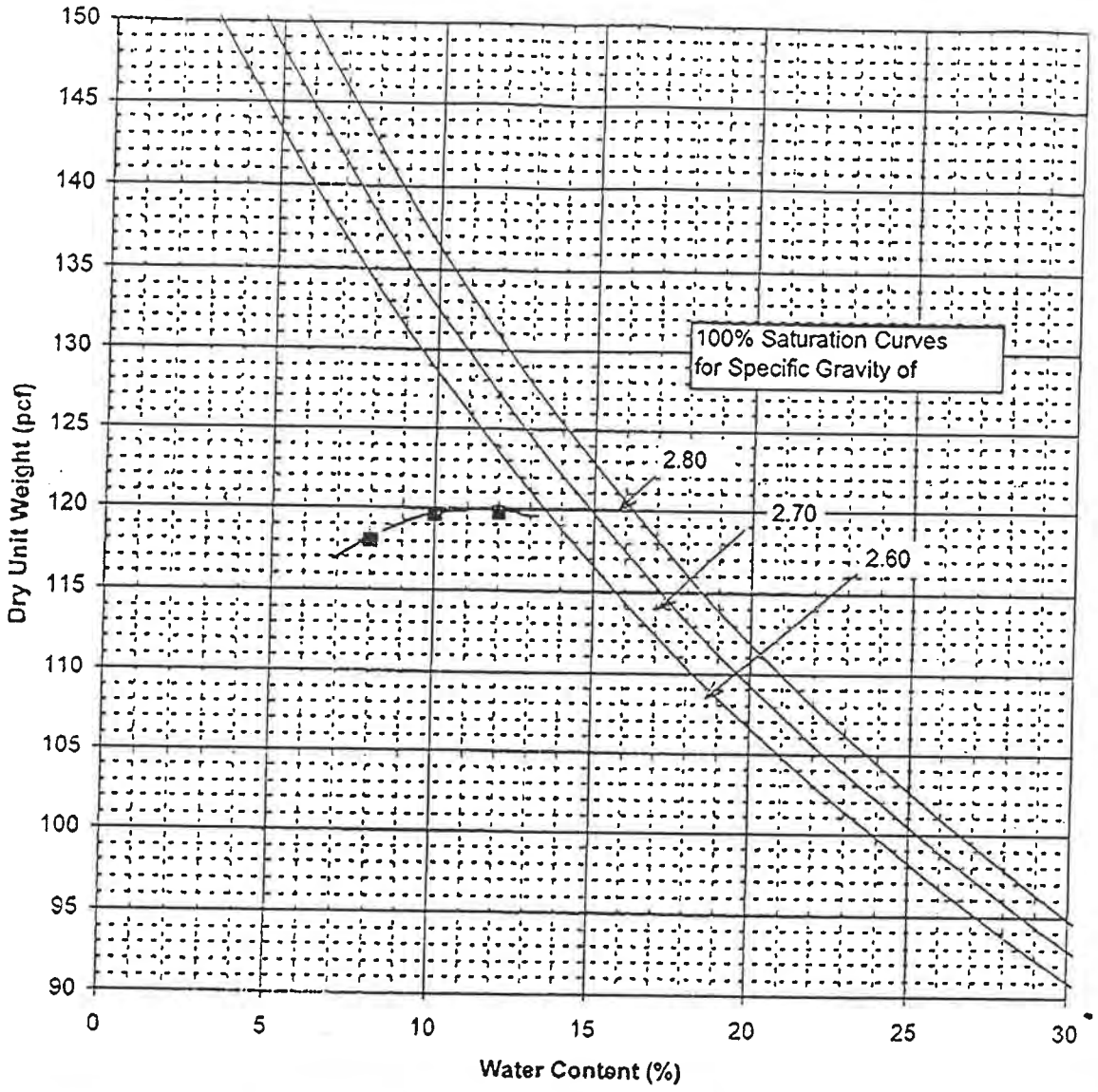
Sample No.: 3 Source of Sample: Date: 6/05/00
Location: Stockpile Elev./Depth:

CGC, Inc.

Client: Terra Engineering & Construction Corp.
Project: Modern Plating
MPC - WWTF - 1
Project No: C94009-40 Plate

R001302

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %		
3	120.0	11.0		
Specimen Description				
Gray Fine to Medium Sand, Some Gravel, Little Silt				
Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %			
N/A	N/A			
Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method B	-	-	-	2.7 (est.)
Preparation Method / USCS	% Gravel	% Sand	% Fines	% Oversize
Dry / SP-SM	20.0	-	-	-

PROJECT: Modern Plating
MPC - WWTF-1

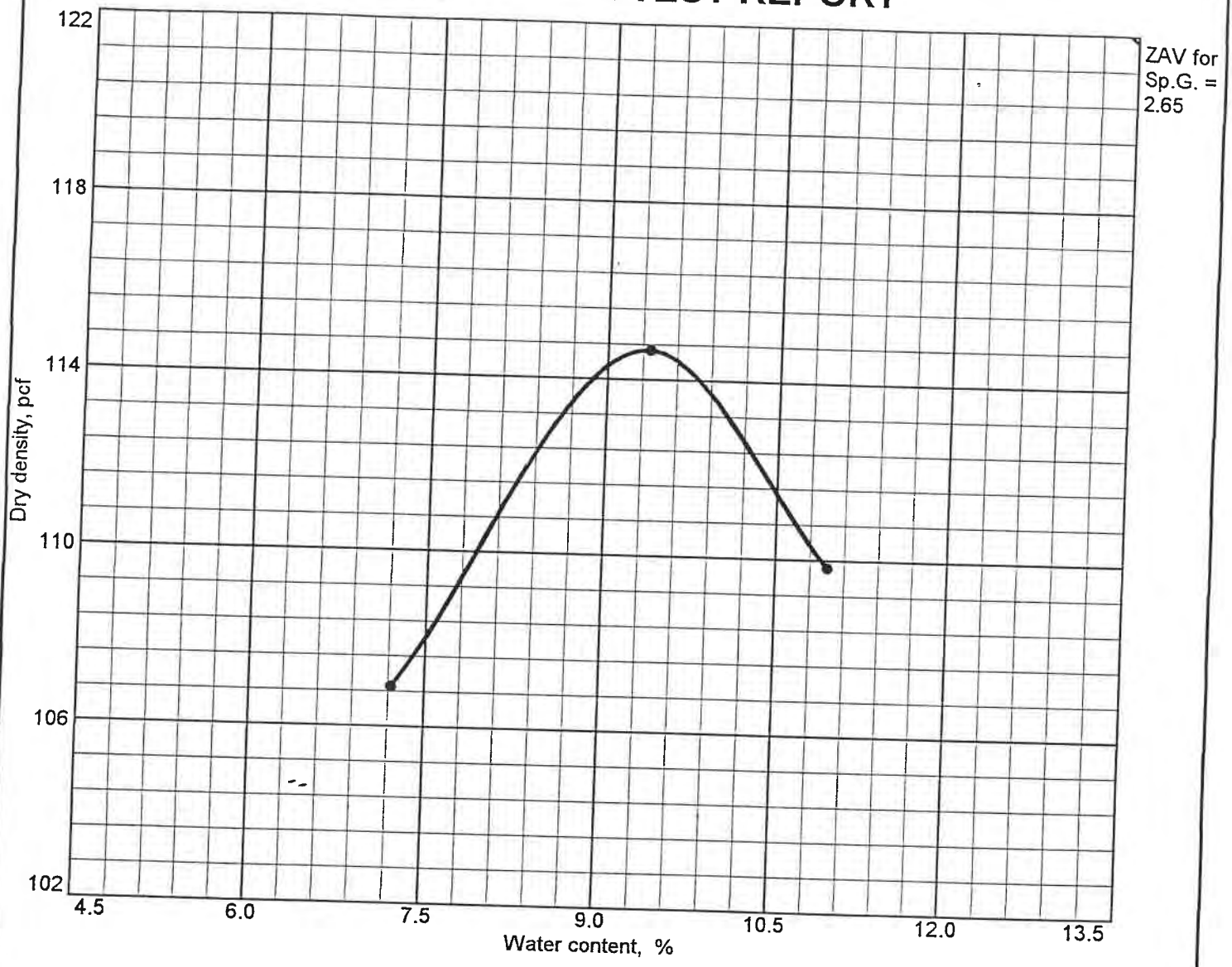
PROJECT NUMBER: C94009-40

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: | REVIEWED BY: | DATE: 5-31-00

File:94009-40b.xls

COMPACTION TEST REPORT



Test specification: ASTM D 698-91 Procedure A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SP	A-3		2.65			16.0	4.7

TEST RESULTS

Maximum dry density = 114.7 pcf

Optimum moisture = 9.3 %

MATERIAL DESCRIPTION

Light Brown fine and medium Sand, little Gravel, trace Silt

Project No. 5M-0004006 **Client:** Foth & Van Dyke

Project: Modern Plating Corporation

Freeport, Illinois

• **Source:** **Sample No.:** 5MS-0051

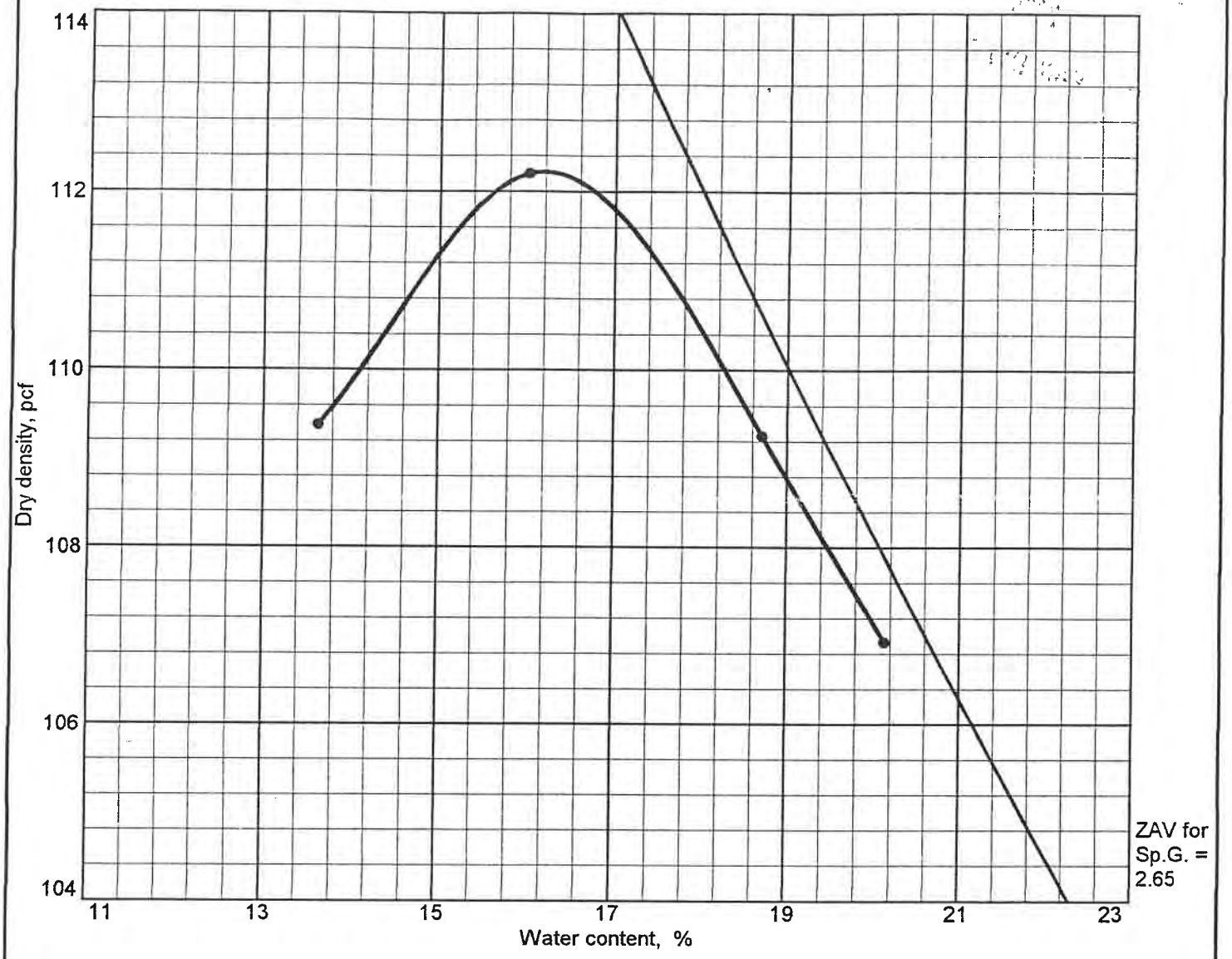
Remarks:

Sample No. 5MS-00051
Assumed Specific gravity
Freeport WWTF-2

COMPACTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

COMPACTION TEST REPORT



Test specification: ASTM D 698-91 Procedure A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
				2.65				

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 112.2 pcf Optimum moisture = 16.2 %	Brown Silty Clay, little fine and medium Sand, trace Gravel

Project No. 5M-0004006 **Client:** Foth & Van Dyke
Project: Modern Plating Corporation
Freeport, Illinois
• **Source:** **Sample No.:** 5MS-00094

Remarks:
Sample No. 5MS-00094
Assumed Specific Gravity
Foth Van & Dyke Sample I.D. MPC-CIVIL-3

COMPACTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

GILES
ENGINEERING ASSOCIATES, INC.
GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

• Atlanta, GA
• Dallas, TX
• Los Angeles, CA
• Madison, WI
• Milwaukee, WI
• Washington, D.C.

November 16, 2000

RECEIVED
NOV 2 1 2000
FOTH & VAN DYKE

Foth & Van Dyke
2737 South Ridge Road
P.O. Box 19012
Green Bay, WI 54307-9012

Attention: Mr. Ron Meister

Subject: Soil Sample Classification
Modern Plating Corporation
701 South Hancock
Freeport, Illinois
Project No.: 5M-0004006

Dear Mr. Meister:

As requested, the following soil samples that were sampled and delivered by Mr. Brian Stanul of Foth & Van Dyke have been visually classified and described in accordance with ASTM D-2488 (Visual-Manual Procedure). The following table is a summary of our visual classifications:

Foth & Van Dyke Sample No.	USCS Group Symbol	USCS Group Name
MPC-CIVIL-3-A	CL	Sandy Clay with Gravel
MPC-CIVIL-3-B	SC	Clayey Sand with Gravel
MPC-CIVIL-3-C	CL	Sandy Clay with Gravel
MPC-CIVIL-3-D	CL	Sandy Clay with Gravel
MPC-CIVIL-3-E	CL	Sandy Clay with Gravel
MPC-CIVIL-3-F	CL	Sandy Clay with Gravel
MPC-CIVIL-3-G	CL	Sandy Clay with Gravel

Sample No. MPC-CIVIL-3-H was classified in accordance with ASTM D-2487 as a sandy lean clay, USCS Group Symbol CL. A sieve analysis was requested to be performed on Sample No. MPC-STONE-2 in accordance with ASTM C-136. The results of the sieve analysis for Sample No. MPC-STONE-2 and the laboratory tests performed on Sample No. MPC-CIVIL-3-H can be found in the attachments to this letter.

If you have any questions on the above soil identifications, contact us at any time.

Very truly yours,

GILES ENGINEERING ASSOCIATES, INC.
Scott A. Breen
Scott A. Breen
Staff Engineer II

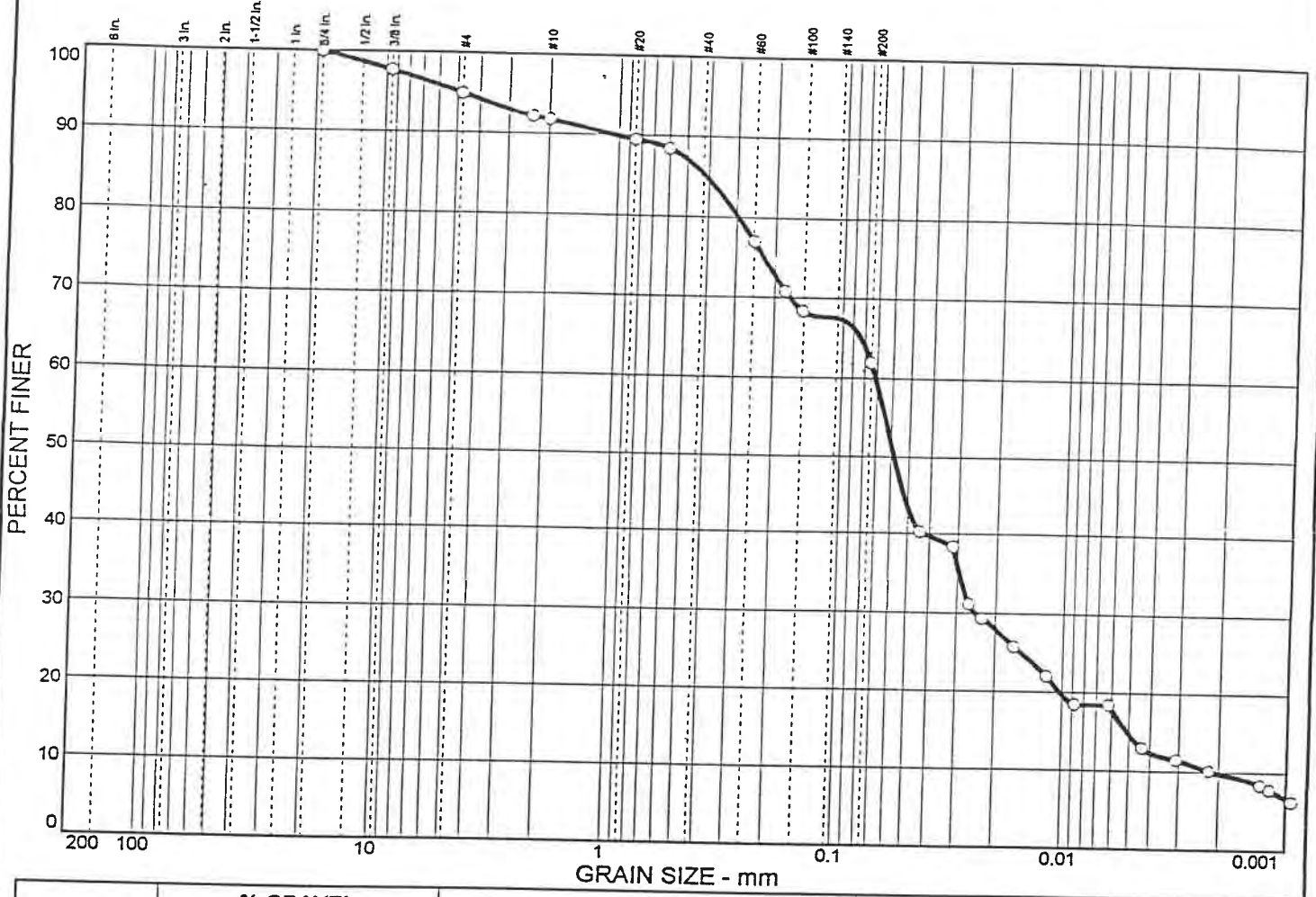
Martin H. Kemps, P.E.
Branch Manager

Enclosure: Particle Size Distribution Test Report (2)
Distribution: Foth & Van Dyke (Madison)
ATTN: Mr. Marty Cieslik

5m0004006-ltr11-16

MASTER FILE COPY
Scope 97M015 Classification 8350
Copy To REM R001306

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	5.1	3.1	6.4	23.5	47.2	14.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	29	16	0.413	0.0714	0.0582	0.0249	0.0051	0.0022	4.04	33.18

MATERIAL DESCRIPTION	USCS	AASHTO
○ Sandy lean clay	CL	A-6(5)

Project No. 5M-0004006 **Client:** Foth & Van Dyke
Project: Modern Plating Corporation
Freeport, Illinois
○ **Location:** On-site, MPC-CIVIL-3-H

Remarks:
○ Sample No. 5MS-00104

PARTICLE SIZE DISTRIBUTION TEST REPORT

GILES ENGINEERING ASSOC., INC.

Appendix D

GCL Material Information

Appendix D1

GCL Manufacturer's QC Data and Product Information

CETCO

May 17, 2000

Benjamin Velasquez
Midessa Industrial Vinyl Co.
4809 W. 42nd
Odessa, TX 79764

RE: Modern Plating Site

Dear Benjamin:

This letter is to certify that CETCO's Geosynthetic Clay Liner will meet the specifications in the following Certified Property Sheet for Bentomat DN. CETCO furnished several clarifications with our materials quote, those clarifications are also attached.

We are enclosed our GCL Installation Guideline. Section 6 describes anchor details, Section 8, Liner Penetration, Section 9 Repair Procedures.

Storage: GCL rolls should be stored in a dry, flat area, stacked no higher than four rolls high on pallets and covered with a tarp.

If you have any questions, please feel free to call me.

Sincerely,

Steve Fishman
Regional Manager

SHOP DRAWING REVIEW

RECEIVED FROM CONTRACTOR - DATE

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS.
NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS.

☐ NO EXCEPTIONS TAKEN
☐ MAKE CORRECTIONS NOTED
☐ AMEND AND RESUBMIT
☐ REJECTED - SEE REMARKS

FOTH & VAN DYKE

REVIEWED BY: DATE:

5342 West 100th St.
Overland Park, KS 66207 email steve.fishman@cetco.com
913-383-8160
FAX 383-8165

A Wholly Owned Subsidiary of AMCOL International
Printed on recycled paper.

Bentomat® DN Panel and Roll Specifications

STANDARD PANEL SPECIFICATIONS

Panel Dimensions*.....**14** ft. (**4.3** m) wide; **150** ft. (**45.7** m) long
Total Panel Area.....**2,100** sq. ft. (**195** sq. m)
Effective Area.....**1,998** sq. ft. (**185** sq. m)
{Assumes 6-in. (150 mm) edge overlap and 2-ft. (600 mm) end overlap}

STANDARD ROLL SPECIFICATIONS

Dimensions.....**16** ft. (**4.88** m) wide w/ core; **24** in. (**610** mm) diameter
Nominal Weight.....**2,600** lbs. (**1,180** kg)
Core Size (I.D.).....**4** in. (**100** mm) I.D. Inner core plug measures **2.5** in. (**63** mm)
Packaging.....**8**-mil (**0.2** mm) U.V.-resistant polyethylene sleeve

STANDARD SHIPPING SPECIFICATIONS

Shipment Size.....**15** rolls per truckload or container load
Granular Bentonite.....**50**-lb. (**23** kg) bags

UNLOADING AND HANDLING EQUIPMENT

Core Pipe and Spreader Bar.....**18** ft. (**5.5** m) long, **2.5** in. (**63** mm) Nominal Pipe Size, XXH
OR: Solid steel pipe
OR: Stinger attachment for forklift
Chains or Straps.....**2** required; each approximately **12** ft. (**3.7** m) long
Equipment.....Front end loader or forklift (typical)

* Custom lengths/widths available

The information and data contained herein are believed to be accurate and reliable. CETCO makes no warranty of any kind and accepts no responsibility for the results obtained through application of this information.

2190 West Shure Drive Arlington Heights, Illinois 60004 [800] 527.9948 tel [847] 392.5800 fax [847] 577.5571

CETCO
COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY
Lining Technologies www.cetco.com

Bentomat® DN Certified Properties

Bentomat "DN" is a reinforced GCL consisting of a layer of sodium bentonite between two geotextiles, which are needlepunched together.

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY, ft^2 (m^2)	CERTIFIED VALUES
Bentonite Swell Index[1]	ASTM D 5890	1 per 50 tons	24 mL/2g min.
Bentonite Fluid Loss[1]	ASTM D 5891	1 per 50 tons	18 mL max.
Bentonite Mass/Area[2]	ASTM D 5993	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2)
GCL Grab Strength[3]	ASTM D 4632	200,000 ft^2 (20,000 m^2)	150 lbs (400 N)
GCL Peel Strength[3]	ASTM D 4632	40,000 ft^2 (4,000 m^2)	15 lbs (65 N)
GCL Index Flux[4]	ASTM D 5887	Weekly	1×10^{-8} m^3/m^2/sec
GCL Permeability[4]	ASTM D 5084	Weekly	5×10^{-9} cm/sec
GCL Hydrated Internal Shear Strength[5]	ASTM D 5321	Periodic	500 psf (24 kPa) typical

Notes:

1 Bentonite property tests performed at CETCO's bentonite processing facility before shipment to CETCO's GCL production facilities.

2 Bentonite mass/area reported at 0 percent moisture content.

3 All tensile testing is performed in the machine direction, with results as minimum average roll values unless otherwise indicated.

4 Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551 kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5×10^{-9}cm/sec for typical GCL thickness. This flux value should not be used for equivalency calculations unless the gradients used represent field conditions. A flux test using gradients that represent field conditions must be performed to determine equivalency. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.

5 Peak value measured at 200 psf (10 kPa) normal stress. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

1500 West Shure Drive Arlington Heights, Illinois 60004 [800] 527.9948 tel [847] 392.5800 fax [847] 577.5571

CETCO uses the following test methods instead of the ones listed in Table 1:

Free Swell	ASTM D 5890
Fluid Loss	ASTM D 5891
Bentonite Mass/Unit Area	ASTM D 5993
Permeability	ASTM D 5084

CETCO reports Hydrated Internal Shear Strength using ASTM D 5321, but our certified value is 500 psf (24 kPa) typical.

CETCO
COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY
P.O. Box 428 • Lovell, Wyoming 82431
(307) 548-6521 • Fax (307) 548-6413

R001313

RECEIVED
JUN 19 2000
TETRA ENGINEERING

Copy for your records

Date: June 13, 2000
PO: 00.FREEIL
Order #: 128169, 128170

Ruban Valasquaz,
Midessa Industrial Vinyl Co.
4809 West 42nd Street
Odessa, TX. 79764
915-530-3055

Dear Ruban Valasquaz,

Please find enclosed the MQA/MQC Data Package for BENTOMAT DN✓ shipments to Midessa Industrial Vinyl Co.. These shipments left our CETCO - Lovell, Wy. plant on 6/9.

If you have any questions regarding the enclosed QA/QC information, please contact Mr. Moses Briseno @ 800-322-1149 (Ext: 421).

Sincerely,

Noe Garcia
Quality Assurance

A Wholly Owned Subsidiary of AMCOL International
Printed on recycled paper.

BENTOMAT DN

MANUFACTURING
QA / QC DATA PACKAGE

PROJECT NAME: Modern Plating Corporation
Freeport, IL. 60132

CUSTOMER P.O.: 00.FREEIL

PREPARED FOR: Midessa Industrial Vinyl Co.
4809 West 42nd Street
Odessa, TX. 79764
915-530-3055

Telephone # :

PREPARED BY: Noe Garcia
Quality Assurance
CETCO
P.O. Box 428
92 Hwy. 37
Lovell, Wy. 82431
800-322-1149 (Ext. 423)

Telephone #: (307)548-6927, (307)548-6413
Fax #:
E-Mail: ngarc@cetco.com

BENTOMAT DN

DAILY MANUFACTURING
QA / QC DATA

FOR ALL GCL MANUFACTURED ON:

Project Name:	Modern Plating Corporation
Prepared For:	Midessa Industrial Vinyl Co.
Customer PO:	00.FREEIL
Order Number:	128169, 128170
Ship Date:	6/9

CONTENTS:

1. DAILY GCL PRODUCTION CERTIFICATION
2. NEEDLE DETECTION CERTIFICATION
3. BENTONITE CLAY CERTIFICATION
4. GCL MANUFACTURING CERTIFICATION AND TEST RESULTS
5. GCL MQA TRACKING FORM

DAILY BENTOMAT DN PRODUCTION
PRODUCTION CERTIFICATION

BENTOMAT DN
MANUFACTURING CERTIFICATION

Project Name:	Modern Plating Corporation
Prepared For:	Midessa Industrial Vinyl Co.
Customer PO:	00.FREEIL
Order Number:	128169, 128170
Ship Date:	9-Jun

Colloid Environmental Technologies Company (CETCO) hereby affirms and certifies that all of the BENTOMAT DN manufactured in this lot achieves the physical and chemical criteria listed on the attached analysis sheet.

Steve Wilkerson
Production Coordinator

Subscribed and sworn to before me this 13th day of June 2000.

Notary Public

JODI L. LINDSAY - Notary Public
County of Big Horn
State of Wyoming
My Commission Expires 7-11-03

NEEDLE DETECTION CERTIFICATION

CERTIFICATION STATEMENT

Project Name:	Modern Plating Corporation
Prepared For:	Midessa Industrial Vinyl Co.
Customer PO:	00.FREEIL
Order Number:	128169, 128170
Ship Date:	9-Jun

This statement is to certify that all components of the BENTOMAT DN manufactured for the above project have been inspected continually for the presence of broken needles through the use of a magnetic removal system.

COLLOID ENVIRONMENTAL TECHNOLOGIES CO. (CETCO)

Subscribed and sworn to before me this 13th day of June 2000.

NOTARY PUBLIC

JODI L. LINDSAY - Notary Public
County of Big Horn
State of Wyoming
My Commission Expires 7-11-03

BENTONITE CLAY CERTIFICATIONS

TECHNICAL DATA SHEET

ORIGIN INFORMATION

BENTONITE

Manufacturer: **Colloid Environmental Technologies Co.**

PRODUCTION

Facility: **Colloid Environmental Technologies Co.**
92 HWY. 37
Lovell, WY 82431

Contact: Jay Bischoff (800)-322-1159

Brand Name: CG 50

BENTONITE
CERTIFICATE OF ANALYSIS

CETCO
92 HWY. 37
LOVELL, WY 82431

TO: Midessa Industrial Vinyl Co.

DATE: 5/1/00

ATTN: Ruban Valasquaz,

Dear Customer:
The BENTONITE that is used to produce our GCL is CG 50 from CETCO, Order Number See Below

A sample of the CG 50 was tested from Lot Number 050100B and was provided the following test results below.

TEST	METHOD	REQ. SPECIFICATION	ROLL # Daily Results ACTUAL RESULTS
RET. 10 MESH	ASTM C 136	0 PERCENT	0
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.	24.0 ✓
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX) ✓	15.6 ✓
Moisture	ASTM D 2216	12.0 % (MAX)	8.0
Passing 200 Mesh	ASTM D 421	1 % (Max)	0.4

We hereby certify that the results shown above represent this shipment. Tests were conducted using American Standard Test Methods and/or customer approved laboratory procedures.
Product made in the U.S.A.

Tests Conducted By: RP, SF

Approved By: Noe Garcia

In any correspondence regarding this shipment, please refer to our Order Numbers listed below.
28169, 128170

BENTONITE
CERTIFICATE OF ANALYSIS

CETCO
92 HWY. 37
LOVELL, WY 82431

DATE: 5/26/00

TO: Midessa Industrial Vinyl Co.

ATTN: Ruban Valasquaz,

Dear Customer:
The BENTONITE that is used to produce our GCL is CG 50 from CETCO, Order Number See Below

A sample of the CG 50 was tested from Lot Number 052600A and was provided the following test results below.

TEST	METHOD	REQ. SPECIFICATION	ROLL # Daily Results ACTUAL RESULTS
RET. 10 MESH	ASTM C 136	0 PERCENT	0
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.	24.0
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX)	16.0
Moisture	ASTM D 2216	12.0 % (MAX)	9.2
Passing 200 Mesh	ASTM D 421	1 % (Max)	0.4

We hereby certify that the results shown above represent this shipment. Tests were conducted using American Standard Test Methods and/or customer approved laboratory procedures.
Product made in the U.S.A.

Tests Conducted By: RP, SF

Approved By: Noe Garcia

In any correspondence regarding this shipment, please refer to our Order Numbers listed below.
128169, 128170

BENTONITE
CERTIFICATE OF ANALYSIS

CETCO
92 HWY. 37
LOVELL, WY 82431

TO: Midessa Industrial Vinyl Co. DATE: 5/26/00

ATTN: Ruban Valasquaz,

Dear Customer:
The BENTONITE that is used to produce our GCL is CG 50 from CETCO, Order Number See Below

A sample of the CG 50 was tested from Lot Number 052600B and was provided the following test results below.

TEST	METHOD	REQ. SPECIFICATION	ROLL # Daily Results ACTUAL RESULTS
RET. 10 MESH	ASTM C 136	0 PERCENT	0
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.	25.0
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX)	15.0
Moisture	ASTM D 2216	12.0 % (MAX)	8.0
Passing 200 Mesh	ASTM D 421	1 % (Max)	0.6

We hereby certify that the results shown above represent this shipment. Tests were conducted using American Standard Test Methods and/or customer approved laboratory procedures.
Product made in the U.S.A.

Tests Conducted By: RP, SF

Approved By: Noe Garcia

In any correspondence regarding this shipment, please refer to our Order Numbers listed below.
128169, 128170

BENTONITE
CERTIFICATE OF ANALYSIS

CETCO
92 HWY. 37
LOVELL, WY 82431

TO: Midessa Industrial Vinyl Co. DATE: 5/26/00

ATTN: Ruban Valasquaz,

Dear Customer:
The BENTONITE that is used to produce our GCL is CG 50 from CETCO, Order Number See Below

A sample of the CG 50 was tested from Lot Number 052600C and was provided the following test results below.

TEST	METHOD	REQ. SPECIFICATION	ROLL # Daily Results ACTUAL RESULTS
RET. 10 MESH	ASTM C 136	0 PERCENT	0
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.	25.0
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX)	16.4
Moisture	ASTM D 2216	12.0 % (MAX)	8.6
Passing 200 Mesh	ASTM D 421	1 % (Max)	0.8

We hereby certify that the results shown above represent this shipment. Tests were conducted using American Standard Test Methods and/or customer approved laboratory procedures. Product made in the U.S.A.

Tests Conducted By: RP, SF

Approved By: Noe Garcia

In any correspondence regarding this shipment, please refer to our Order Numbers listed below.
128169, 128170

BENTONITE
CERTIFICATE OF ANALYSIS

CETCO
92 HWY. 37
LOVELL, WY 82431

TO: Midessa Industrial Vinyl Co. DATE: 6/8/00

ATTN: Ruban Valasquaz,

Dear Customer:
The BENTONITE that is used to produce our GCL is CG 50 from CETCO, Order Number See Below

A sample of the CG 50 was tested from Lot Number 060800B and was provided the following test results below.

TEST	METHOD	REQ. SPECIFICATION	ROLL # Daily Results ACTUAL RESULTS
RET. 10 MESH	ASTM C 136	0 PERCENT	0
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.	25.0
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX)	15.8
Moisture	ASTM D 2216	12.0 % (MAX)	8.8
Passing 200 Mesh	ASTM D 421	1 % (Max)	0.4

We hereby certify that the results shown above represent this shipment. Tests were conducted using American Standard Test Methods and/or customer approved laboratory procedures.
Product made in the U.S.A.

Tests Conducted By: RP, SF

Approved By: Noe Garcia

In any correspondence regarding this shipment, please refer to our Order Numbers listed below.
128169, 128170

BENTOMAT DN
QUALITY TEST RESULTS

BENTOMAT DN
MANUFACTURING CERTIFICATION

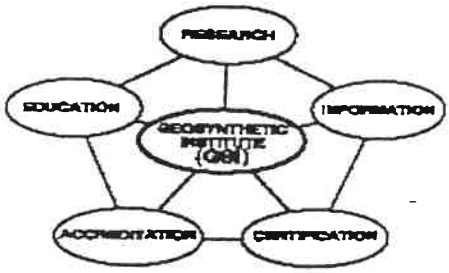
Project Name:	Modern Plating Corporation
Prepared For:	Midessa Industrial Vinyl Co.
Customer PO:	00.FREEIL
Order Number:	128169, 128170
Ship Date:	9-Jun

CETCO hereby affirms and certifies that the BENTOMAT DN material supplied to this project will meet the physical and chemical criteria listed below.

PROPERTY	TEST METHOD	MINIMUM VALUE
Peel Strength	ASTM D 4632	15 lbs (65 N)
Bentonite Free Swell	ASTM D 5890	24 mL / 2g MIN.
Bentonite Fluid Loss	ASTM D 5891	18.0 mL (MAX)
Bentonite Mass / Area	ASTM D 5993	* .75 lb/sq.ft. (Min.)
Grab Strength	ASTM D 4632	150 Lbs.
Grab Elongation	ASTM D 4632	15 Percent Typical
Permeability	ASTM D 5084	5 x 10 (-9) cm/sec. (Max)
Index Flux	ASTM D 5887	1.0 x 10 (-8) m(3)/m(2)/sec. (max.)

* Reported at 0 % moisture content.

GAI Lab Accredited Test Methods were followed during conformance testing for:
ASTM D 4632 - Grab Strength and Grab Elongation.
ASTM D 5887 - Index Flux.
ASTM D 5993 - Bentonite Mass/Area.



Colloid Environmental Technologies Co. (CETCO)

Subscribed and sworn to before me this 13th day of June 2000.

Jodi L Lindsay
Notary Public

JODI L. LINDSAY - Notary Public
County of Big Horn
State of Wyoming
My Commission Expires 7-11-03

BENTOMAT DN
MQA TRACKING FORMS

QCG#TF1 QCT#TF1
6/12/00 10:07:10

COLLOID ENVIRONMENTAL TECH CO
GCL MQA/MQC TRACKING FORM

SHIP TO: MODERN PLATING CORPORATION
701 S. HANCOCK
FREEPORT IL

ORDER NUMBER 000128169

ROLL#	MATERIAL	ROLL LENGTH	SQUARE FEET	ROLL WEIGHT	GEOTEXTILE TOP LOT#	GEOTEXTILE TOP ROLL#	GEOTEXTILE BOTTOM LOT#	GEOTEXTILE BOTTOM ROLL#	CLAY LOT#
LOT# 200019L0									
00001402	L0-BENTOMAT DN	150	2100	3015	6091006A		B843670A		050100B
00001404	L0-BENTOMAT DN	150	2100	3024	6091006A		B843670A		050100B
LOT# 200022L0									
00001704	L0-BENTOMAT DN	150	2100	3095	6091004A		B843758A		052600A
00001705	L0-BENTOMAT DN	150	2100	3076	6091004A		B843758A		052600A
00001706	L0-BENTOMAT DN	150	2100	3059	6091004A		B843758A		052600A
00001707	L0-BENTOMAT DN	150	2100	3053	6091004A		B843758A		052600A
00001708	L0-BENTOMAT DN	150	2100	3050	6091004A		B843758A		052600A
00001709	L0-BENTOMAT DN	150	2100	3049	6091004A		B843758A		052600A
00001710	L0-BENTOMAT DN	150	2100	3034	6091004A		B843758A		052600A
00001792	L0-BENTOMAT DN	150	2100	2927	6090976A		K911094A		052600C
LOT# 200024L0									
00002156	L0-BENTOMAT DN	150	2100	3015	B821074A		114837AA		060800B
00002157	L0-BENTOMAT DN	150	2100	2994	B821074A		114837AA		060800B
00002159	L0-BENTOMAT DN	150	2100	2957	B821074A		M343891A		060800B
00002160	L0-BENTOMAT DN	150	2100	2936	B821074A		M343891A		060800B
00002161	L0-BENTOMAT DN	150	2100	2955	B821074A		M343891A		060800B

TOTAL SQUARE FEET..... 31,500

TOTAL PAGES 1

25

R001330

QCG#TF1 QCT#TF1
6/12/00 10:07:27

COLLOID ENVIRONMENTAL TECH CO
GCL MQA/MQC TRACKING FORM

SHIP TO: MODERN PLATING CORPORATION
701 S. HANCOCK
FREEPORT IL

ORDER NUMBER 000128170

ROLL#	MATERIAL	ROLL LENGTH	SQUARE FEET	ROLL WEIGHT	GEOTEXTILE TOP LOT#	GEOTEXTILE TOP ROLL#	GEOTEXTILE BOTTOM LOT#	GEOTEXTILE BOTTOM ROLL#	CLAY LOT#
LOT# 200022L0									
00001711	L0-BENTOMAT DN	150	2100	3029	6091004A		B843596A		052600A
00001712	L0-BENTOMAT DN	150	2100	3034	B820668A		B843596A		052600A
00001739	L0-BENTOMAT DN	150	2100	2981	B821206A		B843669A		052600B
00001784	L0-BENTOMAT DN	150	2100	2928	6090976A		B843760A		052600B
00001785	L0-BENTOMAT DN	150	2100	2969	6090976A		B843760A		052600C
00001786	L0-BENTOMAT DN	150	2100	2913	6090976A		B843760A		052600C
00001787	L0-BENTOMAT DN	150	2100	2917	6090976A		B843760A		052600C
00001788	L0-BENTOMAT DN	150	2100	2926	6090976A		B843760A		052600C
00001789	L0-BENTOMAT DN	150	2100	2923	6090976A		B843760A		052600C
00001790	L0-BENTOMAT DN	150	2100	2943	6090976A		B843760A		052600C
00001793	L0-BENTOMAT DN	150	2100	2931	6090976A		K911094A		052600C
00001794	L0-BENTOMAT DN	150	2100	2912	6090976A		K911094A		052600C
00001795	L0-BENTOMAT DN	150	2100	2916	6090976A		K911094A		052600C
00001796	L0-BENTOMAT DN	150	2100	2925	6090976A		K911094A		052600C
LOT# 200023L0									
00001798	L0-BENTOMAT DN	150	2100	2738	6090976A		K911094A		052600C

TOTAL SQUARE FEET..... 31,500

TOTAL PAGES 1

R001331

Appendix D2

GCL Laboratory Test Results

MASTER FILE COPY
Scope 97M015 Classification 8552
Copy To REM MASTER File

R001333

Precision Geosynthetic Laboratories

July 7, 2000

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik: RE: Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 000642)

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 000642)

MATERIAL DESCRIPTION: GCL

SAMPLED BY: FOTH & VAN DYKE

DATE RECEIVED: July 3, 2000

DATE REPORTED: July 7, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
GCL-PH1-1 Roll 00001708 Lot 200022LO	52678
GCL-PH1-2 Roll 00001792	52679

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D1777	Thickness
ASTM D5993	Mass Per Unit Area
ASTM D4632.	Grab Tensile
ASTM D4632, *Modified*	Peel Strength
ASTM D4643, *Microwave Method*	Moisture Content
ASTM D5084	Hydraulic Conductivity
ASTM D5887	Index Flux
ASTM D5890	Swell Index
ASTM D5891	Fluid Loss
ASTM D6243	Internal Shear Strength

TEST CONDITIONS: The samples were conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Tables 1 and 2. The units in which the data are reported are included on the tables.

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/3/00**
Date Reported: **7/7/00**
Client Sample ID: **GCL-PH1-1 Roll 00001708 Lot 200022LO**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **000642**
PGL Control No.: **52678**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)													
		0.330	0.332	0.334	0.332	0.334	0.332	0.331	0.330	0.334	0.332	0.332	0.002	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*													
		1.01	1.00	0.91	0.90	0.89						0.94	0.06	*0.75 min.*
ASTM D4632	Grab Tensile													
	Tensile Strength (lbs)													
	MD	375	400	395	313	381	370	420	307	379	363	370	36	*70 min.*
	TD	329	390	384	357	362	362	379	341	355	321	358	23	
	Elongation at Peak (percent)													
	MD	61	60	54	49	58	58	61	60	58	59	58	4	
	TD	80	72	78	72	70	78	100	70	94	83	80	10	
ASTM D4643	Water (Moisture) Content (percent)													
		15.8	15.8	15.3								15.7	0.3	*12 max.*
ASTM D5084	Hydraulic Conductivity (cm./ sec.) *(Confining Stress = 30 psi)*													
		3.9E-09										3.9E-09		*$5x10^{-9}$ max.*
ASTM D5887	Index Flux (m.^{3}/ m.^{2}/sec.)													
		2.2E-09										2.2E-09		*$5x10^{-8}$ max.*
ASTM D5890	Swell Index (mL/ 2 g.)													
		30.0										30.0	N/A	*24 min.*
ASTM D4632	Peel Strength (lbs)													
Modified	*MD*	58	49	61	63	59						58	5	*15 min.*
	TD	47	55	58	62	59						56	6	
ASTM D5891	Fluid Loss (mL)													
		16.2										16.2	N/A	*18 max.*

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Precision Geosynthetic Laboratories

R001335

TABLE 1A

CLIENT: FOTH & VAN DYKE

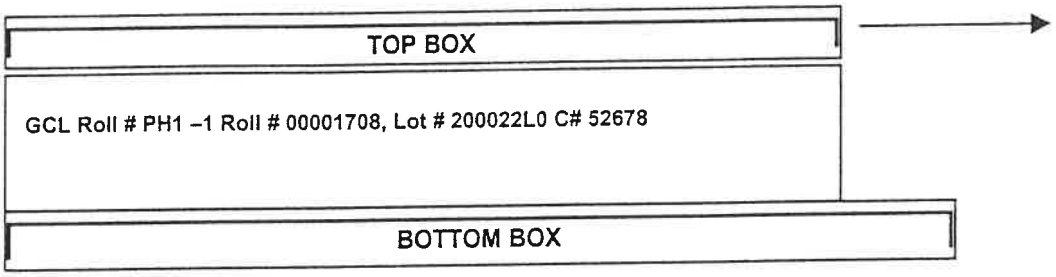
PROJECT: MODERN PLATING CORP.

INTERNAL SHEAR TEST RESULT (ASTM D6243)

(PGL Job No. 000642)

QC'd by: _____
July 17,2000

TEST CONFIGURATION #1



TEST CONDITIONS:

SAMPLE PREPARATION:

1. Specimens were cut to 20" x 20"

HYDRATION / CONSOLIDATION:

1. Each set of specimens was hydrated for 24 hours at normal load.
2. After which each set of specimen was consolidated for 1 hour at normal load in drained condition before shearing.

SHEAR TEST:

1. Shear test was conducted at 0.04 in/ min.
2. Sheared at minimum 3.3 inch horizontal displacement.
3. The test specimens were sheared in drained condition.
4. Tests were performed in general accordance with ASTM D5321-93 Method A using Brainard- Kilman LG-112 Direct Shear machine with effective area of 12 in x 12 in.

TEST RESULTS:

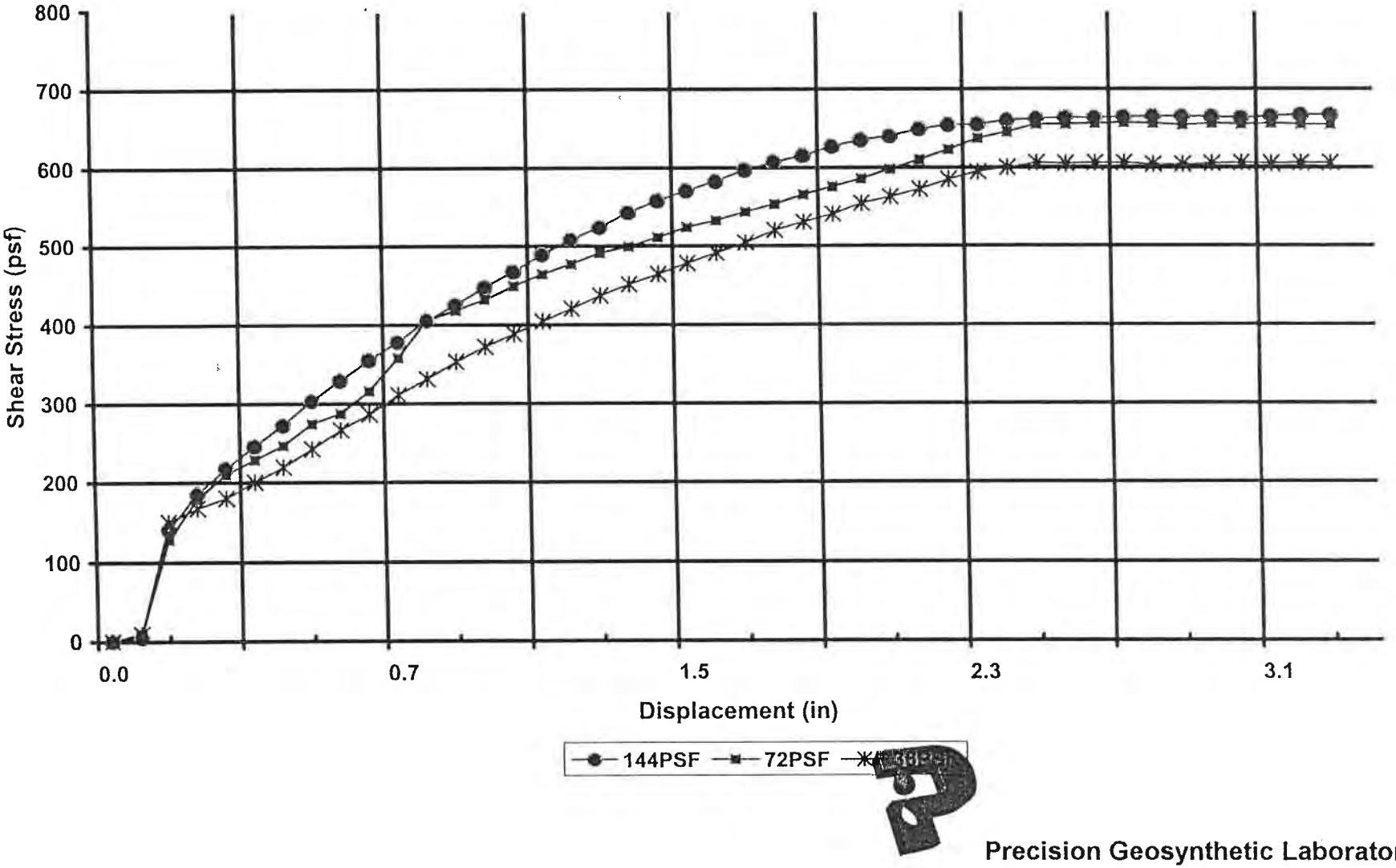
NORMAL STRESS		PEAK STRENGTH		3.3" DISPLACEMENT STRENGTH	
		SHEAR STRESS	PEAK SECANT ANGLE	SHEAR STRESS	3.4" DISPLACEMENT SECANT ANGLE
(psi)	(psf)	(psf)		(psf)	
0.25	36	606	87	606	87
0.5	72	655	84	655	84
1.0	144	677	78	677	78
	COHESION (psf):	595		595	
	FRICTION ANGLE (degrees):	31		31	
	COEFFICIENT OF FRICTION:	0.607		0.607	

OBSERVATIONS:

Failure occurred along the interface. See Figur[illegible] and #2
No stretching, abrasion, or tearing was observed [illegible] either side of the GCL

Precision Geosynthetic Laboratories

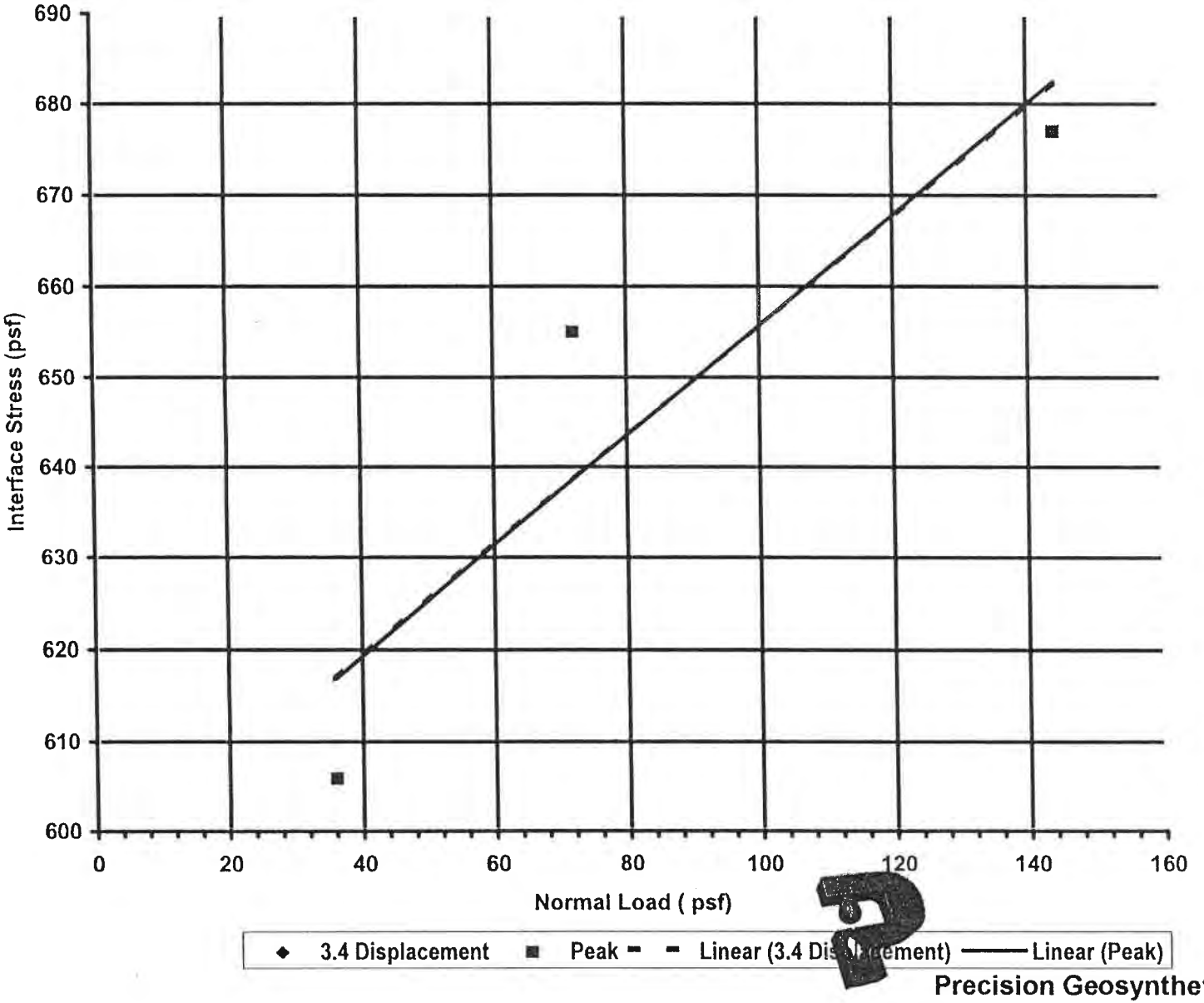
Figure #1
Shear Stress/ Displacement Curve
PGL Job No. 000642_1



Precision Geosynthetic Laboratories

R001337

Figure #2
Normal Stress/ Interface Stress
PGL Job No. 000642_1



Precision Geosynthetic Laboratories

R001338

TABLE 2.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/3/00**
Date Reported: **7/7/00**
Client Sample ID: **GCL-PH1-2 Roll 00001792**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000642**
PGL Control No. : **52679**

		SPECIMENS												Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)													
		0.334	0.330	0.332	0.331	0.334	0.333	0.331	0.334	0.331	0.331	0.332	0.002	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*													
		1.03	0.82	0.90	0.89	0.85						0.90	0.08	*0.75 min.*
ASTM D4632	Grab Tensile													
	Tensile Strength (lbs)													
	MD	348	288	304	377	398	407	317	342	312	287	338	44	*70 min.*
	TD	321	290	389	306	314	344	329	344	369	359	337	30	
	Elongation at Peak (percent)													
	MD	58	58	62	51	64	55	55	67	73	62	60	6	
	TD	74	87	125	112	96	122	73	97	116	98	100	19	
ASTM D4643	Water (Moisture) Content (percent)													
		14.9	15.3	15.0								15.1	0.2	*12 max.*
ASTM D5084	Hydraulic Conductivity (cm./ sec.) *(Confining Stress = 30 psi)*													
		3.6E-09										3.6E-09		*$5x10^{-9}$ max.*
ASTM D5887	Index Flux (m.^{3}/ m.^{2}/sec.)													
		3.5E-09										3.5E-09		*$5x10^{-8}$ max.*
ASTM D5890	Swell Index (mL/ 2 g.)													
		29.0										29.0	N/A	*24 min.*
ASTM D4632	Peel Strength (lbs)													
Modified	*MD*	30	28	55	52	43						42	12	*15 min.*
	TD	77	59	39	65	64						61	14	
ASTM D5891	Fluid Loss (mL)													
		14.2										14.2	N/A	*18 max.*

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Precision Geosynthetic Laboratories

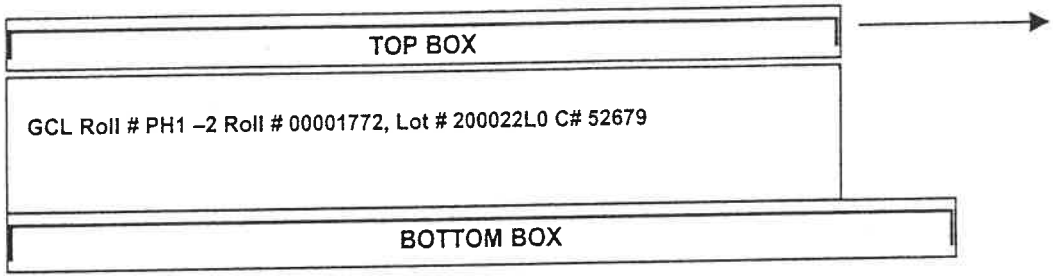
R001339

TABLE 2A

CLIENT: FOTH & VAN DYKE
PROJECT: MODERN PLATING CORP.
INTERNAL SHEAR TEST RESULT (ASTM D6243)
(PGL Job No. 000642)

QC'd by: _____
July 17, 2000

TEST CONFIGURATION #2



TEST CONDITIONS:

SAMPLE PREPARATION:

1. Specimens were cut to 20" x 20"

HYDRATION / CONSOLIDATION:

1. Each set of specimens was hydrated for 24 hours at normal load.
2. After which each set of specimen was consolidated for 1 hour at normal load in drained condition before shearing.

SHEAR TEST:

1. Shear test was conducted at 0.04 in/ min.
2. Sheared at minimum 3.3 inch horizontal displacement.
3. The test specimens were sheared in drained condition.
4. Tests were performed in general accordance with ASTM D5321-93 Method A using Brainard- Kilman LG-112 Direct Shear machine with effective area of 12 in x 12 in.

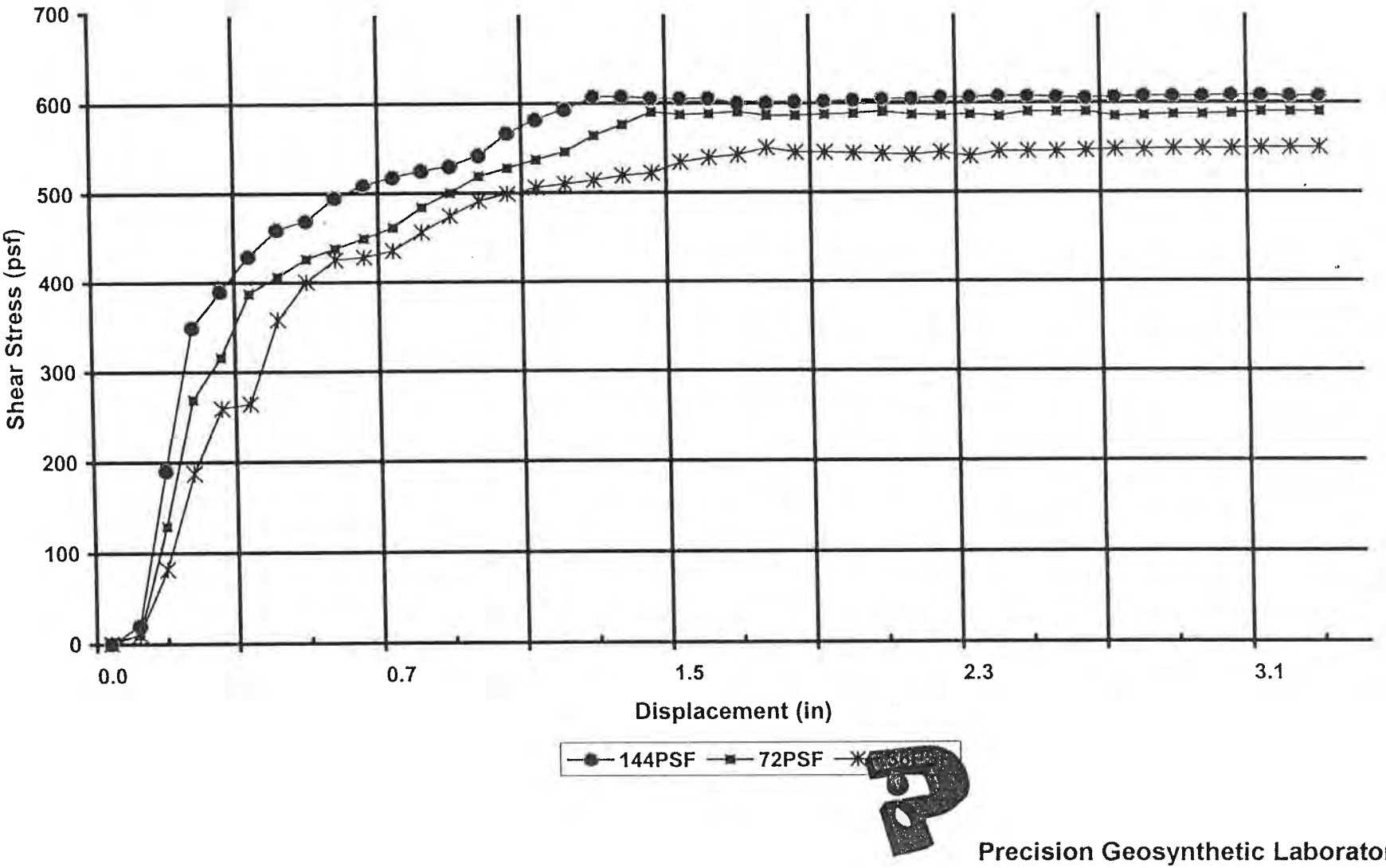
TEST RESULTS:

NORMAL STRESS		PEAK STRENGTH		3.3" DISPLACEMENT STRENGTH	
(psi)	(psf)	SHEAR STRESS (psf)	PEAK SECANT ANGLE	SHEAR STRESS (psf)	3.4" DISPLACEMENT SECANT ANGLE
0.25	36	550	86	550	86
0.5	72	590	83	590	83
1.0	144	607	77	607	77
COHESION (psf):		542		542	
FRICTION ANGLE (degrees):		26		26	
COEFFICIENT OF FRICTION:		0.486		0.486	

OBSERVATIONS:

Failure occurred along the interface. See Figure #2
No stretching, abrasion, or tearing was observed on either side of the GCL.

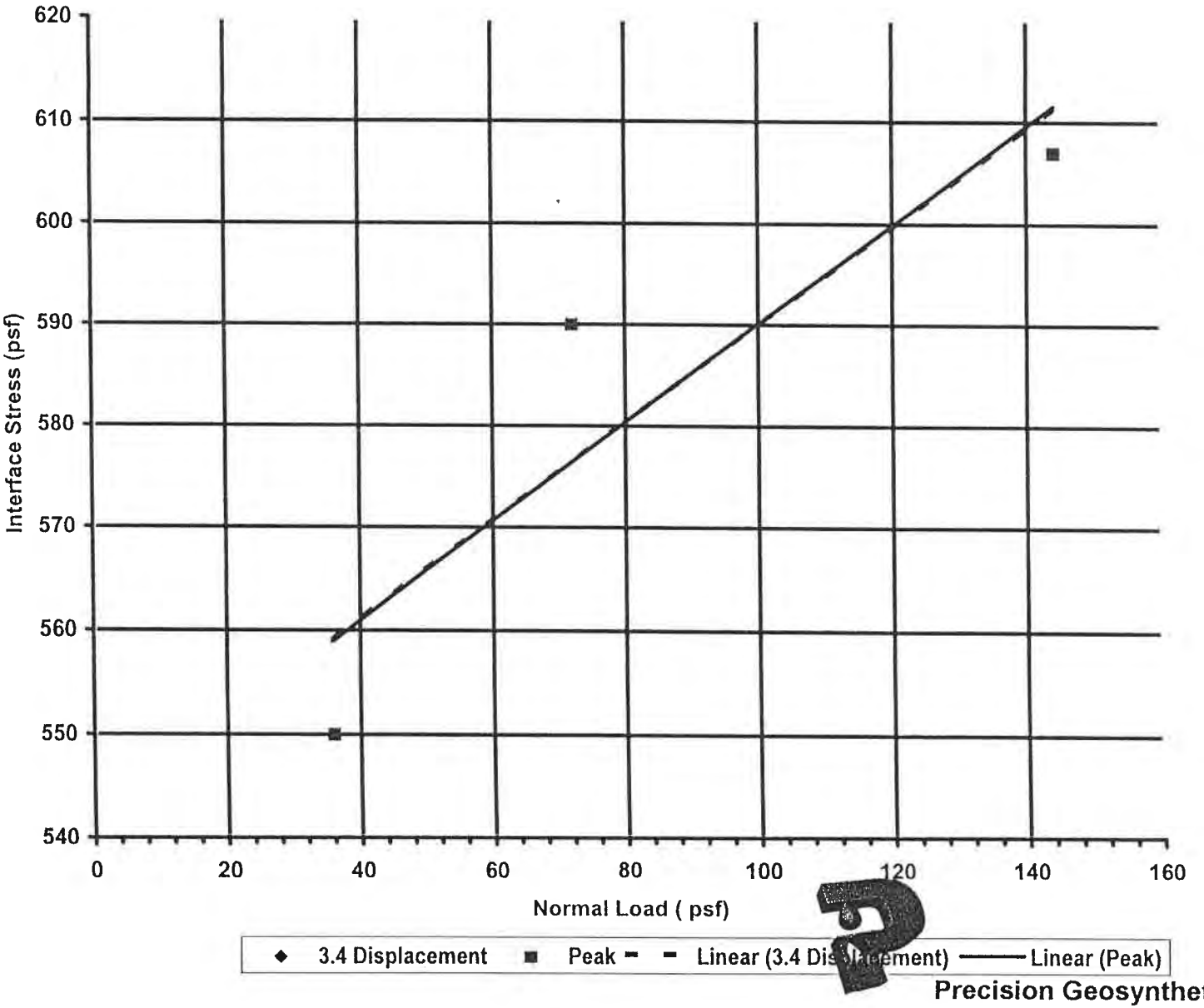
Figure #1
Shear Stress/ Displacement Curve
PGL Job No. 000642_2



Precision Geosynthetic Laboratories

R001341

Figure #2
Normal Stress/ Interface Stress
PGL Job No. 000642_2



Precision Geosynthetic Laboratories

R001342

97M015
#10,500 cc MARL
CIESL
R001343

Precision Geosynthetic Laboratories
1742 West Katella, Suite #4, Orange, California 92867
Tel. No.(714) 744-4599

INVOICE

NO : 114286

Date: 07/18/00

To: FOTH & VAN DYKE

406 Science Drive
Madison, WI 53711

Customer No.: 5588

Job Number: G000642

Attn: Mr. Marty Cieslik

DESCRIPTION : (2) GCL samples.

Project Name : MODERN PLATING CORP.

Quote No. : Q00G0107

Client PO/PR # :

No. of SAMPLES	TEST	DESCRIPTION	TAT	SURCHARGE	UNIT PRICE	TOTAL PRICE
2	D1777	THICKNESS, GCL	R		3.00	6.00
2	D5993	Mass/Area for GCL	R		8.00	16.00
2	D4632A	GRAB TENSILE (MD/TD)	R		32.00	64.00
2	D4632P	PEEL (md)	R		28.00	56.00
2	D4643	MOISTURE CONTENT (MICROWAVE METHO	R		10.00	20.00
2	D5084	HYDRAULIC CONDUCTIVITY-Permeabili	R		125.00	250.00
2	D5887	INDEX FLUX	R		125.00	250.00
2	D5890	FREE SWELL	R		25.00	50.00
2	D5891	FLUID LOSS	R		50.00	100.00
2	D5321(INT)	INTERNAL ASTM D5321/6243 3 POINTS	R		450.00	900.00
					TOTAL	1,712.00

We Appreciate Your Business!

RETURN WITH PAYMENT

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Scope 97M015 Classification 8350
Copy To REM, MASTER FILE

Precision Geosynthetic Laboratories

July 25, 2000

97M015

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik:

RE: Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 000716)

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 000716)

MATERIAL DESCRIPTION: GCL

SAMPLED BY: FOTH & VAN DYKE

DATE RECEIVED: July 14, 2000

DATE REPORTED: July 25, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
GCL-1 Roll 00001402	55001
GCL-2 Roll 00001404	55002
GCL-3 Roll 00001708	55003
GCL-4 Roll 00001710	55004
GCL-5 Roll 00001709	55005
GCL-6 Roll 00002159	55006
GCL-7 Roll 00001704	55007
GCL-8 Roll 00002161	55008
GCL-9 Roll 00002157	55009
GCL-10 Roll 00001705	55010
GCL-11 Roll 00002160	55011
GCL-12 Roll 00001706	55012
GCL-13 Roll 00001785	55013
GCL-14 Roll 00002156	55014

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D1777	Thickness
ASTM D5993	Mass Per Unit Area

TEST CONDITIONS: The samples were conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Tables 1 through 14. The units in which the data are reported are included on the tables.

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-1 Roll 00001402**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **000716**
PGL Control No.: **55001**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)													
		0.384	0.382	0.380	0.375	0.377	0.386	0.378	0.386	0.380	0.386	0.381	0.004	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		1.10	1.03	1.04	N/S							1.06	0.04	*0.75 min.*

41

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001346

TABLE 2.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-2 Roll 00001404**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55002**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.364	0.350	0.356	0.346	0.366	0.360	0.348	0.360	0.360	0.363	0.357	0.007	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.99	0.91	0.93	N/S							0.94	0.04	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001347

TABLE 3.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-3 Roll 00001708**
Material Description: **GCL**

QC'd By: AJ
PGL Job No. : **000716**
PGL Control No. : **55003**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.348	0.357	0.367	0.347	0.355	0.365	0.349	0.361	0.344	0.361	0.355	0.008	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.88	0.91	0.83	N/S							0.87	0.04	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001348

TABLE 4.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-4 Roll 00001710**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55004**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)	0.357	0.360	0.349	0.346	0.351	0.349	0.356	0.352	0.342	0.340	0.350	0.007	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*	0.94	0.93	0.90	N/S							0.92	0.02	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001349

TABLE 5.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-5 Roll 00001709**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55005**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.340	0.355	0.338	0.329	0.329	0.338	0.352	0.347	0.341	0.356	0.342	0.010	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.82	0.85	0.79	N/S							0.82	0.03	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001350

TABLE 6.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-6 Roll 00002159**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **000716**
PGL Control No.: **55006**

		SPECIMENS												Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.356	0.349	0.357	0.350	0.344	0.341	0.339	0.340	0.339	0.360	0.348	0.008	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.92	0.95	0.79	N/S							0.88	0.08	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001351

TABLE 7.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-7 Roll 00001704**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55007**

		SPECIMENS												Proj.
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.325	0.328	0.332	0.335	0.321	0.340	0.328	0.340	0.330	0.327	0.331	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.89	0.89	N/S								0.89	0.00	*0.75 min.*

47

R001352

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

TABLE 8.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-8 Roll 00002161**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55008**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)													
		0.329	0.340	0.358	0.360	0.350	0.350	0.359	0.340	0.342	0.345	0.347	0.010	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*													
		0.75	0.92	0.77	N/S							0.82	0.09	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001353

TABLE 9.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-9 Roll 00002157**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55009**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.345	0.322	0.330	0.341	0.350	0.356	0.359	0.356	0.329	0.342	0.343	0.013	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*	0.76	0.78	0.89	N/S							0.81	0.07	*0.75 min.*

49

R001354

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

TABLE 10.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-10 Roll 00001705**
Material Description: **GCL**

QC'd By: AM
PGL Job No. : **000716**
PGL Control No. : **55010**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.360	0.370	0.368	0.350	0.341	0.348	0.348	0.366	0.359	0.342	0.355	0.011	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*	1.07	0.95	N/S								1.01	0.09	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001355

TABLE 11.
MATERIAL PROPERTIES
CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-11 Roll 00002160**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **000716**
PGL Control No.: **55011**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)													
		0.351	0.366	0.351	0.349	0.357	0.339	0.341	0.349	0.351	0.361	0.351	0.008	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		1.03	0.95	0.83	N/S							0.94	0.10	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001356

TABLE 12.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-12 Roll 00001706**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55012**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)	0.336	0.344	0.340	0.349	0.348	0.336	0.330	0.334	0.330	0.341	0.339	0.007	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*	0.95	0.97	0.89	N/S							0.94	0.04	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001357

TABLE 13.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-13 Roll 00001785**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55013**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)													
		0.362	0.353	0.348	0.371	0.368	0.366	0.361	0.347	0.362	0.350	0.359	0.009	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.88	0.91	N/S								0.90	0.02	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001358

TABLE 14.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/14/00**
Date Reported: **7/25/00**
Client Sample ID: **GCL-14 Roll 00002156**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **000716**
PGL Control No. : **55014**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)													
		0.358	0.363	0.355	0.348	0.352	0.361	0.362	0.359	0.350	0.361	0.357	0.005	*0.25 min.*
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2})				*(Bentonite Content)*									
		0.92	0.89	0.98	N/S							0.93	0.05	*0.75 min.*

N/S - NO MORE SAMPLE, LIMITED SIZE.

Precision Geosynthetic Laboratories

R001359

Precision Geosynthetic Laboratories

October 19, 2000

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik: **RE:** Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

It is a company policy to keep the physical records of each job for 2 years since the receipt of the samples and keep the electronic file for 7 years. ***Failed seam samples are kept for 7 years; good seam samples are disposed after 2 weeks and conformance samples are disposed after 1 month.*** Should you need us to keep them longer, please advise us in writing.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 001348)

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 001348)

MATERIAL DESCRIPTION: GCL

SAMPLED BY: FOTH & VAN DYKE OF MADISON

DATE RECEIVED: October 17, 2000

DATE REPORTED: October 19, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
GCL-3 Roll 00001776	57511

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D1777	Thickness
ASTM D5993	Mass Per Unit Area
ASTM D4632	Grab Tensile
ASTM D4632, *Modified*	Peel Strength
ASTM D4643, *Microwave Method*	Moisture Content
ASTM D5084	Hydraulic Conductivity
ASTM D5887	Index Flux
ASTM D5890	Swell Index
ASTM D5891	Fluid Loss
ASTM D6243	Internal Shear Strength

TEST CONDITIONS: The sample was conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Table 1. The units in which the data are reported are included on the table.

PRECISION GEOSYNTHETIC LABORATORIES

CAL-LAP
Initials: Tech #: 013
Date: 10/19/00

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/17/00**
Date Reported: **10/19/00**
Client Sample ID: **GCL-3 Roll 00001776**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **001348**
PGL Control No.: **57511**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.325	0.326	0.327	0.327	0.324	0.325	0.325	0.325	0.327	0.324	0.325	0.001	0.25 min.
ASTM D5993	Mass per Unit Area (lbs/ ft.^{2}) *(Bentonite Content)*	0.89	0.90	0.89	0.88	0.85						0.88	0.02	0.75 min.
ASTM D4632	Grab Tensile													
	Tensile Strength (lbs)													
	MD	281	302	288	268	317	290	296	280	304	263	289	17	70 min.
	TD	415	368	379	358	361	353	389	360	367	373	372	18	
	Elongation at Peak (percent)													
	MD	77	86	81	71	83	74	81	77	79	72	78	5	
	TD	82	78	80	97	75	71	82	92	73	82	81	8	
ASTM D4643	Water (Moisture) Content (percent)	16.4	16.6	16.4								16.5	0.1	12 max.
ASTM D5084	Hydraulic Conductivity (cm./ sec.) *(Confining Stress = 30 psi)* *(NOTE: TEST NOT COMPLETED AT THIS TIME, IN PROGRESS.)*													$5x10^{-9}$ max.
ASTM D5887	Index Flux (m.^{3}/ m.^{2}/sec.) *(NOTE: TEST NOT COMPLETED AT THIS TIME, IN PROGRESS.)*													$5x10^{-8}$ max.
ASTM D5890	Swell Index (mL/ 2 g.)	27.0										27.0	N/A	24 min.
ASTM D4632 Modified	Peel Strength (lbs)													
	MD	53	42	39	49	55						48	7	15 min.
	TD	63	71	57	66	61						63	5	
ASTM D5891	Fluid Loss (mL) *(NOTE: TEST NOT COMPLETED AT THIS TIME, IN PROGRESS.)*													18 max.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Precision Geosynthetic Laboratories

R001362

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Scope 97M015 Classification 8330 R0001363
Copy To REM, MASTER FILE

Precision Geosynthetic Laboratories

November 2, 2000

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik: **RE:** Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

It is a company policy to keep the physical records of each job for 2 years since the receipt of the samples and keep the electronic file for 7 years. ***Failed seam samples are kept for 7 years; good seam samples are disposed after 2 weeks and conformance samples are disposed after 1 month.*** Should you need us to keep them longer, please advise us in writing.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 001401)

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 001401)

MATERIAL DESCRIPTION: GCL

SAMPLED BY: FOTH & VAN DYKE OF MADISON

DATE RECEIVED: October 27, 2000 **DATE REPORTED:** November 2, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
GCL-PH2-15 Roll 1787	57700
GCL-PH2-16 Roll 1712	57701
GCL-PH2-17 Roll 1784	57702
GCL-PH2-18 Roll 1798	57703
GCL-PH2-19 Roll 17	57704
GCL-PH2-20 Roll 1789	57705
GCL-PH2-21 Roll 1790	57706
GCL-PH2-22 Roll 1711	57707
GCL-PH2-23 Roll 1795	57708
GCL-PH2-24 Roll 1788	57709
GCL-PH2-25 Roll 1794	57710
GCL-PH2-98 Roll 1796	57711

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D1777	Thickness
ASTM D5993	Mass Per Unit Area

TEST CONDITIONS: The samples were conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Tables 1 through 12. The units in which the data are reported are included on the tables

PRECISION GEOSYNTHETIC LABORATORIES

GAI-LAP
Initials: # 013
Date: 11/6/00

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/2/00**
Client Sample ID: **GCL-PH2-15 Roll 1787**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **001401**
PGL Control No.: **57700**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)	0.339	0.341	0.351	0.361	0.348	0.356	0.348	0.343	0.360	0.360	0.351	0.008	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft2)	0.97	0.94	0.98								0.96	0.023	*0.75 min.*

09

R001365

Precision Geosynthetic Laboratories

TABLE 2.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/2/00**
Client Sample ID: **GCL-PH2-16 Roll 1712**
Material Description: **GCL**

QC'd By: 8/2
PGL Job No. : **001401**
PGL Control No. : **57701**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)	0.311	0.319	0.326	0.316	0.320	0.325	0.330	0.328	0.323	0.330	0.323	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft ^{2})	0.87	0.84	0.88								0.86	0.019	*0.75 min.*

61

R001366

Precision Geosynthetic Laboratories

TABLE 3.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/2/00**
Client Sample ID: **GCL-PH2-17 Roll 1784**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : 001401
PGL Control No. : 57702

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)	0.326	0.330	0.341	0.330	0.327	0.340	0.330	0.328	0.336	0.341	0.333	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ft2)	0.92	0.93	0.93								0.92	0.005	*0.75 min.*

62

R001367

Precision Geosynthetic Laboratories

R001368

TABLE 4.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/2/00**
Client Sample ID: **GCL-PH2-18 Roll 1798**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57703**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)	0.348	0.330	0.329	0.336	0.342	0.351	0.339	0.328	0.325	0.321	0.335	0.010	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft^2)	0.92	0.94	0.92								0.93	0.009	

63

Precision Geosynthetic Laboratories

R001369

TABLE 5.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/2/00**
Client Sample ID: **GCL-PH2-19 Roll 17**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : 001401
PGL Control No. : 57704

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.340	0.341	0.330	0.335	0.348	0.342	0.355	0.347	0.351	0.351	0.344	0.008	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft^2)	0.87	0.90									0.88	0.026	*0.75 min*

64

Precision Geosynthetic Laboratories

R001370

TABLE 6.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-20 Roll 1789**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **001401**
PGL Control No.: **57705**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.361	0.352	0.358	0.362	0.349	0.348	0.351	0.348	0.363	0.361	0.355	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft^2)	0.92	1.06									0.989	0.093	*0.75 min.*

65

Precision Geosynthetic Laboratories

R001371

TABLE 7.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-21 Roll 1790**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57706**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	**DESCRIPTION**													
ASTM D1777	Thickness (in)	0.339	0.345	0.350	0.351	0.348	0.330	0.336	0.349	0.352	0.341	0.344	0.007	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft^2)	0.92	0.90	0.90								0.906	0.012	*0.75 min.*

99

Precision Geosynthetic Laboratories

R001372

TABLE 8.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-22 Roll 1711**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57707**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.356	0.360	0.359	0.362	0.365	0.368	0.366	0.351	0.350	0.360	0.360	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft^2)	0.96	0.92									0.942	0.024	*0.75 min.*

67

Precision Geosynthetic Laboratories

R001373

TABLE 9.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-23 Roll 1795**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57708**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.310	0.312	0.311	0.316	0.318	0.309	0.320	0.319	0.325	0.311	0.315	0.006	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft ^{2})	0.84	0.77									0.808	0.048	*0.75 min.*

89

Precision Geosynthetic Laboratories

R001374

TABLE 10.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-24 Roll 1788**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57709**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.341	0.335	0.347	0.338	0.333	0.350	0.352	0.337	0.339	0.351	0.342	0.007	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft ^{2})	0.88	0.88									0.88	0.00	*0.75 min*

69

Precision Geosynthetic Laboratories

R001375

TABLE 11.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-25 Roll 1794**
Material Description: **GCL**

QC'd By: _____
PGL Job No.: **001401**
PGL Control No.: **57710**

		SPECIMENS												
		1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
METHOD	DESCRIPTION													
ASTM D1777	Thickness (in)	0.330	0.335	0.338	0.331	0.331	0.342	0.341	0.334	0.333	0.340	0.335	0.004	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft ^{2})	0.88	0.80									0.84	0.058	*0.75 min.*

70

Precision Geosynthetic Laboratories

R001376

TABLE 12.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/27/00**
Date Reported: **11/6/00**
Client Sample ID: **GCL-PH2-98 Roll 1796**
Material Description: **GCL**

QC'd By: _____
PGL Job No. : **001401**
PGL Control No. : **57711**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D1777	Thickness (in)	0.330	0.338	0.341	0.329	0.350	0.321	0.352	0.326	0.350	0.352	0.339	0.012	*0.25 min.*
ASTM D5993	Mass per Unit Area of the Clay (lbs/ ft ^{2})	0.92	0.88									0.90	0.026	*0.75 min*

71

Precision Geosynthetic Laboratories

Appendix D3

GCL Panel Placement Forms

R001378

PANEL PLACEMENT SUMMARY

PP -

Project Name: MODERN PLATING CORP.

Project No: 97.MO15

Page 1 of

Date: 7/12/2000

Installer: MIDESSA GEOMEMBRANES

Computer Entry By:

Checked By:

Panel Number	Roll Number/ Material Type	Panel Location	Time Deployed	Weather Temp./Wind/ Precip.	QA Monitor	Panel Damage (y/n)	Subgrade Conditions	Length/ Width (feet)	Comments
GCL-1	00001402/BENTOMAT	NORTH SLOPE	06:10	65°F/0/0	BJS	N	OK	35/15	
GCL-2	/		06:18						
GCL-3	/		06:21						
GCL-4	/		06:26						
GCL-5	00001404/		06:35						
GCL-6	/		06:42						
GCL-7	/		06:46						
GCL-8	/		06:52						
GCL-9	00001708/		07:05					25/15	
GCL-10	/		07:12					15/15	
GCL-11	/	BOTTOM	07:15					78/15	
GCL-12	00001710/	NORTH SLOPE	08:37						
GCL-13	/	BOTTOM	08:40					83/15	
GCL-14	00001709	North Slope	9:00		REM	N	OK	35/15	
GCL-15		NE Corner	9:20			N	OK AS NOTED	24/15	SMALL (2'x2') WET SPOT @ TOE OF SLOPE
GCL-16		EAST SLOPE	9:26			N	OK	26/15	
GCL-17		EAST SLOPE	9:29			N	OK	25/15	
GCL-18		EAST SLOPE	10:00			N	OK		
GCL-19	00002159	BOTTOM + WEST SLOPE	10:50			N	OK	150/15	
GCL-20	00001704	WEST SLOPE	10:16					15/15	
GCL-21	/	SOUTH SLOPE	10:15					111/15	
GCL-22	/	SOUTH SLOPE	10:25					18/15	

PANEL PLACEMENT SUMMARY

Project Name: Modern Plating Corp. PP -

Project No: 99M0015 Page 2 of

Installer: MIDCOR Date: 7/12/2000 Computer Entry By:

Checked By:

Panel Number	Roll Number/ Material Type	Panel Location	Time Deployed	Weather Temp./Wind/ Precip.	QA Monitor	Panel Damage (y/n)	Subgrade Conditions	Length/ Width (feet)	Comments
GCL-23	00001704	southslope	10:35		RBM	N	OK	27/15	
GCL-24		Bottom	11:15					75/15	
GCL-25		Bottom	11:30					18/15	
GCL-26		Bottom + East slope	11:50					91/15	
GCL-27		East Slope	1:00pm					48/15	
GCL-28	00002157	Bottom + West Slope	2:30pm					119/15	
GCL-29	00001705	Bottom west and east slope	3:00pm					150/15	Small wet spot in Bottom for sump
GCL-30	00002160	Bottom west and east slope	3:20pm					150/15	
GCL-31	00001706	East Slope	3:40pm					13/15	
GCL-32		East Slope	4:00pm					11/15	
GCL-33		East Slope	4:20pm					32/15	
GCL-34		South Slope	4:40pm					33/15	
GCL-35		South Slope	4:50pm					36/15	
GCL-36		South Slope	5:15pm					19/15	
GCL-37		South Slope	5:25pm					19/15	
GCL-38		South Slope	5:35pm					11/15	
GCL-39		South Slope	5:40pm					27/15	
GCL-40		South Slope	5:45pm					34/15	
GCL-41		South Slope	5:50pm					34/15	
GCL-42		Sump	6:00pm					15/15	Added 2nd layer of GCL due to wet conditions
GCL-43		South Slope	6:05pm					38/15	
GCL-44		South Slope	6:15pm					30/15	

R001379

FORM EES050 (5/98)

R001380

PANEL PLACEMENT SUMMARY

PP-

Project Name: MODERN PLATING CORP.

Page: of

Project No: 97M015

Date: 7/12/00

Computer Entry By:

Installer: MIDESSA GEOMEMBRANES

Checked By:

Panel Number	Roll Number/ Material Type	Panel Location	Time Deployed	Weather Temp./Wind/ Precip.	QA Monitor	Panel Damage (y/n)	Subgrade Conditions	Length/ Width (feet)	Comments
GCL-45	000190-4	West slope	6:20pm		REM	N	OK	20/15	
GCL-46	↓	west slope	6:25pm		↓	↓	↓	20/15	

PANEL PLACEMENT SUMMARY

Project Name: MODERN PLATING CORP. – PHASE 2 PP -

Project No: 97M015

Installer: MIDESSA Date: 10/25/00 Page of

Computer Entry By:

Checked By:

Panel Number	Roll Number/ Material Type	Panel Location	Time Deployed	Weather Temp./Wind/ Precip.	QA Monitor	Panel Damage (y/n)	Subgrade Conditions	Length/ Width (feet)	Comments
GCL-69	175 / GCL	EAST/BOTTOM	12:04	65F/0/0	13551	N	OK	135/15	
GCL-70	1789 /	↓	14:10	↓	↓	↓	↓	135/15	
GCL-71	1790 /	↓	14:43	↓	↓	↓	↓	135/15	
GCL-72	↓ /	EAST SLOPE	14:50	↓	↓	↓	↓	15/15	
GCL-73	1711 /	WEST/BOTTOM	16:12	↓	↓	↓	↓	120/15	
GCL-74	↓ /	WEST SLOPE	16:35	↓	↓	↓	↓	135/15	
GCL-75	1795 /	EAST/BOTTOM	16:57	↓	↓	↓	↓	35/15	
GCL-76	1796 /	WEST SLOPE	17:25	↓	↓	↓	↓	100/15	
GCL-77	↓ ↓	EAST/BOTTOM	17:50	↓	↓	↓	↓	50/15	
								85/15	

R001381

FORM FESOP 15/00

PANEL PLACEMENT SUMMARY

PPI

Project Name: Modern Plating Corp - Phase 2

Project No: 97.1001.5

Date: 10/26/00

Page of

Installer: NAUDESA

Computer Entry By: REM

Checked By:

Panel Number	Roll Number/ Material Type	Panel Location	Time Deployed	Weather Temp/Wind/ Precip	QA Monitor	Panel Damage (y/n)	Subgrade Conditions	Length/ Width (feet)	Comments
GCL-78	?/GCL	Southeast Bottom	7:15	60°F/0/0	REM	N	Damp OK	60/15	
GCL-79	?/GCL	South center Bottom	7:30					17/15	
GCL-80	?/GCL	"	7:35					8/15	
GCL-81	1788/GCL	Sideslope/ Southwest	7:45					29/15	
GCL-82	1788/GCL	Sideslope Southwest	7:50					35/15	
GCL-83	1788/GCL	Sideslope South	8:10					44/15	
GCL-84	1788/GCL	West Sideslope	8:40					Δ12/8	
GCL-85	1788/GCL	Sideslope West	8:50 NW SW					8/8	
GCL-86	1788/GCL	Sideslope West	8:55 Corner					Δ6/10	
GCL-87	1788/GCL	Sideslope Southwest	9:00					Δ4/6	
GCL-88	1788/GCL	South side slope	9:00					Δ17/15	
GCL-89	1788/GCL	South Side Slope	9:10					Δ8/15	
GCL-90	1794/GCL	South side Slope	9:12					35/15	
GCL-91	1794/GCL	South side Slope	9:13					35/15	
GCL-92	1794/GCL	South side Slope	9:15					36/15	
GCL-93	1794/GCL	South side Slope	9:19					37/15	
GCL-94	1796/GCL	West side Slope	9:25					36/15	
GCL-95	1796/GCL	Southeast corner	9:38					22/15	
GCL-96	1796/GCL	Sump (double)	10:05					15/15	2 layers of GCL in sump
GCL-97	1796/GCL	Southeast corner	10:10					22/15	
GCL-98	1796/GCL	Southwest corner	10:12					9/15	
GCL-99	1796/GCL	"	10:15	✓	✓	✓	✓	12/8	

RUD 1.8.2

Appendix E

Geomembrane Material Information

Appendix E1

Geomembrane Roll Inventory Form

INITIAL ROLL INVENTORY

Project Name: MODERN PLATING CORP.

Project No: 97M015 Date: 6/15/00 Page of

Material/Supplier: 60-mil TEXTURED HDPE GEOMEMBRANE

	Roll Number	Lot Number	Date of Arrival	QA Monitor	Width/Length	Conf. Sample (No., P/F)	Date Sample Sent To Lab	Cert. Sheet (P/F)	Visual Inspection/Comments
✓	17012-1	K021354	6/15/00	BJS1	20.22/520				
✓	17332-1	K021408							
✓	17318-1	K021408							
✓	17331-1	K021408							
✓	17014-1	K021354							
✓	17308-1	K021403				PH1-001	6/28/00		
✓	17310-1	K021403							
✓	17316-1	K021403							
✓	17312-1	K021403							
✓	17305-1	K021403							
✓	17307-1	K021403							

R001385

Appendix E2

Manufacturer's Roll Test Data Reports

SOLMAX
INTERNATIONAL

2801 Marie-Victorin Blvd, Varennes, Quebec, Canada J3X 1P7
Phone: (450) 929-1234 Fax (450) 929-2548

May 17, 2000

Benjamin Velasquez
Midessa Geomembranes
4809 West 42nd
Odessa, TX 79764

Dear Mr. Velasquez,

Solmax International hereby certifies that Solmax 460T, 60 mil textured HDPE geomembrane, and Solmax 440T, 40 mil textured geomembrane, both meet the properties outlined on pages 02070-5 to 02070-6 for the Modern Plating Facility project in Freeport, IL

Solmax does take exception to the Friction Resistance properties, ASTM D5321 and ASTM D321. These properties can only be certified to once the liner has been tested.

Please feel free to call us at (800) 571-3904 if you have any questions or require additional information.

Sincerely,

Guylaine Chayer
Quality Control Supervisor
Solmax International

TECHNICAL DATA SHEET
Textured HDPE Geomembrane

SOLMAX INTERNATIONAL

MODERN PLATING FACILITY, FREEPORT, IL

Properties	Test Method	Frequency *	Solmax 460T English Units
Thickness, Minimum Average	ASTM D5994	Every Roll	60 mil
Standard Roll Dimensions‡	N/A	N/A	22' x 520'
Resin Density	ASTM D1505	Once per Batch	0.94 g/cc
Melt Index	ASTM D1238 Condition E	Once per Batch	0.4 g/10 minutes
Oxidative Induction Time	ASTM D3895	Once per Batch	> 100 minutes
Sheet Density	ASTM D1505	Every Other Roll	> 0.940 g/cc
Asperity Height	GRI-GM12	Every Roll	10 mil
Carbon Black Content	ASTM D4218	Every Other Roll	2.0 to 3.0 %
Carbon Black Dispersion (10 views)	ASTM D5596	Every Sixth Roll	Category 1 or 2
Tensile Strength - Yield Strength - Yield Elongation (1.3 in. Gage Length) - Break Strength - Break Elongation (2 in. Gage Length)	ASTM D638 Type IV	Every Other Roll	 126 lb/in 13 % 90 lb/in 150 %
Tear Resistance	ASTM D1004	Every Sixth Roll	42 lbs.
Puncture Resistance	ASTM D4833	Every Sixth Roll	90 lbs.
Puncture Resistance	FTMS 101C	Upon Request	63 lbs.
Stress Crack Resistance (SP-NCTL)	ASTM D5397 (Appendix)	Once per Batch	> 200 hrs (BAM Modified)
Dimensional Stability	ASTM D1204	Every Sixth Roll	± 2 %
Low Temperature Brittleness	ASTM D746	Certified	-112 °F
Oven Aging (at 85°C, Standard OIT, % retained after 90 days)	ASTM D5721	Per Formulation	55 %
U.V. Resistance (High Pressure OIT, % Retained after 1600 hrs)	GRI-GM11	Per Formulation	60 %

*** Testing frequency based on standard roll dimensions.**
‡ Roll length may vary ±1%

Data provided for informational purposes only.
08/99

International Head Office
2801 Marie-Victorin Blvd.• Varennes, Quebec, Canada J3X 1P7
Tel.: (450) 929-1234• Fax: (450) 929-1227• Web: www.solmax.com
Other Offices

Canada:	USA:	France:	Chile:
800 267-1232	800 571-3904	01.30.15.05.46	562 263-1739

Appendix E3

Manufacturer's Resin Quality Assurance Test Results

4/13/00

Chevron

Chevron Chemical Company LLC

March 27, 2000

G Chayer
Solmax Int'l
2801 Blv.
Marie Victorin
Varennes, PQ J3X1P

CERTIFICATE OF ANALYSIS

Product:	9642	Lot Number:	K021378
Chevron Order #:	250219 - 13000	Destination:	Varennes
Package:	GOCX058420	Weight (lbs):	173,750
Customer Order #:	PON1372	Ship Date:	3/24/00

Following is the data on the subject material as determined by the Quality Control Department:

Property	Value	Units
Melt Index	0.15	gms/10 min
HLMI	13.6	gms/10 min
Density	0.9373	gms/cc
OIT	141.4	

The data set forth herein has been carefully compiled by Chevron Chemical Company. However, there is no warranty of any kind, either expressed or implied, applicable to its use and the user assumes all risk and liability in connection therewith.

Sincerely,

Gary MacMurtrie
Supervisor
Quality Control

13 Avril 00

Customer Fax: 450-929-2548

For inquiry, contact Customer Service at the following number:
Film, Coating, Pipe Applications: 1-800-231-3826
Molding Applications: 1-800-231-3828

Appendix F

Geomembrane Conformance Laboratory Test Results

MASTER FILE COPY
Scope 97M015 Classification 8350
Copy To REM, MSCI, MASTER FILE

Precision Geosynthetic Laboratories

July 6, 2000

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik:

RE: Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 000640)

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 000640)

MATERIAL DESCRIPTION: 60 mil Textured HDPE geomembrane

SAMPLED BY: FOTH & VAN DYKE

DATE RECEIVED: July 3, 2000 **DATE REPORTED:** July 6, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
17308-1	52676

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
GRI-GM12	Asperity Height of Textured
ASTM D1505	Density
ASTM D638, Type IV	Tensile Properties
ASTM D1004, *Die C*	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1238, *Cond. 190°C/2.16 kg*	Melt Flow Index

TEST CONDITIONS: The sample was conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Table 1. The units in which the data are reported are included on the table.

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Quela
Vice President

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **7/3/00**
Date Reported: **7/6/00**
Client Sample ID: **17308-1**
Material Description: **60 mil Textured HDPE geomembrane**

QC'd By: _____
PGL Job No.: **000640**
PGL Control No.: **52676**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D5994	Thickness (mils)	60.5	61.1	62.5	61.7	62.0	61.7	60.0	62.1	63.1	61.0	61.6	0.9	57 min. avg.
GRI-GM12	Asperity Height of Textured (mils)	19.0	21.0	20.0	17.0	17.0	16.0	16.0	18.0	18.0	19.0	18.1	1.7	10 min. avg.
ASTM D1505	Density (grams/ cm.^{3})	0.9462	0.9462	0.9462								0.9462	0.0000	0.940 min.
ASTM D638 Type IV	Tensile Properties:													
	Tensile Strength at Yield (lbs/ in.-width)													
	MD	164	172	173	181	174						173	6	126 min.
	TD	178	162	168	161	180						170	9	
	Tensile Strength at Break (lbs/ in.- width)													
	MD	183	186	191	157	186						181	14	90 min.
	TD	182	144	136	221	201						177	36	
	Tensile Elongation at Yield (percent)													
	MD	18.8	20.0	19.5	20.2	20.1						19.7	0.6	12 min.
	TD	18.7	18.3	17.5	18.2	19.2						18.4	0.7	
	Tensile Elongation at Break (percent) *Gauge Length = 2.0 in.*													
	MD	524	484	483	244	478						442	113	100 min.
	TD	477	400	328	587	525						463	102	
ASTM D1004 Die C	Tear Resistance (lbs)													
	MD	57	59	56	59	55	59	56	61	57	58	57	2	42 min.
	TD	55	57	58	54	55	57	58	54	60	56	56	2	
ASTM D4833	Puncture Resistance (lbs)	137	134	133	136	138	131	137	136	135	131	133	4	90 min.
		133	129	131	127	127								
ASTM D1603	Carbon Black Content (percent)	2.49	2.48									2.48	0.00	2-3 range
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)	1	1	1	1	1	1	1	1	1	1	1	N/A	1,2 or 3 rating
ASTM D1238 Cond. 190°C/2.16 kg	Melt Flow Index (grams/ 10 minutes)	0.2107	0.2113	0.2109								0.2110	0.0003	0.4 max.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Precision Geosynthetic Laboratories

3

R001394

MASTER FILE COPY
Scope 97M015 Classification 8350
Copy To MJCL, BJSI, REM
MASTER File

Precision Geosynthetic Laboratories

October 18, 2000

Mr. Marty Cieslik
FOTH & VAN DYKE
406 Science Drive
Madison, WI 53711

Dear Mr. Cieslik:

RE: Modern Plating / 97M015

Thank you for consulting Precision Geosynthetic Laboratories for your material testing needs.

It should be noted that the test specimen and test sample used for this report was believed to be representative of the material produced under the designation herein stated. However, these results are indicative of only the specimens that were actually tested. The testing herein is based upon accepted industry practice as well as the test method listed. Precision Geosynthetic Laboratories neither accepts responsibility for nor makes claims to the final use and purpose of the material.

By accepting the data and results represented on this report, Client agrees to limit the liability of Precision Geosynthetic Laboratories from Client and all other parties for claims arising out of the use of this data to the cost for the respective test(s) represented in this report, and Client agrees to indemnify and hold harmless Precision Geosynthetic Laboratories from and against all liability in excess of the aforementioned limit.

The test data and all associated project information shall be held in confidence and disclosed to other parties only with the authorization of Client or Precision Geosynthetic Laboratories.

It is a company policy to keep the physical records of each job for 2 years since the receipt of the samples and keep the electronic file for 7 years. ***Failed seam samples are kept for 7 years; good seam samples are disposed after 2 weeks and conformance samples are disposed after 1 month.*** Should you need us to keep them longer, please advise us in writing.

If you have any questions or if we may be of further service, please do not hesitate to call at 800-522-4599.

Sincerely,

PRECISION GEOSYNTHETIC LABORATORIES

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

Enclosure: (Job No. 001347)

Precision Geosynthetic Laboratories

CLIENT: FOTH & VAN DYKE
PROJECT: Modern Plating / 97M015

VERIFICATION OF MATERIAL PROPERTIES
(PGL Job No. 001347)

MATERIAL DESCRIPTION: 60 mil textured HDPE geomembrane

SAMPLED BY: FOTH & VAN DYKE OF MADISON

DATE RECEIVED: October 17, 2000 **DATE REPORTED:** October 18, 2000

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PRECISION CONTROL NUMBER
Geomembrane-2 Roll 17316-1	57510

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D638, Type IV	Tensile Properties
ASTM D1004, *Die C*	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1238, *Cond. 190°C/2.16 kg*	Melt Flow Index

TEST CONDITIONS: The sample was conditioned for a minimum one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS:

The test results are summarized in Table 1. The units in which the data are reported are included on the table.

PRECISION GEOSYNTHETIC LABORATORIES

GAI-LAP
Initials: [illegible] #: 013
Date: 10/18/00

Edith Pintor
Quality Assurance

Cora B. Queja
Vice President

1160 North Gilbert Street, Anaheim, CA 92801, Tel # 714-520-9631, Fax # 714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: FOTH & VAN DYKE

PROJECT: Modern Plating / 97M015

Date Received: **10/17/00**
Date Reported: **10/18/00**
Client Sample ID: **Geomembrane-2 Roll 17316-1**
Material Description: **60 mil textured HDPE geomembrane**

QC'd By: _____
PGL Job No.: **001347**
PGL Control No.: **57510**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Proj. Specs.
ASTM D5994	Thickness (mils)	65.4	68.1	63.4	62.0	63.0	65.1	64.0	67.1	61.0	63.0	64.2	2.2	57 min. avg.
ASTM D1505	Density (grams/ cm.^{3})	0.9485	0.9485	0.9485								0.9485	0.0000	0.940 min.
ASTM D638	Tensile Properties:													
Type IV	Tensile Strength at Yield (lbs/ in.-width)													
	MD	191	200	186	182	188						189	7	126 min.
	TD	180	178	186	180	186						182	4	
	Tensile Strength at Break (lbs/ in.- width)													
	MD	172	231	204	219	176						200	26	90 min.
	TD	182	152	148	197	156						167	21	
	Tensile Elongation at Yield (percent)													
	MD	18.8	19.2	18.3	18.2	18.1						18.5	0.5	12 min.
	TD	18.3	18.5	18.8	18.3	17.5						18.3	0.5	
	Tensile Elongation at Break (percent) *Gauge Length = 2.0 in.*													
	MD	391	562	523	572	427						495	81	100 min.
	TD	473	392	292	510	425						418	84	
ASTM D1004	Tear Resistance (lbs)													
Die C	*MD*	59	61	64	60	59	60	60	64	57	57	60	2	42 min.
	TD	55	57	56	57	58	57	57	58	59	54	57	1	
ASTM D4833	Puncture Resistance (lbs)	156	155	145	144	146	146	142	143	139	140	144	6	90 min.
		144	144	139	140	134								
ASTM D1603	Carbon Black Content (percent)	2.54	2.55									2.55	0.01	2-3 range
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)	1	1	1	1	1	1	1	1	1	1	1	N/A	1,2 or 3 rating
ASTM D1238	Melt Flow Index (grams/ 10 minutes)													
Cond. 190°C/2.16 kg		0.1970	0.1915	0.1940								0.1942	0.0028	0.4 max.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION

Precision Geosynthetic Laboratories

R001397

CONFORMANCE TEST CHAIN OF CUSTODY FORM

Precision Geosynthetic Laboratories
1160 North Gilbert Street
Anaheim, CA 92801
(800-522-4599)

PROJECT NAME / PROJECT NUMBER: MODERN PLATING CORP. / 97MC

PROJECT LOCATION: FREEPORT, IL

GEOMEMBRANE TESTING

SAMPLE ID	Thickness ASTM D5199 or D5994	Density ASTM D1505 or D792	Carbon Black Content ASTM D1603	Carbon Dispersion D3015/ D5596	Tensile ASTM D638 GM13 / NSF54	Tear Resistance ASTM D1004 ___ (Die C)	Puncture D4833 /101CM2065	Melt Flow Index ASTM D1238, cond E	Dimensional Stability ASTM D1204	Low Temp. Brittleness D746/ D1790	NCTL ASTM D5397 Hours ___	Other ASTM ___
GEOMEMBRANE-2 (ROLL 17316-1)	X	X	X	X	X	X	X	X				57510

NONWOVEN OR WOVEN GEOTEXTILE TESTING

SAMPLE ID	Thickness ASTM D5199 or D1777	Mass Per Area ASTM D5261 or D3776	Grab Tensile ASTM D4632	Trapezoid Tear ASTM D4533	Puncture Resistance ASTM D4833	Mullen Burst ASTM D3786	Permittivity ASTM D4491	AOS ASTM D4751	Wide Width Tensile ASTM D4595	UV (hrs ___ ASTM D4355	Other ASTM ___	Other ASTM ___

GEOCOMPOSITE / GEONET / GEOGRID TESTING

SAMPLE ID	Thickness ASTM D5199 or D1777	Density ASTM D1505 or D792	Carbon Black Content ASTM D1603	Mass Per Area ASTM D5261 or D3776	Melt Flow Index ASTM D1238, cond. E	Peel ASTM D413, - F904 or GRI-GC7	Transmissivity* - ASTM D4716	Compression ASTM D1621	Tensile Strength ASTM D1882 or D5035	Wide Width Tensile ASTM D4595	Rib Tensile Strength GRI-GG1	Junction Strength GRI-GG2

* Transmissivity Test Parameters: Normal Load:_____, Gradient:_____, Seating Time:_____, Boundary Condition:_____

GCL TESTING

SAMPLE ID	Thickness ASTM D5199	Mass Per Area ASTM D5993	Grab Tensile ASTM D4632	Peel Strength ASTM D6496	Moisture Content ASTM D4643 or D2216	Hydraulic Conductivity ASTM D5084	Index Flux ASTM D5887	Swell Index ASTM D5890	Fluid Loss ASTM D5891	Internal Shear Strength ASTM D6243	Other ASTM ___	Other ASTM ___

SEND REPORT TO:
Name: MARTY CIESLIK
Company: FOTH & VAN DYKE
Address: 406 SCIENCE DR., STE 400 MADISON, WI 53711
Phone: (608) 238-4761
Fax: (608) 238-4633
e-mail: mcieslik@foth.com

FIELD CONTACT:
Name: BRIAN STANUL
Pager: N/A
Mobil: (608) 576-1635
Phone: (608) 238-4761
Fax: (608) 238-4633
e-mail: bstanul@foth.com

Released by:
Name: BRIAN STANUL
Date/Time: 10/16/00
Received by:
Name:
PGL
Date/Time: 10/17/00 9:15

Shipped Via:
O Fedex
O UPS
O Airborne
O DHL
O US Mail
O Others

Appendix G

Geomembrane Installation Forms

Appendix G1

Daily Geomembrane Installation Field Reports

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 7/11/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE I

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: X Dry	Project Site: Muddy
	60	82	CLEAR	0	N/A	X	

Contractors on Site: TERRA ENGR. & CONST. — Personnel (#)
EQUIPMENT USED: D6 DOZER, 450 DOZER, BACKHOE, ROLLER, 610 BACKHOE — 1 - FOREMAN
MIDESSA GEOMEMBRANES — 2 - OPERATORS
1 - LABORER

Other Personnel on Site: RON MEISTER (FVD) — Purpose: ASSISTS WITH QC

Report of Observation of Work and Comments: BJS1 ON SITE AT 07:00. TERRA IS GROOMING PHASE I AND PICKING ROCKS. MIDESSA GEOMEMBRANES CREW ARRIVES AND UNLOADS EQUIPMENT & DOES LINER INVENTORY. BJS1 PERFORMS STANDARD COUNT ON TROXLER AT 08:25. TERRA GRADES NORTHWEST END OF BOTTOM AT 09:10. IT WAS ~0.5' TOO HIGH. TRUCKS HAUL CLAY MATERIAL TO SUMP AREA. BACKHOE WORKS ON SUMP AT 09:50. TRUCKS DELIVER GRAVEL TO SITE AT 10:35. TERRA REMOVES TEMPORARY SUMP AT 11:05. TERRA TAKES LUNCH AT 12:00. TERRA RESUMES GROOMING SLOPES AND ROLLING PHASE I BOTTOM AT 12:30. JOHN DEERE 610C BACKHOE DELIVERED TO SITE AT 13:05. TERRA EXCAVATES SUMP TO EL. 753.50 AT 14:00. LARGE AMOUNTS OF GROUNDWATER INFILTRATION. TERRA FILLS SUMP BOTTOM WITH 1' OF SOIL. BJS1 CALLS REM TO DISCUSS SUMP AT 14:10. BJS1 CALLS MARTY STURZL TO DISCUSS ADDING 1' TO SUMP. MRS SAYS THAT TO MAINTAIN VOLUME, SLOPE INTERCEPT SHOULD BE MOVED 7' TO NORTHWEST. TERRA BEGINS CUTTING ANCHOR TRENCH ON NORTH BERM AT 14:50. REM ON SITE AT 15:45. BJS1, REM CONFERENCE CALL WITH NANDU PARUVAKAT AT 16:15. DECIDE TO MAKE SUMP 1' SHALLOWER, BUT LARGER TO MAKE UP FOR VOLUME. ~~16:30~~ REM, BJS1 discuss status with Terra: NEED TO REMOVE ROCKS, BACKDRAG SLOPES, & ROLL BOTTOM. LINER CREW WILL START FIRST THING IN THE MORNING. BJS1 DENSITY TESTS ON SOUTH HALF OF BOTTOM AT 17:10. BJS1, REM MEASURE SUMP BOTTOM AT 17:45. TERRA STOPS AT 18:00

Additional Space on Back

~~(OVER)~~ Brian Stanley

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJSI Date: 7/12/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE I

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	70	85	PARTLY CLOUDY	TRACE	N/A	X	

Contractors on Site:	Personnel (#)
TERRA ENGR & CONST.	1- FOREMAN
	1- OPERATOR
	1- LABORER
MIDESSA GEOMEMBANES	1- SUPERVISOR
	2- TECHS, 6- LABORERS

Other Personnel on Site:	Purpose
RON MEISTER (FVD)	GEOMEMBRANE QC
JIM LOGAN (FVD)	RECORD ~~SERVER~~ SERVEY
ROB WATSON (IEPA)	OBSERVE GCL
KARI HANSON (IEPA)	" "

Report of Observation of Work and Comments: BJSI, TERRA, & MIDESSA ON SITE AT 06:00. MIDESSA BEGINS DEPLOYING GCL AT 06:00. BJSI MEASURES THICKNESS OF ROLLS AND COLLECTS CONFORMANCE SAMPLES. REM ON SITE AT 06:15. TERRA BEGINS WORK ON SUMP AT 06:30. LIGHT RAIN STARTS AT 07:15. MIDESSA COVERS GCL WITH GEOMEMBRANE. KARI HANSON (IEPA) ON SITE ~~AT~~ AT 08:20. JRL ON SITE AT 08:25 ~~AT~~ TO DO RECORD ELEVATION SURVEY. TERRA CUTS SUMP BACK 5' TO THE NORTHWEST AT 11:15. MIDDESSA, TERRA TAKE LUNCH AT 12:00. IEPA OFF SITE. TERRA RESUMES WORK AT 12:30. MIDESSA RESUMES DEPLOYING GCL & GEOMEMBRANE AT 13:00. TERRA OFF SITE AT 17:30. MIDESSA FINISHES WELDING SECONDARY GEOMEMBRANE AND LEAVES SITE AT 20:30.

Additional Space on Back

Brian Stamel

FORM CEC019 (1/91)

Foth & Van Dyke

Client: MODERN PLATING CORP Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 7/13/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE I

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: X Dry	Project Site: Muddy
	70	92	CLEAR	0	N/A	X	

Contractors on Site:	Personnel (#)
TERRA ENGR. & CONST.	1-FOREMAN
	1-OPERATOR
MIDESSA GEOMEMBRANES	1-SUPERVISOR
	2-TECHS
	7-LABORERS

Other Personnel on Site:	Purpose
RON MEISTER (FVD)	GEOMEMBRANE QC
JIM LOGAN (FVD)	RECORD SURVEY
KARI HANSON (TERRA)	OBSERVE GEOMEMBRANE
MARTY CIESLIK (FVD)	" "

Report of Observation of Work and Comments: MIDESSA COMPLETED SEAM AND PATCH TESTING ON SECONDARY GEOMEMBRANE. JRL SURVEYED LOCATIONS OF SEAMS AND PATCHES. MIDESSA PLACED GEOCOMPOSITE (SECONDARY) ON SIDESLOPES. TERRA PLACED SECONDARY LEACHATE COLLECTION PIPE IN SUMP. TERRA AND MIDESSA PLACED ROCK IN SUMP.

Additional Space on Back

Brian Stanul

FORM CEC019 (1/91)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJSI Date: 7/14/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE I

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: X Dry	Project Site: Muddy
	70	88	CLEAR	0	N/A	X	

Contractors on Site: TERRA ENGR. & CONST. — Personnel (#): 1 - FOREMAN; 1 - OPERATOR; 1 - SUPERVISOR; 2 - TECHS; 7 - LABORERS

MIDESSA GEOMEMBRANES

Other Personnel on Site: JIM LOGAN (FVD) — Purpose: SURVEY GEOMEMBRANE

Report of Observation of Work and Comments: MIDESSA PLACED GEONET ON PHASE I BOTTOM AND PLASTIC TIED PANELS TOGETHER. MIDESSA THEN INSTALLED THE PRIMARY GEOMEMBRANE AND WELDED IT IN PLACE. MIDESSA COMPLETED PATCHES AND SEAM TESTING ON EAST HALF OF PHASE I. JRL COMPLETED SURVEY OF PRIMARY GEOMEMBRANE.

Additional Space on Back

Brian Atanel

FORM CEC019 (1/91)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJSI Date: 7/15/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE I

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	65	84	CLEAR	0	N/A	X	

Contractors on Site: TERRA ENGR & CONST. — Personnel (#): 1-FOREMAN
1-LABORER
MIDESSA GEOMEMBRANES — 1-SUPERVISOR
2-TECHS
7-LABORERS

Other Personnel on Site: — Purpose:

Report of Observation of Work and Comments: MIDESSA ~~(S)~~ COMPLETES TESTING ON PRIMARY GEOMEMBRANE ON WEST SIDE OF PHASE I. MIDESSA THEN INSTALLS PRIMARY GEOCOMPOSITE AND PLATIC TIES AND LYSTERS PANELS IN PLACE. MIDESSA INSTALLS PIPE BOOT FOR LEAK DETECTION PIPE THROUGH THE PRIMARY ~~GEOMEMBRANE~~ GEOMEMBRANE. TERRA PLACES PRIMARY LEACHATE COLLECTION PIPE IN SUMP. TERRA BACKFILLS AND COMPACTS THE ANCHOR TRENCH. MIDESSA PLACES SAND BAGS ALONG EAST BERM TIE-IN. MIDESSA COMPLETES INSTALLATION AND LEAVES SITE.

Additional Space on Back

Brian Atamel

FORM CEC019 (1/91)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/24/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE 2

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	65	75	PARTLY CLOUDY	DRIZZLE	0		X

Contractors on Site: TERRA ENGR & CONST.
MIDESSA GEOMEMBRANES

Personnel (#)
1 - FOREMAN
2 - OPERATORS
2 - MECHANICS
- TECHNICIANS
- LABORERS

Other Personnel on Site:

Purpose

Report of Observation of Work and Comments: BJS1 ON SITE AT 07:30. FOGGY, DRIZZLING. DUE TO WET CONDITIONS, TERRA PERFORMS MAINTENANCE ON EQUIPMENT. MIDESSA ON SITE AT 14:55 AND UNLOADS EQUIPMENT AND CHECKS CONDITION OF PHASE 2 SUBBASE. STILL WET, BUT IN GOOD CONDITION. BJS1, MIDESSA, & TERRA OFF SITE AT 15:40.

Additional Space on Back

Brian Staud

FORM CEC019 (1/91)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97MO15
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/25/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE 2 / LAGOON No. 1 / PHASE 1

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	55	70	CLOUDY	TRACE	0		X

Contractors on Site:	Number of Men
TERRA ENGR. & CONST.	3
MIDESSA GEOMEMBRANES	8

Other Personnel on Site:	Purpose
JIM LOGAN, MARTY CIESLIK (FID)	OBSERVE LINER INSTALLATION
KARI HANSON, KATHY GEYER, ROB WATSON (IEPA)	" " "

Report of Observation of Work and Comments: BJS1, TERRA, AND MIDESSA ON SITE AT 07:00. SITE IS WET DUE TO MIST AND HEAVY FOG. TERRA SCRAPES ACCESS ROAD TO REMOVE MUD WITH DOZER AT 07:10. MIDESSA BEGINS DEPLOYING GCL PANELS AT 07:35. JIM LOGAN ON SITE AT 07:35 TO ASSIST WITH DOCUMENTATION AND TO SURVEY LINER. MARTY CIESLIK ON SITE TO OBSERVE INSTALLATION AND ASSIST WITH DOCUMENTATION AT 08:15. TERRA REMOVES STANDING WATER FROM SUMP AT 08:50. MIDESSA BEGINS DEPLOYING @ SECONDARY GEOMEMBRANE PANELS AT 09:05. TERRA STACKS SLUDGE IN LAGOON No. 1 AT 10:00. KARI HANSON, KATHY GEYER, & ROB WATSON (IEPA) ON SITE AT 11:00. LUNCH AT 13:00. MIDESSA RESUMES INSTALLATION AT 14:00. MIDESSA'S TENSIONOMETER IS NOT WORKING. WILL SAVE TRIAL WELDS FOR TESTING WHEN NEW TENSIONOMETER ARRIVES TOMORROW. TERRA LOADS SLUDGE INTO PHASE 1. MIDESS STOPS AT 19:15. APPROX. 3/4 OF GCL AND @ SECONDARY GEOMEMBRANE INSTALLED.

Additional Space on Back

Brian Stanul

FORM 373 (1/90)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/26/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE 2

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	60	75	PARTLY CLOUDY	0	0		X

Contractors on Site:	Number of Men
TERRA ENGR. & CONST.	2
MIDESSA GEOMEMBRANES	10

Other Personnel on Site:	Purpose
RON MEISTER, JOHN FAVORITE (FVD)	OBSERVE LINER INSTALLATION
KARI HANSON, KATHY GEYER, ROB WATSON (IEPA)	" " "

Report of Observation of Work and Comments: BJS1 AND TERRA ON SITE AT 07:00. MIDESSA ON SITE AT 07:10. MIDESSA RESUMES DEPLOYING GCL AND SECONDARY GEOMEMBRANE AT 07:25. RON MEISTER (FVD) ON SITE TO OBSERVE LINER INSTALLATION AND ASSIST WITH DOCUMENTATION AT 07:35. JOHN FAVORITE (FVD) ON SITE AT 09:30. WE WON'T NEED SURVEY TODAY. JOHN FAVORITE OFF SITE. ROB WATSON, KARI HANSON, & KATHY GEYER (IEPA) ON SITE AT 10:00. LUNCH AT 13:30. MIDESSA RESUMES WORK AT 14:30. TENSIONOMETER DELIVERED TO SITE AT 15:00. MIDESSA TESTS TRIAL WELDS AND DESTRUCTIVE SAMPLES. MIDESSA STOPS AT 18:30. SECONDARY GEOMEMBRANE INSTALLED. NORTH 3/4 OF GEOMEMBRANE ~~INSTALLED~~ TESTED AND SURVEYED. GEOCOMPOSITE PLACED ON SLOPES.

Additional Space on Back

Brian Stanul

FORM 373 (1/90)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/27/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE 2, LAGOON No. 1 / PHASE 1

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	55	70	CLEAR	0	0	X	

Contractors on Site:	Number of Men
TERRA ENGR. & CONST.	3
MIDESSA GEOMEMBRANES	10

Other Personnel on Site:	Purpose
JOHN FAVORITE (FVD)	SURVEY GEOMEMBRANE
KATHY GEYER (IEPA)	OBSERVE LINER INSTALLATION

Report of Observation of Work and Comments: BJS1, TERRA, AND MIDESSA ON SITE AT 07:00. MIDESSA CONTINUES INSTALLING GEOCOMPOSITE AND GEONET FOR SECONDARY LINER. MIDESSA COMPLETES SECONDARY GEOMPOSITE AND GEONET. TERRA INSTALLS ~~LEAK DETECTION~~ LEAK DETECTION PIPE AND GRAVEL IN SUMP. MIDESSA BEGINS INSTALLING PRIMARY GEOMEMBRANE. MIDESSA STOPS AT 18:30. PRIMARY GEOMEMBRANE INSTALLED AND SURVEYED. TERRA LOADED SLUDGE INTO PHASE 1.

Additional Space on Back

Brian Stanuel

FORM 373 (1/90)

Foth & Van Dyke

Client: MODERN PLATING CORP. Scope I.D.: 97M015
Project: CAMU LANDFILL CONSTRUCTION Page: 1
Prepared by: BJS1 Date: 10/28/00

RESIDENT INSPECTION REPORT - SITE

Location: PHASE 2

Weather	Temp. Lo	Temp. Hi	Sky	Rain	Snow	Project Site: Dry	Project Site: Muddy
	45	60	PARTLY CLOUDY	0	0	X	

Contractors on Site:	Number of Men
MIDESSA GEOMEMBRANES	10
TERRA ENGR. & CONST.	1

Other Personnel on Site:	Purpose
KATHY GEYER (IEPA)	OBSERVE LINER INSTALLATION
MARTY CIESLIK (FVD)	" " "

Report of Observation of Work and Comments: BJS1 AND MIDESSA ON SITE AT ~~07:00~~ 07:00. MIDESSA FINISHES AIR TESTING ON PRIMARY GEOMEMBRANE AND INSTALLS PRIMARY ~~GEOM~~ GEOCOMPOSITE. KATHY GEYER ON SITE AT 08:30. MARTY CIESLIK ON SITE AT 09:45. MIDESSA OFF SITE AT 13:05. PHASE 2 LINER INSTALLATION COMPLETED. TERRA OPERATOR ON SITE AT 13:20 TO BACKFILL ANCHOR TRENCH. BJS1, TERRA OFF SITE AT 14:30.

Additional Space on Back

Brian Stanley

FORM 373 (1/90)

Appendix G2

Preproduction Weld Logs

TRIAL WELD SUMMARY

TW -

Project Name: MODERN PLATING CORP.

Page of

Project No: 97M015

Date: 7/12/00

Computer Entry By:

Installer: MIDESSA GEOMEMBRANES

Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (~~Wind/~~ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	08:00	BJS1	O	O	RV	F1	—	—	843	10.2	127\141	140\127	127\124	150	P	
2	14:15	BJS1	10	O	RRV	F1	—	—	850	10.4	124\123	122\131	135\129	145	P	
3	18:00	BJS1	O	O	RRV	E1	515	405	—	—	127\—	133\—	135\—	159	P	

13

R001412

TRIAL WELD SUMMARY

TW -

Project Name: MODERN PLATING CORP.

Project No: 97M015

Date: 7/13/00

Page of

Installer: MIDESSA

Computer Entry By:

Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (Wind/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	07:35	BJSJ	70°F	0/0	BSRRV	E1	515	405	—	—	109\	138\	119\	135	P	
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R001413

TRIAL WELD SUMMARY

TW -

Project Name: MODERN PLATING CORP.

Page of

Project No: 97M015

Date: 7/14/00

Computer Entry By:

Installer: MIDESSA GEOMEMBRANES

Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (Wind/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	06:30	BJS1	70°F	0/0	RV	F1	—	—	850	10.1	140\118	118\108	128\130	147	P	
2	10:05	BJS1	75°F	10/0	FA	E1	515	405	—	—	96\—	100\—	104\—	125	P	
3	13:45	BJS1	90°F	10/0	~~FA~~ RV	F1	—	—	850	12.5	101\100	101\96	102\95	130	P	
4	14:30	BJS1	90°F	10/0	FA	E1	515	405	—	—	109\101	96\98	97\99	130	P	

15

R001414

TRIAL WELD SUMMARY

TW -

Project Name: MODERN PLATING CORP.

Project No: 97M015

Date: 7/15/00

Page of

Installer: MIDESSA GEOMEMBRANES

Computer Entry By:

Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (Wind/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	06:50	BJSJ	70°F	0/0	FV	E1	515	450	—	—	132 —	131 —	126 —	153	P	

R001415

TRIAL WELD SUMMARY

TW -

Project Name: MPC PHASE II

Project No: 97M015

Page / of

Date: OCT. 25- 2000

Installer: ~~MEDE~~ MIDESSA GEOMEMBRANES

Computer Entry By:

Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (Wind/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
~~1~~	~~12:50~~	MJC1	~~0/FOG~~	~~63.6°F~~	~~BV BFV~~	~~#5 PROBE~~				700						
1	2:00 PM	MJC1		69.6°F NO WIND CLOUDY	BFV	#5			868	700 12ft/min	~~144~~ 107	120 150	125 151	167	P	LEISTER TENSIOMETER #1, MATERIAL TEMP 65° HAND PULLED TRIALS DUE TO
																BUSKEN TENSIOMETER SHEET TEMP 73.0°F
																THE TEST VALUES FOR THE TRIAL WELDS
																WILL BE REPORTED TOMORROW WITH
																A NEW TENSIOMETER HAND PULL PEELED
																ON INSIDE TRIAL
2	2:20 PM	MJC1		69 NO WIND CLOUDY	BFV	#5			868	650 11ft/min	146 121	177 144	134 136	180	PASS-VISUAL	NEW WELD
3	3:40	MJC1		69 NO WIND	BFV	#5			860	650	134 130	150 130	144 136	188	P	AFTER PCT/PGO REPAIR SOAP OF
																MOUSE SO A NEW TRIAL WELD
																WAS NECESSARY
4	6:14	MJC1				#5			860	620 10ft/m	136 125	151 153	140 142	180	P	

17

R001416

TRIAL WELD SUMMARY

IW -

Project Name: MODERN PLATING CORP. – PHASE 2 | Page of

Project No: 97M015 | Date: 10/26/00 | Computer Entry By:

Installer: MIDESSA | Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ Precip.)	Weather (Wind/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	09:35	BJS1			RV	5	—	—	860	676	136\144	137\141	130\132	185	P	
2	13:30	BJS1			RV	5	—	—	860	676	132\160	153\156	157\153	178	P	

FORM EES048 (5/98)

R001417

TRIAL WELD SUMMARY

TW -

Project Name: MODERN PLATING CORP – PHASE 2 | Page of

Project No: 97M015 | Date: 10/27/00 | Computer Entry By:

Installer: MIDESSA | Checked By:

Test No.	Time	QA Monitor	Weather (Wind/ ~~Precip.~~)	Weather (~~Wind~~/ Precip.)	Welder ID	Mach. No.	Extrusion Welds Barrel Temp.	Extrusion Welds Preheat Temp.	Fusion Welds Wedge Temp.	Fusion Welds Speed Setting	PEEL (PPI) Inside\Outside Weld 1	PEEL (PPI) Inside\Outside Weld 2	PEEL (PPI) Inside\Outside Weld 3	SHEAR (PPI) 1	Pass\ Fail	Comments
1	09:35	BJS1	5	0	RV	#5	—	—	860	676	144 \ 140	155 \ 136	124 \ 137	185 \ 171	P	
2	12:50	BJS1	5	0	RV	#5	—	—	860	676	110 \ 144	~~141~~ \ 140	144 \ 120	162	P	

19

R001418

FORM EES048 (5/98)