Table 2-25

Current Groundwater Monitoring Program
Monitoring Wells
Modern Plating Corporation

Wells			
Quarterly		Annually	
6	A, B, C	5	C, D
7	A, B, C, D	6	A, B, C
8	A, B, C	7	A, B, C, D
11	A, B, C, E	8	A, B, C
12	A, B, C, E	9	A
13	A, B, C, E	10	A
14	A, B, C, E	11	A, B, C, E
15	A, B, C	12	A, B, C, E
16	C	13	A, B, C, E
17	A, B	14	A, B, C, E
18	A, B	15	A, B, C
19	A, B	16	C
20	C	17	A, B, C, D
		18	A, B, D
		19	A, B, C, D
		20	C
		21	A, C
		22	A, C

Note: All wells must be measured quarterly for groundwater surface elevations.

Table 2-26

Current Groundwater Monitoring Program
Sampling Parameters
Modern Plating Corporation

Parameters	
Quarterly	Annually
Cadmium (total)	Arsenic (total)
Chromium (total)	Cadmium (total)
Copper (total)	Chromium (total)
Cyanide (total) (only upper aquifer)	Copper (total)
Lead (total)	Copper (total)
Nickel (total)	Cyanide (total)
Zinc (total) (only upper aquifer)	Lead (total)
VOCs (entire SW-846 8010 list)	Nickel (total)
pH	Zinc (total)
Specific conductance	VOCs (entire SW-846 8010 list)
	pH
	Specific conductance

Table 2-27

Groundwater Monitoring Program
Modern Plating Corporation

Well	Parameter List
MW-5C	Groundwater Elevation, Field Parameters, Metals, VOCs
MW-5D	Groundwater Elevation, Field Parameters, Metals
MW-6A	Groundwater Elevation
MW-6B	Groundwater Elevation
MW-6C	Groundwater Elevation, Field Parameters, VOCs
MW-7A	Groundwater Elevation
MW-7B	Groundwater Elevation
MW-7C	Groundwater Elevation, Field Parameters
MW-7D	Groundwater Elevation, Field Parameters, VOCs
MW-8A	Groundwater Elevation
MW-8C	Groundwater Elevation, Field Parameters, VOCs
MW-9A	Groundwater Elevation
MW-10A	Groundwater Elevation, Field Parameters, Metals
MW-11A	Groundwater Elevation
MW-11C	Groundwater Elevation, Field Parameters, VOCs
MW-11E	Groundwater Elevation
MW-12A	Groundwater Elevation, Field Parameters, Metals
MW-12B	Groundwater Elevation, Field Parameters, VOCs
MW-12C	Groundwater Elevation
MW-12E	Groundwater Elevation
MW-13A	Groundwater Elevation, Field Parameters, Metals
MW-13B	Groundwater Elevation, Field Parameters, VOCs

Table 2-27 *(Continued)*

Well	Parameter List
MW-13C	Groundwater Elevation
MW-13E	Groundwater Elevation
MW-14A	Groundwater Elevation, Field Parameters, Metals
MW-14B	Groundwater Elevation, Field Parameters, VOCs
MW-14C	Groundwater Elevation, VOCs
MW-14E	Groundwater Elevation
MW-15A	Groundwater Elevation, Field Parameters, Metals
MW-15B	Groundwater Elevation, Field Parameters, VOCs
MW-15C	Groundwater Elevation
MW-16C	Groundwater Elevation, Field Parameters, Metals, VOCs
MW-17A	Groundwater Elevation
MW-17B	Groundwater Elevation, Field Parameters, VOCs
MW-17C	Groundwater Elevation
MW-17D	Groundwater Elevation
MW-18A	Groundwater Elevation
MW-18B	Groundwater Elevation, Field Parameters, VOCs
MW-18D	Groundwater Elevation
MW-19A	Groundwater Elevation
MW-19B	Groundwater Elevation, Field Parameters, VOCs
MW-19C	Groundwater Elevation
MW-19D	Groundwater Elevation
MW-20C	Groundwater Elevation, Field Parameters, Metals
MW-21A	Groundwater Elevation
MW-21C	Groundwater Elevation
MW-22A	Groundwater Elevation
MW-22C	Groundwater Elevation

Table 2-27 *(Continued)*

Groundwater elevation will be measured semi-annually in all site wells during the February and August sampling events.

Metal analysis will be limited to cadmium, chromium, lead, and nickel only. Wells sampled for metals will be sampled annually during the August sampling event.

VOCs analysis will be limited to tetrachloroethene, trichloroethene, cis-1,2 dichloroethene, and vinyl chloride. Wells sampled for VOCs will be sampled semi-annually in the February and August sampling events.

Field parameters include pH, specific conductance and temperature. Field parameters will be collected from a well whenever it is sampled for VOCs or metals.

2.7.3.2 Response Action (IAC 35 s. 725.403)

MPC will submit a response action plan as required by IAC 35 s. 725.403 in the final design report. The response action plan will set forth the actions that will be taken if the action leakage rate is exceeded. This action will include the following:

- Notification of the IEPA within 7 days
- Submission of a written assessment to the IEPA within 14 days
- Determination to the extent practicable the location, size, and cause of any leak
- Within 30 days after notification that the action leakage rate has been exceeded, submission of the results of the assessment and determination listed above
- If leakage continues, perform the assessment required by s. 725.403(c)

2.7.3.3 Monitoring and Inspection (IAC 35, s. 725.404)

MPC will monitor the amount of liquids pumped from the LDS sump monthly unless the liquid level in the sump stays below the pump operating level for two consecutive months, then the amount of liquid will be monitored and removed quarterly.

2.7.4 Surveying and Recordkeeping (IAC 35 s. 725.409)

MPC will maintain the following in their operating records:

- A map with the exact location, dimensions and depth of the landfill cell
- A list of the waste disposed of each cell
- All monitoring results
- Construction documentation reports and drawings
- A record survey documenting the location of the facility

2.7.5 Post-Closure Inspection and Maintenance Plan (IAC 35 s. 725.218)

2.7.5.1 General

The following is a description of the inspection and maintenance procedures which will be undertaken by MPC during the long-term care period. It is understood that these activities will start on a date determined by the IEPA after issuance of a certificate of closure for the MPC landfill.

The post-closure care then will be provided by MPC on the landfill for a minimum of 30 years. The post-closure care inspection and maintenance activities outlined below will be completed semi-annually for the first 3 years after the post-closure care period begins, and annually in the spring of each year thereafter.

2.7.5.2 Inspection and Maintenance Procedures

2.7.5.2.1 Vegetation

The vegetation of the final cover, berms, grass waterways, and other features shall be inspected for the following:

- Growth and overall health
- Evidence of stress
- Bare spots from erosion, washout, die-offs, etc.
- Need for reseeding

Any areas showing evidence of stress or bare soil shall be reworked, fertilized, mulched and seeded.

2.7.5.2.2 Final Cover Settlement and Integrity

The final cover shall be inspected to determine if any of the following has occurred:

- Erosion resulting in rills, gullies or bare soil
- Settlement resulting in loss of grade and/or water standing on the final cover
- Slumping or sloughing of final cover

Any area showing settlement or slumping shall be repaired to effect drainage and prevent erosion, topsoiled, fertilized, mulched and seeded.

2.7.5.2.3 Stormwater Management System

The stormwater management system includes ditches, culverts, erosion control devices, sedimentation pond(s), etc. The following lists stormwater management system components which must be inspected and suggests maintenance activities which should be implemented.

Inspection Item	Suggested Maintenance or Repair Activities
Erosion Control Devices	
♦ Riprap (if required) - inspect for washout and/or undercutting	Replace geotextile and riprap, as required.
♦ Erosion matting (if required) - inspect for washout and/or undercutting	Replace or repair.
♦ Erosion bales or silt fencing (if required) - inspect for washout or undercutting	Replace or repair.

Culverts	
♦ Inspect for washout or siltation at inlet and outlet	Clean, replace, repair, or provide riprap or other erosion control devices.
♦ Inspect for erosion in the ditch above and below the culvert	Replace, repair or provide riprap or other erosion control devices.
Sedimentation Basin	
♦ Inspect berms for erosion, scouring and slumping	Replace and repair erosion and vegetation.
♦ Inspect pond bottom for build-up of sediment	Remove sediment to design grades on as-built plans.
♦ Inspect inlet and outlet for erosion and sedimentation	Replace, repair or provide the additional erosion control devices and remove sediment.
♦ Inspect trash rack and rock filter	Clean, repair, and replace as required.

2.7.5.2.4 Leachate Management System

The leachate management system consists of a sideslope riser, external pump, and leachate transfer piping. The following is a list of conditions or items which should be inspected along with the suggested maintenance or repair activities:

Inspection Items	Suggested Maintenance Activity
Exterior Leachate Piping	
♦ Inspect manholes for leaks	Repair as required.
♦ Primary leachate transfer piping	Clean out annually.
♦ Cleanouts - inspect casings, caps, locks and labels	Repair as required.
Leachate Pump Station	
♦ Inspect manway for corrosion	All - Repair, replace or maintain defective part. Refer to pump and controls O&M manuals for additional information.
♦ Inspect pumps, floats, etc., as per manufacturer's Operation & Maintenance (O&M) manual	
♦ Check leachate level float function and high water alarms	

2.7.5.2.5 Gas Management System

The proposed MPC CAMU landfill is designed with a passive gas management system. This system consists of slotted pipes in shallow gravel-filled trenches located below the composite cover. The gas management system should be inspected for the following:

- Damage to the pipes or gravel trenches due to landfill settlement.
- Water in the collection trench and gas vents. Vent trench gravel and pipes must be free from water to function properly.

2.7.5.2.6 Facility Access and Security Devices

Facility access includes unpaved roads internal to the site which, during the long-term care period, are used to inspect, monitor, and service the leachate, and surface water management systems and sample and/or test the environmental monitoring devices.

Facility access road should be inspected annually and repaired as required to keep them passable under all weather conditions. The access road must be plowed in winter so that the required inspection, monitoring and maintenance activities can be completed.

Site security devices such as fences, gates, locks on buildings, protector pipes on monitoring devices, etc., should be inspected during each monitoring event and during periodic maintenance activities. Site security devices should be repaired or replaced as necessary during the long-term care period.

2.7.6 Financial Assurance for Post-Closure Monitoring and Maintenance (IAC 35 s. 725.245)

The written cost estimate for post-closure monitoring and maintenance required by 35 IAC 725.244 (Cost Estimate for Post-Closure Care) is provided in Table 2-28. Upon IEPA approval of the post-closure monitoring and maintenance program, MPC will establish financial assurance for post-closure care by selecting one of the financial assurance options listed in 35 IAC 725.245 (Financial Assurance for Post-Closure Monitoring and Maintenance).

2.8 Operation and Closure Schedule (IAC 35 s. 725.213)

35 IAC 725.213 requires the owner/operator to treat, remove or dispose of all hazardous waste in accordance with the approved closure plan within 90 days after receiving the final volume of hazardous wastes or 90 days after approval of the closure plan by the IEPA.

The information which follows describes the construction operation and closure sequence for CAMU landfill (landfill). It should be noted that MPC plans to construct the landfill, complete the filling of the landfill with contaminated sludge/soils and close the landfill during a single

Table 2-28

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	*	*	*
4. 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
♦ Stormwater Monitoring (1 location, 2 times/year)	2 smpls	40/smpl	80

R002609

Table 2-28 (*Continued*)

Item/Description	Estimated Quantity	Unit Cost ($)	Cost ($)/Year
5. Mowing (2 ac per year)	2 ac	50/ac	100
6. Landfill Sump Pump (replace 1 pump every 5 yrs)	6 pumps	$1,400/ea	280[2]
	Subtotal		$13,450
	Contingency (10%)		$1,350
	Total Cost per Year		$14,800

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

Prepared by: REM
Checked by: SJL1

[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.

*Note: No leachate anticipated at this time since the final cover will be placed immediately after filling the landfill. As part of the final design, the amount of "squeezate" (i.e., consolidation water) will be estimated, and cost for treatment included.

R002610

construction season. Figure 2-21 is a timetable which lists the major activities for the landfill construction, filling and closure. We propose to complete a geotechnical investigation and laboratory test program to determine the shear strength, consolidation characteristics, and other physical properties of the sludge. The scope of work for this investigation will be presented to the IEPA in a short work plan submitted prior to starting the final design work on the CAMU landfill. The timetable shown on Figure 2-21 allows for consolidation and dewatering of the sludge through placing the sludge in a temporary Waste Storage Area (WSA). This WSA is a lined temporary storage pile with a leachate collection system. Details of the WSA liner and leachate collection system are generally as shown on Figure 2-22 (plan view) and Figure 2-23 (section), which include the following:

- An 18-in layer of uniformly sized aggregate (e.g., ¾-in clear stone) which will serve as a surface wear course and a leachate collection layer. The hydraulic conductivity of this aggregate will be in the $1x10^{-2}$ cm/sec or greater range. This aggregate is laid on a minimum 1% slope to a sump located in the approximate center of the WSA.

- A geocomposite consisting of a geonet with a non-woven geotextile attached to each side is proposed approximately half way up the 9-ft high temporary pile height to enhance the sludge dewatering and consolidation.

- The collected leachate will be pumped via a temporary pipeline to the existing MPC on-site industrial wastewater treatment plant.

The WSA has the capacity to contain all the sludge and contaminated soil to be excavated from Lagoon No. 2 (approximately 3,600 cy) and a portion of the sludge and soil from Lagoon No. 1 (approximately 1,100 cy). We have estimated that the sludge will be kept in the WSA for about 7 weeks after which it will be placed in the CAMU landfill constructed on-site.

Figure 2-21 lists 14 major steps necessary to construct, fill, restore, close and document construction of the WSA and CAMU landfill. Figure 2-24 shows the sequence, location and movement of materials for construction tasks 1 through 5 as listed in Figure 2-21 which includes construction and filling of the WSA and construction of the west ½ of the landfill. Figure 2-25 shows the sequence, location, and movement of materials for construction tasks 6 through 9 as listed in Figure 2-21, which includes construction of the east ½ of the landfill, emptying of the WSA, excavation of the remaining lagoons and contaminated soils and placement of these materials in the landfills. Figure 2-26 shows the final sequences of construction including Tasks 10 through 12 which include dismantling of the WSA, regrading of excavated areas and placement of the final cover over the landfill.

As illustrated on Figure 2-21, we expect the CAMU landfill construction, filling and closure process to take approximately 16 weeks starting in March 1998, with closure of the CAMU landfill expected in mid-June 1998. The CAMU landfill construction, operation, and closure would be documented as required by 35 IAC s. 725.215 and s. 702.126 by mid-July 1998.

Figure 2-21

Timetable for
CAMU Construction, Filling, and Closure
Modern Plating Corporation

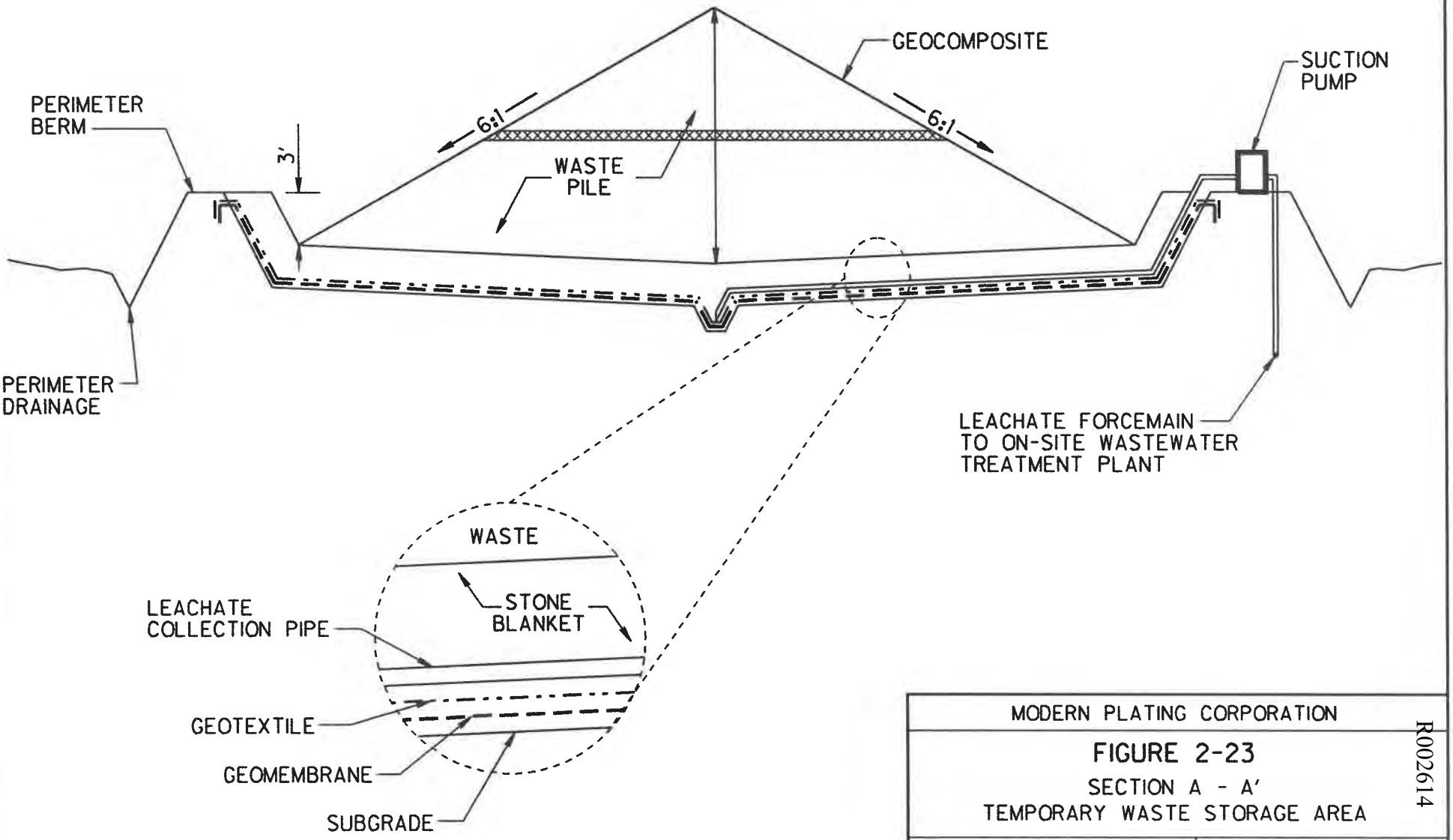
Task No./ Description of Construction Task	March		April		May		June		July		August		Sept		Oct	
	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
1. Construct haul roads and install temporary and permanent erosion control and sedimentation pond.		(1)														
2. Construct temporary Waste Storage Area (WSA).		(2)														
3. Excavate sludge from Lagoon No. 2 and the East ⅓ of Lagoon No. 1, and place in WSA.			(1)													
♦ Allow to consolidate/dewater[1]					(5) Consolidation/Dewatering											
4a. Complete earthwork for west ½ of CAMU landfill.																
4b. Complete liner and leachate collection system construction for west ½ of CAMU landfill.				(2)												
5. Excavate and place sludge/soil from Lagoon No. 3 in West ½ of the constructed landfill.					(1)											
♦ Allow to consolidate/dewater.						(4) Consolidation/Dewatering										
6. Construct liners, LCS and LDS in the East ½ of the CAMU.					(2)											
7. Load, haul, and place the consolidated sludge from the WSA in the East ½ of the CAMU.						(1)										
8. Excavate, load, haul and place contaminated soils from the Shawnee Building, vault and wetlands to buttress filling in the CAMU.							(1)									
9. Load, haul and place sludge/soil from the remainder of Lagoon No. 1, Lagoon No. 0, and Lagoon No. 1A in the East ½ of the CAMU.								(2)								

Figure 2-21 *(Continued)*

Task No./ Description of Construction Task	March		April		May		June		July		August		Sept		Oct	
	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
♦ Allow for consolidation/ dewatering.								(3) Consolidation/Dewatering								
10. Demolition of WSA including restoration and load, haul and place contaminated materials in the CAMU.						(1)										
11. Regrade excavated areas including Lagoons 0, 1A, 1, and a portion of 3 and Shawnee Building, vault area and wetlands.																
12. Construct final cover including liners, drainage layer and gas system.							(2)									
13. Punch list work and seed, fertilize, and mulch final cover.								(1)								
14. Prepare and submit construction and closure documentation report to the IEPA.										(4)						

1. Lagoon No. 0, remainder of No. 1, 1A, and 3 should be opened up and continually disced and regraded to enhance the drying and consolidation.

2. Some tasks listed could be performed concurrently with other tasks, however, are listed in a separate time slot to allow for consolidation and dewatering of the sludge.



MODERN PLATING CORPORATION

FIGURE 2-23

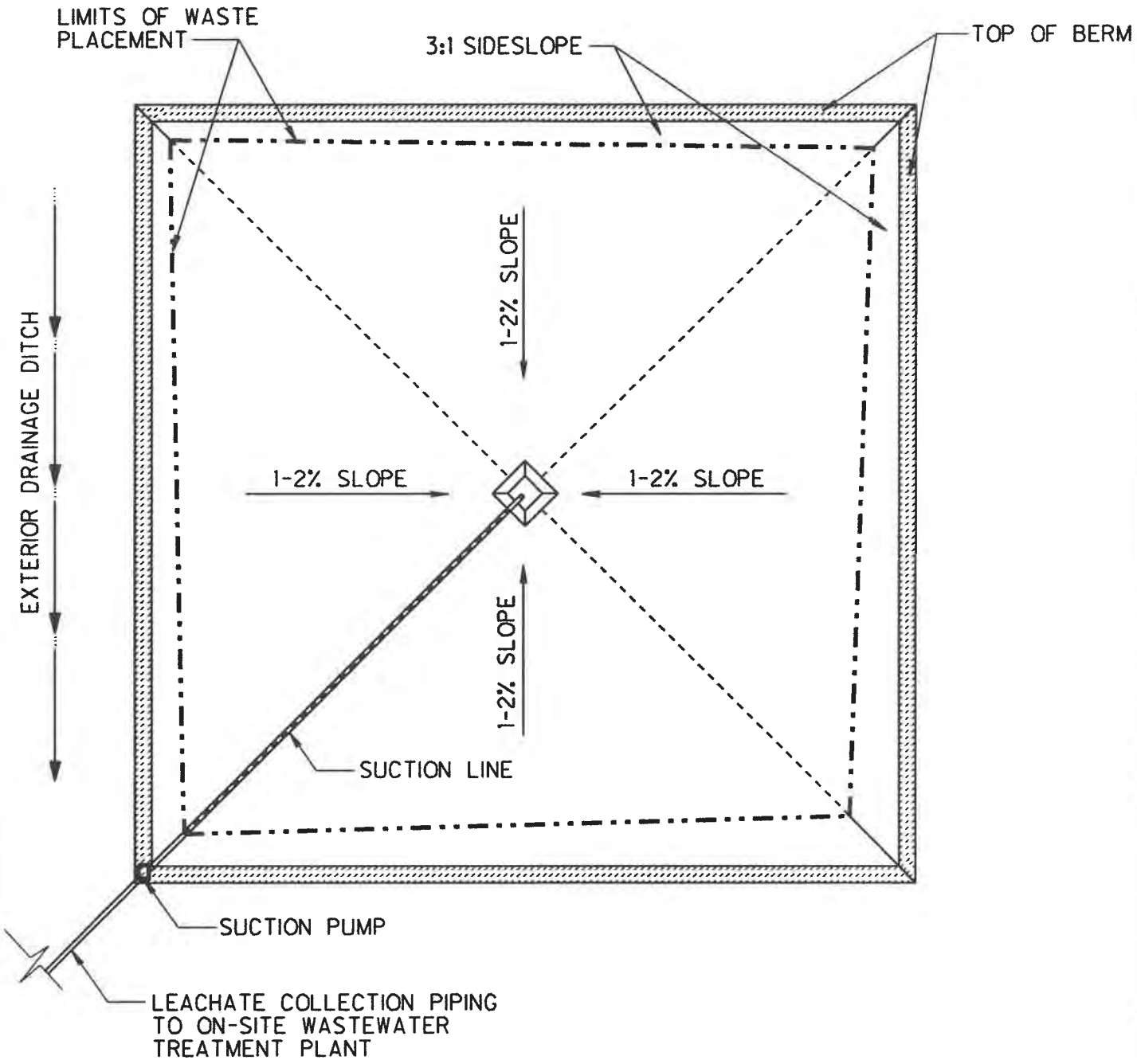
SECTION A - A'
TEMPORARY WASTE STORAGE AREA

R002614

Scale:	NOT TO SCALE	Date:	AUGUST, 1997
Prepared By:	Foth & Van Dyke	By:	JOW

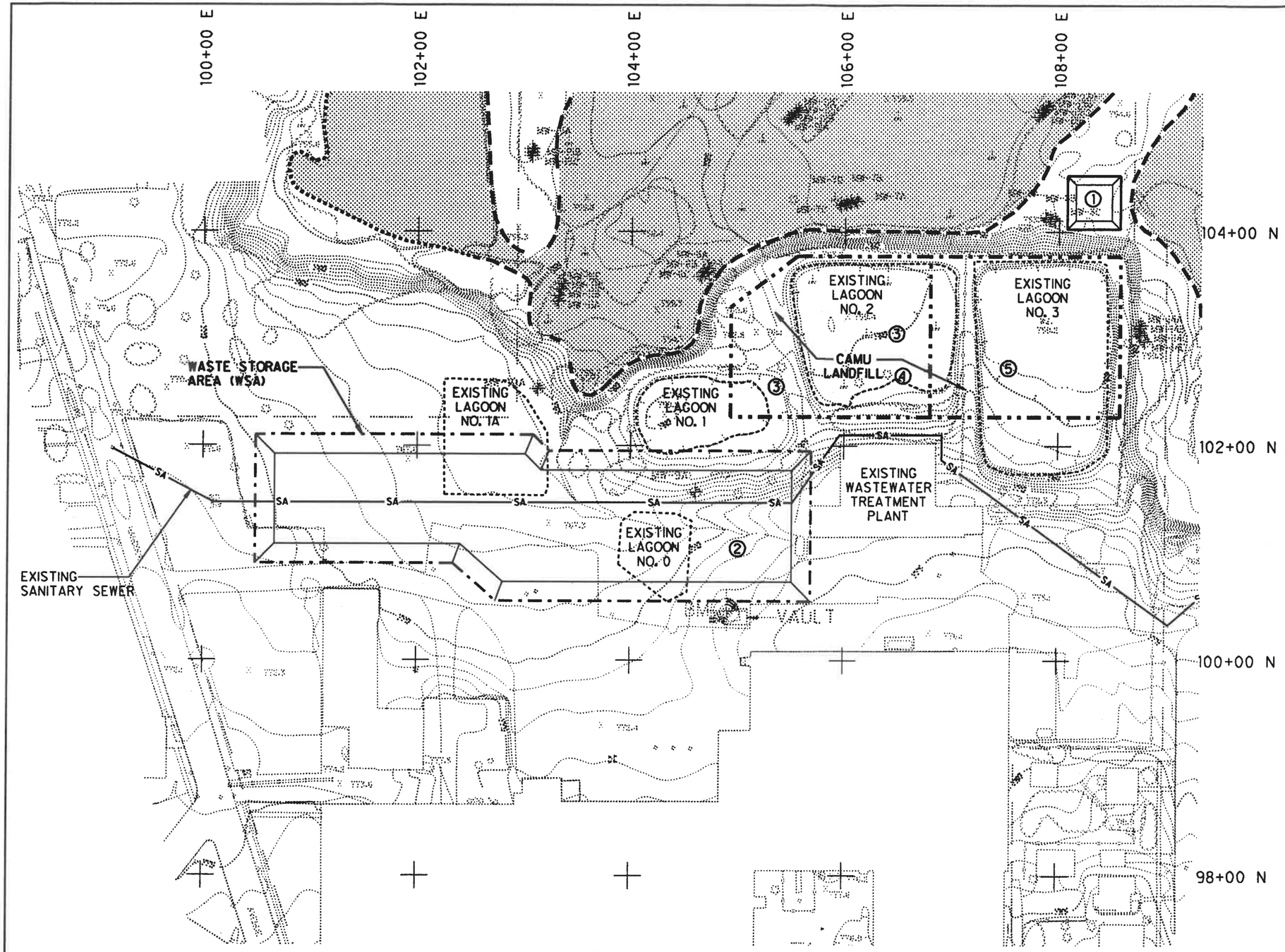
C:\cadwork\7M15F23.DGN

97M015 110



MODERN PLATING CORPORATION		
FIGURE 2-22 TEMPORARY WASTE STORAGE AREA PLAN AND SECTION VIEW		
Scale: NOT TO SCALE	Date: AUGUST, 1997	
Prepared By: Foth & Van Dyke		By: JOW

C:\cadwork\7M15F23.DGN



N

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- CONTROL MONUMENT
- APPROXIMATE PROPERTY LINE
- GROUNDWATER MONITORING WELL LOCATION AND NUMBER
- EXISTING BUILDING
- EXISTING FENCE
- APPROXIMATE LIMITS OF WETLAND
- INFERRED EXTENT OF WETLAND
- WETLANDS AREA
- CAMU WASTE LIMITS
- APPROXIMATE LIMITS OF WASTE STORAGE AREA
- ① CONSTRUCT SEDIMENTATION BASIN AND DITCHING
- ② CONSTRUCT WASTE STORAGE AREA
- ③ SLUDGE TRANSFERRED TO WSA
- ④ CONSTRUCT CAMU LANDFILL (WESTERN HALF)
- ⑤ SLUDGE TRANSFERED FROM LAGOON NO. 3 TO CAMU LANDFILL

NOTES:

1. SITE LOCATION: SE 1/4 OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS.
2. TOPOGRAPHICAL MAP PREPARED FROM AERIAL SURVEY PERFORMED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. WETLAND DELINEATION FIELD WORK CONDUCTED ON MAY 29, 1992.

MODERN PLATING CORPORATION

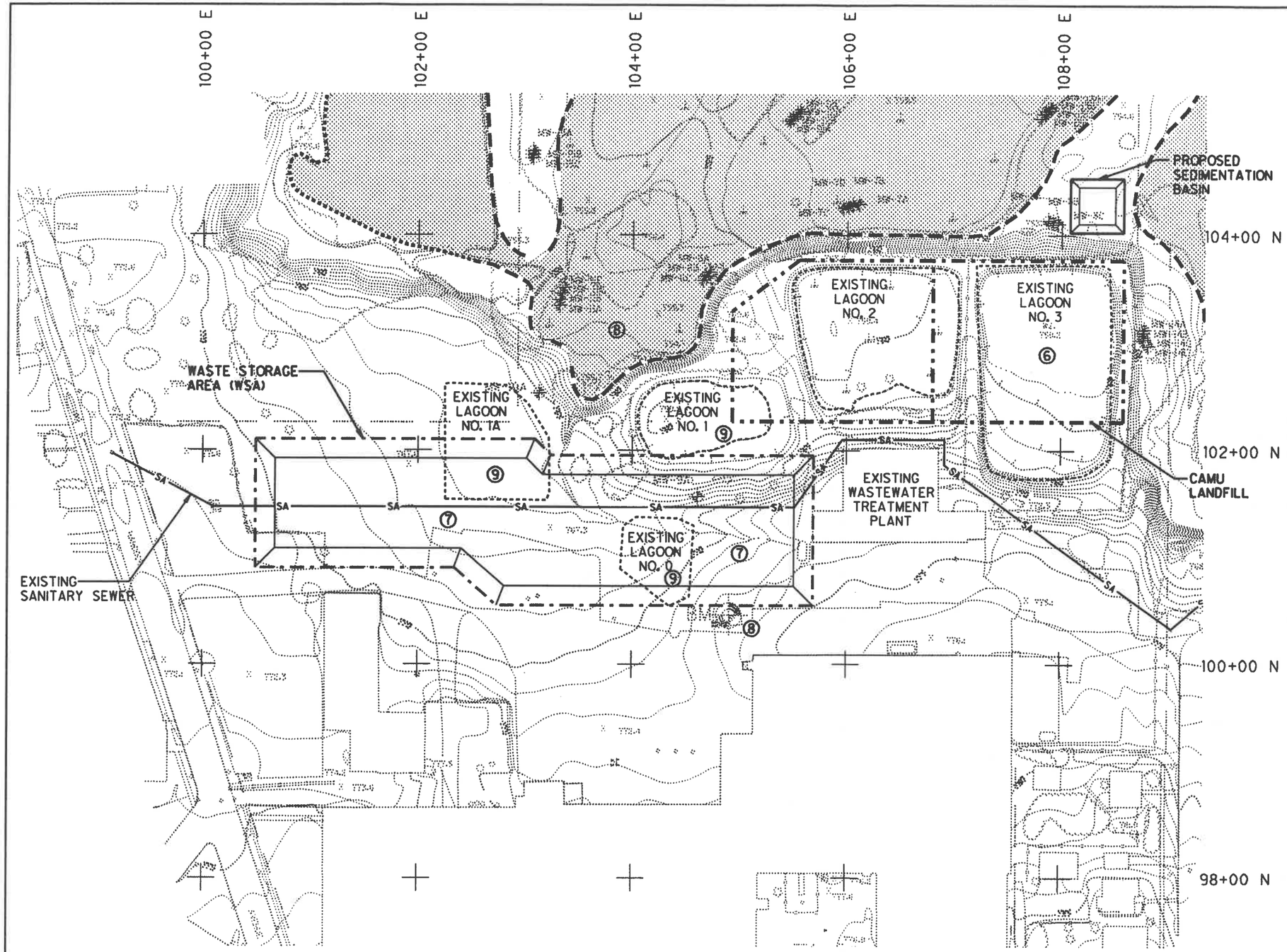
FIGURE 2-24

CAMU LANDFILL CONSTRUCTION SEQUENCE
TASK 1 THROUGH 5 FROM FIGURE 2-21

Scale: 0 50' 100'		Date: AUGUST, 1997	
Prepared By:	Foth & Van Dyke	By:	JOW

C:\cadwork\7m15f17.dgn

97M015



N

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- CONTROL MONUMENT
- APPROXIMATE PROPERTY LINE
- GROUNDWATER MONITORING WELL LOCATION AND NUMBER
- EXISTING BUILDING
- EXISTING FENCE
- APPROXIMATE LIMITS OF WETLAND
- INFERRED EXTENT OF WETLAND
- WETLANDS AREA
- CAMU WASTE LIMITS
- APPROXIMATE LIMITS OF WASTE STORAGE AREA
- ⑥ CONSTRUCT LANDFILL (EASTERN HALF)
- ⑦ TRANSFER SLUDGE FROM WSA TO CAMU LANDFILL
- ⑧ TRANSFER CONTAMINATED SOILS TO CAMU LANDFILL
- ⑨ TRANSFER SLUDGE FROM LAGOONS TO CAMU LANDFILL

NOTES:

1. SITE LOCATION: SE 1/4 OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS.
2. TOPOGRAPHICAL MAP PREPARED FROM AERIAL SURVEY PERFORMED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. WETLAND DELINEATION FIELD WORK CONDUCTED ON MAY 29, 1992.

MODERN PLATING CORPORATION

FIGURE 2-25

CAMU LANDFILL CONSTRUCTION SEQUENCE
TASK 6 THROUGH 9 FROM FIGURE 2-21

Scale: 0 50' 100'		Date: AUGUST, 1997	
Prepared By: Foth & Van Dyke		By: JOW	

C:\cadwork\7m15f18.dgn

100+00 E
102+00 E
104+00 E
106+00 E
108+00 E
104+00 N
102+00 N
100+00 N
98+00 N
PROPOSED SEDIMENTATION BASIN
PROPOSED CHAIN LINK FENCE
PROPOSED CAMU LANDFILL
EXISTING LAGOON NO. 2
EXISTING LAGOON NO. 3
EXISTING LAGOON NO. 1
EXISTING LAGOON NO. 1A
EXISTING LAGOON NO. 0
WASTE STORAGE AREA (WSA)
EXISTING WASTEWATER TREATMENT PLANT
EXISTING SANITARY SEWER
SA

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING SPOT ELEVATION
- DEPRESSION
- TREES AND / OR BRUSH
- EXISTING ROADWAY
- EXISTING TRAIL
- CONTROL MONUMENT
- APPROXIMATE PROPERTY LINE
- GROUNDWATER MONITORING WELL LOCATION AND NUMBER
- EXISTING BUILDING
- EXISTING FENCE
- APPROXIMATE LIMITS OF WETLAND
- INFERRED EXTENT OF WETLAND
- WETLANDS AREA
- CAMU WASTE LIMITS
- APPROXIMATE LIMITS OF WASTE STORAGE AREA
- PROPOSED CHAIN LINK FENCE
- (10) DISMANTLE WSA
- (11) REGRADE EXCAVATION AREAS
- (12) CONSTRUCT FINAL COVER OVER CAMU LANDFILL

NOTES:

1. SITE LOCATION: SE 1/4 OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS.
2. TOPOGRAPHICAL MAP PREPARED FROM AERIAL SURVEY PERFORMED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. WETLAND DELINEATION FIELD WORK CONDUCTED ON MAY 29, 1992.

MODERN PLATING CORPORATION

FIGURE 2-26

CAMU LANDFILL CONSTRUCTION SEQUENCE
TASK 10 THROUGH 12 FROM FIGURE 2-21

Scale: 0 50' 100' | Date: AUGUST, 1997

Prepared By: Foth & Van Dyke | By: JOW

C:\cadwork\7m15f19.dgn

The documentation report required for the facility will in general include the following:

- Documentation of the construction and operation of the temporary WSA
- Documentation of the construction and operation of the CAMU landfill
- Documentation of closure of the CAMU landfill including construction documentation for all of the final cover components
- Documentation of restoration of the lagoons, and contaminated soil areas at which excavation and removal took place.

As per the draft IEPA RCRA Closure Plan Guidance, this *Closure Documentation Report* will contain the following information:

- The volume of waste, waste residue, decontamination waste and contaminated soil (if any) removed
- A description of the disposition of all waste identified above
- The waste manifest numbers
- Copies of the waste manifests
- Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort
- 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:
  - Identification of the reason for the sampling/analysis effort and the goals of the effort
  - A summary in tabular form of all analytical data, including all quality assurance/quality control data
  - A scaled drawing showing the horizontal location from which all soil samples were collected
  - Identification of the depth and vertical interval from which each sample was collected

- A description of the soil sampling procedures, sample preservation procedures and chain-of-custody procedures
- Identification of the test method used and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences
- Copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates
- Visual classification of each soil sample in accordance with ASTM D 2488
- A summary of all procedures used for quality assurance/quality control, including the results of these procedures
- A discussion of the data, as they relate to the overall goal of the sampling/analysis effort

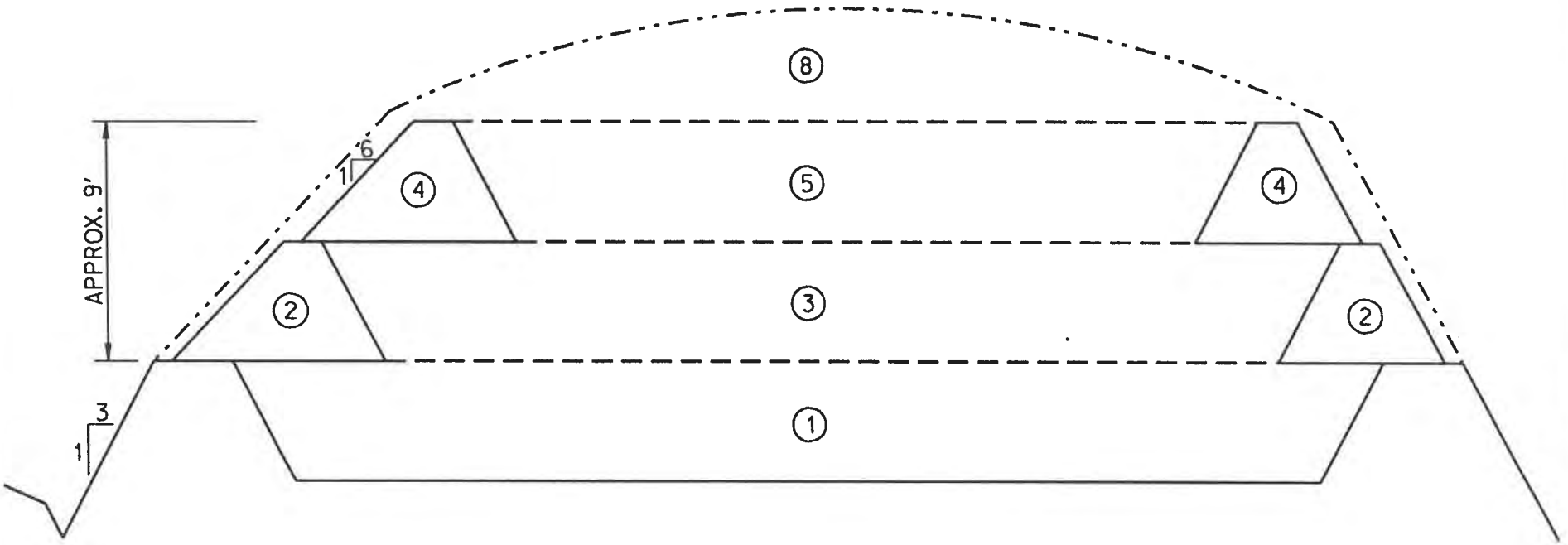
- Color photo documentation of closure. Document conditions before, during, and after closure
- A chronological summary of closure activities and the cost involved
- If appropriate, a survey plat showing location of disposal units (required by 35 IAC, Subtitle G, Sections 725.216 and 725.219 as amended March 24, 1987)
- If appropriate, a copy of the document (notation in deed or other document examined during title searches) in which the notification required under Section 725.219(b) as amended March 24, 1987

2.8.1 Contingency Plan

The following is a contingency plan which provides a conceptual method of filling and operating the CAMU landfill in the event that the sludge does not have adequate strength to maintain the slopes proposed herein for the final cover. As we stated earlier in this report, existing sludge geotechnical data along with additional soil and laboratory data collected prior to final design will be used to determine the shear strength, consolidation characteristics, permeability and stability of the sludge on the final slopes. If the result of these analyses show that the final slope on the landfill does not have adequate stability and factor of safety the filling the operating procedures will be modified to reflect the lack of sludge strength.

Figure 2-27 illustrates the contingency operating plan for filling the landfill if the sludge does not have adequate strength. Under the contingency plan, the landfill would be filled as an impoundment that is filled in stages on and only to the level of the top of the embankment as shown in Figure 2-27. Subsequent filling would occur within (behind) embankments constructed of on-site contaminated soil and each subsequent embankment is stepped inward to effectively

C:\cadwork\7MI5F23.DGN



NOTES:

1. INITIAL FILLING WITH SLUDGE.
2. CONSTRUCTION OF EARTH BERMS CONSISTING OF CONTAMINATED SOILS OR OFF-SITE SOIL AROUND THE ENTIRE FACILITY. STABILIZED OR TREATED SLUDGE ALSO COULD BE USED FOR THIS BERM CONSTRUCTION.
3. FILLING OF AN ADDITIONAL LIFT OF SLUDGE.
4. SEE NOTE NO. 2
5. SEE NOTE NO. 3
6. SEE NOTE NO. 2
7. SEE NOTE NO. 3
8. CONSTRUCTION OF FINAL COVER WITH THE ADDITIONAL FILL REQUIRED TO FORM THE SIDESLOPE AND COVER COMING FROM OFF-SITE SOILS.

MODERN PLATING CORPORATION			
FIGURE 2-27 CAMU LANDFILL - CONTINGENCY FILLING PLAN			
Scale:	NOT TO SCALE	Date:	AUGUST, 1997
Prepared By:	Foth & Van Dyke	By:	JOW

R002621

97M015 116

confine the waste. This technique is commonly used in the mining industry for managing slurried tailings and is sometimes referred to as upstream construction. What is important is that in the event that tailings cannot be adequately dewatered, there is a contingent method which can be used to successfully secure the waste in the CAMU landfill. Once all the waste is in place, off-site soil can be used to form the slope required to maintain proper drainage of the landfill final cover.

2.8.2 Personnel Safety

In addition to the obvious measures needed to protect the health of nearby residents, MPC will also undertake measures to protect all personnel involved or possibly exposed to hazardous waste by the proposed closure activities.

Under the provisions of 29 CFR 1910 (51 FR 15, 654, December 19, 1986), closure operations at this facility will meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. Site workers involved in closure activities will have received a minimum of 40 hours of health and safety training off-site, plus a minimum of 3 days' actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site will have at least an additional 8 hours of specialized training on managing hazardous waste operations.

As part of the final design process, a site-specific safety plan will be developed. The general components of the site safety plan for closure operations are outlined in Appendix P.

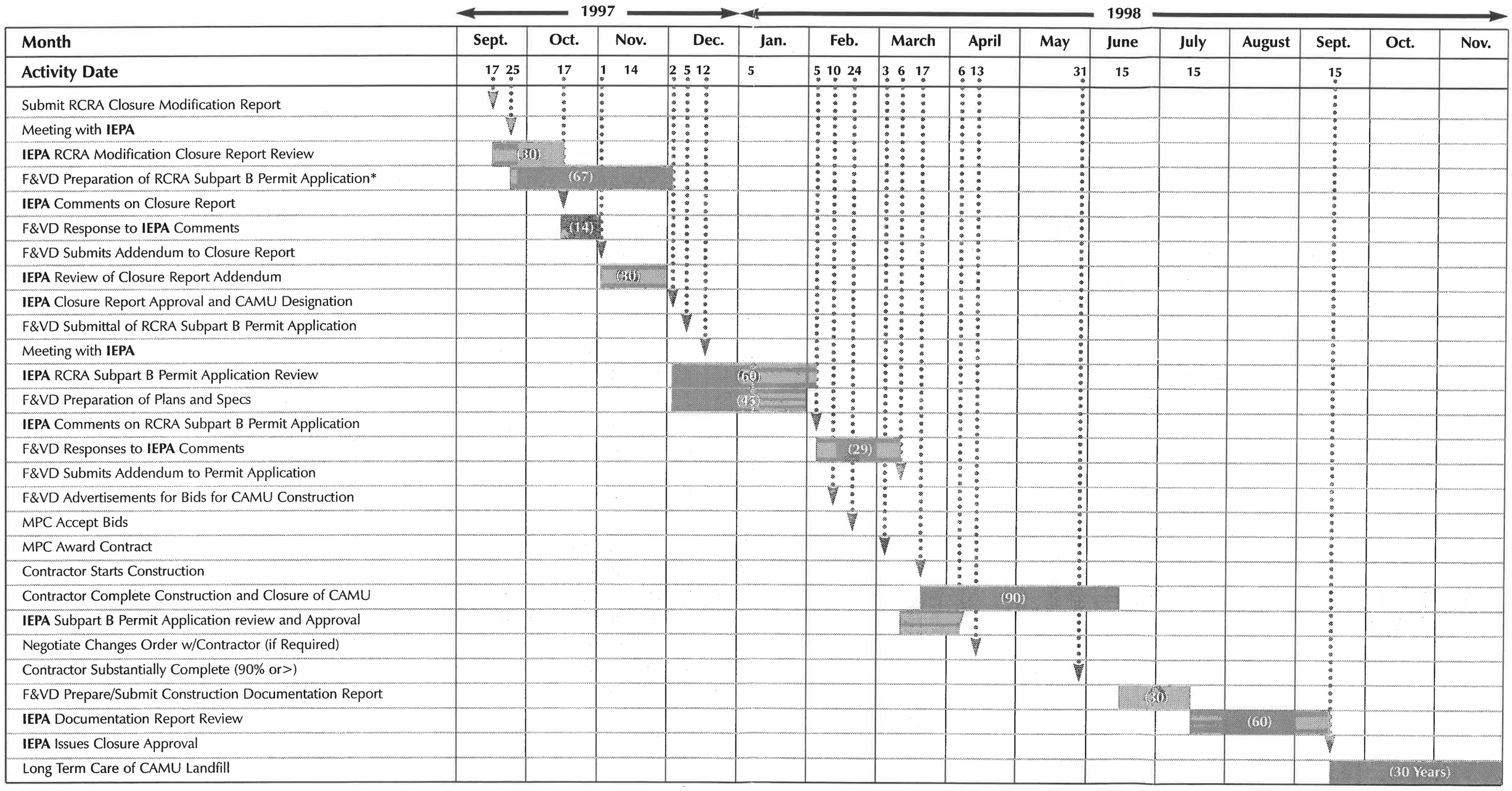
3 Summary

This report presented Modern Plating Corporation's preferred remedial action and closure approach for site sludges, soils, and groundwater. The preferred remedy includes the construction of an on-site CAMU landfill, approximately 1.2 acres in size, and containing 16,000 cy of waste. The CAMU landfill is designed with a double liner system, a leachate collection system, and a composite final cover. A key component of the preferred alternative is the post-closure monitoring plan. At the time of this submittal, IEPA's response to the May 30, 1997 proposed groundwater plan had not yet been received. When finalized, the approved groundwater monitoring plan will be incorporated into the post-closure care plan.

A proposed schedule showing permit/report submittals, approvals, design, development of plans and specifications, remedial contract award and site remedial construction, is shown on Figure 3-1. Continued and frequent contamination between the IEPA and Modern Plating will be necessary to ensure implementation of the closure schedule presented on Figure 3-1.

R002624

Figure 3-1
CAMU Landfill Permitting, Construction and Closure Time Table
Modern Plating Corporation



GJS/97M015/71

(30) Duration in Calendar Days
MPC Modern Plating Corporation
IEPA Illinois Environmental Protection Agency
F&VD Foth & Van Dyke

▼ Completion or Meeting Date

4 References

Boardman, Brian T., 1993. *The Potential Use of Geosynthetic Clay Liners as Final Covers in Arid Regions*, Master of Science Thesis, The University of Texas at Austin, 110 p.

Daniel, D.E., 1993. *Geosynthetic Clay Liners (GCLs) in Landfill Covers*. Thirty-First Annual Solid Waste Exposition, The Solid Waste Association of North America, San Jose, California.

Foth & Van Dyke, February 1987a. *Hydrogeologic Assessment of the Modern Plating Corporation Facility, Freeport, Illinois*.

Foth & Van Dyke, November 1987b. *Hydrogeologic Assessment of the Modern Plating Corporation Facility, Phase II, Freeport, Illinois*.

Foth & Van Dyke, May 1995. *Final Corrective Measures Study - Compendium Report, Modern Plating Corporation Facility, Freeport, Illinois*.

Foth & Van Dyke, October 1991. *Final Corrective Measures Study - Response to U.S. EPA Comments*.

Foth & Van Dyke, July 1992. *Final Corrective Measures Study - Response to U.S. EPA Comments, Response No. 2*.

Foth & Van Dyke, March 1993. *Corrective Measures Study Soil Sampling Plan*.

Foth & Van Dyke, August 1993, *Response to July 21, 1993 Letter*.

LaGatta, M.D., 1992. *Hydraulic Conductivity Tests of Geosynthetic Clay Liners Subjected to Differential Settlement*, Master of Science Thesis, The University of Texas at Austin, 120 p.

USEPA, Daniel, D.E. and B.T. Boardman, August 1993. *Report of Workshop of Geosynthetic Clay Liners*, PB94-114691.

USEPA, Eastern Research Group, Inc., May 1991. *Design and Construction of RCRA/CERCLA Final Covers*, EPA/625/4-91/025.

University of Texas at Austin College of Engineering, June 1996. *Geosynthetic Clay Liners for Waste Containment and Pollution Prevention*. Short course notes.

Appendix A

Drawings

Appendix B

1992 Fehr-Graham & Associates Report on Shawnee Building Soil Sampling Results

Erwin D. Toerber
Quentin H. Davis
Mark K. Young
Hans A. Anderson
R. Todd Weegens

660 W. Stephenson St.
Freeport, Illinois 61032
815/235-7643
FAX 815/235-4632

R002628

CELEBRATING OUR 20th YEAR

FEHR-GRAHAM
& ASSOCIATES
Engineering and Science
Consultants

December 15, 1993

Mr. Munib Amad
Illinois Environmental Protection Agency
Bureau of Land #33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

Re: 1770200010--Stephenson County
Modern Plating
ILD005172325
RCRA Closure

Dear Mr. Amad:

In our October 18, 1993 letter to you, we stated that additional samples would be collected at Modern Plating during the next round of sampling at this site. Enclosed with this letter is Figure 1 which shows the locations of the previously proposed sample locations, and which also shows two additional sample locations. These additional sample locations are located in Area A and in Area B. The additional samples will be collected beneath Area A and Area B at a depth of 16 feet. Samples will be collected by the protocol established in the January 14, 1993, submittal.

The purpose of these additional samples is to establish the maximum depth at which concentrations of TCE, total cyanide, and EP TOX cadmium occur above clean-up objectives. These samples are being collected at the request of Mr. Ken Lovett of the IEPA. Mr. Lovett requested these samples in order to determine if concentrations above clean-up objectives are found to extend to the water table, as he felt that contaminants might still be migrating downward. Should the samples proposed beneath Area A and Area B show concentrations below clean-up objectives, it will verify that groundwater is not threatened beneath the Shawnee from contamination from the Shawnee Building.

Soil concentrations in Area A and Area B have been summarized in several enclosed figures. These figures show the locations of all borings taken in and

around the Shawnee Building, as well as the analytical results for soil samples collected from these borings. Both of the samples proposed in Area A and Area B are beneath zones which have shown the highest concentrations of TCE, total cyanide, and EP TOX cadmium.

If the proposed samples beneath Area A, Area B, and outside the Shawnee building all show concentrations below clean-up objectives, the extent of contamination at the Shawnee building should be sufficiently defined for developing a remediation plan.

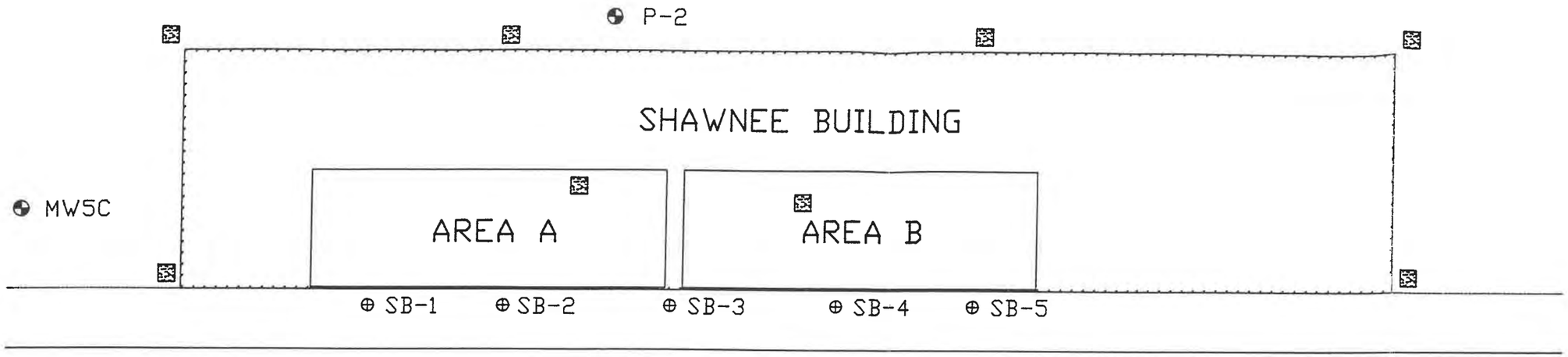
As discussed in earlier correspondence, work at the Shawnee Building is on hold awaiting the IEPA and the US EPA to agree upon clean-up objective across the entire site. This work will begin upon being informed by the Agencies that they have reached an agreement and that work can commence.

This letter is being sent to the Agency for the purposes of informing you of work that Modern Plating is going to undertake beyond what has been required. This letter is not being submitted as a closure plan modification or request. If you have any questions or comments concerning this letter, please call me at our office.

Sincerely yours,

Thomas E. Davis
Hydrogeologist

TED:sm
I:\WPFILES\LETTER\T28277B.EPA
Enclosures
cc: Craig Skolrood, Modern Plating
Steve Laszewski, Ph.D., Foth & Van Dyke
Thad Slaughter, USEPA Region V



SCALE: 1" = 30'

LEGEND

- ⊕ EXISTING SOIL BORINGS
- ◓ EXISTING MONITOR WELL & PIEZOMETERS
- ▩ PROPOSED SOIL BORING

FIGURE 1

MODERN PLATING CORPORATION
PROPOSED SOIL BORINGS

11/29/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
3 815/235-7643 61032-5098

T28277AI

R002631

MODERN PLATING FACILITY

SHAWNEE BUILDING

A13 B15

C2 C4 C3 C5 C6 C1

A3 A4 A5 A6 A7 A2 A12 A1 A8 A10 A9 A11

B4 B5 B6 B7 B2 B3 B8 B14 B9 B1 B10 B11 B12 B13

R-O-W

SB-1 SB-2 SB-3 SB-4 SB-5

EAST SHAWNEE STREET

SB-11 SB-6 SB-7 SB-8 SB-9 SB-10A

R-O-W

N W E S

SCALE: 1" ≅ 30'

LEGEND

- SOIL SAMPLE LOCATION
- 4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
SOIL SAMPLE LOCATIONS

10/14/93

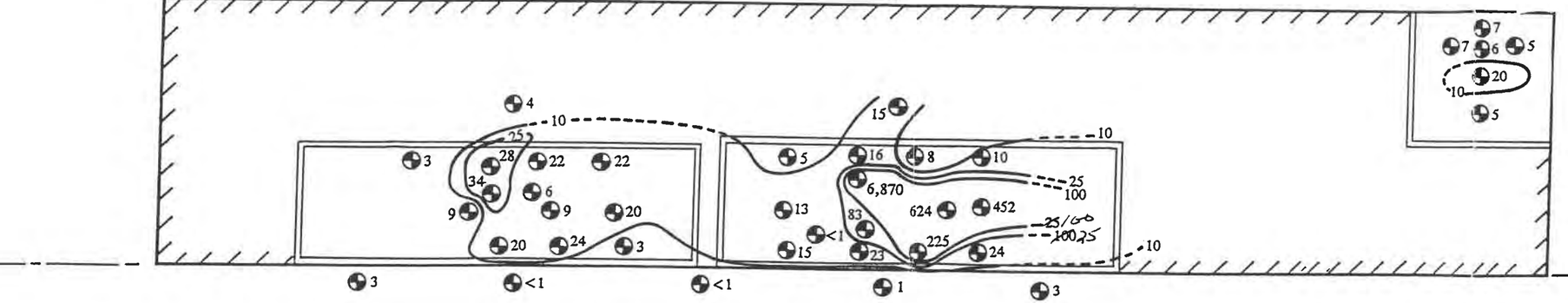
FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

28277

R002632

MODERN PLATING FACILITY

SHAWNEE BUILDING



EAST SHAWNEE STREET

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
EP TOX CADMIUM ug/l
O - 1'

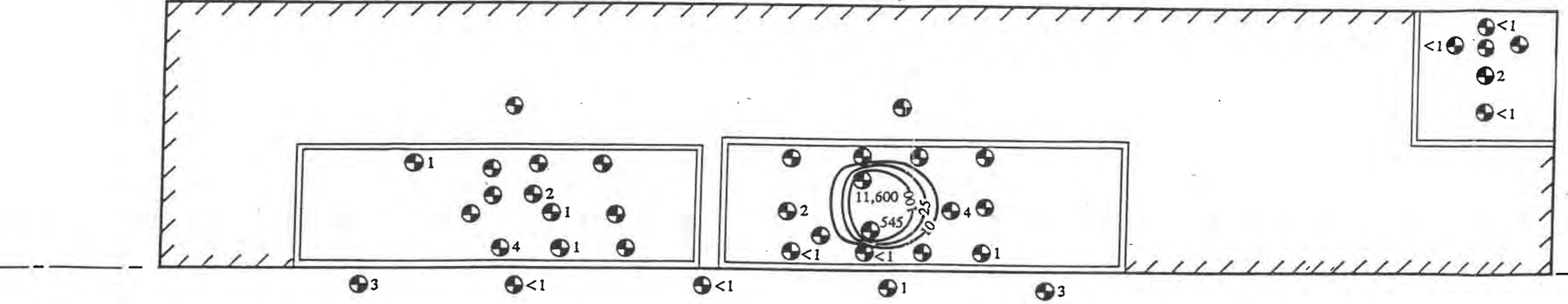
10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

28277

MODERN PLATING FACILITY

SHAWNEE BUILDING



R-O-W

EAST SHAWNEE STREET

R-O-W

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

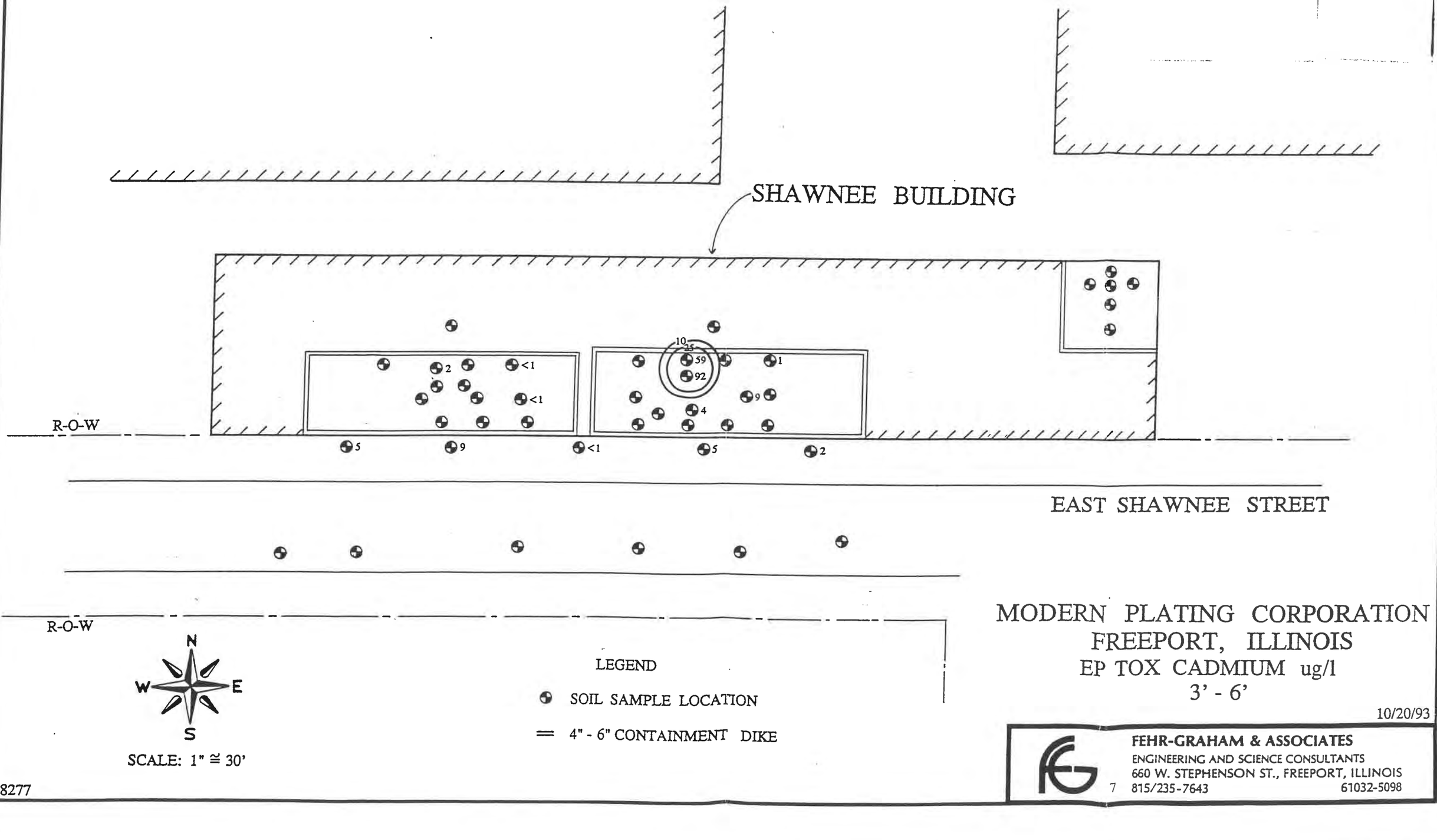
MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
EP TOX CADMIUM ug/l
1' - 2.5'

10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

28277

MODERN PLATING FACILITY



SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
EP TOX CADMIUM ug/l
3' - 6'

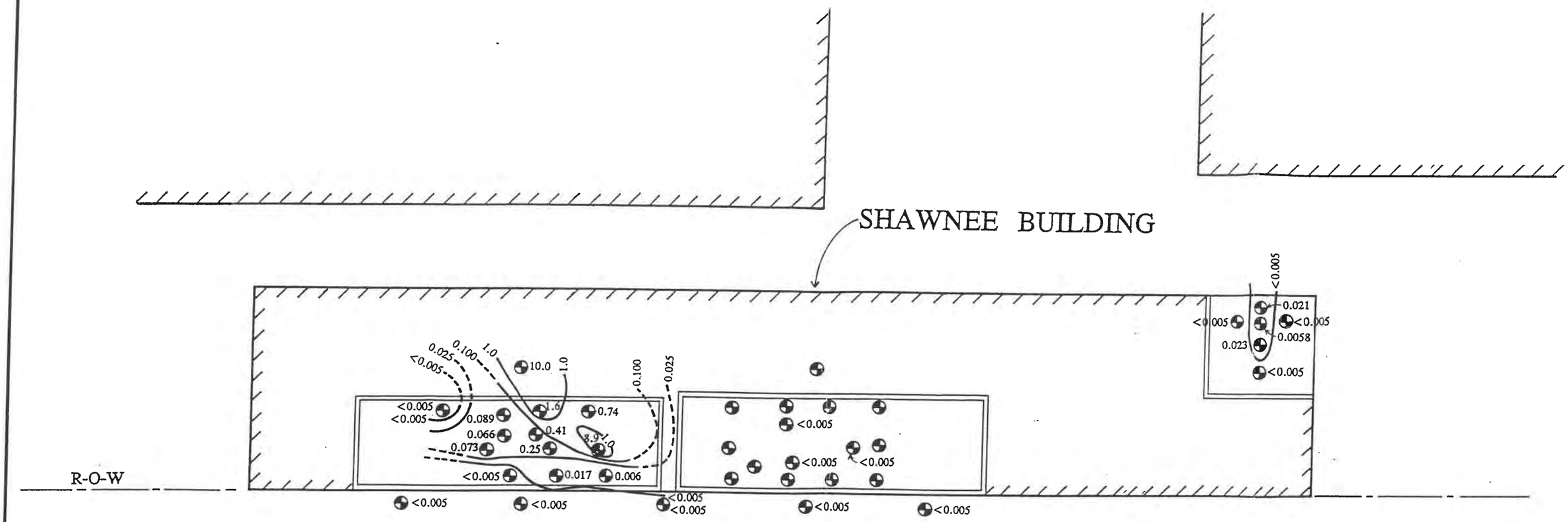
10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
7 815/235-7643 61032-5098

28277

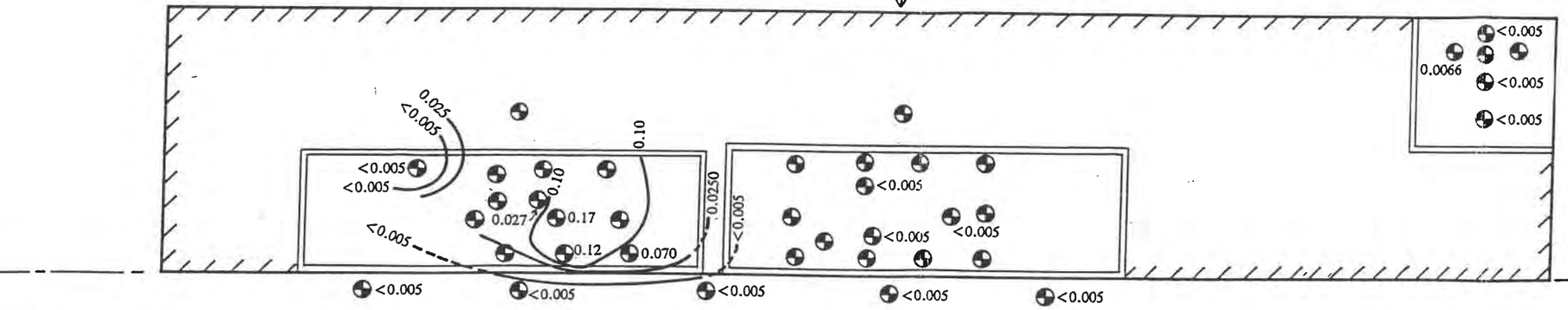
MODERN PLATING FACILITY

SHAWNEE BUILDING


0.025
0.100
1.0
10.0
1.0
0.100
0.025
<0.005
<0.005
<0.005
0.089
1.6
0.74
0.066
0.41
9.5
0.073
0.25
<0.005
0.017
0.006
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
0.021
<0.005
0.023
0.0058
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005
<0.005

MODERN PLATING FACILITY

SHAWNEE BUILDING



R-O-W

EAST SHAWNEE STREET

R-O-W

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

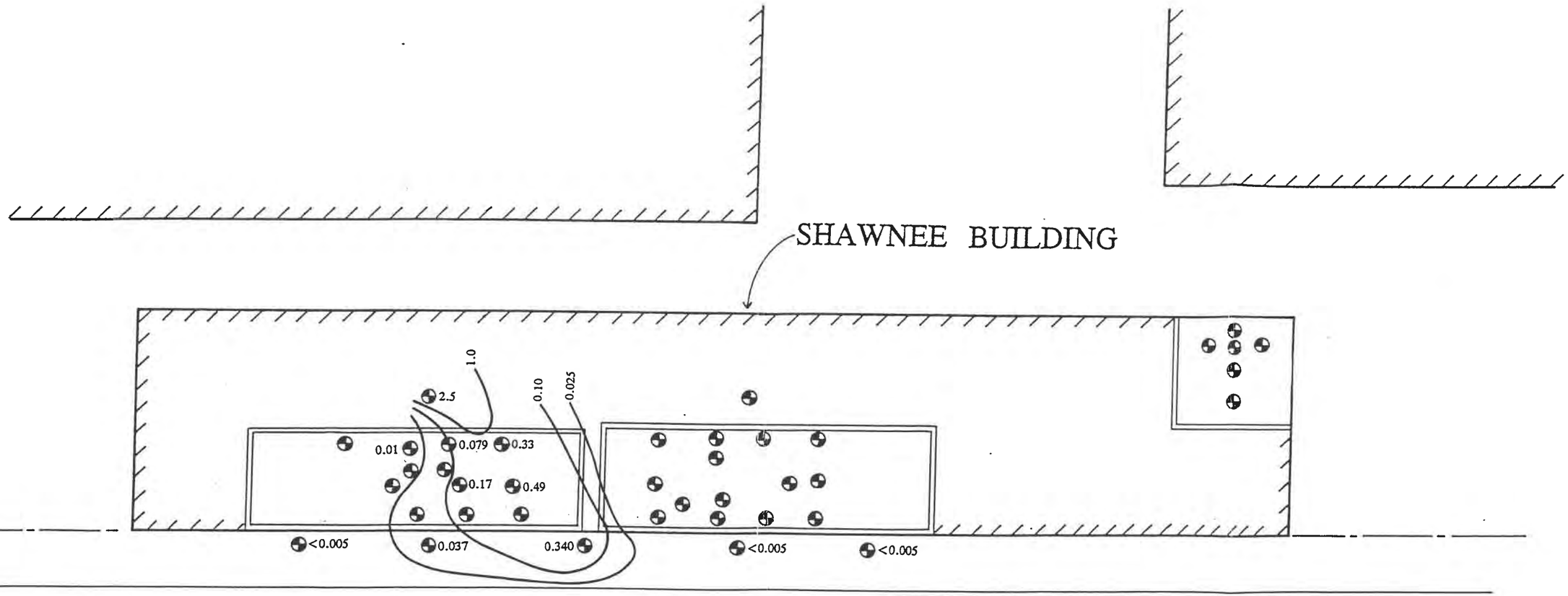
MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
TCE CONCENTRATIONS
1' - 2.5'

10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
9 815/235-7643 61032-5098

28277

MODERN PLATING FACILITY



N
W E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
TCE CONCENTRATIONS
3' - 6'

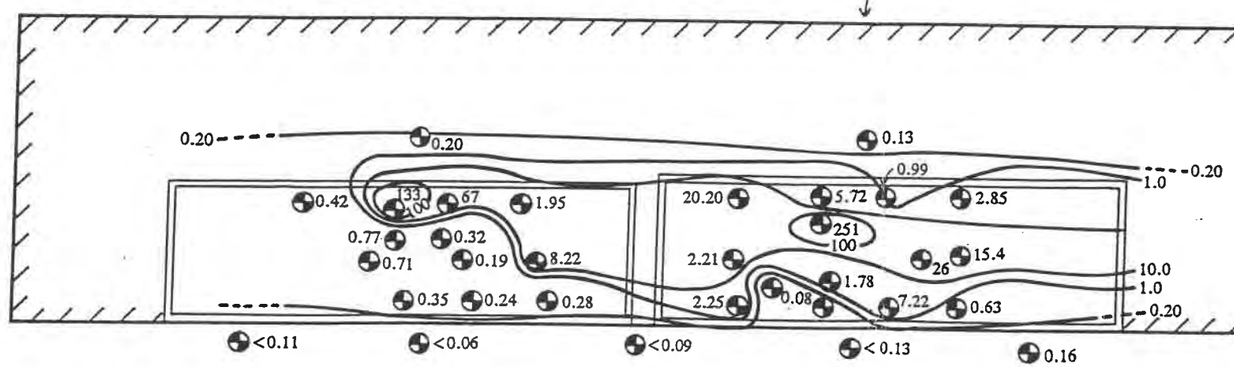
10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
10 815/235-7643 61032-5098

28277

MODERN PLATING FACILITY

SHAWNEE BUILDING



R-O-W

EAST SHAWNEE STREET

R-O-W

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
TOTAL CYANIDE mg/kg
O - 1'

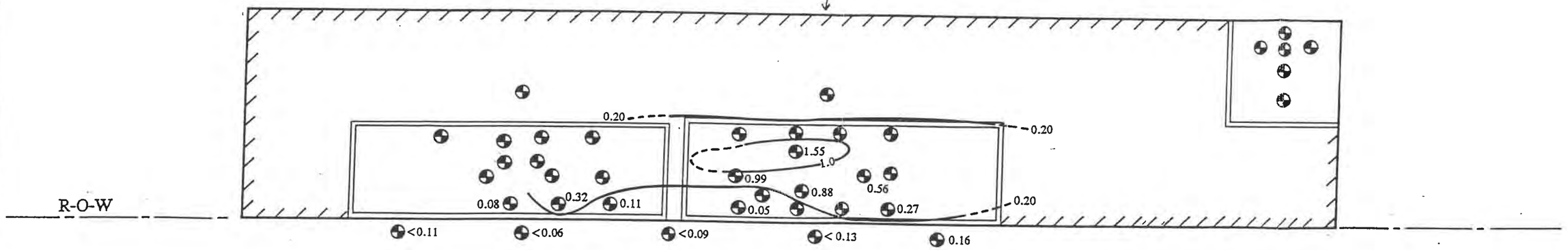
10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

28277

MODERN PLATING FACILITY

SHAWNEE BUILDING



R-O-W

EAST SHAWNEE STREET

R-O-W

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

● SOIL SAMPLE LOCATION

═ 4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
TOTAL CYANIDE mg/kg
1' - 2.5'

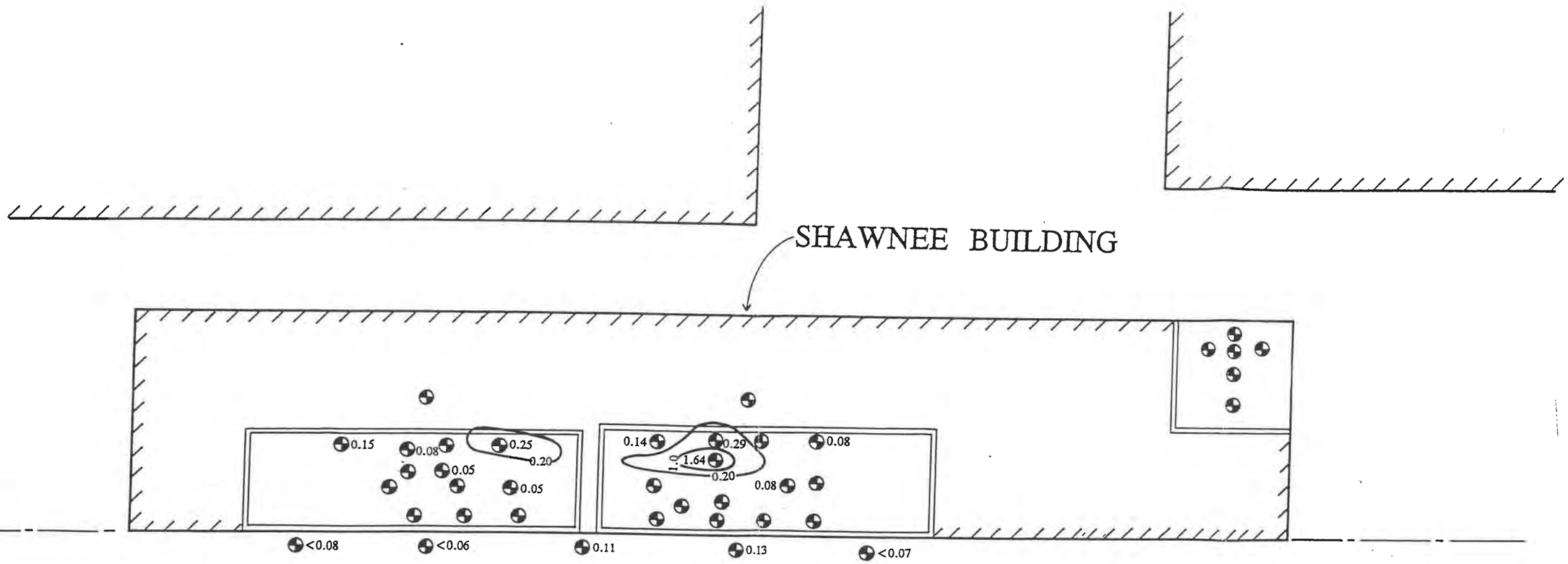
10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
12 815/235-7643 61032-5098

28277

MODERN PLATING FACILITY

SHAWNEE BUILDING



R-O-W

EAST SHAWNEE STREET

R-O-W

N
W
E
S

SCALE: 1" ≅ 30'

LEGEND

SOIL SAMPLE LOCATION

4" - 6" CONTAINMENT DIKE

MODERN PLATING CORPORATION
FREEPORT, ILLINOIS
TOTAL CYANIDE mg/kg
3' - 6'

10/20/93

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

28277

Erwin D. Toerber
Quentin H. Davis
Mark K. Young
Hans A. Anderson
R. Todd Weegens

660 W. Stephenson St.
Freeport, Illinois 61032
815/235-7643
FAX 815/235-4632

R002641

FEHR-GRAHAM
& ASSOCIATES
Engineering and Science
Consultants

RECEIVED AUG 1 4 1992

CERTIFIED MAIL NO. P-140 143 268
RETURN RECEIPT REQUESTED

August 12, 1992

Mr. Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

Re: 1770200010 - Stephenson County
Modern Plating
ILD005172325
RCRA-Closure, Soil Sampling Results

Attention: Mr. Munib Ahmad

Dear Mr. Ahmad:

It is our understanding that the Shawnee Building storage areas will be incorporated as part of the superfund work under United States Environmental Protection Agency review. Until this is made official, we will continue to meet requirements set by the Illinois Environmental Protection Agency.

Additional soil samples have been taken near the Shawnee Building container storage area at the Modern Plating facility in Freeport, Illinois. These samples were taken as proposed in the February 26, 1992 letter to the IEPA, and as modified in the May 27, 1992, closure plan modification response sent by the IEPA to the Modern Plating Corporation.

The soil samples were collected in stainless steel tubes which were pre-cleaned by the IEPA procedure in the enclosed Attachment VII. The ends of the tube were filled with bentonite, wrapped with aluminum, and capped with plastic end

caps. Sample identification labels were affixed to the stainless steel tubes, and chain of custody tape was placed over the stainless steel tubes. The samples were immediately placed into insulated ice-filled chests. The samples were delivered to the laboratory within 24 hours of being collected.

The new soil borings were numbered from SB-6 to SB-11. These locations are shown in Figure 1. The locations were moved from those proposed in the February 26, 1992 report. The proposed boring locations were moved to the actual locations due to the presence of electric lines, city water lines, and city sewer lines. This change in the boring locations was approved by Mr. Munib Ahmad during a telephone conversation with Mr. Tom Davis of Fehr-Graham & Associates. This telephone conversation took place at approximately 11:15 am on July 7, 1992.

The sampling depth for each of the borings is shown in Table 1. The samples were a brown inorganic clay (CL). The analytical results are summarized in Tables 2, 3, and 4. These results demonstrate that neither cyanide contamination nor TCE contamination occurs where the most recent borings were placed.

The limits of contamination are illustrated Figures 2, 3, and 4.

The borings demonstrate that EP TOX cadmium increases in concentration and in the vertical extent of contamination in these borings. These results appear to be more indicative of background, and is not reasonable to believe that the facility caused greater contamination outside of its property, beneath a surfaced road, and deep into tight clays.

Further work will be proposed once the agreement to incorporate the Shawnee Building into the superfund site is completed. Work also should be delayed until the final cleanup levels have been set for the site by the U.S. EPA and the IEPA.

Per Craig Skolrood's request, copies of this document are being sent to Thad Slaughter and Bob O'Hara.

Please feel free to call me if there are questions or comments over this submittal.

Sincerely,

Thomas E. Davis

Thomas E. Davis
Geologist

TED:ns:28277
Enclosure
cc: Craig Skolrood, Modern Plating Corporation
Thad Slaughter, U.S. EPA, Region V, 77 W. Jackson Blvd, Chicago, Illinois 60604-3590, Attention of HRE-8J
Bob O'Hara, IEPA
Rod Bloese, Foth & Van Dyke

R002644

P-2

SHAWNEE BUILDING

AREA A

AREA B

MW5C

SB-1 SB-2 SB-3 SB-4 SB-5

SHAWNEE STREET

SB-11 SB-6 SB-7 SB-8 SB-9 SB-10A

P-1

FIGURE 1

MODERN PLATING CORPORATION

N

W E

S

SCALE: 1" = 20'

LEGEND

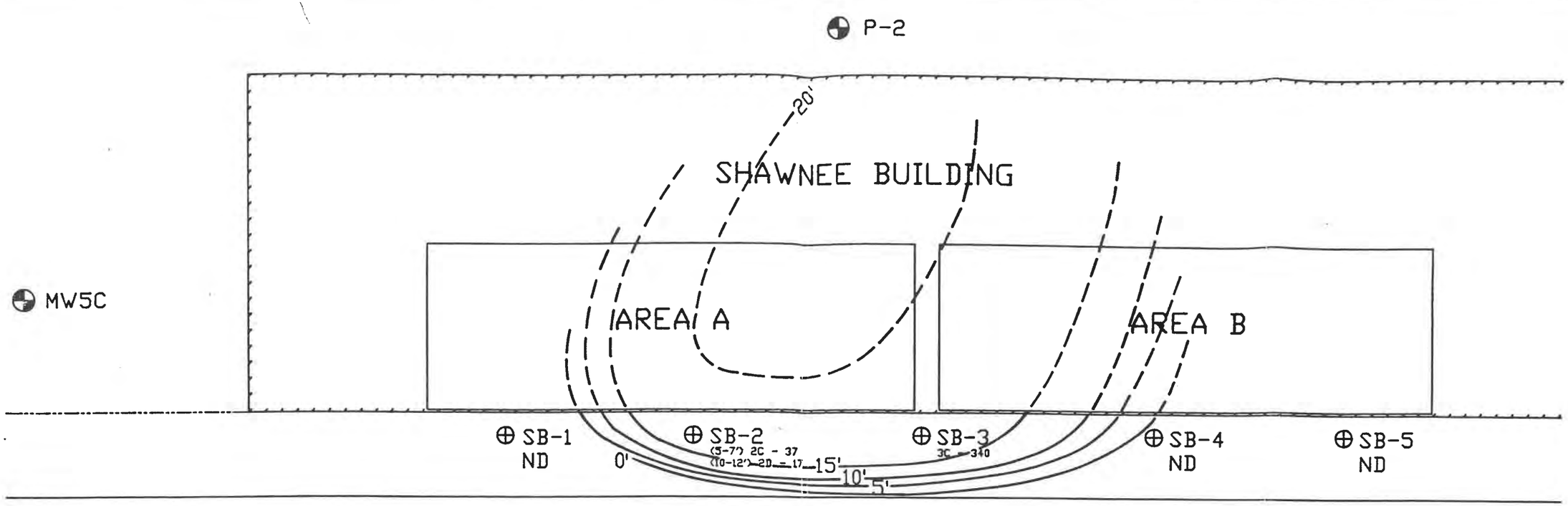
⊕ EXISTING SOIL BORINGS

EXISTING MONITOR WELL & PIEZOMETERS

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST. FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AA



LEGEND

⊕ EXISTING SOIL BORINGS

◓ EXISTING MONITOR WELL & PIEZOMETERS

ND NO DETECTION (< 5 µg/kg)

CLEAN-UP LIMIT IS 5 µg/kg

FIGURE 2

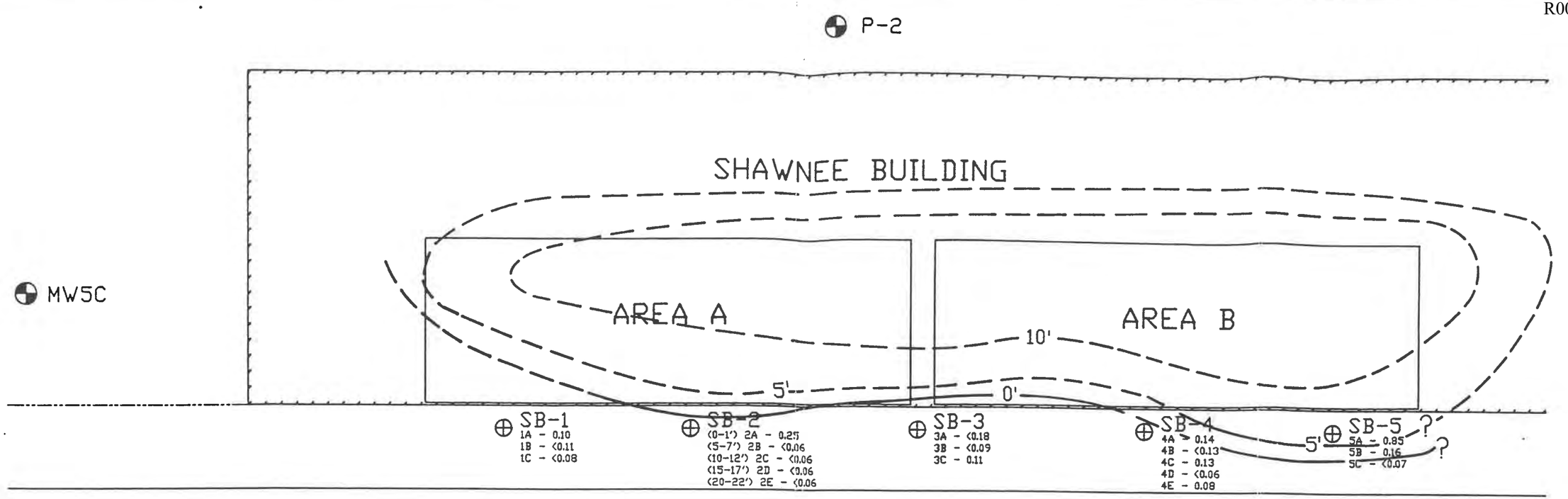
MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
TRICHLOROETHENE
µg/kg

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST. FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AF

R002646



N
W E
S

SCALE: 1" = 20'

LEGEND

⊕ EXISTING SOIL BORINGS

◓ EXISTING MONITOR WELL & PIEZOMETERS

ND NO DETECTION (<0.25 µg/kg)

CLEAN-UP LIMIT IS 0.20 mg/kg

FIGURE 3

MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
TOTAL CYANIDE
mg/kg

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AG

P-2

SHAWNEE BUILDING

MW5C

AREA A

AREA B

SB-1
1A - 0.007
1B - 0.003
1C - 0.005
1D - 0.003
1E - 0.001

SB-2
2A - 0.003
2B - <0.001
2C - 0.009
2D - 0.007
2E - 0.001

SB-3
3A - 0.004
3B - <0.001
3C - <0.001

SB-4
4A - 0.30
4B - 0.001
4C - 0.005
4D - 0.003
4E - 0.007

SB-5
5A - 0.009
5B - 0.003
5C - 0.002

SHAWNEE STREET

SB-11
11A - 0.013

SB-6
6A - 0.008
6C - 0.010
6D - 0.016
6E - 0.012

SB-7
7A - 0.006
7B - 0.009
7D - 0.006
7E - 0.010

SB-8
8D - 0.010
8E - 0.010

SB-9
9E - 0.011

SB-10A
10A - 0.011

P-1

N
W E
S

SCALE: 1" = 20'

LEGEND

⊕ EXISTING SOIL BORINGS

EXISTING MONITOR WELL & PIEZOMETERS

CLEAN-UP LIMIT IS 0.005 mg/L

FIGURE 4

MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
EP TOX CADMIUM
mg/L

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AH

R002648

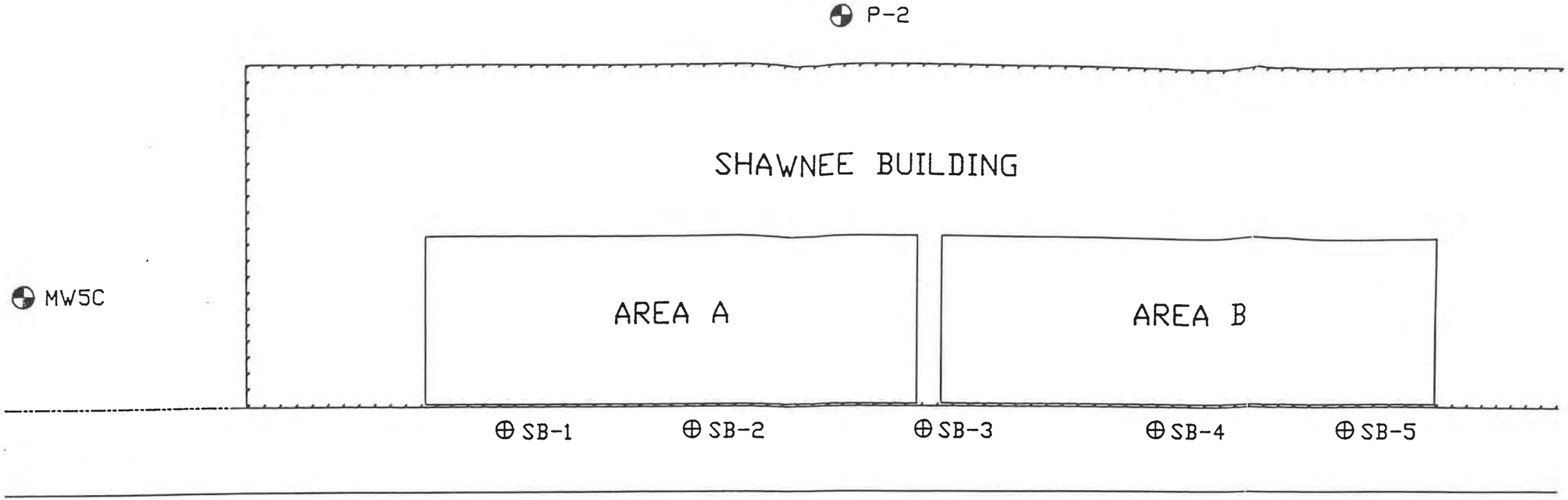


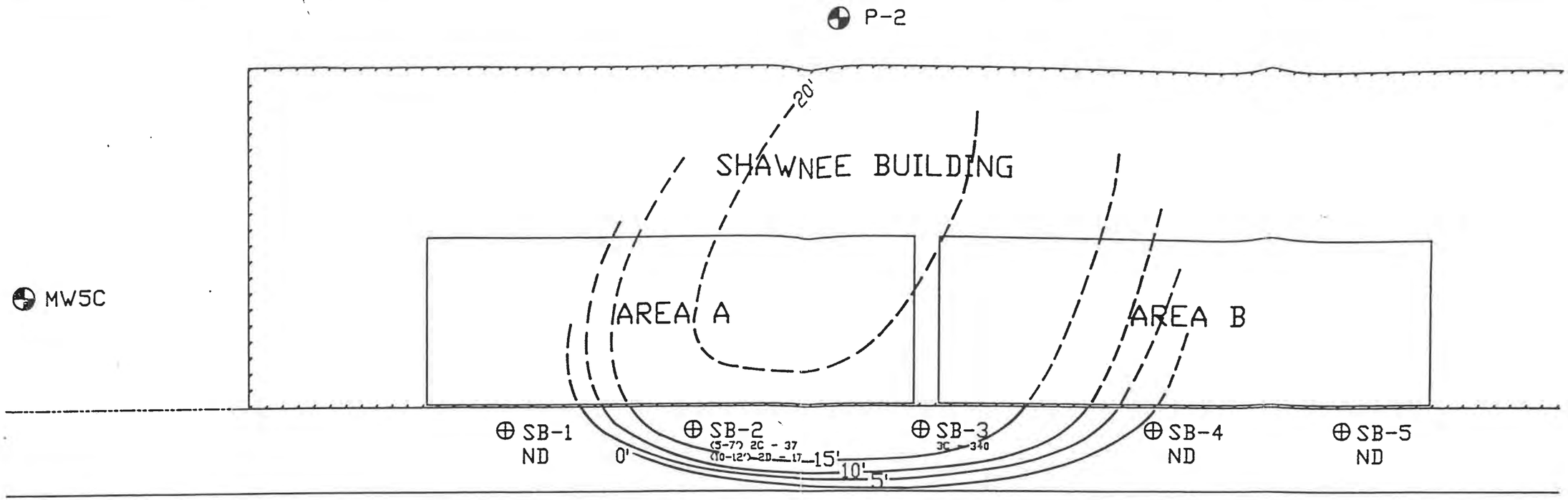
FIGURE 1

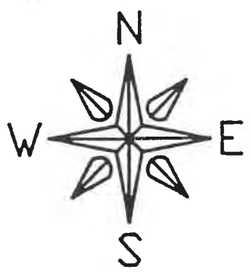
MODERN PLATING CORPORATION

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST. FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AA





SCALE: 1" = 20'

LEGEND

⊕ EXISTING SOIL BORINGS

◓ EXISTING MONITOR WELL & PIEZOMETERS

ND NO DETECTION (< 5 µg/kg)

CLEAN-UP LIMIT IS 5 µg/kg

FIGURE 2

MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
TRICHLOROETHENE
µg/kg

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
18 815/235-7643 61032-5098

T28277AF

P-2

SHAWNEE BUILDING

MW5C

AREA A

AREA B

10'

5'

0'

5'

SB-1
1A - 0.10
1B - <0.11
1C - <0.08

SB-2
(0-1') 2A - 0.25
(5-7') 2B - <0.06
(10-12') 2C - <0.06
(15-17') 2D - <0.06
(20-22') 2E - <0.06

SB-3
3A - <0.18
3B - <0.09
3C - 0.11

SB-4
4A - 0.14
4B - <0.13
4C - 0.13
4D - <0.06
4E - 0.08

SB-5 ?
5A - 0.85
5B - 0.16
5C - <0.07
?

SHAWNEE STREET

SB-11 ND

SB-6 ND

SB-7 ND

SB-8 ND

SB-9 ND

SB-10A ND

P-1

N

W E

S

SCALE: 1" = 20'

LEGEND

⊕ EXISTING SOIL BORINGS

EXISTING MONITOR WELL & PIEZOMETERS

ND NO DETECTION (<0.25 µg/kg)

CLEAN-UP LIMIT IS 0.20 mg/kg

FIGURE 3

MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
TOTAL CYANIDE
mg/kg

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AG

P-2

SHAWNEE BUILDING

AREA A

AREA B

MW5C

SB-1
1A - 0.007
1B - 0.003
1C - 0.005
1D - 0.003
1E - 0.001

SB-2
2A - 0.003
2B - <0.001
2C - 0.009
2D - 0.007
2E - 0.001

SB-3
3A - 0.004
3B - <0.001
3C - <0.001

SB-4
4A - 0.30
4B - 0.001
4C - 0.005
4D - 0.003
4E - 0.007

SB-5
5A - 0.009
5B - 0.003
5C - 0.002

SHAWNEE STREET

SB-11
11A - 0.013

SB-6
6A - 0.008
6C - 0.010
6D - 0.016
6E - 0.012

SB-7
7A - 0.006
7B - 0.009
7D - 0.006
7E - 0.010

SB-8
8D - 0.010
8E - 0.010

SB-9
9E - 0.011

SB-10A
10A - 0.011

P-1

N
W E
S

SCALE: 1" = 20'

LEGEND

⊕ EXISTING SOIL BORINGS

EXISTING MONITOR WELL & PIEZOMETERS

CLEAN-UP LIMIT IS 0.005 mg/L

FIGURE 4

MAXIMUM DEPTH OF CONTAMINATION
MODERN PLATING CORPORATION
EP TOX CADMIUM
mg/L

7/22/92

FEHR-GRAHAM & ASSOCIATES
ENGINEERING AND SCIENCE CONSULTANTS
660 W. STEPHENSON ST., FREEPORT, ILLINOIS
815/235-7643 61032-5098

T28277AH

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002652

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

JOB NUMBER: 92.2239

The Following samples were received by NET for analysis:

Sample Number	Sample Description	Date Taken
106459	5543-B6a, Grab Soil	07/08/1992
106460	5544-B6b, Grab Soil	07/08/1992
106461	5545-B6c, Grab Soil	07/08/1992
106462	5546-B6d, Grab Soil	07/08/1992
106463	5547-B6e, Grab Soil	07/08/1992
106464	5548-B7a, Grab Soil	07/08/1992
106465	5549-B7b, Grab Soil	07/08/1992
106466	5550-B7c, Grab Soil	07/08/1992
106467	5551-B7d, Grab Soil	07/08/1992
106468	5552-B7e, Grab Soil	07/08/1992
106469	5553-B8a, Grab Soil	07/08/1992
106470	5554-B8b, Grab Soil	07/08/1992
106471	5555-B8c, Grab Soil	07/08/1992
106472	5556-B8d, Grab Soil	07/08/1992
106473	5557-B8e, Grab Soil	07/08/1992
106474	5558-B9a, Grab Soil	07/08/1992
106475	5559-B9b, Grab Soil	07/08/1992
106476	5560-B10a, Grab Soil	07/08/1992

The abbreviations and references listed below have been adopted by NET as standard conventions and are used throughout this report:

(1) Method reference from EPA SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA SW-846, 3rd Ed., September, 1986.

(2) Method reference from ASTM, "American Society for Testing Materials."

(3) Method reference from EPA "Methods for Chemical Analysis of Waters and Wastes," USEPA, EPA 600/4-79-020, revised March, 1983.

(4) Method reference from "Standard Methods for the Examination of Water and Wastewater."

(5) Method reference from EPA "Methods for the Determination of Organic Compounds in Drinking Water," USEPA, 524.2, Revised 1989.

(6) EPA 40 CFR, Part 763 Appendix A to Subpart F - PLM

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002653

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

JOB NUMBER: 92.2239

The Following samples were received by NET for analysis:

Sample Number	Sample Description	Date Taken
106477	5561-B11a, Grab Soil	07/08/1992

The abbreviations and references listed below have been adopted by NET as standard conventions and are used throughout this report:

(1) Method reference from EPA SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA SW-846, 3rd Ed., September, 1986.

(2) Method reference from ASTM, "American Society for Testing Materials."

(3) Method reference from EPA "Methods for Chemical Analysis of Waters and Wastes," USEPA, EPA 600/4-79-020, revised March, 1983.

(4) Method reference from "Standard Methods for the Examination of Water and Wastewater."

(5) Method reference from EPA "Methods for the Determination of Organic Compounds in Drinking Water," USEPA, 524.2, Revised 1989.

(6) EPA 40 CFR, Part 763 Appendix A to Subpart F - PLM

NET NATIONAL ENVIRONMENTAL TESTING, INC.®

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002654

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106459

SAMPLE DESCRIPTION: 5543-B6a, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/21/1992
EP Tox - Cadmium	0.008	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002655

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106460

SAMPLE DESCRIPTION: 5544-B6b, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/21/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.®

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002656

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106461

SAMPLE DESCRIPTION: 5545-B6c, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/21/1992
EP Tox - Cadmium	0.010	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002657

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106462

SAMPLE DESCRIPTION: 5546-B6d, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/21/1992
EP Tox - Cadmium	0.016	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002658

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106463

SAMPLE DESCRIPTION: 5547-B6e, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/21/1992
EP Tox - Cadmium	0.012	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002659

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106464

SAMPLE DESCRIPTION: 5548-B7a, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.006	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002660

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106465

SAMPLE DESCRIPTION: 5549-B7b, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.009	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002661

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106466

SAMPLE DESCRIPTION: 5550-B7c, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002662

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106467

SAMPLE DESCRIPTION: 5551-B7d, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.006	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002663

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106468

SAMPLE DESCRIPTION: 5552-B7e, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.010	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/14/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002664

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106469

SAMPLE DESCRIPTION: 5553-B8a, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002665

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106470

SAMPLE DESCRIPTION: 5554-B8b, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R0012666

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106471

SAMPLE DESCRIPTION: 5555-B8c, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002667

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106472

SAMPLE DESCRIPTION: 5556-B8d, Grab Soil #28277

Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.010	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R0002068

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106473

SAMPLE DESCRIPTION: 5557-B8e, Grab Soil
#28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.010	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002669

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106474

SAMPLE DESCRIPTION: 5558-B9a, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	<0.005	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002670

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106475

SAMPLE DESCRIPTION: 5559-B9b, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.011	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/15/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002671

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106476

SAMPLE DESCRIPTION: 5560-B10a, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.011	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/16/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

R002672

ANALYTICAL REPORT

Mr. Ken Thompson
FEHR-GRAHAM & ASSOCIATES
660 W. Stephenson Street
Freeport, IL 61032

07/23/1992

Job No: 92.2239
Sample No: 106477

SAMPLE DESCRIPTION: 5561-B11a, Grab Soil #28277
Date Taken: 07/08/1992
IEPA Cert. No.100220

Date Received: 07/09/1992
WDNR Cert. No.999447240

TEST NAME	RESULTS	UNITS	METHODS	DATE ANALYZED
Cyanide, Total	<0.25	ug/g	9010 (1)	07/22/1992
EP Tox - Cadmium	0.013	mg/L	213.1 (3)	07/23/1992
VOLATILE COMPOUNDS				
Trichloroethene	<5.0	ug/kg	8240 (1)	07/16/1992

Roline Milne

Roline Milne, Project Manager
Rockford Division

OCEAN GROUP

FEHR-GRAHAM & ASSOCIATES
SAMPLE CHAIN OF CUSTODY FORM

SHEET 1 OF 2

PROJECT # 28277

SAMPLER'S SIGNITURE

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME OF COLLECTION	COMP	GRAB	VOLUME COLLECTED	NO. OF CONTAINERS	INITIAL	SAMPLE DESCRIP.	EXPECTED CONCENT.	VOC GC MS	TC METALS	FLASH	PH	O&G	COD	TOC	TDS	TC ORG NO PEST OR HERB	PNA 8310 HPLC	BETX	TCE	TOTAL Cyanide EP TOX, CAM, Metals		
543 - B6a	7-8-92	10:45		X	2 Tubes	2	KT	Soil	?												X	X	X	
544 - B6b		10:55		X																	X	X	X	
545 - B6c		11:00		X																	X	X	X	
546 - B6d		11:05		X																	X	X	X	
547 - B6e		11:15		X																	X	X	X	
548 - B7a		11:30		X																	X	X	X	
549 - B7b		11:35		X																	X	X	X	
550 - B7c		11:40		X																	X	X	X	
551 - B7d		11:45		X																	X	X	X	
552 - B7e		11:50		X																	X	X	X	
553 - B8a		12:30		X																	X	X	X	
554 - B8b		12:40		X																	X	X	X	
555 - B8c		12:50		X																	X	X	X	
556 - B8d		1:00		X																	X	X	X	
557 - B8e		1:10		X																	X	X	X	
558 - B9a		1:45		X																	X	X	X	
559 - B9b		2:00		X																	X	X	X	

COMMENTS:

X RETAIN SAMPLES

RELINQUISHED BY: NAME _____ DATE/TIME 7/9/92 12:10 RECEIVED BY: NAME Lori Rominski DATE/TIME 7/9/92 1210

RELINQUISHED BY: NAME _____ DATE/TIME _____ RECEIVED BY: NAME _____ DATE/TIME _____

RELINQUISHED BY: NAME _____ DATE/TIME _____ RECEIVED BY: NAME _____ DATE/TIME _____

R002673

FEHR-GRAHAM & ASSOCIATES
SAMPLE CHAIN OF CUSTODY FORM

SHEET 2 OF 2

PROJECT # 23277

SAMPLER'S SIGNITURE Ken L. Ferguson

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME OF COLLECTION	COMP	GRAB	VOLUME COLLECTED	NO. OF CONTAINERS	INITIAL	SAMPLE DESCRIP.	EXPECTED CONCENT.	VOC GC MS	TC METALS	FLASH	PH	O&G	COD	TOC	TDS	TC ORG NO PEST OR HERB	PAH 8310 HPLC	BETX	TCE	TOTAL Cyanide	EP TOX CADMIUM		
55560-B10a	7-8-92	10:30		X	2 Tube	2	KF	Soil	?												X	X	X		
561-B11a	7-8-92	9:30		X	1 Tube	1	KF	Soil	?												X	X	X		

43

COMMENTS:

X RETAIN SAMPLES

RELINQUISHED BY: NAME Ken L. Ferguson DATE/TIME 7/9/92 12:10 RECEIVED BY: NAME Lori Leombruni DATE/TIME 7/9/92 1210

RELINQUISHED BY: NAME _____ DATE/TIME _____ RECEIVED BY: NAME _____ DATE/TIME _____

RELINQUISHED BY: NAME _____ DATE/TIME _____ RECEIVED BY: NAME _____ DATE/TIME _____

R002674

TABLE I

Sampling Depths

Sample Depth	B-6	B-7	B-8	B-9	B-10	B-11
0-1	SC	SC	SC	SC	SC	SC
5-7	SC	SC	SC	NS	NS	NS
10-12	SC	SC	SC	NS	NS	NS
15-17	SC	SC	SC	NS	NS	NS
20-22	SC	SC	SC	SC	NS	NS

SC = Sample Collected
NS = No Sample

ATTACHMENT 7

Soil Volatile Sampling Procedures

Procedure:

A. PREPARATION AND DECONTAMINATION OF SOIL SAMPLER (i.e. STAINLESS STEEL, BRASS, BRONZE, COPPER, etc.). An example of these samplers would be a shelby tube, split-barrel sampler with metal tube inserts or California sampler. These are only examples there maybe more types available. Also, the sample tube must be at least six inches long.

*1. Wash tubing or sampler with hot water and a nonfoaming detergent.
2. Rinse with hot water.
*3. Rinse with a solvent, such as hexane or acetone.
4. Rinse with very hot water to drive off solvent.
5. Rinse with deionized distilled water.
6. Air Dry
7. Store the sampler in aluminum foil until ready for use.

*Consult the laboratory for specific recommendations.

B. SOIL SAMPLING FOR VOLATILE ORGANICS

1. Using a properly decontaminated sampler (refer to preparation and decontamination instructions), push or drive the sampler to obtain a representative soil sample.

2. DO NOT remove sample from sample tube in the field. The laboratory should remove the sample from the sampling tube.

3. Immediately add clay or other cohesive material (i.e. wetted bentonite) to the ends of the sample to eliminate head space, if necessary.

4. Cover both ends of the sampler with aluminum foil. If possible, cover the aluminum foil with a cap.

5. Put the sample in storage at 4 degrees centigrade immediately.

6. Transport the samples to the laboratory as soon as possible. Most laboratories require delivery within 24 hours of sampling.

NOTE:

Soil samples which will be tested for volatile organic constituents <u>cannot</u> be composited because of the volatilization which would result from any compositing method.

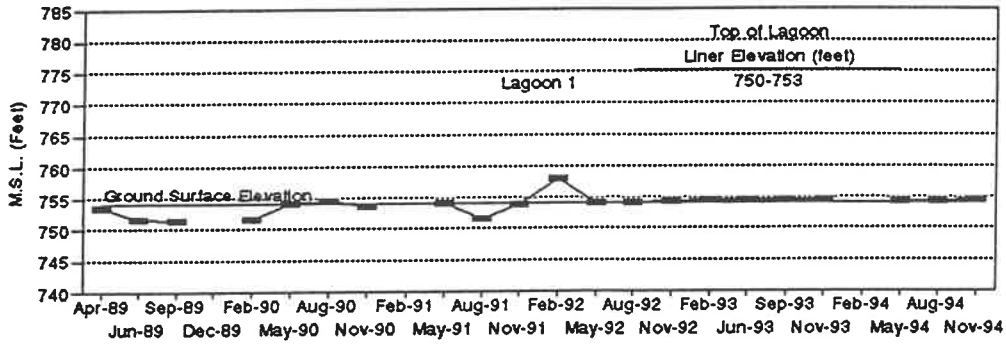
Appendix C

Lagoon Liners - Groundwater Elevation

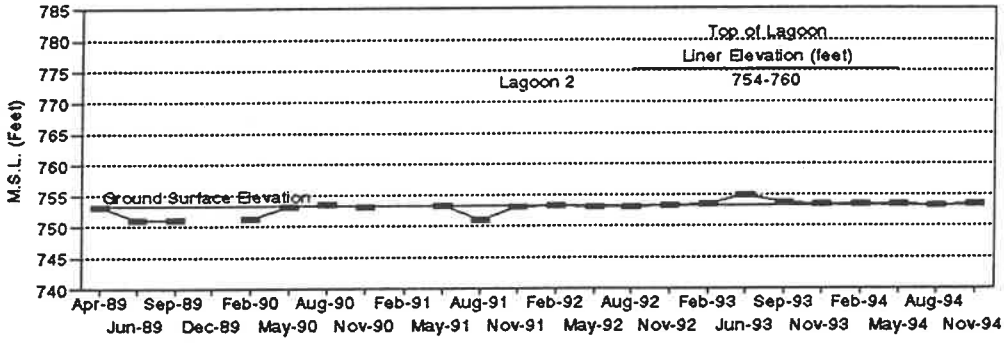
Comparison of Lagoon Base With Groundwater Elevation

Modern Plating Corporation

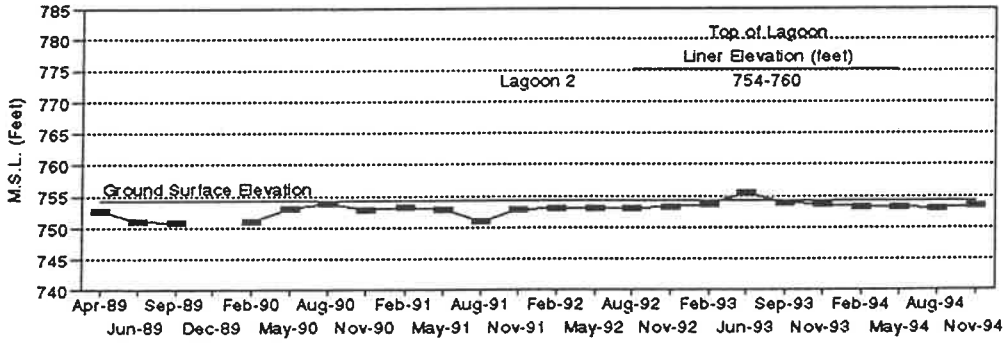
MW-6A



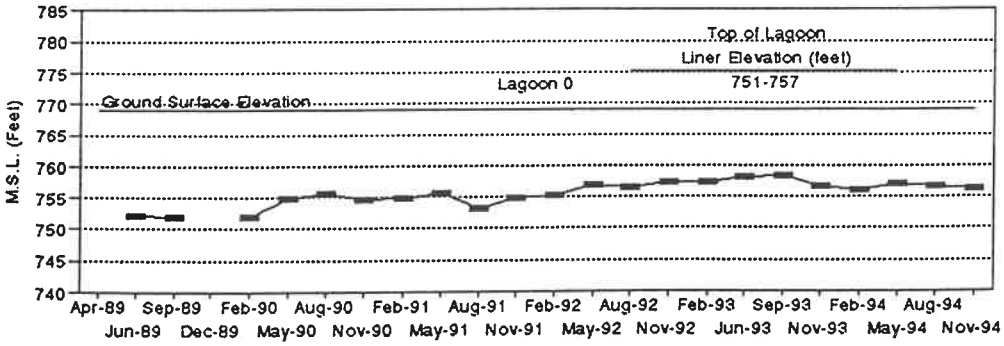
MW-7A



MW-8A

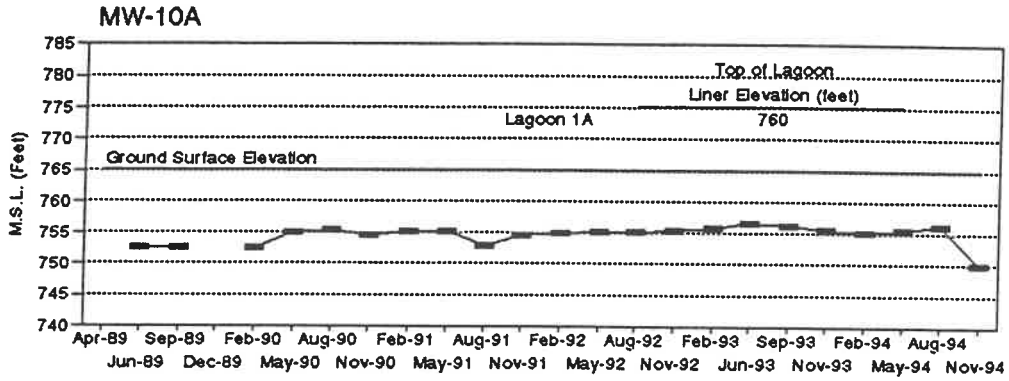


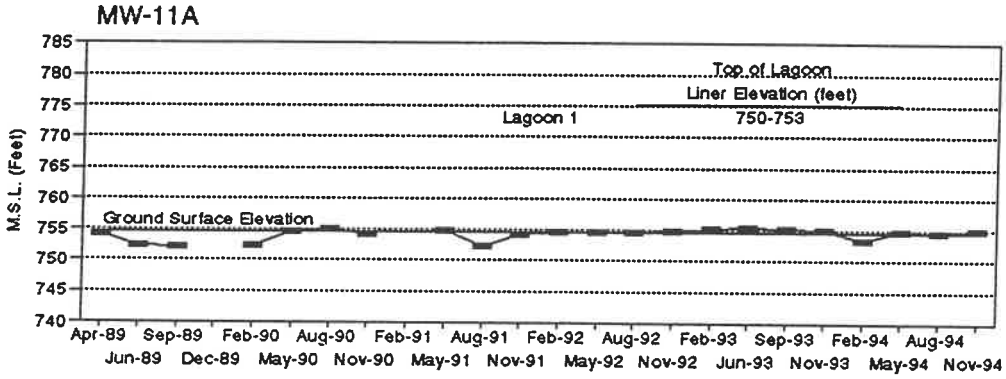
MW-9A

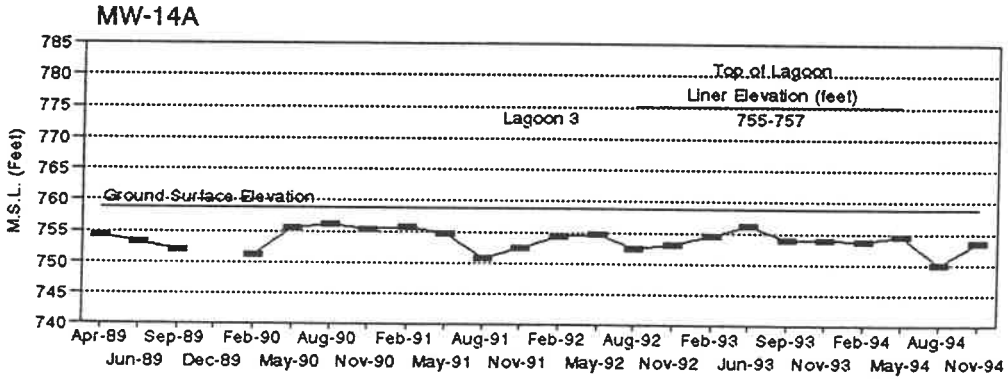


Comparison of Lagoon Base With Groundwater Elevation

Modern Plating Corporation







Appendix D

Historical Groundwater Quality Data

Groundwater Quality Data for Metals

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-5C	86/11	<	50		2		1300		130				34		230		220
MW-5C	87/03	<	50		1		1600		90				33		280		410
MW-5C	87/06	<	50		2		4800		200				70		610		320
MW-5C	87/08		41		2.8		2300		200				54		340		320
MW-5C	87/11		13		1.1		330						19		100		110
MW-5C	88/06				3.6		17000										320
MW-5C	90/05		12		2.2		6510		180				31		840		210
MW-5C	91/05		17		18		26000		710	<	5		19		6800		180
MW-5C	92/08	<	3	<	0.5		130	<	20	<	5	<	2		100	<	20
MW-5C	93/06	<	3		28		2500		110	<	5		20		490		70
MW-5C	94/05	<	3		6		2000		79		8.3		9.7		510		27
MW-5C	95/05	<	10		9.2		1900		59	<	5		8.9		190		27
MW-5C	96/02																
MW-5C	96/05	<	3		8.6		3200		71	<	5		10		280		35
MW-5C	96/08																
MW-5C	96/11																
MW-5C	97/02																
MW-5C	97/05		5.3		7.1		2500		95	<	5.4		16		170		51
MW-5D	86/11	<	50		16		26		210				33	<	140		400
MW-5D	87/03	<	50		3		160		140				27		120		200
MW-5D	87/06	<	50		3		29	<	80				1		100		96
MW-5D	87/08		30		2.9		500		160				40		350		410
MW-5D	87/11	<	5		1.5		10						5	<	100		60
MW-5D	88/06				3.2		140								160		250
MW-5D	89/04		7		1.4		630						9		250		93
MW-5D	89/09		6		1.6		2300		140				28		1300		740
MW-5D	89/12		3		2.8		1500		89				20		650		510
MW-5D	90/02		4		0.3		110		17				5		110		66
MW-5D	90/05		6		5		790		61				24		290		220
MW-5D	90/11									<	20						
MW-5D	91/05	<	3		3.6		490		52	<	5		16		160		180
MW-5D	92/08	<	3		2.5		25	<	20	<	5		2		240	<	20
MW-5D	93/06	<	3		4.7		480		40	<	5		3		210	<	20
MW-5D	94/05	<	3		2.4		1300		78	<	6		6.8		1100		21
MW-5D	95/05	<	10		6.4		8100		350	<	5		9.4		1800		47
MW-5D	96/02																
MW-5D	96/05	<	3	<	0.5		500	<	20	<	5	<	1.5		270	<	20
MW-5D	96/08																
MW-5D	96/11																
MW-5D	97/02																
MW-5D	97/05	<	3		4.1		36		66		5.5	<	1.5		4100		45
MW-6A	86/11	<	50		2		10	<	100				6		260		70
MW-6A	87/03	<	50		9		21	<	80				16		340		160
MW-6A	87/06	<	50		6		24	<	80				14		300		160
MW-6A	87/08		7		5.1		22	<	80				16		280		150
MW-6A	87/11		44		19		180						71		450		940
MW-6A	89/06		5		1	<	2						2		95	<	20
MW-6A	89/09		20		18		74		62				47		190		610
MW-6A	89/12		10		9.2		57		34				21		130		420
MW-6A	90/02		11		4		75		22				16		120		280
MW-6A	90/05		11		5		12		15				6.9		84		70
MW-6A	90/11		5.5		3.8		18			<	5		4.5		110		54
MW-6A	91/05	<	3		0.4	<	2	<	14		7	<	2		41		35
MW-6A	91/08		5		21		7	<	20	<	5		15		90		140
MW-6A	91/11	<	3		13	<	2	<	20	<	10	<	2		80		40

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-6A	92/05	<	3		7	<	2	<	20	<	5	<	2		70		30
MW-6A	92/08		3		0.8	<	2	<	20	<	5	<	2		70	<	20
MW-6A	92/11	<	3		3.1	<	2	<	20	<	5	<	2		90	<	20
MW-6A	93/02				3.1	<	2		20	<	5	<	2		80	<	20
MW-6A	93/06	<	3		46		9		70		19		15		130		120
MW-6A	93/09				4	<	2	<	20		16		2.4			<	20
MW-6A	93/11			<	0.5	<	2	<	20	<	6	<	2			<	20
MW-6A	94/05	<	3		1	<	2	<	50	<	6	<	3	<	100	<	20
MW-6A	94/08				2.7	<	2	<	50	<	6	<	1.5				130
MW-6A	94/11				1	<	2	<	20	<	6	<	1.5		130	<	20
MW-6A	95/05	<	10		0.85	<	10	<	20	<	5	<	1.5		110	<	20
MW-6A	95/08			<	0.5	<	2	<	20	<	5		1.7		92	<	20
MW-6A	95/11				1.5	<	2	<	20	<	5	<	1.5		90	<	20
MW-6A	96/05	<	3		0.84	<	2	<	20	<	5	<	1.5		51	<	20
MW-6A	96/08			<	0.5	<	2	<	20	<	5	<	1.5		90	<	20
MW-6A	96/11				0.76	<	2	<	20		5.2	<	1.5		66	<	20
MW-6A	97/05		4.8		0.69	<	2	<	20		8.4	<	1.5		61	<	20
MW-6B	86/11	<	50		18		70000		110				2		540		210
MW-6B	87/03	<	50		27		27000	<	80				12		410		220
MW-6B	87/06	<	50		10		11000	<	80				13		280		150
MW-6B	87/08	<	5		7.9		2000	<	80			<	5		210		60
MW-6B	87/11		20		13		13000						31		240		280
MW-6B	89/06		3		0.7		63						2		110		33
MW-6B	89/09		18		7.6		2500		16				10		150		350
MW-6B	89/12		82		13		17000		39				29		310		540
MW-6B	90/02		10		4.4		850	<	14				4		140		45
MW-6B	90/05		9		9		246	<	145				3.5		110		51
MW-6B	90/11		21		8.4		490			<	5		3.2		140		76
MW-6B	91/05	<	3		1.2		5	<	14	<	5	<	2		69		36
MW-6B	91/08	<	3		5.3		240	<	20		20		2		130		40
MW-6B	91/11	<	3		2.8		170	<	20	<	10	<	2		120		30
MW-6B	92/05	<	3		0.5	<	2	<	20	<	5	<	2		80	<	20
MW-6B	92/08	<	3		0.8		14	<	20		6	<	2		90	<	20
MW-6B	92/11	<	3		4.9		90	<	20	<	5	<	2		140		40
MW-6B	93/02				1.9		7	<	20		10		9		150	<	20
MW-6B	93/06	<	3		2		46	<	20	<	5		3.4		460		130
MW-6B	93/09				5.8		7	<	20		6		13				130
MW-6B	93/11			<	0.5		10	<	20	<	6	<	2				32
MW-6B	94/05	<	3		0.71	<	2	<	50	<	6	<	3		200	<	20
MW-6B	94/08			<	0.5		4	<	50	<	6	<	1.5			<	20
MW-6B	94/11				0.54		40	<	20	<	6	<	1.5		150	<	20
MW-6B	95/05		18		0.59		50		290	<	5		2.2		160		53
MW-6B	95/08			<	0.5		3.8	<	20	<	5	<	1.5		110		20
MW-6B	95/11				0.61		93	<	20	<	5	<	1.5		110	<	20
MW-6B	96/05		15		0.82		75	<	20	<	5	<	1.5		110	<	20
MW-6B	96/08			<	0.5		9.2	<	20	<	5	<	1.5		150		29
MW-6B	96/11				0.53		39	<	20	<	5	<	1.5		96	<	20
MW-6B	97/05	<	3		0.82		6	<	20	<	5.4	<	1.5		130		31
MW-6C	86/11	<	50	<	1		11	<	100				53	<	140		560
MW-6C	87/03	<	50		10		30		120				140	<	100		120
MW-6C	87/06	<	50		12		22	<	80				41	<	100		62
MW-6C	87/08		16		2.2		26	<	80				35	<	100	<	50
MW-6C	87/11		47		2.1		30						116		100		180
MW-6C	91/05		12		1.7		870		69	<	5		50		170		190
MW-6C	91/08	<	3	<	0.5		30	<	20	<	5	<	2	<	25	<	20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-6C	91/11	< 3	< 0.5	< 2	< 20	< 10	< 2	< 20	< 20
MW-6C	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-6C	92/08	< 3	< 0.5	2	< 20	< 5	< 2	< 20	< 20
MW-6C	92/11	< 3	2	< 2	< 20	< 5	< 2	1200	140
MW-6C	93/02		0.9	5	< 20	< 5	< 2	< 20	
MW-6C	93/06	3.7	6	140	110	< 5	75	370	130
MW-6C	93/09		1.1	< 2	< 20	<	2		
MW-6C	93/11		< 0.5	< 2	< 20	<	2		
MW-6C	94/05	< 3	0.51	2.3	< 50	< 6	< 3	< 100	< 20
MW-6C	94/08		< 0.5	3.4	< 50	<	1.5		
MW-6C	94/11		< 0.5	< 2	< 20	<	1.5	< 40	
MW-6C	95/05	< 10	< 0.5	< 10	< 20	< 5	13	< 40	< 20
MW-6C	95/08		< 0.5	< 2	< 20	<	1.5	< 40	
MW-6C	95/11		0.62	190	< 20		13	47	
MW-6C	96/05	< 3	< 0.5	5.7	< 20	< 5	< 1.5	< 40	< 20
MW-6C	96/08		2.3	4.3	< 20	<	1.5	< 40	
MW-6C	96/11		< 0.5	3	< 20	<	1.5	< 40	
MW-6C	97/05	< 3	< 0.5	2.1	< 20	< 5.4	< 1.5	< 40	< 20
MW-7A	86/11	< 50	35	160	150		46	380	510
MW-7A	87/03	< 50	10	27	< 80		29	400	230
MW-7A	87/06	< 50	13	49	80		30	340	240
MW-7A	87/08	27	6.1	26	80		39	420	300
MW-7A	87/11	16	440	1000			340	1100	5800
MW-7A	89/06	4	1.4	4			3	160	21
MW-7A	89/09	4	1.7	6	< 14		9	110	200
MW-7A	89/12	12	11	68	33		28	180	490
MW-7A	90/02	14	11	70	37		38	180	450
MW-7A	90/05	19	22	84	24		27	160	180
MW-7A	90/11	11	20	120		8	36	210	360
MW-7A	91/05	< 3	6.6	17	< 14	9	9.4	150	83
MW-7A	91/08	< 3	4.5	6	< 20	< 5	20	260	100
MW-7A	91/11	< 3	1.6	< 2	< 20	12	< 2	170	< 20
MW-7A	92/02	< 3	1.5	< 2	< 20	8	< 2	140	< 20
MW-7A	92/05	< 3	6.2	< 2	< 20	< 5	< 2	170	< 20
MW-7A	92/08	< 3	14	13	< 20	9	18	180	80
MW-7A	92/11	4	12	3	< 20	< 5	7	230	120
MW-7A	93/02		6.8	4	20	< 5	7	230	40
MW-7A	93/06	< 3	2.9	3.6	< 20	6	3	250	30
MW-7A	93/09		3.9	2.3	< 20	< 5	3.1		22
MW-7A	93/11		1.6	< 2	< 20	18	< 2	<	20
MW-7A	94/02		< 0.5	4.2	< 50	11	< 3	<	20
MW-7A	94/05	< 3	< 0.5	< 2	< 50	11	< 3	< 100	< 20
MW-7A	94/08		< 0.5	< 2	< 50	7.3	< 1.5	<	20
MW-7A	94/11		< 0.5	< 2	< 20	< 6	< 1.5	120	< 20
MW-7A	95/02		< 0.5	< 2	< 25	6.3	< 1.5	150	< 20
MW-7A	95/05	< 10	< 0.5	< 10	< 20	8.7	2.6	85	26
MW-7A	95/08		< 0.5	< 2	< 20	7.1	< 1.5	90	< 20
MW-7A	95/11		< 0.5	2.1	< 20	< 5	< 1.5	97	< 20
MW-7A	96/02		< 0.5	< 2	< 20	5.9	< 1.5	92	< 20
MW-7A	96/05	< 3	< 0.5	< 2	< 20	10	< 1.5	72	< 20
MW-7A	96/08		< 0.5	< 2	< 20	< 5	< 1.5	130	< 20
MW-7A	96/11		< 0.5	< 2	< 20	< 5	< 1.5	80	< 20
MW-7A	97/02		< 0.5	< 2	< 20	< 5.4	< 1.5	96	< 20
MW-7A	97/05	< 3	< 0.5	< 2	< 20	7.5	< 1.5	69	< 20
MW-7B	86/11	< 50	14	30	160		32	890	560

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-7B	87/03	<	50		3		11	<	80				12		850		430
MW-7B	87/06	<	50		30		43	<	80				14		710		460
MW-7B	87/08	<	5		3		16	<	80				6		720		330
MW-7B	87/11		40		130		310						315		2200		8300
MW-7B	89/06		5	<	0.3	<	2					<	2		290		220000
MW-7B	89/09		6		5.6		10	<	14				6		710		2300
MW-7B	89/12		44		84		260		380				160		4900		29000
MW-7B	90/02		6		12		130		24				13		730		1300
MW-7B	90/05		15		17		32		110				43		790		2800
MW-7B	90/11		13		15		110				14		64		1200		3200
MW-7B	91/05	<	3		11		16		34		17		12		680		920
MW-7B	91/08	<	3		5.2		12		20	<	5		7		750		1200
MW-7B	91/11	<	3		0.6	<	2	<	20	<	10		2		630		310
MW-7B	92/05	<	3		0.5	<	2	<	20	<	5	<	2		850		300
MW-7B	92/08	<	3	<	0.5	<	2	<	20		9	<	2		830		260
MW-7B	92/11		6		9	<	2	<	20	<	5	<	2		720		310
MW-7B	93/02				7.2		7		30	<	5		8		1200		760
MW-7B	93/06		4.2		78		4		30		7		7.5		630		510
MW-7B	93/09				7.4		2.9		160	<	5		5.7				610
MW-7B	93/11			<	0.5	<	2	<	20	<	6	<	2				81
MW-7B	94/02			<	0.5	<	2	<	50	<	6	<	3				110
MW-7B	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3		270		82
MW-7B	94/08			<	0.5	<	2	<	50	<	6	<	1.5				94
MW-7B	94/11			<	0.5	<	2	<	20	<	6	<	1.5		480		120
MW-7B	95/02			<	0.5	<	2	<	25	<	6	<	1.5		520		160
MW-7B	95/05	<	10		0.59	<	10	<	20	<	5		2.8		480		160
MW-7B	95/08			<	0.5	<	2	<	20	<	5	<	1.5		360		110
MW-7B	95/11			<	0.5	<	2	<	20	<	5	<	1.5		390		100
MW-7B	96/02			<	0.5	<	2	<	20	<	5	<	1.5		420		110
MW-7B	96/05	<	3	<	0.5	<	2	<	20		13	<	1.5		270		92
MW-7B	96/08			<	0.5	<	2	<	20	<	5	<	1.5		280		72
MW-7B	96/11			<	0.5	<	2	<	20	<	5	<	1.5		360		79
MW-7B	97/02			<	0.5	<	2	<	20	<	5.4	<	1.5		350		94
MW-7B	97/05	<	3	<	0.5	<	2	<	20		6.1	<	1.5		270		96
MW-7C	86/11	<	50		8		42	<	100				10	<	140		150
MW-7C	87/03	<	50		6		31	<	80			<	5	<	100		70
MW-7C	87/06	<	50		10		46	<	80			<	5	<	100		71
MW-7C	87/08	<	5		4.8		18	<	80			<	5	<	100		70
MW-7C	87/11		11		33		380						53		240		420
MW-7C	90/05		5		16		37	<	14				5		28		100
MW-7C	91/05		9		6.2		130		180	<	5		98		93		350
MW-7C	91/08	<	3	<	0.5		4		20	<	5	<	2		40	<	20
MW-7C	91/11	<	3		1.6		7	<	20	<	5		3	<	20	<	20
MW-7C	92/05	<	3	<	0.5		2	<	20	<	5	<	2	<	20	<	20
MW-7C	92/08	<	3	<	0.5		3	<	20	<	5	<	2	<	20	<	20
MW-7C	92/11	<	3		4.1		6	<	20	<	5	<	2	<	40		40
MW-7C	93/02				1.4		74		20		15		7		50		
MW-7C	93/06	<	3		1.6		67	<	20	<	5	<	2	<	50	<	20
MW-7C	93/09				1.3		26	<	20			<	2				
MW-7C	94/05	<	3	<	0.5		9.9	<	50	<	6	<	3	<	100	<	20
MW-7C	94/08			<	0.5		5.4	<	50			<	1.5				
MW-7C	94/11			<	0.5		5.7	<	20			<	1.5	<	40		
MW-7C	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-7C	95/08			<	0.5		3.4	<	20			<	1.5	<	40		
MW-7C	95/11			<	0.5		73	<	20				2	<	40		

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-7C	96/02		1.4	580	38		13	340	
MW-7C	96/05	< 3	< 0.5	140	< 20	< 5	2.6	320	< 20
MW-7C	96/08		< 0.5	100	< 20	<	1.5	240	
MW-7C	96/11		1.6	160	< 20		8.4	650	
MW-7C	97/02		1.5	270	24		5.1	770	
MW-7C	97/05	< 3	< 0.5	200	< 20	< 5.4	2.1	540	< 20
MW-7D	86/11	< 50	5	26	< 100		50	< 140	160
MW-7D	87/03	< 50	10	15	< 80	<	5	< 100	60
MW-7D	87/06	< 50	12	20	< 80	<	5	< 100	44
MW-7D	87/08	< 5	3.2	10	< 80	<	5	< 100	< 50
MW-7D	87/11	5	50	410			38	260	460
MW-7D	89/09	5	4	20	100		50	43	460
MW-7D	89/12	5	12	190	270		77	120	600
MW-7D	90/02	< 3	2.8	120	45		26	53	240
MW-7D	90/05	< 3	7	17	< 14		5.3	< 23	30
MW-7D	90/11					< 20			
MW-7D	91/05	< 3	2.3	90	< 14	< 5	6	68	64
MW-7D	91/08	< 3	0.9	11	< 20	< 5	3	90	30
MW-7D	91/11	< 3	3	4	< 20	< 5	< 2	< 20	20
MW-7D	92/02	< 3	7.2	49	30	< 5	4	90	60
MW-7D	92/05	< 3	6	< 2	< 20	< 5	< 2	< 20	20
MW-7D	92/08	< 3	2.5	49	< 20	< 5	< 2	30	< 20
MW-7D	92/11	< 3	0.7	7	< 20	< 5	< 2	< 40	< 20
MW-7D	93/02		2	9	30	< 5	3	< 20	
MW-7D	93/06	< 3	0.56	14	< 20	< 5	< 2	< 50	< 20
MW-7D	93/09		< 0.5	8.6	< 20	<	2		
MW-7D	94/05	< 3	< 0.5	7.4	< 50	< 6	< 3	< 100	< 20
MW-7D	94/08		< 0.5	9.4	< 50	<	1.5		
MW-7D	94/11		< 0.5	11	< 20	<	1.5	< 40	
MW-7D	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-7D	95/08		< 0.5	110	< 20		5.1	110	
MW-7D	95/11		< 0.5	51	< 20	<	1.5	270	
MW-7D	96/02		< 0.5	19	< 20		2	< 40	
MW-7D	96/05	< 3	< 0.5	7.1	< 20	< 5	< 1.5	< 40	< 20
MW-7D	96/08		< 0.5	6.1	< 20	<	1.5	< 40	
MW-7D	96/11		< 0.5	6.3	< 20	<	1.5	< 40	
MW-7D	97/02		< 0.5	8.2	< 20		1.5	< 40	
MW-7D	97/05	< 3	< 0.5	6.6	< 20	< 5.4	< 1.5	< 40	< 20
MW-8A	86/11	< 50	40	38	< 100		53	190	360
MW-8A	87/03	< 50	17	23	< 80		14	< 100	360
MW-8A	87/06	< 50	18	130	< 80		5	< 100	310
MW-8A	87/08	29	47	150	< 80		30	210	1200
MW-8A	87/11	22	35	70			34	100	840
MW-8A	89/06	10	23	5			3	85	130
MW-8A	89/09	80	72	500	19		26	160	1300
MW-8A	89/12	54	38	240	< 14		9	120	720
MW-8A	90/02	40	44	290	14		11	150	760
MW-8A	90/05	34	28	256	< 14		8.8	110	460
MW-8A	90/11	57	20	670		280	7.9	120	250
MW-8A	91/05	< 3	3.2	140	< 14	150	< 2	53	33
MW-8A	91/08	< 3	13	1030	< 20	63	3	100	90
MW-8A	91/11	< 3	3.1	93	< 20	290	< 2	30	< 20
MW-8A	92/02	5	7.3	190	< 20	170	< 2	30	30
MW-8A	92/05	< 3	4.1	34	< 20	< 5	< 2	30	< 20
MW-8A	92/08	15	9.3	410	< 20	180	< 2	30	90

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-8A	92/11		4		1.4		160	<	20		91	<	2	<	40	<	20
MW-8A	93/02				2.4		570	<	20		250	<	2		50	<	20
MW-8A	93/06		19		5		2200	<	20		290		5.4	<	50		40
MW-8A	93/09				120		4500	<	20		380		5.7				78
MW-8A	93/11				2.3		290	<	20		140	<	2			<	20
MW-8A	94/02				0.74		110	<	50		56	<	3			<	20
MW-8A	94/05	<	3		1		28	<	50		100	<	3	<	100	<	20
MW-8A	94/08				1.1		230	<	50		140	<	1.5			<	20
MW-8A	94/11				0.63		70	<	20		11	<	1.5	<	40	<	20
MW-8A	95/02				1.4		260	<	25		170	<	1.5	<	40		38
MW-8A	95/05	<	10		1.1		170	<	20		110	<	1.5	<	40		35
MW-8A	95/08				0.54		73	<	20		50		2.3	<	40	<	20
MW-8A	95/11				0.8		100	<	20		72	<	1.5	<	40	<	20
MW-8A	96/02				1.9		110	<	20		69	<	1.5	<	40	<	20
MW-8A	96/05	<	3		1.7		98	<	20		63	<	1.5	<	40	<	20
MW-8A	96/08				0.77		350	<	20		19	<	1.5		49	<	20
MW-8A	96/11				0.88		89	<	20		48	<	1.5	<	40	<	20
MW-8A	97/02				1.7		130	<	20		45	<	1.5	<	40	<	20
MW-8A	97/05	<	3		2		490	<	20		55	<	1.5	<	40		26
MW-8B	86/11	<	50		18		230	<	100				22	<	140		150
MW-8B	87/03	<	50		11		1200	<	80				21		210		180
MW-8B	87/06	<	50		12		320	<	80			<	5		100		40
MW-8B	87/08		10		13		520	<	80				21		120		130
MW-8B	87/11		8		13		440						14	<	100		130
MW-8B	89/06		18		28		790						41		150		530
MW-8B	89/09		6		13		1000		15				14		53		370
MW-8B	89/12		12		29		1100		36				33		120		610
MW-8B	90/02		10		41		1300		51		-		42		140		540
MW-8B	90/11		5.1		19		1000				200		18		94		300
MW-8B	96/02																
MW-8B	96/05																
MW-8B	96/08																
MW-8B	96/11																
MW-8B	97/02																
MW-8C	86/11	<	50		3		14	<	100				19		140		120
MW-8C	87/03	<	50		5		24	<	80				23	<	100		150
MW-8C	87/06	<	50		7		16	<	80			<	5	<	100		66
MW-8C	87/08		9		5.5		19	<	80				6	<	100		90
MW-8C	87/11		50		90		460					<	5		1200		4100
MW-8C	88/06													<	30		
MW-8C	90/05		8		4.8		94	<	14				7.1		44		72
MW-8C	91/05	<	3		2.4	<	2	<	14	<	5		6	<	23		22
MW-8C	91/08	<	3		0.5	<	2	<	20	<	5	<	2		30		40
MW-8C	91/11	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-8C	92/02	<	3	<	0.5		3	<	20		5	<	2	<	20	<	20
MW-8C	92/05	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-8C	92/08	<	3	<	0.5		3	<	20	<	5	<	2	<	20	<	20
MW-8C	92/11	<	3		8.6		7	<	20	<	5	<	2		270		90
MW-8C	93/02				4		85		140	<	5		9		50		
MW-8C	93/06	<	3		4.9		56	<	20	<	5		2.2	<	50		20
MW-8C	93/09				46		58		28				3.2				
MW-8C	93/11			<	0.5		3.1	<	20			<	2				
MW-8C	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-8C	94/08			<	0.5		6.6	<	50			<	1.5				
MW-8C	94/11			<	0.5		6	<	20			<	1.5	<	40		

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-8C	95/02		< 0.5	6.1	< 25	<	1.5	< 40	
MW-8C	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-8C	95/08		< 0.5	3.6	< 20	<	1.5	< 40	
MW-8C	95/11		< 0.5	7.2	< 20	<	1.5	< 40	
MW-8C	96/02		< 0.5	5.3	< 20	<	1.5	< 40	
MW-8C	96/05	< 3	< 0.5	5.8	< 20	< 5	< 1.5	< 40	< 20
MW-8C	96/08		< 0.5	5.4	< 20	<	1.5	< 40	
MW-8C	96/11		< 0.5	4.4	< 20	<	1.5	< 40	
MW-8C	97/02		< 0.5	5.2	< 20	<	1.5	< 40	
MW-8C	97/05	< 3	< 0.5	5.1	< 20	< 5.4	< 1.5	< 40	< 20
MW-9A	89/04	230	230	1600			6000	900	
MW-9A	89/06	12	58	140			27	350	1300
MW-9A	91/05	190	2100	9500	1500	2600	45	2000	6500
MW-9A	92/08	40	1000	3800	980	55	8	980	5500
MW-9A	93/06	10	99	140	240	11	< 2	1400	2400
MW-9A	94/05	39	10000	1700	1600	230	21	4500	25000
MW-9A	95/05	< 10	3700	530	550	< 5	8	1200	12000
MW-9A	96/02								
MW-9A	96/05	< 3	1100	62	53	32	< 1.5	300	2400
MW-9A	96/08								
MW-9A	96/11								
MW-9A	97/02								
MW-9A	97/05	5.8	790	56	67	17	< 1.5	240	1500
MW-10A	89/04	80	72	620			380	560	
MW-10A	89/06	16	7	92			47	110	570
MW-10A	91/05	< 3	0.8	18	< 14	5.7	< 2	24	< 20
MW-10A	92/08	7	6.9	140	70	5	38	100	250
MW-10A	93/06	< 3	3.7	250	20	< 5	4	110	40
MW-10A	94/05	4.5	22	660	150	6	69	280	470
MW-10A	95/05	< 10	19	330	72	< 5	30	170	160
MW-10A	96/02								
MW-10A	96/05	< 3	0.98	3	< 20	7.4	< 1.5	< 40	< 20
MW-10A	96/08								
MW-10A	96/11								
MW-10A	97/02								
MW-10A	97/05	< 3	< 3.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-11A	87/11	2	60	100			40	250	350
MW-11A	88/06		5.6	12				33	50
MW-11A	89/04	5	7.5	18			6	38	260
MW-11A	90/05	4	14	13	< 14		9.1	36	79
MW-11A	90/11	7.9	88	130		23	38	190	400
MW-11A	91/05	< 3	12	27	24	< 5	12	32	110
MW-11A	91/08	< 3	38	8	< 20	< 5	3	30	100
MW-11A	91/11	< 3	5.4	< 2	< 20	< 10	< 2	30	< 20
MW-11A	92/02	< 3	1.9	< 2	< 20	5	< 2	< 20	< 20
MW-11A	92/05	< 3	10	< 2	< 20	< 5	< 2	< 20	< 20
MW-11A	92/08	< 3	1.6	< 2	< 20	< 5	< 2	< 20	< 20
MW-11A	92/11	< 3	1.1	< 2	< 20	< 5	< 2	< 40	< 20
MW-11A	93/02		9.8	3	20	< 5	9	60	40
MW-11A	93/06	< 3	3.4	14	< 20	< 5	< 2	< 50	30
MW-11A	93/09		1.8	< 2	< 20	< 5	2.7		44
MW-11A	93/11		< 0.5	< 2	< 20	< 6	< 2		< 20
MW-11A	94/02		< 0.5	< 2	< 50	< 6	< 3		< 20
MW-11A	94/05	< 3	0.68	< 2	< 50	< 6	< 3	< 100	< 20
MW-11A	94/08		0.86	< 2	< 50	< 6	< 1.5		< 20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-11A	94/11		1.5	20	20	6	4.9	40	20
MW-11A	95/02		1.7	16	25	6	1.5	40	21
MW-11A	95/05	< 10	1.7	12	20	5	1.5	40	20
MW-11A	95/08		1.2	380	20	5	1.5	40	20
MW-11A	95/11		< 0.5	4.1	20	5	1.5	40	20
MW-11A	96/05	< 3	1.3	2	20	5	1.5	40	20
MW-11A	96/08		< 0.5	2	20	5	1.5	40	20
MW-11A	96/11		1.1	2.9	23	5	2.3	40	48
MW-11A	97/02		< 0.5	2	20	5.4	1.5	40	20
MW-11A	97/05	< 3	0.9	2.2	20	5.4	1.5	40	21
MW-11B	87/11	5	15	10			11	100	70
MW-11B	88/06		2.5	5				30	17
MW-11B	89/04	< 3	0.7	5			< 2	30	16
MW-11B	90/05	< 3	2.8	2	14		2.4	36	23
MW-11B	90/11	< 3	19	27		5	3.5	27	42
MW-11B	91/05	< 3	< 0.3	2	14	5	2	23	20
MW-11B	91/08	< 3	18	8	20	5	2	25	70
MW-11B	91/11	< 3	3.8	2	20	10	2	20	20
MW-11B	92/02	< 3	7.3	2	20	5	2	20	20
MW-11B	92/05	< 3	10	2	20	5	2	20	20
MW-11B	92/08	< 3	4.9	2	20	5	2	20	20
MW-11B	92/11	< 3	5.7	2	20	5	2	20	20
MW-11B	93/02		6.9	2	20	5	2	40	20
MW-11B	93/06	< 3	2.4	13	20	5	2	20	20
MW-11B	93/09		10	12	20	5	2	50	20
MW-11B	93/11		1.4	2	20	6	2.2		460
MW-11B	96/02						2		20
MW-11B	96/05								
MW-11B	96/08								
MW-11B	96/11								
MW-11B	97/02								
MW-11C	87/11	5	11	140			162	120	830
MW-11C	88/06		2.8	35				30	95
MW-11C	90/05	5	6	2	14		2.7	23	27
MW-11C	90/11	3.7	< 0.3	2		10	2.3	23	20
MW-11C	91/05	< 3	< 0.3	2	14	5	2	23	20
MW-11C	91/08	3	< 0.5	2	20	5	2	25	20
MW-11C	91/11	5	5.5	2	20	10	2	20	40
MW-11C	92/02	3	< 0.5	2	20	13	2	20	20
MW-11C	92/05	< 3	1.7	2	20	5	2	20	20
MW-11C	92/08	4	< 0.5	2	20	5	2	20	20
MW-11C	92/11	< 3	3.9	2	20	5	2	40	50
MW-11C	93/02		7.5	2	20	5	4	20	
MW-11C	93/06	5.1	< 0.5	2	20	5	2	50	20
MW-11C	93/09		5.8	2	20		2		
MW-11C	93/11		0.51	2	20		2		
MW-11C	94/05	4.8	< 0.5	2	50	6	3	100	20
MW-11C	94/08		< 0.5	2	50		1.5		
MW-11C	94/11		< 0.5	2	20		1.5	40	
MW-11C	95/05	< 10	0.65	10	27	5	15	40	28
MW-11C	95/08		< 0.5	2.5	20		1.5	40	
MW-11C	95/11		< 0.5	2	20		1.5	40	
MW-11C	96/05	4.4	< 0.5	2	20	5.8	1.5	40	20
MW-11C	96/08		< 0.5	5.2	20		1.5	40	
MW-11C	96/11		< 0.5	2	20		1.5	40	

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-11C	97/02			<	0.5	<	2	<	20			<	1.5	<	40		
MW-11C	97/05		4.5	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-11E	87/11		28		2.6		5.5						38	<	100		230
MW-11E	88/06				26		760								850		6000
MW-11E	89/09		21		6.4		11		54				34		40		480
MW-11E	89/12		17		1.1		37		72				33		39		500
MW-11E	90/02		16		7.2		8		24				25	<	23		130
MW-11E	90/05		17		3.3		4	<	14				6.4	<	23		34
MW-11E	90/11		15		0.3		4			<	5		3.9	<	23		24
MW-11E	91/05		10		0.8	<	2		15	<	5	<	2	<	23		27
MW-11E	91/08		18	<	0.5	<	2	<	20	<	5		2	<	25	<	20
MW-11E	91/11		14	<	0.5	<	2	<	20	<	10	<	2	<	20	<	20
MW-11E	92/02		17	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-11E	92/05	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-11E	92/08		13	<	0.5	<	2	<	20	<	5	<	2	<	20		110
MW-11E	92/11		13		1.6	<	2	<	20		11	<	2	<	40		20
MW-11E	93/02				8.5	<	2	<	20	<	5		10	<	20		
MW-11E	93/06		14	<	0.5		3.1	<	20	<	5		2	<	50	<	20
MW-11E	93/09				0.94	<	2	<	20			<	2				
MW-11E	93/11			<	0.5	<	2	<	20				4.1				
MW-11E	94/02			<	0.5	<	2	<	50			<	3				
MW-11E	94/05		15	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-11E	94/08			<	0.5	<	2	<	50			<	1.5				
MW-11E	94/11			<	0.5	<	2	<	20			<	1.5	<	40		
MW-11E	95/02			<	0.5	<	2	<	25			<	1.5	<	40		
MW-11E	95/05		14	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-11E	95/08			<	0.5	<	2	<	20			<	1.5	<	40		
MW-11E	95/11			<	0.5	<	2	<	20				1.7	<	40		
MW-11E	96/02				1.5	<	2	<	20			<	1.5	<	40		
MW-11E	96/05		16	<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-11E	96/08			<	0.5	<	2	<	20			<	1.5	<	40		
MW-11E	96/11			<	0.5	<	2	<	20			<	1.5	<	40		
MW-11E	97/02			<	0.5		2.4	<	20				3	<	40		
MW-11E	97/05		15	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-12A	87/11		8		7.8		1.1						13		140		140
MW-12A	88/06				4.8		16								160		190
MW-12A	89/04	<	3		0.9		4					<	2		97		52
MW-12A	90/05		6		5.4		6		27				13		87		99
MW-12A	90/11		5.4		21		16				7.8		16		110		210
MW-12A	91/05	<	3		0.7	<	2	<	14		5.8	<	2		34	<	20
MW-12A	91/08	<	3		3.4	<	2		30	<	5	<	2		90		20
MW-12A	91/11	<	3		0.5	<	2	<	20	<	10	<	2		30	<	20
MW-12A	92/05	<	3		6.3	<	2	<	20	<	5	<	2	<	20	<	20
MW-12A	92/08	<	3		1.3	<	2	<	20		6	<	2	<	20	<	20
MW-12A	92/11	<	3		1.9	<	2	<	20	<	5	<	2	<	40		30
MW-12A	93/02				2.4	<	2	<	20	<	5	<	2		40	<	20
MW-12A	93/06	<	3		9		2.8	<	20	<	5	<	2	<	50		30
MW-12A	93/09				2.1	<	2	<	20	<	5		5.2				87
MW-12A	93/11			<	0.5	<	2	<	20	<	6	<	2			<	20
MW-12A	94/02			<	0.5	<	2	<	50	<	6	<	3			<	20
MW-12A	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-12A	94/08			<	0.5	<	2	<	50	<	6	<	1.5			<	20
MW-12A	94/11			<	0.5		16	<	20	<	6	<	1.5		72	<	20
MW-12A	95/02			<	0.5	<	2	<	25		7.1	<	1.5		70	<	20
MW-12A	95/05	<	10	<	0.5	<	10	<	20		6.7	<	1.5		50	<	20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-12A	95/08		< 0.5	< 2	< 20	11 <	1.5	63 <	20
MW-12A	95/11		< 0.5	< 2	< 20	8.3 <	1.5	58 <	20
MW-12A	96/02		< 0.5	< 2	< 20	5.9 <	1.5 <	40 <	20
MW-12A	96/05	< 3	< 0.5	< 2	< 20	6.6 <	1.5 <	40 <	20
MW-12A	96/08		< 0.5	< 2	< 20	< 5 <	1.5	57 <	20
MW-12A	96/11		< 0.5	< 2	< 20	< 5 <	1.5 <	40 <	20
MW-12A	97/02		< 0.5	< 2	< 20	7.7 <	1.5	52 <	20
MW-12A	97/05	< 3	< 0.5	< 2	< 20	5.6 <	1.5 <	40 <	20
MW-12B	84/08		< 0.5	< 2	< 50	< 6 <	1.5	<	20
MW-12B	87/11	< 5	2.5	< 5			11	120 <	50
MW-12B	88/06		2.3	4				84	17
MW-12B	89/04	5	0.6	2			< 2	59 <	20
MW-12B	90/05	11	3	7	< 14		3.6	39	29
MW-12B	90/11	< 3	8	< 2		< 5 <	2	37	20
MW-12B	91/05	< 3	0.8	< 2	< 14	< 5 <	2 <	23 <	20
MW-12B	91/08	4	1.8	4	30	< 5	5	40	30
MW-12B	91/11	< 3	< 0.5	< 2	< 20	< 10 <	2	50	30
MW-12B	92/05	< 3	0.5	< 2	< 20	< 5 <	2	40 <	20
MW-12B	92/08	< 3	3.2	6	20	< 5	13 <	20	50
MW-12B	92/11	< 3	0.6	< 2	< 20	< 5 <	2 <	40 <	20
MW-12B	93/02		3.8	< 2	< 20	< 5 <	2	60 <	20
MW-12B	93/06	3.1	10	12	< 20	< 5 <	2 <	50	20
MW-12B	93/09		4.8	3.9	< 20	< 5	2.3		30
MW-12B	93/11		< 0.5	< 2	< 20	< 6 <	2	<	20
MW-12B	94/02		< 0.5	14	< 50	< 6 <	3	<	20
MW-12B	94/05	5.5	< 0.5	< 2	< 50	< 6 <	3 <	100 <	20
MW-12B	94/11		< 0.5	< 2	< 20	< 6 <	1.5	49 <	20
MW-12B	95/02		< 0.5	< 2	< 25	< 6 <	1.5	74 <	20
MW-12B	95/05	< 10	< 0.5	< 10	< 20	< 5 <	1.5 <	40 <	20
MW-12B	95/08		< 0.5	< 2	< 20	< 5 <	1.5 <	40	25
MW-12B	95/11		< 0.5	< 2	< 20	< 5 <	1.5 <	40 <	20
MW-12B	96/02		< 0.5	< 2	< 20	< 5 <	1.5 <	40 <	20
MW-12B	96/05	< 3	< 0.5	< 2	< 20	6.1 <	1.5 <	40 <	20
MW-12B	96/08		< 0.5	< 2	< 20	< 5 <	1.5 <	40 <	20
MW-12B	96/11		< 0.5	< 2	< 20	< 5 <	1.5 <	40 <	20
MW-12B	97/02		< 0.5	< 2	< 20	< 5.4 <	1.5	48 <	20
MW-12B	97/05	4.4	< 0.5	< 2	< 20	< 5.4 <	1.5 <	40 <	20
MW-12C	87/11	24	1.4	16			88 <	100	250
MW-12C	88/06		0.7	63			<	30	180
MW-12C	90/05	4	1.5	2	< 14		2.8 <	23 <	20
MW-12C	90/11	< 3	< 0.3	< 2		< 5 <	2 <	23 <	20
MW-12C	91/05	< 3	0.7	< 2	< 14	< 5 <	2 <	23 <	20
MW-12C	91/08	< 3	< 0.5	< 2	< 20	< 5 <	2	30 <	20
MW-12C	91/11	3	1.6	7	< 20	< 10	58 <	20	80
MW-12C	92/05	< 3	< 0.5	< 2	< 20	< 5 <	2 <	20 <	20
MW-12C	92/08	< 3	< 0.5	< 2	< 20	< 5 <	2 <	20 <	20
MW-12C	92/11	< 3	< 0.5	< 2	< 20	< 5 <	2 <	40 <	20
MW-12C	93/02		6.6	2	< 20	< 5	37 <	20	
MW-12C	93/06	< 3	< 0.5	6.9	< 20	< 5 <	2 <	50 <	20
MW-12C	93/09		< 0.5	4.8	< 20	<	2		
MW-12C	94/05	< 3	< 0.5	3.7	< 50	< 6 <	3 <	100 <	20
MW-12C	94/08		< 0.5	2.8	< 50	<	1.5		
MW-12C	94/11		< 0.5	4.7	< 20	<	1.5 <	40	
MW-12C	95/05	< 10	< 0.5	< 10	< 20	< 5 <	1.5 <	40 <	20
MW-12C	95/08		< 0.5	3.1	< 20	<	1.5 <	40	

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-12C	95/11		< 0.5	17	< 20		3.9	< 40	
MW-12C	96/02		< 0.5	15	< 20		2.4	< 40	
MW-12C	96/05	< 3	< 0.5	5.1	< 20	< 5	< 1.5	< 40	< 20
MW-12C	96/08		< 0.5	8.7	< 20	<	1.5	< 40	
MW-12C	96/11		< 0.5	3.8	< 20	<	1.5	< 40	
MW-12C	97/05	< 3	< 0.5	3	< 20	< 5.4	< 1.5	< 40	< 20
MW-12E	87/11	11	4.5	17			12	< 100	110
MW-12E	88/06		0.1	4			<	30	76
MW-12E	90/05	6	1 <	2	< 14		2	< 23	27
MW-12E	90/11	5	< 0.3 <	2	<	5 <	2	< 23	32
MW-12E	91/05	8.1	< 0.3 <	2	< 14	< 5 <	2	< 23	24
MW-12E	91/08	11	< 0.5 <	2	< 20	< 5 <	2	30	20
MW-12E	91/11	9	< 0.5 <	2	< 20	< 10 <	2	< 20	20
MW-12E	92/05	< 3	< 0.5 <	2	< 20	< 5 <	2	< 20	< 20
MW-12E	92/08	7	< 0.5 <	2	< 20	< 5 <	2	< 20	< 20
MW-12E	92/11	6	< 0.5	2	< 20	< 5 <	2	< 40	< 20
MW-12E	93/02		7.5	4	< 20	< 5	7	< 20	
MW-12E	93/06	20	< 0.5	3	< 20	< 5 <	2	< 50	40
MW-12E	93/09		9.1	2.2	< 20	<	2		
MW-12E	94/05	< 3	< 0.5 <	2	< 50	< 6 <	3	< 100	21
MW-12E	94/08		< 0.5 <	2	< 50	<	1.5		
MW-12E	94/11		< 0.5 <	2	< 20	<	1.5	< 40	
MW-12E	95/05	< 10	< 0.5 <	10	< 20	< 5 <	1.5	< 40	38
MW-12E	95/08		< 0.5 <	2	< 20	<	1.5	< 40	
MW-12E	95/11		< 0.5 <	2	< 20	<	1.5	< 40	
MW-12E	96/05	11	< 0.5 <	2	< 20	< 5 <	1.5	< 40	24
MW-12E	96/08		< 0.5 <	2	< 20	<	1.5	< 40	
MW-12E	96/11		< 0.5 <	2	< 20	<	1.5	< 40	
MW-12E	97/05	10	< 0.5 <	2	< 20	< 5.4 <	1.5	< 40	42
MW-13A	87/11	18	9	22			17	< 100	210
MW-13A	88/06		1	6				54	82
MW-13A	89/04	6	< 1.5	5			2	48	45
MW-13A	90/05	150	4.8	5	31		8.7	61	240
MW-13A	90/11	60	16	13		30	12	89	270
MW-13A	91/05	< 3	< 0.3 <	2	< 14	14 <	2	87	< 20
MW-13A	91/08	6	4.9	3	20	6 <	2	170	50
MW-13A	91/11	< 3	2 <	2	< 20	< 5 <	2	170	< 20
MW-13A	92/05	< 3	< 0.5 <	2	< 20	< 5 <	2	17	30
MW-13A	92/08	27	1.4	4	< 20	7	5	90	30
MW-13A	92/11	< 3	0.9 <	2	< 20	< 5 <	2	150	40
MW-13A	93/02		< 0.5 <	2	< 20	12 <	2	160	< 20
MW-13A	93/06	< 3	1.6 <	2	< 20	5 <	2	150	< 20
MW-13A	93/09		4.4 <	2	< 20	7.6 <	2		42
MW-13A	94/05	6.1	< 0.5 <	2	< 50	< 6 <	3	< 100	< 20
MW-13A	94/08		0.86 <	2	< 50	9.1 <	1.5		42
MW-13A	94/11		< 0.5	2	< 20	20	2.3	< 40	100
MW-13A	95/05	< 10	< 0.5 <	10	< 20	7.3 <	1.5	< 40	< 20
MW-13A	95/08		< 0.5 <	2	< 20	11 <	1.5	47	< 20
MW-13A	95/11		< 0.5 <	2	< 20	7.8 <	1.5	42	< 20
MW-13A	96/02		1.6 <	2	< 20	10 <	1.5	< 40	< 20
MW-13A	96/05	< 3	< 0.5 <	2	< 20	10 <	1.5	< 40	< 20
MW-13A	96/08		0.5 <	2	< 20	30	1.7	77	87
MW-13A	96/11		< 0.5 <	2	< 20	8.8 <	1.5	< 40	< 20
MW-13A	97/02		< 0.5 <	2	< 20	16 <	1.5	< 40	30
MW-13A	97/05	7.6	< 0.5 <	2	< 20	13 <	1.5	< 40	< 20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-13B	87/11	13	12	170			152	210	560
MW-13B	88/06		1.9	43				260	140
MW-13B	89/04	< 3	1.8	6			3	94	61
MW-13B	90/05	12	1.7	22	39		54	200	200
MW-13B	90/11	4.9	2.5	26		65	23	170	120
MW-13B	91/05	< 3	0.4	< 2	< 14	18	< 2	180	< 20
MW-13B	91/08	< 3	0.8	< 2	40	8	< 2	170	< 20
MW-13B	91/11	< 3	0.6	< 2	< 20	< 5	< 2	150	< 20
MW-13B	92/05	< 3	5.1	< 2	< 20	< 5	< 2	250	30
MW-13B	92/08	< 3	0.9	15	30	17	49	310	110
MW-13B	92/11	< 3	1.8	< 2	< 20	< 5	< 2	290	< 20
MW-13B	93/02		3.8	< 2	< 20	30	< 2	180	< 20
MW-13B	93/06	< 3	< 0.5	< 2	< 20	10	< 2	120	< 20
MW-13B	93/09		4.6	3.3	< 20	< 5	< 2		41
MW-13B	93/11		0.54	< 2	< 20	12	< 2		< 20
MW-13B	94/05	< 3	< 0.5	< 2	< 50	< 6	< 3	< 100	< 20
MW-13B	94/08		< 0.5	< 2	< 50	11	< 1.5		< 20
MW-13B	94/11		< 0.5	2.3	< 20	< 6	< 1.5	140	< 20
MW-13B	95/05	< 10	< 0.5	< 10	< 20	17	1.6	180	< 20
MW-13B	95/08		< 0.5	< 2	< 20	10	< 1.5	85	< 20
MW-13B	95/11		< 0.5	< 2	< 20	16	< 1.5	130	< 20
MW-13B	96/02		< 0.5	< 2	< 20	24	< 1.5	120	< 20
MW-13B	96/05	< 3	< 0.5	18	< 20	11	1.9	150	< 20
MW-13B	96/08		< 0.5	< 2	< 20	10	< 1.5	110	< 20
MW-13B	96/11		< 0.5	< 2	< 20	11	< 1.5	61	< 20
MW-13B	97/02		< 0.5	< 2	< 20	19	< 1.5	99	< 20
MW-13B	97/05	< 3	< 0.5	< 2	< 20	18	< 1.5	89	20
MW-13C	87/11	31	11	16			30	< 100	270
MW-13C	88/06		0.8	46				< 30	280
MW-13C	90/05	28	5.8	7	< 14		16	< 23	98
MW-13C	90/11	17	0.4	9		< 5	9.8	< 23	79
MW-13C	91/05	15	< 0.3	7	< 14	< 5	7.4	< 23	77
MW-13C	91/08	< 3	< 0.5	< 2	20	9	< 2	30	< 20
MW-13C	91/11	< 3	< 0.5	2	< 20	< 5	< 2	< 20	< 20
MW-13C	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	30
MW-13C	92/08	< 3	< 0.5	3	< 20	< 5	< 2	< 20	< 20
MW-13C	92/11	< 3	1.7	13	< 20	< 5	< 2	< 40	60
MW-13C	93/02		< 0.5	2	30	< 5	10	< 20	
MW-13C	93/06	< 3	7.7	13	< 20	< 5	< 2	< 50	70
MW-13C	93/09		13	5	< 20		6.4		
MW-13C	93/11		0.6	< 2	< 20		12		
MW-13C	94/05	3.4	1.6	6.8	< 50	< 6	18	< 100	61
MW-13C	94/08		< 0.5	11	< 50		6.1		
MW-13C	94/11		< 0.5	5.4	< 20		6.4	< 40	
MW-13C	95/05	< 10	< 0.5	< 10	< 20	< 5	8.2	< 40	35
MW-13C	95/08		< 0.5	2	< 20		2	< 40	
MW-13C	95/11		< 0.5	6.1	< 20		6.2	< 40	
MW-13C	96/05	< 3	< 0.5	12	< 20	< 5	15	< 40	< 20
MW-13C	96/08		< 0.5	5.8	< 20		4	< 40	
MW-13C	96/11		< 0.5	4.8	< 20		2.6	< 40	
MW-13C	97/02		0.56	12	< 20		21	< 40	
MW-13C	97/05	3.7	< 0.5	6.1	< 20	6.5	7.7	< 40	35
MW-13E	87/11	11	5.8	22			11	< 100	210
MW-13E	88/06		3	9				< 30	160
MW-13E	90/05	3	7.3	14	< 14		3.4	< 23	44

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-13E	90/11	<	3	<	0.3		5			<	5	<	2	<	23	<	20
MW-13E	91/05	<	3		3.2		6	<	14	<	5	<	2	<	23		25
MW-13E	91/08	<	3	<	0.5		4		30	<	5	<	2		30	<	20
MW-13E	91/11	<	3	<	0.5		6	<	20	<	5	<	2	<	20	<	20
MW-13E	92/02	<	3	<	0.5		6	<	20		5	<	2	<	20	<	20
MW-13E	92/05	<	3	<	0.5		3	<	20	<	5	<	2	<	20		20
MW-13E	92/08	<	3	<	0.5		4	<	20	<	5	<	2	<	20	<	20
MW-13E	92/11	<	3		1.1		9	<	20	<	5	<	2	<	40	<	20
MW-13E	93/02				1.4		4	<	20	<	5	<	2	<	20		
MW-13E	93/06	<	3		0.84		5.7	<	20	<	5	<	2	<	50		30
MW-13E	93/09				6.8		7.6	<	20				2.7				
MW-13E	93/11				0.58		2	<	20			<	2				
MW-13E	94/02				0.51		6.6	<	50			<	3				
MW-13E	94/05	<	3	<	0.5		8.4	<	50	<	6	<	3	<	100	<	20
MW-13E	94/08				1.2		5.9	<	50			<	1.5				
MW-13E	94/11				0.55		6.8	<	20			<	1.5	<	40		
MW-13E	95/02			<	0.5		5.9	<	25			<	1.5	<	40		
MW-13E	95/05	<	10		0.69	<	10	<	20	<	5	<	1.5	<	40		66
MW-13E	95/08				0.91		7	<	20			<	1.5	<	40		
MW-13E	95/11			<	0.5		8.7	<	20			<	1.5	<	40		
MW-13E	96/02			<	0.5		6.2	<	20			<	1.5	<	40		
MW-13E	96/05	<	3	<	0.5		5.9	<	20	<	5	<	1.5	<	40	<	20
MW-13E	96/08			<	0.5		5.3	<	20			<	1.5	<	40		
MW-13E	96/11			<	0.5		6.1	<	20			<	1.5	<	40		
MW-13E	97/02				2.9		14	<	20			<	1.5	<	40		
MW-13E	97/05	<	3	<	0.5		4.8	<	20	<	5.4	<	1.5	<	40	<	20
MW-14A	87/11		27		310		650						36		580		2900
MW-14A	88/06				3.8		18								120		93
MW-14A	89/04		80		1100		3200						250		2300		14000
MW-14A	89/09		34		230		590		320				62		500		2700
MW-14A	89/12		10		100		250		120				26		240		1200
MW-14A	90/02		15		100		240		130				32		210		1000
MW-14A	90/05		10		35		82		46				14		140		340
MW-14A	90/11		4.4		33		82				74		7.9		170		400
MW-14A	91/05		3.1		23		53		30		38		6.9		130		240
MW-14A	91/08	<	3		27		16	<	20		24	<	2		200		200
MW-14A	91/11	<	3		6.6	<	2	<	20		33	<	2		90	<	20
MW-14A	92/02	<	3	<	0.5	<	2	<	20		62	<	2		130		30
MW-14A	92/05	<	3		2.7	<	2	<	20	<	5	<	2		120		40
MW-14A	92/08		5		48		49		30		60		6		160		440
MW-14A	92/11	<	3		2.7		2	<	20		40	<	4		80		180
MW-14A	93/02				7.6		2	<	20		30	<	2		110		40
MW-14A	93/06	<	3		6		15	<	20		29		3.9		90		100
MW-14A	93/09				7.8		8.5	<	20		42	<	2				53
MW-14A	93/11				2.4	<	2	<	20		36	<	2			<	20
MW-14A	94/02				4		7.1	<	50		18	<	3				55
MW-14A	94/05	<	3	<	0.5	<	2	<	50		20	<	3	<	100	<	20
MW-14A	94/08			<	0.5		2.8	<	50		12		1.6				26
MW-14A	94/11				0.72		5.4	<	20		14		2.6		66		40
MW-14A	95/02			<	0.5		6.9	<	25		16	<	1.5		74		40
MW-14A	95/05	<	10		0.92	<	10	<	20		26		1.8		51	<	20
MW-14A	95/08				9.8		18	<	20		22		13		65		210
MW-14A	95/11				2.2		4.7	<	20		16	<	1.5		160		120
MW-14A	96/02				3.8		2.5	<	20		23	<	1.5		250		170
MW-14A	96/05	<	3		7.7		5.9	<	20	<	5		2.2		100		88

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-14A	96/08		2.8	3.2 <	20	11	100	120	37
MW-14A	96/11		6.7	3.7 <	20	26	< 1.5	74	62
MW-14A	97/02		69	12	33	27	2.8	200	640
MW-14A	97/05	5.6	22	11 <	20	35	5.7	66	300
MW-14B	87/11	7	24	90			23	100	380
MW-14B	88/06		52	270				210	1000
MW-14B	89/04						2		
MW-14B	89/09	40	830	2400	740		220	1800	10000
MW-14B	89/12	10	150	450	210		61	350	2000
MW-14B	90/02	4	8.4	11	18		5	46	47
MW-14B	90/05	5	4.8	7	14		2.8	48	45
MW-14B	90/11	< 3	48	180		56	19	340	650
MW-14B	91/05	< 3	1.5	3	29	34	2.7	230	56
MW-14B	91/08	< 3	25	55	40	31	6	270	260
MW-14B	91/11	< 3	2.6 <	2 <	20 <	5 <	2	110 <	20
MW-14B	92/02	< 3	2.6	2 <	20	6 <	2	180	30
MW-14B	92/05	< 3	4.2 <	2 <	20 <	5 <	2	240	40
MW-14B	92/08	< 3	1.2	6 <	20 <	5	3	180 <	20
MW-14B	92/11	< 3	5.7	10 <	20	20 <	2	210	150
MW-14B	93/02		1.6	16	30	11	5	160	30
MW-14B	93/06	< 3	< 0.5 <	2 <	20	7 <	2	60 <	20
MW-14B	93/09		9.7	5 <	20	20 <	2		41
MW-14B	93/11		< 0.5 <	2 <	20	13 <	2		< 20
MW-14B	94/02		< 0.5 <	2 <	50	7.3 <	3		< 20
MW-14B	94/05	< 3	4.7 <	2 <	50	19 <	3 <	100 <	20
MW-14B	94/08		< 0.5 <	2 <	50	7	4		< 20
MW-14B	94/11		< 0.5 <	2 <	20	7.8	2	99	23
MW-14B	95/02		< 0.5 <	2 <	25	7.6 <	1.5	69	21
MW-14B	95/05	< 10	< 0.5 <	10 <	20	9.7	1.6	56	21
MW-14B	95/08		< 0.5 <	2 <	20	12	3.2 <	40 <	20
MW-14B	95/11		< 0.5 <	2 <	20	9.8 <	1.5 <	40 <	20
MW-14B	96/02		< 0.5	3.4 <	20	27	37	54 <	20
MW-14B	96/05	< 3	4.5	110 <	20	10	2.3 <	40 <	20
MW-14B	96/08		< 0.5 <	2 <	20 <	5 <	1.5 <	40 <	20
MW-14B	96/11		< 0.5	3 <	20	10 <	1.5 <	40 <	20
MW-14B	97/02		2.6	14 <	20	11 <	1.5 <	40	24
MW-14B	97/05	< 3	< 0.5 <	2 <	20	12 <	1.5 <	40 <	20
MW-14C	87/11	30	5.8	110			61 <	100	380
MW-14C	88/06		1.2	6			<	30	19
MW-14C	89/09	4	7.5	16 <	14		8	27	72
MW-14C	89/12	3	< 0.3	2.2 <	14		2 <	23	24
MW-14C	90/02	4	2.6	4 <	14		3 <	23 <	20
MW-14C	90/05	14	2	6	14		3.1	23	35
MW-14C	90/11	< 3	< 0.3 <	2	<	5 <	2 <	23 <	20
MW-14C	91/05	< 3	3.1	7 <	14 <	5 <	2 <	23 <	20
MW-14C	91/08	< 3	1.9	2 <	20 <	5	3	50	30
MW-14C	91/11	< 3	< 0.5 <	2 <	20 <	5 <	2 <	20 <	20
MW-14C	92/02	< 3	< 0.5 <	2 <	20	6 <	2 <	20 <	20
MW-14C	92/05	< 3	< 0.5 <	2 <	20 <	5 <	2 <	20 <	20
MW-14C	92/08	< 3	< 0.5 <	2 <	20 <	5 <	2 <	20 <	20
MW-14C	92/11	< 3	1.3	2	130 <	5 <	2 <	40	60
MW-14C	93/02		< 0.5 <	2 <	20 <	5 <	2 <	20	
MW-14C	93/06	< 3	< 0.5 <	2 <	20 <	5 <	2 <	50 <	20
MW-14C	93/09		2.8	2.6 <	20		< 2		
MW-14C	93/11		0.81 <	2 <	20		< 2		

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-14C	94/02		< 0.5	16	< 50		< 3		
MW-14C	94/05	< 3	< 0.5	15	< 50	< 6	< 3	< 100	< 20
MW-14C	94/08		< 0.5	< 2	< 50		< 1.5		
MW-14C	94/11		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14C	95/02		< 0.5	19	< 25		< 1.5	< 40	
MW-14C	95/05	< 10	< 0.5	< 10	< 20	< 5	3.5	< 40	21
MW-14C	95/08		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14C	95/11		< 0.5	13	< 20		6	< 40	
MW-14C	96/02		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14C	96/05	< 3	< 0.5	2.3	< 20	< 5	< 1.5	< 40	< 20
MW-14C	96/08		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14C	96/11		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14C	97/02		1.2	13	< 20		< 1.5	< 40	
MW-14C	97/05	< 3	< 0.5	2.7	< 20	< 5.4	< 1.5	< 40	< 20
MW-14E	87/11	42	19	200			240	180	1400
MW-14E	88/06		1.6	5			<	30	26
MW-14E	89/09	< 3	2.5	12	< 14		4	< 23	38
MW-14E	89/12	4	< 0.3	3.5	< 14		5	< 23	46
MW-14E	90/02	< 3	8	7	25		17	34	35
MW-14E	90/05	3	0.6	6	14		4.2	23	28
MW-14E	90/11	< 3	< 0.3	< 2		< 5	< 2	< 23	< 20
MW-14E	91/05	< 3	0.7	4	< 14	< 5	< 2	< 23	< 20
MW-14E	91/08	< 3	< 0.5	< 2	< 20	< 5	< 2	30	40
MW-14E	91/11	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-14E	92/02	< 3	< 0.5	< 2	< 20	6	< 2	< 20	< 20
MW-14E	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-14E	92/08	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-14E	92/11	< 3	< 0.5	< 2	< 20	< 5	< 2	< 40	< 20
MW-14E	93/02		1.4	5	30	< 5	5	< 20	
MW-14E	93/06	< 3	< 0.5	< 2	< 20	< 5	< 2	< 50	< 20
MW-14E	93/09		16	15	31		< 2		
MW-14E	93/11		< 0.5	< 2	< 20		< 2		
MW-14E	94/02		< 0.5	< 2	< 50		< 3		
MW-14E	94/05	< 3	< 0.5	< 2	< 50	< 6	< 3	< 100	< 20
MW-14E	94/08		< 0.5	< 2	< 50		< 1.5		
MW-14E	94/11		< 0.5	5.1	< 20		< 1.5	< 40	
MW-14E	95/02		< 0.5	< 2	< 25		< 1.5	< 40	
MW-14E	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-14E	95/08		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14E	95/11		< 0.5	2.1	< 20		< 1.5	< 40	
MW-14E	96/02		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14E	96/05	< 3	< 0.5	< 2	< 20	< 5	3.7	< 40	< 20
MW-14E	96/08		< 0.5	< 2	< 20		1.5	< 40	
MW-14E	96/11		< 0.5	< 2	< 20		< 1.5	< 40	
MW-14E	97/02		1.2	12	< 20		13	< 40	
MW-14E	97/05	< 3	< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	24
MW-15A	87/11	12	1.6	16			52	< 100	300
MW-15A	91/05	< 3	0.3	< 2	< 14	< 5	< 2	< 23	< 20
MW-15A	91/08	< 3	0.6	2	< 20	< 5	< 2	40	< 20
MW-15A	91/11	< 3	1.5	4	< 20	< 10	3	< 20	< 20
MW-15A	92/02	< 3	2.3	< 2	< 20	5	< 2	< 20	< 20
MW-15A	92/05	< 3	1.7	< 2	< 20	< 5	< 2	< 20	< 20
MW-15A	92/08	< 3	3	4	< 20	< 5	16	< 20	< 20
MW-15A	92/11	< 3	0.6	< 2	< 20	< 5	< 2	< 40	< 20
MW-15A	93/02		15	7	< 20	< 5	4	< 20	< 20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-15A	93/06	< 3	1.6	5.8	< 20	< 5	< 2	< 50	< 20
MW-15A	93/09		2.8	88	< 20	< 5	< 2		370
MW-15A	93/11		< 0.5	< 2	< 20	< 6	< 2		< 20
MW-15A	94/02		< 0.5	2.7	< 50	< 6	< 3		< 20
MW-15A	94/05	< 3	< 0.5	4.7	< 50	< 6	< 3	< 100	< 20
MW-15A	94/08		< 0.5	< 2	< 50	< 6	< 1.5		< 20
MW-15A	94/11		0.61	2.4	< 20	< 6	< 1.5	< 40	< 20
MW-15A	95/02		< 0.5	< 2	< 25	< 6	< 1.5	< 40	< 20
MW-15A	95/05	10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-15A	95/08		< 0.5	3.6	< 20	< 5	< 1.5	< 40	< 20
MW-15A	95/11		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15A	96/02		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15A	96/05	< 3	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15A	96/08		0.51	3.1	< 20	< 5	< 1.5	< 40	< 20
MW-15A	96/11		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15A	97/02		< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-15A	97/05	< 3	< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-15B	87/11	6	2.4	9			22	< 100	110
MW-15B	88/06		0.9	5				< 30	47
MW-15B	89/04	< 3	0.5	2			2	< 30	< 20
MW-15B	90/05	5	1.7	120	< 14		2.9	< 23	20
MW-15B	91/05	< 3	< 0.3	< 2	< 14	< 5	< 2	< 23	< 20
MW-15B	91/08	< 3	2.3	< 2	20	< 5	9	30	< 20
MW-15B	91/11	< 3	0.8	< 2	< 20	< 10	< 2	< 20	< 20
MW-15B	92/02	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-15B	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-15B	92/08	< 3	1.3	< 2	< 20	< 5	< 2	< 20	< 20
MW-15B	92/11	< 3	< 0.5	< 2	< 20	10	3	< 40	30
MW-15B	93/02		7.8	< 2	< 20	< 5	5	< 20	< 20
MW-15B	93/06	< 3	0.83	< 2	< 20	< 5	< 2	< 50	< 20
MW-15B	93/09		11	5.5	< 20	< 5	2		31
MW-15B	93/11		< 0.5	< 2	< 20	< 6	< 2		< 20
MW-15B	94/02		< 0.5	< 2	< 50	< 6	< 3		< 20
MW-15B	94/05	< 3	< 0.5	< 2	< 50	< 6	< 3	< 100	< 20
MW-15B	94/08		< 0.5	< 2	< 50	< 6	< 1.5		< 20
MW-15B	94/11		< 0.5	< 2	< 20	< 6	< 1.5	< 40	< 20
MW-15B	95/02		< 0.5	< 2	< 25	< 6	< 1.5	< 40	< 20
MW-15B	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-15B	95/08		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	95/11		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	96/02		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	96/05	< 3	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	96/08		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	96/11		< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-15B	97/02		< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-15B	97/05	< 3	< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-15C	87/11	33	3.6	100			52	120	470
MW-15C	88/06		0.5	43					140
MW-15C	90/05	28	1.9	2	< 14		7.1	< 23	24
MW-15C	91/05	5.4	0.6	8	< 14	< 5	11	< 23	70
MW-15C	91/08	6	2.9	2	40	< 5	< 2	50	< 20
MW-15C	91/11	7	< 0.5	< 2	< 20	< 10	< 2	< 20	< 20
MW-15C	92/02	9	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-15C	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-15C	92/08	7	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-15C	92/11		5		1.7	<	2	<	20		8	<	2	<	40	<	20
MW-15C	93/02				6.9	<	2	<	20	<	5	<	2	<	20		
MW-15C	93/06	<	3		2.4		2.7	<	20		12		5.2	<	50		50
MW-15C	93/09				19		3.8	<	20				6.2				
MW-15C	93/11			<	0.5	<	2	<	20			<	2				
MW-15C	94/02			<	0.5	<	2	<	50			<	3				
MW-15C	94/05		6.5	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-15C	94/08				0.6	<	2	<	50			<	1.5				
MW-15C	94/11			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	95/02			<	0.5	<	2	<	25			<	1.5	<	40		
MW-15C	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-15C	95/08			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	95/11			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	96/02			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	96/05		7.2	<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-15C	96/08			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	96/11			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	97/02			<	0.5	<	2	<	20			<	1.5	<	40		
MW-15C	97/05		7.9	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-16C	87/11		42		6		160						5		170		440
MW-16C	89/04		38		3		410						86		200		700
MW-16C	89/06		8	<	0.3		28						19	<	30		220
MW-16C	89/09		15		4.2		180		120				56		130		580
MW-16C	89/12		10		2.8		120		75				31		98		420
MW-16C	90/02		3		0.6		40		19				9	<	23		47
MW-16C	90/05		15		1.8				77				42				290
MW-16C	90/11		12		7		320			<	5		42		95		270
MW-16C	91/05		10		2.8		200		83	<	5		87		120		250
MW-16C	91/08	<	3		1.3		8	<	20	<	5		15	<	25		20
MW-16C	91/11	<	3	<	0.5		4	<	20	<	10		9	<	20		20
MW-16C	92/02	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-16C	92/05	<	3	<	0.5	<	2	<	20	<	5	<	2		20	<	20
MW-16C	92/08	<	3		3.1		9	<	20	<	5		25		60		40
MW-16C	92/11	<	3	<	0.5	<	2	<	20	<	5	<	2	<	40	<	20
MW-16C	93/02				1.1	<	2	<	20	<	5	<	2		340		
MW-16C	93/06	<	3		0.8		6		30	<	5		14		70		60
MW-16C	93/09				1.2	<	2	<	20	<	5	<	2				56
MW-16C	93/11				0.77		6.4	<	20	<	6		9.4				27
MW-16C	94/02				0.83		25		140	<	6		13				320
MW-16C	94/05		3.3		2.5		29		1100	<	6		29	<	100		140
MW-16C	94/08			<	0.5		22	<	50	<	6		7.1				32
MW-16C	94/11				0.5		40		20	<	6	<	6	<	40		35
MW-16C	95/02				0.68		25	<	25	<	6		10	<	40		47
MW-16C	95/05	<	10	<	0.5		12	<	20	<	5		2.5	<	40	<	20
MW-16C	95/08			<	0.5		21	<	20	<	5		7.5	<	40		36
MW-16C	95/11				0.84		52	<	20	<	5		5.8	<	40		28
MW-16C	96/02			<	0.5		19	<	20	<	5		5.3	<	40		54
MW-16C	96/05	<	3	<	0.5		17	<	20	<	5		4.5	<	40	<	20
MW-16C	96/08			<	0.5		30		23	<	5		8.5	<	40		36
MW-16C	96/11			<	0.5		19	<	20	<	5		3	<	40		26
MW-16C	97/02			<	0.5		12	<	20	<	5.4	<	1.5	<	40	<	20
MW-16C	97/05	<	3		0.6		17	<	20	<	5.4	<	1.5	<	40		45
MW-17A	89/04		22		1.6		340						57		110		520
MW-17A	89/06		7		1.1		40						16		65		310
MW-17A	89/09		14		1.8		120		73				40		120		620

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-17A	89/12	< 3	< 0.3	54	< 14		3	78	260
MW-17A	90/02	9	2	270	51		24	160	340
MW-17A	90/05	29	5.6	620	96		53.6	180	390
MW-17A	91/05	6.7	3.8	140	77	< 5	43	130	320
MW-17A	91/08	< 3	1.3	13	30	< 5	3	60	70
MW-17A	91/11	< 3	1.6	< 2	< 20	10 <	2	< 20	30
MW-17A	92/02	< 3	1.6	< 2	< 20	< 5 <	2	< 20	< 20
MW-17A	92/05	< 3	6.1	< 2	< 20	< 5	2	40	< 20
MW-17A	92/08	< 3	17	10	< 20	7	2	80	130
MW-17A	92/11	< 3	< 0.5	< 2	< 20	< 5 <	2	< 40	< 20
MW-17A	93/02		< 0.5	< 2	30	< 5 <	2	< 20	< 20
MW-17A	93/06	< 3	< 0.5	< 2	< 20	< 5 <	2	< 50	< 20
MW-17A	93/09		0.52	< 2	< 20	< 5 <	2		< 20
MW-17A	93/11		0.5	< 2	< 20	< 6 <	2		< 20
MW-17A	94/02		< 0.5	< 2	< 50	< 6 <	3		< 20
MW-17A	94/05	< 3	1.3	19	< 50	< 6	5	< 100	120
MW-17A	94/08		0.54	9.2	< 50	< 6	9.3		55
MW-17A	94/11		< 0.5	< 2	< 20	< 6 <	1.5	< 40	< 20
MW-17A	95/02		0.59	2.7	< 25	< 6 <	1.5	< 40	< 20
MW-17A	95/05	< 10	< 0.5	12	< 20	< 5 <	1.5	< 40	< 20
MW-17A	95/08		0.71	< 2	< 20	< 5 <	1.5	< 40	< 20
MW-17A	95/11		< 0.5	6.7	< 20	< 5 <	1.5	< 40	< 20
MW-17A	96/02		< 0.5	4.4	< 20	< 5 <	1.5	< 40	< 20
MW-17A	96/05	< 3	< 0.5	< 2	< 20	< 5 <	1.5	< 40	< 20
MW-17A	96/08		< 0.5	5.8	< 20	< 5 <	1.5	< 40	27
MW-17A	96/11		< 0.5	770	< 20	< 5 <	1.5	90	< 20
MW-17A	97/02		0.65	5.9	< 20	< 5.4 <	1.5	< 40	< 20
MW-17A	97/05	< 3	< 0.5	2.6	< 20	< 5.4 <	1.5	< 40	< 20
MW-17B	89/04	< 3	1.4	7			4	< 30	< 20
MW-17B	89/06	< 3	< 0.3	< 2		<	2	< 30	65
MW-17B	89/09	< 3	0.8	3	< 14		3	< 23	20
MW-17B	89/12	< 3	< 0.3	< 2	< 14	<	2	< 23	< 20
MW-17B	90/02	< 3	1.3	2	< 14	<	2	< 23	< 20
MW-17B	90/05	9	1.6	21	15		9.6	< 23	50
MW-17B	91/05	< 3	1.1	8	< 14	34	2.2	< 23	< 20
MW-17B	91/08	< 3	2.6	< 2	40	< 5 <	2	50	< 20
MW-17B	91/11	< 3	7.2	< 2	< 20	< 5	3	< 20	20
MW-17B	92/02	< 3	< 0.5	< 2	< 20	< 5 <	2	< 20	< 20
MW-17B	92/05	< 3	< 0.5	< 2	< 20	< 5 <	2	20	< 20
MW-17B	92/08	< 3	0.6	6	< 20	< 5	4	< 20	< 20
MW-17B	92/11	< 3	< 0.5	< 2	< 20	< 5 <	2	< 40	< 20
MW-17B	93/02		< 0.5	< 2	< 20	< 5 <	2	< 20	< 20
MW-17B	93/06	< 3	< 0.5	< 2	< 20	< 5 <	2	< 50	< 20
MW-17B	93/09		< 0.5	< 2	< 20	< 5 <	2		< 20
MW-17B	93/11		< 0.5	< 2	< 20	< 6 <	2		< 20
MW-17B	94/02		< 0.5	< 2	< 50	< 6 <	3		< 20
MW-17B	94/05	< 3	< 0.5	2.5	< 50	< 6 <	3	< 100	< 20
MW-17B	94/08		< 0.5	< 2	< 50	54	2.9		< 20
MW-17B	94/11		< 0.5	< 2	< 20	< 6 <	1.5	< 40	< 20
MW-17B	95/02		< 0.5	< 2	< 25	< 6 <	1.5	< 40	< 20
MW-17B	95/05	< 10	< 0.5	< 10	< 20	< 5 <	1.5	< 40	< 20
MW-17B	95/08		< 0.5	< 2	< 20	< 5 <	1.5	< 40	< 20
MW-17B	95/11		< 0.5	< 2	< 20	< 5	5.1	< 40	< 20
MW-17B	96/02		< 0.5	< 2	< 20	< 5 <	1.5	< 40	< 20
MW-17B	96/05	12	< 0.5	< 2	< 20	< 5	4.1	< 40	< 20

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-17B	96/08			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-17B	96/11			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-17B	97/02			<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-17B	97/05	<	3	<	0.5	<	2	<	20	<	5.4		2	<	40	<	20
MW-17C	89/04		5		1.3		10						11	<	30		36
MW-17C	89/09		5		2.9		4	<	14				12	<	23		28
MW-17C	89/12		5	<	0.3		21	<	14				14	<	23		380
MW-17C	90/02		8		1.7		11		18				11	<	23		25
MW-17C	90/05		6		4.2		4	<	14				4.8	<	23	<	20
MW-17C	91/05		4.1		1.3		6	<	14	<	5		2.7	<	23		42
MW-17C	92/08		6	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-17C	93/06		5.3	<	0.5		2.6		30	<	5		7.4	<	50		30
MW-17C	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-17C	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-17C	96/02																
MW-17C	96/05	<	3	<	0.5		2.8	<	20	<	5		3.4	<	40	<	20
MW-17C	96/08																
MW-17C	96/11																
MW-17C	97/02																
MW-17C	97/05		6.1	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-17D	89/04	<	3		1.1		13						3	<	30		27
MW-17D	89/09	<	3		3.2		8	<	14				10	<	23	<	20
MW-17D	89/12		5	<	0.3	<	2	<	14			<	2	<	23	<	20
MW-17D	90/02		6		3.1		7		15				8	<	23		22
MW-17D	90/05		10		0.3		9	<	14				7.8	<	23		54
MW-17D	91/05		4.9	<	0.3	<	2	<	14	<	5	<	2	<	23		20
MW-17D	92/08		7	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-17D	93/06		5.6	<	0.5	<	2	<	20	<	5	<	2	<	50	<	20
MW-17D	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-17D	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-17D	96/02																
MW-17D	96/05		6.7	<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-17D	96/08																
MW-17D	96/11																
MW-17D	97/02																
MW-17D	97/05		7.4	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-18A	89/04		5		0.3		200						21		110		390
MW-18A	89/06	<	3	<	0.3	<	2					<	2	<	30	<	20
MW-18A	89/09		5		1.3		250		35				21		130		340
MW-18A	89/12	<	3	<	0.3	<	2	<	14			<	2		42	<	20
MW-18A	90/02	<	3		0.6		35	<	14				3		57	<	20
MW-18A	90/05		6		0.6		855		23				17		230		120
MW-18A	91/05	<	3		3.3		180		20	<	5		12		54		90
MW-18A	91/08	<	3		3		25	<	20	<	5	<	2		30	<	20
MW-18A	91/11	<	3		6.5		14	<	20		7		4		190	<	20
MW-18A	92/02	<	3	<	0.5		37	<	20		6	<	2		20	<	20
MW-18A	92/05	<	3	<	0.5	<	2	<	20	<	5	<	2		30	<	20
MW-18A	92/08	<	3	<	0.5		1100	<	20	<	5		4		410	<	20
MW-18A	92/11	<	3	<	0.5		4	<	20	<	5	<	2		70	<	20
MW-18A	93/02			<	0.5		18	<	20	<	5		4		40		70
MW-18A	93/06	<	3	<	0.5	<	2	<	20	<	5	<	2	<	50	<	20
MW-18A	93/09			<	0.5	<	2	<	20	<	5	<	2			<	20
MW-18A	93/11			<	0.5	<	2	<	20	<	6	<	2			<	20
MW-18A	94/02			<	0.5	<	2	<	50	<	6	<	3			<	20
MW-18A	94/05	<	3		1.6		44	<	50	<	6		3.3	<	100		65

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-18A	94/08			<	0.5	<	2	<	50	<	6	<	1.5			<	20
MW-18A	94/11			<	0.5		8.6	<	20	<	6	<	1.5	<	40	<	20
MW-18A	95/02			<	0.5	<	2	<	25	<	6	<	1.5	<	40	<	20
MW-18A	95/05	<	10	<	0.5		44	<	20	<	5	<	1.5	<	40	<	20
MW-18A	95/08			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	95/11			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	96/02			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	96/05	<	3	<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	96/08			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	96/11			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18A	97/02			<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-18A	97/05	<	3	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-18B	89/04	<	3		0.4		8						4	<	30	<	20
MW-18B	89/06	<	3	<	0.3	<	2					<	2	<	30	<	20
MW-18B	89/09	<	3		1.4		2	<	14				2		38	<	20
MW-18B	89/12	<	3	<	0.3	<	2	<	14			<	2		31	<	20
MW-18B	90/02	<	3		0.8		2	<	14				3		32	<	20
MW-18B	90/05	<	3		1.1		4	<	14				5.1	<	23	<	20
MW-18B	91/05	<	3	<	0.3		6	<	14	<	5	<	2		34	<	20
MW-18B	91/08	<	3		0.6	<	2	<	20	<	5		5		40	<	20
MW-18B	91/11	<	3		3.5	<	2	<	20	<	5	<	2		20	<	20
MW-18B	92/02	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-18B	92/05	<	3	<	0.5	<	2	<	20	<	5	<	2		40	<	20
MW-18B	92/08	<	3	<	0.5	<	2	<	20	<	5	<	2		30	<	20
MW-18B	92/11	<	3	<	0.5	<	2	<	20		7	<	2	<	40	<	20
MW-18B	93/02				1		4		210		8		4		30		30
MW-18B	93/06	<	3	<	0.5	<	2	<	20	<	5	<	2	<	50	<	20
MW-18B	93/09			<	0.5	<	2	<	20	<	5	<	2			<	20
MW-18B	93/11			<	0.5	<	2	<	20	<	6	<	2			<	20
MW-18B	94/02			<	0.5	<	2	<	50	<	6	<	3			<	20
MW-18B	94/05	<	3	<	0.5	<	2	<	50	<	6	<	3	<	100	<	20
MW-18B	94/08			<	0.5	<	2	<	50	<	6	<	1.5			<	20
MW-18B	94/11			<	0.5	<	2	<	20	<	6	<	1.5	<	40	<	20
MW-18B	95/02			<	0.5	<	2	<	25	<	6	<	1.5	<	40	<	20
MW-18B	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-18B	95/08			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18B	95/11			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18B	96/02			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18B	96/05	<	3	<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18B	96/08			<	0.5	<	2	<	20	<	5	<	1.5		44	<	20
MW-18B	96/11			<	0.5	<	2	<	20	<	5	<	1.5	<	40	<	20
MW-18B	97/02			<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-18B	97/05	<	3	<	0.5	<	2	<	20	<	5.4	<	1.5	<	40	<	20
MW-18D	89/04	<	3		0.6		28						3		67	<	20
MW-18D	89/09	<	3		7		28		27				11		40		27
MW-18D	89/12	<	3		0.9		4	<	14				10	<	23		20
MW-18D	90/02	<	3		0.6		10	<	14			<	2		35	<	20
MW-18D	90/05		33		12		364		580				234		400		1200
MW-18D	91/05	<	3		0.9		6	<	14	<	5		2.9	<	23	<	20
MW-18D	92/08	<	3	<	0.5	<	2	<	20	<	5	<	2	<	20	<	20
MW-18D	93/06	<	3		4.1		4.6		1600	<	5		30	<	50		670
MW-18D	94/05	<	3	<	0.5		4.2	<	50	<	6	<	3	<	100	<	20
MW-18D	95/05	<	10	<	0.5	<	10	<	20	<	5	<	1.5	<	40	<	20
MW-18D	96/02																
MW-18D	96/05	<	3		1.1		3.1	<	20	<	5	<	1.5	<	40		22

Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-18D	96/08								
MW-18D	96/11								
MW-18D	97/02								
MW-18D	97/05	< 3	< 0.5	3.8	< 20	< 5.4	< 1.5	< 40	32
MW-19A	89/04	14	0.4	170			27	2100	480
MW-19A	89/06	4	0.4	14			3	1100	22
MW-19A	89/09	37	0.7	230	13000		67	6200	740
MW-19A	89/12		< 0.3	4	230		< 2	4500	37
MW-19A	90/02	9	0.5	78	3000		17	3900	280
MW-19A	90/05	12	2.9	101	3700		15	1700	130
MW-19A	91/05	< 3	4.2	45	950	< 5	7.8	1600	81
MW-19A	91/08	< 3	0.7	18	1100	< 5	4	2400	40
MW-19A	91/11	< 3	6.8	5	910	48	5	2700	20
MW-19A	92/02	< 3	< 0.5	< 2	80	8	< 2	1400	< 20
MW-19A	92/05	< 3	< 0.5	< 2	40	< 5	< 2	2700	< 20
MW-19A	92/08	7	0.5	32	1500	< 5	17	2300	70
MW-19A	92/11	< 3	1.5	8	< 20	< 5	2	2300	30
MW-19A	93/02		< 0.5	8	1200	< 5	5	1800	50
MW-19A	93/06	< 3	< 0.5	< 2	70	< 5	< 2	820	< 20
MW-19A	93/09		0.87	< 2	63	< 5	< 2		< 20
MW-19A	93/11		1.2	< 2	66	< 6	< 2		< 20
MW-19A	94/02		< 0.5	< 2	< 50	< 6	< 3		< 20
MW-19A	94/05	< 3	1.9	2.9	120	< 6	< 3	840	79
MW-19A	94/08		< 0.5	4.6	320	< 6	4.1		23
MW-19A	94/11		< 0.5	< 2	35	< 6	< 1.5	510	< 20
MW-19A	95/02		< 0.5	2.8	180	< 6	1.5	670	< 20
MW-19A	95/05	< 10	< 0.5	< 10	41	< 5	< 1.5	520	< 20
MW-19A	95/08		< 0.5	< 2	79	< 5	1.6	740	< 20
MW-19A	95/11		< 0.5	< 2	44	< 5	< 1.5	560	< 20
MW-19A	96/02		< 0.5	< 2	35	< 5	< 1.5	650	< 20
MW-19A	96/05	< 3	< 0.5	3.9	38	< 5	< 1.5	540	< 20
MW-19A	96/08		< 0.5	< 2	61	< 5	< 1.5	740	< 20
MW-19A	96/11		< 0.5	< 2	110	< 5	< 1.5	980	< 20
MW-19A	97/02		< 0.5	< 2	36	< 5.4	< 1.5	570	< 20
MW-19A	97/05	< 3	< 0.5	< 2	41	< 5.4	< 1.5	580	< 20
MW-19B	89/04	3	0.5	6			2	< 30	< 30
MW-19B	89/06	3	< 0.3	3			< 2	< 30	< 20
MW-19B	89/09	< 3	8.4	10	< 14		3	27	44
MW-19B	89/12	3	< 0.3	< 2	< 14		< 2	< 23	< 20
MW-19B	90/02	3	1	3	22		3	< 23	< 20
MW-19B	90/05	4	1.4	9	< 14		3.1	< 23	< 20
MW-19B	91/05	4.2	2.6	28	< 14	7.5	3.5	< 23	24
MW-19B	91/08	< 3	1.1	< 2	< 20	< 5	< 2	40	< 20
MW-19B	91/11	< 3	5.6	< 2	< 20	6	< 2	< 20	< 20
MW-19B	92/02	< 3	< 0.5	< 2	< 20	7	< 2	< 20	< 20
MW-19B	92/05	< 3	< 0.5	< 2	< 20	< 5	< 2	30	< 20
MW-19B	92/08	< 3	< 0.5	< 2	< 20	8	< 2	< 20	< 20
MW-19B	92/11	< 3	< 0.05	< 2	< 20	< 5	< 2	< 40	30
MW-19B	93/02		0.7	< 2	180	< 5	< 2	70	40
MW-19B	93/06	3	< 0.5	< 2	< 20	< 5	< 2	< 50	< 20
MW-19B	93/09		< 0.5	< 2	< 20	< 5	< 2		< 20
MW-19B	93/11		< 0.5	< 2	< 20	< 6	< 2		< 20
MW-19B	94/02		1.1	< 2	< 50	< 6	< 3		< 20
MW-19B	94/05	< 3	< 0.5	< 2	< 50	< 6	4.8	< 100	< 20
MW-19B	94/08		< 0.5	< 2	< 50	20	< 1.5		< 20

Modern Plating Corporation

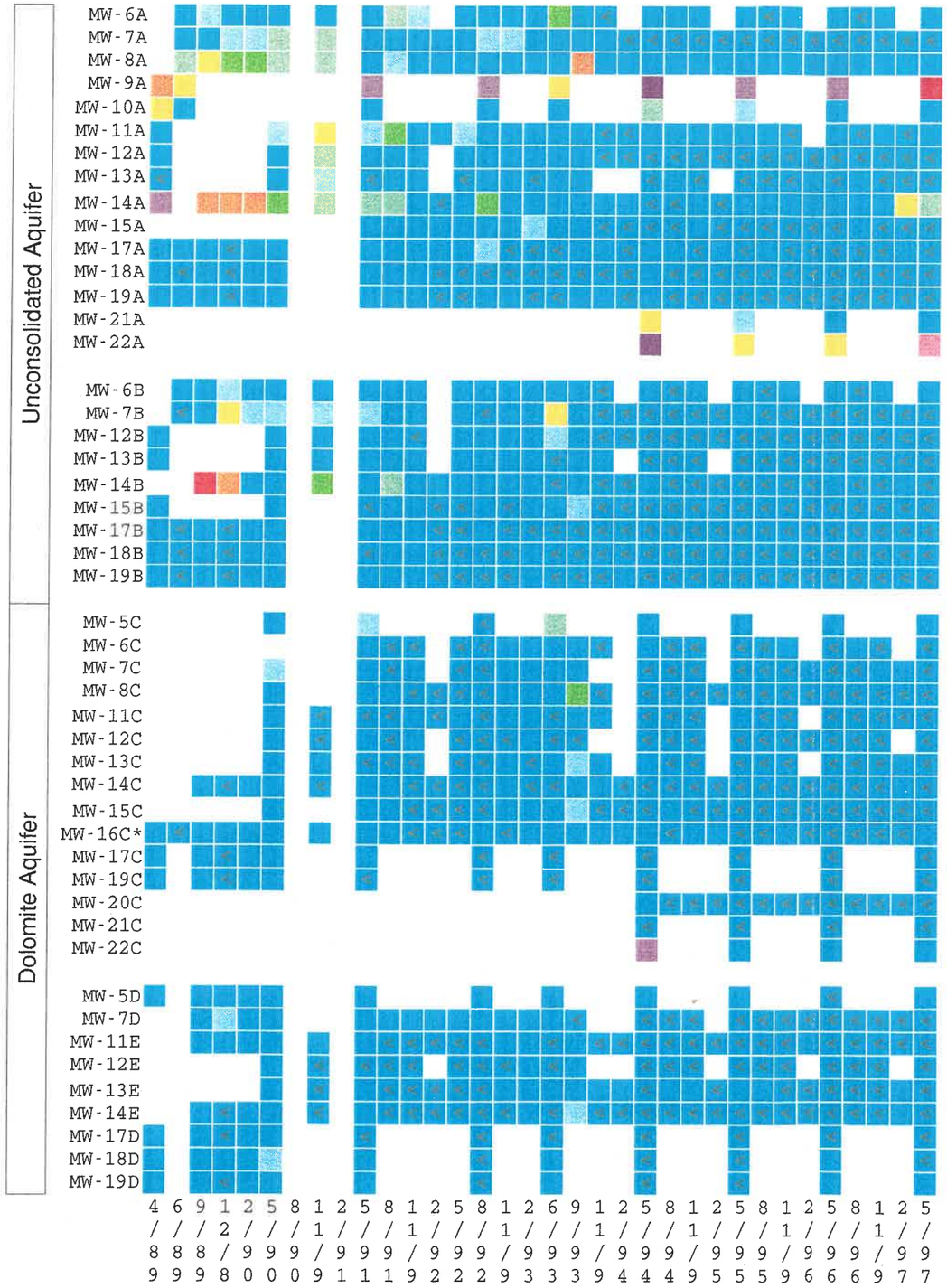
Historical Monitoring Data
Total Metals

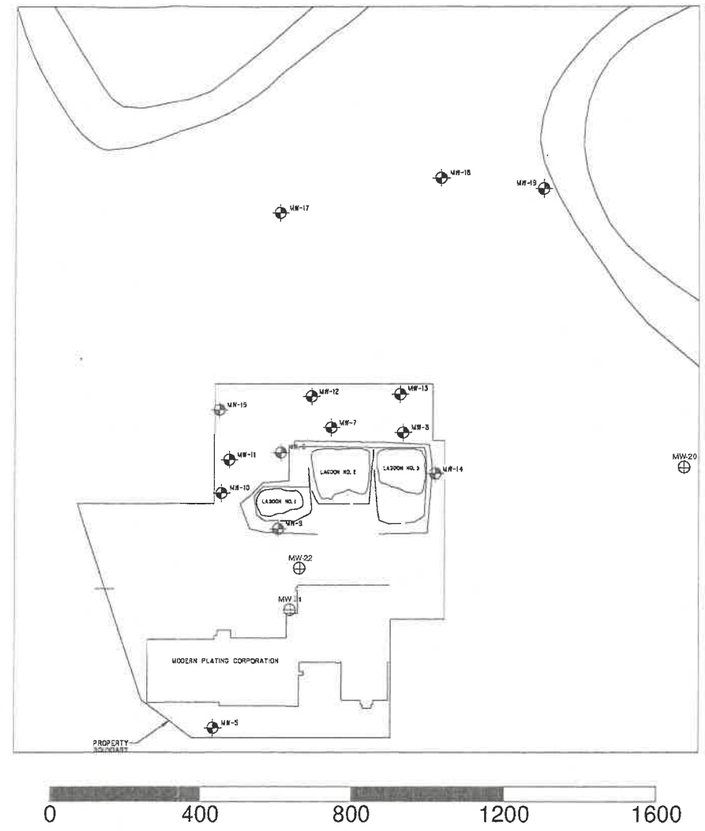
Station	Year/ Month	Arsenic ug/l	Cadmium ug/l	Chromium ug/l	Copper ug/l	Cyanide ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l
Standard		200	50	1000	650	600	100	2000	10000
MW-19B	94/11	<	< 0.5	< 2	< 20	< 6	< 1.5	< 40	< 20
MW-19B	95/02	<	< 0.5	< 2	< 25	< 6	< 1.5	< 40	< 20
MW-19B	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-19B	95/08	<	< 0.5	< 2	< 20	15	< 1.5	< 40	< 20
MW-19B	95/11	<	< 0.5	< 2	< 20	5.7	< 1.5	< 40	< 20
MW-19B	96/02	<	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-19B	96/05	< 3	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-19B	96/08	<	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-19B	96/11	<	< 0.5	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-19B	97/02	<	< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-19B	97/05	< 3	< 0.5	< 2	< 20	13	< 1.5	< 40	< 20
MW-19C	89/04	< 3	0.3	4			3	< 30	33
MW-19C	89/09	< 3	0.3	3	< 14		3	< 23	< 20
MW-19C	89/12	< 3	< 0.3	< 2	< 14	<	2	< 23	< 20
MW-19C	90/02	< 3	1.4	7	< 14		2	< 23	< 20
MW-19C	90/05	< 3	2.6	2	< 14		8.6	< 23	35
MW-19C	91/05	< 3	< 0.3	< 2	< 14	< 5	< 2	< 23	< 20
MW-19C	92/08	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-19C	93/06	< 3	< 0.5	< 2	< 20	< 5	< 2	< 50	< 20
MW-19C	94/05	< 3	< 0.5	< 2	< 50	< 6	< 3	< 100	< 20
MW-19C	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-19C	96/02								
MW-19C	96/05	< 3	< 0.5	< 2	< 20	5.2	< 1.5	< 40	< 20
MW-19C	96/08								
MW-19C	96/11								
MW-19C	97/02								
MW-19C	97/05	< 3	< 0.5	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-19D	89/04	4	0.3	6			2	< 30	24
MW-19D	89/09	< 3	0.7	4	< 14		4	< 23	26
MW-19D	89/12	< 3	< 0.3	< 2	< 14	<	2	< 23	< 20
MW-19D	90/02	5	0.4	6	< 14		2	< 23	< 20
MW-19D	90/05	4	1.1	15	< 14		8	< 23	40
MW-19D	91/05	< 3	0.5	13	< 14	< 5	3.8	< 23	< 20
MW-19D	92/08	< 3	< 0.5	< 2	< 20	< 5	< 2	< 20	< 20
MW-19D	93/06	< 3	1.9	< 2	140	< 5	2.1	< 50	70
MW-19D	94/05	< 3	< 0.5	< 2	< 50	< 6	< 3	< 100	23
MW-19D	95/05	< 10	< 0.5	< 10	< 20	< 5	< 1.5	< 40	< 20
MW-19D	96/02								
MW-19D	96/05	< 3	0.69	< 2	< 20	< 5	< 1.5	< 40	< 20
MW-19D	96/08								
MW-19D	96/11								
MW-19D	97/02								
MW-19D	97/05	< 3	2.9	< 2	< 20	< 5.4	< 1.5	< 40	< 20
MW-20C	94/05	< 3	0.77	< 2	< 50	< 6	< 3	< 100	53
MW-20C	94/08	<	< 0.5	95	< 50	28	< 1.5		< 20
MW-20C	94/11	<	< 0.5	170	< 20		7.1	220	
MW-20C	95/02	<	< 0.5	40	< 25		2.4	150	
MW-20C	95/05	< 10	< 0.5	82	< 20	< 5	5	220	< 20
MW-20C	95/08	<	< 0.5	1600	< 20	<	1.5	290	
MW-20C	95/11	<	< 0.5	630	< 20	<	1.5	220	
MW-20C	96/02	<	< 0.5	910	< 20	<	1.5	280	
MW-20C	96/05	< 3	< 0.5	310	< 20	6.2	< 1.5	170	< 20
MW-20C	96/08	<	< 0.5	670	< 20	<	1.5	350	
MW-20C	96/11	<	< 0.5	1100	< 20	<	1.5	510	
MW-20C	97/02	<	< 0.5	720	< 20	<	1.5	340	

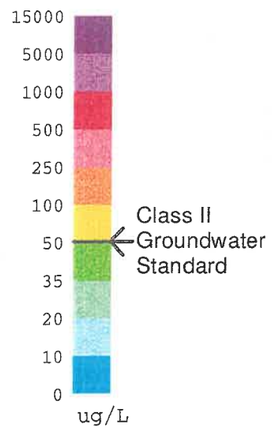
Modern Plating Corporation

Historical Monitoring Data
Total Metals

Station	Year/ Month		Arsenic ug/l		Cadmium ug/l		Chromium ug/l		Copper ug/l		Cyanide ug/l		Lead ug/l		Nickel ug/l		Zinc ug/l
Standard			200		50		1000		650		600		100		2000		10000
MW-20C	97/05	<	3	<	0.5		510	<	20	<	5.4	<	1.5		430		20
MW-21A	94/05		16		60		85		360	<	6		160		680		1300
MW-21A	95/05	<	10		10		480		94	<	5		47		460		390
MW-21A	96/05	<	3		4.6		35	<	20	<	5		8.5		120		56
MW-21A	97/05		3.7		0.55		3.6	<	20	<	5.4	<	1.5		120		34
MW-21C	94/05	<	3	<	0.5		74	<	50	<	6	<	3		240	<	20
MW-21C	95/05	<	10	<	0.5		80	<	20	<	5		5.8		360	<	20
MW-21C	96/05	<	3	<	0.5		26	<	20	<	5	<	1.5		64	<	20
MW-21C	97/05	<	3	<	0.5		80	<	20	<	5.4	<	1.5		150	<	20
MW-22A	94/05		35		14000		4000		2200		73		8500		3800		43000
MW-22A	95/05	<	10		93		1200	<	20	<	5		130		530		41000
MW-22A	96/05	<	3		90		620	<	20		14		55		720		19000
MW-22A	97/05		4.5		390		75		44		5.5		240		90		1800
MW-22C	94/05		5.8		1000		300		130		22		340		150		2200
MW-22C	95/05	<	10		2.6	<	10	<	20	<	5		2.4	<	40		29
MW-22C	96/05	<	3		7.2		6.2	<	20	<	5		9	<	40		35
MW-22C	97/05		6.6		4.8		7.9	<	20	<	5.4		9.5	<	40		62







< Implies No Detect

* Denotes Background Well

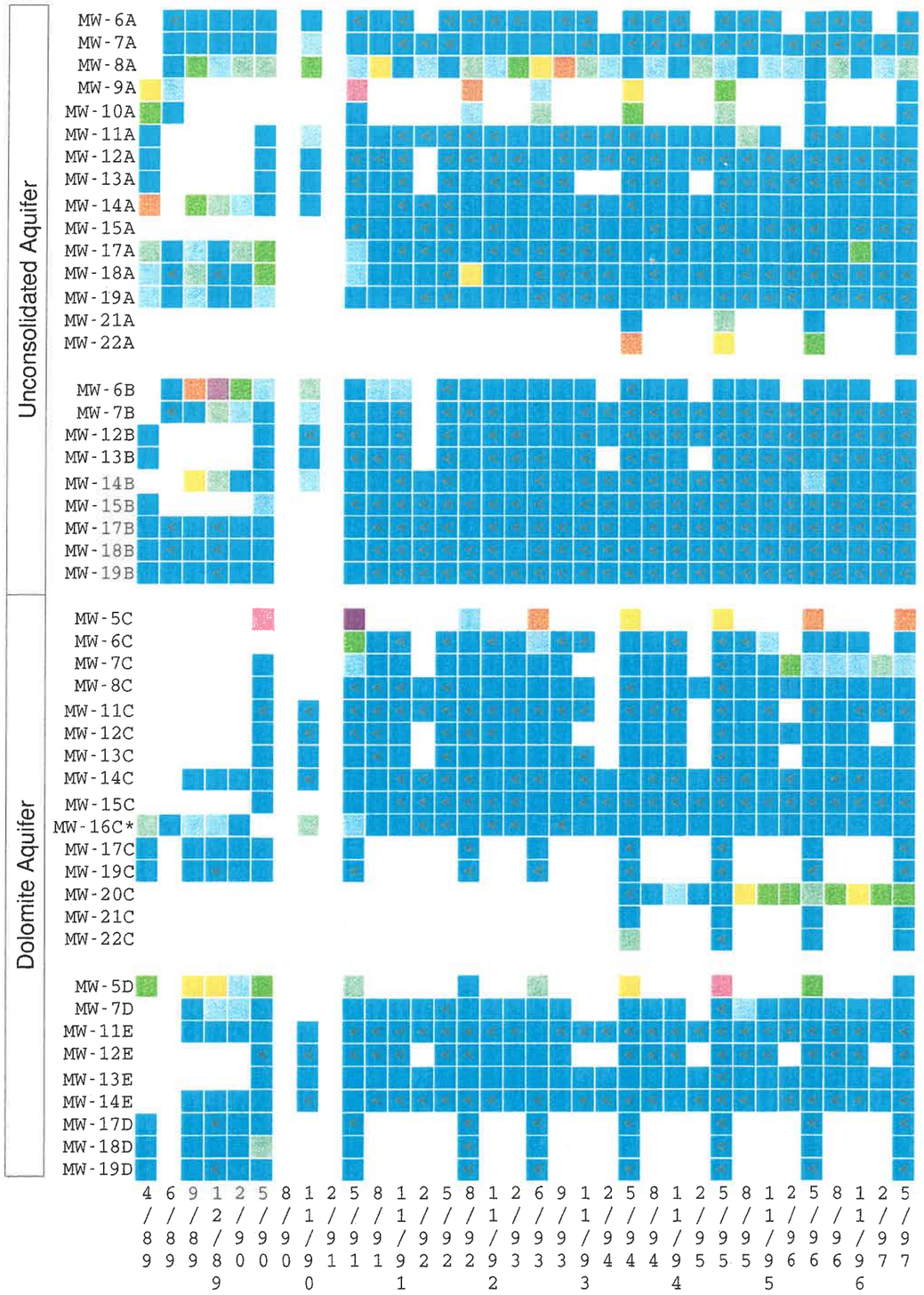
Modern Plating Facility

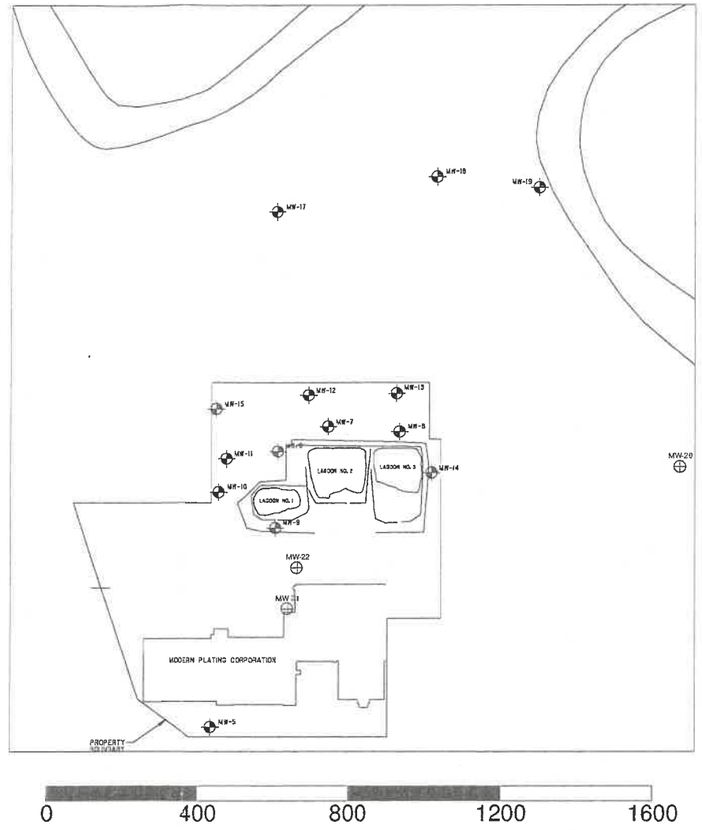
Figure 3-1

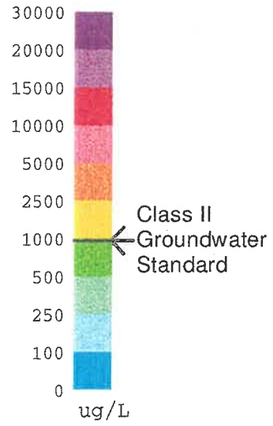
Historical Groundwater Concentrations Cadmium

Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes:92m13:hilstrcle:graphs:cd.srf,.wk1,basemap2.bln





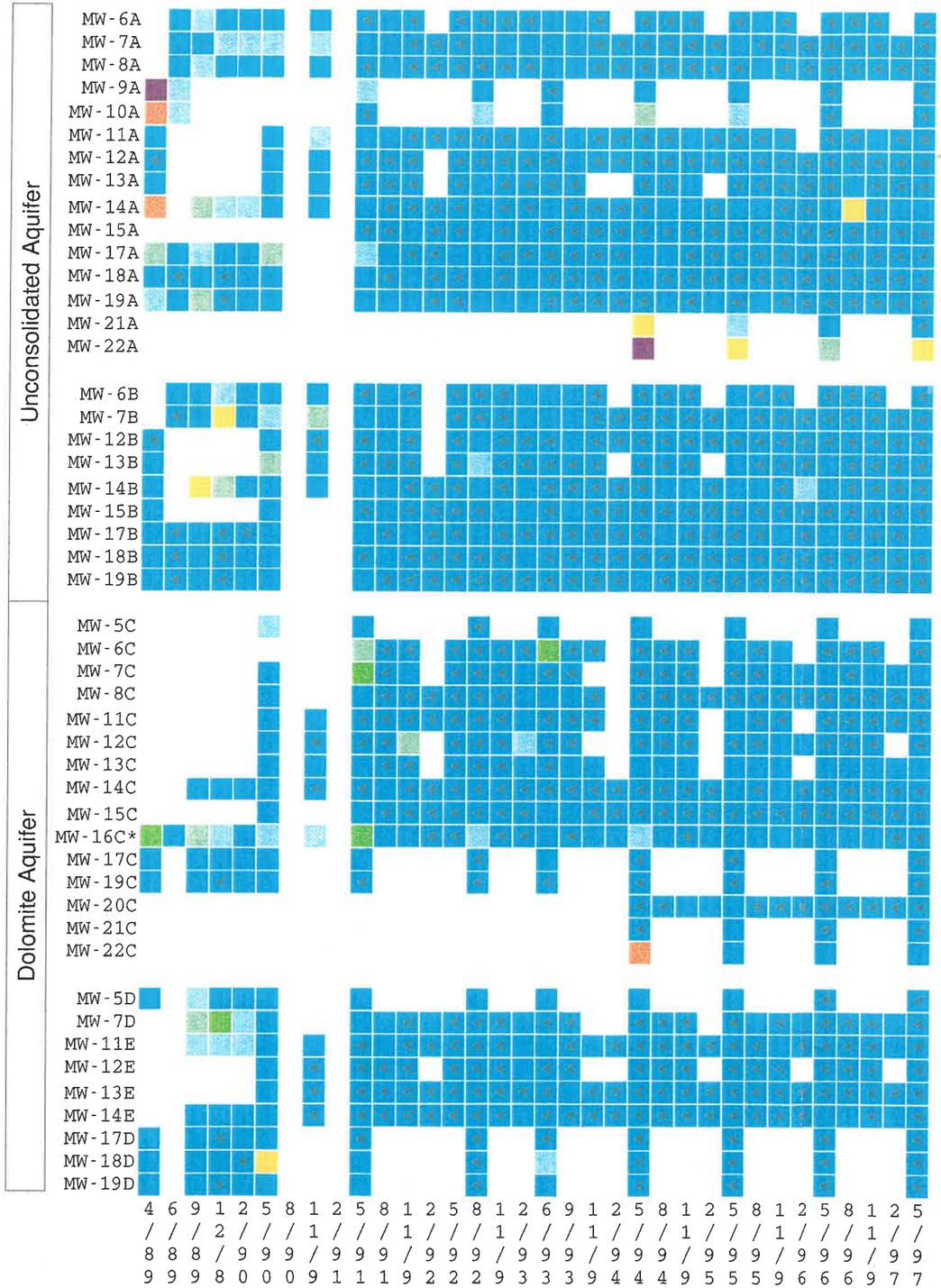


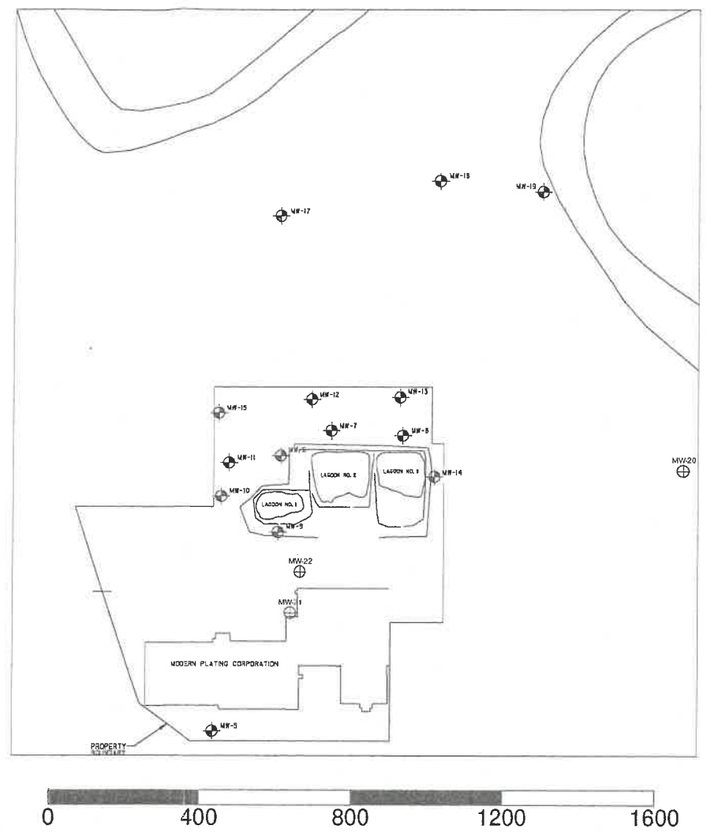
< Implies No Detect

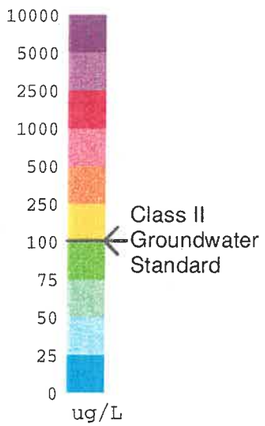
* Denotes Background Well

Modern Plating Facility	
Figure 3-2 **Historical Groundwater Concentrations Chromium**	
Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes\92m13\histrcle\graphs\cr.srf,.wk1,basemap2.bln







< Implies No Detect

* Denotes Background Well

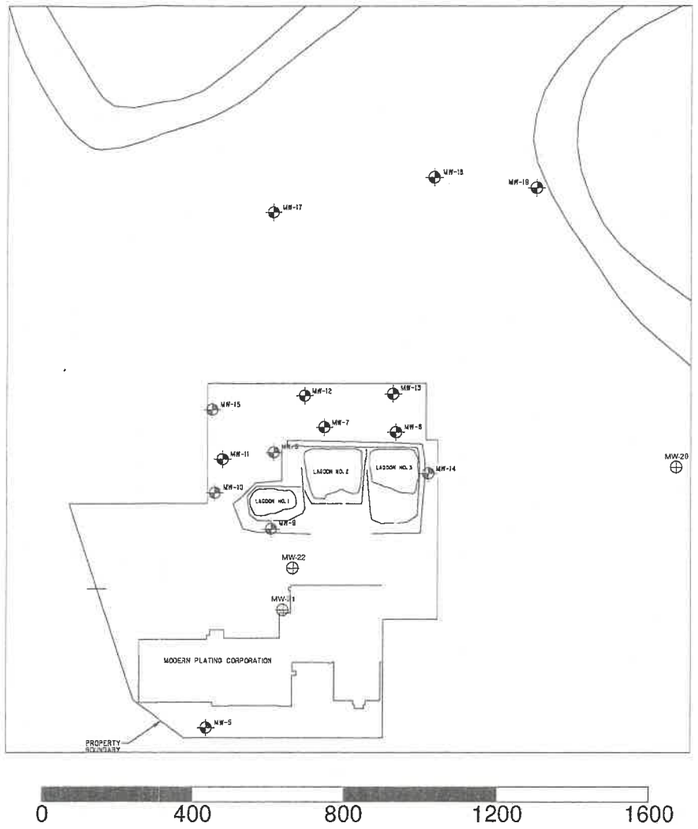
Modern Plating Facility

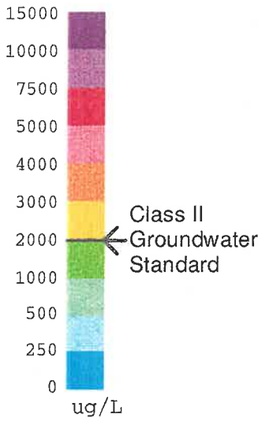
Figure 3-3

Historical Groundwater Concentrations
Lead

Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes\92m13\histrcle\graphs\pb.srf,,wk1,basemap2.bln





< Implies No Detect

* Denotes Background Well

Modern Plating Facility	
Figure 3-4 **Historical Groundwater Concentrations Nickel**	
Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes\92m13\histrcle\graphs\ni.srf,.wk1,basemap2.bln

Groundwater Quality Data for VOCs

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-5C	86/11								< 1	< 1	< 10	< 1	
MW-5C	87/03								8	6	< 10	< 1	
MW-5C	87/06								12	15	< 10		
MW-5C	87/08								18	20	< 10		
MW-5C	87/11								12.7	17.1	2	< 1	
MW-5C	88/03								10	20		< 1	
MW-5C	88/06								14	16		< 1	
MW-5C	90/05								5.7	7.2	< 2	< 5	
MW-5C	90/08		< 0.5						6	7	< 1	< 1	
MW-5C	91/05	< 5	< 5		< 5	< 5		< 5	7	7	< 10	< 5	< 5
MW-5C	92/08	< 1	< 1		< 1	< 1		< 1	14	12	< 10	< 1	< 1
MW-5C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-5C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	35	48	< 3	< 1	< 1
MW-5C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	8.8	6.3	< 3	< 1	< 1
MW-5C	96/02												
MW-5C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	16	9.3	< 3	< 1	< 1
MW-5C	96/08												
MW-5C	96/11												
MW-5C	97/02												
MW-5C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	11	6.8	< 3	< 1	< 1
MW-5D	86/11								14	8	< 10	< 1	
MW-5D	87/03								9	9	< 10	< 1	
MW-5D	87/06								13	17	< 10		
MW-5D	87/08								12	15	< 10		
MW-5D	87/11								9	15.1	< 2	< 1	
MW-5D	88/03								< 1	11		11	
MW-5D	88/06								7.6	14		< 1	
MW-5D	89/04								7.1	12	< 10	< 5	
MW-5D	89/09								6	11	< 0.5		< 1
MW-5D	89/12								6.7	11	< 0.5		< 1
MW-5D	90/02								7	11	< 1	< 0.5	
MW-5D	90/05								410	790	< 2	< 5	
MW-5D	90/08		< 0.5						6	9	< 1	< 1	
MW-5D	91/05	< 5	< 5		< 5	< 5		< 5	10	12	< 10	< 5	< 5
MW-5D	92/08	< 1	< 1		< 1	< 1		< 1	10	11	< 10	< 1	< 1
MW-5D	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-5D	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.4	5.6	< 3	< 1	< 1
MW-5D	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	9.7	8.3	< 3	< 1	< 1
MW-5D	96/02												
MW-5D	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	13	8.7	< 3	< 1	< 1
MW-5D	96/08												
MW-5D	96/11												
MW-5D	97/02												
MW-5D	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	16	9.9	< 3	< 1	< 1

R002710

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-6A	86/11								< 1	32	106	< 1	
MW-6A	87/03								< 1	44	< 10	137	
MW-6A	87/06								< 8	12	52	280	
MW-6A	87/08								< 12	10	100	360	
MW-6A	87/11								< 0.5	27.4	62.9	387	
MW-6A	89/04								< 10	< 10	< 20	82	
MW-6A	89/06								< 5	6.4	38	250	
MW-6A	89/09								< 1	2.4	7	< 1	
MW-6A	89/12								< 1	7.4	15	< 1	
MW-6A	90/02								< 1	7	15	190	
MW-6A	90/05		15						< 1	< 1	< 2	2.3	
MW-6A	90/11	< 5	< 5						< 5	< 5	< 10	33	< 5
MW-6A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	29	230	< 5
MW-6A	91/08	< 1	2		< 1	< 1		< 1	< 1	10	17	290	< 1
MW-6A	91/11	< 1	1.4		< 1	< 1		< 1	< 1	7.8	9	120	< 1
MW-6A	92/05	< 1	< 1		< 1	< 1		< 1	< 1	< 1	56.2	150	< 1
MW-6A	92/08	< 5	< 5		< 5	< 5		< 5	12	550	< 50	160	< 5
MW-6A	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	27	170	< 1
MW-6A	93/02	< 1	2.5		< 1	< 1		< 1	< 1	3.3	110	660	< 1
MW-6A	93/06	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	34	28	380	< 10
MW-6A	93/09	< 1	50	< 1	< 1	< 1	< 1	< 1	< 1	110	240	1200	20
MW-6A	93/11	< 1	< 1	< 1	1.2	< 1	< 1	< 1	< 1	100	170	850	7.2
MW-6A	94/05	20	16	< 10	11	< 10	< 10	< 10	< 10	44	270	1300	66
MW-6A	94/08	< 1	11	< 1	< 1	< 1	< 1	< 1	< 1	140	180	470	6.1
MW-6A	94/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	28	190	690	< 10
MW-6A	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	51	240	670	< 20
MW-6A	95/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	65	< 30	490	< 10
MW-6A	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	100	240	< 10
MW-6A	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	69	86	< 10
MW-6A	96/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	230	480	< 10
MW-6A	96/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	150	240	< 10
MW-6A	97/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	130	180	< 10
MW-6B	86/11								19	70	42	< 1	
MW-6B	87/03								11	80	< 10	133	
MW-6B	87/06								< 62	1700	< 120	310	
MW-6B	87/08								11	2600	36	300	
MW-6B	87/11								16.7	1381	< 50	274	
MW-6B	89/04								< 10	220	< 20	290	
MW-6B	89/06								< 120	490	< 250	190	
MW-6B	89/09								12	420	8.9	< 5	
MW-6B	89/12								21	360	29	< 1	
MW-6B	90/02								13	340	< 10	300	
MW-6B	90/05								< 1	230	< 2	300	
MW-6B	90/11	< 5	< 5						8	230	9	250	< 5

R002711

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month		1,1,1-Trichloroethane ug/l		1,1-Dichloroethene ug/l		1,2-Dichlorobenzene ug/l		1,2-Dichloroethane ug/l		1,2-Dichloropropane ug/l		1,4-Dichlorobenzene ug/l		Carbon Tetrachloride ug/l		Tetrachloroethene ug/l		Trichloroethene ug/l		Vinyl Chloride ug/l		cis-1,2-Dichloroethene ug/l		trans-1,2-Dichloroethene ug/l
Standard			1000.0		35.0		1500.0		25.0		25.0		375.0		25.0		25.0		25.0		10.0		200.0		500.0
MW-6B	91/05	<	25	<	25			<	25	<	25			<	25		6		220	<	50		110	<	25
MW-6B	91/08	<	5	<	5			<	5	<	5			<	5		9		360		45		160	<	5
MW-6B	91/11	<	1		1.3			<	1	<	1			<	1		11		430		13		180	<	1
MW-6B	92/05		1.4	<	1			<	1	<	1			<	1		19.5		988	<	10		98.8	<	1
MW-6B	92/08	<	10	<	10			<	10	<	10			<	10		24		1300	<	100		150	<	10
MW-6B	92/11		2.2	<	1			<	1	<	1			<	1	<	1		2100		14		250		1.2
MW-6B	93/02		1.7	<	1			<	1	<	1			<	1		39		1200		9.9		180		1.1
MW-6B	93/06	<	20	<	20	<	20	<	20	<	20	<	20	<	20		52		1400		77		570	<	20
MW-6B	93/09	<	1	<	1	<	1	<	1	<	1	<	1	<	1		40		810		39		260	<	1
MW-6B	93/11	<	5	<	5	<	5	<	5	<	5	<	5	<	5		43		1500		21		170	<	5
MW-6B	94/05	<	10	<	20	<	10	<	10	<	10	<	10	<	10		42		850		26	<	10	<	10
MW-6B	94/08	<	1		5.4	<	1	<	1	<	1	<	1	<	1		35		340		48		320		3.3
MW-6B	94/11	<	5	<	10	<	5	<	5	<	5	<	5	<	5		26		220		19		210	<	5
MW-6B	95/05	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20		280	<	60		32	<	20
MW-6B	95/08	<	5	<	10	<	5	<	5	<	5	<	5	<	5		20		170	<	15		130	<	5
MW-6B	95/11	<	10	<	20	<	10	<	10	<	10	<	10	<	10		14		250		13		160	<	10
MW-6B	96/05	<	10	<	20	<	10	<	10	<	10	<	10	<	10		14		240		19		140	<	10
MW-6B	96/08	<	5	<	10	<	5	<	5	<	5	<	5	<	5		21		260		21		120	<	5
MW-6B	96/11	<	5	<	10	<	5	<	5	<	5	<	5	<	5		18		180		19		120	<	5
MW-6B	97/05	<	5	<	10	<	5	<	5	<	5	<	5	<	5		14		120	<	15		82	<	5
MW-6C	86/11																4		6	<	10	<	1		
MW-6C	87/03																2		7	<	10	<	1		
MW-6C	87/06																4		13	<	10				
MW-6C	87/08																3		13	<	10				
MW-6C	87/11																2.1		11.2	<	2	<	1		
MW-6C	89/04																5.3		160	<	10		110		
MW-6C	90/05																4.9		13	<	2		3.7		
MW-6C	91/05	<	5	<	5			<	5	<	5			<	5		5		12	<	10	<	5	<	5
MW-6C	91/08	<	1	<	1			<	1	<	1			<	1		10.2		24.8	<	5		1.9	<	1
MW-6C	91/11	<	1	<	1			<	1	<	1			<	1		5.1		11	<	10	<	1	<	1
MW-6C	92/05	<	1	<	1			<	1	<	1			<	1		5.1		10.5	<	10	<	1	<	1
MW-6C	92/08	<	1	<	1			<	1	<	1			<	1		5		11	<	10	<	1	<	1
MW-6C	92/11	<	10	<	10			<	10	<	10			<	10	<	10		85	<	10		25	<	10
MW-6C	93/02	<	1	<	1			<	1	<	1			<	1		3.9		8.7	<	1	<	1	<	1
MW-6C	93/06	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1		5.8	<	1	<	1	<	1
MW-6C	93/09	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1		5	<	1	<	1	<	1
MW-6C	93/11	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1		3	<	1		15	<	1
MW-6C	94/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1		3.7		9.8	<	3		1.5	<	1
MW-6C	94/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1		5.6		8.8	<	3		3.5	<	1
MW-6C	94/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1		3.6		4.9	<	3		1	<	1
MW-6C	95/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1		3.3		7.5	<	3	<	1	<	1
MW-6C	95/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1		3.5		6.9	<	3	<	1	<	1
MW-6C	95/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1		2.3		5.6	<	3	<	1	<	1
MW-6C	96/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1		4		6.8	<	3	<	1	<	1

R002712

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-6C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	8.6	< 3	< 1	< 1
MW-6C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.2	9.2	< 3	1.1	< 1
MW-6C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.7	8.1	< 3	< 1	< 1
MW-7A	86/11								< 1	< 1	140	< 1	
MW-7A	87/03								< 1	< 1	< 10	< 1	
MW-7A	87/06								< 11	5	71	350	
MW-7A	87/08								< 5	< 5	97	370	
MW-7A	87/11								< 10	< 10	89.2	320	
MW-7A	89/04								< 100	3800	< 200	530	
MW-7A	89/06								< 120	2000	300	890	
MW-7A	89/09								< 10	1300	120		< 10
MW-7A	89/12								< 10	1300	210		16
MW-7A	90/02								< 100	1900	240	4000	
MW-7A	90/05	7.7	4.4						9	1600	72	1500	
MW-7A	90/11	< 5	13						1	850	230	2400	15
MW-7A	91/02	< 100	< 100		< 100	< 100		< 100	< 100	280	310	3000	< 100
MW-7A	91/05	< 100	< 100		< 100	< 100		< 100	< 100	1400	550	3500	< 100
MW-7A	91/08	< 10	12		< 10	< 10		< 10	< 10	300	270	1400	< 10
MW-7A	91/11	< 1	< 1		< 1	< 1		< 1	< 1	43	22	100	< 1
MW-7A	92/02	< 10	< 10		< 10	< 10		< 10	< 10	1400	< 100	1600	< 10
MW-7A	92/05	< 1	18		< 1	< 1		< 1	8.5	1800	500	2100	13
MW-7A	92/08	< 10	< 10		< 10	< 10		< 10	< 10	260	290	1200	< 10
MW-7A	92/11	< 10	12		< 10	< 10		< 10	< 10	440	450	2800	< 10
MW-7A	93/02	1	8		< 1	< 1		< 1	2.1	1300	120	900	5.8
MW-7A	93/06	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	22	< 10	810	< 10
MW-7A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	66	75	280	< 1
MW-7A	93/11	< 1	5.7	< 1	< 1	< 1	< 1	< 1	< 1	2.7	110	330	2
MW-7A	94/02	< 1	3	< 1	< 1	< 1	< 1	< 1	< 1	1.2	160	540	< 1
MW-7A	94/05	< 50	< 100	< 50	< 50	< 50	< 50	< 50	< 50	< 50	110	430	< 50
MW-7A	94/08	< 1	6.3	< 1	< 1	< 1	< 1	< 1	< 1	15	160	400	3
MW-7A	94/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	140	440	< 10
MW-7A	95/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	< 20	160	470	< 20
MW-7A	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	22	160	340	< 20
MW-7A	95/08	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	< 20	97	100	< 20
MW-7A	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	170	380	< 10
MW-7A	96/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	< 20	180	400	< 20
MW-7A	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	13	230	380	< 10
MW-7A	96/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	200	330	< 10
MW-7A	96/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	190	260	< 5
MW-7A	97/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	170	240	< 5
MW-7A	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	180	290	< 5
MW-7B	86/11								2	35	63	< 1	
MW-7B	87/03								< 1	47	< 10	99	
MW-7B	87/06								< 19	190	170	690	

R002713

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-7B	87/08								< 5	310	220	740	
MW-7B	87/11								< 5	513	200	789	
MW-7B	89/04								< 200	4600	< 400	660	
MW-7B	89/06								< 120	3500	< 250	430	
MW-7B	89/09								38	5100	73		< 20
MW-7B	89/12								44	5300	180		< 20
MW-7B	90/02								61	6600	280	3525	
MW-7B	90/05	7.5	8						31	2500	62	5.1	
MW-7B	90/11	9	23						46	2200	480	3200	25
MW-7B	91/05	< 100	< 100		< 100	< 100		< 100	< 100	4300	280	1900	< 100
MW-7B	91/08	< 20	< 20		< 20	< 20		< 20	< 20	4400	< 100	490	< 20
MW-7B	91/11	< 1	< 1		< 1	< 1		< 1	< 1	100	< 10	13	< 1
MW-7B	92/05	9.5	16		< 1	< 1		< 1	77	6400	640	1100	< 1
MW-7B	92/08	< 50	< 50		< 50	< 50		< 50	100	6400	< 500	1100	< 50
MW-7B	92/11	< 50	< 50		< 50	< 50		< 50	< 50	2400	190	1200	< 50
MW-7B	93/02	1.7	4.8		< 1	< 1		< 1	21	2300	140	490	3.5
MW-7B	93/06	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	30	< 10	22	< 10
MW-7B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.7	79	< 1	5.1	< 1
MW-7B	93/11	< 1	2	< 1	< 1	< 1	< 1	< 1	8.2	60	7.8	42	2.2
MW-7B	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	10	59	7.2	53	< 1
MW-7B	94/05	1.2	< 2	< 1	< 1	< 1	< 1	< 1	16	90	7	44	< 1
MW-7B	94/08	2.1	2.9	< 1	< 1	< 1	< 1	< 1	22	180	34	170	1.8
MW-7B	94/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	18	310	180	330	< 5
MW-7B	95/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	860	290	680	< 20
MW-7B	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	930	250	440	< 20
MW-7B	95/08	< 20	< 40	< 20	< 20	< 20	< 20	< 20	30	210	< 60	39	< 20
MW-7B	95/11	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	1100	170	420	< 20
MW-7B	96/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	1100	220	470	< 20
MW-7B	96/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	28	890	160	330	< 20
MW-7B	96/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	170	18	46	< 10
MW-7B	96/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	16	480	32	150	< 10
MW-7B	97/02	< 10	< 20	< 10	< 10	< 10	< 10	< 10	14	790	120	340	< 10
MW-7B	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	13	470	91	240	< 5
MW-7C	86/11								< 1	2	< 10	< 1	
MW-7C	87/03								< 1	5	< 1	< 1	
MW-7C	87/06								2	11	< 10		
MW-7C	87/08								3	12	< 10		
MW-7C	87/11								1.3	10.7	3.7	11.5	
MW-7C	89/04								< 5	35	< 10	< 5	
MW-7C	90/05								< 1	92	< 2	49	
MW-7C	91/05	< 5	< 5		< 5	< 5		< 5	4	30	< 10	6	< 5
MW-7C	91/08	< 1	< 1		< 1	< 1		< 1	9.2	49	< 5	5.2	< 1
MW-7C	91/11	< 1	< 1		< 1	< 1		< 1	4.4	20	< 10	1.2	< 1
MW-7C	92/05	< 1	< 1		< 1	< 1		< 1	5.2	31	< 10	6.2	< 1

R002714

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-7C	92/08	< 1	< 1		< 1	< 1		< 1	5.9	19	< 10	< 1	< 1
MW-7C	92/11	< 1	< 1		< 1	< 1		< 1	1.9	5.8	< 1	< 1	< 1
MW-7C	93/02	< 1	< 1		< 1	< 1		< 1	5.6	17	< 1	< 1	< 1
MW-7C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.8	20	< 1	< 1	< 1
MW-7C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.8	22	< 1	< 1	< 1
MW-7C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.5	15	< 3	< 1	< 1
MW-7C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	6	13	< 3	< 1	< 1
MW-7C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	7.4	< 3	< 1	< 1
MW-7C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.8	15	< 3	< 1	< 1
MW-7C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	13	< 3	< 1	< 1
MW-7C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.5	15	< 3	< 1	< 1
MW-7C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5	12	< 3	< 1	< 1
MW-7C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	11	< 3	< 1	< 1
MW-7C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.8	13	< 3	< 1	< 1
MW-7C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.7	15	< 3	< 1	< 1
MW-7C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.4	12	< 3	< 1	< 1
MW-7C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.4	13	< 3	< 1	< 1
MW-7D	86/11								< 1	4	< 10	< 1	
MW-7D	87/03								2	5	< 10	< 1	
MW-7D	87/06								3	11	< 10		
MW-7D	87/08								2	11	< 10		
MW-7D	87/11								1	6.3	< 2	< 1	
MW-7D	89/04								< 5	13	< 1	< 5	
MW-7D	89/09								3.1	11	< 0.5	<	1
MW-7D	89/12								6.4	12	< 0.5	<	1
MW-7D	90/02								4	17	< 1	2	
MW-7D	90/05								3.8	10	< 2	< 5	
MW-7D	91/05	< 5	< 5		< 5	< 5		< 5	4	32	< 10	10	< 5
MW-7D	91/08	< 1	< 1		< 1	< 1		< 1	9.1	48	< 5	5.8	< 1
MW-7D	91/11	< 1	< 1		< 1	< 1		< 1	5.2	30	< 10	3.2	< 1
MW-7D	92/02	< 1	< 1		< 1	< 1		< 1	4.7	15	< 10	1.4	< 1
MW-7D	92/05	< 1	< 1		< 1	< 1		< 1	6	20	< 10	1.5	< 1
MW-7D	92/08	< 1	< 1		< 1	< 1		< 1	4.1	15	< 10	1.6	< 1
MW-7D	92/11	< 1	< 1		< 1	< 1		< 1	5.2	28	< 1	3.4	< 1
MW-7D	93/02	< 1	< 1		< 1	< 1		< 1	6	16	< 1	1.3	< 1
MW-7D	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.1	14	< 1	1.3	< 1
MW-7D	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.9	11	< 1	< 1	< 1
MW-7D	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.1	10	< 3	< 1	< 1
MW-7D	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.1	6.9	< 3	1.2	< 1
MW-7D	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5	9.8	< 3	< 1	< 1
MW-7D	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5	12	< 3	< 1	< 1
MW-7D	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	8.8	< 3	< 1	< 1
MW-7D	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.9	11	< 3	< 1	< 1
MW-7D	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.9	17	< 3	< 1	< 1

R002715

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-7D	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.1	16	< 3	< 1	< 1
MW-7D	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	5.6	25	< 3	< 1	< 1
MW-7D	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	6.2	26	< 3	< 1	< 1
MW-7D	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.8	23	< 3	< 1	< 1
MW-7D	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	6.3	25	< 3	< 1	< 1
MW-8A	86/11								20	124	< 10	< 1	
MW-8A	87/03								22	121	< 10	137	
MW-8A	87/06								< 50	2100	< 100	460	
MW-8A	87/08								16	2800	33	610	
MW-8A	87/11								< 25	1715	< 100	548	
MW-8A	89/04								< 120	3100	< 250	560	
MW-8A	89/06								< 50	2500	150	890	
MW-8A	89/09								10	1600	61	< 10	
MW-8A	89/12								< 10	1200	74	< 10	
MW-8A	90/02								10	1700	90	1413	
MW-8A	90/05	4.1							10	1600	120	600	
MW-8A	90/11	< 5	5						8	1500	100	1200	15
MW-8A	91/02	< 50	< 50		< 50	< 50		< 50	10	2000	150	1500	12
MW-8A	91/05	< 50	< 50		< 50	< 50		< 50	< 50	2200	93	1400	< 50
MW-8A	91/08	< 20	< 20		< 20	< 20		< 20	< 20	2300	< 100	580	< 20
MW-8A	91/11	< 10	< 10		< 10	< 10		< 10	16	2100	< 100	600	< 10
MW-8A	92/02	< 10	< 10		< 10	< 10		< 10	16	1600	< 100	660	< 10
MW-8A	92/05	< 10	< 10		< 10	< 10		< 10	11	1100	< 100	490	< 10
MW-8A	92/08	< 5	< 5		< 5	< 5		< 5	10	980	51	600	< 5
MW-8A	92/11	< 1	1.5		< 1	< 1		< 1	7.2	840	27	820	2.1
MW-8A	93/02	< 10	< 10		< 10	< 10		< 10	< 10	1200	26	680	< 10
MW-8A	93/08	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	500	< 10	540	< 10
MW-8A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.8	560	93	720	7.1
MW-8A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	560	82	1300	5.5
MW-8A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.2	60	31	97	1.2
MW-8A	94/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	5.7	420	40	530	< 5
MW-8A	94/08	< 1	3.2	< 1	< 1	< 1	< 1	< 1	5.7	180	34	480	3.7
MW-8A	94/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	450	37	580	< 10
MW-8A	95/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	350	< 60	550	< 20
MW-8A	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	330	35	450	< 20
MW-8A	95/08	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	240	< 100	390	< 20
MW-8A	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	340	42	560	< 10
MW-8A	96/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	310	71	620	< 20
MW-8A	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	220	94	580	< 10
MW-8A	96/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	270	63	330	< 10
MW-8A	96/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	230	56	590	< 5
MW-8A	97/02	< 2	< 4	< 2	< 2	< 2	< 2	< 2	3.5	200	54	450	2.7
MW-8A	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	170	78	500	< 5
MW-8B	86/11								< 1	37	< 10	< 1	

R002716

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month		1,1,1-Trichloroethane ug/l		1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l		Tetrachloroethene ug/l	Trichloroethene ug/l		Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l		trans-1,2-Dichloroethene ug/l
Standard			1000.0		35.0	1500.0	25.0	25.0	375.0	25.0		25.0	25.0		10.0	200.0		500.0
MW-8B	87/03											31	101	<	1	29		
MW-8B	87/06											24	1400	<	100	43		
MW-8B	87/08											28	3000	<	10	83		
MW-8B	87/11										<	25	1675	<	100	73.3		
MW-8B	89/04										<	100	2700	<	200	160		
MW-8B	89/06										<	120	2200	<	250	270		
MW-8B	89/09											13	1200		13			15
MW-8B	89/12											14	1400		41		<	10
MW-8B	90/02										<	50	2800	<	50	395		
MW-8B	90/05		3.3		5.2							27	1800		39	240		
MW-8B	90/11	<	50		3							17	1400		31	440		25
MW-8B	90/11	<	50	<	50							20	1400		29	440		25
MW-8B	90/11	<	5	<	50							17	1500		31	440		34
MW-8B	90/11	<	50		3							20	1500		31	440		34
MW-8B	90/11	<	50	<	50							17	1400		31	440		34
MW-8B	90/11	<	50	<	50							20	1500		29	440		25
MW-8B	90/11	<	5	<	50							17	1500		31	440		25
MW-8B	90/11	<	5		3							20	1500		31	440		25
MW-8B	90/11	<	5		3							17	1400		29	440		34
MW-8B	90/11	<	5	<	50							17	1400		29	440		25
MW-8B	90/11	<	5		3							17	1500		31	440		34
MW-8B	90/11	<	5	<	50							20	1400		31	440		25
MW-8B	90/11	<	5	<	50							17	1400		29	440		34
MW-8B	90/11	<	50	<	50							17	1400		31	440		25
MW-8B	90/11	<	50		3							20	1500		31	440		25
MW-8B	90/11	<	50		3							20	1400		31	440		25
MW-8B	90/11	<	50	<	50							17	1400		29	440		25
MW-8B	90/11	<	50		3							20	1500		29	440		34
MW-8B	90/11	<	50	<	50							20	1400		29	440		34
MW-8B	90/11	<	50		3							20	1400		31	440		34
MW-8B	90/11	<	50	<	50							20	1500		31	440		34
MW-8B	90/11	<	5	<	50							20	1400		31	440		34
MW-8B	90/11	<	5	<	50							17	1500		29	440		34
MW-8B	90/11	<	50		3							20	1500		29	440		25
MW-8B	90/11	<	50		3							20	1400		29	440		34
MW-8B	90/11	<	50	<	50							20	1500		31	440		25
MW-8B	90/11	<	50	<	50							17	1500		31	440		25
MW-8B	90/11	<	50	<	50							17	1400		29	440		34
MW-8B	90/11	<	50	<	50							20	1500		29	440		34
MW-8B	90/11	<	50		3							17	1500		29	440		34
MW-8B	90/11	<	5	<	50							20	1400		29	440		34
MW-8B	90/11	<	5		3							20	1500		29	440		34
MW-8B	90/11	<	50		3							17	1400		29	440		34
MW-8B	90/11	<	5		3							17	1500		29	440		25

R002717

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month		1,1,1-Trichloroethane ug/l		1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l		1,2-Dichloroethane ug/l		1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l		Carbon Tetrachloride ug/l		Tetrachloroethene ug/l		Trichloroethene ug/l		Vinyl Chloride ug/l		cis-1,2-Dichloroethene ug/l		trans-1,2-Dichloroethene ug/l
Standard			1000.0		35.0	1500.0		25.0		25.0	375.0		25.0		25.0		25.0		10.0		200.0		500.0
MW-8B	90/11	<	5		3										20		1500		29		440		25
MW-8B	90/11	<	5	<	50										20		1500		31		440		25
MW-8B	90/11	<	50		3										17		1500		31		440		34
MW-8B	90/11	<	5	<	50										20		1400		29		440		25
MW-8B	90/11	<	50		3										20		1400		29		440		25
MW-8B	90/11	<	5	<	50										17		1500		29		440		25
MW-8B	90/11	<	50	<	50										20		1400		31		440		25
MW-8B	90/11	<	5		3										20		1400		31		440		34
MW-8B	90/11	<	50		3										17		1500		29		440		25
MW-8B	90/11	<	5		3										17		1400		31		440		34
MW-8B	90/11	<	50	<	50										17		1500		29		440		25
MW-8B	90/11	<	5		3										17		1500		29		440		34
MW-8B	90/11	<	5		3										20		1400		29		440		25
MW-8B	90/11	<	5	<	50										20		1500		31		440		34
MW-8B	90/11	<	5		3										20		1400		31		440		25
MW-8B	90/11	<	5		3										17		1500		31		440		25
MW-8B	90/11	<	5	<	50										20		1500		29		440		25
MW-8B	90/11	<	5		3										20		1500		31		440		34
MW-8B	90/11	<	50	<	50										17		1500		29		440		34
MW-8B	90/11	<	5	<	50										20		1500		29		440		34
MW-8B	90/11	<	5	<	50										17		1400		31		440		25
MW-8B	90/11	<	50		3										17		1400		31		440		34
MW-8B	90/11	<	50	<	50										17		1500		31		440		34
MW-8B	90/11	<	50		3										17		1400		29		440		25
MW-8B	90/11	<	50	<	50										20		1400		31		440		34
MW-8B	90/11	<	5	<	50										17		1400		31		440		34
MW-8B	90/11	<	5		3										17		1400		29		440		25
MW-8B	90/11	<	5		3										20		1400		29		440		34
MW-8B	90/11	<	5		3										17		1400		31		440		25
MW-8B	90/11	<	50		3										17		1500		31		440		25
MW-8B	96/02																						
MW-8B	96/05																						
MW-8B	96/08																						
MW-8B	96/11																						
MW-8B	97/02																						
MW-8C	86/11														3		12	<	10	<	1		
MW-8C	87/03														2	<	1	<	10		3		
MW-8C	87/06														4		24	<	10		9		
MW-8C	87/08														4		25	<	10		8		
MW-8C	87/11														1.1		14.8	<	2		7.4		
MW-8C	89/04													<	5		29	<	10		9.6		
MW-8C	90/05														2.4		14	<	2		3.3		
MW-8C	91/05	<	5	<	5		<	5	<	5		<	5		2		16	<	10		8	<	5
MW-8C	91/08	<	1	<	1		<	1	<	1		<	1		2.8		42	<	5		24	<	1

R002718

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-8C	91/11	< 1	< 1		< 1	< 1		< 1	2.2	16	< 10	5.6	< 1
MW-8C	92/02	< 1	< 1		< 1	< 1		< 1	2.6	17	< 10	5.3	< 1
MW-8C	92/05	< 1	< 1		< 1	< 1		< 1	2.7	21	< 10	4.6	< 1
MW-8C	92/08	< 1	< 1		< 1	< 1		< 1	2.6	19	< 10	4.1	< 1
MW-8C	92/11	< 1	< 1		< 1	< 1		< 1	< 1	12	< 1	8.7	< 1
MW-8C	93/02	< 1	< 1		< 1	< 1		< 1	2.2	14	< 1	5.4	< 1
MW-8C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.5	19	< 1	9	< 1
MW-8C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW-8C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.2	15	< 1	5.1	< 1
MW-8C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2	16	< 3	< 1	< 1
MW-8C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.2	16	< 3	6.5	< 1
MW-8C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.4	18	< 3	3.8	< 1
MW-8C	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.9	17	< 3	4.5	< 1
MW-8C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.4	15	< 3	3.8	< 1
MW-8C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	14	< 3	4	< 1
MW-8C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.2	19	< 3	3.6	< 1
MW-8C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.3	20	< 3	4.7	< 1
MW-8C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.6	16	< 3	4.2	< 1
MW-8C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.8	19	< 3	2.3	< 1
MW-8C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.6	19	< 3	4.4	< 1
MW-8C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3	24	< 3	4.9	< 1
MW-8C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.1	24	< 3	5	< 1
MW-9A	89/04								< 5	< 5	79	32	
MW-9A	89/06								< 5	5.9	37	46	
MW-9A	90/05								< 1	17	< 2	17	
MW-9A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	36	< 10	48	< 5
MW-9A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	19	< 10	9	< 1
MW-9A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	21	< 1	27	< 1
MW-9A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	2.4	< 1
MW-9A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8.1	< 1
MW-9A	96/02												
MW-9A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	21	17	< 1
MW-9A	96/08												
MW-9A	96/11												
MW-9A	97/02												
MW-9A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	16	15	< 1
MW-10A	89/04								< 5	1500	47	220	
MW-10A	89/06								< 5	110	45	180	
MW-10A	90/05	1.2							1.4	43	< 2	65	
MW-10A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	17	7	120	< 5
MW-10A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	6.2	< 10	87	< 1
MW-10A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	12	< 1	8.1	< 1
MW-10A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.8	54	< 3	18	< 1
MW-10A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	71	< 3	30	< 1

R002719

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-10A	96/02												
MW-10A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	38	3.2	41	< 1
MW-10A	96/08												
MW-10A	96/11												
MW-10A	97/02												
MW-10A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	15	< 3	17	< 1
MW-11A	87/11								< 25	< 1	< 100	367	
MW-11A	88/03								< 1	< 1		310	
MW-11A	88/06								< 1	14		340	
MW-11A	89/04								< 100	< 100	< 200	580	
MW-11A	89/06								< 50	< 50	270	420	
MW-11A	90/05								< 1	< 1	< 2	240	
MW-11A	90/11	< 25	< 25						< 25	< 25	< 50	280	< 25
MW-11A	91/05	< 50	< 50		< 50	< 50		< 50	< 50	< 50	18	350	< 50
MW-11A	91/08	< 1	< 1		< 1	< 1		< 1	< 1	1.7	29	192	< 1
MW-11A	91/11	< 1	< 1		< 1	< 1		< 1	< 1	3.3	15	150	< 1
MW-11A	92/02	< 1	< 1		< 1	< 1		< 1	< 1	2.2	18	150	< 1
MW-11A	92/05	< 1	< 1		< 1	< 1		< 1	< 1	2.5	12.9	142	< 1
MW-11A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	1.3	30	110	< 1
MW-11A	92/11	< 1	< 1		< 1	< 1		< 1	< 1	2.5	27	190	< 1
MW-11A	93/02	< 1	< 1		< 1	< 1		< 1	1	4.7	1.4	88	< 1
MW-11A	93/06	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	63	< 5
MW-11A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.4	5.6	55	< 1
MW-11A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	6.5	7	67	< 1
MW-11A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	6.5	12	73	< 1
MW-11A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	12	5.2	34	< 1
MW-11A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	4.3	31	72	< 1
MW-11A	94/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	96	< 10
MW-11A	95/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	140	< 5
MW-11A	95/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	150	< 30	68	< 10
MW-11A	95/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	15	33	240	< 10
MW-11A	95/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	6.5	45	160	< 5
MW-11A	96/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	55	130	< 5
MW-11A	96/08	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	5.8	30	140	< 5
MW-11A	96/11	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	2	35	100	< 2
MW-11A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.2	15	< 1
MW-11A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.6	15	45	< 1
MW-11B	87/11								8.3	106	< 2	13.5	
MW-11B	88/03								9	17		29	
MW-11B	88/06								< 1	15		9.3	
MW-11B	89/04								< 5	13	< 10	< 5	
MW-11B	89/06								< 5	21	< 10	28	
MW-11B	90/05								< 1	11	< 2	61	
MW-11B	90/11	< 5	< 5						< 5	10	< 10	15	< 5

R002720

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-11B	91/02	< 5	< 5		< 5	< 5		< 5	< 5	7	< 10	28	< 5
MW-11B	91/05	< 5	< 5		< 5	< 5		< 5	< 5	5	< 10	85	< 5
MW-11B	91/08	< 1	< 1		< 1	< 1		< 1	< 1	14.4	< 5	27.7	< 1
MW-11B	91/11	< 1	< 1		< 1	< 1		< 1	< 1	12	< 10	26	< 1
MW-11B	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.1	< 10	38	< 1
MW-11B	92/05	< 1	< 1		< 1	< 1		< 1	< 1	2.1	< 10	43	< 1
MW-11B	92/08	< 1	< 1		< 1	< 1		< 1	< 1	5.7	< 10	31	< 1
MW-11B	92/11	< 1	< 1		< 1	< 1		< 1	< 1	7.3	< 1	41	< 1
MW-11B	93/02	< 1	< 1		< 1	< 1		< 1	< 1	1.9	< 1	3.8	< 1
MW-11B	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-11B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.9	< 1
MW-11B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.4	< 1	20	< 1
MW-11B	96/02												
MW-11B	96/05												
MW-11B	96/08												
MW-11B	96/11												
MW-11B	97/02												
MW-11C	87/11								< 0.5	12.5	< 2	6.9	
MW-11C	88/03								< 1	12		5	
MW-11C	88/06								< 1	16		6.2	
MW-11C	89/04								< 5	10	< 10	11	
MW-11C	90/05								< 1	2.9	< 2	15	
MW-11C	90/11	< 5	< 5						< 5	4	< 10	39	1
MW-11C	91/02	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	< 5	< 5
MW-11C	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	41	< 5
MW-11C	91/08	< 1	< 1		< 1	< 1		< 1	< 1	2.2	< 5	30.1	1.1
MW-11C	91/11	< 1	< 1		< 1	< 1		< 1	< 1	3.3	< 10	18	< 1
MW-11C	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.4	< 10	18	< 1
MW-11C	92/05	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	5.5	< 1
MW-11C	92/08	< 1	< 1		< 1	< 1		< 1	< 1	2.9	< 10	17	< 1
MW-11C	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	13	< 1
MW-11C	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	21	< 1
MW-11C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	6.8	< 1	23	< 1
MW-11C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	7.3	< 1
MW-11C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	16	< 1
MW-11C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	16	< 1
MW-11C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	27	< 1
MW-11C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	18	< 1
MW-11C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	12	< 1
MW-11C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	24	< 1
MW-11C	95/11	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-11C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	19	< 1
MW-11C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.4	23	< 1
MW-11C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.1	26	< 1

R002721

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-11C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	19	< 1
MW-11C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.5	22	< 1
MW-11E	87/11								< 0.5	17.4	< 2	5	
MW-11E	88/03								< 1	17		14	
MW-11E	88/06								< 1	1.9		37	
MW-11E	89/04								< 5	5	< 10	42	
MW-11E	89/09								< 1	3.4	< 0.5		1.9
MW-11E	89/12								< 1	2.9	< 0.5		< 1
MW-11E	90/02								< 1	1	< 1	89	
MW-11E	90/05								< 1	2.8	< 2	31	
MW-11E	90/11	< 5	< 5						< 5	3	< 10	91	< 5
MW-11E	91/02	< 5	< 5		< 5	< 5		< 5	< 5	2	< 10	91	< 5
MW-11E	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	85	< 5
MW-11E	91/08	< 1	< 1		< 1	< 1		< 1	< 1	8.8	< 5	131	1.3
MW-11E	91/11	< 1	< 1		< 1	< 1		< 1	< 1	2	< 10	45	< 1
MW-11E	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.1	< 10	45	< 1
MW-11E	92/05	< 1	< 1		< 1	< 1		< 1	< 1	1	< 10	50	< 1
MW-11E	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	< 1	< 1
MW-11E	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	66	< 1
MW-11E	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	56	< 1
MW-11E	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.8	< 1	34	< 1
MW-11E	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	33	< 1
MW-11E	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	29	< 1
MW-11E	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	36	< 1
MW-11E	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	38	< 1
MW-11E	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-11E	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	45	< 1
MW-11E	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	49	< 1
MW-11E	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	23	< 1
MW-11E	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	< 1	< 3	47	< 1
MW-11E	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	50	< 1
MW-11E	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	44	< 1
MW-11E	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	48	< 1
MW-11E	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	43	< 1
MW-11E	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	51	< 1
MW-11E	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	45	< 1
MW-11E	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	48	< 1
MW-12A	87/11								< 2.5	45.2	46.8	1063	
MW-12A	88/03								< 1	120		630	
MW-12A	88/06								< 1	490		400	
MW-12A	89/04								< 100	150	< 200	830	
MW-12A	89/06								< 5	110	93	1200	
MW-12A	90/05								< 1	74	< 2	740	
MW-12A	90/08		< 5						< 10	34	110	1900	

R002722

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month		1,1,1-Trichloroethane ug/l		1,1-Dichloroethene ug/l		1,2-Dichlorobenzene ug/l		1,2-Dichloroethane ug/l		1,2-Dichloropropane ug/l		1,4-Dichlorobenzene ug/l		Carbon Tetrachloride ug/l		Tetrachloroethene ug/l	Trichloroethene ug/l		Vinyl Chloride ug/l		cis-1,2-Dichloroethene ug/l		trans-1,2-Dichloroethene ug/l
Standard			1000.0		35.0		1500.0		25.0		25.0		375.0		25.0		25.0	25.0		10.0		200.0		500.0
MW-12A	90/11	<	50	<	50											<	50	25		71		1400	<	50
MW-12A	91/02	<	50	<	50			<	50	<	50			<	50	<	50	16		58		860	<	50
MW-12A	91/05	<	50	<	50			<	50	<	50			<	50	<	50	21		70		1100	<	50
MW-12A	91/08	<	5	<	5			<	5	<	5			<	5	<	5	27		63		770	<	5
MW-12A	91/11	<	5	<	5			<	5	<	5			<	5	<	5	16		43	<	5	<	5
MW-12A	92/05	<	5	<	5			<	5	<	5			<	5	<	5	23.4		56		318	<	5
MW-12A	92/08	<	2.5	<	2.5			<	2.5	<	2.5			<	2.5	<	2.5	19		56		380	<	2.5
MW-12A	92/11	<	2	<	2			<	2	<	2			<	2	<	2	28		65		690	<	2
MW-12A	93/02	<	1	<	1			<	1	<	1			<	1	<	1	76		41		400	<	1
MW-12A	93/06	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5	56	<	5		310	<	5
MW-12A	93/09	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	68		38		310	<	1
MW-12A	93/11	<	1		2.4	<	1	<	1	<	1	<	1	<	1	<	1	92		50		360		1.1
MW-12A	94/02	<	1		4.4	<	1	<	1	<	1	<	1	<	1	<	1	180		86		720		2.1
MW-12A	94/05	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20	180		52		500	<	20
MW-12A	94/08	<	1		8.2	<	1	<	1	<	1	<	1	<	1		2.7	150		170		460		4.4
MW-12A	94/11	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	980		93		660	<	10
MW-12A	95/02	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20	220		110		750	<	20
MW-12A	95/05	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20	180		100		580	<	20
MW-12A	95/08	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	130	<	30		500	<	10
MW-12A	95/11	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20	110		140		750	<	20
MW-12A	96/02	<	20	<	40	<	20	<	20	<	20	<	20	<	20	<	20	200		190		770	<	20
MW-12A	96/05	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	93		170		520	<	10
MW-12A	96/08	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	70		140		520	<	10
MW-12A	96/11	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	71		160		560	<	10
MW-12A	97/02	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	73		150		480	<	10
MW-12A	97/05	<	10	<	20	<	10	<	10	<	10	<	10	<	10	<	10	79		140		430	<	10
MW-12B	84/08		1.1		8.6	<	1	<	1	<	1	<	1	<	1		28	230		34		350		3.9
MW-12B	87/11																5.2	642		30.1		1158		
MW-12B	88/03															<	1	1500				350		
MW-12B	88/06																3.2	360				370		
MW-12B	89/04															<	60	370	<	120		400		
MW-12B	89/06															<	50	380	<	100		380		
MW-12B	90/05															<	1	260	<	2		380		
MW-12B	90/08			<	5											<	10	250	<	10		340		
MW-12B	90/11	<	50	<	50											<	50	120		19		730	<	50
MW-12B	91/02	<	50	<	50			<	50	<	50			<	50	<	50	63		20		680	<	50
MW-12B	91/05	<	50	<	50			<	50	<	50			<	50	<	50	240		10		320	<	50
MW-12B	91/08	<	1	<	1			<	1	<	1			<	1		4.1	180		13		210	<	1
MW-12B	91/11	<	2.5	<	2.5			<	2.5	<	2.5			<	2.5		3.1	68		42		390	<	2.5
MW-12B	92/05	<	1	<	1			<	1	<	1			<	1		14.7	989	<	10		136	<	1
MW-12B	92/08	<	2	<	2			<	2	<	2			<	2		7.9	310	<	20		380		2.6
MW-12B	92/11	<	10	<	10			<	10	<	10			<	10	<	10	310	<	10		640	<	10
MW-12B	93/02		1.3		1.9			<	1	<	1			<	1		15	810		9.4		270		1.4
MW-12B	93/06	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	540	<	10		280	<	10

R002723

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-12B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.6	280	7.6	170	< 1
MW-12B	93/11	2.2	13	< 1	< 1	< 1	< 1	< 1	11	380	28	320	4.6
MW-12B	94/02	1.9	14	< 1	< 1	< 1	< 1	< 1	9.3	3000	59	1200	12
MW-12B	94/05	< 50	< 100	< 50	< 50	< 50	< 50	< 50	< 50	1900	< 150	740	< 50
MW-12B	94/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	11	230	52	750	< 10
MW-12B	95/02	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	640	92	640	< 10
MW-12B	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	280	60	420	< 20
MW-12B	95/08	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	140	< 60	94	< 20
MW-12B	95/11	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	93	< 60	260	< 20
MW-12B	96/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	93	34	260	< 20
MW-12B	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	98	28	190	< 10
MW-12B	96/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	160	21	220	< 10
MW-12B	96/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	120	860	300	< 10
MW-12B	97/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	5.7	120	68	320	< 5
MW-12B	97/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	10	150	< 30	180	< 10
MW-12C	87/11								0.9	9.8	< 2	2.4	
MW-12C	88/03								1.7	13		1.5	
MW-12C	88/06								1.3	17		1.3	
MW-12C	89/04								< 5	9.5	< 10	< 5	
MW-12C	90/05								3.2	8.4	< 2	1.6	
MW-12C	90/08		< 0.5						3	10	< 1	3	
MW-12C	90/11	< 5	< 5						5	14	< 10	4	< 5
MW-12C	91/02	< 5	< 5		< 5	< 5		< 5	5	17	< 10	5	< 5
MW-12C	91/05	< 5	< 5		< 5	< 5		< 5	5	20	< 10	6	< 5
MW-12C	91/08	< 1	< 1		< 1	< 1		< 1	7.6	27	< 5	6.3	< 1
MW-12C	91/11	< 1	< 1		< 1	< 1		< 1	4.3	16	< 10	3.2	< 1
MW-12C	92/05	< 1	< 1		< 1	< 1		< 1	5.3	18.1	< 10	3	< 1
MW-12C	92/08	< 1	< 1		< 1	< 1		< 1	5.4	16	< 10	2.9	< 1
MW-12C	92/11	< 1	< 1		< 1	< 1		< 1	2.7	8.4	< 1	3.6	< 1
MW-12C	93/02	< 1	< 1		< 1	< 1		< 1	4.2	8.9	< 1	1.5	< 1
MW-12C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.4	8.9	< 1	< 1	< 1
MW-12C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.1	8.3	< 1	< 1	< 1
MW-12C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.5	11	< 3	1.5	< 1
MW-12C	94/08	11	< 2	< 1	< 1	< 1	< 1	< 1	6.9	< 1	< 3	3	< 1
MW-12C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.5	5	< 3	1.1	< 1
MW-12C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.1	10	< 3	1.8	< 1
MW-12C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	7.9	< 3	1.8	< 1
MW-12C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.4	8.6	< 3	1.4	< 1
MW-12C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.7	9.2	< 3	2	< 1
MW-12C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.9	7.4	< 3	1.7	< 1
MW-12C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.1	8.4	< 3	1.8	< 1
MW-12C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.9	9.5	< 3	2.2	< 1
MW-12C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.7	8.9	< 3	2	< 1
MW-12E	87/11								< 0.5	23	< 2	1.5	

R002724

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-12E	88/03								< 1	26		1.4	
MW-12E	88/06								< 1	23		1.1	
MW-12E	89/04								< 5	18	< 10	< 5	
MW-12E	90/05								< 1	9.3	< 2	1.6	
MW-12E	90/11	< 5	< 5						0.8	9	< 10	4	< 5
MW-12E	91/05	< 5	< 5		< 5	< 5		< 5	< 5	12	< 10	18	< 5
MW-12E	91/08	< 1	< 1		< 1	< 1		< 1	< 1	19	< 5	13	< 1
MW-12E	91/11	< 1	< 1		< 1	< 1		< 1	< 1	14	< 10	8.4	< 1
MW-12E	92/05	< 1	< 1		< 1	< 1		< 1	< 1	13.2	< 10	8.7	< 1
MW-12E	92/08	< 1	< 1		< 1	< 1		< 1	< 1	14	< 10	6.1	< 1
MW-12E	92/11	< 1	< 1		< 1	< 1		< 1	< 1	13	< 1	11	< 1
MW-12E	93/02	< 1	< 1		< 1	< 1		< 1	1	8.4	< 1	3.1	< 1
MW-12E	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	6.3	< 1	< 1	< 1
MW-12E	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	11	< 1	< 1	< 1
MW-12E	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	9.8	< 3	11	< 1
MW-12E	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.4	< 3	13	< 1
MW-12E	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	6.1	< 3	6.6	< 1
MW-12E	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.4	< 3	11	< 1
MW-12E	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.5	< 3	10	< 1
MW-12E	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	9.7	< 3	9	< 1
MW-12E	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.7	< 3	9.5	< 1
MW-12E	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	7.3	< 3	19	< 1
MW-12E	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.4	< 3	14	< 1
MW-12E	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	8.2	< 3	15	< 1
MW-13A	87/11								< 2.5	115	< 10	123	
MW-13A	88/03								< 1	154		77	
MW-13A	88/06								< 1	200		67	
MW-13A	89/04								< 16	190	< 33	140	
MW-13A	89/06								< 12	190	< 25	150	
MW-13A	90/05								7.4	160	< 2	210	
MW-13A	90/08		< 5						< 10	260	38	560	
MW-13A	90/11	< 50	< 50						< 50	1500	120	2800	< 50
MW-13A	91/05	< 50	< 50		< 50	< 50		< 50	< 50	1200	120	1900	< 50
MW-13A	91/08	< 10	< 10		< 10	< 10		< 10	< 10	710	< 50	1200	< 10
MW-13A	91/11	< 5	5		< 5	< 5		< 5	< 5	170	< 50	690	< 5
MW-13A	92/05	< 10	< 10		< 10	< 10		< 10	< 10	1200	170	1400	11
MW-13A	92/08	< 5	6.9		< 5	< 5		< 5	< 5	300	< 50	1000	< 5
MW-13A	92/11	< 1	2.4		< 1	< 1		< 1	2.6	220	10	680	2.7
MW-13A	93/02	< 10	< 10		< 10	< 10		< 10	< 10	250	26	610	< 10
MW-13A	93/06	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	730	< 20	1400	< 20
MW-13A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	120	6	210	< 1
MW-13A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.5	55	5.8	74	1
MW-13A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	24	< 3	65	< 1
MW-13A	94/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	73	< 15	75	< 5

R002725

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-13A	95/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	460	< 30	140	< 10
MW-13A	95/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	270	< 30	160	< 10
MW-13A	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	95	< 30	120	< 10
MW-13A	96/02	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	92	< 30	140	< 10
MW-13A	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	63	< 30	100	< 10
MW-13A	96/08	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	72	< 15	81	< 5
MW-13A	96/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	5.5	110	< 15	76	< 5
MW-13A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	120	< 3	64	< 1
MW-13A	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	120	< 15	110	< 5
MW-13B	87/11								6.3	257	< 20	48.3	
MW-13B	88/03								< 1	270		270	
MW-13B	88/06								< 1	23		480	
MW-13B	89/04								< 16	380	< 33	61	
MW-13B	89/06								< 60	1900	120	360	
MW-13B	90/05		16						7.4	160	72	920	
MW-13B	90/08		14						23	3400	140	1800	
MW-13B	90/11	< 50	< 50						12	2300	240	1500	< 50
MW-13B	91/05	< 100	< 100		< 100	< 100		< 100	< 100	3400	230	1900	< 100
MW-13B	91/08	< 8	< 8		< 8	< 8		< 8	< 8	730	< 80	67	< 8
MW-13B	91/11	< 5	< 5		< 5	< 5		< 5	9.7	1300	< 50	120	< 5
MW-13B	92/05	< 20	< 20		< 20	< 20		< 20	45	4300	340	970	< 20
MW-13B	92/08	< 5	< 5		< 5	< 5		< 5	9.8	720	< 50	150	< 5
MW-13B	92/11	1.1	1.4		< 1	< 1		< 1	8.9	700	24	200	1.6
MW-13B	93/02	< 10	< 10		< 10	< 10		< 10	< 10	630	70	500	< 10
MW-13B	93/06	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	410	< 10	49	< 10
MW-13B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.6	74	< 1	9.5	< 1
MW-13B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	6.4	58	2.8	16	< 1
MW-13B	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	6.6	52	3.3	27	< 1
MW-13B	94/08	< 1	1.7	< 1	< 1	< 1	< 1	< 1	8.4	63	< 3	30	< 1
MW-13B	94/11	< 2	< 4	< 2	< 2	< 2	< 2	< 2	10	580	16	71	< 2
MW-13B	95/05	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	430	70	180	< 20
MW-13B	95/08	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	90	< 65	23	< 20
MW-13B	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	180	18	83	< 10
MW-13B	96/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	220	< 60	63	< 20
MW-13B	96/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	10	380	81	190	< 10
MW-13B	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	9.8	190	14	58	< 1
MW-13B	96/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	9.4	150	< 15	19	< 5
MW-13B	97/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	9.5	370	< 15	43	< 5
MW-13B	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	13	360	34	150	< 5
MW-13C	87/11								2.6	19.3	< 2	5.6	
MW-13C	88/03								2.1	15		2.5	
MW-13C	88/06								2.2	15		2.6	
MW-13C	89/04								< 5	14	< 10	< 5	
MW-13C	90/05								3	13	< 2	1.8	

R002726

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-13C	90/08		< 0.5						1	10	< 1	4	
MW-13C	90/11	< 5	< 5						3	16	< 10	6	< 5
MW-13C	91/02	< 5	< 5		< 5	< 5		< 5	3	17	< 10	5	< 5
MW-13C	91/05	< 5	< 5		< 5	< 5		< 5	3	20	< 10	6	< 5
MW-13C	91/08	< 1	< 1		< 1	< 1		< 1	< 1	28	< 5	4.7	< 1
MW-13C	91/11	< 1	< 1		< 1	< 1		< 1	3.2	17	< 10	3.5	< 1
MW-13C	92/05	< 1	< 1		< 1	< 1		< 1	5	33	< 10	4	< 1
MW-13C	92/08	< 1	< 1		< 1	< 1		< 1	3.6	20	< 10	3.1	< 1
MW-13C	92/11	< 1	< 1		< 1	< 1		< 1	1.5	18	< 1	5.9	< 1
MW-13C	93/02	< 1	< 1		< 1	< 1		< 1	3.3	17	< 1	4.1	< 1
MW-13C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.6	20	< 1	3.5	< 1
MW-13C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.1	16	< 1	1.6	< 1
MW-13C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3	16	< 1	2.4	< 1
MW-13C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.6	15	< 3	2	< 1
MW-13C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.6	18	< 3	9	< 1
MW-13C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.8	20	< 3	2	< 1
MW-13C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.5	16	< 3	2	< 1
MW-13C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.5	15	< 3	2	< 1
MW-13C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	19	< 3	1.8	< 1
MW-13C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.8	16	< 3	1.8	< 1
MW-13C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	17	< 3	1.9	< 1
MW-13C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	19	< 3	1.8	< 1
MW-13C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.4	20	< 3	1.6	< 1
MW-13C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4.3	22	< 3	1.9	< 1
MW-13E	87/11							<	0.5	4.4	< 2	2.8	
MW-13E	88/03								1.8	11		19	
MW-13E	88/06								1.7	14		8.4	
MW-13E	89/04							<	5	15	< 10	< 5	
MW-13E	90/05								2.5	11	< 2	2.3	
MW-13E	90/11	< 5	< 5						2	15	< 10	4	< 5
MW-13E	91/02	< 5	< 5		< 5	< 5		< 5	3	16	< 10	5	< 5
MW-13E	91/05	< 5	< 5		< 5	< 5		< 5	2	23	< 10	8	< 5
MW-13E	91/08	< 1	< 1		< 1	< 1		< 1	3.5	24	< 5	4.8	< 1
MW-13E	91/11	< 1	< 1		< 1	< 1		< 1	2	14	< 10	3.3	< 1
MW-13E	92/02	< 1	< 1		< 1	< 1		< 1	2.5	17	< 10	3.3	< 1
MW-13E	92/05	< 1	< 1		< 1	< 1		< 1	2.6	19	< 10	3.6	< 1
MW-13E	92/08	< 1	< 1		< 1	< 1		< 1	2.8	19	< 10	3.2	< 1
MW-13E	92/11	< 1	< 1		< 1	< 1		< 1	2.2	19	< 1	3.9	< 1
MW-13E	93/02	< 1	< 1		< 1	< 1		< 1	2.7	< 1	< 1	35	< 1
MW-13E	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	8.4	< 1	< 1	< 1
MW-13E	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	14	< 1	< 1	< 1
MW-13E	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.2	12	< 1	2	< 1
MW-13E	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	6.4	< 3	1.1	< 1
MW-13E	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.1	16	< 3	1.8	< 1

R0027727

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-13E	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.7	9.6	< 3	3.6	< 1
MW-13E	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.8	18	< 3	2.1	< 1
MW-13E	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.6	16	< 3	2.2	< 1
MW-13E	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	15	< 3	1.9	< 1
MW-13E	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	15	< 3	1.5	< 1
MW-13E	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	16	< 3	1.7	< 1
MW-13E	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3	18	< 3	1.9	< 1
MW-13E	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	15	< 3	1.6	< 1
MW-13E	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.7	19	< 3	1.9	< 1
MW-13E	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.9	21	< 3	1.8	< 1
MW-13E	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.7	15	< 3	1.4	< 1
MW-13E	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3	23	< 3	1.9	< 1
MW-14A	87/11								< 0.5	15.5	< 2	4509	
MW-14A	88/03								< 1	4.6		29	
MW-14A	88/06								< 1	1.6		22	
MW-14A	89/04								< 5	< 5	< 10	22	
MW-14A	89/06								< 5	< 5	< 10	18	
MW-14A	89/12								< 1	< 1	20		< 1
MW-14A	90/02								< 1	< 0.5	13	47	
MW-14A	90/05								< 1	< 1	< 2	12	
MW-14A	90/08		< 0.5						< 1	< 0.5	13	32	
MW-14A	90/11	< 5	< 5						< 5	7	7	14	< 5
MW-14A	91/02	< 5	< 5	< 5	< 1	< 5	< 5	< 1	< 5	2	7	10	< 5
MW-14A	91/05	< 5	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 10	12	< 5
MW-14A	91/08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	8	12.5	< 1
MW-14A	91/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	9.1	< 1
MW-14A	92/02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	4.8	< 1
MW-14A	92/05	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	1.7	< 1
MW-14A	92/08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	19	< 1
MW-14A	92/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	20	< 1
MW-14A	93/02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	15	16	< 1
MW-14A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.2	13	< 1
MW-14A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	19	7.7	< 1
MW-14A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	7.7	6.8	< 1
MW-14A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	13	6.1	< 1
MW-14A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	7.1	< 1
MW-14A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.2	8.4	< 1
MW-14A	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.9	11	< 1
MW-14A	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.9	11	< 1
MW-14A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	11	< 1
MW-14A	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.1	< 1	< 3	13	< 1
MW-14A	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	13	9.6	< 1
MW-14A	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	17	6.8	< 1
MW-14A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	15	5.7	< 1

R002728

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-14A	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	36	6.6	< 1
MW-14A	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	37	17	< 1
MW-14A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	19	6.1	< 1
MW-14A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	27	8	< 1
MW-14B	87/11								15.4	312	< 2	17.9	
MW-14B	88/03								25	830		16	
MW-14B	88/06								< 1	68		16	
MW-14B	89/04								< 50	1600	< 100	< 50	
MW-14B	89/06								< 50	2100	< 100	< 50	
MW-14B	89/12								90	1900	410		1.2
MW-14B	90/02								110	2100	180	810	
MW-14B	90/05		3.1						160	1300	74	450	
MW-14B	90/08		< 5						47	400	200	680	
MW-14B	90/11	< 50	< 50						18	260	120	440	< 50
MW-14B	91/02	< 50	< 50		< 50	< 50		< 50	22	260	98	130	< 50
MW-14B	91/05	< 50	< 50		< 50	< 50		< 50	66	1600	22	49	< 50
MW-14B	91/08	< 10	< 10		< 10	< 10		< 10	70	1000	< 50	26	< 10
MW-14B	91/11	< 10	< 10		< 10	< 10		< 10	78	1000	< 100	22	< 10
MW-14B	92/02	< 3	< 3		< 3	< 3		< 3	45	380	< 30	15	< 3
MW-14B	92/05	< 2	< 2		< 2	< 2		< 2	28	310	19	17	< 2
MW-14B	92/08	< 2	< 2		< 2	< 2		< 2	26	180	< 20	9.7	< 2
MW-14B	92/11	< 10	< 10		< 10	< 10		< 10	42	410	25	26	< 10
MW-14B	93/02	< 1	< 1		< 1	< 1		< 1	20	140	4.5	18	< 1
MW-14B	93/06	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	68	100	17	< 10
MW-14B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	56	180	28	10	< 1
MW-14B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	32	67	10	9.1	< 1
MW-14B	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	8.3	22	11	5.2	< 1
MW-14B	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	18	48	23	11	< 1
MW-14B	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	7.8	41	16	7.6	< 1
MW-14B	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	13	51	38	17	< 1
MW-14B	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	10	39	22	18	< 1
MW-14B	95/05	< 2	< 4	< 2	< 2	< 2	< 2	< 2	17	88	23	20	< 2
MW-14B	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	13	45	< 3	8.8	< 1
MW-14B	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	18	65	7.3	6.1	< 1
MW-14B	96/02	< 2	< 4	< 2	< 2	< 2	< 2	< 2	38	110	12	8.4	< 2
MW-14B	96/05	< 2	< 4	< 2	< 2	< 2	< 2	< 2	19	54	< 6	6.8	< 2
MW-14B	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	15	48	5.9	1.9	< 1
MW-14B	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	21	51	6.1	9.5	< 1
MW-14B	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	21	45	3.9	5.6	< 1
MW-14B	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	13	41	4.1	4	< 1
MW-14C	87/11								< 0.5	8.3	< 2	1.9	
MW-14C	88/03								4.1	250		21	
MW-14C	88/06								< 1	39	< 1		
MW-14C	89/04								< 5	8.4	< 10	< 5	

R0027729

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-14C	89/06								< 5	< 5	< 10	< 5	
MW-14C	89/12								< 1	16	16		< 1
MW-14C	90/02								< 1	110	3	49	
MW-14C	90/05								4.5	1100	< 2	58	
MW-14C	90/08		< 0.5						1	19	< 1	15	
MW-14C	90/11	< 5	< 5						< 5	21	< 10	15	< 5
MW-14C	91/02	< 5	< 5		< 5	< 5		< 5	< 5	11	1	24	< 5
MW-14C	91/05	< 5	< 5		< 5	< 5		< 5	< 5	9	< 10	10	< 5
MW-14C	91/08	< 1	< 1		< 1	< 1		< 1	< 1	9.3	< 5	12.2	< 1
MW-14C	91/11	< 1	< 1		< 1	< 1		< 1	< 1	4.8	< 10	< 1	< 1
MW-14C	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.6	< 10	4.5	< 1
MW-14C	92/05	< 1	< 1		< 1	< 1		< 1	< 1	4.2	< 10	4.8	< 1
MW-14C	92/08	< 1	< 1		< 1	< 1		< 1	< 1	4.8	< 10	3.8	< 1
MW-14C	92/11	< 1	< 1		< 1	< 1		< 1	< 1	6.7	< 1	3.7	< 1
MW-14C	93/02	< 1	< 1		< 1	< 1		< 1	< 1	3.8	< 1	3.3	< 1
MW-14C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.5	< 1	< 1	< 1
MW-14C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-14C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.2	< 1	1.3	< 1
MW-14C	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.2	< 3	2.1	< 1
MW-14C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.9	< 3	1.5	< 1
MW-14C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.3	< 3	1.7	< 1
MW-14C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.4	< 3	1.9	< 1
MW-14C	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.1	< 3	2.1	< 1
MW-14C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	4	< 3	1.8	< 1
MW-14C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.7	< 3	1.5	< 1
MW-14C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.3	< 3	2.6	< 1
MW-14C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	4	< 3	1.8	< 1
MW-14C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.8	< 3	2	< 1
MW-14C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.1	< 3	< 1	< 1
MW-14C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.5	< 3	2	< 1
MW-14C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.7	< 3	< 1	< 1
MW-14C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.9	< 3	1.7	< 1
MW-14E	87/11								0.5	4	< 2	< 1	
MW-14E	88/03								< 1	5.1		19	
MW-14E	88/06								< 1	11		1.7	
MW-14E	89/04								< 5	5.7	< 10	< 5	
MW-14E	89/12								< 1	3.2	< 0.5		< 1
MW-14E	90/02								< 1	18	< 1	12	
MW-14E	90/05								< 1	3.2	< 2	1.4	
MW-14E	90/11	< 5	< 5						< 5	9	< 10	4	< 5
MW-14E	91/02	< 5	< 5		< 5	< 5		< 5	< 5	4	< 10	3	< 5
MW-14E	91/05	< 5	< 5		< 5	< 5		< 5	< 5	6	< 10	< 5	< 5
MW-14E	91/08	< 1	< 1		< 1	< 1		< 1	< 1	5.6	< 5	1.2	< 1
MW-14E	91/11	< 1	< 1		< 1	< 1		< 1	< 1	3.8	< 10	1.3	< 1

R002730

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-14E	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.4	< 10	< 1	< 1
MW-14E	92/05	< 1	< 1		< 1	< 1		< 1	1.6	4.3	< 10	< 1	< 1
MW-14E	92/08	< 1	< 1		< 1	< 1		< 1	< 1	3.6	< 10	< 1	< 1
MW-14E	92/11	< 1	< 1		< 1	< 1		< 1	< 1	3	< 1	1.9	< 1
MW-14E	93/02	< 1	< 1		< 1	< 1		< 1	< 1	2	< 1	< 1	< 1
MW-14E	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 1	< 1	< 1
MW-14E	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-14E	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.1	3.1	< 1	< 1	< 1
MW-14E	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.1	< 3	< 1	< 1
MW-14E	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.9	< 3	< 1	< 1
MW-14E	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.8	< 3	< 1	< 1
MW-14E	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3.2	< 3	< 1	< 1
MW-14E	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.2	3.5	< 3	1	< 1
MW-14E	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.4	4.1	< 3	< 1	< 1
MW-14E	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.1	2.7	< 3	< 1	< 1
MW-14E	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.9	< 3	< 1	< 1
MW-14E	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.3	2.9	< 3	< 1	< 1
MW-14E	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.3	3.1	< 3	< 1	< 1
MW-14E	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.5	3.3	< 3	< 1	< 1
MW-14E	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.4	< 3	< 1	< 1
MW-14E	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	3	< 3	< 1	< 1
MW-14E	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.4	3.1	< 3	< 1	< 1
MW-15A	87/11							< 1	< 0.5	4.8	< 2	12.5	
MW-15A	88/03							< 1	< 1	5.2		51	
MW-15A	88/06							< 1	< 1				
MW-15A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	1	< 10	17	< 5
MW-15A	91/08	< 1	< 1		< 1	< 1		< 1	< 1	5.3	< 5	16	< 1
MW-15A	91/11	< 1	< 1		< 1	< 1		< 1	< 1	3.7	< 10	9.2	< 1
MW-15A	92/02	< 1	< 1		< 1	< 1		< 1	< 1	2.3	< 10	9.7	< 1
MW-15A	92/05	< 1	< 1		< 1	< 1		< 1	< 1	1.2	< 10	7.4	< 1
MW-15A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	2.4	< 10	6.4	< 1
MW-15A	92/11	1	< 1		< 1	< 1		< 1	< 1	2.6	< 1	6.9	< 1
MW-15A	93/02	< 1	< 1		< 1	< 1		< 1	< 1	1.7	< 1	3.6	< 1
MW-15A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.3	< 1	4.3	< 1
MW-15A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-15A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	4.1	< 1
MW-15A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	2.5	< 1
MW-15A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1	< 3	4.1	< 1
MW-15A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 3	4.6	< 1
MW-15A	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	1.8	< 1
MW-15A	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.7	< 3	2.2	< 1
MW-15A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.3	< 3	1.7	< 1
MW-15A	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.1	< 3	3.1	< 1
MW-15A	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.8	< 3	3.4	< 1

R002731

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month		1,1,1-Trichloroethane ug/l		1,1-Dichloroethene ug/l		1,2-Dichlorobenzene ug/l		1,2-Dichloroethane ug/l		1,2-Dichloropropane ug/l		1,4-Dichlorobenzene ug/l		Carbon Tetrachloride ug/l		Tetrachloroethene ug/l		Trichloroethene ug/l		Vinyl Chloride ug/l		cis-1,2-Dichloroethene ug/l		trans-1,2-Dichloroethene ug/l
Standard			1000.0		35.0		1500.0		25.0		25.0		375.0		25.0		25.0		25.0		10.0		200.0		500.0
MW-15A	96/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		2.4	<	3		2.8	<	1
MW-15A	96/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		2.8	<	3		4.2	<	1
MW-15A	96/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		1.4	<	3		5.8	<	1
MW-15A	96/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		2.3	<	3		4.7	<	1
MW-15A	97/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		1.8	<	3		2.6	<	1
MW-15A	97/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		1.5	<	3		3.8	<	1
MW-15B	87/11															<	0.5		3.4	<	2		3.8		
MW-15B	88/03															<	1		4.1				2.6		
MW-15B	88/06															<	1		2.5				6		
MW-15B	89/04															<	50			<	10	<	5		
MW-15B	89/06															<	5	<	5	<	10	<	5		
MW-15B	90/05															<	1		1.9	<	2		3.2		
MW-15B	91/05	<	5	<	5			<	5	<	5			<	5	<	5		2	<	10		6	<	5
MW-15B	91/08	<	1	<	1			<	1	<	1			<	1	<	1		2	<	5		2	<	1
MW-15B	91/11	<	1	<	1			<	1	<	1			<	1	<	1		1.4	<	10	<	1	<	1
MW-15B	92/02	<	1	<	1			<	1	<	1			<	1	<	1		2	<	10		3.1	<	1
MW-15B	92/05	<	1	<	1			<	1	<	1			<	1	<	1		1.9	<	10		2.6	<	1
MW-15B	92/08	<	1	<	1			<	1	<	1			<	1	<	1		1.4	<	10		1.1	<	1
MW-15B	92/11	<	1	<	1			<	1	<	1			<	1	<	1	<	1	<	1		2	<	1
MW-15B	93/02	<	1	<	1			<	1	<	1			<	1		1	<	1	<	1		1.2	<	1
MW-15B	93/06	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
MW-15B	93/09	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
MW-15B	93/11	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
MW-15B	94/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	94/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		1	<	3	<	1	<	1
MW-15B	94/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3		1.3	<	1
MW-15B	94/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	95/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	95/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	95/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	95/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	96/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	96/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	96/08	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3		1.1	<	1
MW-15B	96/11	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	97/02	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	3	<	1	<	1
MW-15B	97/05	<	1	<	2	<	1	<	1	<	1	<	1	<	1	<	1		1	<	3		1	<	1
MW-15C	87/11															<	0.5		23.6	<	2		9.2		
MW-15C	88/06															<	1		16				8.4		
MW-15C	89/04															<	5		6.7	<	10	<	5		
MW-15C	89/06															<	5	<	5	<	10	<	5		
MW-15C	90/05															<	1		21				1		
MW-15C	91/05	<	5	<	5			<	5	<	5			<	5	<	5		4	<	10		39	<	5
MW-15C	91/08	<	1	<	1			<	1	<	1			<	1	<	1		5.6	<	5		27	<	1

R002732

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-15C	91/11	< 1	< 1		< 1	< 1		< 1	< 1	4.1	< 10	< 1	< 1
MW-15C	92/02	< 1	< 1		< 1	< 1		< 1	< 1	3.3	< 10	24	< 1
MW-15C	92/05	< 1	< 1		< 1	< 1		< 1	< 1	3.4	< 10	24.8	< 1
MW-15C	92/08	< 1	< 1		< 1	< 1		< 1	< 1	2.6	< 10	26	< 1
MW-15C	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	17	< 1
MW-15C	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	13	< 1
MW-15C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	17	< 1
MW-15C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	15	< 1
MW-15C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	23	< 1
MW-15C	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	20	< 1
MW-15C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	28	< 1
MW-15C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	35	1.4
MW-15C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	26	< 1
MW-15C	95/02	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 6	30	< 2
MW-15C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	15	< 1
MW-15C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	23	< 1
MW-15C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	30	< 1
MW-15C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	30	1.1
MW-15C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	28	< 1
MW-15C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	31	< 1
MW-15C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	33	1.5
MW-15C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	28	< 1
MW-15C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	30	< 1
MW-16C	87/11								< 0.5	< 0.5	< 2	< 1	
MW-16C	88/03								< 1	< 1		< 1	
MW-16C	89/04								< 5	< 5	< 10	< 5	
MW-16C	89/06								< 5	< 5	< 10	< 5	
MW-16C	89/09								< 1	< 1	< 0.5		< 1
MW-16C	89/12								< 1	< 1	< 0.5		< 1
MW-16C	90/02								< 1	< 1	< 1	< 0.5	
MW-16C	90/05								< 1	< 1	< 2	< 5	
MW-16C	90/11	< 5	< 5						< 5	64	5	28	< 5
MW-16C	91/02	< 5	< 5		< 5	< 5	< 5	< 5	< 5	3	< 10	37	2
MW-16C	91/05	< 5	< 5		< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5
MW-16C	91/08	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1
MW-16C	91/11	< 1	< 1		< 1	< .1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-16C	92/02	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-16C	92/05	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-16C	92/08	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-16C	92/11	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-16C	93/02	< 1	< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-16C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 1	< 1	< 1
MW-16C	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-16C	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

R002733

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-16C	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-16C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	89/04								< 5	< 5	< 10	< 5	
MW-17A	89/06								< 5	< 5	< 10	< 5	
MW-17A	89/09								< 1	1.1	< 0.5		< 1
MW-17A	89/12								< 1	< 1	< 0.5		< 1
MW-17A	90/02								< 1	1	< 1	3	
MW-17A	90/05								< 1	< 1	< 2	< 5	
MW-17A	91/05	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5
MW-17A	91/08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1
MW-17A	91/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-17A	92/02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-17A	92/05	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-17A	92/08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1
MW-17A	92/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17A	93/02	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1

R002734

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-17A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17B	89/04								< 5	< 5	< 10	< 5	
MW-17B	89/06								< 5	< 5	< 10	< 5	
MW-17B	89/09								< 1	< 1	< 0.5		< 1
MW-17B	89/12								< 1	< 1	< 0.5		< 1
MW-17B	90/02								< 1	< 0.5	< 1	12	
MW-17B	90/05								< 1	< 1	< 2	2.4	
MW-17B	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	10	< 5
MW-17B	91/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 5	8.1	< 1
MW-17B	91/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	3.9	< 1
MW-17B	92/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	5.4	< 1
MW-17B	92/05	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	7	< 1
MW-17B	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	2.3	< 1
MW-17B	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	3.3	< 1
MW-17B	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	12	< 1
MW-17B	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.8	< 1
MW-17B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-17B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.7	< 1
MW-17B	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	2.6	< 1
MW-17B	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	5.8	< 1
MW-17B	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	4.3	< 1
MW-17B	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	6.6	< 1
MW-17B	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8	< 1
MW-17B	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	3.9	< 1
MW-17B	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	5.1	< 1
MW-17B	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	5.6	< 1
MW-17B	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	6.7	< 1
MW-17B	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17B	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	3.2	< 1
MW-17B	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	2.2	< 1
MW-17B	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8	< 1
MW-17B	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	6.3	< 1
MW-17C	89/04								< 5	< 5	< 10	< 5	
MW-17C	89/06								< 5	< 5	< 10	< 5	
MW-17C	89/09								< 1	< 1	< 0.5		< 1
MW-17C	89/12								< 1	< 1	< 0.5		< 1
MW-17C	90/02								< 1	2	< 1	3	
MW-17C	90/05								< 1	< 1	< 2	1	
MW-17C	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	6	< 5
MW-17C	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	4.5	< 1
MW-17C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	7.6	< 1
MW-17C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	4.5	< 1
MW-17C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	5.3	< 1
MW-17C	96/02												

R002735

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-17C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17C	96/08												
MW-17C	96/11												
MW-17C	97/02												
MW-17C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8.7	< 1
MW-17D	89/04								< 5	< 5	< 10	< 5	
MW-17D	89/06								< 5	< 5	< 10	< 5	
MW-17D	89/09								< 1	< 1	< 0.5		< 1
MW-17D	89/12								< 1	< 1	< 0.5		< 1
MW-17D	90/02								< 1	2	< 1	3	
MW-17D	90/05								< 1	< 1	< 2	2.9	
MW-17D	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	10	< 5
MW-17D	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	8.2	< 1
MW-17D	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.6	< 1
MW-17D	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8	< 1
MW-17D	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	8.2	< 1
MW-17D	96/02												
MW-17D	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-17D	96/08												
MW-17D	96/11												
MW-17D	97/02												
MW-17D	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	15	< 1
MW-18A	89/04								< 5	6.1	< 10	140	
MW-18A	89/06								< 50	< 5	< 100	150	
MW-18A	89/09								< 1	4.6	4.8		1.1
MW-18A	89/12								< 1	8	16		1.6
MW-18A	90/02								< 10	5	12	570	
MW-18A	90/05								< 1	2.4	< 2	< 5	
MW-18A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	8	< 10	200	< 5
MW-18A	91/08	< 1	< 1		< 1	< 1		< 1	< 1	10.4	< 5	135	< 1
MW-18A	91/11	< 1	< 1		< 1	< 1		< 1	< 1	6.8	< 10	160	< 1
MW-18A	92/02	< 1	< 1		< 1	< 1		< 1	< 1	11	< 10	170	< 1
MW-18A	92/05	< 1	< 1		< 1	< 1		< 1	< 1	8.8	< 10	110	< 1
MW-18A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	11	< 10	140	< 1
MW-18A	92/11	< 1	< 1		< 1	< 1		< 1	< 1	9.2	2.8	260	< 1
MW-18A	93/02	< 1	< 1		< 1	< 1		< 1	< 1	10	< 1	100	< 1
MW-18A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.5	< 1	18	< 1
MW-18A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3.7	< 1	18	< 1
MW-18A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.1	< 1	12	< 1
MW-18A	94/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.4	< 3	14	< 1
MW-18A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.5	< 3	14	< 1
MW-18A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.4	< 3	35	< 1
MW-18A	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.7	< 3	37	< 1
MW-18A	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.1	< 3	32	< 1

R002736

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-18A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.5	< 3	30	< 1
MW-18A	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.5	< 3	15	< 1
MW-18A	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 3	36	< 1
MW-18A	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.7	2.9	43	< 1
MW-18A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.7	< 3	< 1	< 1
MW-18A	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3	2.6	< 1
MW-18A	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 3	9.5	< 1
MW-18A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.4	< 3	20	< 1
MW-18A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.3	< 3	27	< 1
MW-18B	89/04								< 5	< 5	< 10	57	
MW-18B	89/06								< 120	< 120	< 250	< 120	
MW-18B	89/09								< 1	< 1	7.5		2.2
MW-18B	89/12								< 1	< 1	15		1.3
MW-18B	90/02								< 10	7	< 10	400	
MW-18B	90/05								< 1	< 1	< 2	81	
MW-18B	91/05	< 50	< 50		< 50	< 50		< 50	< 50	16	33	1600	< 50
MW-18B	91/08	< 1	3.2		< 1	< 1		< 1	< 1	< 1	12	< 1	3.7
MW-18B	91/11	< 1	2.1		< 1	< 1		< 1	< 1	< 1	5.1	620	< 1
MW-18B	92/02	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 50	650	< 5
MW-18B	92/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 50	540	< 5
MW-18B	92/08	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 50	600	< 5
MW-18B	92/11	< 1	1		< 1	< 1		< 1	< 1	< 1	11	620	1
MW-18B	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	160	< 1
MW-18B	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-18B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	120	< 1
MW-18B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9	140	< 1
MW-18B	94/02	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	240	< 10
MW-18B	94/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	190	< 5
MW-18B	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	10	190	< 1
MW-18B	94/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	140	< 5
MW-18B	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.4	75	< 1
MW-18B	95/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	130	< 10
MW-18B	95/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	10	< 10	< 30	110	< 10
MW-18B	95/11	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	140	< 10
MW-18B	96/02	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	13	180	< 2
MW-18B	96/05	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	6.8	120	< 2
MW-18B	96/08	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	7	76	< 2
MW-18B	96/11	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	10	120	< 2
MW-18B	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	15	120	< 1
MW-18B	97/05	< 2	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	9.3	150	< 2
MW-18D	89/04								< 5	< 5	< 10	< 5	
MW-18D	89/06								< 5	< 5	< 10	< 5	
MW-18D	89/09								< 1	< 1	< 0.5		< 1
MW-18D	89/12								< 1	< 1	< 0.5		< 1

R002737

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-18D	90/02								< 1	0.5	< 1	< 0.5	
MW-18D	90/05								< 1	< 1	< 2	< 5	
MW-18D	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	< 5	< 5
MW-18D	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	< 1	< 1
MW-18D	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-18D	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-18D	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-18D	96/02												
MW-18D	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-18D	96/08												
MW-18D	96/11												
MW-18D	97/02												
MW-18D	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19A	89/04								< 5	< 5	< 10	< 5	
MW-19A	89/06								< 5	< 5	< 10	< 5	
MW-19A	89/09								< 1	< 1	< 0.5		1
MW-19A	89/12								< 1	< 1	< 0.5	<	1
MW-19A	90/02								< 1	0.6	< 1	26	
MW-19A	90/05								< 1	< 1	< 2		
MW-19A	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	23	< 5
MW-19A	91/08	< 1	< 1		< 1	< 1		< 1	< 1	27	< 5	9	< 1
MW-19A	91/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	55	< 1
MW-19A	92/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	11	< 1
MW-19A	92/05	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	3.6	< 1
MW-19A	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	< 1	< 1
MW-19A	92/11	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	520	< 1
MW-19A	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 1	19	< 1
MW-19A	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	65	< 1
MW-19A	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	14	< 1
MW-19A	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	64	< 1
MW-19A	94/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	96	< 5
MW-19A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	12	< 1
MW-19A	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	43	< 1
MW-19A	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	60	< 1
MW-19A	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	2	< 1
MW-19A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	4.7	< 1
MW-19A	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	4.3	< 1
MW-19A	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	1.9	< 1
MW-19A	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	13	< 1
MW-19A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19A	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	20	< 1
MW-19A	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	27	< 1
MW-19A	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	13	< 1
MW-19A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	40	< 1

R002738

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-19B	89/04								< 25	< 25	< 50	410	
MW-19B	89/06								< 25	< 25	< 50	600	
MW-19B	89/09								< 1	1.5	11		2.3
MW-19B	89/12								< 1	< 1	17		2.8
MW-19B	90/02								< 10	< 5	< 10	760	
MW-19B	90/05								< 1	< 1	< 2	150	
MW-19B	91/05	< 25	< 25		< 25	< 25		< 25	< 25	< 25	< 50	540	< 25
MW-19B	91/08	100	< 20		< 20	< 20		< 20	< 20	< 20	< 100	110	< 20
MW-19B	91/11	< 2.5	< 2.5		< 2.5	< 2.5		< 2.5	< 2.5	< 2.5	< 25	410	< 2.5
MW-19B	92/02	< 2.5	< 2.5		< 2.5	< 2.5		< 2.5	< 2.5	< 2.5	< 25	410	< 2.5
MW-19B	92/05	< 2.5	< 2.5		< 2.5	< 2.5		< 2.5	< 2.5	< 2.5	< 25	410	< 2.5
MW-19B	92/08	< 2.5	< 2.5		< 2.5	< 2.5		< 2.5	< 2.5	< 2.5	< 25	400	< 2.5
MW-19B	92/11	< 1	1.6		< 1	< 1		< 1	< 1	< 1	15	770	1.8
MW-19B	93/02	< 1	< 1		< 1	< 1		< 1	< 1	< 1	4	300	< 1
MW-19B	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2.9	< 1	< 1
MW-19B	93/09	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	130	< 1
MW-19B	93/11	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	16	170	< 1
MW-19B	94/02	< 20	< 40	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 60	300	< 20
MW-19B	94/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	190	< 10
MW-19B	94/08	< 1	1.9	< 1	< 1	< 1	< 1	< 1	< 1	< 1	13	370	1.8
MW-19B	94/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	31	210	< 5
MW-19B	95/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	48	230	< 5
MW-19B	95/05	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	190	< 10
MW-19B	95/08	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 30	240	< 10
MW-19B	95/11	< 5	< 10	< 5	< 5	< 5	< 5	8.4	< 5	< 5	29	290	< 5
MW-19B	96/02	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	38	320	< 5
MW-19B	96/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	61	160	< 5
MW-19B	96/08	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	49	200	< 5
MW-19B	96/11	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	55	110	< 5
MW-19B	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	54	140	< 1
MW-19B	97/05	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	18	280	< 5
MW-19C	89/04								< 5	< 5	< 10	< 5	
MW-19C	89/06								< 5	< 5	< 10	< 5	
MW-19C	89/09								< 1	1.1	< 0.5		< 1
MW-19C	89/12								< 1	< 1	< 0.5		< 1
MW-19C	90/02								< 1	< 0.5	< 1	< 0.5	
MW-19C	90/05								< 1	< 1	< 2	1.5	
MW-19C	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	< 5	< 5
MW-19C	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	< 1	< 1
MW-19C	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-19C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19C	96/02												
MW-19C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1

R002739

Modern Plating Corporation

Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-19C	96/08												
MW-19C	96/11												
MW-19C	97/02												
MW-19C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19D	89/04								< 5	< 5	< 10	< 5	
MW-19D	89/06								< 5	< 5	< 10	< 5	
MW-19D	89/09								< 1	< 1	< 0.5		< 1
MW-19D	89/12								< 1	< 1	< 0.5		< 1
MW-19D	90/02								< 1	0.8	< 1	< 0.5	
MW-19D	90/05								< 1	< 1	< 2	< 5	
MW-19D	91/05	< 5	< 5		< 5	< 5		< 5	< 5	< 5	< 10	< 5	< 5
MW-19D	92/08	< 1	< 1		< 1	< 1		< 1	< 1	< 1	< 10	< 1	< 1
MW-19D	93/06	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
MW-19D	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19D	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19D	96/02												
MW-19D	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-19D	96/08												
MW-19D	96/11												
MW-19D	97/02												
MW-19D	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	94/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	94/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	95/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	95/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	95/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	96/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.3	< 3	2.4	< 1
MW-20C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	96/08	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	96/11	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	97/02	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-20C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-21A	94/05	< 2	< 4	< 2	< 2	< 2	< 2	< 2	2	47	11	39	< 2
MW-21A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1	14	< 3	59	< 1
MW-21A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1	3.1	45	64	< 1
MW-21A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1	5.7	34	54	< 1
MW-21C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.1	3.5	< 3	< 1	< 1
MW-21C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.5	3.9	< 3	< 1	< 1
MW-21C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	3.6	4.4	< 3	< 1	< 1
MW-21C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	4	4.7	< 3	< 1	< 1
MW-22A	94/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	4.6	< 1
MW-22A	95/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1

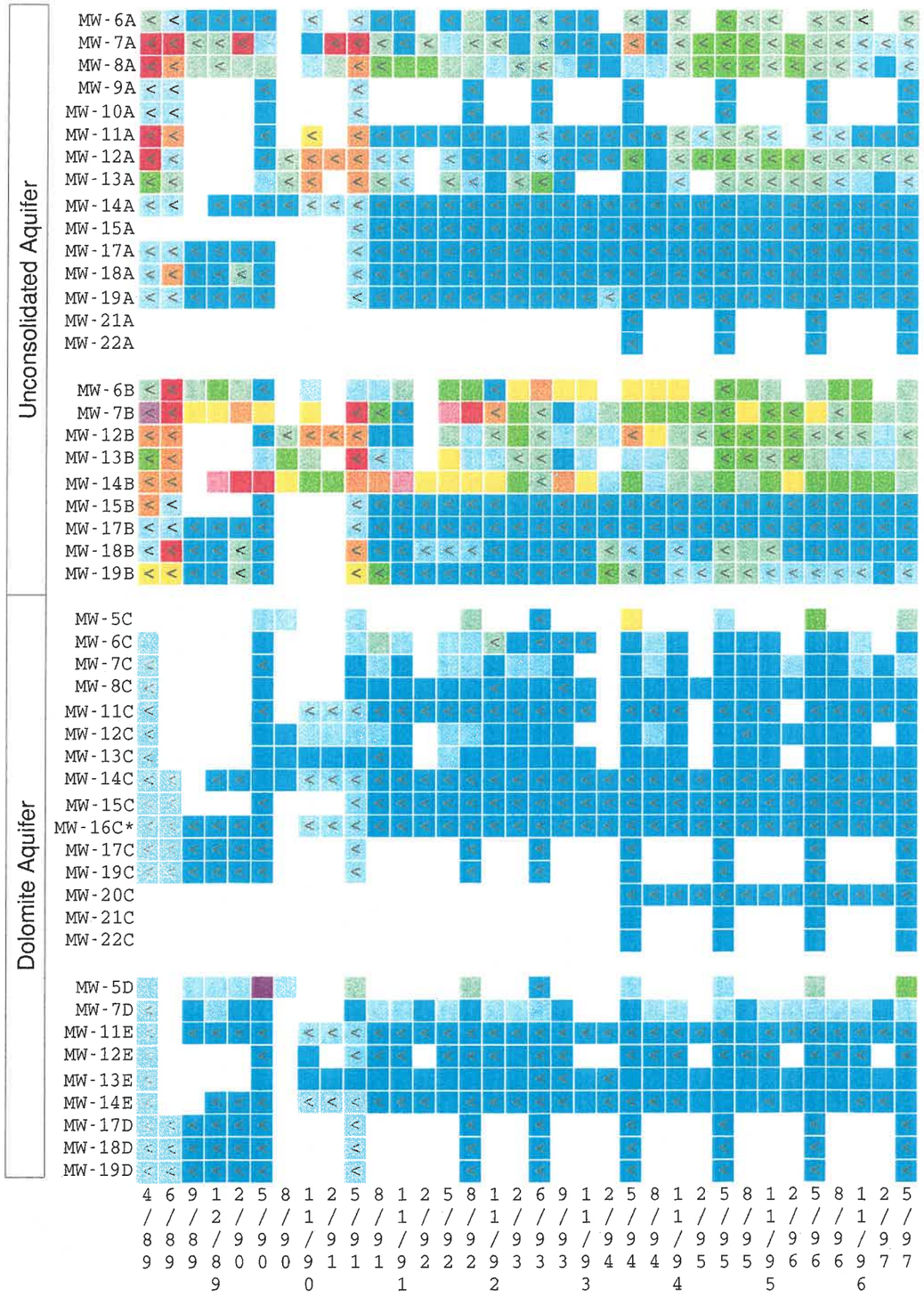
R002740

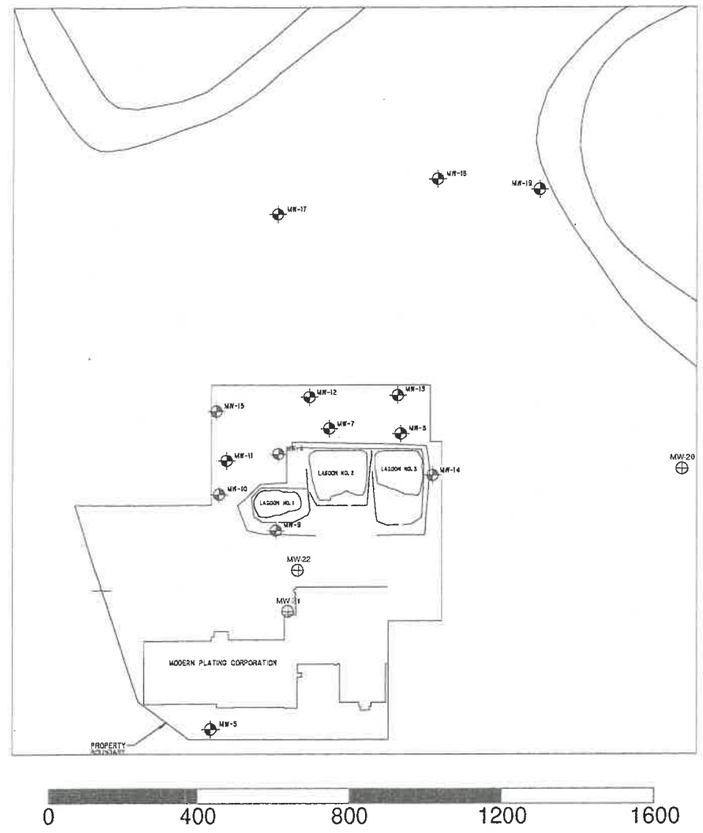
Modern Plating Corporation

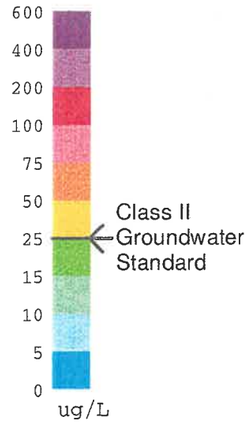
Historical Monitoring Data
VOC's with 35 Ill. Adm. Code 303 Part 620 Standards

Station	Year/ Month	1,1,1-Trichloroethane ug/l	1,1-Dichloroethene ug/l	1,2-Dichlorobenzene ug/l	1,2-Dichloroethane ug/l	1,2-Dichloropropane ug/l	1,4-Dichlorobenzene ug/l	Carbon Tetrachloride ug/l	Tetrachloroethene ug/l	Trichloroethene ug/l	Vinyl Chloride ug/l	cis-1,2-Dichloroethene ug/l	trans-1,2-Dichloroethene ug/l
Standard		1000.0	35.0	1500.0	25.0	25.0	375.0	25.0	25.0	25.0	10.0	200.0	500.0
MW-22A	96/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	< 1	< 1
MW-22A	97/05	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 3	1.6	< 1
MW-22C	94/05	< 1	< 2	< 1	< 1	< 1	< 1	1	2.3	3.2	< 3	< 1	< 1
MW-22C	95/05	< 1	< 2	< 1	< 1	< 1	< 1	1	3.5	4.5	< 3	< 1	< 1
MW-22C	96/05	< 1	< 2	< 1	< 1	< 1	< 1	1	4.5	5.1	< 3	< 1	< 1
MW-22C	97/05	< 1	< 2	< 1	< 1	< 1	< 1	1	4.5	4.8	< 3	< 1	< 1

R002741







< Implies No Detect

* Denotes Background Well

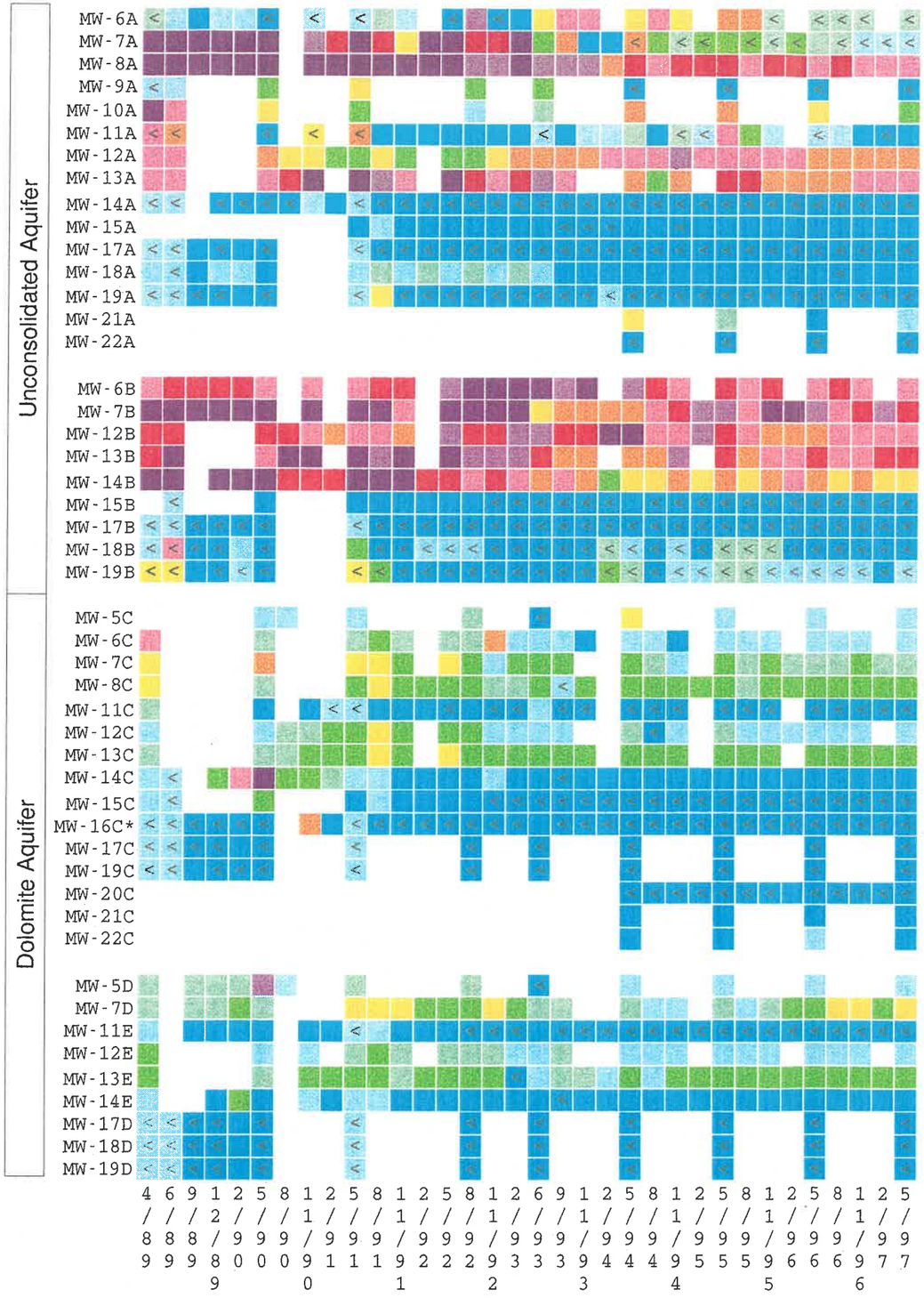
Modern Plating Facility

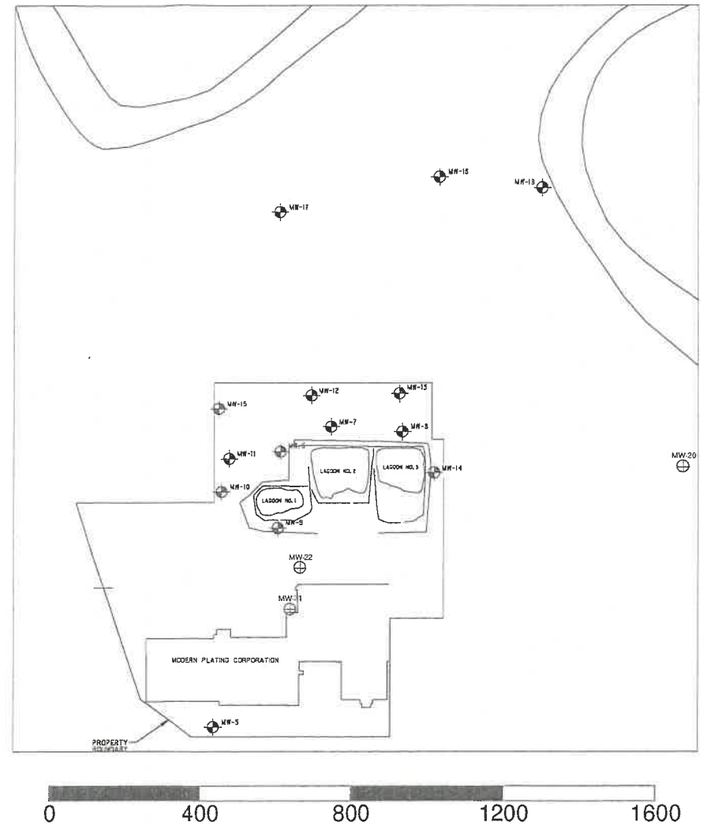
Figure 3-5

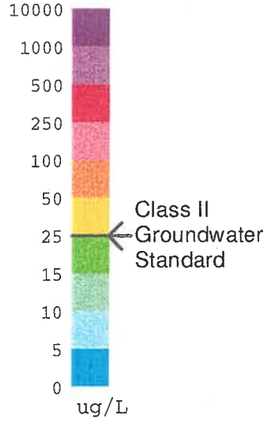
Historical Groundwater Concentrations
Tetrachloroethene

Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes:92m13:histrcle:graphs:pce.srf,.wk1,basemap2.bln





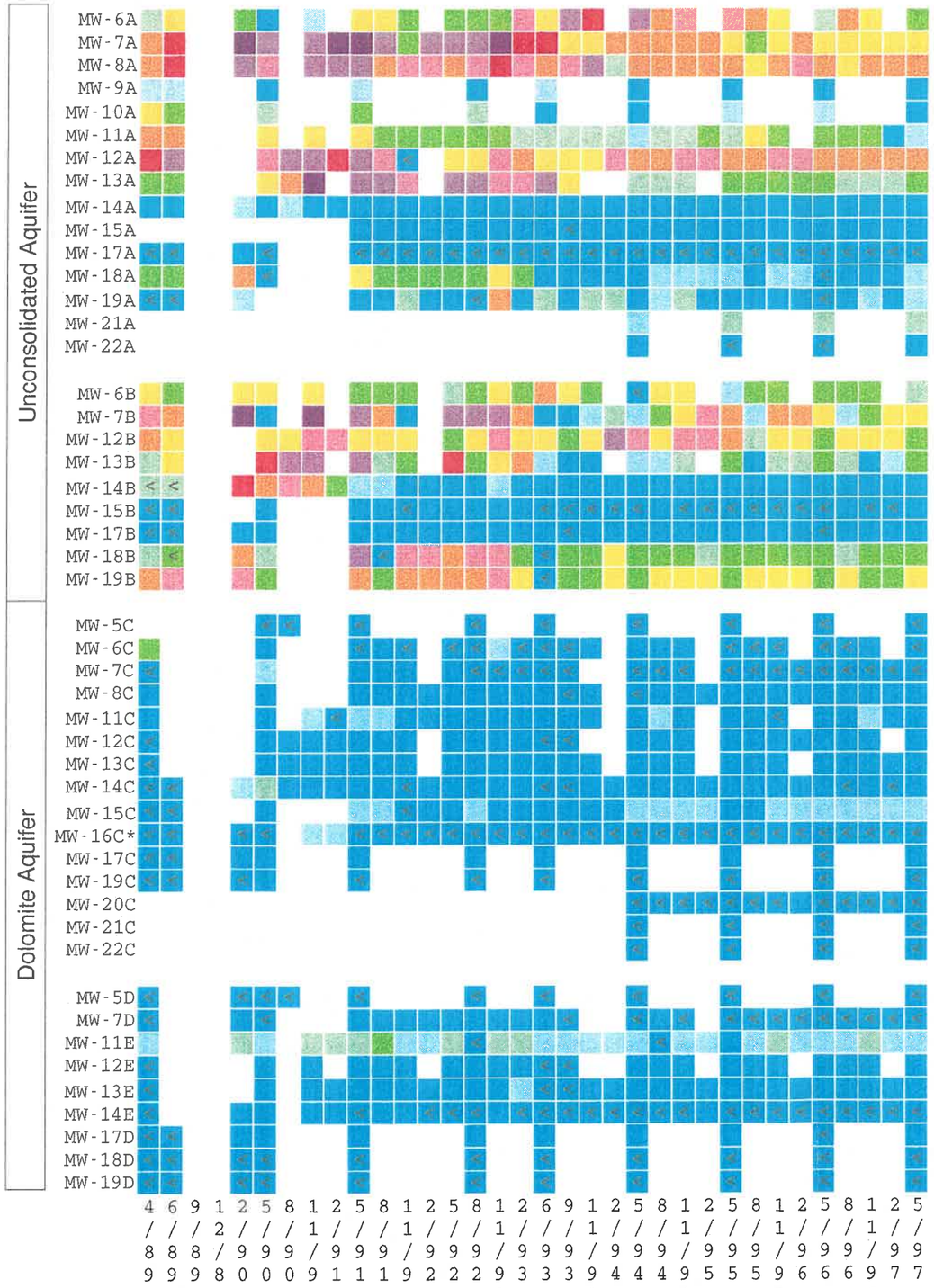


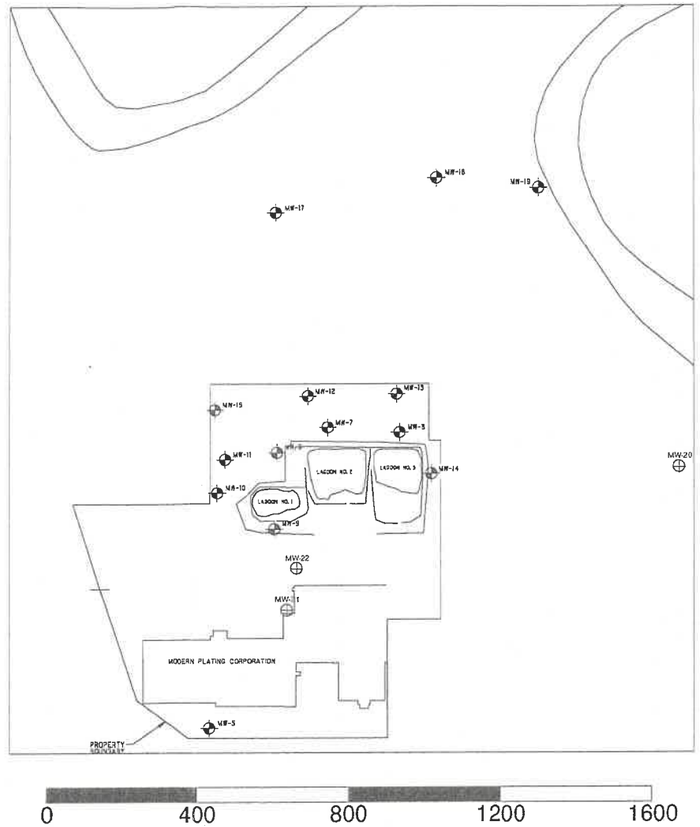
< Implies No Detect

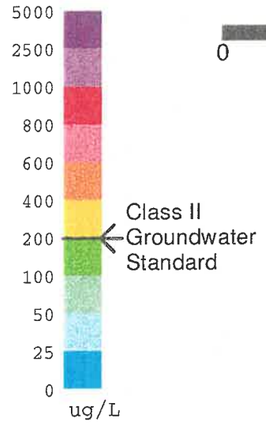
* Denotes Background Well

Modern Plating Facility	
Figure 3-6 **Historical Groundwater Concentrations Trichloroethene**	
Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes\92m13\histrcle\graphs\toe.srf,.wk1,basemap2.bln







< Implies No Detect

* Denotes Background Well

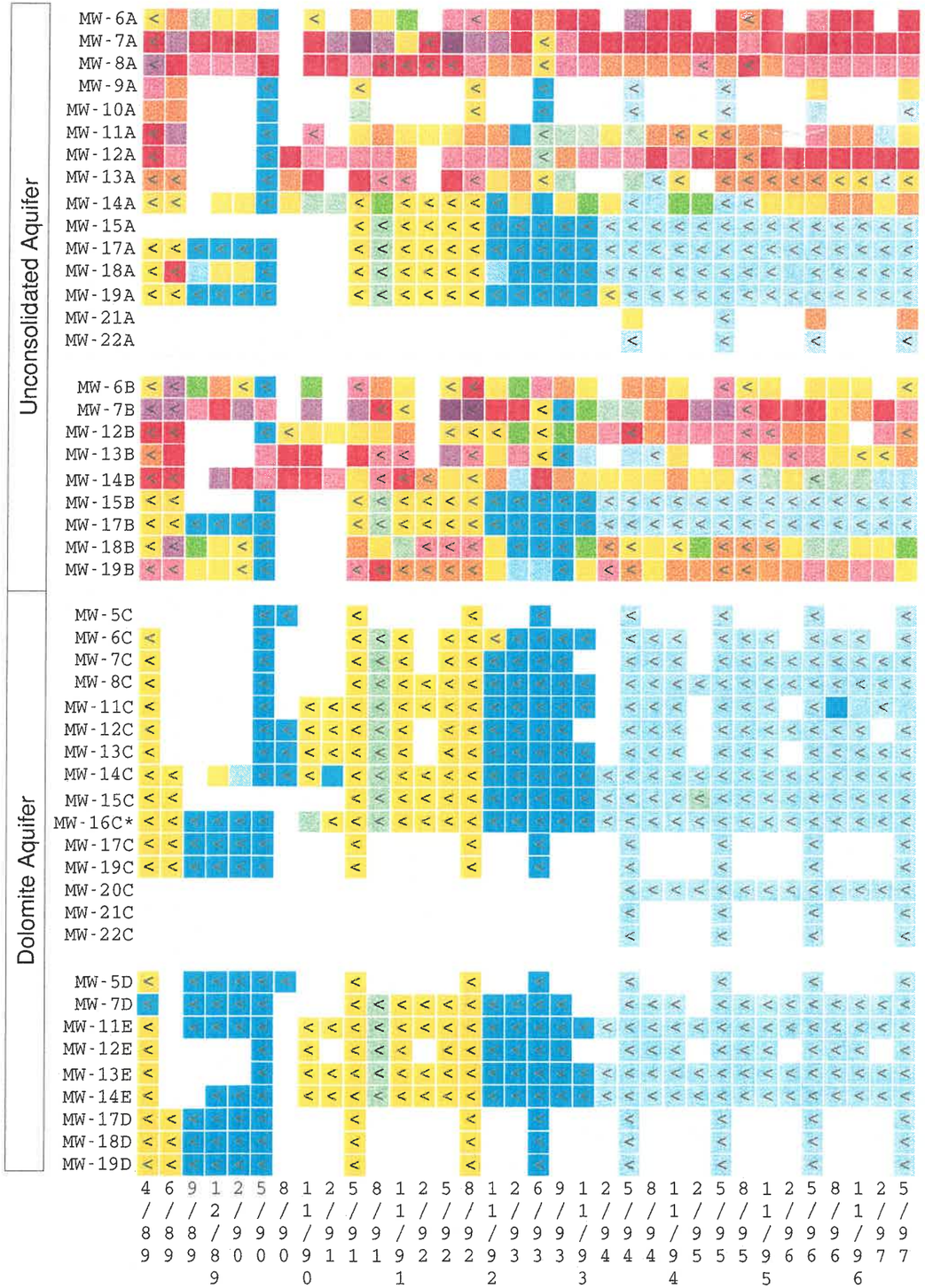
Modern Plating Facility

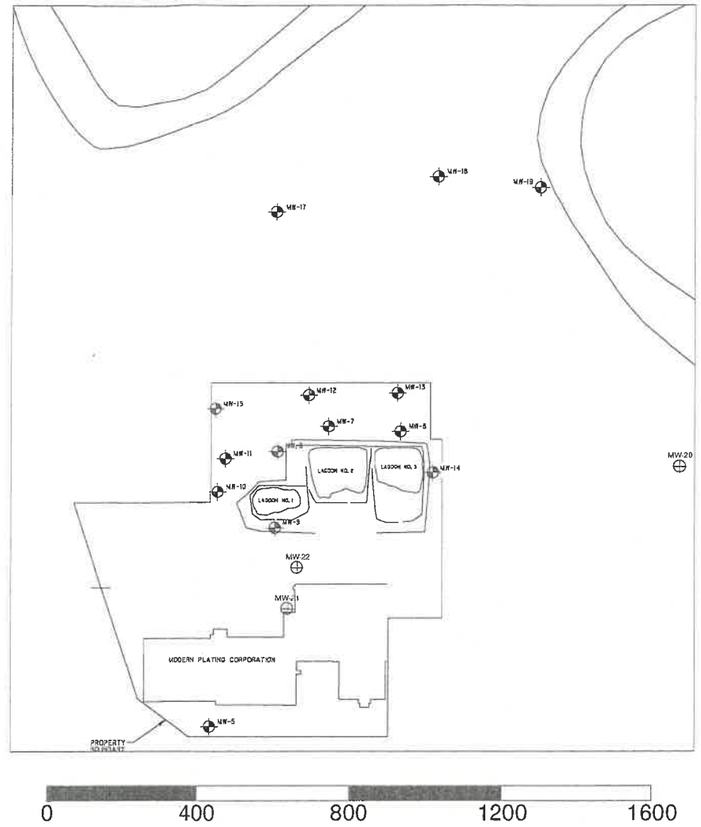
Figure 3-7

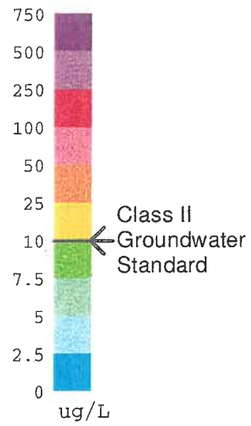
Historical Groundwater Concentrations cis-1,2-Dichloroethene

Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes\92m13\histrcle\graphs\c12dce.srf,.wk1,basemap2.bln







< Implies No Detect

* Denotes Background Well

Modern Plating Facility

Figure 3-8

Historical Groundwater Concentrations
Vinyl Chloride

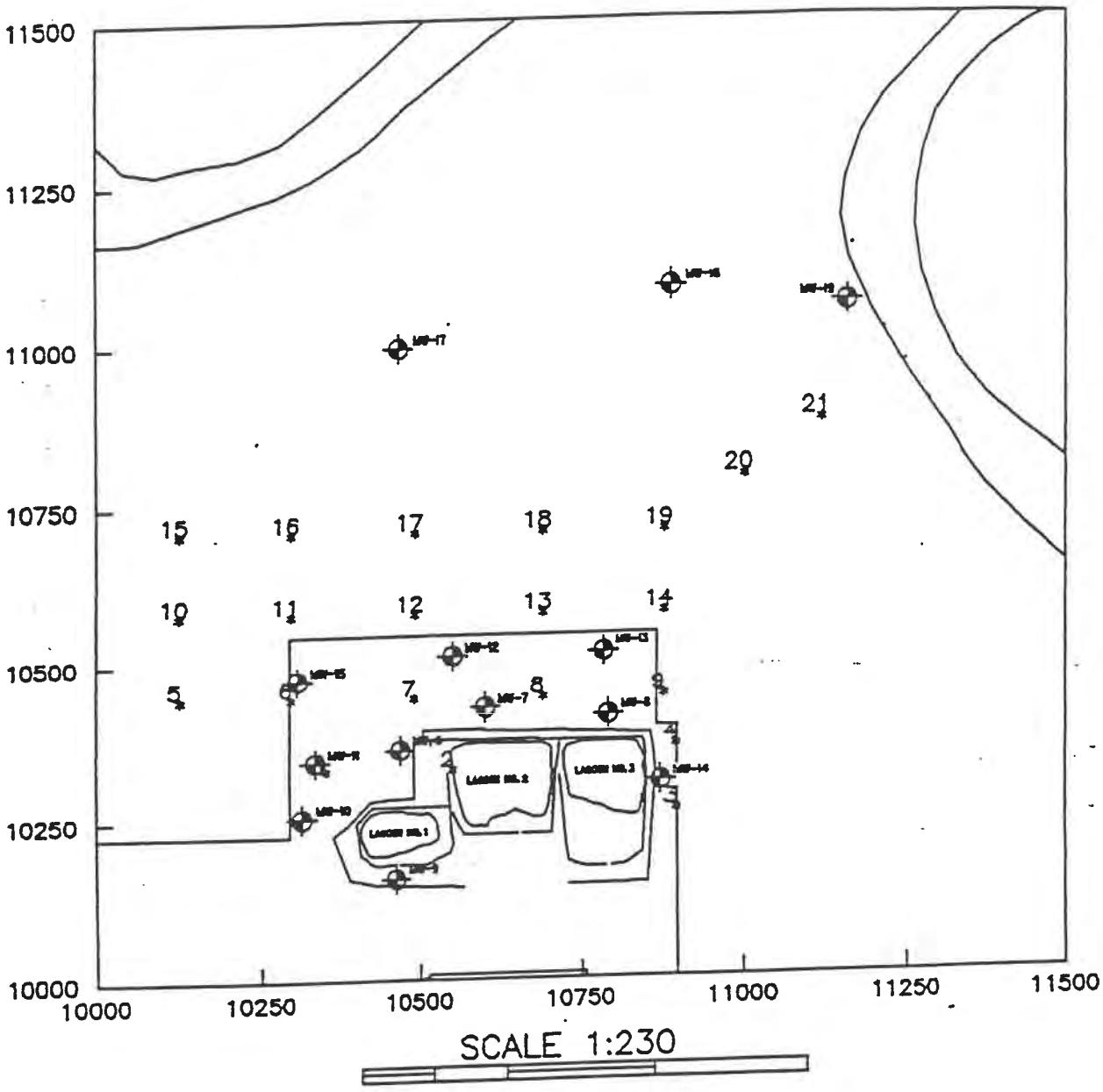
Scale: As Shown	Date: July, 1997
Prepared By: Foth & Van Dyke	By: SGL

j:\scopes:92m13:histrcle:graphs\vc.srf,.wk1,basemap2.bln

Appendix E

RFI Soil Sampling - Locations and Contour Plots

Soil Sample Locations (April – May 1989)



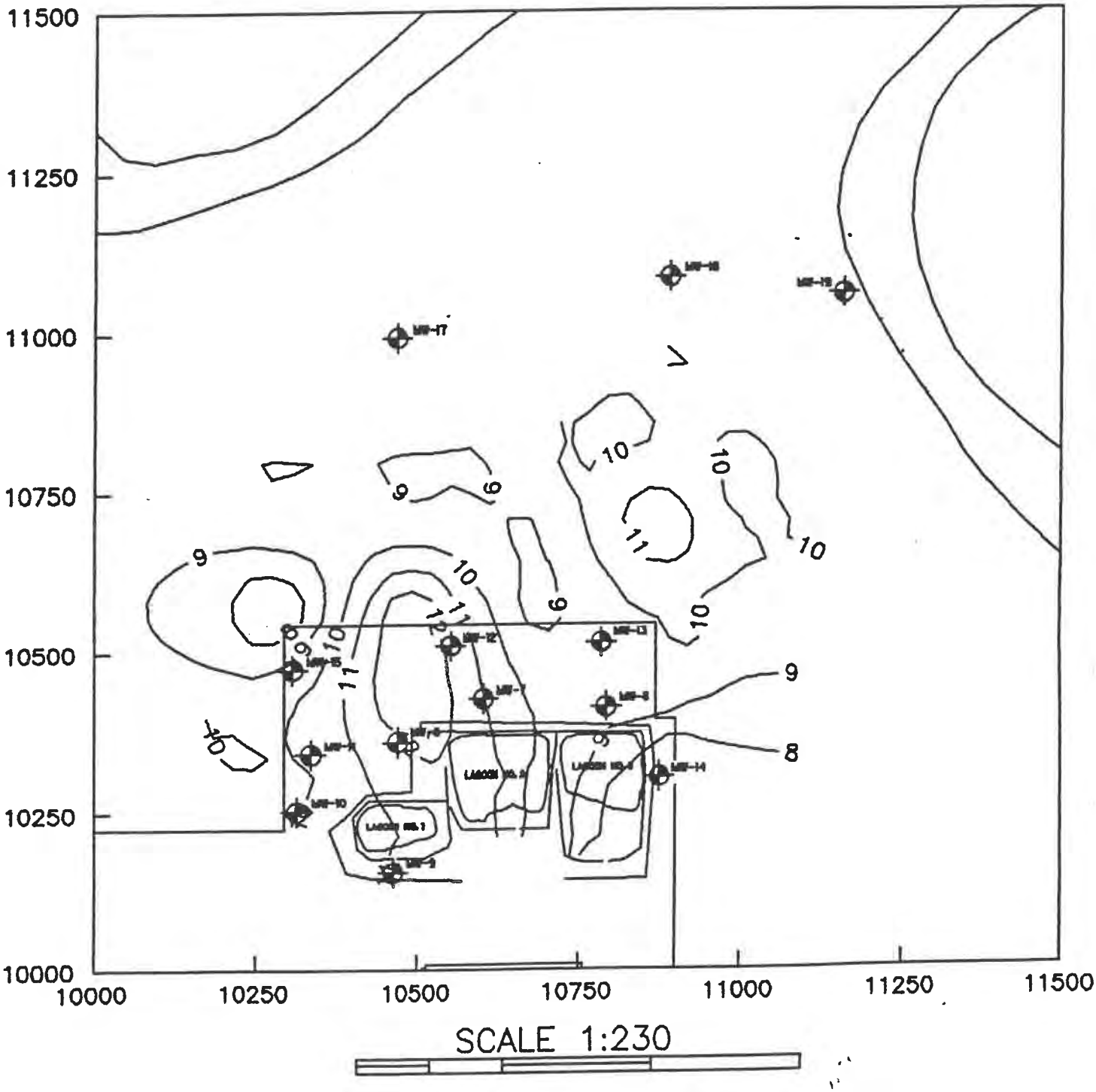
MODERN PLATING CORPORATION-FREEPORT, ILL.		
FIGURE 1 RFI SOIL SAMPLE LOCATIONS APRIL - MAY 1989		
Scale: 1" = 230'	Date: JUNE 1992	
Prepared By: Foth & Van Dyke		By: JOW

92M32

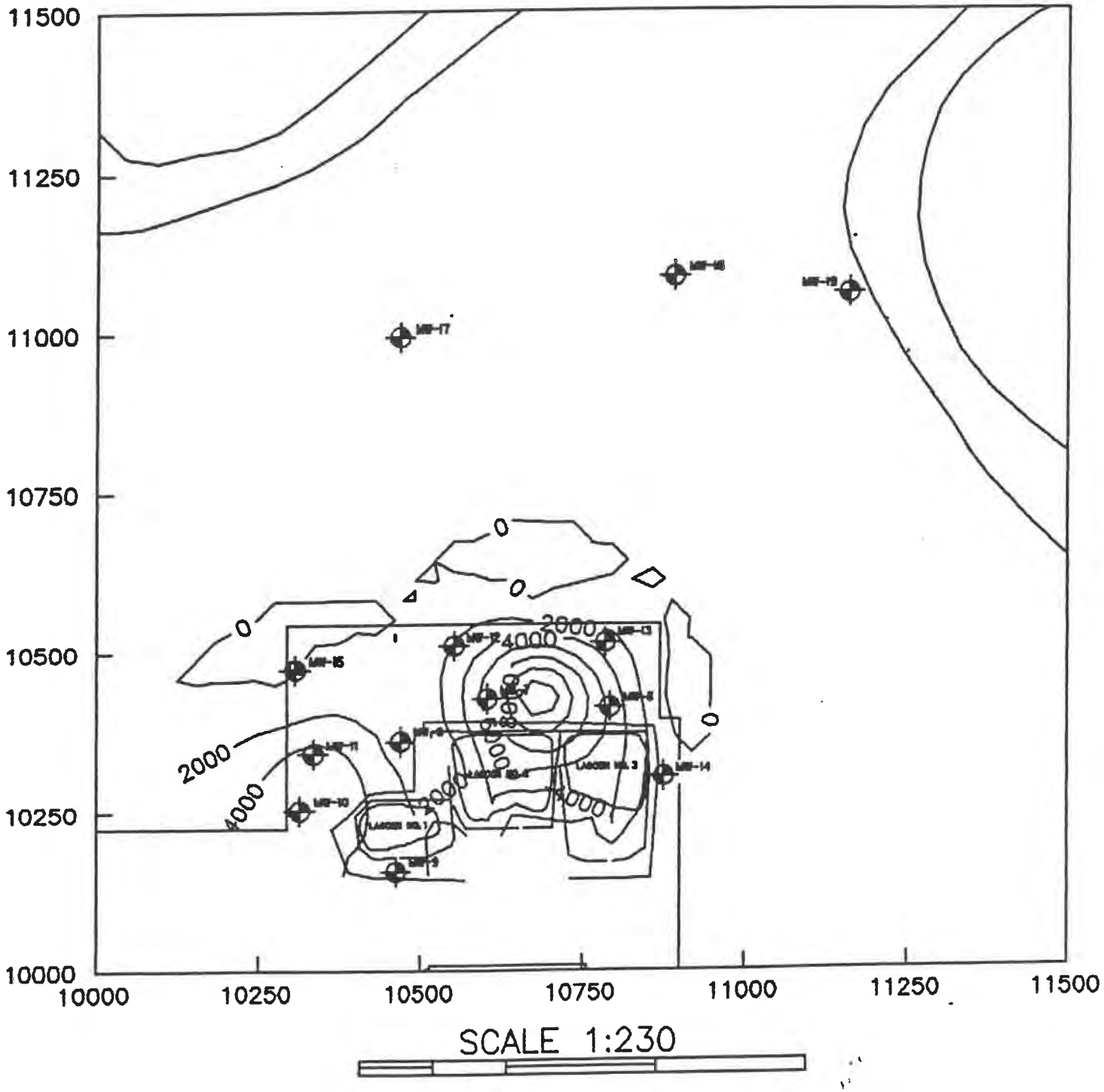
1

prgemcp.DGN

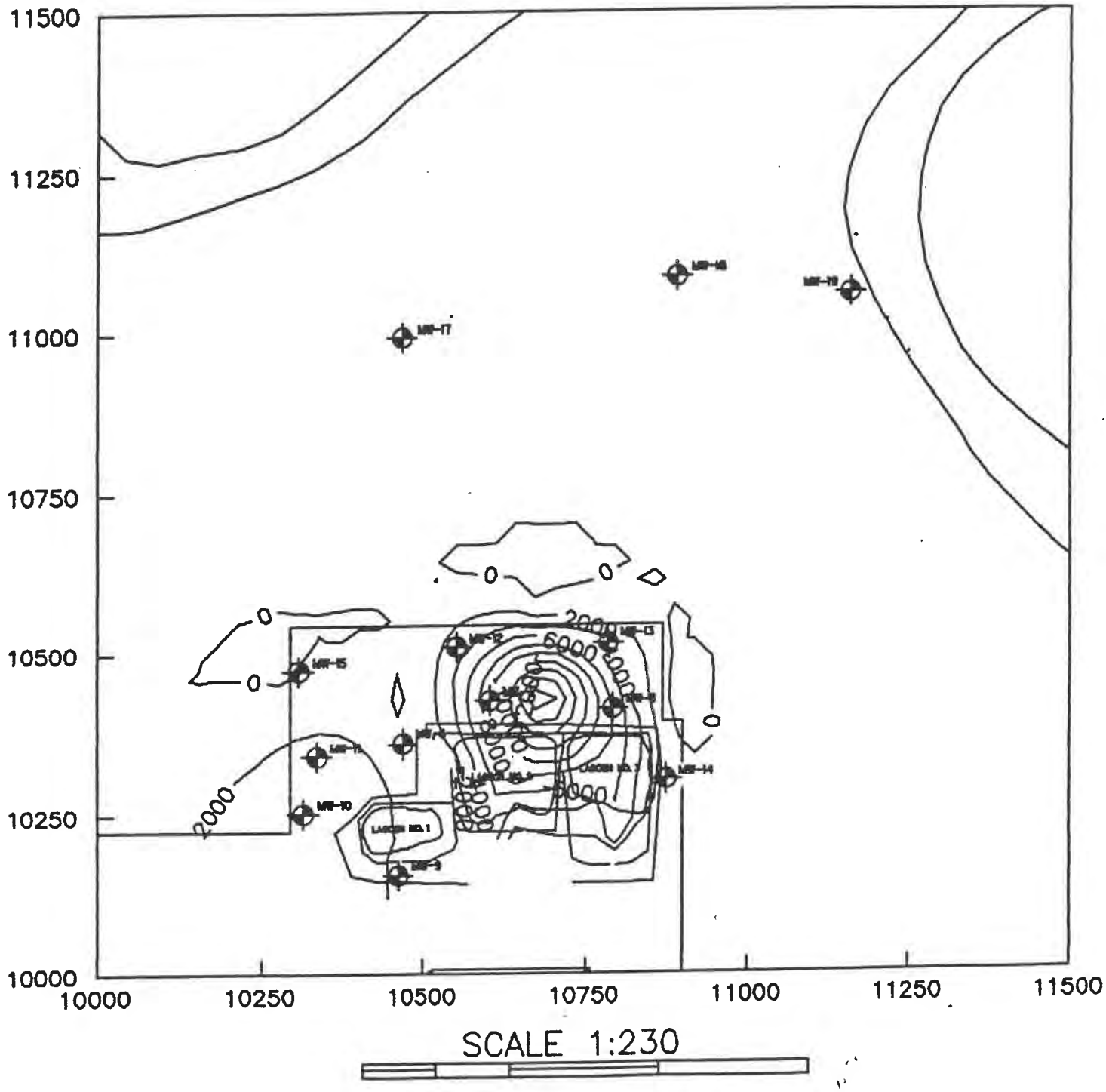
Soil Arsenic Levels (mg/kg)



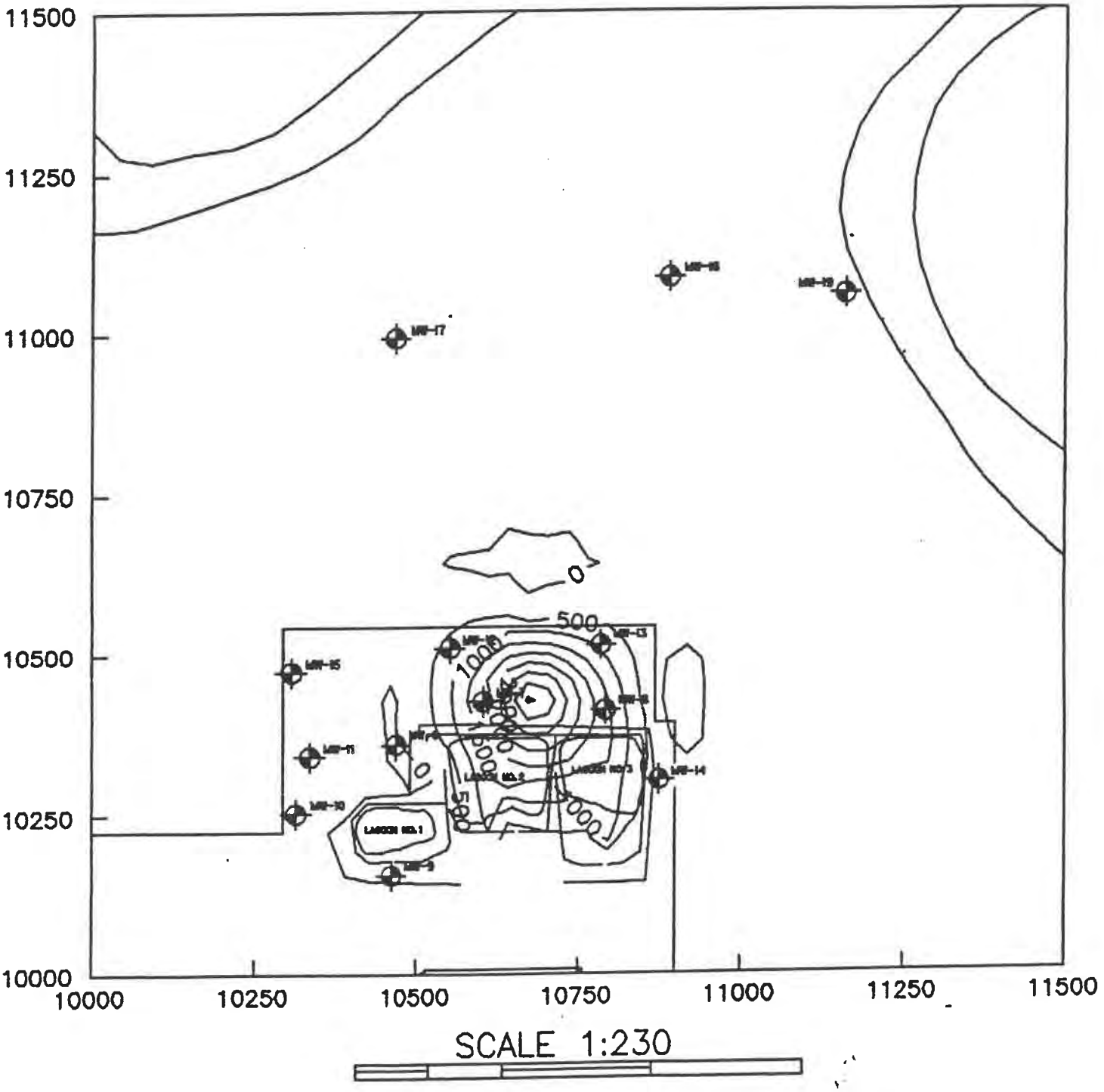
Soil Cadmium Levels (mg/kg)



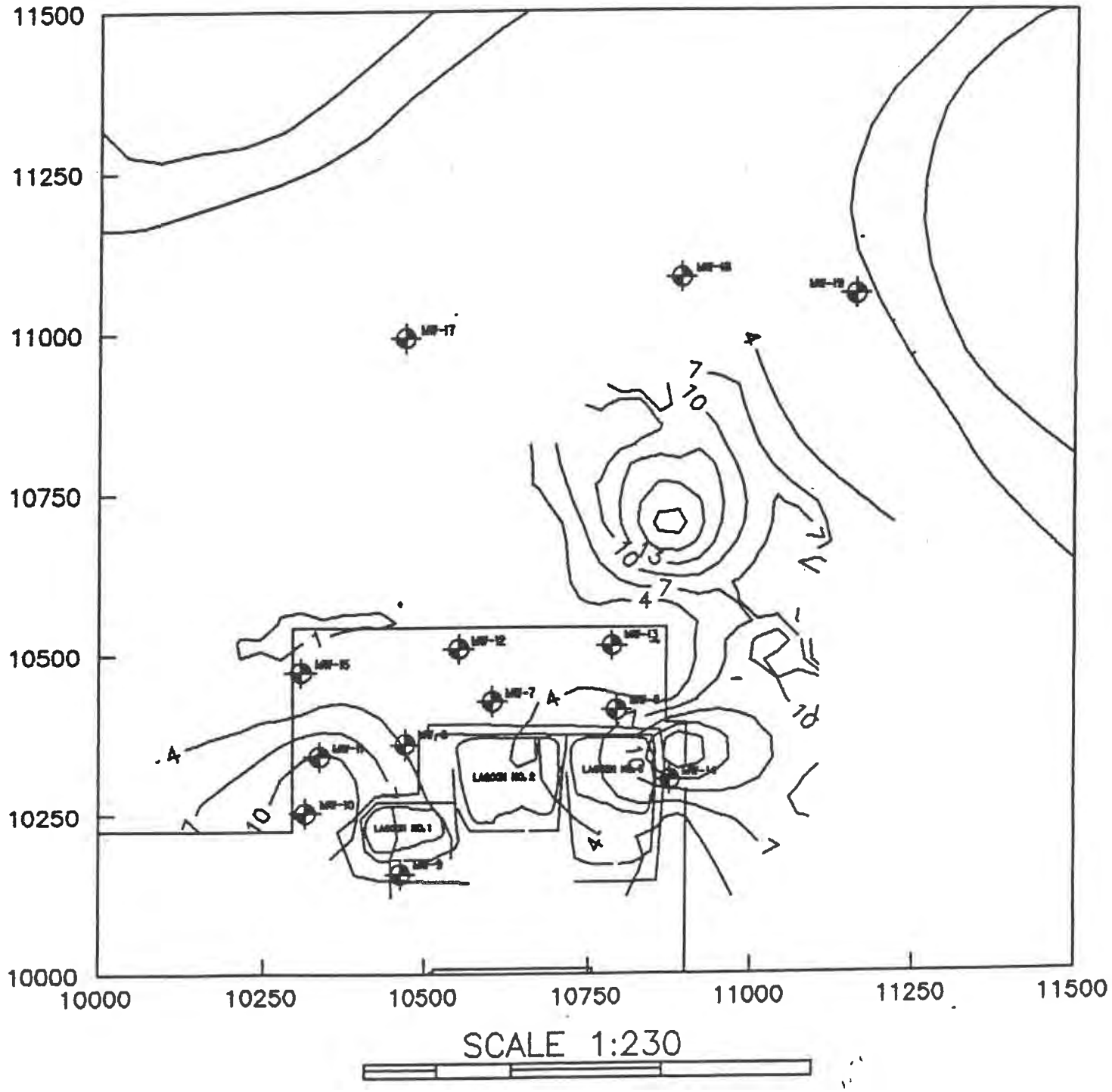
Soil Chromium Levels (mg/kg)



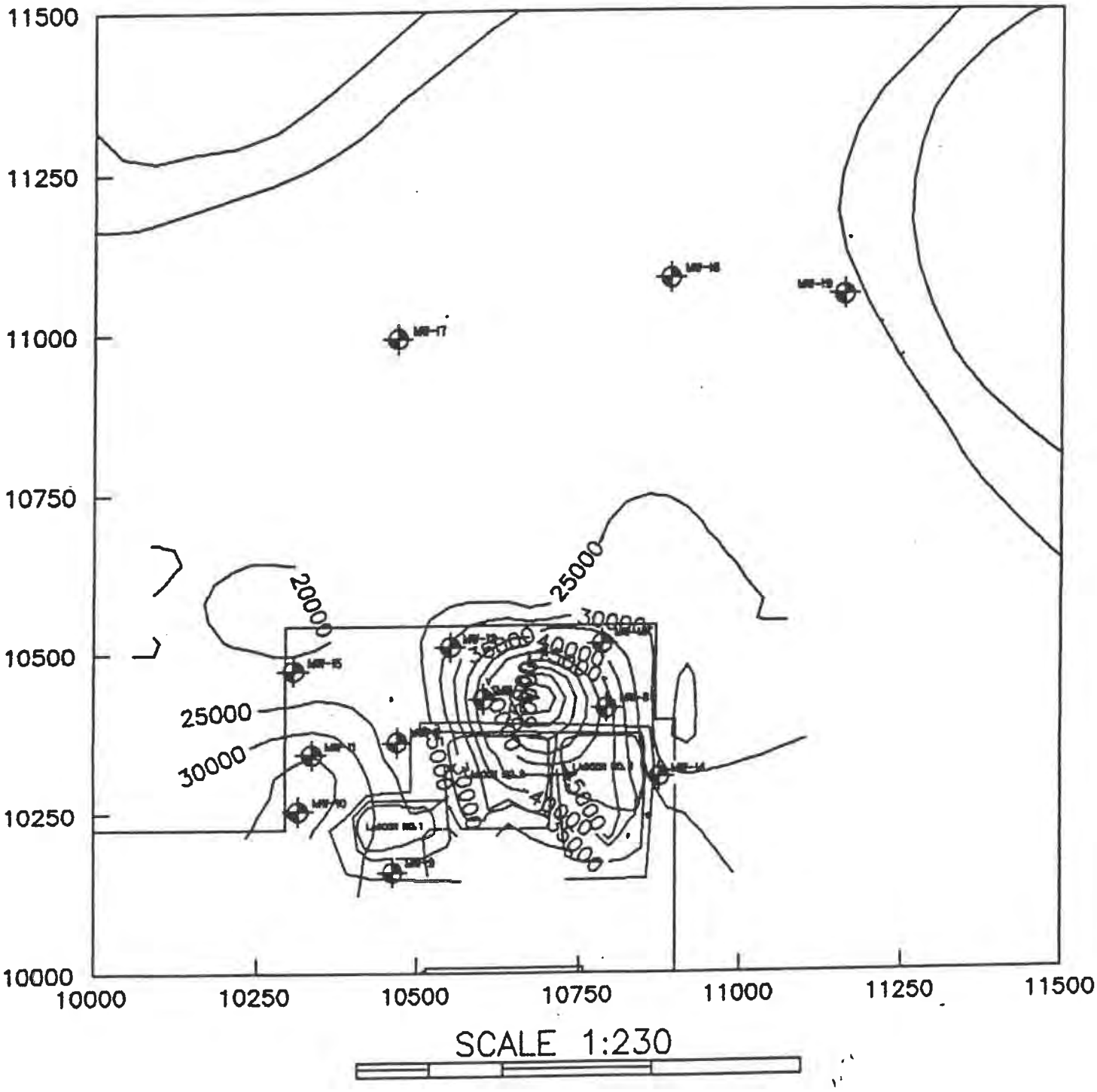
Soil Copper Levels (mg/kg)



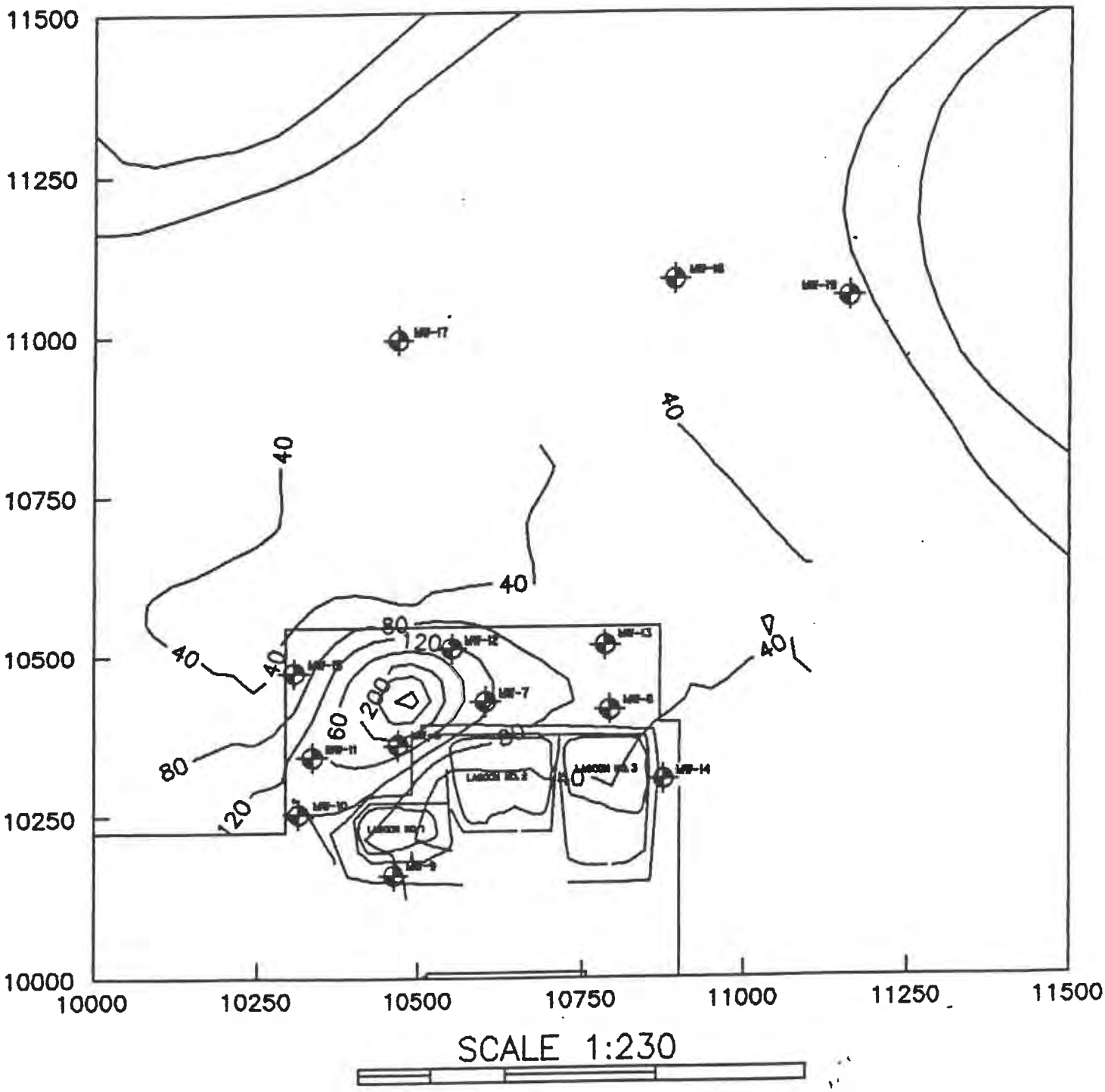
Soil Cyanide Levels (mg/kg)



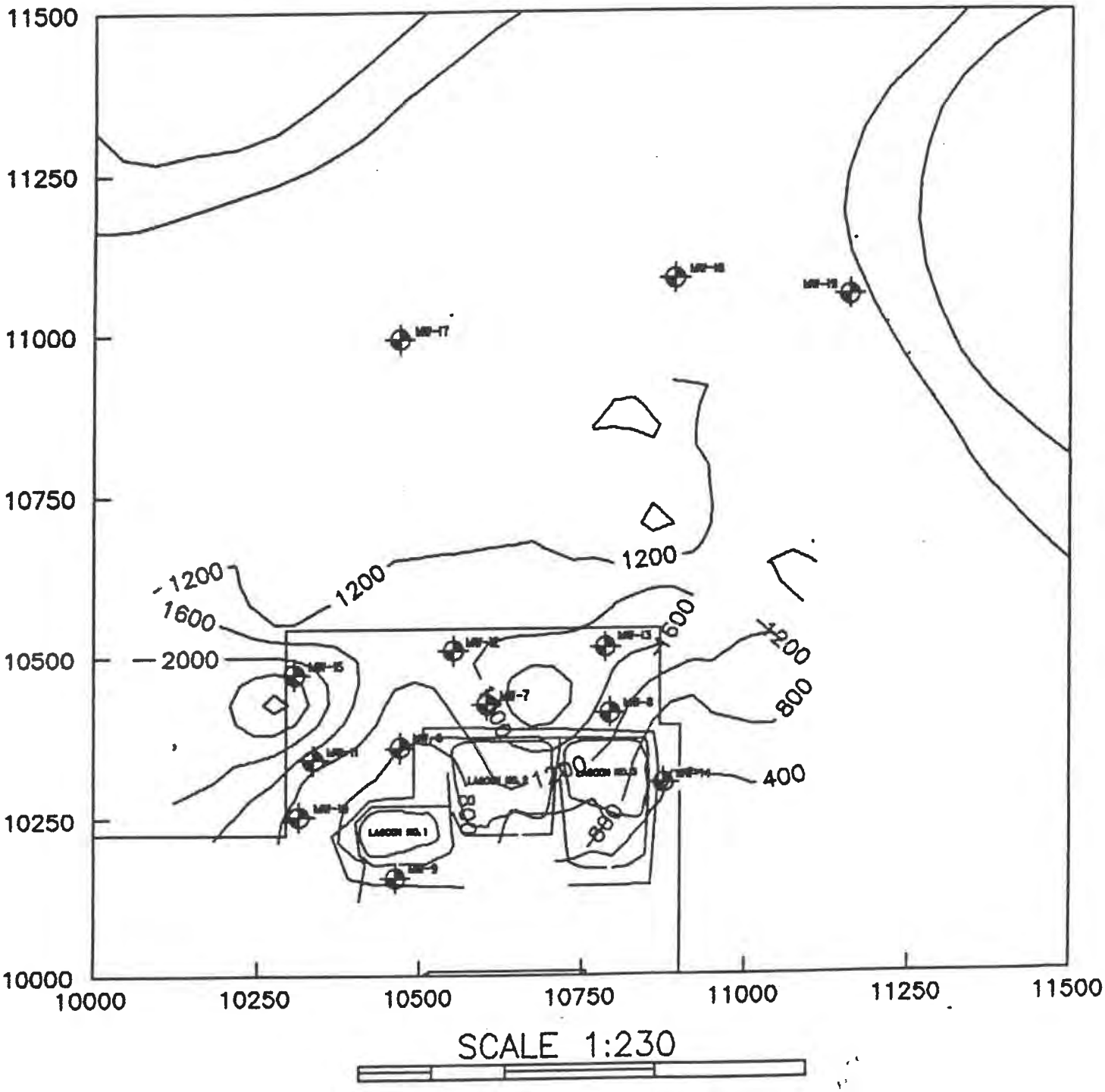
Soil Iron Levels (mg/kg)



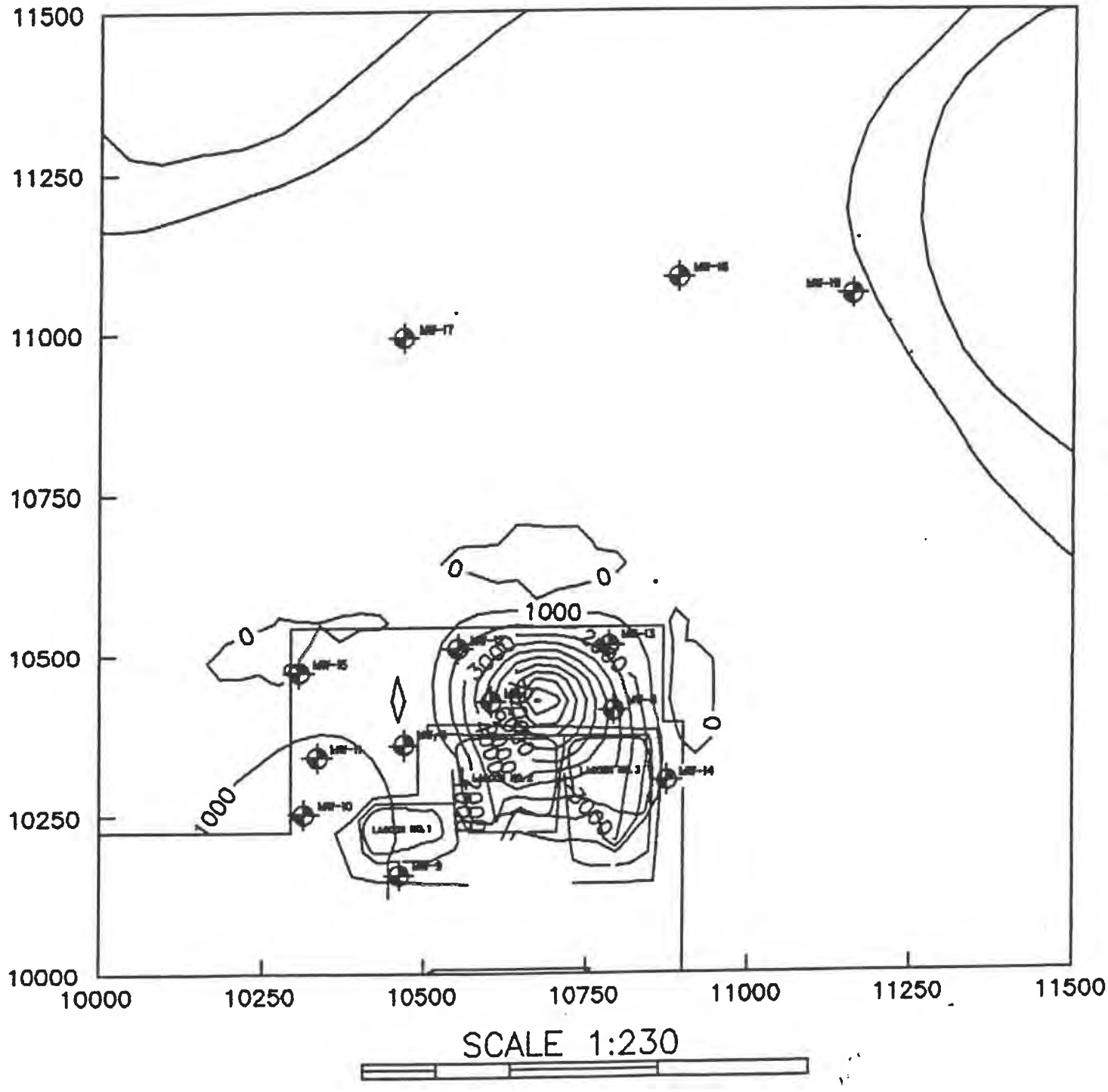
Soil Lead Levels (mg/kg)



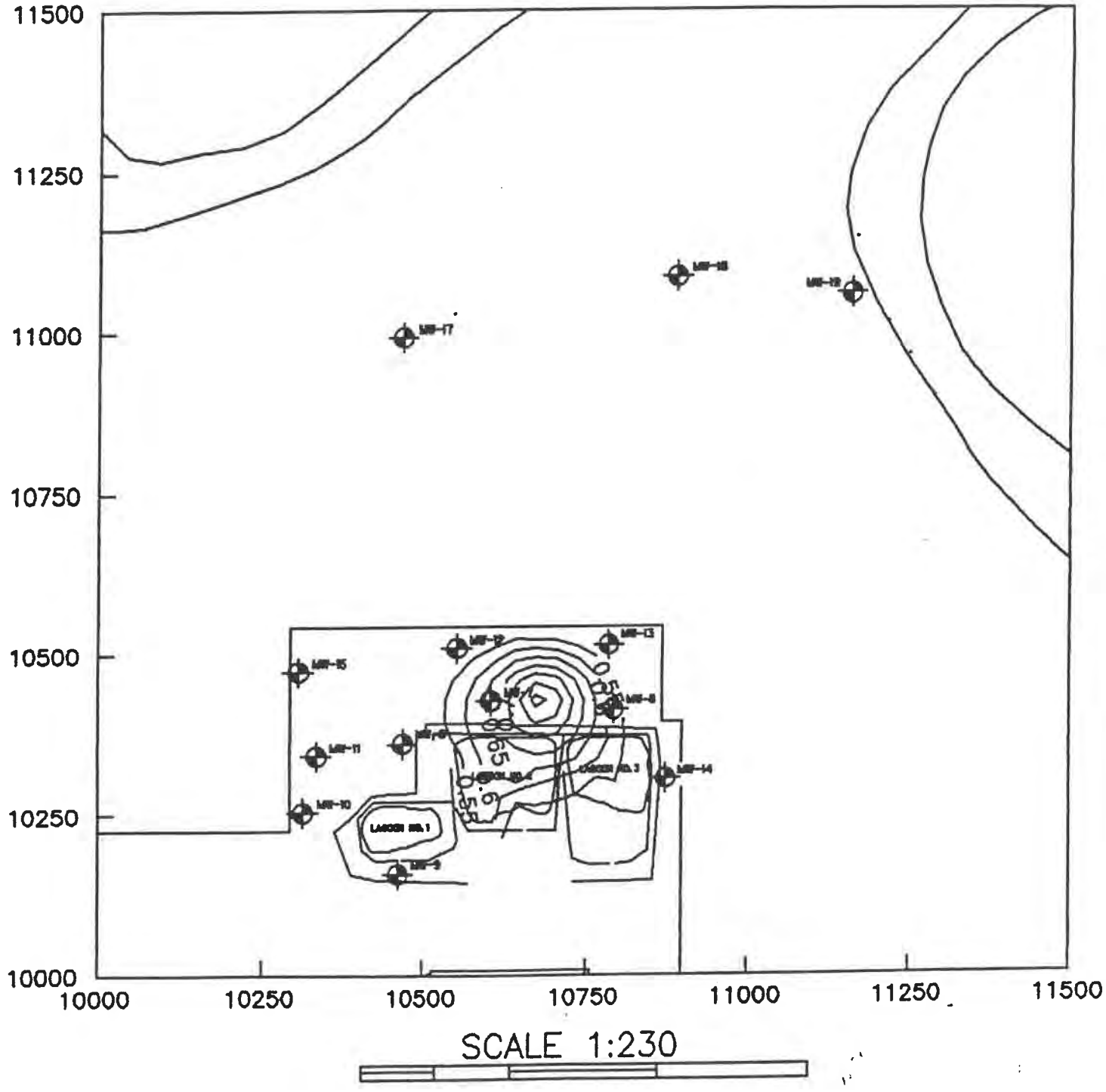
Soil Manganese Levels (mg/kg)



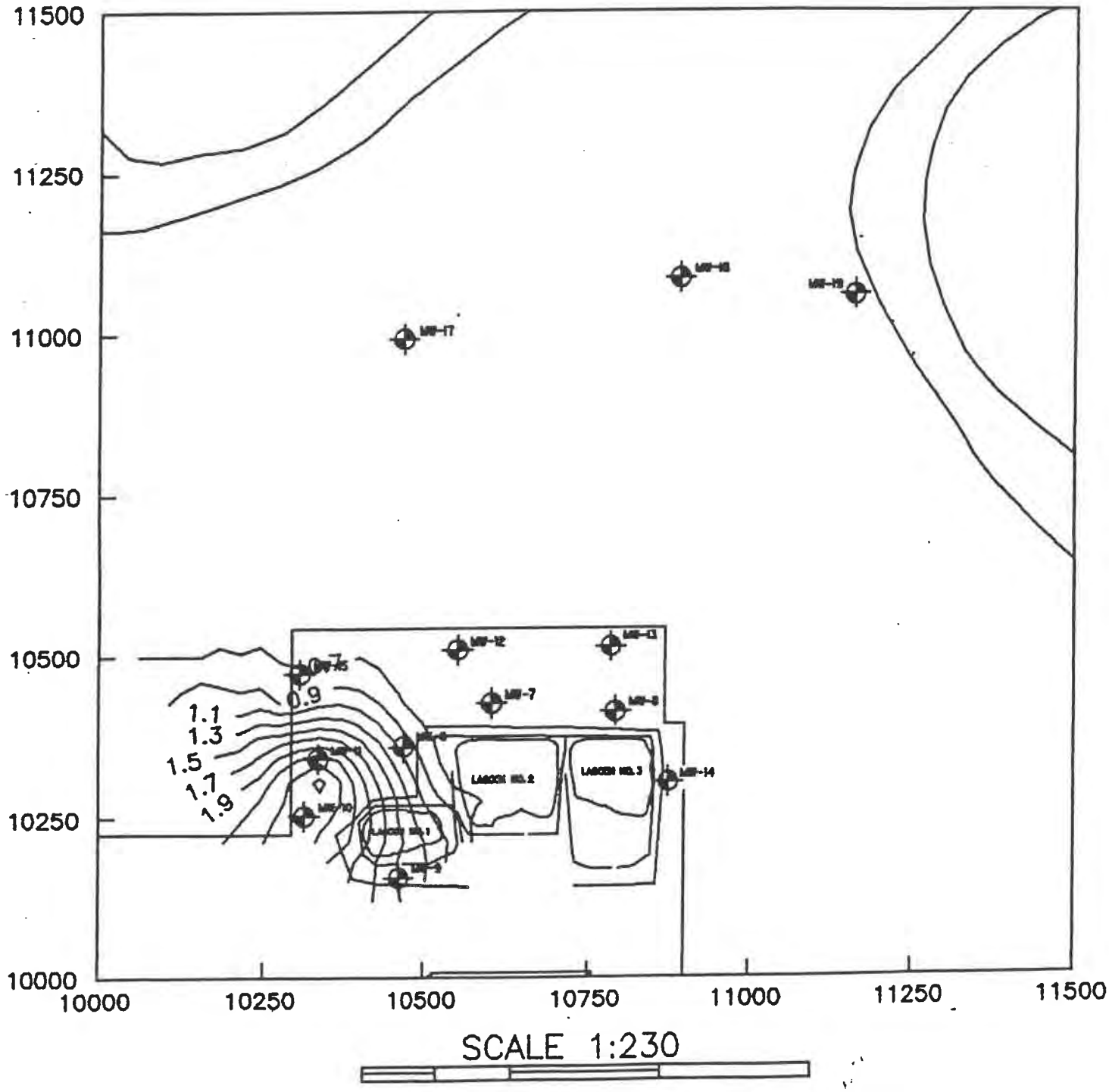
Soil Nickel Levels (mg/kg)



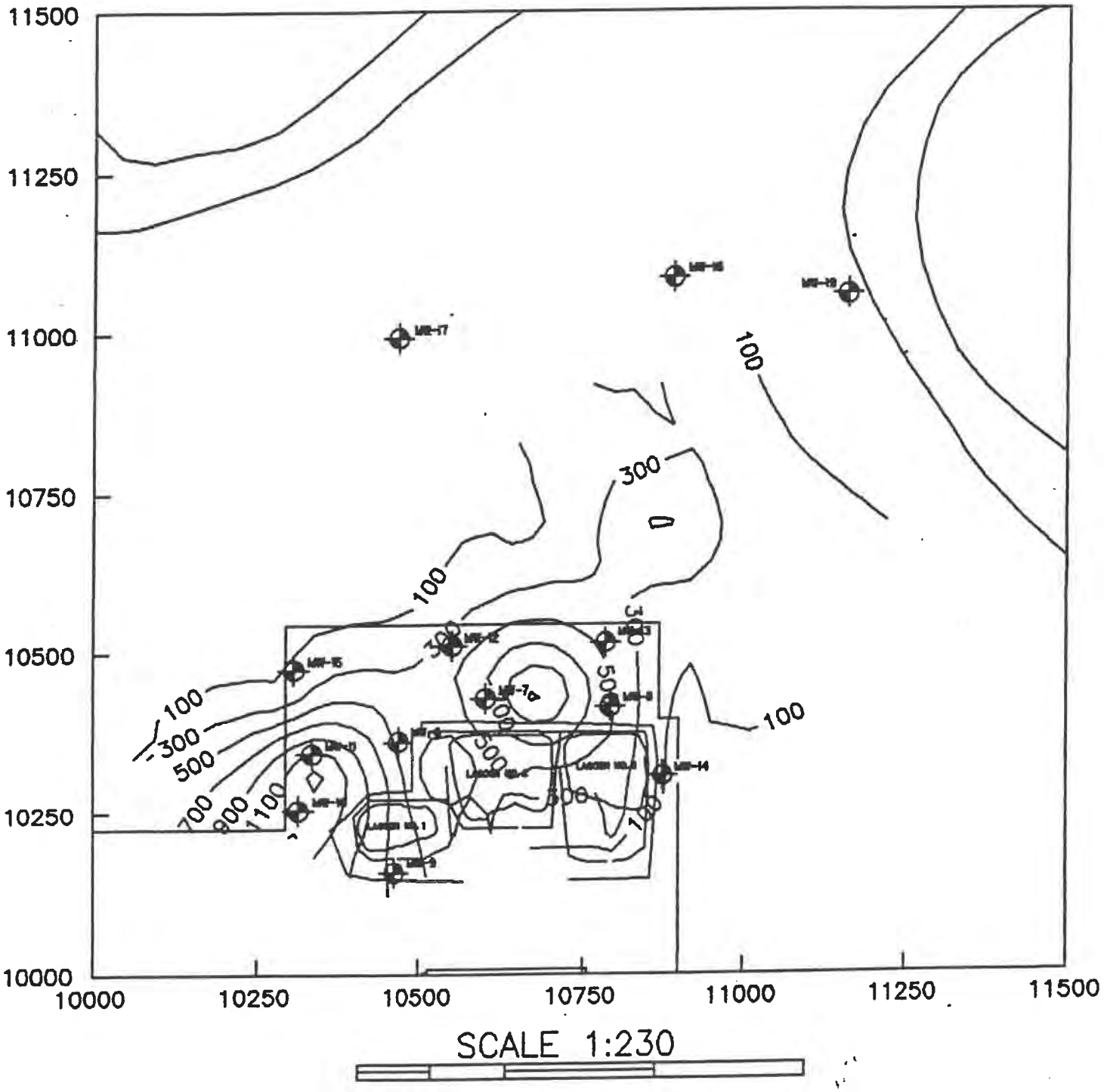
Soil Selenium Levels (mg/kg)



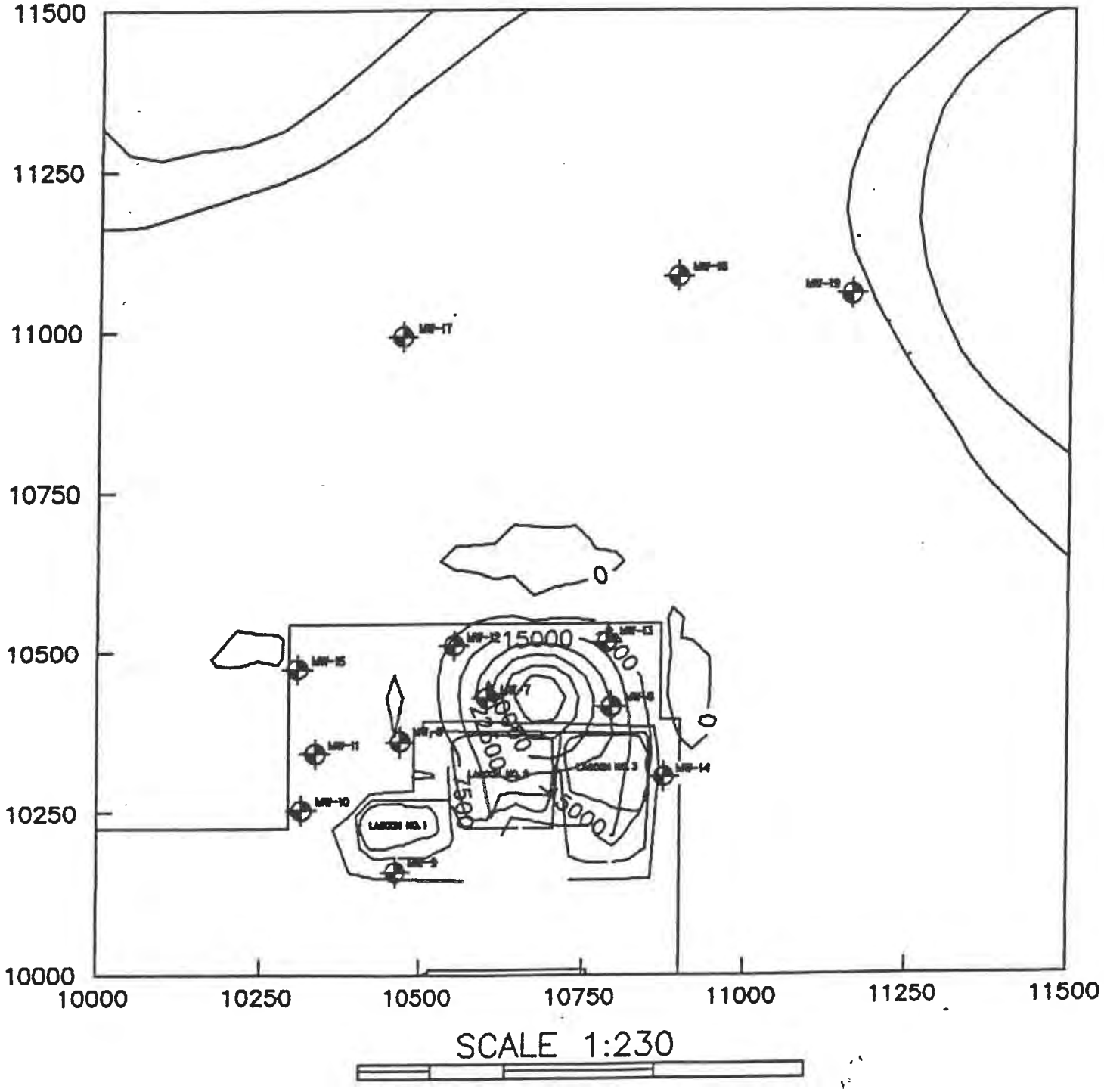
Soil Silver Levels (mg/kg)



Soil Sulfate Levels (mg/kg)



Soil Zinc Levels (mg/kg)



Appendix F

1994 CMS Soil Results - Figures F-1, F-2, and F-3

Figure F-1

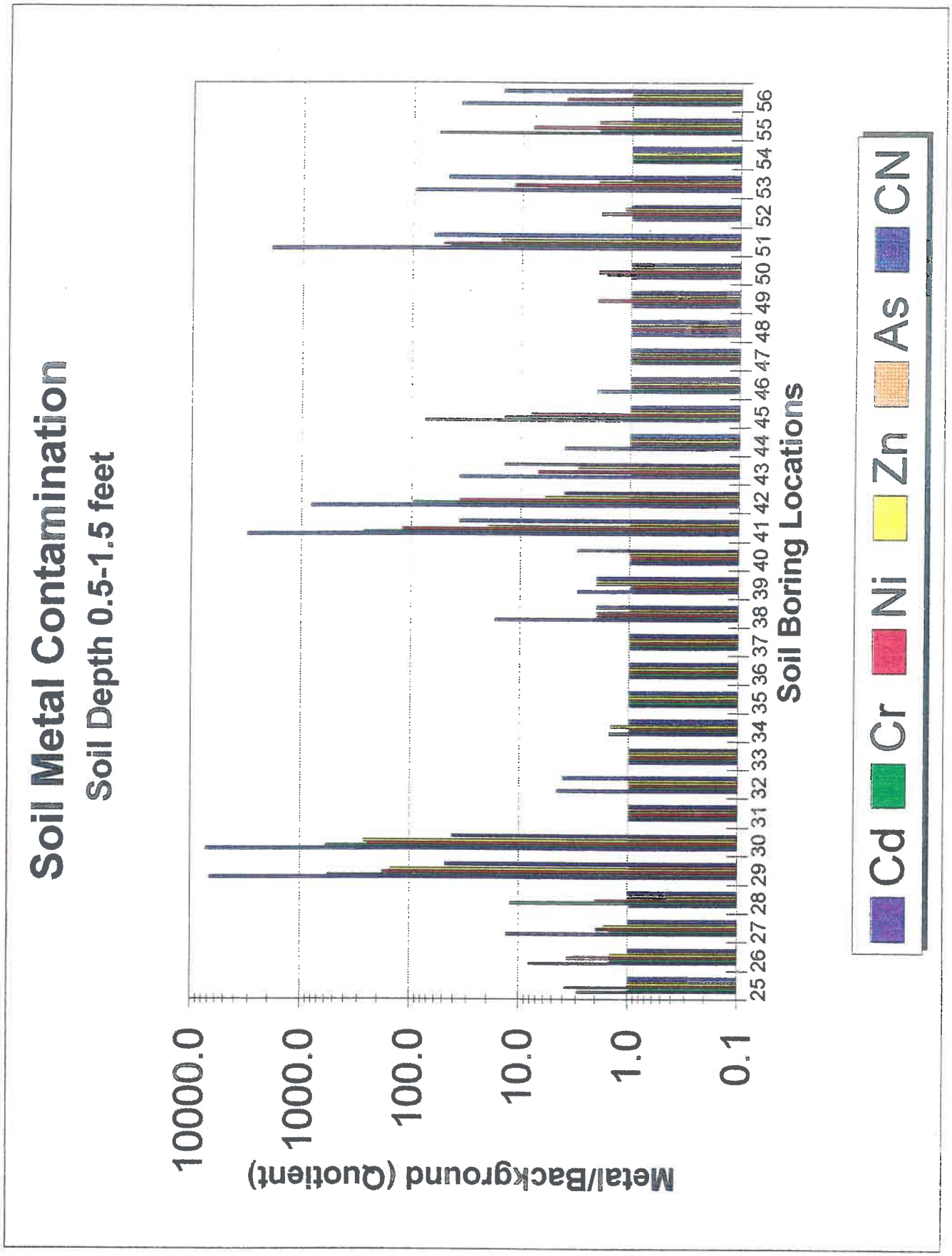

Soil Metal Contamination
Soil Depth 0.5-1.5 feet
Metal/Background (Quotient)
10000.0
1000.0
100.0
10.0
1.0
0.1
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
Soil Boring Locations
Cd
Cr
Ni
Zn
As
CN

Figure F-2

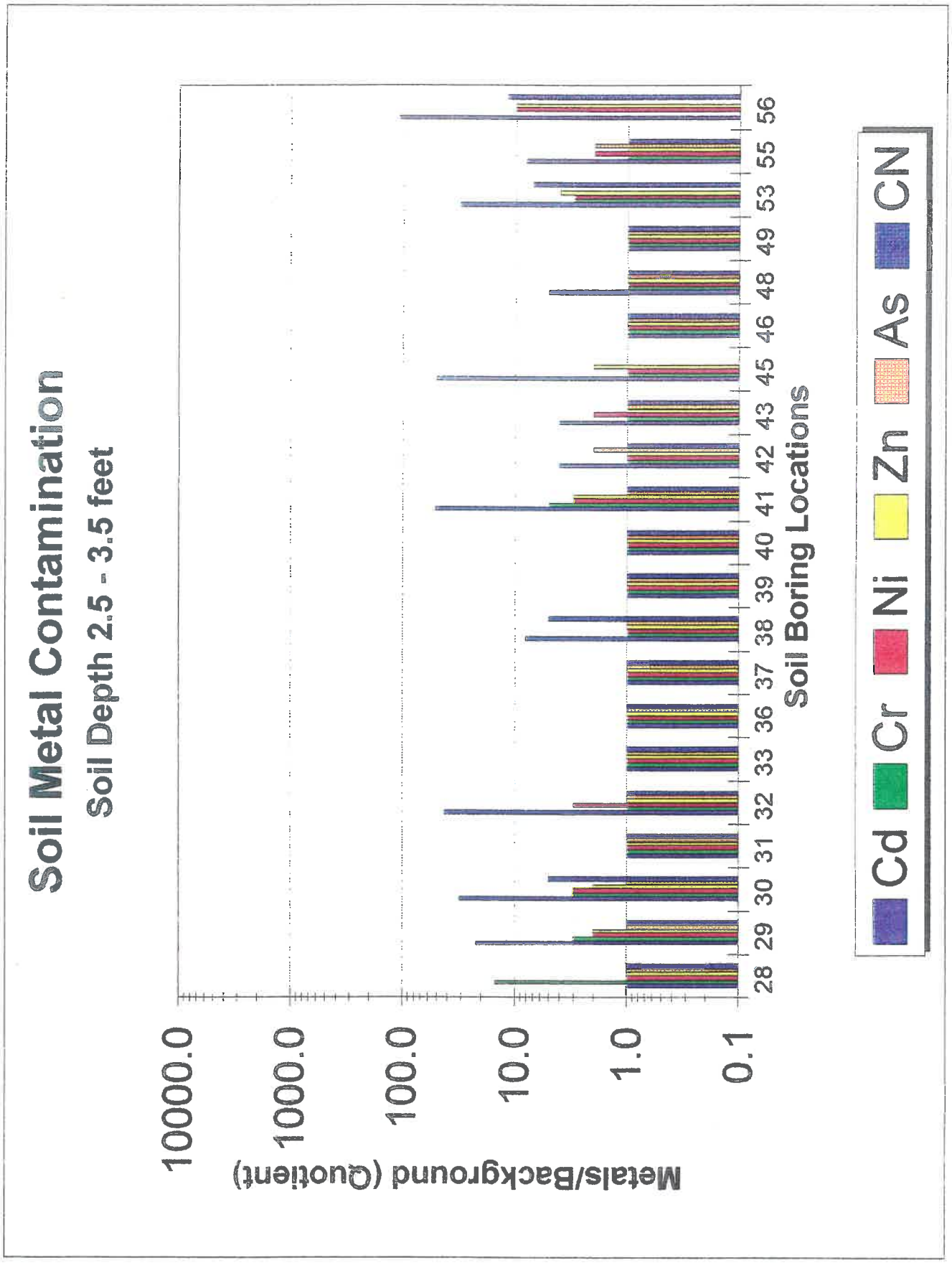
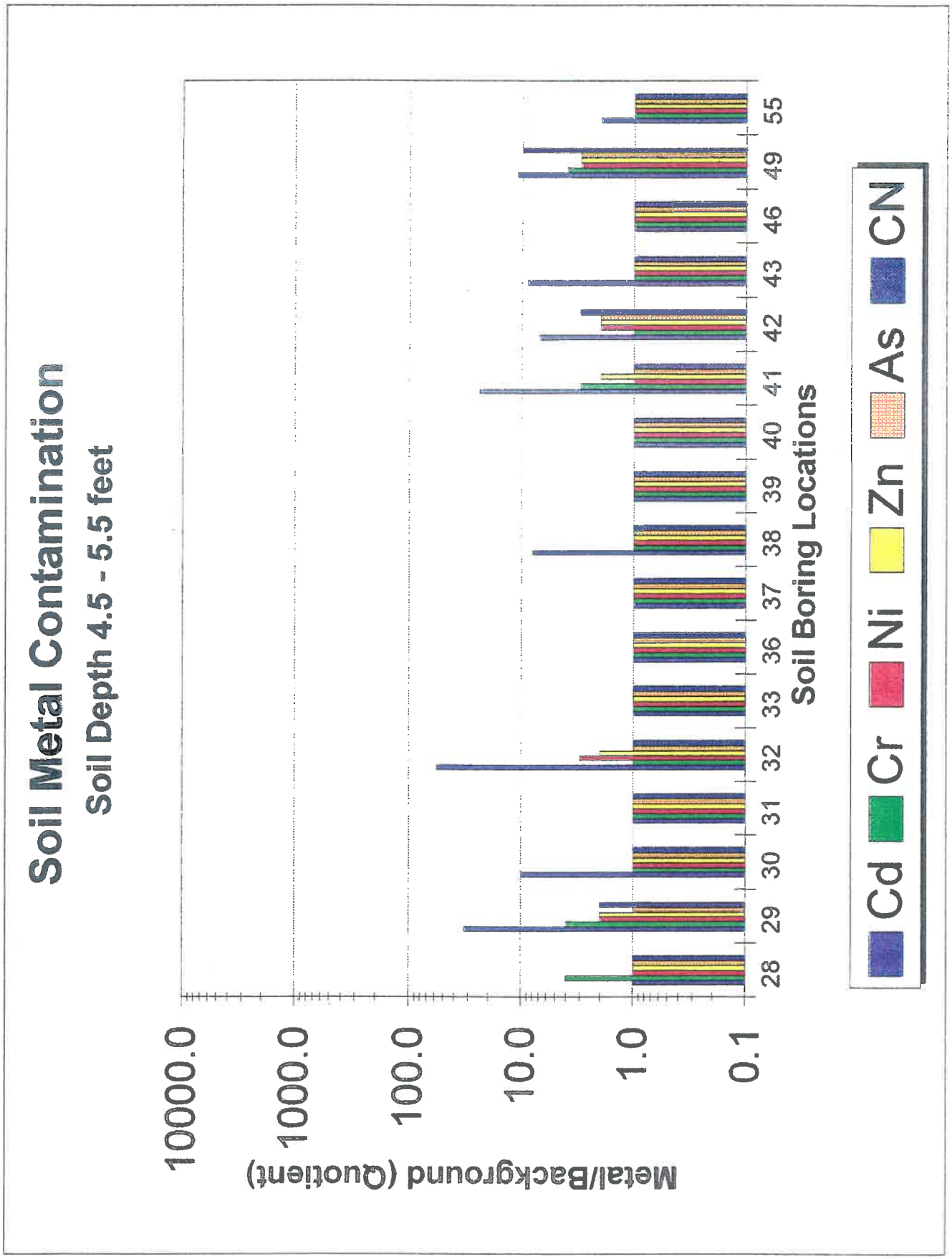

Soil Metal Contamination
Soil Depth 2.5 - 3.5 feet
Metals/Background (Quotient)
10000.0
1000.0
100.0
10.0
1.0
0.1
28 29 30 31 32 33 36 37 38 39 40 41 42 43 45 46 48 49 53 55 56
Soil Boring Locations
Cd Cr Ni Zn As CN

Figure F-3

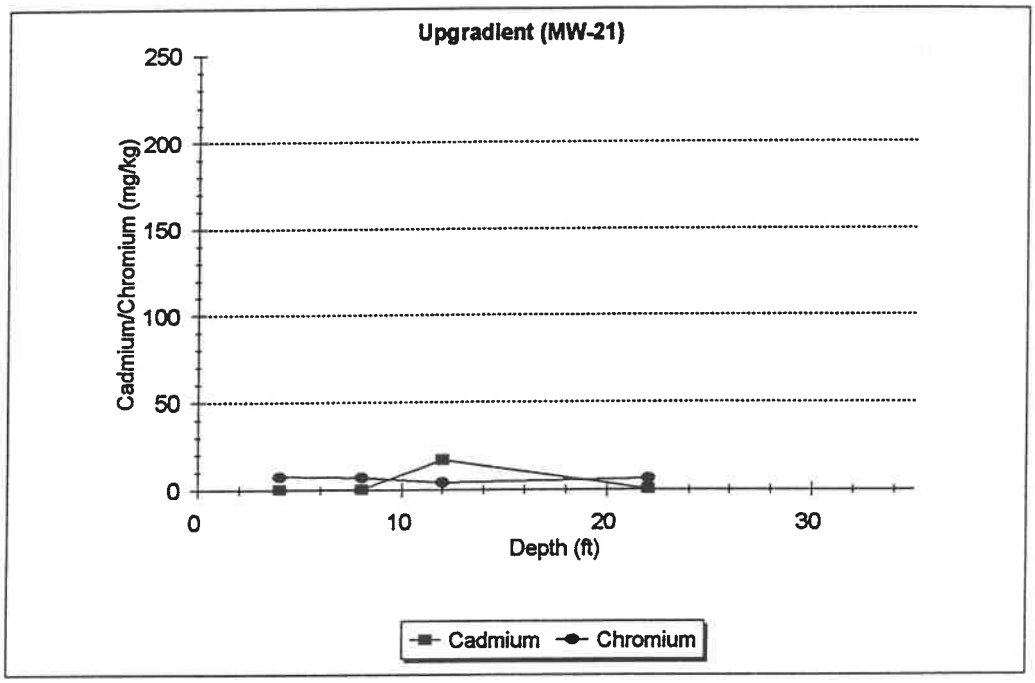

Soil Metal Contamination
Soil Depth 4.5 - 5.5 feet
Metal/Background (Quotient)
10000.0
1000.0
100.0
10.0
1.0
0.1
28
29
30
31
32
33
36
37
38
39
40
41
42
43
46
49
55
Soil Boring Locations
Cd
Cr
Ni
Zn
As
CN

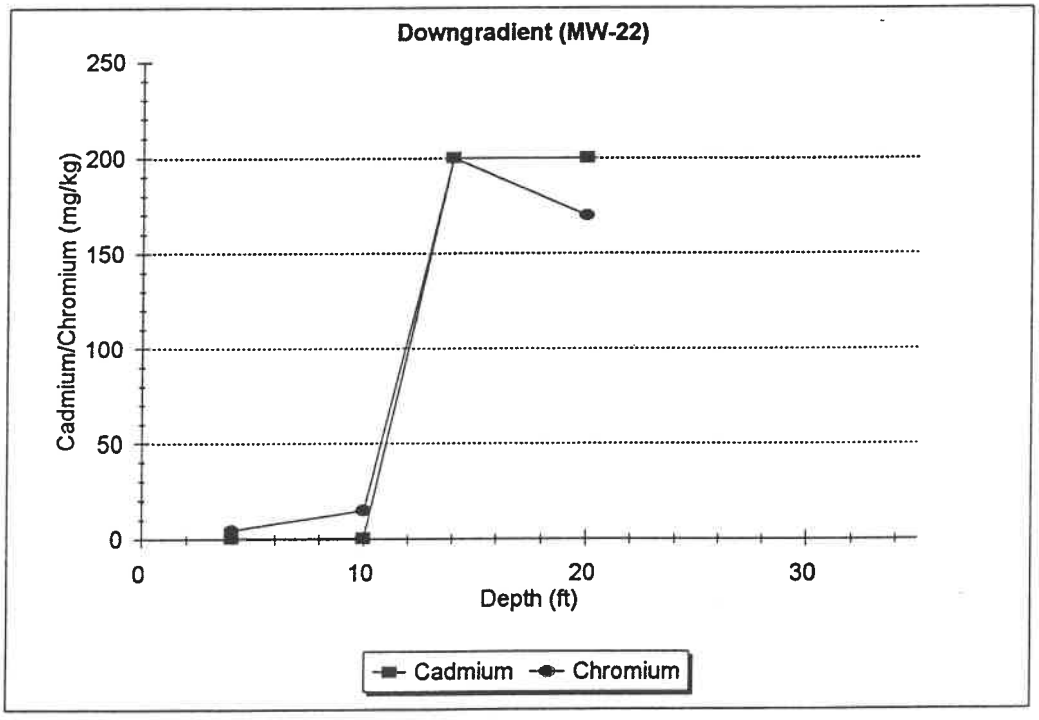
Appendix G

Underground Cyanide Vault - Soil Results

Soil Sampling Analysis Results near the Vault Area

Modern Plating Corporation





Note: If a constituent was below detection limit, half of the detection limit was used.

Appendix H

Wetland Delineation Forms - Endangered Species Search

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-1 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Acer negundo	FACW-	7. Rhus radicans	NA
2. Ulmus americana	FACW-	8. Galium aparine	FACU
3. Fraxinus pennsylvanica	FACW	9. Viola papilionacea	FAC
Saplings/shrubs		**Woody vines**	
4. Acer negundo	FACW-	10. none	
5. Acer saccharinum	FACW	11.	
6. Rhus radicans	NA	12.	

% of species that are OBL, FACW, and/or FAC: 86. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A = 7" 10YR 2/1 SL

AB = >16" 10YR 3/2 SiCL

Soil

Series and phase: Huntsville On hydric soils list? Yes ___; No X.

Mottled: Yes ___; No X. Mottle color: _____; Matrix color: 10YR 3/2.

Gleyed: Yes ___ No X Other indicators: _____.

Hydric soils: Yes ___ No X; Basis: lack of low chroma matrix.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes ___; No X. Depth to saturated soil: >16" .

Other indicators: none .

Wetland hydrology: Yes ___; No X. Basis: lack of hydrology indicators that were noted on lower topographical areas

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland _____; Nonwetland X.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-2 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. Phalaris arundinacea	FACW+
2.		8. Carex sp.	OBL
3.		9. Impatiens capensis	FACW
Saplings/shrubs		**Woody vines**	
4. none		10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A=8" 10YR2/1, SiL
AB=>16" 5Y3/1, SiL w/7.5YR4/4 mottles

Soil

Series and phase: Otter On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 7.5YR4/4; Matrix color: 5Y 3/1.

Gleyed: Yes ___ No X. Other indicators: mottles are many/medium/Distinct

Hydric soils: Yes X No ___; Basis: _____.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes X; No ___. Depth to saturated soil: 8" .

Other indicators: _____.

Wetland hydrology: Yes X; No ___. Basis: depth to saturated soil <12"

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland _____.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-3 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Acer negundo	FACW-	7. Acer saccharinum	FACW
2. Acer saccharinum	FACW	8. Phalaris arundinacea	OBL
3.		9. Galium asperellum	OBL
Saplings/shrubs		**Woody vines**	
4. Acer saccharinum	FACW	10. none	
5. Acer negundo	FACW-	11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A = 6" 10YR 2/1 SiL

AB = >16" 10YR 3/1 SiCl w/ 10YR 3/3 mottles

Soil

Series and phase: Other On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 10YR 3/3; Matrix color: 10YR 3/1.

Gleyed: Yes ___ No X. Other indicators: mottles are few/fine/faint.

Hydric soils: Yes X No ___; Basis: low chroma matrix.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes X; No ___. Depth to saturated soil: 16".

Other indicators: drift lines and sparsly vegetated ground layer indicating inundation

Wetland hydrology: Yes X; No ___. Basis: _____.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland _____.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-4 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Acer negundo	FACW-	7. Phalaris arundinacea	FACW+
2. Ulmus americana	FACW-	8. Solidago gigantea	FACW
3.		9. Polygonum pensylvanicum	FACW+
Saplings/shrubs		**Woody vines**	
4. Acer negundo	FACW-	10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A = 9" 10YR 3/1, SiL

AB = >16" 5Y 3/1, SCL w/10YR 3/4 mottles

Soil

Series and phase: Otter On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 10YR 3/4; Matrix color: 5Y 3/1.

Gleyed: Yes ___ No ___ Other indicators: mottles are common/medium/faint

Hydric soils: Yes X No ___; Basis: low chroma matrix.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes ___; No X. Depth to saturated soil: >16".

Other indicators: Silt covered debris.

Wetland hydrology: Yes X; No ___. Basis: _____.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland _____.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-5 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. none	
2.		8.	
3.		9.	
Saplings/shrubs		**Woody vines**	
4. none		10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 0. Other indicators: _____.

Hydrophytic vegetation: Yes ____ No X. Basis: cultivated farmland

A_p = 8" 10YR 3/2 SiL

AB = >16" 10YR 3/2 SiCL

Soil

Series and phase: Huntsville On hydric soils list? Yes____; No X.

Mottled: Yes____; No X. Mottle color: _____; Matrix color: 10YR 3/2.

Gleyed: Yes____ No X Other indicators: _____.

Hydric soils: Yes____ No X; Basis: _____.

Hydrology

Inundated: Yes____; No X. Depth of standing water: _____.

Saturated soils: Yes____; No X. Depth to saturated soil: >16"

Other indicators: none

Wetland hydrology: Yes____; No X. Basis: no wetland indicators

Atypical situation: Yes X; No____.

Normal Circumstances? Yes X No____.

Wetland Determination: Wetland _____; Nonwetland X

Comments: area is actively cultivated on wetland periphery

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-6 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. none	
2.		8.	
3.		9.	
Saplings/shrubs		**Woody vines**	
4. none		10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: ___. Other indicators: _____.

Hydrophytic vegetation: Yes ___ No X. Basis: cultivated farmland.

Ap = 6" 10YR 3/2 SiL
AB = >16" 10YR 3/2 SiCl

Soil

Series and phase: Huntsville On hydric soils list? Yes ___; No X.

Mottled: Yes ___; No X. Mottle color: _____; Matrix color: 10YR 3/2

Gleyed: Yes ___ No X. Other indicators: few oxidized root channels.

Hydric soils: Yes ___ No X; Basis: _____.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes ___; No X. Depth to saturated soil: >16"

Other indicators: none

Wetland hydrology: Yes ___; No X. Basis: _____.

Atypical situation: Yes X; No ___.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland _____; Nonwetland X.

Comments: area is actively cultivated near wetland periphery

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-7 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. Phararis arundinacea	FACW+ OBL
2.		8. Carex Sp.	
3.		9.	
Saplings/shrubs		**Woody vines**	
4. Salix exigua	OBL	10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A=7" 10YR 3/1, SiL
AB=>16" 5Y 3/1 w/10YR 3/3 mottles

Soil

Series and phase: Otter On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 10YR 3/3; Matrix color: 5Y 3/1.

Gleyed: Yes ___ No X. Other indicators: mottles are few coarse faint w/many oxidized root channels

Hydric soils: Yes X No ___; Basis: low chroma below A horizon.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes ___; No X. Depth to saturated soil: >16"

Other indicators: Silt covered debris

Wetland hydrology: Yes X; No ___. Basis: _____.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland ___.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-8 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. Phalaris arundinacea	FACW+
2.		8. Typha latifolia	OBL
3.		9. Impatiens capensis	FACW
Saplings/shrubs		**Woody vines**	
4. none		10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A=>16" 5Y 3/1, silw/10YR 3/4 mottes at surface

Soil

Series and phase: Otter On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 10YR 3/4; Matrix color: 5Y 3/1.

Gleyed: Yes ___ No X Other indicators: mottles are common/medium/faint and many oxidized root channels

Hydric soils: Yes X No ___; Basis: low chroma near surface.

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes X; No ___. Depth to saturated soil: 10"

Other indicators: Silt covered debris

Wetland hydrology: Yes X; No ___. Basis: Water w/in 12" of surface.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland _____.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-9 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. none		7. none	
2.		8.	
3.		9.	
Saplings/shrubs		**Woody vines**	
4. none		10. none	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 0. Other indicators: none.

Hydrophytic vegetation: Yes ____ No X. Basis: Cultivated farmland.

A=7" 10YR 3/1 SiCl
AB=>16" 10YR 3/2 SiCl

Soil

Series and phase: Huntsville On hydric soils list? Yes____; No X.

Mottled: Yes____; No X. Mottle color:_____; Matrix color: 10YR 3/2.

Gleyed: Yes____ No X. Other indicators: none.

Hydric soils: Yes____ No X; Basis: lack up mottles in upper 16" of profile

Hydrology

Inundated: Yes____; No X. Depth of standing water:_____.

Saturated soils: Yes____; No X. Depth to saturated soil: >16"

Other indicators: none.

Wetland hydrology: Yes____; No X. Basis:_____.

Atypical situation: Yes X; No____.

Normal Circumstances? Yes X No____.

Wetland Determination: Wetland_____; Nonwetland X.

Comments: area near wetland periphery is cultivated

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-10 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Acer negundo	FACW-	7. Phalaris arundinacea	FACW+
2. Acer saccharinum	FACW	8. Impatiens capensis	FACW
3. Salix exigua	OBL	9. Galium asprellum	OBL
Saplings/shrubs		**Woody vines**	
4. Salix exigua	OBL	10. none	
5. Acer negundo	FACW-	11.	
6. Acer saccharinum	FACW	12.	

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: >50%

A = >16" 5Y 3/1 SiL w/ 10YR 4/3 mottles

Soil

Series and phase: Otter On hydric soils list? Yes X; No ___.

Mottled: Yes X; No ___. Mottle color: 10YR 4/3; Matrix color: 5Y 3/1.

Gleyed: Yes ___ No X Other indicators: mottles are few/medium/faint. w/ many oxidized root channels

Hydric soils: Yes X No ___; Basis: low chroma A horizon

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes X; No ___. Depth to saturated soil: 11"

Other indicators: Silt covered debris

Wetland hydrology: Yes X; No ___. Basis: water w/in 12" of surface.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland X; Nonwetland _____.

Comments:

Determined by: Jon Gunton

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: Modern Plating Co. Application Number: _____ Project Name: _____

State: IL County: Stephenson Legal Description: Township: 27N Range: 8E

Date: 5-29-92 Plot No.: W-11 Section: SE 1/4 Sec. 32

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1.	Acer saccharinum	FACW	7.	Phalaris arundinacea	FACW+
2.	Fraxinus pennsylvanica	FACW	8.		
3.			9.		
Saplings/shrubs			Woody vines		
4.	Acer negunda	FACW-	10.		
5.	Acer saccharinum	FACW	11.		
6.			12.		

% of species that are OBL, FACW, and/or FAC: 100. Other indicators: _____.

Hydrophytic vegetation: Yes X No ___. Basis: _____.

A = 7" 10YR 2/1 SiL
AB = >16" 10YR 3/2 SiCL w/ 10YR 4/3 mottles @ 14"

Soil

Series and phase: Lawson On hydric soils list? Yes ___; No X.

Mottled: Yes X; No ___. Mottle color: 10YR 4/3; Matrix color: 10YR 3/2.

Gleyed: Yes ___ No X. Other indicators: mottles are many fine faint.

Hydric soils: Yes ___ No X; Basis: high chroma matrix and mottle colors

Hydrology

Inundated: Yes ___; No X. Depth of standing water: _____.

Saturated soils: Yes ___; No X. Depth to saturated soil: >16".

Other indicators: none.

Wetland hydrology: Yes ___; No X. Basis: lack of indicators.

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ___.

Wetland Determination: Wetland _____; Nonwetland X.

Comments:

Determined by: Jon Gumtow

Foth & Van Dyke

Two Park Plaza, Suite 950
10850 West Park Place
Milwaukee, WI 53224-3619
414/359-2500
FAX: 414/359-2519

June 8, 1992

Dr. Deanna Glosser
Illinois Department of Conservation
Division of Natural Heritage, Endangered Species Program
600 North Grand Avenue West
Springfield, Illinois 62701-1787

Dear Dr. Glosser:

RE: Endangered Resource Information
Modern Plating Corporation
Freeport, Illinois

Foth & Van Dyke is preparing a biological impact assessment, under the direction of United States Environmental Protection Agency (USEPA) Region V, for the Modern Plating Corporation facility in Freeport, Illinois. This assessment is, in part, focused on endangered or threatened species and natural community habitats which may exist within the study area or surrounding properties.

In order to gather baseline data on unique resources in the area, Foth & Van Dyke is requesting a review of your records regarding occurrence of endangered or threatened species; or natural community areas/special or unique habitats.

The study area is located within the SE 1/4 of Section 32, Township 27 North, Range 8 East, Stephenson County, Illinois. The attached United States Geological Survey (USGS) 7.5 min. East Freeport, Illinois, Quadrangle map locates the study area.

Based on a recent telephone conversation with your office, Foth & Van Dyke understands your department typically requires 2 to 3 weeks to process requests of this nature. If you encounter any problems meeting this schedule or if you have any questions pertaining to this project, please contact me at 414-359-2500.

Sincerely,

Foth & Van Dyke

Jon H. Gumtow
Project Scientist

JHG:slf

Enclosure

cc: Steve Laszewski, Foth & Van Dyke - Green Bay
Rod Bloese, Foth & Van Dyke - St. Louis

SJL1-G
R002780 RTB-Se
SVD1 -GE
Master file-

Illinois Department of Conservation
life and land together

Manning
Director

John W. Comerio
Deputy Director

Bruce F. Clay
Assistant Director

LINCOLN TOWER PLAZA • 524 SOUTH SECOND STREET • SPRINGFIELD 62701-1787
CHICAGO OFFICE • ROOM 4-300 • 100 WEST RANDOLPH 60601

June 16, 1992

Jon H. Gumtow
Foth & Van Dyke
Two Park Plaza, Suite 950
10850 West Park Place
Milwaukee, WI 53224-3619

RE: Modern Plating Corporation
Freeport, Illinois

Dear Mr. Gumtow:

We have reviewed the information you provided about the above referenced project and have found no records of the occurrence of endangered or threatened species or other sensitive resources within one mile of the project site. Our information on the area is taken from the Illinois Natural Heritage Database, a computer-based system for tracking the occurrence of sensitive resources in Illinois.

Please be aware that the Natural Heritage Database cannot provide a conclusive statement on the presence, absence or condition of significant natural features in any part of Illinois. The reports only summarize the existing information regarding the natural features or locations in question known to the Division of Natural Heritage at the time of the request. The reports should never be regarded as final statements on the site being considered, nor should they be a substitute for field surveys required for environmental assessments.

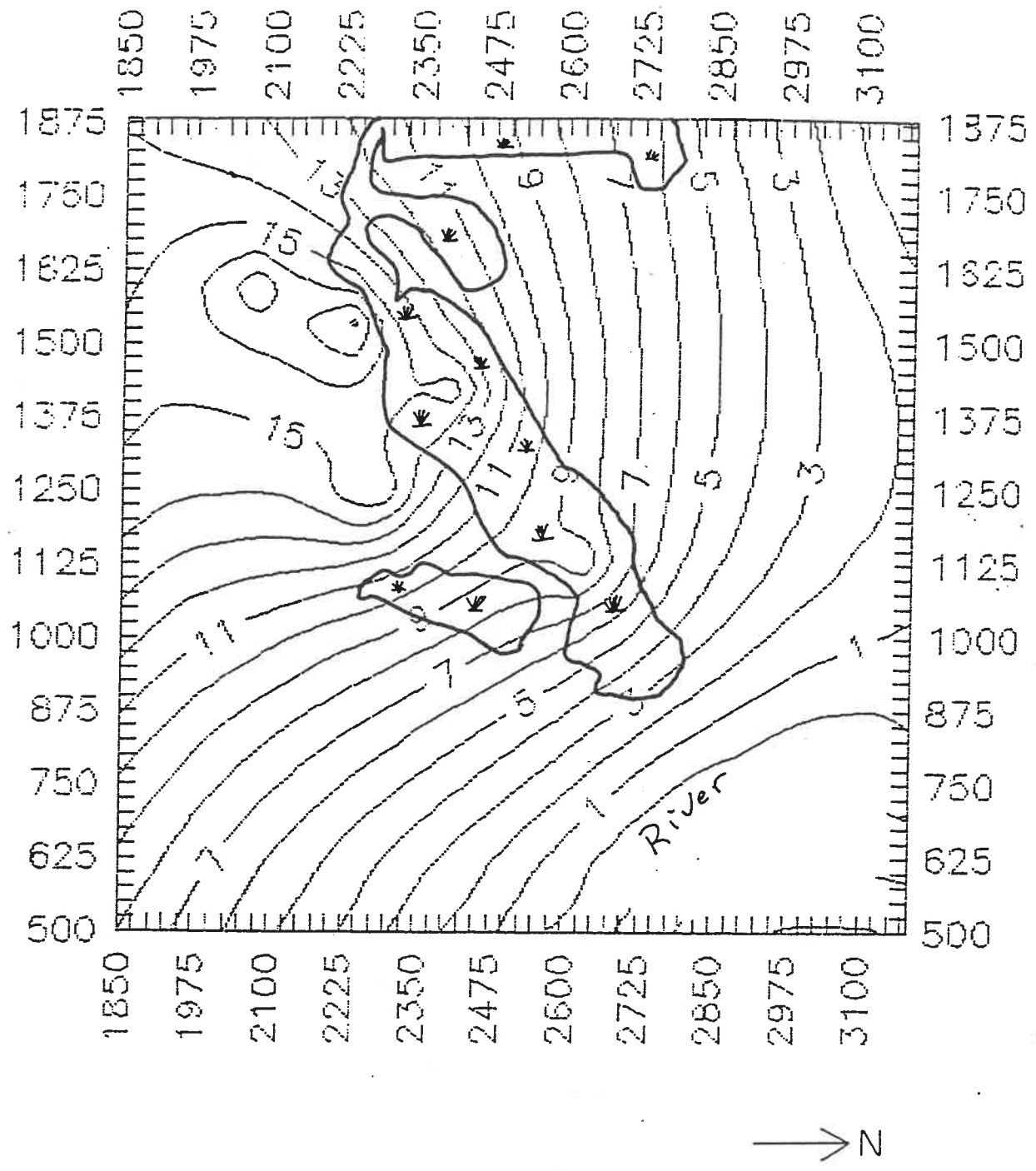
We do not charge for searches of the Database, but we encourage you to support its continued operation with a tax-deductible contribution to the Illinois Nongame Wildlife Conservation Fund. The suggested donation for a simple search as was required in this case is $30. Donations may be sent to the Division of Natural Heritage at the Springfield address on this letterhead.

If you have additional questions, please contact our office at (217)785-8290.

Sincerely,

Glen Kruse

Glen Kruse
Project Manager



LEGEND

—15— DRAWDOWN CONTOUR

WETLAND

MODERN PLATING CORP., FREEPORT, ILLINOIS

FIGURE P-1

DRAWDOWN(ft) IN UPPER AQUIFER
ALTERNATIVE NO. 3

Scale: 1" = 276'	Date: OCT. 1991
Prepared By: Foth & Van Dyke	By: JRB

Appendix I

TACO Equation R26 Calculation

Foth & Van Dyke
engineers · architects · scientists

Client: MPC Scope I.D.: 97M015
Project: VC Dilution in Groundwtr. Page: 1/2
Prepared By: JAJ. Date: 8.29.97
Checked By: Date:

Calculation of Migration of Vinyl Chloride: Concentration Along centerline at Pecatonica River.

Use TACO Eqn R26.

$$C_x = C_{source} \cdot \exp\left[\left(\frac{x}{2\alpha_x}\right)\cdot\left(1-\sqrt{1+\frac{4\lambda\cdot\alpha_x}{U}}\right)\right]\cdot \operatorname{erf}\left[\frac{S_w}{4\cdot\sqrt{\alpha_y\cdot x}}\right]\cdot \operatorname{erf}\left[\frac{S_d}{2\cdot\sqrt{\alpha_z\cdot x}}\right]$$

C_x = Concentration at distance x from source
C_{source} = concentration in groundwater at edge of source.
For vinyl chloride – use 200 as conservative estimate.

X = distance to compliance point (cm).
Pecatonica R. from Lagoons is ~ 800 ft. (24,000 cm).

$\alpha_x = 0.1 \cdot X = 2{,}400$ cm.
$\alpha_y = \alpha_x/3 = 800$ cm.
$\alpha_z = \alpha_y/20 = 120$ cm.

λ = degradation constant
For vinyl chloride, $\lambda = 0.00024\ day^{-1}$ (TACO, App C, Table E).

$U = \frac{k\cdot i}{\theta_T}$ k = hydr. conductivity (cm/d) = 232 cm/d (Fcms)
i = hydr. gradient = 0.006 (Fcms)
θ_T = porosity = 0.38

$U = 3.66$ cm/d.

S_w = width of plume at source (cm)
assume Length of Lagoons combined = 600 ft ≅ 18,500 cm.

S_d = depth of plume at source (cm)
assume 20 ft (610 cm) for thickness of upper aquifer.

erf = error function
calculated from Tables (TACO, App C, Table G)

Foth & Van Dyke
engineers · architects · scientists

Client: MPC Scope I.D.: 97m015
Project: VC Dilution in Grndwtr Page: 2/2
Prepared By: JJA1 Date: 8.29.97
Checked By: Date:

$$C_x = C_{source} \cdot \exp\left[\left(\frac{x}{2\alpha_x}\right)\cdot\left(1-\sqrt{1+\frac{4\lambda\cdot\alpha_x}{U}}\right)\right] \cdot erf\left[\frac{sw}{4\cdot\sqrt{\alpha_y\cdot x}}\right] \cdot erf\left[\frac{sl}{2\cdot\sqrt{\alpha_z\cdot x}}\right]$$

$$= C_{source} \cdot \exp\left[\left(\frac{24{,}000}{2\cdot(2{,}400)}\right)\cdot\left(1-\sqrt{1+\frac{4\cdot(0.00024\cdot 2{,}400}{3.66}}\right)\right] \cdot erf\left[\frac{18{,}500}{4\cdot\sqrt{300\cdot 24{,}000}}\right] \cdot erf\left[\frac{610}{2\cdot\sqrt{120\cdot 24{,}0}}\right.$$

$$= C_{source} \cdot \exp\left[5\cdot\left(1-\sqrt{1+\frac{2{,}304}{3.66}}\right)\right] \cdot erf[1.056] \cdot erf[0.18]$$

$$= C_{source} \cdot \exp\left[5\cdot(1-\sqrt{1.63})\right] \cdot 0.88 \cdot 0.22$$

$$= C_{source} \cdot \exp\left(5\cdot(1-1.2765)\right) \cdot 0.88 \cdot 0.22$$

$$= C_{source} \cdot \exp(-1.38) \cdot 0.88 \cdot 0.22$$

$$= C_{source} \cdot 0.25 \cdot 0.88 \cdot 0.22$$

$$= C_{source} \cdot 0.048$$

If C_{source} = 200 µg/L, C_x = 200 × 0.048 = 9.7 µg/L

If C_{source} = 180 µg/L (max conc. detected in source well at site in July, 97),

C_x = 180 × 0.048 = 8.6 µg/L

Actual concentration detected at well near River in July, 97 was 18 µg/L

	Groundwater Darcy Velocity, U_{gw} (cm/yr)	$U_{gw} = K \bullet i$	**R24**
Equations for the Groundwater Ingestion Exposure Route	Remediation Objective for Carcinogenic Contaminants (mg/L)	$\frac{TR \bullet BW \bullet AT_c \bullet 365 \frac{d}{yr}}{SF_o \bullet IR_w \bullet EF \bullet ED}$	**R25**
	Dissolved Hydrocarbon Concentration along Centerline, $C_{(x)}$ (g/cm^3_{water})	$C_{(x)} = C_{source} \bullet \exp\left[\left(\frac{X}{2\alpha_x}\right) \bullet \left(1 - \sqrt{1 + \frac{4\lambda \bullet \alpha_x}{U}}\right)\right] \bullet erf\left[\frac{S_w}{4 \bullet \sqrt{\alpha_y \bullet X}}\right] \bullet erf\left[\frac{S_d}{2 \bullet \sqrt{\alpha_z \bullet X}}\right]$ NOTE: 1. This equation does not predict the contaminant flow within bedrock. 2. If the value of the First Order Degradation Constant (λ) is not readily available, then set $\lambda = 0$.	**R26**

$\exp(x) = e^x$

R002785

Equations for the Soil Component of the Groundwater Ingestion Exposure Route	Remediation Objective (mg/kg)	$\frac{GW_{source}}{LF_{sw}}$ NOTE: This equation can only be used to model contaminant migration not in the water bearing unit.	**R12**
	Groundwater at the source, GW_{source} (mg/L)	$GW_{source} = \frac{GW_{comp}}{C_{(x)}/C_{source}}$	**R13**
	Leaching Factor, LF_{sw} $(mg/L_{water})/(mg/kg_{soil})$	$LF_{sw} = \frac{\rho_s \bullet \frac{cm^3 \cdot kg}{L \cdot g}}{\left[\theta_{ws} + (k_s \bullet \rho_s) + (H' \bullet \theta_{as})\right] \bullet \left[1 + \frac{(U_{gw} \bullet \delta_{gw})}{(I \bullet W)}\right]}$	**R14**
	Steady-State Attenuation Along the Centerline of a Dissolved Plume, $C_{(x)}/C_{source}$	$C_{(x)}/C_{source} = \exp\left[\left(\frac{X}{2\alpha_x}\right) \bullet \left(1 - \sqrt{1 + \frac{4\lambda \bullet \alpha_x}{U}}\right)\right] \bullet erf\left[\frac{S_w}{4 \bullet \sqrt{\alpha_y \bullet X}}\right] \bullet erf\left[\frac{S_d}{2 \bullet \sqrt{\alpha_z \bullet X}}\right]$ NOTE: 1. This equation does not predict the contaminant flow within bedrock. 2. If the value of the First Order Degradation Constant (λ) is not readily available, then set $\lambda = 0$.	**R15**
	Longitudinal Dispersivity, α_x (cm)	$\alpha_x = 0.10 \bullet X$	**R16**

R002786

Transverse Dispersivity, α_y (cm)	$\alpha_y = \frac{\alpha_x}{3}$	**R17**
Vertical Dispersivity, α_z (cm)	$\alpha_z = \frac{\alpha_x}{20}$	**R18**
Specific Discharge, U (cm/d)	$U = \frac{K \bullet i}{\theta_T}$	**R19**
Soil-Water Sorption Coefficient, k_s	$k_s = K_{oc} \bullet f_{oc}$	**R20**
Volumetric Air Content in Vadose Zone Soils, θ_{as} (cm^3_{air}/cm^3_{soil})	$\theta_{as} = \theta_T - \frac{(w \bullet \rho_s)}{\rho_w}$	**R21**
Volumetric Water Content in Vadose Zone Soils, θ_{ws} (cm^3_{water}/cm^3_{soil})	$\theta_{ws} = \frac{w \bullet \rho_s}{\rho_w}$	**R22**
Total Soil Porosity, θ_T (cm^3/cm^3_{soil})	$\theta_T = \theta_{as} + \theta_{ws}$	**R23**

R002787

Section 742.APPENDIX C: Tier 2 Tables and Illustrations

Section 742.Table G: Error Function (erf)

$$erf(\beta) = \frac{2}{\sqrt{\pi}} \int_0^{\beta} e^{-\varepsilon^2} d\varepsilon$$

β	*erf* (β)
0	0
0.05	0.056372
0.1	0.112463
0.15	0.167996
0.2	0.222703
0.25	0.276326
0.3	0.328627
0.35	0.379382
0.4	0.428392
0.45	0.475482
0.5	0.520500
0.55	0.563323
0.6	0.603856
0.65	0.642029
0.7	0.677801
0.75	0.711156
0.8	0.742101
0.85	0.770668
0.9	0.796908
0.95	0.820891
1.0	0.842701
1.1	0.880205
1.2	0.910314
1.3	0.934008
1.4	0.952285
1.5	0.966105
1.6	0.976348
1.7	0.983790
1.8	0.989091
1.9	0.992790
2.0	0.995322
2.1	0.997021
2.2	0.998137
2.3	0.998857
2.4	0.999311
2.5	0.999593
2.6	0.999764
2.7	0.999866
2.8	0.999925
2.9	0.999959
3.0	0.999978

Appendix J

TACO Calculations for Soils

Tier 2 Calculations for Shawnee Building

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Arsenic

		Industrial	Constr. Worker
Remedial Objective	mg/kg	613	61
RFDo	mg/kg-day	0.0003	0.0003
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating

SSL	Ingestion Pathway		S3	Equation
Tier 2	Carcinogenic			

compound: Arsenic

		Industrial	Constr. Worker
Remedial Objective	mg/kg	3.82	83
SFo	(mg/kg-day)-1	1.5	1.5
TR		1E-06	1E-06
IRsoil	mg/day	50	480
BW	kg	70	70
ATc	yr	70	70
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrial/Commercial

compound: Arsenic

		Industrial
Remedial Objective	mg/kg	1347.54
URF	(ug/m3)-1	0.0043
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Arsenic

		Construction Worker
Remedial Objective	mg/kg	28073.74
URF	(ug/m3)-1	0.0043
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Cadmium

		Industrial	Constr. Worker
Remedial Objective	mg/kg	2044	204
RFDo	mg/kg-day	0.001	0.001
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrial/Commercial

compound: Cadmium

		Industrial
Remedial Objective	mg/kg	3219.12
URF	(ug/m3)-1	0.0018
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Cadmium

		Construction Worker
Remedial Objective	mg/kg	67065.04
URF	(ug/m3)-1	0.0018
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: cis-DCE

		Industrial	Constr. Worker
Remedial Objective	mg/kg	20440	20405
RFDo	mg/kg-day	0.01	0.1
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Cyanide

		Industrial	Constr. Worker
Remedial Objective	mg/kg	40880	4081
RFDo	mg/kg-day	0.02	0.02
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Chromium (III)

		Industrial	Constr. Worker
Remedial Objective	mg/kg	2044000	204045
RFDo	mg/kg-day	1	1
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Nickel

		Industrial	Constr. Worker
Remedial Objective	mg/kg	40880	4081
RFDo	mg/kg-day	0.02	0.02
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrual/Commercial

compound: Nickel

		Industrial
Remedial Objective	mg/kg	24143.41
URF	(ug/m3)-1	0.00024
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Nickel

		Construction Worker
Remedial Objective	mg/kg	502987.81
URF	(ug/m3)-1	0.00024
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Tetrachloroethene

		Industrial	Constr. Worker
Remedial Objective	mg/kg	20440	20405
RFDo	mg/kg-day	0.01	0.1
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 2 Carcinogenic

compound: Tetrachloroethene

		Industrial	Constr. Worker
Remedial Objective	mg/kg	110	2388
SFo	(mg/kg-day)-1	0.052	0.052
TR		1E-06	1E-06
IRsoil	mg/day	50	480
BW	kg	70	70
ATc	yr	70	70
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Volatiles) S4 Equation
Tier 2 Noncarcinogenic
Industrual/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	69501
RFC	mg/m3	0.4
THQ		1
AT	yr	25
EF	days/yr	250
ED	yr	25
VF	m3/kg	119009
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	7.9E+08
Da	cm2/s	1.5E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72

Modern Plating
SSL Inhalation Pathway (Volatiles) S5 Equation
Tier 2 Noncarcinogenic
Construction Worker

compound: Tetrachloroethene

		Construction Worker
Remedial Objective	mg/kg	450
RFC	mg/m3	0.4
THQ		1
AT	yr	0.115
EF	days/yr	30
ED	yr	1
VF	m3/kg	8034
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	3600000
Da	cm2/s	1.5E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72
VF'	m3/kg	803

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 2 Carcinogenic
Industrual/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	838.81
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
VF	m3/kg	119009
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	1.501084E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72

Modern Plating
SSL Inhalation Pathway (Volatiles) S7 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Tetrachloroethene

		Construction Worker
Remedial Objective	mg/kg	1179.67
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
VF	m3/kg	8034
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	3600000
Da	cm2/s	1.50108E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72
VF'	m3/kg	803

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S11 Equation
Tier 2 Noncarcinogenic
Industrual/Commercial

compound: Tetrachloroethene

		Industrial
emedial Objective	mg/kg	827774223
RFC	mg/m3	0.4
THQ		1
AT	yr	25
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts S12 Equation
Tier 2 Noncarcinogenic
Construction Worker

compound: Tetrachloroethene

		Construction Worker
Remedial Objective	mg/kg	79328363
RFC	mg/m3	0.4
THQ		1
AT	yr	0.115
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrual/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	9990378.55
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Tetrachloroethene

		Construction Worker
Remedial Objective	mg/kg	208132886.48
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Trichloroethene

		Industrial	Constr. Worker
Remedial Objective	mg/kg	12264	1224
RFDo	mg/kg-day	0.006	0.006
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 2 Carcinogenic

compound: Trichloroethene

		Industrial	Constr. Worker
Remedial Objective	mg/kg	520	11291
SFo	(mg/kg-day)-1	0.011	0.011
TR		1E-06	1E-06
IRsoil	mg/day	50	480
BW	kg	70	70
ATc	yr	70	70
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 2 Carcinogenic
Industrual/Commercial

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	354.89
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
VF	m3/kg	147581
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	9.761228E-07
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.079
Dw	cm2/s	9.1E-06
H'	dim_less	0.422
Koc	cm3/g	166
Kd	cm3/g	3.984

Modern Plating
SSL Inhalation Pathway (Volatiles) S7 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Trichloroethene

		Construction Worker
Remedial Objective	mg/kg	499.10
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
VF	m3/kg	9962
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	3600000
Da	cm2/s	9.76123E-07
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.079
Dw	cm2/s	9.1E-06
H'	dim_less	0.422
Koc	cm3/g	166
Kd	cm3/g	3.984
VF'	m3/kg	996

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrial/Commercial

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	3408482.09
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Trichloroethene

		Construction Worker
Remedial Objective	mg/kg	71010043.62
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: trans-DCE

		Industrial	Constr. Worker
Remedial Objective	mg/kg	40880	4081
RFDo	mg/kg-day	0.02	0.02
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 2 Carcinogenic

compound: Vinyl Chloride

		Industrial	Constr. Worker
Remedial Objective	mg/kg	3	65
SFo	(mg/kg-day)-1	1.9	1.9
TR		1E-06	1E-06
IRsoil	mg/day	50	480
BW	kg	70	70
ATc	yr	70	70
EF	day/yr	250	30
ED	yr	25	1

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 2 Carcinogenic
Industrual/Commercial

compound: Vinyl Chloride

		Industrial
Remedial Objective	mg/kg	1.77
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
VF	m3/kg	36269
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	1.61622E-05
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.106
Dw	cm2/s	1.23E-06
H'	dim_less	1.11
Koc	cm3/g	18.6
Kd	cm3/g	0.4464

Modern Plating
SSL Inhalation Pathway (Volatiles) S7 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Vinyl Chloride

		Construction Worker
Remedial Objective	mg/kg	2.48
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
VF	m3/kg	2448
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	3600000
Da	cm2/s	1.6162E-05
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.106
Dw	cm2/s	1.23E-06
H'	dim_less	1.11
Koc	cm3/g	18.6
Kd	cm3/g	0.4464
VF'	m3/kg	245

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 2 Carcinogenic
Industrial/Commercial

compound: Vinyl Chloride

		Industrial
Remedial Objective	mg/kg	68981.19
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	250
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S14 Equation
Tier 2 Carcinogenic
Construction Worker

compound: Vinyl Chloride

		Construction Worker
Remedial Objective	mg/kg	1437108.03
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	30
ED	yr	1
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194
PEF'	m3/kg	141742161

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 2 Noncarcinogenic

compound: Zinc

		Industrial	Constr. Worker
Remedial Objective	mg/kg	613200	61214
RFDo	mg/kg-day	0.3	0.3
THQ		1	1
IRsoil	mg/day	50	480
BW	kg	70	70
AT	yr	25	0.115
EF	day/yr	250	30
ED	yr	25	1

Tier 3 Calculations for Wetland Soils

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Arsenic

		Industrial
Remedial Objective	mg/kg	12775
RFDo	mg/kg-day	0.0003
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 3 Carcinogenic

compound: Arsenic

		Industrial
Remedial Objective	mg/kg	79.49
SFo	(mg/kg-day)-1	1.5
TR		1E-06
IRsoil	mg/day	50
BW	kg	70
ATc	yr	70
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Arsenic

		Industrial
Remedial Objective	mg/kg	28073.74
URF	(ug/m3)-1	0.0043
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Cadmium

		Industrial
Remedial Objective	mg/kg	42583
RFDo	mg/kg-day	0.001
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Cadmium

		Industrial
Remedial Objective	mg/kg	67065.04
URF	(ug/m3)-1	0.0018
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: cis-DCE

		Industrial
Remedial Objective	mg/kg	425833
RFDo	mg/kg-day	0.01
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Cyanide

		Industrial
Remedial Objective	mg/kg	851667
RFDo	mg/kg-day	0.02
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Chromium (III)

		Industrial
Remedial Objective	mg/kg	42583333
RFDo	mg/kg-day	1
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Nickel

		Industrial
Remedial Objective	mg/kg	851667
RFDo	mg/kg-day	0.02
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Nickel

		Industrial
Remedial Objective	mg/kg	502987.81
URF	(ug/m3)-1	0.00024
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	425833
RFDo	mg/kg-day	0.01
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 3 Carcinogenic

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	2293
SFo	(mg/kg-day)-1	0.052
TR		1E-06
IRsoil	mg/day	50
BW	kg	70
ATc	yr	70
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Volatiles) S4 Equation
Tier 3 Noncarcinogenic
Industrial/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	1447942
RFC	mg/m3	0.4
THQ		1
AT	yr	25
EF	days/yr	12
ED	yr	25
VF	m3/kg	119009
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	7.9E+08
Da	cm2/s	1.5E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	17475.16
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
VF	m3/kg	119009
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	1.501084E-06
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.072
Dw	cm2/s	8.2E-06
H'	dim_less	0.754
Koc	cm3/g	155
Kd	cm3/g	3.72

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S11 Equation
Tier 3 Noncarcinogenic
Industrial/Commercial

compound: Tetrachloroethene

		Industrial
emedial Objective	mg/kg	17245296308
RFC	mg/m3	0.4
THQ		1
AT	yr	25
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Tetrachloroethene

		Industrial
Remedial Objective	mg/kg	208132886.48
URF	(ug/m3)-1	5.8E-07
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	255500
RFDo	mg/kg-day	0.006
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 3 Carcinogenic

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	10839
SFo	(mg/kg-day)-1	0.011
TR		1E-06
IRsoil	mg/day	50
BW	kg	70
ATc	yr	70
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	7393.51
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
VF	m3/kg	147581
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	9.761228E-07
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.079
Dw	cm2/s	9.1E-06
H'	dim_less	0.422
Koc	cm3/g	166
Kd	cm3/g	3.984

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Trichloroethene

		Industrial
Remedial Objective	mg/kg	71010043.62
URF	(ug/m3)-1	1.7E-06
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

compound: trans-DCE

		Industrial
Remedial Objective	mg/kg	851667
RFDo	mg/kg-day	0.02
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Ingestion Pathway S3 Equation
Tier 3 Carcinogenic

compound: Vinyl Chloride

		Industrial
Remedial Objective	mg/kg	63
SFo	(mg/kg-day)-1	1.9
TR		1E-06
IRsoil	mg/day	50
BW	kg	70
ATc	yr	70
EF	day/yr	12
ED	yr	25

Modern Plating
SSL Inhalation Pathway (Volatiles) S6 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Vinyl Chloride

		Industrial
Remedial Objective	mg/kg	36.77
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
VF	m3/kg	36269
Q/C	(g/m2s)/(kg/m3)	97.78
T	s	790000000
Da	cm2/s	1.61622E-05
theta-a		0.04
theta-w		0.34
n		0.38
foc	g/g	0.024
pb	g/cm3	1.7
Di	cm2/s	0.106
Dw	cm2/s	1.23E-06
H'	dim_less	1.11
Koc	cm3/g	18.6
Kd	cm3/g	0.4464

Modern Plating
SSL Inhalation Pathway (Fugitive Dusts) S13 Equation
Tier 3 Carcinogenic
Industrial/Commercial

compound: Vinyl Chloride

		Industrial
Remedial Objective	mg/kg	1437108.03
URF	(ug/m3)-1	8.4E-05
TR		1E-06
ATc	yr	70
EF	days/yr	12
ED	yr	25
PEF	m3/kg	1417421614
Q/C	(g/m2s)/(kg/m3)	97.78
V		0.5
Um	m/s	4.69
Ut	m/s	11.32
F(x)		0.194

Modern Plating
SSL Ingestion Pathway S1 Equation
Tier 3 Noncarcinogenic

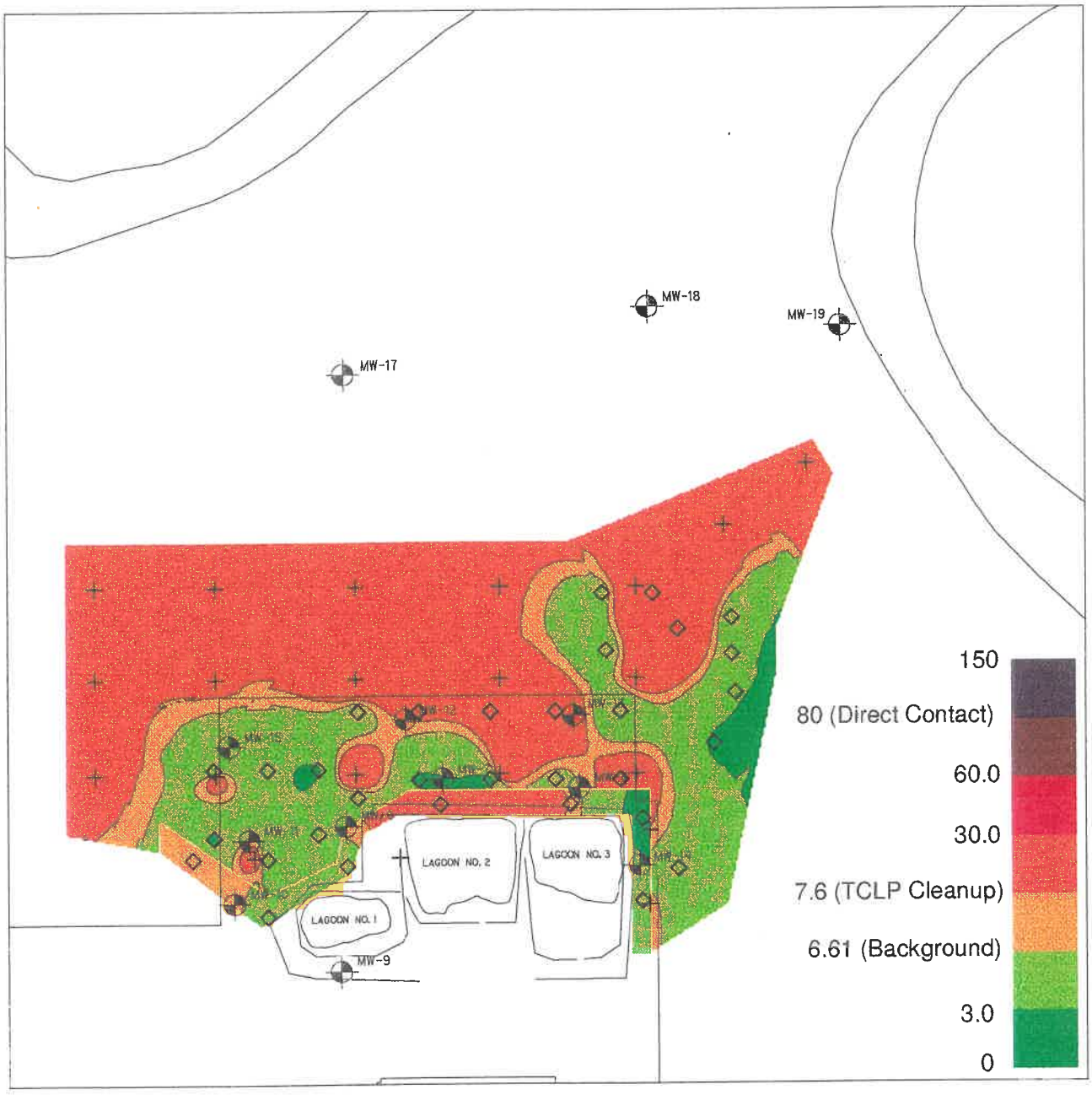
compound: Zinc

		Industrial
Remedial Objective	mg/kg	12775000
RFDo	mg/kg-day	0.3
THQ		1
IRsoil	mg/day	50
BW	kg	70
AT	yr	25
EF	day/yr	12
ED	yr	25

Appendix K

Soil Concentration Contour Maps Identifying Areas Exceeding Site-Specific Soil Cleanup Objectives

Soil Arsenic Concentrations (mg/kg)
0.5 - 1.5 Feet



+ 1991 Soil Sample

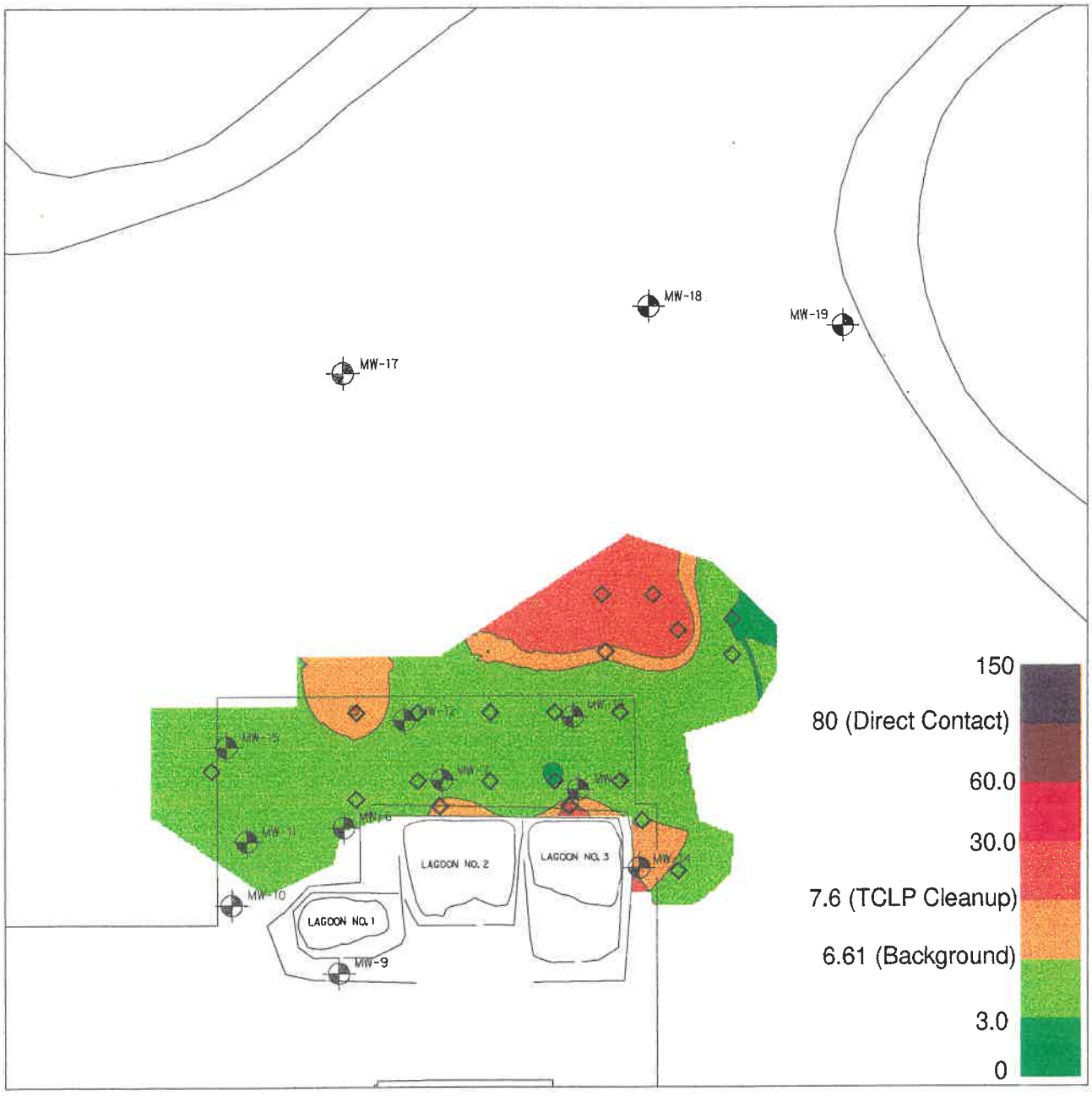
◇ 1994 Soil Sample

0 250 500 750 1000

Feet

1

Soil Arsenic Concentrations (mg/kg)
2.5 - 3.5 Feet

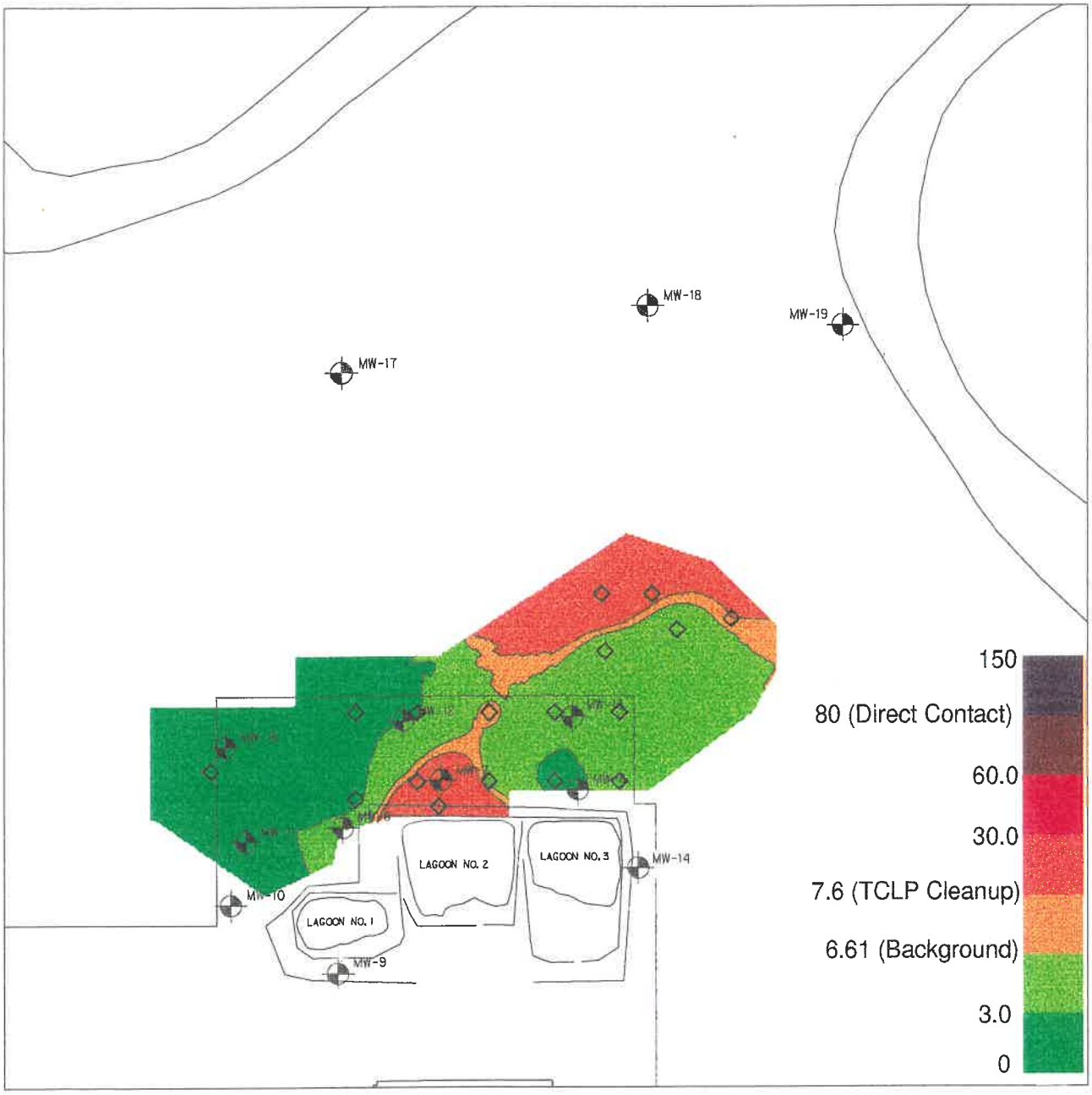


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

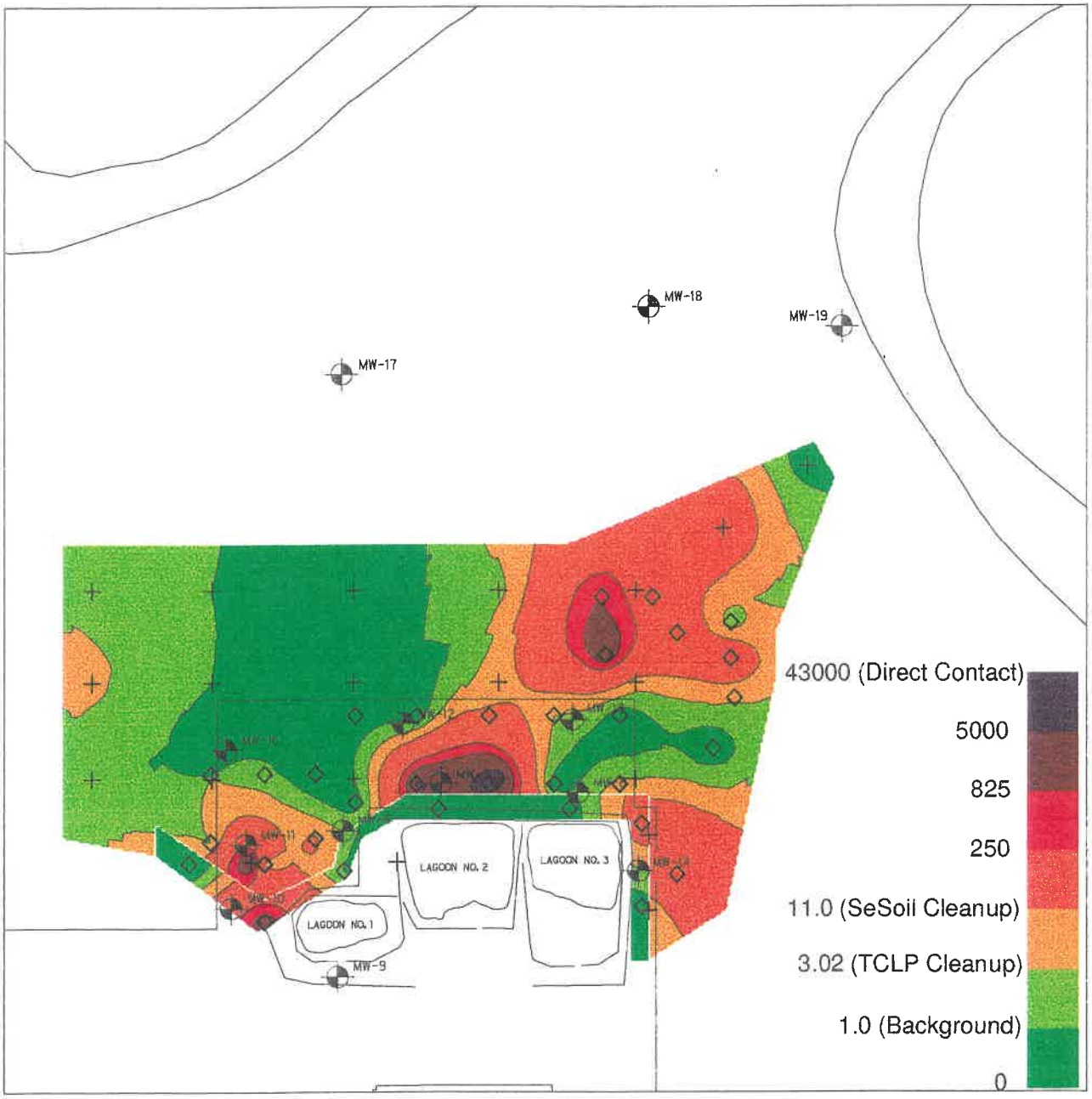
Soil Arsenic Concentrations (mg/kg)
4.5 - 5.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Cadmium Concentrations (mg/kg)
0.5 - 1.5 Feet



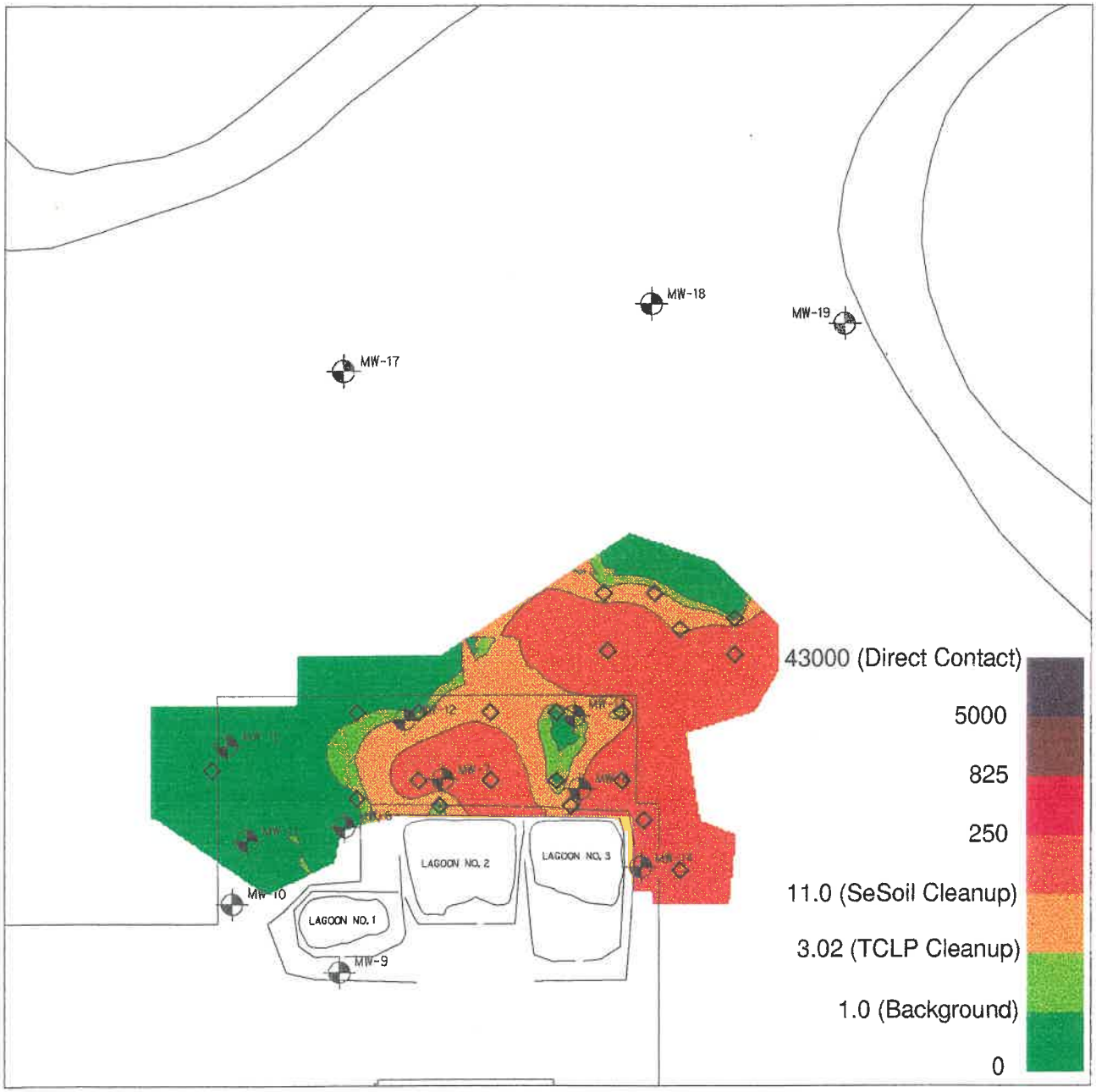
+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

Feet

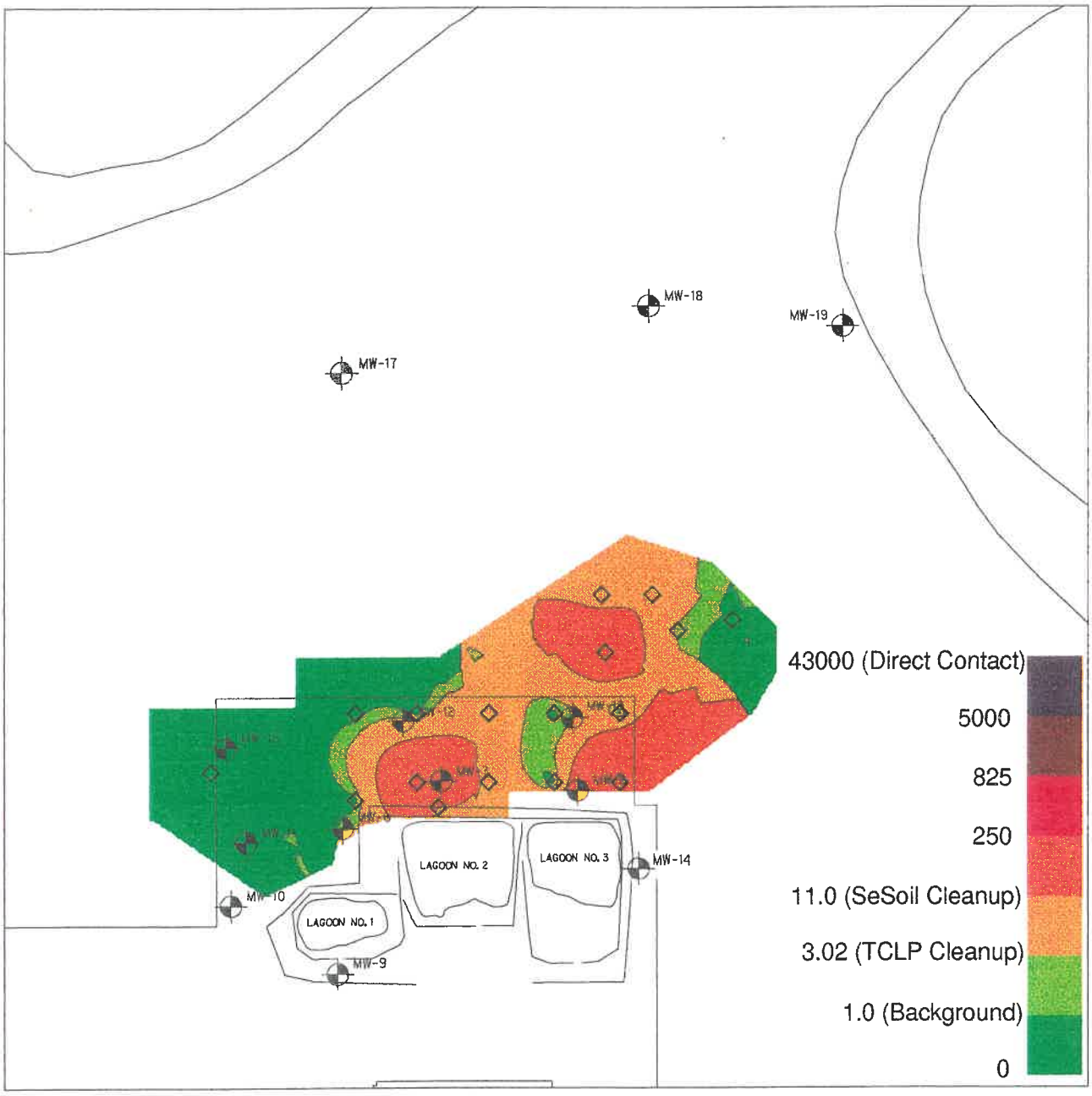
Soil Cadmium Concentrations (mg/kg)
2.5 - 3.5 Feet



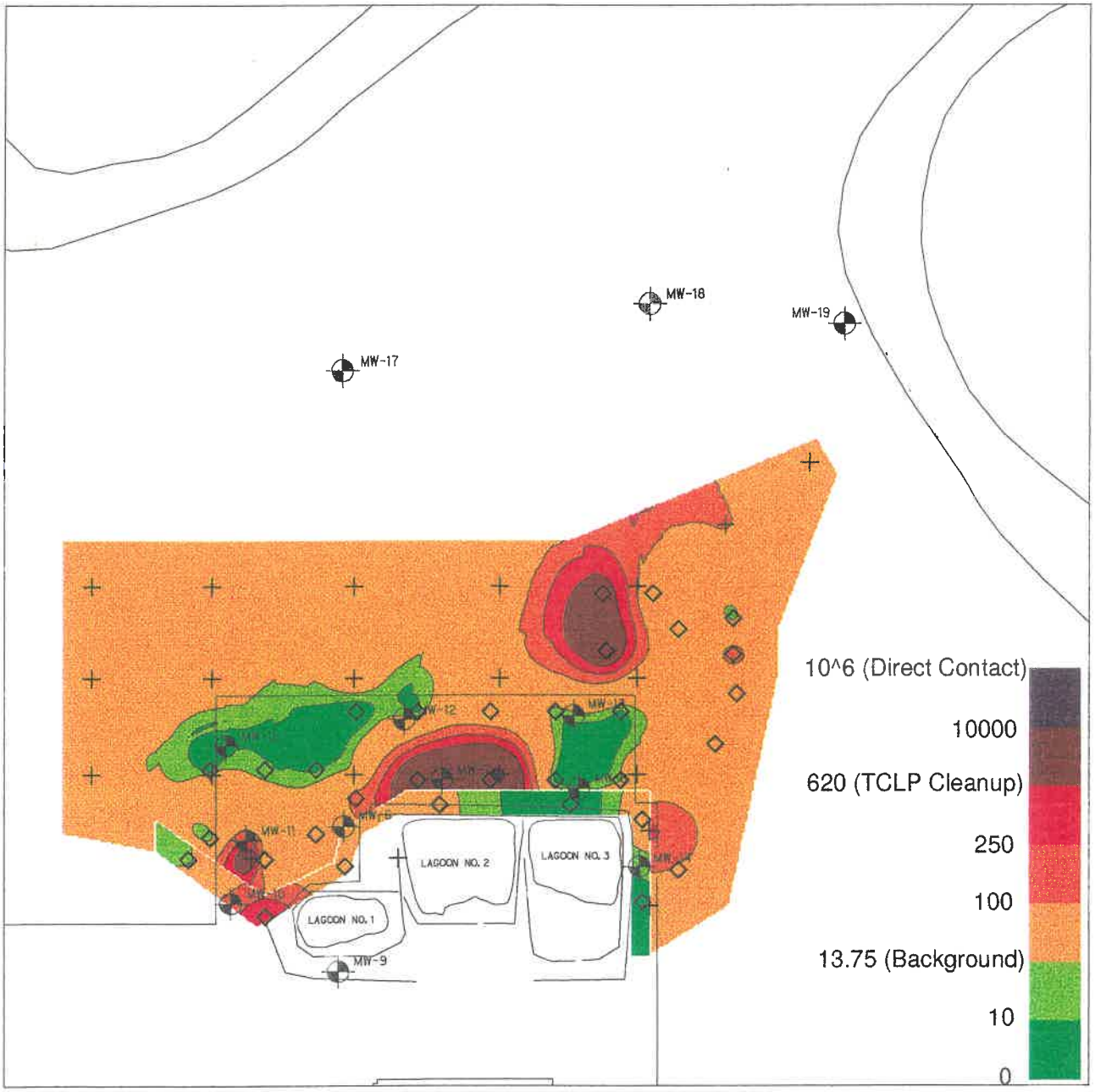
◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Cadmium Concentrations (mg/kg)
4.5 - 5.5 Feet



Soil Chromium Concentrations (mg/kg)
0.5 - 1.5 Feet



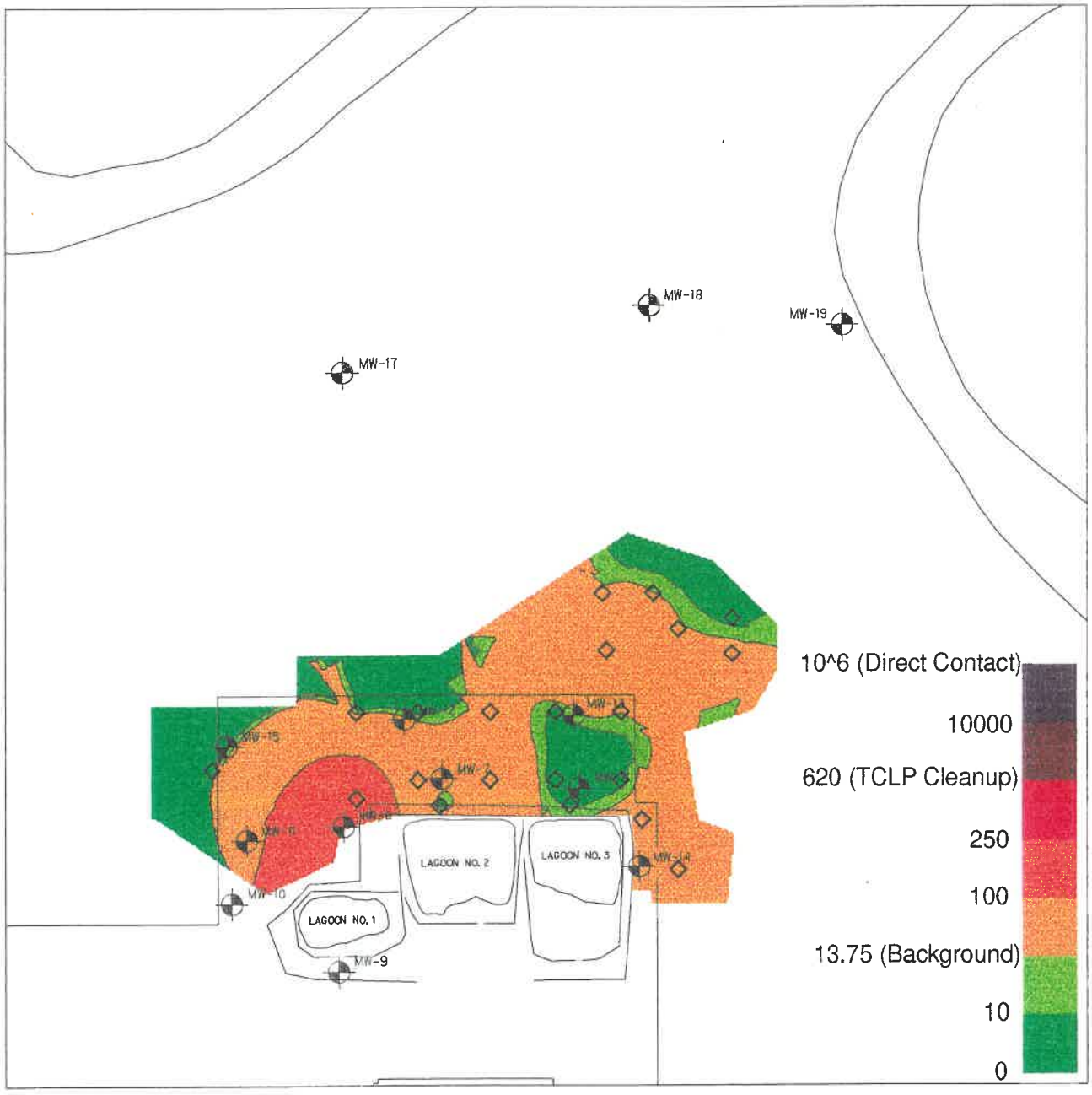
+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

Feet

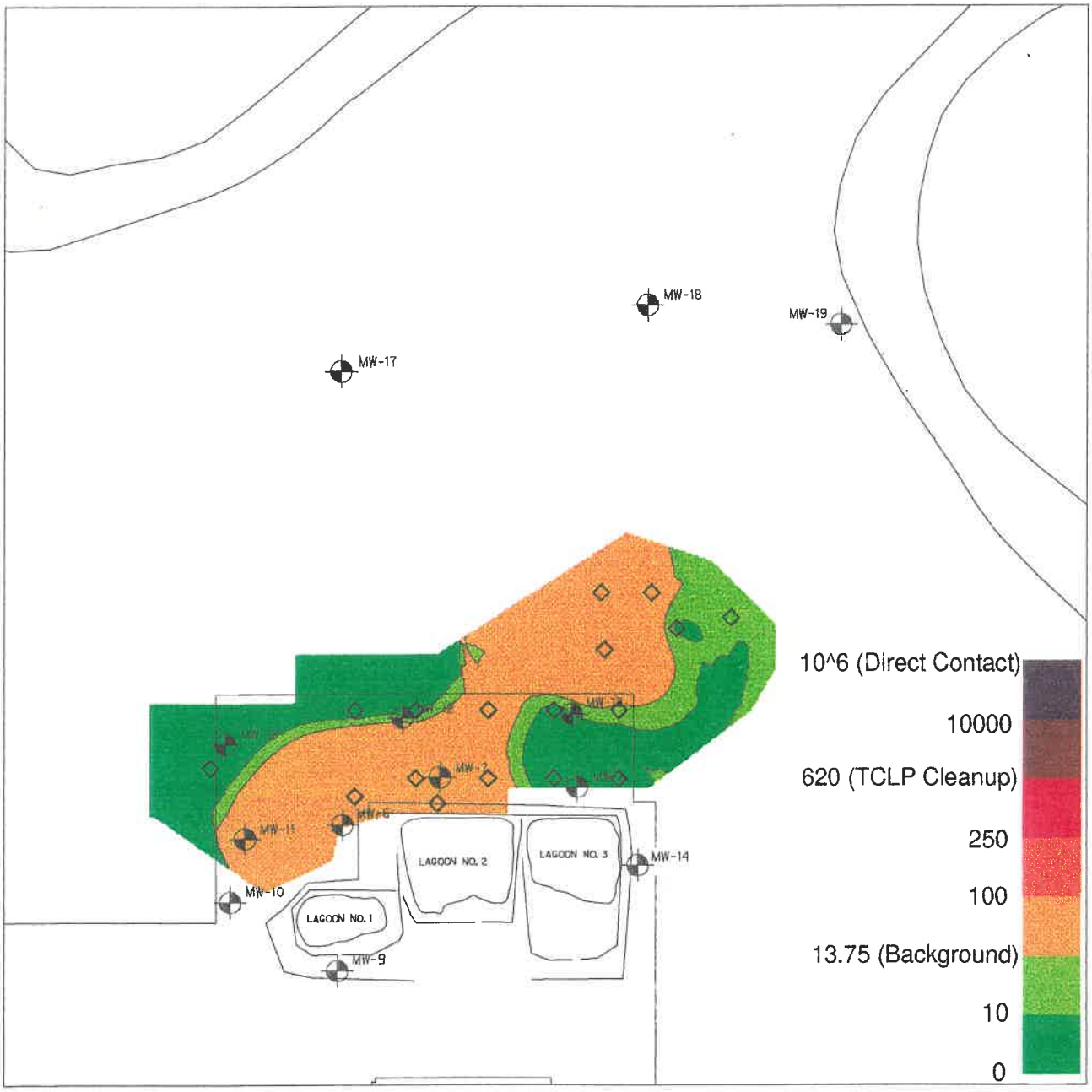
Soil Chromium Concentrations (mg/kg)
2.5 - 3.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Chromium Concentrations (mg/kg)
4.5 - 5.5 Feet

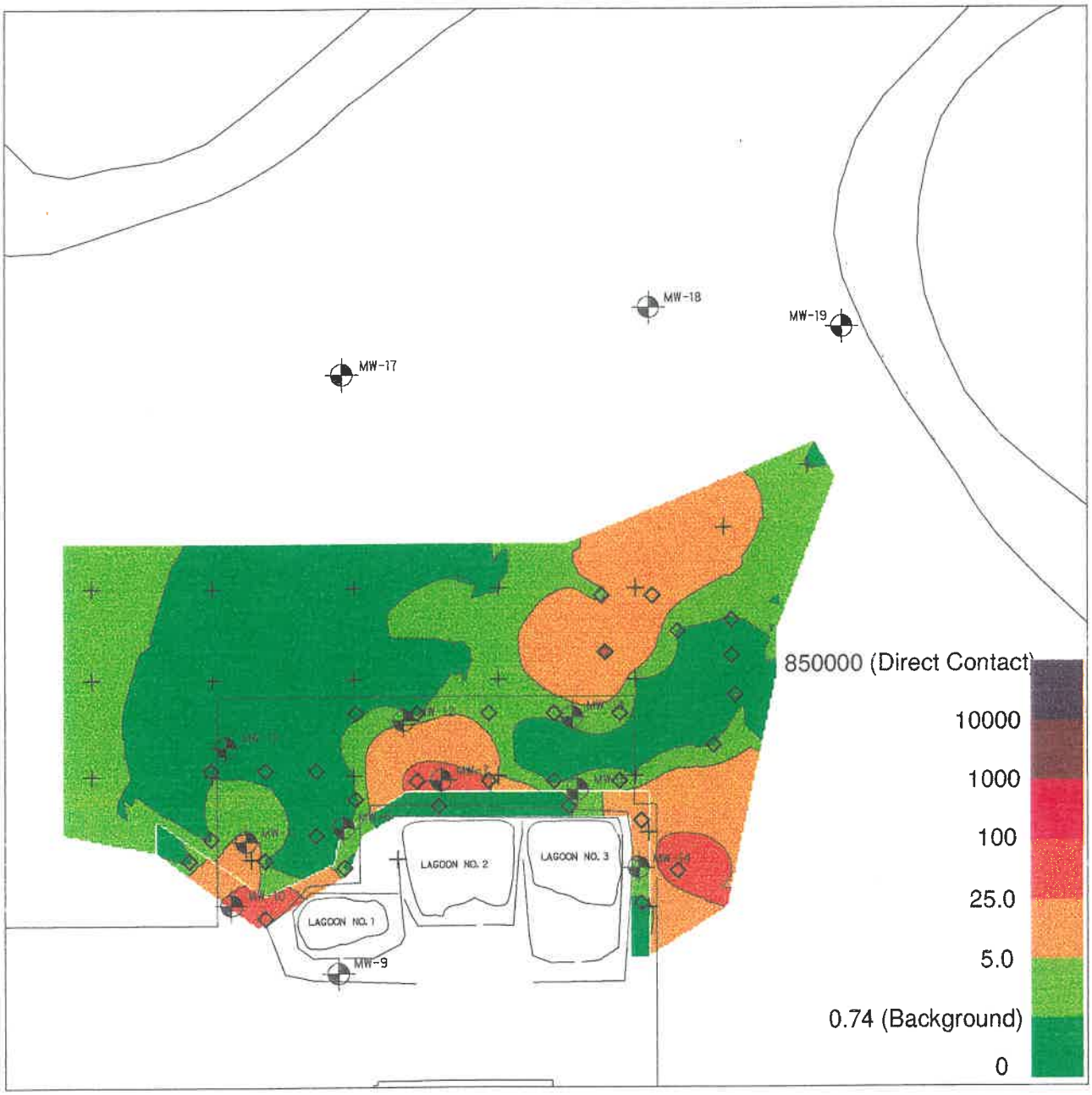


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

Soil Cyanide Concentrations (mg/kg)
0.5 - 1.5 Feet



+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

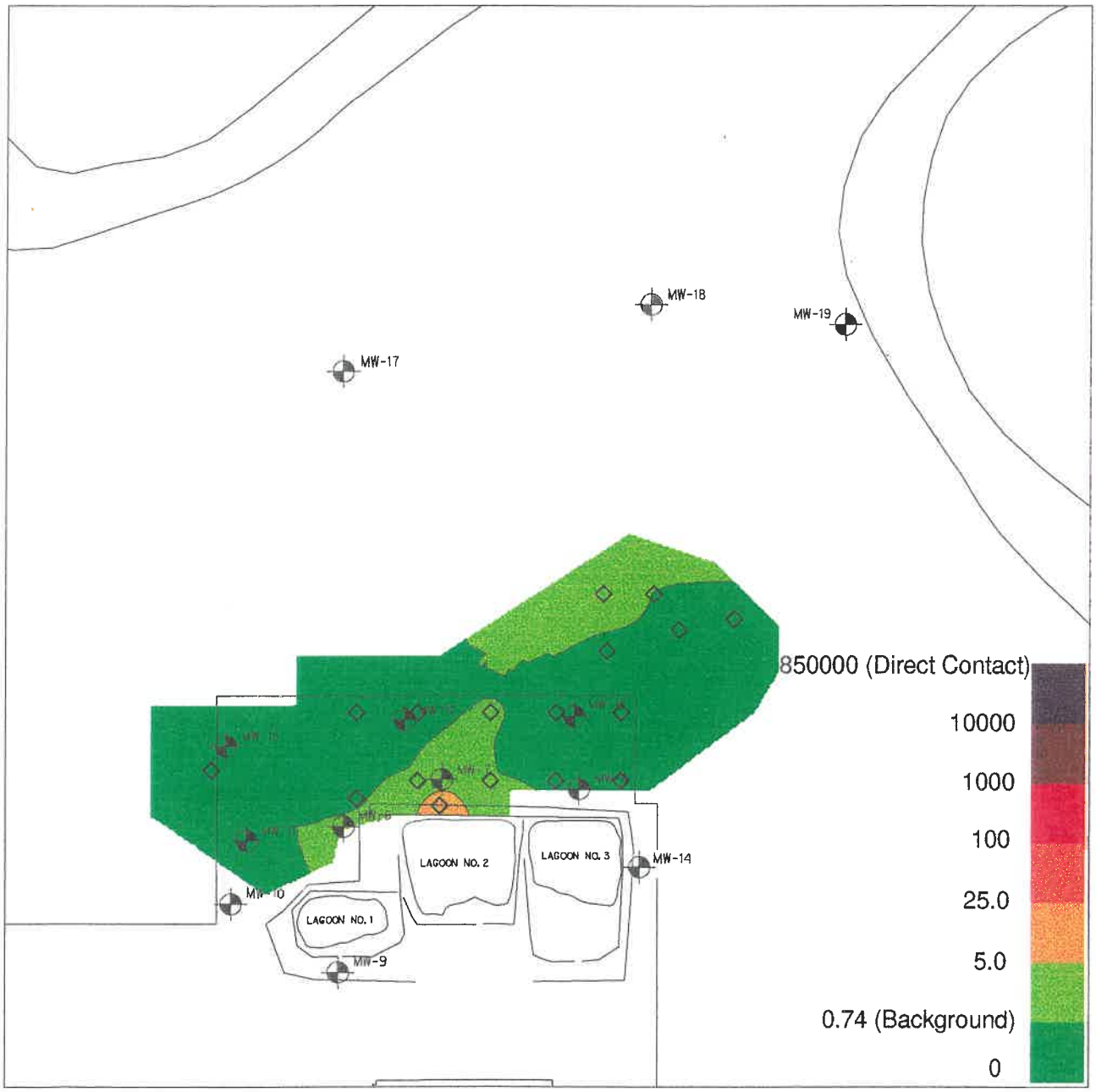
Feet

Soil Cyanide Concentrations (mg/kg)
2.5 - 3.5 Feet

◇ 1994 Soil Sample

0 250 500 750 1000
Feet

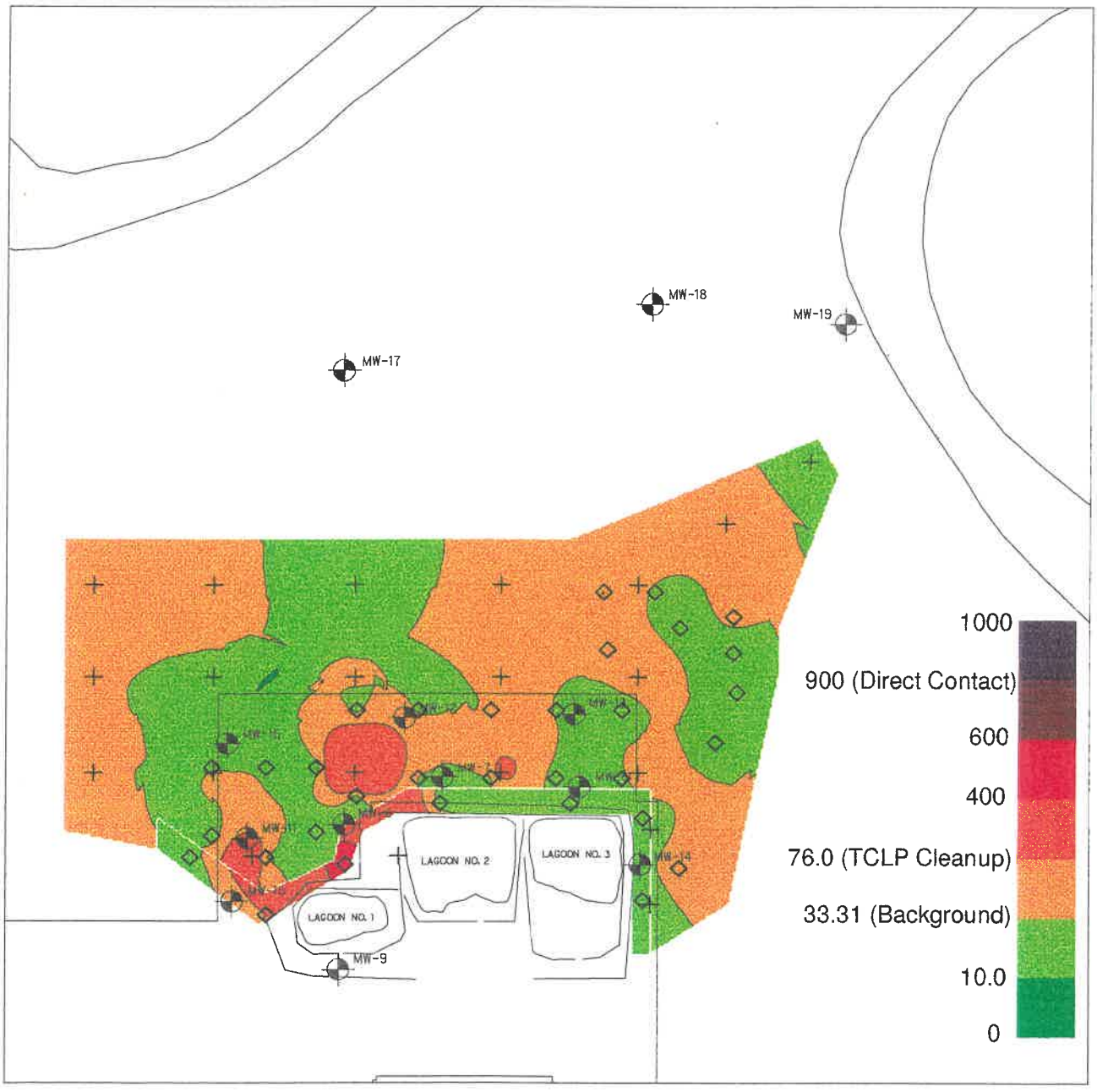
Soil Cyanide Concentrations (mg/kg)
4.5 - 5.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Lead Concentrations (mg/kg)
0.5 - 1.5 Feet



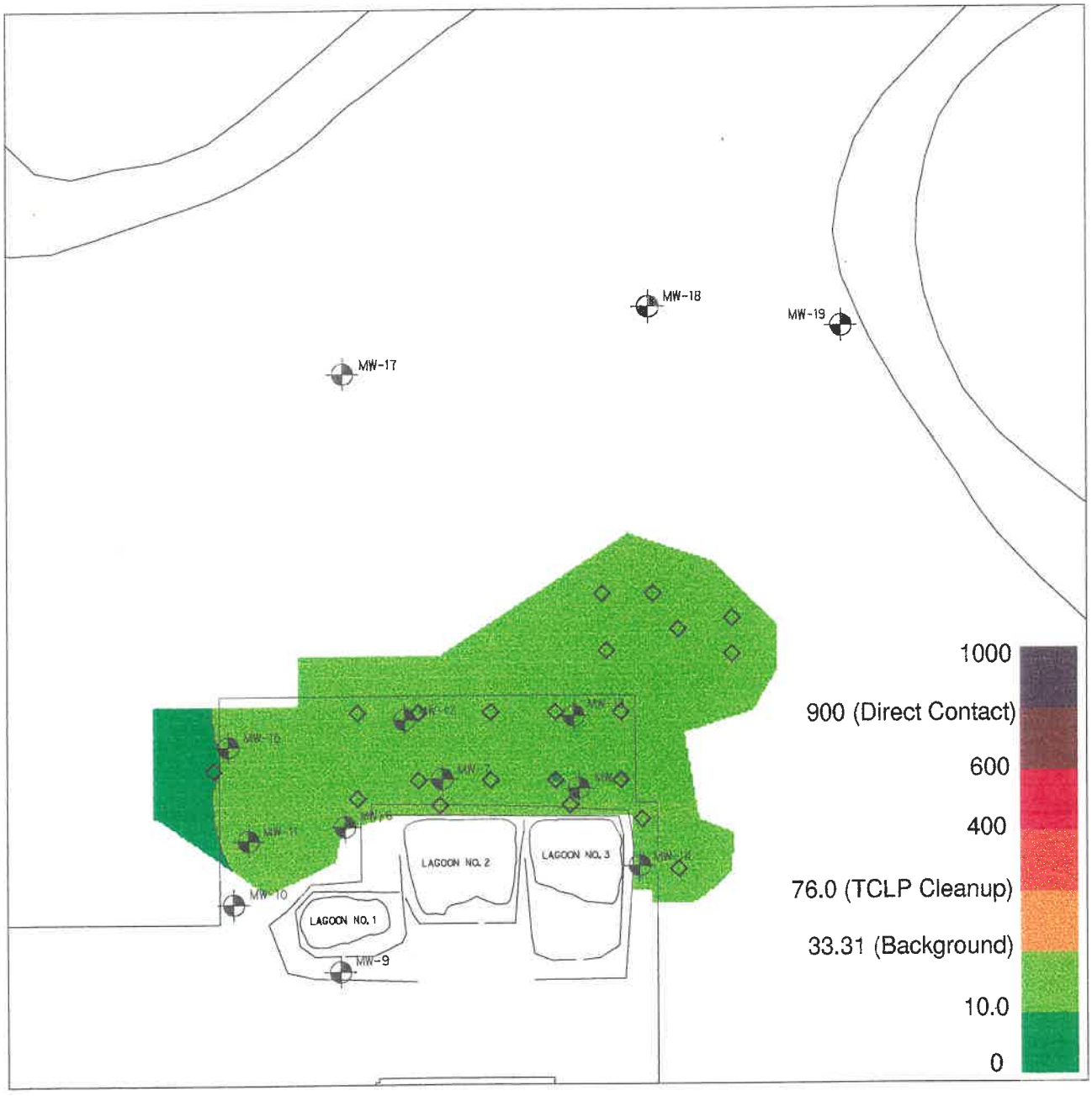
+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

Feet

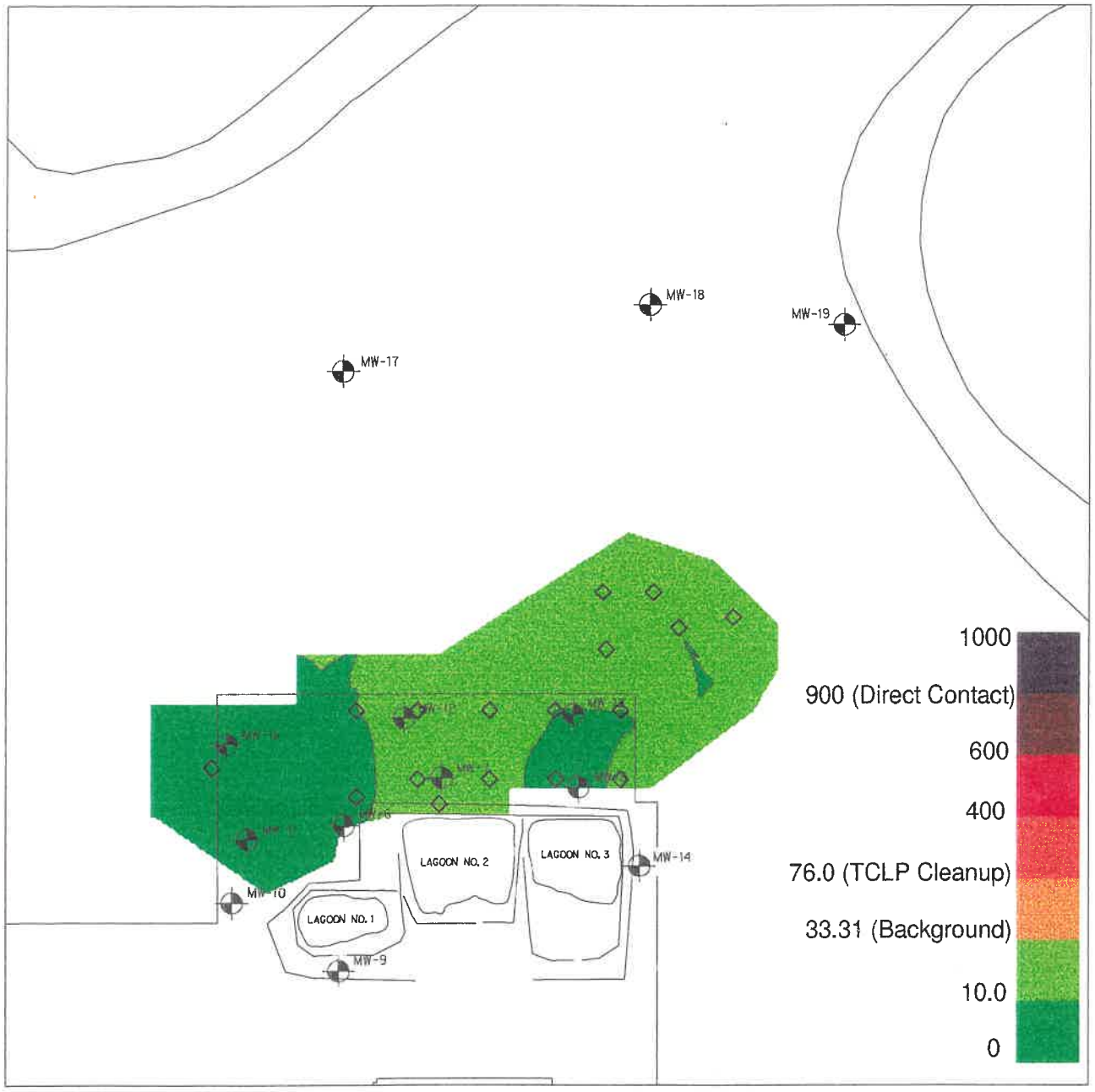
Soil Lead Concentrations (mg/kg)
2.5 - 3.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

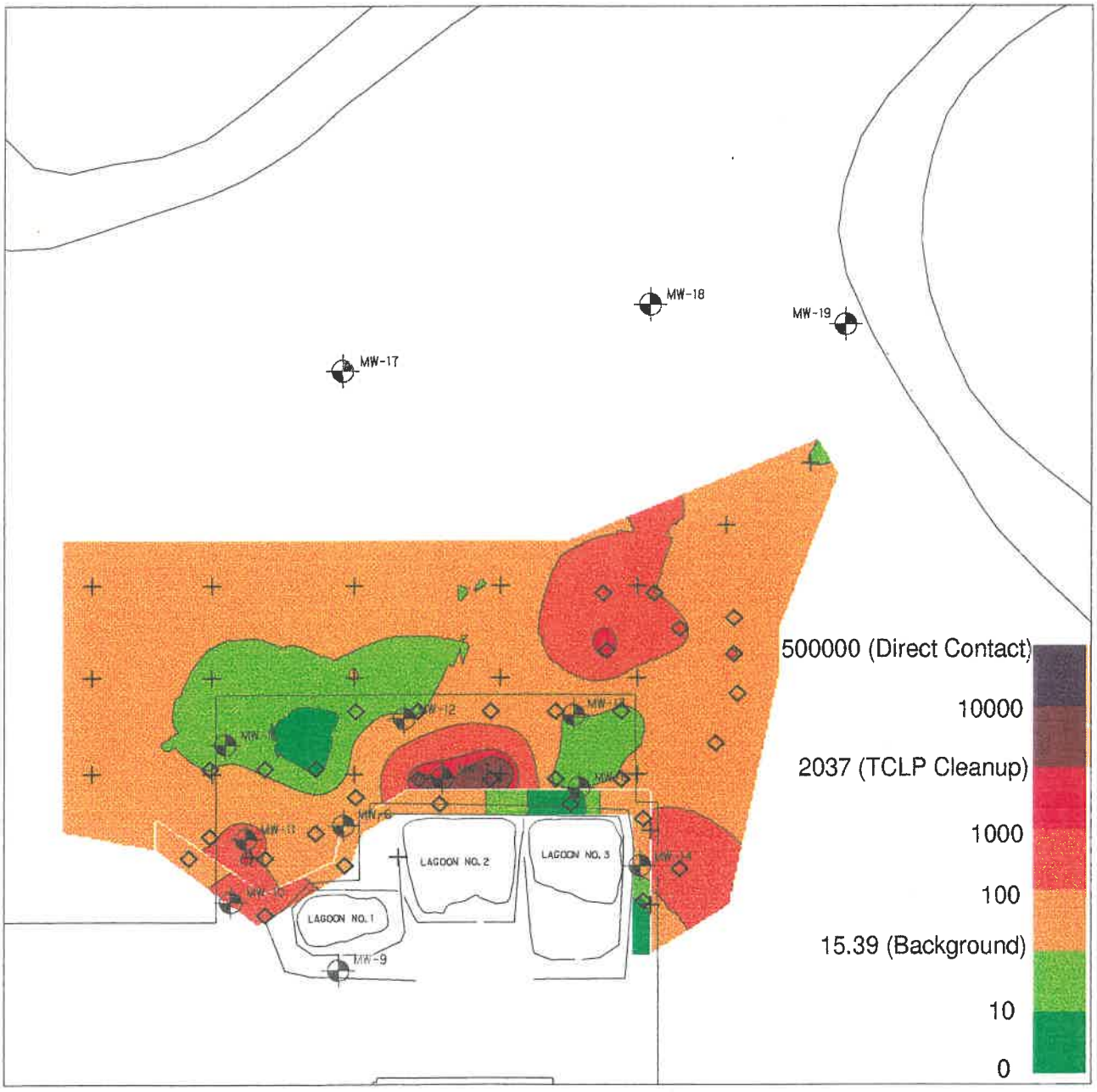
Soil Lead Concentrations (mg/kg)
4.5 - 5.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Nickel Concentrations (mg/kg)
0.5 - 1.5 Feet



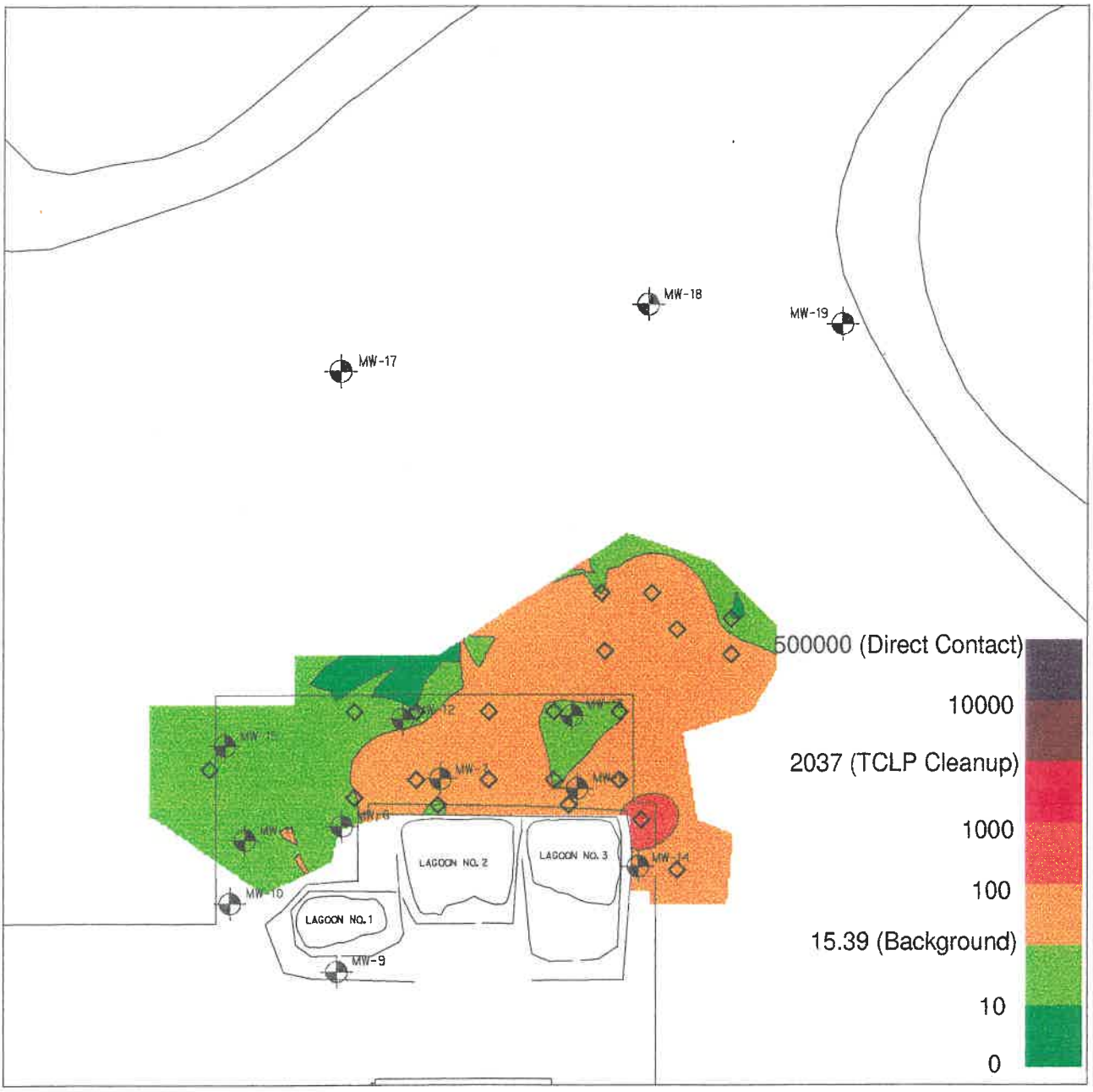
+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

Feet

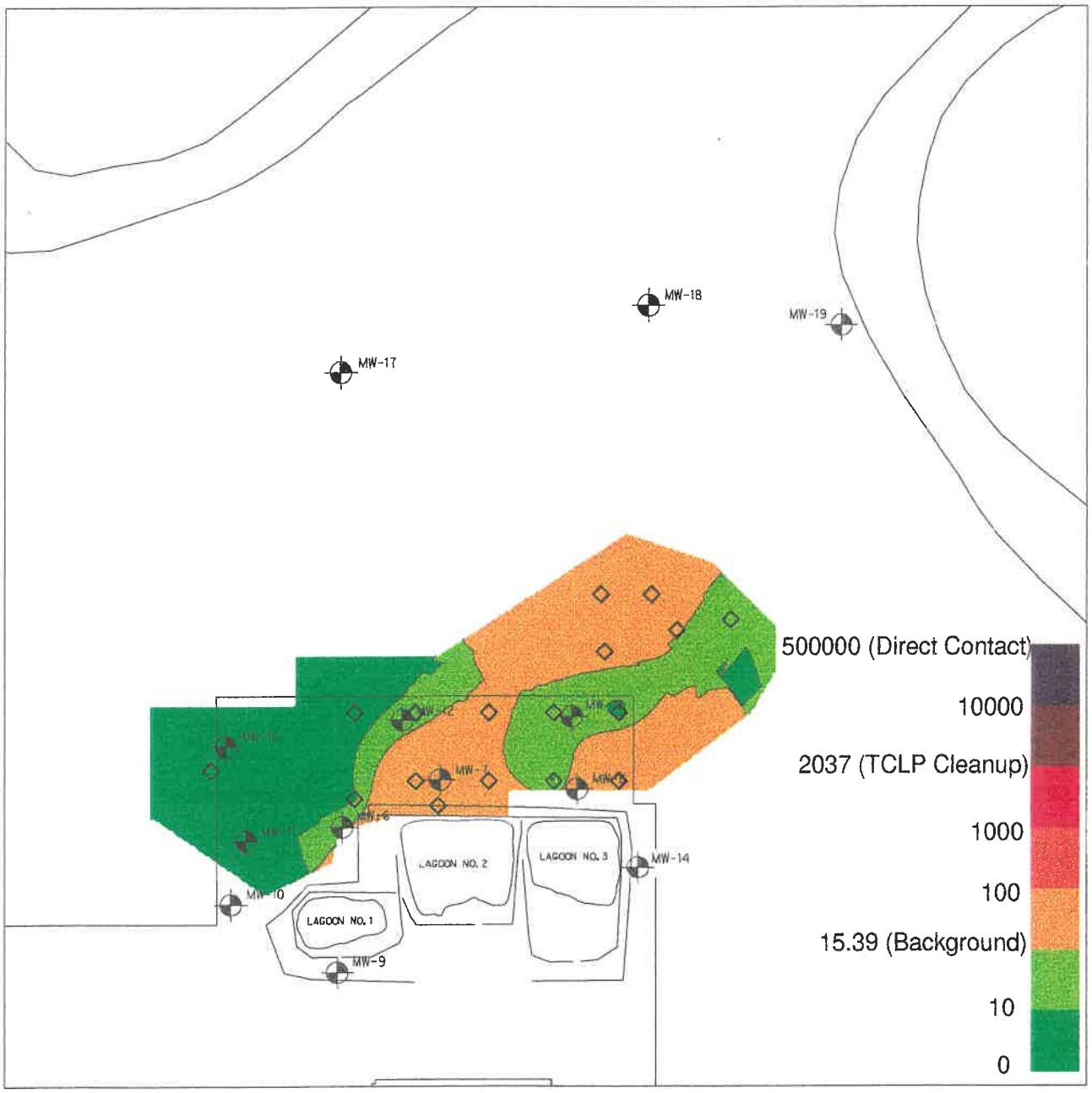
Soil Nickel Concentrations (mg/kg)
2.5 - 3.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil Nickel Concentrations (mg/kg)
4.5 - 5.5 Feet

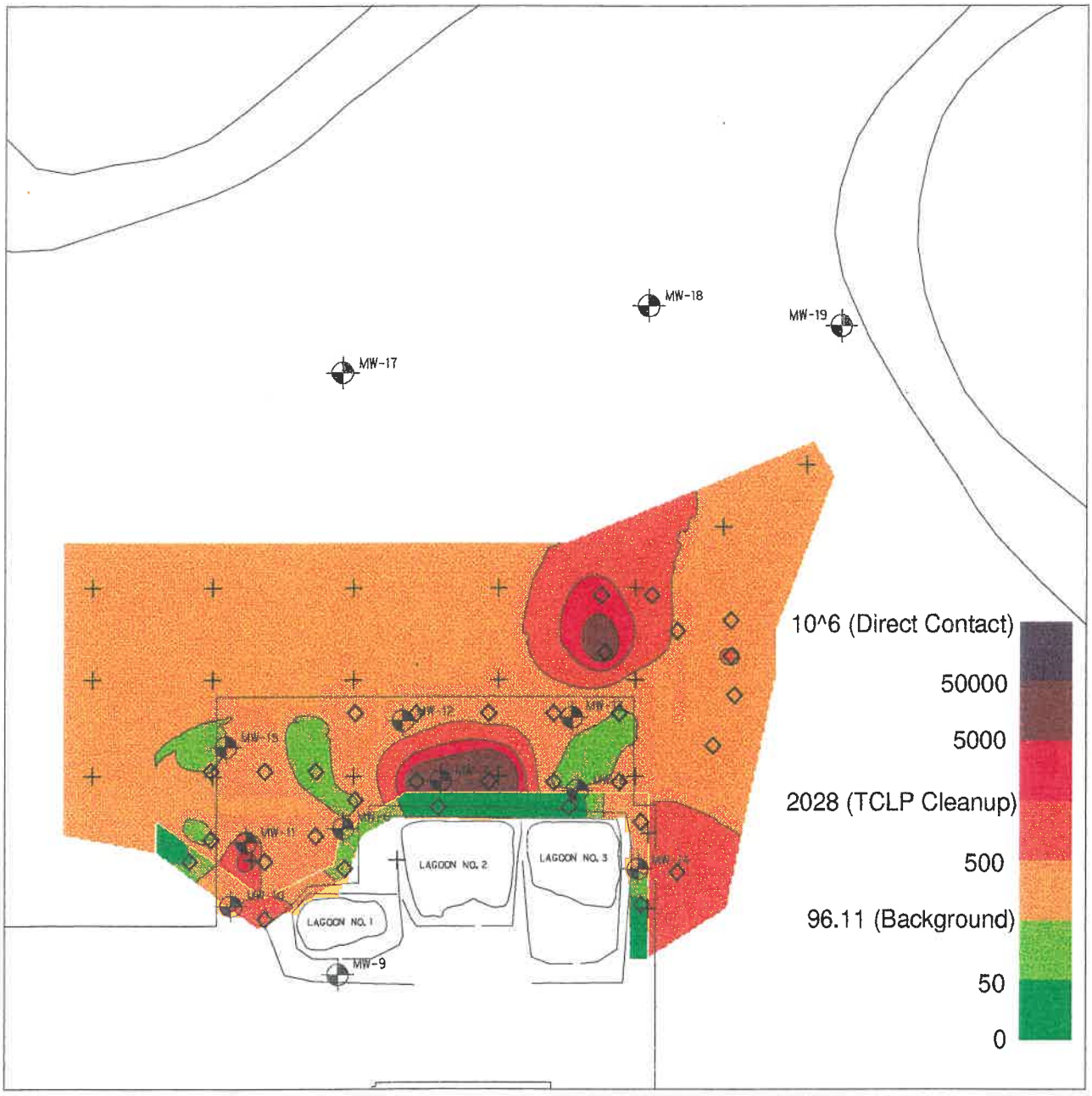


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

Soil Zinc Concentrations (mg/kg)
0.5 - 1.5 Feet



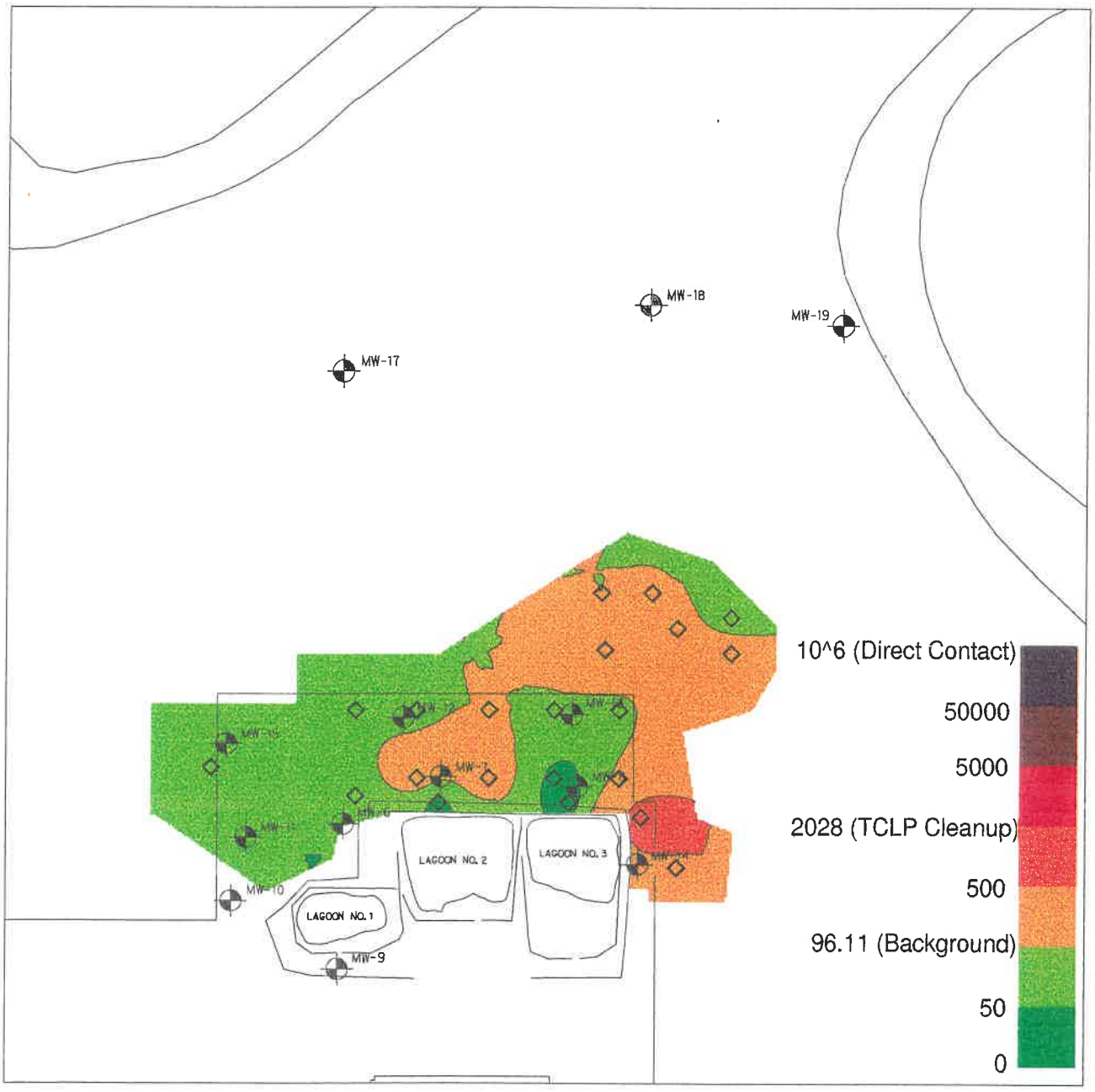
+ 1991 Soil Sample

◇ 1994 Soil Sample

0 250 500 750 1000

Feet

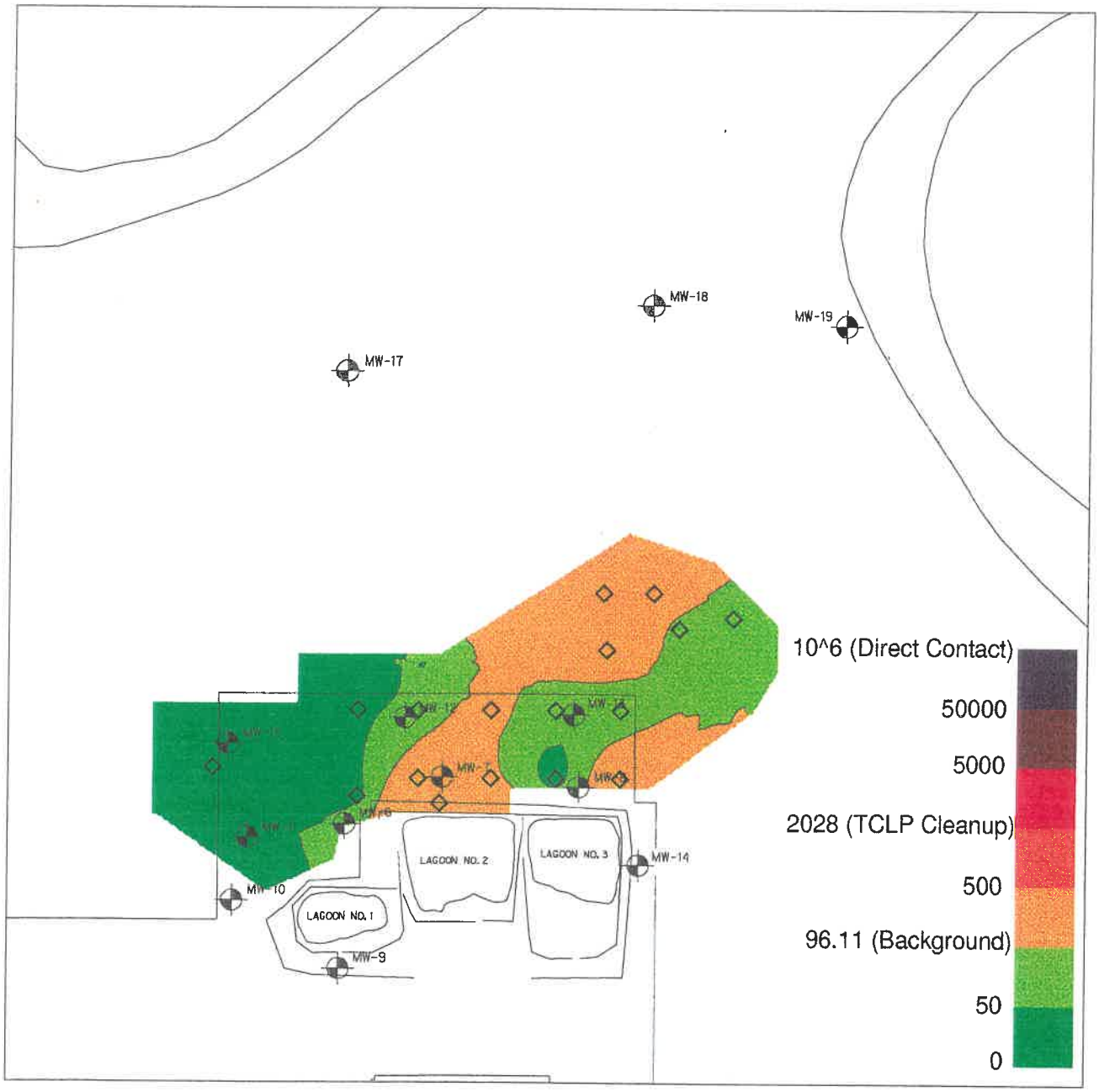
Soil Zinc Concentrations (mg/kg)
2.5 - 3.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

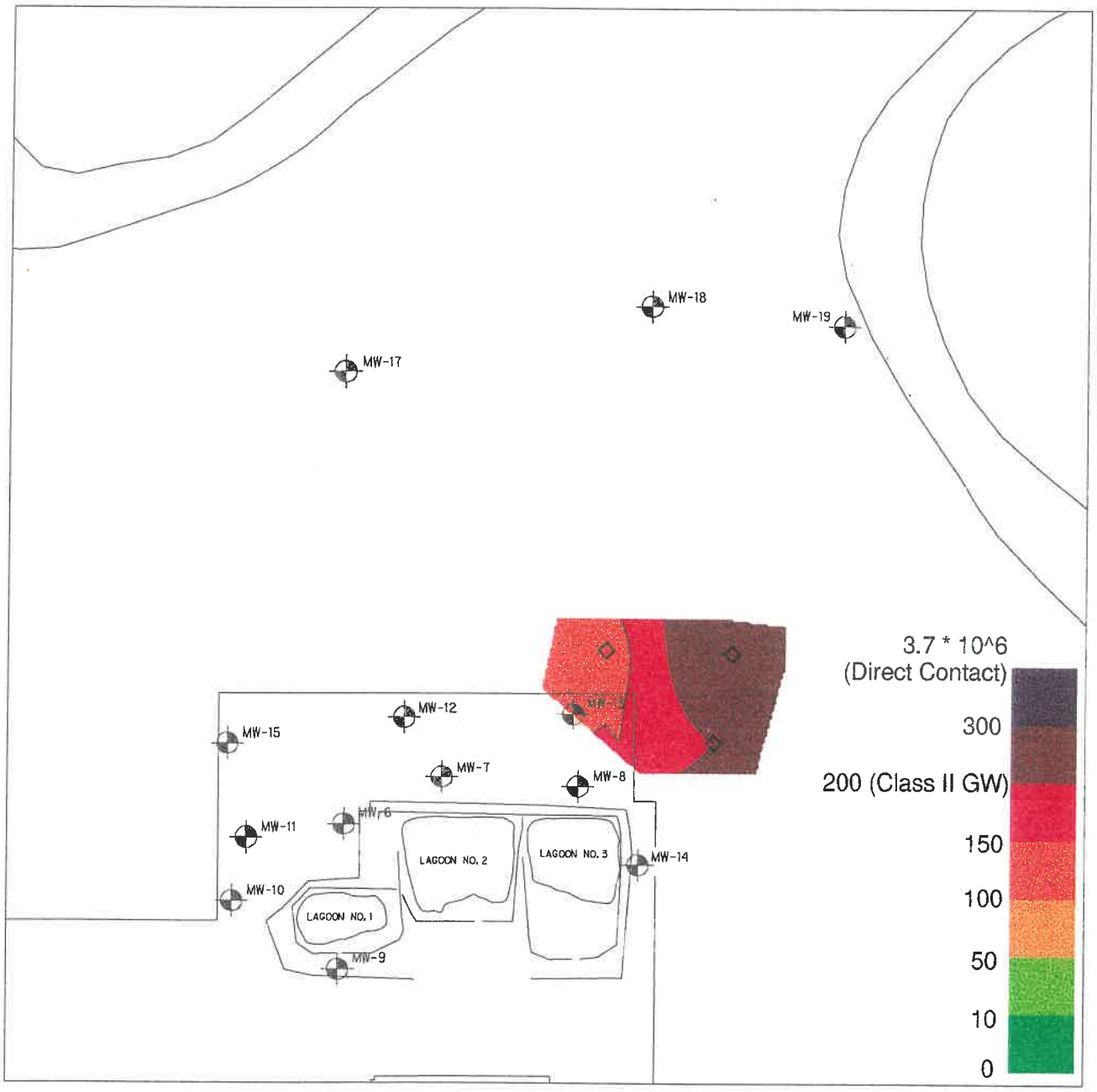
Soil Zinc Concentrations (mg/kg)
4.5 - 5.5 Feet



◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Soil cis-1,2-DCE Concentrations (ug/kg)
4.5 - 5.5 Feet

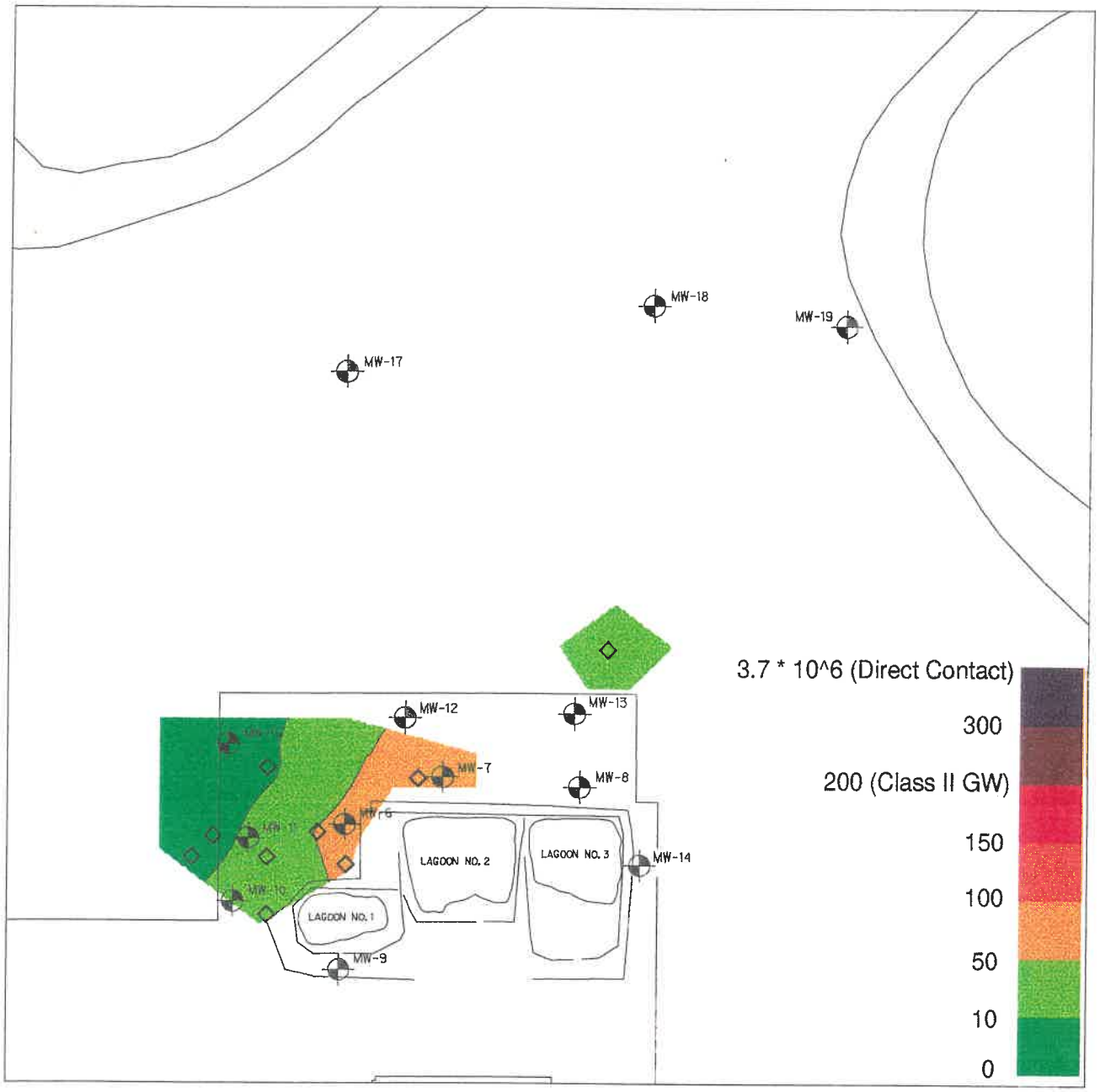


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

Soil cis-1,2-DCE Concentrations (ug/kg)
0.5 - 1.5 Feet

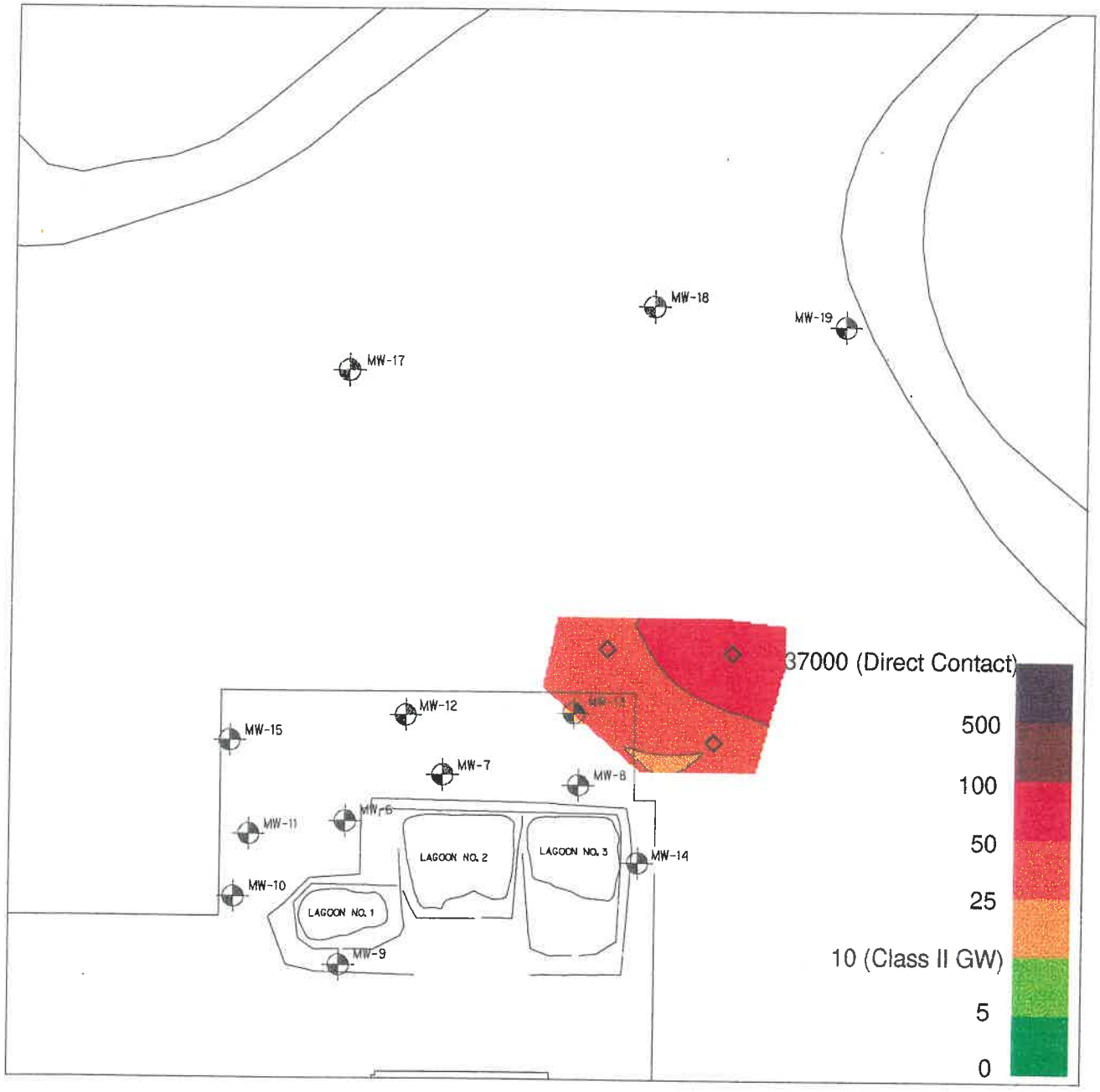


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

Soil Vinyl Chloride Concentrations (ug/kg)
4.5 - 5.5 Feet

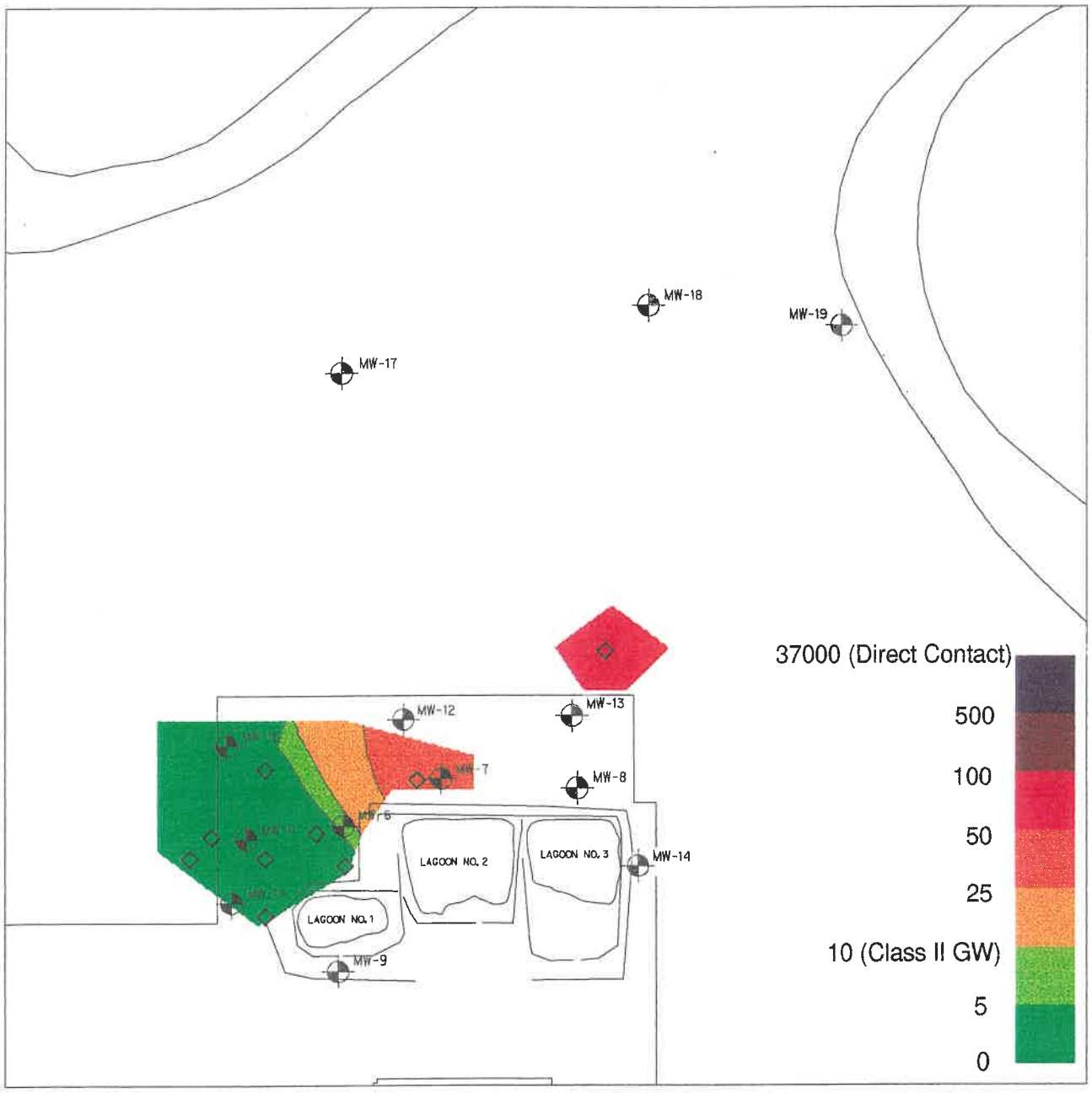


◇ 1994 Soil Sample

0 250 500 750 1000

Feet

Soil Vinyl Chloride Concentrations (ug/kg)
0.5 - 1.5 Feet

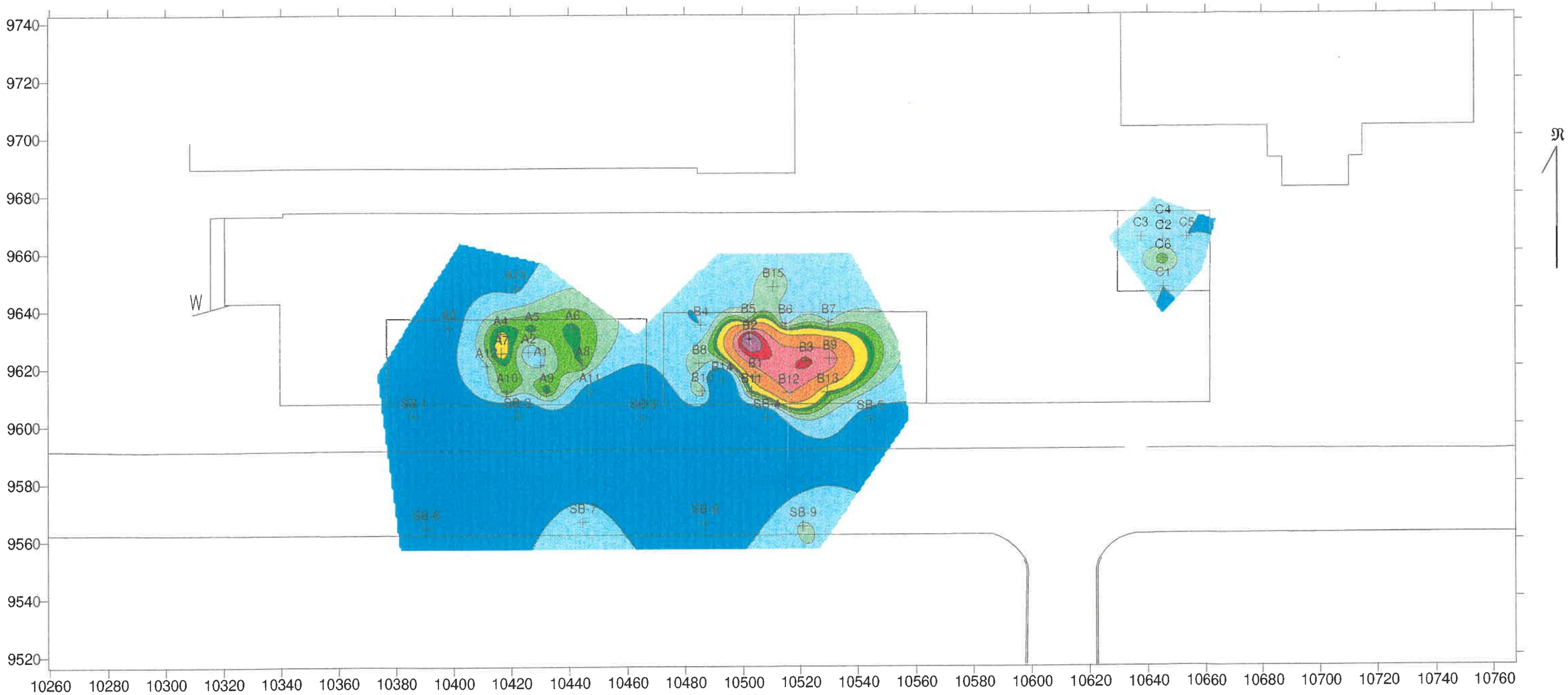


◇ 1994 Soil Sample

0 250 500 750 1000
Feet

Modern Plating Corporation

EP TOX Cadmium - ug/L
0 - 1'



Cleanup Objective

0 5 10 15 20 25 50 200 500 1030 5000 15000 ug/L

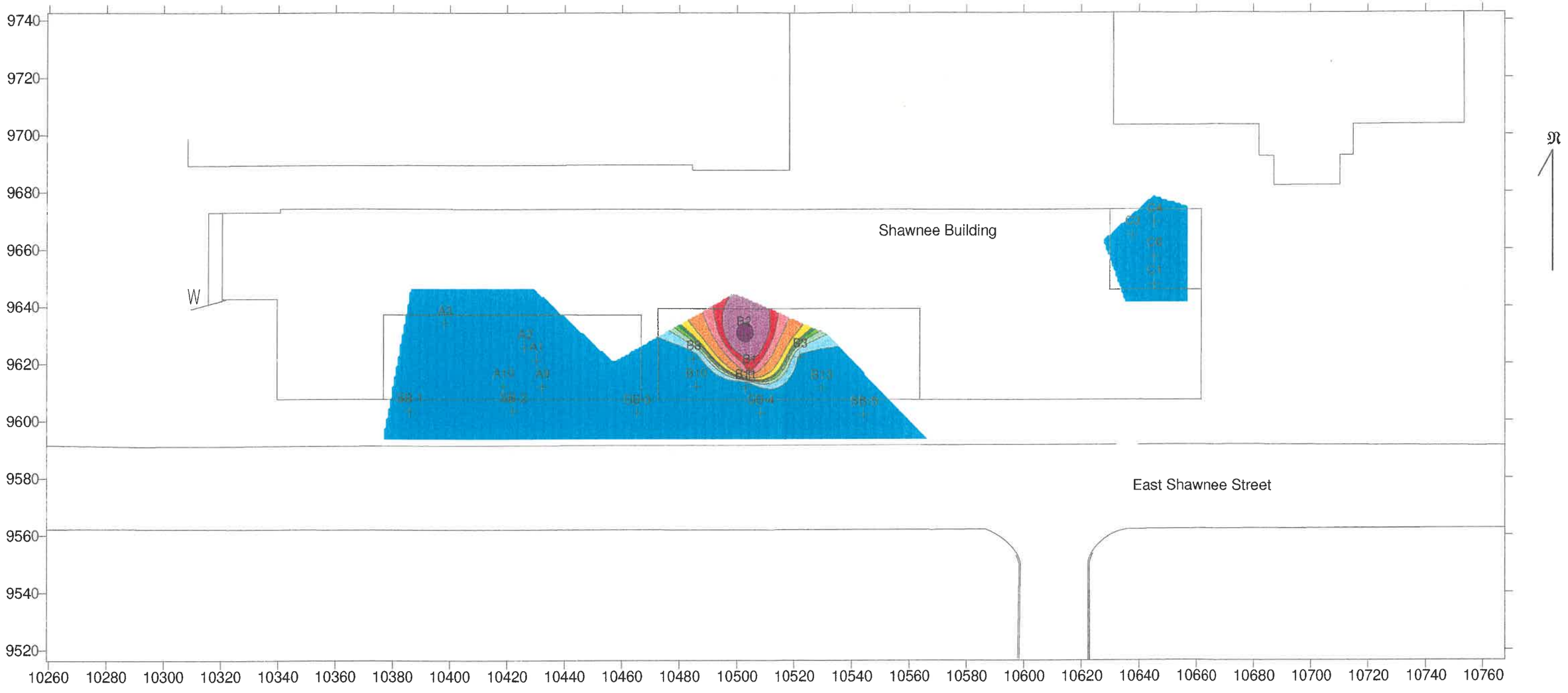
Scale

0 20 40 60 80 Feet

Modern Plating Facility	
Figure 2-A EP TOX Cadmium - ug/L 0-1'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

EP TOX Cadmium - ug/L
1' - 2.5'



Cleanup Objective

ug/L

0 5 10 15 20 25 50 200 500 1030 5000 15000

Scale

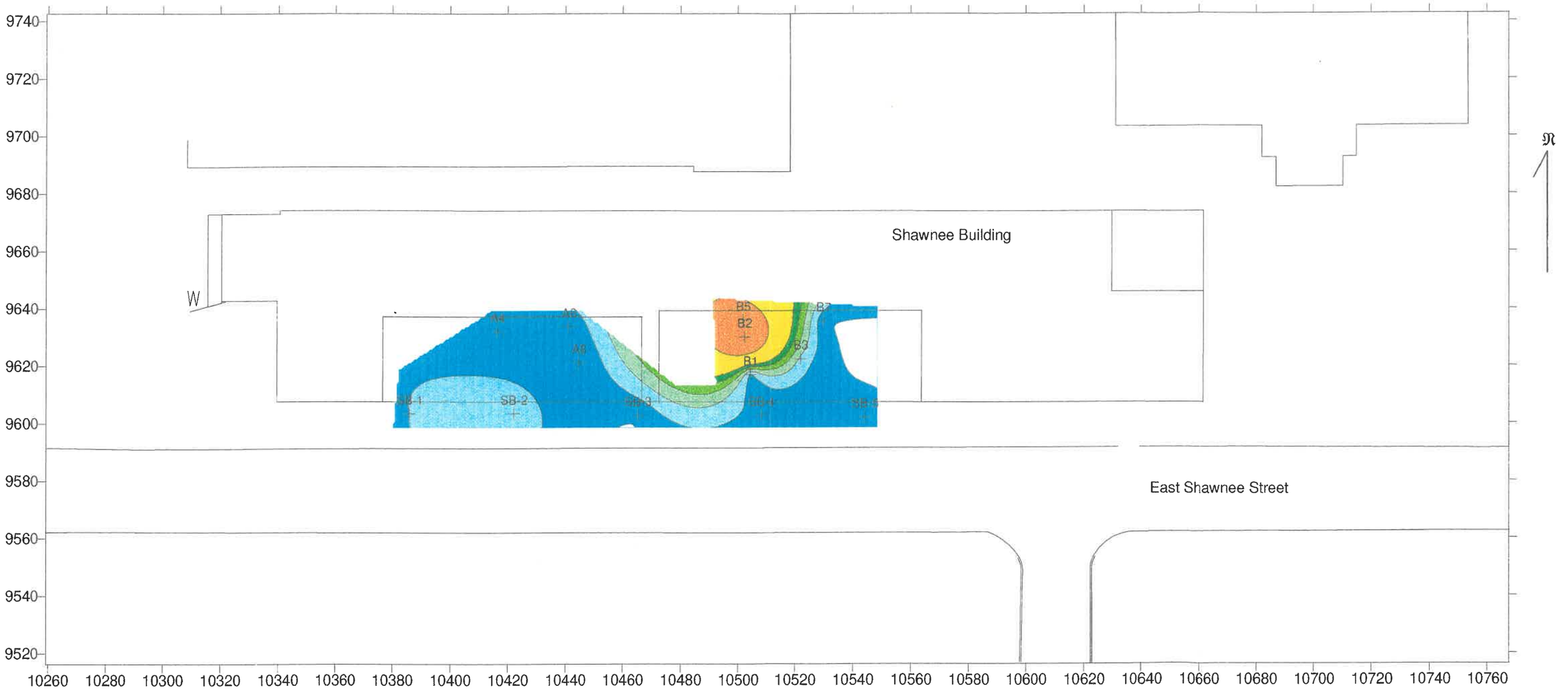
0 20 40 60 80

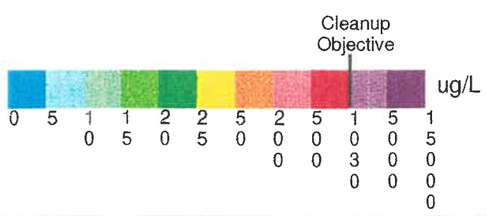
Feet

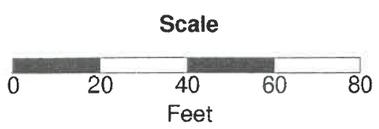
Modern Plating Facility	
Figure 2-B EP TOX Cadmium - ug/L 1'-2.5'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

EP TOX Cadmium - ug/L
3' - 6'



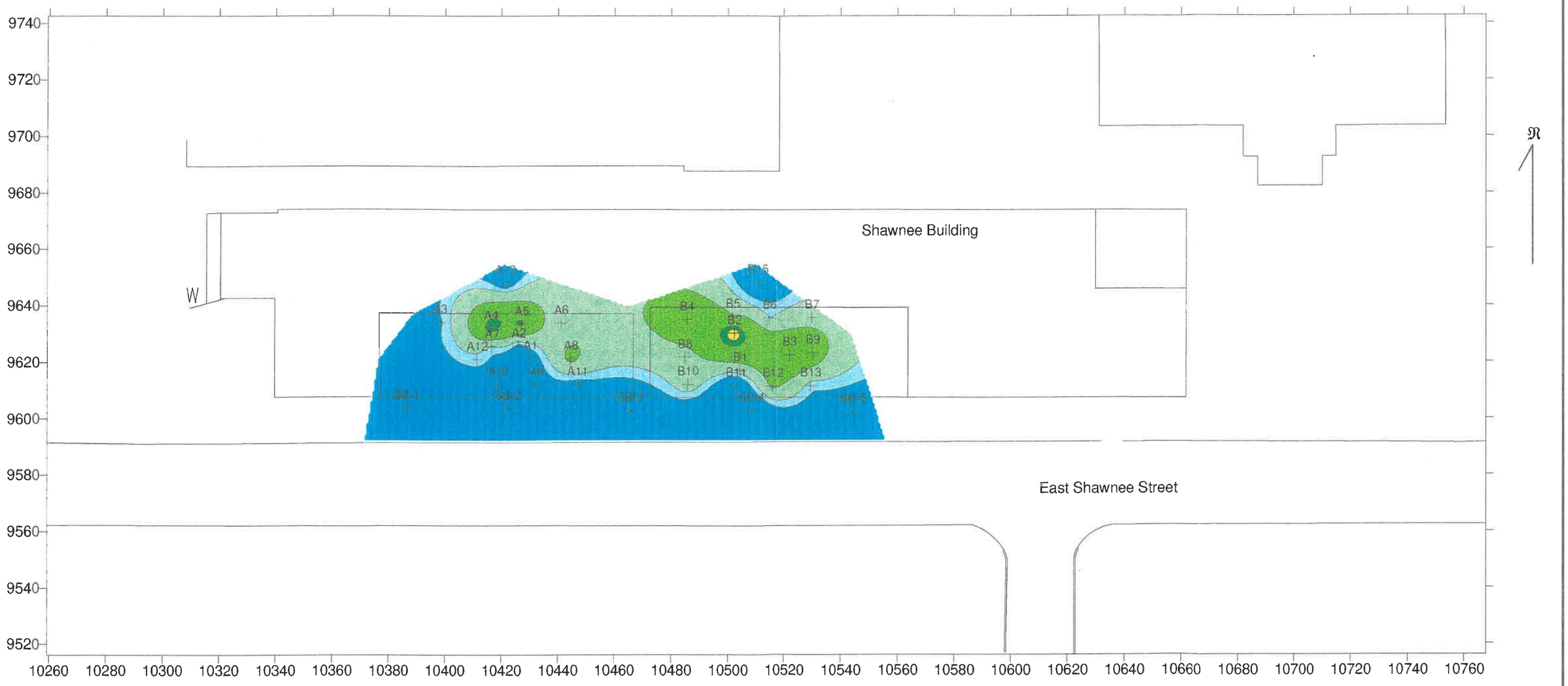




Modern Plating Facility	
Figure 2-C EP TOX Cadmium - ug/L 3'-6'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

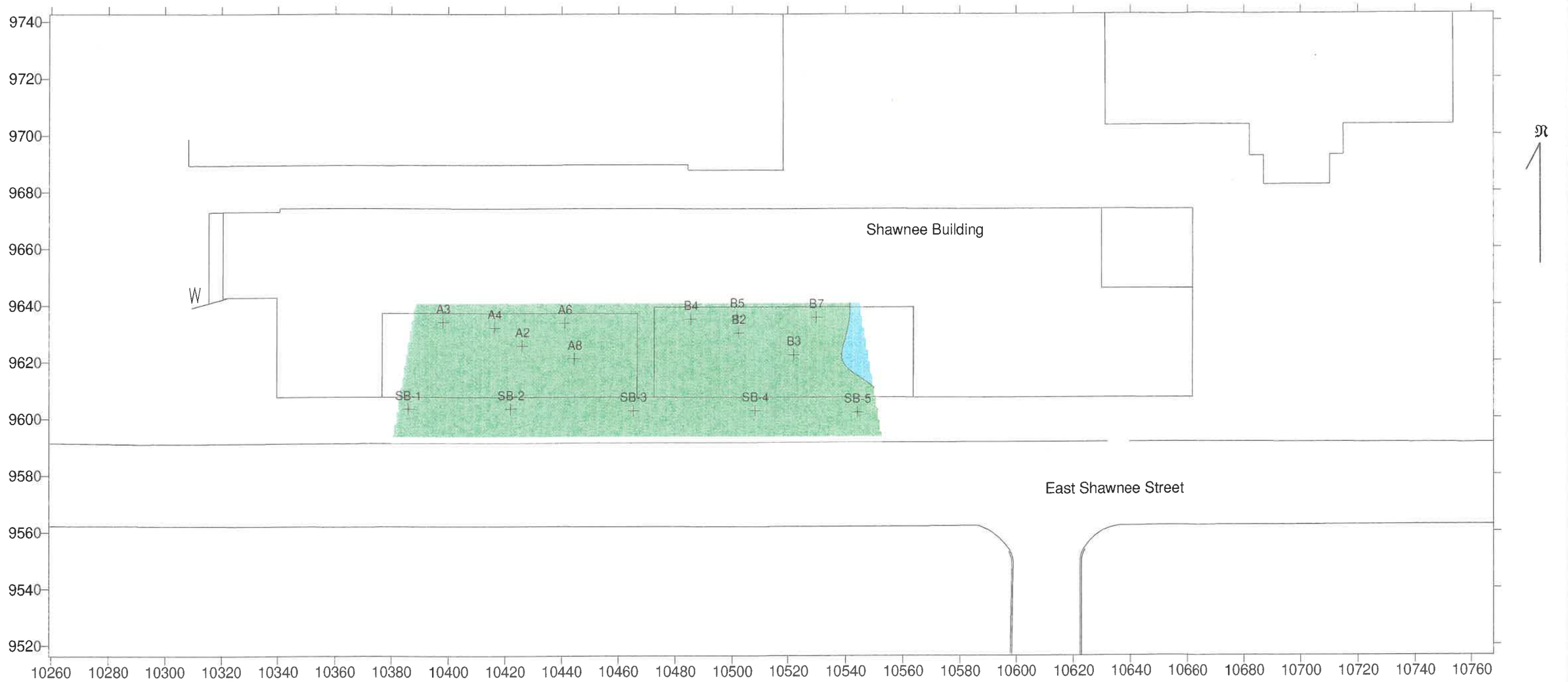
Cyanide - mg/kg
0' - 1'



Modern Plating Facility	
Figure 2-D Cyanide - mg/kg 0'-1'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

Cyanide - mg/kg
3' - 6'



Cleanup Objective

0 0.5 1 5 50 100 1000 4100 5000 10000 15000 20000 mg/kg

Scale

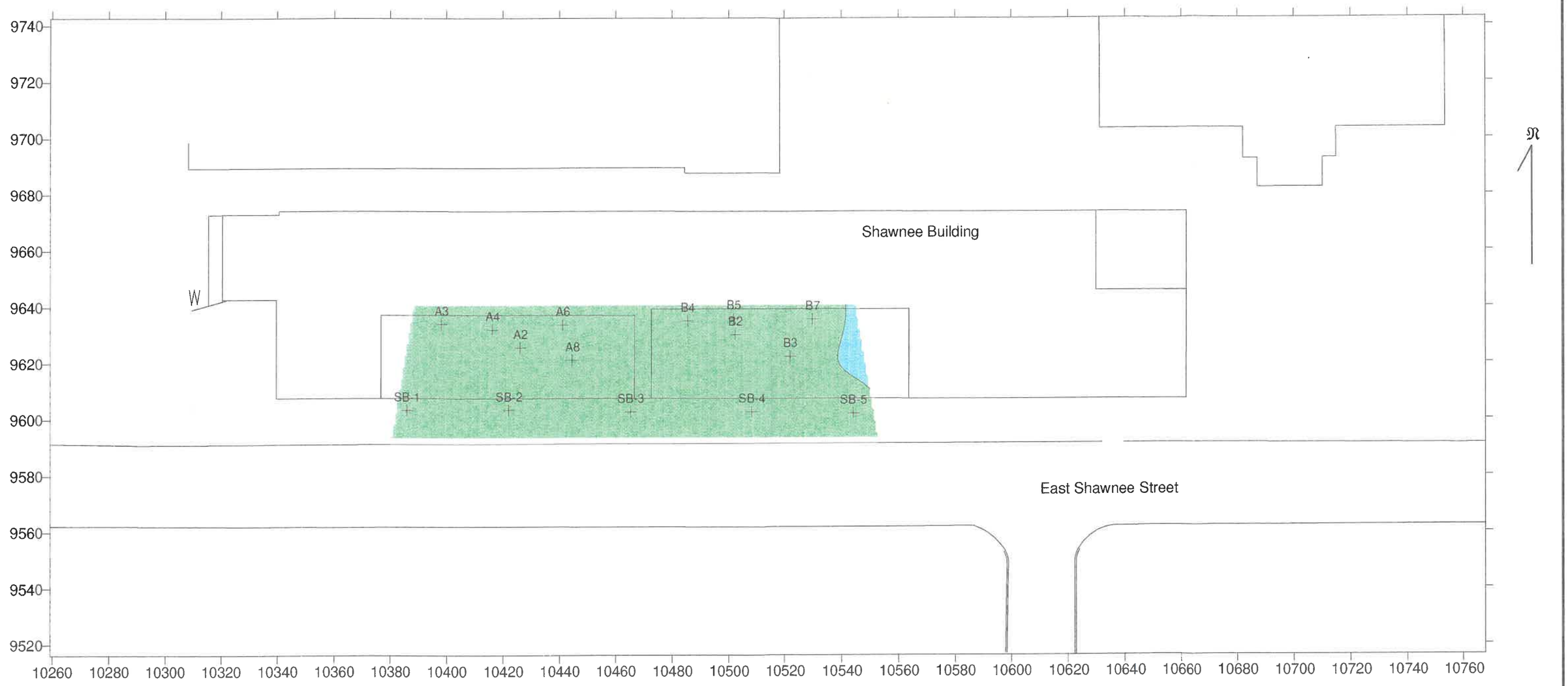
0 20 40 60 80 Feet

30

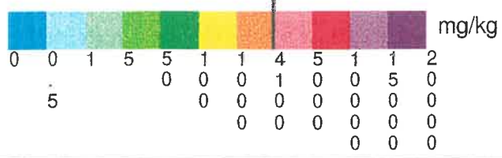
Modern Plating Facility	
Figure 2-E Cyanide - mg/kg 3'-6'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

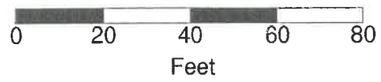
Cyanide - mg/kg
3' - 6'



Cleanup Objective



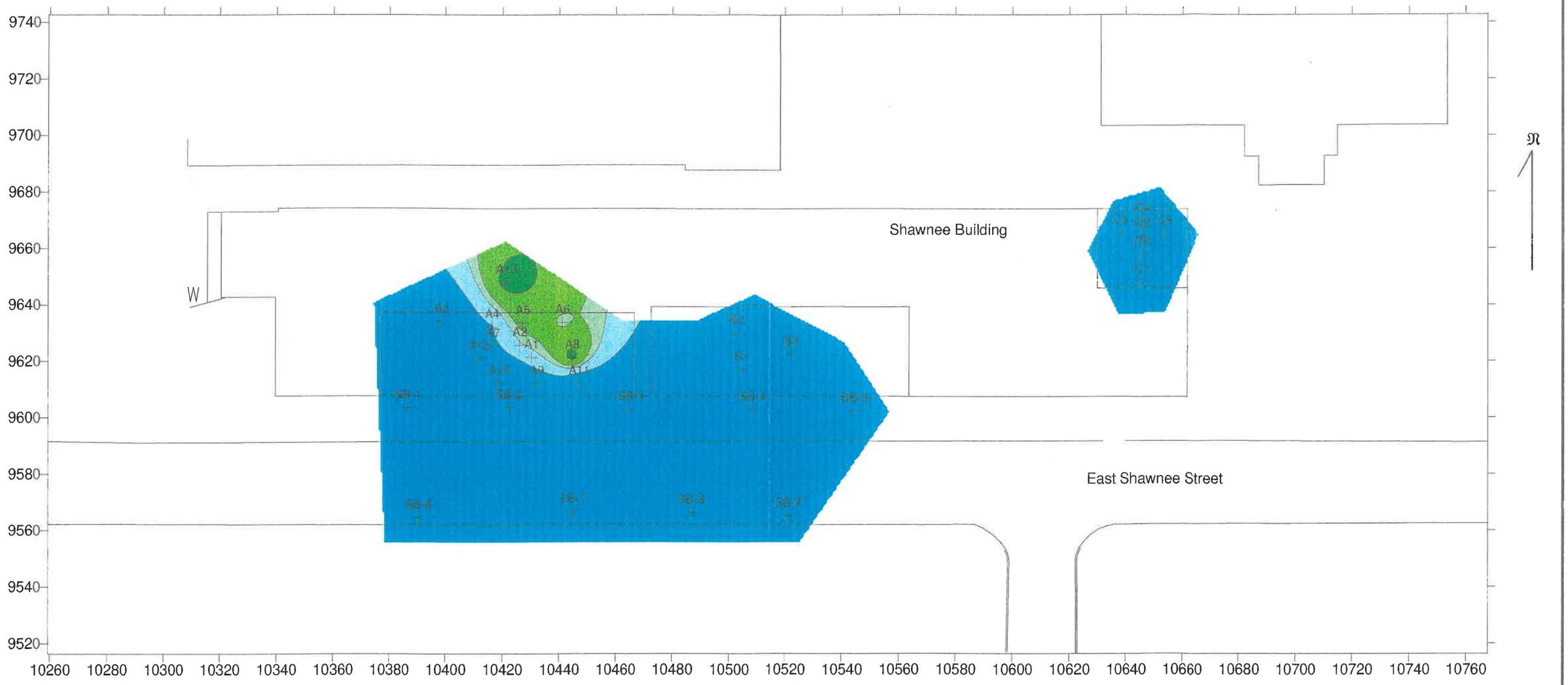
Scale



Modern Plating Facility	
Figure 2-E Cyanide - mg/kg 3'-6'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

Trichloroethene - mg/kg
0' - 1'



Cleanup Objective

0	0.1	0.5	1	5	25	100	350	500	1000	1500	2000	mg/kg

Scale

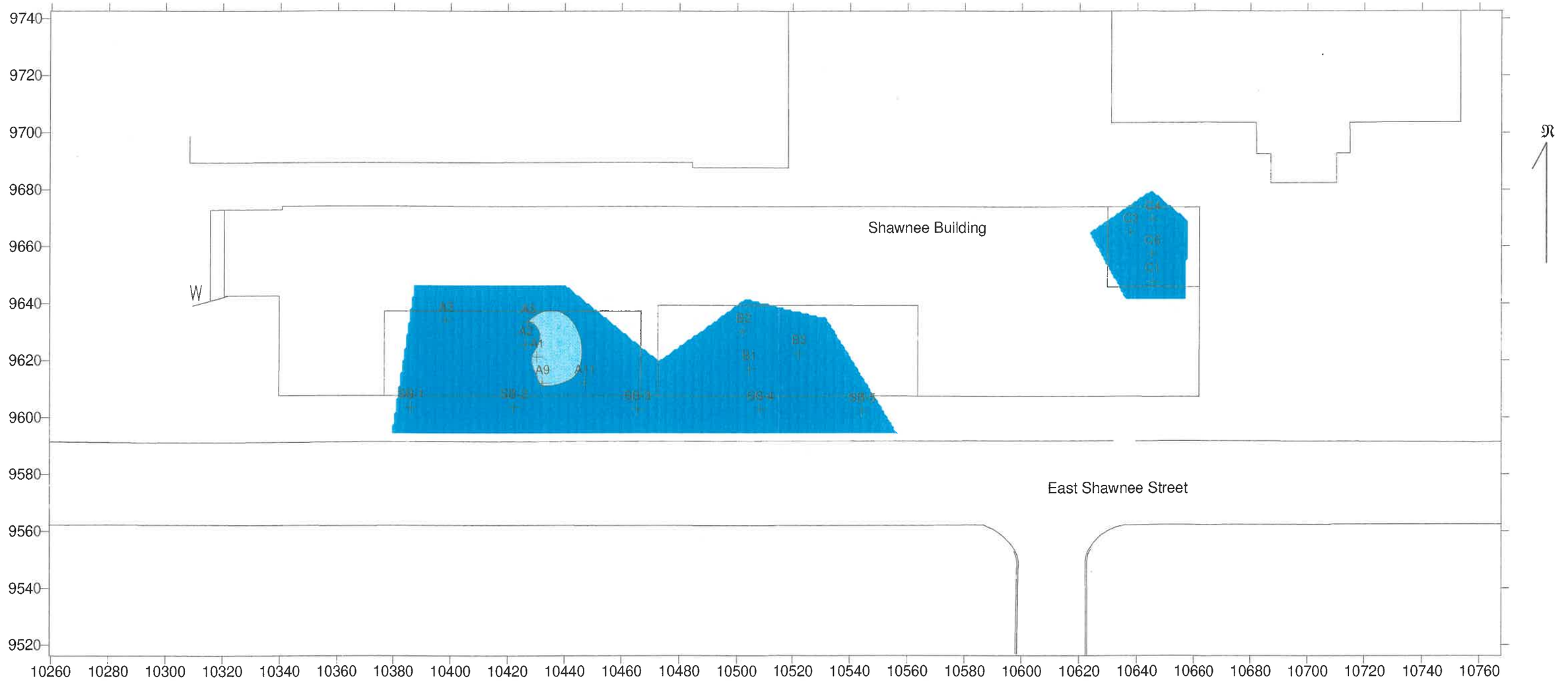
0 20 40 60 80

Feet

Modern Plating Facility	
Figure 2-F Trichloroethene - mg/kg 0'-1'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

Trichloroethene - mg/kg
1' - 2.5'



Cleanup Objective

0	0.1	0.5	1	5	25	100	350	500	1000	1500	2000	mg/kg

Scale

0 20 40 60 80

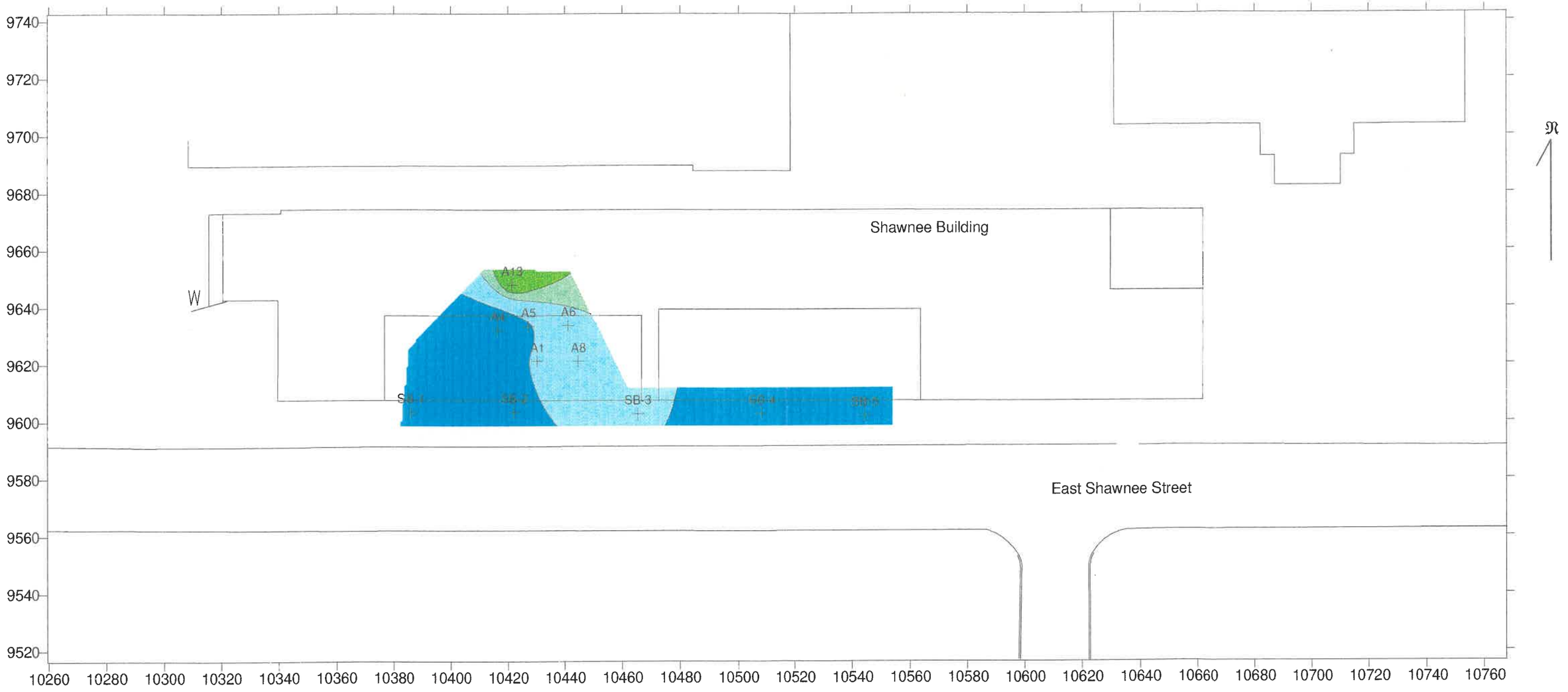
Feet

32

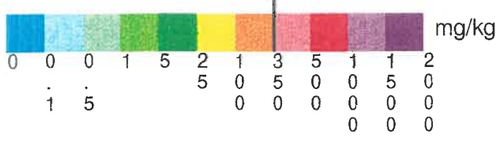
Modern Plating Facility	
Figure 2-G Trichloroethene - mg/kg 1'-2.5'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Modern Plating Corporation

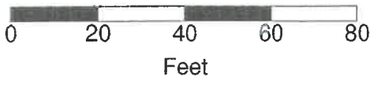
Trichloroethene - mg/kg
3' - 6'



Cleanup Objective



Scale



33

Modern Plating Facility	
Figure 2-H Trichloroethene - mg/kg 3'-6'	
Scale: 1" = 35'	Date: April, 1995
Prepared By: Foth & Van Dyke	By : SGL

Appendix L

Underground Vault - Contaminated Material Volume Estimate

Foth & Van Dyke

Client: Modern Plating Corp Scope I.D.: R002889
Project: VAULT EXCAVATION EST Page: 1 | 1
Prepared by: REM Date: 6/5/97
Checked by: SVDI Date: 8/28/97

VAULT Excavation

Estimate Disposal Quantities for VAULT Removal Disposal

GIVEN:
- VAULT dimensions 20' long x 20' wide x 10' deep
- poured concrete walls + floor

Determine Volume of Concrete to be disposed of:

- Assume concrete walls 15" Thick (this is conservative since 1' Thick is more likely, use 1' for sidewall thickness)

		(15")	
Floor	20' x 20' x	1.3'	= 520 CF
Roof	20 x 20' x	1.3'	520 CF
Sides	20' x 10' x 1' (4)		800 CF
		SUBTOTAL →	1840 CF

Access MH 6' ϕ 6' high
$\pi(3)^2(6) = 169.65$ say 170

TOTAL → 2010 CF x CY/27CF = 74.44 say 75 CY

Soil Requiring Disposal
- Assume 2' soil around side and below bottom require disposal

Below Floor	20' x 20' x 2'	= 800 CF
" Sides	20' x 10' x 2' (4)	= 1600 CF

2400 CF x CY/27CF = 88.9 say 90 CY

75 CY
90 CY
165 CY x 1.25 (contingency) = 206.25 say 200 CY (Soil and Concrete)

Appendix M

Geomembrane Products Data

Geomembrane product data

These products are engineered to provide cost-effective solutions and meet specific design requirements in fluid barrier and other geotechnical engineering applications.

ENGINEERS HAVE BEEN SUCCESSfully designing with geomembranes since the 1950s. Geomembrane use has increased as a result of growing concerns over the protection of valuable water resources. Legislation enacted within the last 20 years requires the use of geosynthetic lining materials to meet guidelines established by the Resource Conservation and Recovery Act (RCRA), the Clean Water Act and SuperFund. The geomembrane industry's highly developed quality control methods ensure that these guidelines are met.

An installation's functional requirements will determine the type of geomembrane. Geomembranes are available in a variety of physical, mechanical and chemical resistance properties designed to meet the requirements of a wide range of applications. The products can be compounded for exposure to ultraviolet light, ozone and micro-organisms in soil. Different combinations of these properties exist in various geosynthetic lining materials to cover a wide spectrum of geotechnical applications and designs.

Several methods are used to join the geosynthetic lining materials in the factory and in the field. Each material has highly developed quality-control techniques that govern its manufacture and installation. New products and improved manufacturing and installation techniques continue to be developed as the industry advances its technology.

The numbers

Companies that submitted product listings were asked to provide data according to the (industry-accepted) test methods identified by *GFR's* International Technical Advisory Committee and other industry representatives. This year, geomembrane manufacturers were given the option to submit geomembrane product data in minimum values or in minimum average roll values (MARV). Each manufacturer has provided a signed certificate of compliance verifying the accuracy of its numbers. Some deviations (ASTM test methods) were allowed for clarity and to streamline the product charts.

"Minimum" is defined as the value calculated as the typical minus three (3) standard deviations from documented manufacturing quality control test results obtained from one test method associated with one specific property. A minimum value statistically indicates a 99.7 percent degree of confidence that any sample taken during quality-assurance testing will exceed the value reported.

To learn more

The IFAI Geomembrane Division is a nonprofit trade group composed of the major geomembrane manufacturers and distributors in the United States and Canada. It functions as the industry's central resource for information and educational materials. To learn more, contact IFAI at 800/225-4324, 612/222-2508 or check out IFAI's Web site at www.ifai.com. GFR

ENGLISH—SI/SI—ENGLISH UNIT CONVERSION CHART

Length
1 millimeter = .0394 in
1 meter = 3.28 ft
1 inch = 25.4 mm = 1000 mils
1 foot = .305 m
1 mil = .001 in

Mass
1 gram = .0352 oz
1 kilogram = 2.20 lbs
1 ounce = 28.3 g
1 pound = .454 kg

Area
1 meter^2 = 1.195 yd^2
1 yard^2 = .836 m^2

Force
1 newton = .225 lb
1 pound = 4.45 N

Stress, Pressure
1 pound per square inch = 6.89 kPa
1 kilopascal = .1451 psi

Transmissivity
1 meter^2/second = 4.83 x 10^3 gal/min/ft
1 gal/min/ft = .207 x 10^{-3} m^2/S^2

U.S. sieve Designation	Opening size (mm)
200	.075
170	.090
140	.106
120	.125
100	.150
80	.180
70	.212
60	.250
50	.300
45	.355
40	.425
35	.500
30	.600
25	.710
20	.850
18	1.00
16	1.18
14	1.40
12	1.70
10	2.00
8	2.36
7	2.80
6	3.35
5	4.00
4	4.75

PUBLISHER'S NOTE

All information included in the *Specifier's Guide* was compiled from information submitted by firms in the geosynthetics industry. Specifications were submitted voluntarily and their accuracy is the responsibility of the manufacturer. The appearance of a listing in this directory is not an endorsement of the company or product by *GFR* or the Industrial Fabrics Association International (IFAI). The *Specifier's Guide* is intended as a guide, and *GFR* and IFAI encourage readers to contact the companies listed for further information.

GEOMEMBRANES/POLYETHYLENE

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation Yield/Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
Agru/America Inc.																	
Smooth Liner	HDPE	6.86/400 (22.5/1312)	0.75 (30)	0.948	12 (66)	21 (120)	13/700	0.16 (36)	0.10 (23)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, TL, DL, DP
Smooth Liner	HDPE	6.86/300 (22.5/984)	1.0 (40)	0.948	15 (88)	28 (160)	13/700	0.23 (52)	0.14 (31)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, TL, DL, DP
Smooth Liner	HDPE	6.86/200 (22.5/656)	1.5 (60)	0.948	23 (132)	42 (240)	13/700	0.36 (80)	0.21 (47)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, TL, DL, DP
Smooth Liner	HDPE	6.86/150 (22.5/492)	2.0 (80)	0.948	30 (176)	56 (320)	13/700	0.46 (105)	0.28 (63)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, TL, DL
Smooth Liner	HDPE	6.86/100 (22.5/328)	2.5 (100)	0.948	39 (220)	70 (400)	13/700	0.58 (130)	0.35 (79)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, TL, DL
Grip Liner	HDPE	6.86/80 (22.5/263)	1.5 (60)	0.948	17 (96)	17 (96)	13/200	0.42 (95)	0.22 (50)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Grip Liner	HDPE	6.86/70 (22.5/230)	2.0 (80)	0.948	23 (128)	23 (128)	13/200	0.56 (126)	0.30 (67)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Grip Liner	HDPE	6.86/60 (22.5/197)	2.5 (100)	0.948	28 (160)	28 (160)	13/200	0.70 (158)	0.37 (83)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP

2 *

R002892

Agru/America Inc. (cont.)

Super Grip Net	HDPE	6.86/60 (22.5/197)	1.5 (60)	0.948	20 (114)	22 (126)	13/200	0.33 (75)	0.18 (40)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Super Grip Net	HDPE	6.86/50 (22.5/165)	2.0 (80)	0.948	27 (152)	29 (168)	13/200	0.44 (100)	0.24 (53)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Super Grip Net	HDPE	6.86/50 (22.5/165)	2.5 (100)	0.948	33 (190)	37 (210)	13/200	0.56 (125)	0.30 (67)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Drainage Liner	HDPE	7/80 (23/262)	1.5 (60)	0.948	21 (120)	23 (132)	13/200	0.42 (95)	0.22 (50)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Drainage Liner	HDPE	6.86/70 (22.5/230)	2.0 (80)	0.948	28 (160)	31 (176)	13/200	0.56 (126)	0.30 (67)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
Drainage Liner	HDPE	6.86/70 (22.5/230)	2.5 (100)	0.948	35 (200)	39 (220)	13/200	0.70 (158)	0.37 (83)	-75 (<-103)	NP	NP	NP	NP	2–3	200	NP
A/A D–Tex Textured 2 Sides	HDPE–T	6.7/150 (22/492)	1.0 (40)	0.948	15 (88)	28 (160)	13/600	0.24 (52)	0.14 (31)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL
A/A D–Tex Textured 2 Sides	HDPE–T	6.7/125 (22/410)	1.5 (60)	0.948	23 (132)	42 (240)	13/600	0.36 (80)	0.21 (47)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL
A/A D–Tex Textured 2 Sides	HDPE–T	6.7/100 (22/328)	2.0 (80)	0.948	31 (176)	56 (320)	13/600	0.46 (105)	0.28 (63)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A

(4) No failures at this temperature

(5) Value of time to failure under load of 30% yield stress of parent geomembranes

(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
LL = Landfill liner
DP = Decorative pond
TL = Tunnel liner
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturer before making any specifying/purchasing decisions.

R002893

GEOMEMBRANES/POLYETHYLENE

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength: Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength: Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation: Yield/Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear: Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
Agru/America Inc. (cont.)																	
A/A S–Tex Textured 1 Side	HDPE–T	6.7/150 (22/492)	1.0 (40)	0.948	15 (88)	28 (160)	13/600	0.24 (52)	0.14 (31)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL
A/A S–Tex Textured 1 Side	HDPE–T	6.7/125 (22/410)	1.5 (60)	0.948	23 (132)	42 (240)	13/600	0.36 (80)	0.21 (47)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL
A/A S–Tex Textured 1 Side	HDPE–T	6.7/100 (22/328)	2.0 (80)	0.948	31 (176)	56 (320)	13/600	0.46 (105)	0.28 (63)	-75 (<-103)	NP	NP	NP	NP	2–3	200	CL, SIL, SIC, LL, LC, LPL, DP, TL, PL
Columbia Geosystems Ltd.																	
Geodex HP–40	HDPE	7/238 (23/780)	1.02 (40)	0.94	15.4 (88)	26.6 (152)	13/700	0.23 (52)	0.13 (30)	-75 (-103)	14 (80)	14 (80)	10 (60)	10 (60)	2.0	200	LL, SIL, SIC, DL, LPL, LC, TL
* Geodex HP–60	HDPE	7/158 (23/520)	1.52 (60)	0.94	23.1 (132)	39.9 (228)	13/700	0.35 (78)	0.20 (45)	-75 (-103)	21 (120)	21 (120)	16 (90)	16 (90)	2.0	200	LL, SIL, SIC, DL, LPL, LC, TL
Geodex HP–80	HDPE	7/122 (23/400)	2.03 (80)	0.94	30.8 (170)	53.2 (304)	13/700	0.46 (104)	0.27 (60)	-75 (-103)	28 (160)	28 (160)	21 (120)	21 (120)	2.0	200	LL, SIL, SIC, DL, LPL, LC, TL
Geodex HP–100	HDPE	7/96 (23/315)	2.54 (100)	0.94	38.5 (220)	66.5 (380)	13/700	0.59 (130)	0.33 (75)	-75 (-103)	35 (200)	35 (200)	26 (150)	26 (150)	2.0	200	LL, SIL, SIC, DL, LPL, LC, TL

R002894

Columbia Geosystems Ltd. (cont.)

Geodex Friction Seal HD–60	HDPE–T	7/158 (23/520)	1.52 (60)	0.94	23.1 (132)	15.7 (90)	12/100	0.35 (78)	0.20 (45)	-75 (-103)	21 (120)	21 (120)	16 (90)	16 (90)	2.0	200	all
Geodex Friction Seal HD–80	HDPE–T	7/122 (23/400)	2.03 (80)	0.94	30.8 (175)	15.7 (90)	12/100	0.46 (104)	0.27 (60)	-75 (-103)	28 (160)	28 (160)	21 (120)	21 (120)	2.0	200	all
Geodex Friction Seal LL–40	LLDPE–T	7/238 (23/780)	1.02 (40)	0.92	NA	15.4 (88)	NA	0.25 (56)	0.13 (29)	-75 (-103)	10.5 (60)	10.5 (60)	9.3 (53)	7.9 (45)	2.0	200	all
Geodex Friction Seal LL–60	LLDPE–T	7/158 (23/520)	1.52 (60)	0.92	NA	15.7 (90)	NA	0.37 (84)	0.19 (44)	-75 (-103)	15.8 (90)	15.8 (90)	14.0 (80)	11.9 (68)	2.0	200	all

GSE Lining Technology Inc.

GSE HyperFlex	HDPE	7.25/145 (23.8/475)	1.5 (60)	0.94	23.1 (132)	52.5 (300)	15/600	0.36 (80)	0.22 (50)	<-70 (<-94)	21.2 (121)	21.2 (121)	17.2 (98)	13.7 (78)	2–3	NP	all
GSE HyperFlex	HDPE	7.25/108 (23.8/355)	2.0 (80)	0.94	30.3 (176)	70.0 (400)	15/600	0.47 (107)	0.30 (67)	<-70 (<-94)	28.4 (162)	28.4 (162)	22.8 (130)	18.2 (104)	2–3	NP	all
GSE HyperFlex	HDPE	7.25/87 (23.8/285)	2.5 (100)	0.94	38.5 (220)	87.5 (500)	15/600	0.59 (133)	0.37 (83)	<-70 (<-94)	35.5 (203)	35.5 (203)	25.0 (143)	22.8 (130)	2–3	NP	all
GSE UltraFlex	VFPE	7.25/218 (23.8/715)	1.0 (40)	0.92	NA	31.5 (180)	NA/800	0.26 (58)	0.11 (25)	<-70 (<-94)	9.8 (56)	9.8 (56)	8.4 (48)	8.4 (48)	2–3	NP	all

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A
(4) No failures at this temperature
(5) Value of time to failure under load of 30% yield stress of parent geomembranes
(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
LL = Landfill liner
DP = Decorative pond
TL = Tunnel liner
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturers before making any specifying/purchasing decisions.

R002895

GEOMEMBRANES/POLYETHYLENE

GSE Lining Technology Inc. (cont.)

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/ Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength: Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength: Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation: Yield/ Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear: Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
GSE UltraFlex	VFPE	7.25/145 (23.8/475)	1.5 (60)	0.92	NA	47.3 (270)	NA/810	0.45 (102)	0.20 (44)	<-70 (<-94)	14.7 (84)	14.7 (84)	12.6 .(72)	12.6 (72)	2–3	NP	all
GSE UltraFlex	VFPE	7.25/108 (23.8/355)	2.0 (80)	0.92	NA	64.4 (368)	NA/850	0.49 (110)	0.21 (48)	<-70 (<-94)	19.6 (112)	19.6 (112)	16.8 (96)	16.8 (96)	2–3	NP	all
GSE HyperFrictionFlex	HDPE–T	7.25/145 (23.8/475)	1.5 (60)	0.94	23.1 (132)	52.5 (300)	15/600	0.36 (80)	0.22 (50)	<-70 (<-94)	21.2 (121)	21.2 (121)	17.2 (98)	13.7 (78)	2–3	NP	slopes or seismic areas
GSE HyperFrictionFlex	HDPE–T	7.25/108 (23.8/355)	2.0 (80)	0.94	30.8 (176)	70 (400)	15/600	0.47 (107)	0.30 (67)	<-70 (<-94)	28.4 (162)	28.4 (162)	22.8 (130)	18.2 (104)	2–3	NP	slopes or seismic areas
GSE HyperFrictionFlex	HDPE–T	7.25/87 (23.8/285)	2.5 (100)	0.94	38.5 (220)	87.5 (500)	15/600	0.59 (133)	0.37 (83)	<-70 (<-94)	35.5 (203)	35.5 (203)	25.0 (143)	22.8 (130)	2–3	NP	slopes or seismic areas
GSE UltraFrictionFlex	VFPE–T	7.25/218 (23.8/715)	1.0 (40)	0.92	NA	26.3 (150)	NA/500	0.24 (55)	0.11 (24)	<-70 (<-94)	9.8 (56)	9.8 (56)	8.4 (48)	8.4 (48)	2–3	NP	caps, slopes or seismic areas
GSE UltraFrictionFlex	VFPE–T	7.25/145 (23.8/475)	1.5 (60)	0.92	NA	42.6 (243)	NA/600	0.36 (80)	0.16 (36)	<-70 (<-94)	14.7 (84)	14.7 (84)	12.6 (72)	12.6 (72)	2–3	NP	caps, slopes or seismic areas
GSE UltraFrictionFlex	VFPE–T	7.25/108 (23.8/355)	2.0 (80)	0.92	NA	56.7 (324)	NA/800	0.49 (110)	0.21 (48)	<-70 (<-94)	19.6 (112)	19.6 (112)	16.8 (96)	16.8 (96)	2–3	NP	caps, slopes or seismic areas

R0002896

GSE Lining Technology Inc. (cont.)

GSE HD	HDPE	10.5/256 [A] (34.5/840)	0.75 (30)	0.94	11.4 (65)	21.0 (120)	13/560	0.17 (39)	0.10 (22)	<-70 (<-94)	10.7 (61)	10.7 (61)	8.6 (49)	6.8 (39)	2–3	NP	all
GSE HD	HDPE	10.5/198 [A] (34.5/650)	1.0 (40)	0.94	15.1 (86)	28.0 (160)	13/560	0.23 (52)	0.13 (30)	<-70 (<-94)	14.2 (81)	14.2 (81)	11.4 (65)	9.1 (52)	2–3	NP	all
GSE HD	HDPE	10.5/128 [A] (34.5/420)	1.5 (60)	0.94	22.8 (130)	42.0 (240)	13/600	0.36 (80)	0.20 (45)	<-70 (<-94)	21.2 (121)	21.2 (121)	17.2 (98)	13.7 (78)	2–3	NP	all
GSE HDT	HDPE CX–T	6.9/191 (22.5/625)	0.75 (30)	0.94	11.0 (63)	6.7 (38)	13/120	0.17 (39)	0.10 (22)	<-70 (<-94)	9.8 (56)	9.8 (56)	7.7 (44)	5.4 (31)	2–3	NP	slopes or seismic areas
GSE HDT	HDPE CX–T	6.9/183 (22.5/600)	1.0 (40)	0.94	15.1 (86)	8.8 (50)	13/120	0.23 (52)	0.13 (30)	<-70 (<-94)	13.3 (76)	13.3 (76)	10.5 (60)	7.4 (42)	2–3	NP	slopes or seismic areas
GSE HDT	HDPE CX–T	6.9/128 (22.5/420)	1.5 (60)	0.94	22.8 (130)	13.1 (75)	13/120	0.36 (80)	0.20 (45)	<-70 (<-94)	19.8 (113)	19.8 (113)	15.4 (88)	11.0 (63)	2–3	NP	slopes or seismic areas
GSE HDT	HDPE CX–T	6.9/98 (22.5/320)	2.0 (80)	0.94	30.3 (173)	17.5 (100)	13/120	0.47 (105)	0.27 (60)	<-70 (<-94)	26.4 (151)	26.4 (151)	20.1 (115)	14.7 (84)	2–3	NP	slopes or seismic areas
GSE HD Textured One Side	HDPE CX–T 1-side T	6.9/183 (22.5/600)	1.0 (40)	0.94	15.1 (86)	8.8 (50)	13/120	0.23 (52)	0.13 (30)	<-70 (<-94)	13.3 (76)	13.3 (76)	10.5 (60)	7.4 (42)	2–3	NP	slopes or seismic areas
GSE HD Textured One Side	HDPE CX–T 1-side T	6.9/128 (22.5/420)	1.5 (60)	0.94	22.8 (130)	13.1 (75)	13/120	0.36 (80)	0.20 (45)	<-70 (<-94)	19.8 (113)	19.8 (113)	15.4 (88)	11.0 (63)	2–3	NP	slopes or seismic areas

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A

(4) No failures at this temperature

(5) Value of time to failure under load of 30% yield stress of parent geomembranes

(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
LL = Landfill liner
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
TL = Tunnel liner
DP = Decorative pond
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
(A) Also available in widths of 6.9 m (22.5 ft)

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GTR recommends you contact the manufacturers before making any specifying/purchasing decisions.

R0022897

GEOMEMBRANES/POLYETHYLENE

GSE Lining Technology Inc. (cont.)

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength: Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength: Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation: Yield/Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear: Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
GSE HD Light-Reflective	HDPE CX	10.5/198 [A] (34.5/650)	1.0 (40)	0.94	15.1 (86)	28.0 (160)	13/560	0.23 (52)	0.13 (30)	<-70 (<-94)	14.2 (81)	14.2 (81)	11.4 (65)	9.1 (52)	2–3	NP	all
GSE HD Light-Reflective	HDPE CX	10.5/128 [A] (34.5/420)	1.5 (60)	0.94	22.8 (130)	42.0 (240)	13/600	0.36 (80)	0.20 (45)	<-70 (<-94)	21.2 (121)	21.2 (121)	17.2 (98)	13.7 (78)	2–3	NP	all
GSE HD Light-Reflective	HDPE CX	10.5/98 [A] (34.5/320)	2.0 (80)	0.94	30.3 (173)	56.0 (320)	13/600	0.47 (105)	0.27 (60)	<-70 (<-94)	28.4 (162)	28.4 (162)	22.8 (130)	18.2 (104)	2–3	NP	all
GSE HD Light-Reflective	HDPE CX	10.5/76 [A] (34.5/250)	2.5 (100)	0.94	37.8 (216)	70.0 (400)	13/600	0.58 (130)	0.33 (75)	<-70 (<-94)	35.5 (203)	35.5 (203)	25.0 (143)	22.8 (130)	2–3	NP	all
GSE HD Light-Reflective Textured	HDPE CX–T	6.9/183 (22.5/600)	1.0 (40)	0.94	15.1 (86)	8.8 (50)	13/120	0.23 (52)	0.13 (30)	<-70 (<-94)	13.3 (76)	13.3 (76)	10.5 (60)	7.4 (42)	2–3	NP	slopes or seismic areas
GSE HD Light-Reflective Textured	HDPE CX–T	6.9/128 (22.5/420)	1.5 (60)	0.94	22.8 (130)	13.1 (75)	13/120	0.36 (80)	0.20 (45)	<-70 (<-94)	19.8 (113)	19.8 (113)	15.4 (88)	11.0 (63)	2–3	NP	slopes or seismic areas
GSE HD Light-Reflective Textured	HDPE CX–T	6.9/98 (22.5/320)	2.0 (80)	0.94	30.3 (173)	17.5 (100)	13/120	0.47 (105)	0.27 (60)	<-70 (<-94)	26.4 (151)	26.4 (151)	20.1 (115)	14.7 (84)	2–3	NP	slopes or seismic areas
GSE HD Conductive	HDPE CX conductive	10.5/128 [A] (34.5/420)	1.5 (60)	0.94	22.8 (130)	42.0 (240)	13/600	0.36 (80)	0.20 (45)	<-70 (<-94)	21.2 (121)	21.2 (121)	17.2 (98)	13.7 (78)	2–3	NP	spark-testable liner

R002898

GSE Lining Technology Inc. (cont.)

GSE HD Conductive	HDPE CX conductive	10.5/98 [A] (34.5/320)	2.0 (80)	0.94	30.3 (173)	56.0 (320)	13/600	0.47 (105)	0.27 (60)	<-70 (<-94)	28.4 (162)	28.4 (162)	22.8 (130)	18.2 (104)	2–3	NP	spark-testable liner
GSE HD Conductive	HDPE CX conductive	10.5/76 [A] (34.5/250)	2.5 (100)	0.94	37.8 (216)	70.0 (400)	13/600	0.58 (130)	0.33 (75)	<-70 (<-94)	35.5 (203)	35.5 (203)	25.0 (143)	22.8 (130)	2–3	NP	spark-testable liner
GSE HD Conductive Textured	HDPE CX–T conductive	6.9/128 (22.5/420)	1.5 (60)	0.94	22.8 (130)	13.1 (75)	13/120	0.36 (80)	0.20 (45)	<-70 (<-94)	19.8 (113)	19.8 (113)	15.4 (88)	11.0 (63)	2–3	NP	spark-testable liner
GSE HD Conductive Textured	HDPE CX–T conductive	6.9/98 (22.5/320)	2.0 (80)	0.94	30.3 (173)	17.5 (100)	13/120	0.47 (105)	0.27 (60)	<-70 (<-94)	26.4 (151)	26.4 (151)	20.1 (115)	14.7 (84)	2–3	NP	spark-testable liner

National Seal Co.

NSC Dura Seal HD	HDPE	4.57/9.3 (15/30.5)	1.0 (40)	0.94	15.4 (88)	26.6 (152)	13/700	0.23 (52)	0.13 (30)	-75 (-103)	14 (80)	14 (80)	10.5 (60)	9.1 (52)	2.0	200	all
NSC Dura Seal HD	HDPE	4.57/9.3 (15/30.5)	1.5 (60)	0.94	23.1 (132)	39.9 (228)	13/700	0.35 (78)	0.20 (45)	-75 (-103)	21 (120)	21 (120)	15.8 (90)	13.7 (78)	2.0	200	all
NSC Dura Seal HD	HDPE	4.57/9.3 (15/30.5)	2.0 (80)	0.94	30.8 (176)	53.2 (304)	13/700	0.46 (104)	0.27 (60)	-75 (-103)	28 (160)	28 (160)	21 (120)	18.2 (104)	2.0	200	all
NSC Dura Seal HD	HDPE	4.57/9.3 (15/30.5)	2.5 (100)	0.94	38.5 (220)	66.5 (380)	13/700	0.58 (130)	0.33 (75)	-75 (-103)	35 (200)	35 (200)	26.2 (150)	22.8 (130)	2.0	200	all

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene
(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.
(3) As modified by NSF Standard 54, Appendix A
(4) No failures at this temperature
(5) Value of time to failure under load of 30% yield stress of parent geomembranes
(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
LL = Landfill liner
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
TL = Tunnel liner
DP = Decorative pond
RP = Reserve pit
NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
(A) Also available in widths of 6.9 m (22.5 ft)

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturers before making any specifying/purchasing decisions.

R002899

GEOMEMBRANES/POLYETHYLENE

National Seal Co. (cont.)

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/ Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength: Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength: Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation: Yield/ Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear: Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
NSC Friction Seal HD	HDPE–T	4.57/9.3 (15/30.5)	1.0 (40)	0.94	15.4 (88)	16.1 (92)	13/200	0.23 (52)	0.13 (30)	-75 (-103)	14 (80)	14 (80)	10.5 (60)	9.1 (52)	2.0	200	all
NSC Friction Seal HD	HDPE–T	4.57/9.3 (15/30.5)	1.5 (60)	0.94	23.1 (132)	24.2 (138)	13/200	0.35 (78)	0.20 (45)	-75 (-103)	21 (120)	21 (120)	15.8 (90)	13.7 (78)	2.0	200	all
NSC Friction Seal HD	HDPE–T	4.57/9.3 (15/30.5)	2.0 (80)	0.94	30.8 (176)	32.2 (184)	13/200	0.46 (104)	0.27 (60)	-75 (-103)	28 (160)	28 (160)	21.0 (120)	18.2 (104)	2.0	200	all
NSC Friction Seal HD	HDPE–T	4.57/9.3 (15/30.5)	2.5 (100)	0.94	38.5 (220)	40.3 (230)	13/200	0.58 (130)	0.33 (75)	-75 (-103)	35 (200)	35 (200)	26.2 (150)	22.8 (130)	2.0	200	all
NSC Dura Seal LL	LLDPE	4.57/9.3 (15/30.5)	1.0 (40)	0.935 (max.)	NA	26.6 (152)	NA/850	0.25 (56)	0.11 (25)	-75 (-103)	10.5 (60)	10.5 (60)	9.3 (53)	7.9 (45)	2.0	NA	all
NSC Dura Seal LL	LLDPE	4.57/9.3 (15/30.5)	1.5 (60)	0.935 (max.)	NA	39.9 (228)	NA/850	0.37 (84)	0.17 (38)	-75 (-103)	15.8 (90)	15.8 (90)	14.0 (80)	11.9 (68)	2.0	NA	all
NSC Dura Seal LL	LLDPE	4.57/9.3 (15/30.5)	2.0 (80)	0.935 (max.)	NA	53.2 (304)	NA/850	0.50 (112)	0.22 (50)	-75 (-103)	21 (120)	21 (120)	18.6 (106)	15.9 (91)	2.0	NA	all
NSC Friction Seal LL	LLDPE–T	4.57/9.3 (15/30.5)	1.0 (40)	0.935 (max.)	NA	15.4 (88)	NA/450	0.25 (56)	0.11 (25)	-75 (-103)	10.5 (60)	10.5 (60)	9.3 (53)	7.9 (45)	2.0	NA	all

10

(* final cover)

R002900

National Seal Co. (cont.)

NSC Friction Seal LL	LLDPE–T	4.57/9.3 (15/30.5)	1.5 (60)	0.935 (max.)	NA	23.1 (132)	NA/450	0.37 (84)	0.17 (38)	-75 (-103)	15.8 (90)	15.8 (90)	14.0 (80)	11.9 (68)	2.0	NA	all
NSC Friction Seal LL	LLDPE–T	4.57/9.3 (15/30.5)	2.0 (80)	0.935 (max.)	NA	30.8 (176)	NA/450	0.50 (112)	0.22 (50)	-75 (-103)	21 (120)	21 (120)	18.6 (106)	15.9 (91)	2.0	NA	all
NSC Friction Seal Geodex HD-Textured 60	HDPE–T	7/238 (23/780)	1.5 (60)	0.94	23.1 (132)	15.8 (90)	12/100	NA	0.20 (45)	-75 (-103)	21 (120)	21 (120)	15.8 (90)	13.7 (78)	2.0	200	all
NSC Friction Seal Geodex HD-Textured 60	HDPE–T	7/238 (23/780)	2.0 (80)	0.94	30.8 (176)	21.0 (120)	12/100	NA	0.27 (60)	-75 (-103)	28 (160)	28 (160)	21.0 (120)	18.2 (104)	2.0	200	all

Poly-Flex Inc. (Data supplied in minumum values)

Poly-Flex HDPE	HDPE	6.9/304.9 (22.5/1000)	0.5 (20)	0.940	8.1 (46)	14.0 (80)	13/700	0.13 (30)	0.06 (14)	-70 (-94)	7.7 (44)	7.7 (44)	5.1 (29)	5.1 (29)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex HDPE	HDPE	6.9/243.9 (22.5/800)	0.75 (30)	0.940	12.1 (69)	21.0 (120)	13/700	0.20 (45)	0.9 (21)	-70 (-94)	11.6 (66)	11.6 (66)	7.5 (43)	7.5 (43)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex HDPE	HDPE	6.9/182.9 (22.5/600)	1.0 (40)	0.940	16.1 (92)	28.0 (160)	13/700	0.27 (60)	0.12 (28)	-70 (-94)	15.2 (87)	15.2 (87)	10.0 (57)	10.0 (57)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
* Poly-Flex HDPE	HDPE	6.9/122.0 (22.5/400)	1.5 (60)	0.940	24.2 (138)	42.0 (240)	13/700	0.40 (90)	0.19 (42)	-70 (-94)	22.9 (131)	22.9 (131)	15.1 (86)	15.1 (86)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A
(4) No failures at this temperature
(5) Value of time to failure under load of 30% yield stress of parent geomembranes
(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
LL = Landfill liner
DP = Decorative pond
TL = Tunnel liner
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturer before making any specifying/purchasing decisions.

R002901

GEOMEMBRANES/POLYETHYLENE

Poly-Flex Inc. (cont.) (Data supplied in minumum values)

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation Yield/Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
Poly-Flex HDPE	HDPE	6.9/91.5 (22.5/300)	2.0 (80)	0.940	32.2 (184)	56.0 (320)	13/700	0.53 (120)	0.25 (56)	-70 (-94)	30.6 (175)	30.6 (175)	20.0 (114)	20.0 (114)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex HDPE	HDPE	6.9/76.2 (22.5/250)	2.5 (100)	0.940	40.3 (230)	70.0 (400)	13/700	0.67 (150)	0.31 (70)	-70 (-94)	38.2 (218)	38.2 (218)	25.0 (143)	25.0 (143)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex Textured HDPE	HDPE	7.0/137.2 (23/450)	1.0 (40)	0.940	15.8 (90)	14.0 (80)	13/200	0.24 (55)	0.12 (28)	-70 (-94)	14.9 (85)	14.9 (85)	9.8 (56)	9.8 (56)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex Textured HDPE	HDPE	7.0/106.7 (23/350)	1.5 (60)	0.940	22.1 (126)	17.5 (100)	13/200	0.33 (75)	0.18 (40)	-70 (-94)	21.0 (120)	21.0 (120)	13.7 (78)	13.7 (78)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex Textured HDPE	HDPE	7.0/76.2 (23/250)	2.0 (80)	0.940	28.0 (160)	27.1 (155)	13/200	0.42 (95)	0.23 (52)	-70 (-94)	26.6 (152)	26.6 (152)	17.3 (99)	17.3 (99)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex LLDPE	LLDPE	6.9/243.9 (22.5/800)	0.75 (30)	0.922	8.4 (48)	22.2 (127)	13/800	0.16 (37)	0.07 (16)	-70 (-94)	7.9 (45)	7.9 (45)	6.5 (37)	6.5 (37)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex LLDPE	LLDPE	6.9/182.9 (22.5/600)	1.0 (40)	0.922	11.2 (64)	29.8 (170)	13/800	0.22 (50)	0.10 (22)	-70 (-94)	10.5 (60)	10.5 (60)	8.7 (50)	8.7 (50)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex LLDPE	LLDPE	6.9/122.0 (22.5/400)	1.5 (60)	0.922	16.8 (96)	44.6 (255)	13/800	0.33 (75)	0.15 (33)	-70 (-94)	15.7 (90)	15.7 (90)	13.1 (75)	13.1 (75)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex Textured LLDPE	LLDPE	7.0/137.2 (23/450)	1.0 (40)	0.922	10.5 (60)	11.4 (66)	13/300	0.21 (48)	0.10 (23)	-70 (-94)	9.3 (53)	9.3 (53)	7.7 (44)	7.7 (44)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL
Poly-Flex Textured LLDPE	LLDPE	7.0/106.7 (23/350)	1.5 (60)	0.922	15.8 (90)	16.6 (95)	13/300	0.31 (70)	0.15 (34)	-70 (-94)	13.8 (79)	13.8 (79)	11.5 (66)	11.5 (66)	2	200	LL, LC, TL, DL, LPL, CL, SIC, SIL

(fmal cover)

R002902

Raven Industries Inc.

Rufco EX20	CX HDPE, VLDPE, HDPE	up to 40,000 ft²	0.51 (20)	0.94, 0.91, 0.94	5.3 (30)	17.5 (100)	13/900	0.17 (37)	0.05 (12)	-60 (-76)	NP	0.17 (39)	NP	0.15 (34)	2.5	300	CL, SIL, SIC, LL, DL, LPL, LC, TL
Rufco EX30	CX HDPE, VLDPE, HDPE	up to 27,000 ft²	0.76 (30)	0.94, 0.91, 0.94	8.4 (48)	24.5 (140)	13/900	0.22 (50)	0.09 (20)	-60 (-76)	NP	0.27 (60)	NP	0.17 (39)	2.5	300	CL, SIL, SIC, LL, DL, LPL, LC, TL
Rufco EX40	CX HDPE, VLDPE, HDPE	up to 20,000 ft²	1.02 (40)	0.94, 0.91, 0.94	10.5 (60)	35.0 (200)	13/1000	0.29 (65)	0.11 (25)	-60 (-76)	NP	0.36 (80)	NP	0.28 (64)	2.5	300	CL, SIL, SIC, LL, DL, LPL, LC, TL

S.D. Enterprise Co. Ltd.

SD–HDPE	HDPE	6.86/141 (22.5/462)	1.5 (60)	0.94	(150)	(240)	13/700	NP	200,000 (45)	<-77 (<-107)	NP	NP	NP	NP	2.0–3.0	NP	CL, SIL, SIC, LL, DL, LPL, LC, TC
SD–HTX	HDPE–T	6.86/128 (22.5/420)	1.5 (60)	0.94	(130)	(75)	13/150	NP	200,000 (45)	<-77 (<-107)	NP	NP	NP	NP	2.0–3.0	NP	CL, SIL, SIC, LL, DL, LPL, LC, TC
SD–VFPE	LLDPE	6.86/141 (22.5/462)	1.5 (60)	0.94	NP	(200)	NP/800	NP	47,000 (88)	<-84 (<-120)	NP	NP	NP	NP	2.0–3.0	NP	CL, SIL, SIC, LL, DL, LPL, LC, TC
SD–VPTX	LLDPE–T	6.86/128 (22.5/420)	1.5 (60)	0.94	NP	NP	10/250	NP	47,000 (88)	<-84 (<-120)	NP	NP	NP	NP	2.0–3.0	NP	CL, SIL, SIC, LL, DL, LPL, LC, TC

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A

(4) No failures at this temperature

(5) Value of time to failure under load of 30% yield stress of parent geomembranes

(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
LL = Landfill liner
DP = Decorative pond
TL = Tunnel liner
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturer before making any specifying/purchasing decisions.

R002903

GEOMEMBRANES/POLYETHYLENE

Serrot Corp.

Product Name	Base Polymer [1]	Dimensional Properties: Roll Width/Length (m) ft	Dimensional Properties: Thickness ASTM D 5199 [2] mm (mils)	Density ASTM D 1505 (g/cm³)	Tensile Properties ASTM D 638 [3]: Strength: Yield kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Strength: Break kN/m (lb/in)	Tensile Properties ASTM D 638 [3]: Elongation: Yield/Break %	Puncture Resistance FTMS 101C Method 2065 kN (lb)	Tear Resistance ASTM D 1004 kN (lbs)	Low Temperature Brittleness ASTM D 746 [4] °C (°F)	Seam Strength ASTM D 4437 [3]: Shear: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Shear: Extrusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Fusion kN/m (lb/in)	Seam Strength ASTM D 4437 [3]: Peel: Extrusion kN/m (lb/in)	Carbon Black Content ASTM D 1603 (%)	Environmental Stress Crack Resistance ASTM D 5397 Appendix [5] (hours)	Manufacturer's Suggested Applications [6]
Serrot HDPE	HDPE	7/223 (23/730)	1.0 (40)	0.94	15 (84)	27 (152)	13/560	0.23 (52)	0.13 (28)	-80 (-112)	15 (86)	15 (86)	10 (57)	9 (48)	2–3	200	CL, SIL, LL, LC
* Serrot HDPE	HDPE	7/148 (23/485)	1.5 (60)	0.94	23 (126)	41 (228)	13/560	0.36 (80)	0.19 (42)	-80 (-112)	23 (126)	23 (126)	15 (84)	13 (70)	2–3	200	CL, SIL, LL, DL, LPL, LC
Serrot HDPE	HDPE	7/110 (23/360)	2.0 (80)	0.94	30 (168)	54 (304)	13/560	0.47 (105)	0.25 (55)	-80 (-112)	31 (171)	31 (171)	29 (114)	18 (95)	2–3	200	CL, SIL, LL, DL, LPL, TL
Serrot HDPE	HDPE	7/88 (23/290)	2.5 (100)	0.94	38 (210)	68 (380)	13/560	0.58 (130)	0.29 (65)	-80 (-112)	39 (216)	39 (216)	26 (144)	21 (120)	2–3	200	CL, SIL, LL, LPL, TL
Serrot HDT	HDPE	7/223 (23/730)	1.0 (40)	0.94	15 (84)	11 (60)	13/100	0.23 (52)	0.13 (28)	-80 (-112)	15 (86)	15 (86)	10 (57)	9 (48)	2–3	200	CL, SIL, LL, DL, LPL, LC
Serrot HDT	HDPE	7/148 (23/485)	1.5 (60)	0.94	23 (126)	16 (90)	13/100	0.36 (80)	0.19 (42)	-80 (-112)	23 (126)	23 (126)	15 (84)	13 (70)	2–3	200	CL, SIL, LL, DL, LPL, LC
Serrot HDT	HDPE	7/110 (23/360)	2.0 (80)	0.94	30 (168)	21 (120)	13/100	0.47 (105)	0.25 (55)	-80 (-112)	31 (171)	31 (171)	20 (114)	18 (95)	2–3	200	CL, SIL, LL, DL, LPL, LC
* (final cover) Serrot	LLDPE	7/223 (23/730)	1.0 (40)	0.94	NA	27 (152)	NA/625	0.23 (52)	0.10 (22)	-80 (-112)	8 (44)	8 (44)	7 (40)	7 (40)	2–3	200	LC
Serrot LLDPE	LLDPE	7/148 (23/485)	1.5 (60)	0.94	NA	41 (228)	NA/625	0.36 (80)	0.15 (33)	-80 (-112)	12 (66)	12 (66)	11 (60)	11 (60)	2–3	200	LC
Serrot LLDT	LLDPE	7/223 (23/730)	1.0 (40)	0.94	NA	13 (72)	NA/200	0.23 (52)	0.10 (22)	-80 (-112)	8 (44)	8 (44)	7 (40)	7 (40)	2–3	200	LC
Serrot LLDT	LLDPE	7/148 (23/485)	1.5 (60)	0.94	NA	19 (108)	NA/200	0.36 (80)	0.15 (33)	-80 (-112)	12 (66)	12 (66)	11 (60)	11 (60)	2–3	200	LC

R002904

Solmax Geosynthetics Inc.

SF–440	HDPE	6.86/211 (23/692)	1.0 (40)	0.94	16.6 (95)	28 (160)	13/700	0.78 [A] (175)	0.13 (30)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all
* SF–460	HDPE	6.86/141 (23/462)	1.5 (60)	0.94	24.5 (140)	42 (240)	13/700	1.20 [A] (270)	0.20 (45)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all
SF–480	HDPE	6.86/106 (23/348)	2.0 (80)	0.94	33.3 (190)	56 (320)	13/700	1.56 [A] (350)	0.27 (60)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all
SF–440T	HDPE–T	6.86/183 (23/600)	1.0 (40)	0.94	NP	NP	13/150	0.23 (52)	0.13 (30)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all
SF–460T	HDPE–T	6.86/128 (23/420)	1.5 (60)	0.94	NP	NP	13/150	0.35 (80)	0.20 (45)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all
SF–480T	HDPE–T	6.86/97 (23/318)	2.0 (80)	0.94	NP	NP	13/150	0.47 (105)	0.27 (60)	-80 (-112)	NP	NP	NP	NP	2–3	1,500 [B]	all

(1) HDPE = High density polyethylene
CX-T = Coextruded, textured
VLDPE = Very low density polyethylene
CX = Coextruded
LLDPE = Linear low density polyethyene

(2) There is currently no recognized standard for thickness determination of textured geomembranes. Values shown for textured geomembranes are nominal values only.

(3) As modified by NSF Standard 54, Appendix A

(4) No failures at this temperature

(5) Value of time to failure under load of 30% yield stress of parent geomembranes

(6) CL = Canal liner
SIL = Surface impoundment liner
SIC = Surface impoundment cover
LL = Landfill liner
DP = Decorative pond
DL = Dam liner
LPL = Leach pad liner
LC = Landfill cover
TL = Tunnel liner
RP = Reserve pit

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
(A) Test method ASTM D 2031
(B) Test method ASTM D 1693

Unless otherwise indicated, these are minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

GFR recommends you contact the manufacturers before making any specifying/purchasing decisions.

GEOMEMBRANES/POLYETHYLENE

R002905

GEOMEMBRANES/POLYPROPYLENE

Product Name	Polymer Type	Dimensional Properties: Maximum Panel Size m² (ft²)	Dimensional Properties: Thickness ASTM D 751 mm (mils)	Specific Gravity ASTM D 792	Dimensional Stability ASTM D 1204 %	Puncture Resistance ASTM D 4833 kN (lb)	Tear Resistance ASTM D 1004 Die C kN (lb)	Tensile Properties ASTM D 638: Strength Yield kN/m (lb/in)	Tensile Properties ASTM D 638: Strength Break kN/m (lb/in)	Tensile Properties ASTM D 638: Elongation Yield %	Tensile Properties ASTM D 638: Elongation Break %	Low Temperature Brittleness ASTM D 2136 °C	Suggested Seam Strength ASTM D 4545: Shear kN/m (lb/in)	Suggested Seam Strength ASTM D 4545: Peel kN/m (lb/in)	Carbon Black Content ASTM D 1603 %	Manufacturer's Suggested Applications [1]
Cooley Engineered Membranes Inc. (Data supplied in minimum values)																
PP7620	polypropylene	3,600 (40,000)	0.5 (20)	0.9	I	1.1 (250)	0.44 (100)	NA	NA	NA	NA	-65	NA	NA	NA	LL, LC, LPL SIL, PL, TL
PP7630	polypropylene	2,700 (30,000)	0.75 (30)	0.9	I	1.1 (250)	0.44 (100)	NA	NA	NA	NA	-65	NA	NA	NA	LL, LC, LPL SIL, PL, TL
PP7636	polypropylene	1,800 (20,000)	0.9 (36)	0.9	I	1.1 (250)	0.44 (100)	NA	NA	NA	NA	-65	NA	NA	NA	LL, LC, LPL SIL, PL, TL
PP7645	polypropylene	1,800 (20,000)	1.14 (45)	0.9	I	1.1 (250)	0.44 (100)	NA	NA	NA	NA	-65	NA	NA	NA	LL, LC, LPL SIL, PL, TL
PP7660	polypropylene	1,350 (15,000)	1.5 (60)	0.9	I	1.1 (250)	0.44 (100)	NA	NA	NA	NA	-65	NA	NA	NA	LL, LC, LPL SIL, PL, TL
JPS Elastomerics Corp. (Data supplied in minimum values)																
Polypropylene	polypropylene	2,300 (25,000)	0.9 (36)	0.92–0.96	I	0.93 (210)	0.24 (55)	NP	NP	NP	NP	-40	0.78 (175)	3.5 (20)	NP	CL, SIL, LL, LC, TL, DL, LPL
Polypropylene	polypropylene	2,300 (25,000)	1.14 (45)	0.92–0.96	I	0.93 (210)	0.24 (55)	NP	NP	NP	NP	-40	0.89 (200)	3.5 (20)	NP	CL, SIL, SIC, LL, LC, TL, DL, LPL

R002906

Appendix N

Geocomposite Products Data

GEONETS

Product Name	Structure [1]	Core/Net/Mesh Polymer Composition [2]	Geotextile Attached	Dimensional Properties: Width/Length m (ft)	Dimensional Properties: Core/Net/Mesh [3] Thickness ASTM D 5199 mm (mil)	Compressive Strength ASTM D 1621 kPa (psi)	> 3.5×10^{-2} m^2/sec Req'd In Plane Flow Rate ASTM D 4716 [4]: Gradient = 0.1 Pressure = 10 kPa (1.45 psi) m^2/s (gal/min/ft)	In Plane Flow Rate ASTM D 4716 [4]: Gradient = 0.1 Pressure = 100 kPa (14.5 psi) m^2/s (gal/min/ft)
Akzo Nobel Geosynthetics Co.								
Enkanet 4011	O/C	HDPE	nonwoven	2/97.6 (6.5/320)	9.40 (370)	NA	0.00896 (43.2)	0.00213 (10.2)
Enkanet 4211	O/C	HDPE	nonwoven (both sides)	2/97.6 (6.5/320)	8.13 (320)	NA	0.0046 (21.5)	0.00175 (8.4)
* Enkanet 4015	O/C	HDPE	nonwoven	2/97.6 (6.5/320)	9.40 (370)	NA	0.0128 (61.8)	0.00394 (19.0)
Enkanet 4215	O/C	HDPE	nonwoven (both sides)	2/97.6 (6.5/320)	9.65 (380)	NA	0.00817 (39.4)	0.00354 (17.1)
Engineered Synthetic Products Inc.								
Transnet	GN	HDPE	none	4.3/91.5 (14/300)	5.5 (220)	NP	NP	3.4×10^{-3} (16.4)
Transnet TNT	OC	HDPE	nonwoven	4.3/varies (14/varies)	dependent on geotextile selection	NP	NP	dependent on geotextile selection

1

R002908

GEONETS

Product Name	Structure [1]	Core/Net/Mesh Polymer Composition [2]	Geotextile Attached	Dimensional Properties: Width/Length m (ft)	Dimensional Properties: Core/Net/Mesh [3] Thickness ASTM D 5199 mm (mil)	Compressive Strength ASTM D 1621 kPa (psi)	In Plane Flow Rate ASTM D 4716 [4]: Gradient = 0.1 Pressure = 10 kPa (1.45 psi) m^2/s (gal/min/ft)	In Plane Flow Rate ASTM D 4716 [4]: Gradient = 0.1 Pressure = 100 kPa (14.5 psi) m^2/s (gal/min/ft)
Tenax Corp.								
Tendrain 70	O/C	HDPE	nonwoven	2/61 (6.7/200)	8.8 (350)	>1436 (208)	$4.4E^{-3}$ (21.5)	$3.7E^{-3}$ (18)
Tendrain 100	O/C	HDPE	nonwoven	2/61 (6.7/200)	8.8 (350)	>1436 (208)	$4.4E^{-3}$ (21.5)	$3.7E^{-3}$ (18)
CE 2	GN	HDPE	none	2/55 (6.7/180)	5 (200)	NP	$2.7E^{-3}$ (13)	$2.6E^{-3}$ (12.5)
CE 3	GN	HDPE	none	2/55 (6.7/180)	4 (160)	NP	$1.9E^{-3}$ (9.2)	$1.8E^{-3}$ (8.7)
CE 9	GN	HDPE	none	2/55 (6.7/180)	5.5 (220)	NP	$3.1E^{-3}$ (15)	$3.0E^{-3}$ (14.5)
TNT 20606	O/C	HDPE	nonwoven	2/55 (6.7/180)	5.3 (210)	NP	NP	NP
WEBTEC Inc.								
TerraNet 160	GN	HDPE	none	2/55 (6.7/180)	4 (160)	NP	0.0019 (9.2)	0.0018 (8.7)

R002909

Appendix O

GCL Product Data

GEOSYNTHETIC CLAY LINERS

Product Name	GCL Dimensional Properties: Panel Size Roll Width/Length m/m (ft/ft)	GCL Dimensional Properties: Average Roll Weight kN (lb)	GCL Dimensional Properties: Bentonite Mass/Unit Area Exclusion of Glue Weight kN/m^2 (lb/ft^2)	GCL Hydraulic Properties: Flux at i = 1.0 [1] ASTM D 5084 [2] m/s (cm/sec)	Base Bentonite Properties: Swell Index USP-NF-XVII (min) ml/2g	Base Bentonite Properties: Fluid Loss API-13B (ml)	GCL Structural Components: Upper Geosynthetic: Type or Structure	GCL Structural Components: Upper Geosynthetic: Weight ASTM D 3776 g/m^2 (oz/yd^2)	GCL Structural Components: Lower Geosynthetic: Type or Structure	GCL Structural Components: Lower Geosynthetic: Weight ASTM D 3776 or Thickness ASTM D 5199 g/m^2 or mm (oz/yd^2 or mil)	GCL Tensile Properties ASTM D 4595 for geotextiles as lower component ASTM D 638 for geomembranes as lower component: Tensile Strength kN/m (lb/in)	GCL Tensile Properties ASTM D 4595 for geotextiles as lower component ASTM D 638 for geomembranes as lower component: Tensile Elongation %	Manufacturer's Suggested Applications [3]

Colloid Environmental Technologies Co. (CETCO)

Claymax 200 R	4.2/45.7 (13.83/150)	1044 kg (2300)	3.7 [a] (0.75)	5×10^{-11} (5×10^{-9})	24	18	woven	108 (3.2)	nonwoven	203 (6.0)	13.1 [b] (75)	>10	LL
Claymax 500 SP	4.2/45.7 (13.83/150)	1044 kg (2300)	3.7 [a] (0.75)	5×10^{-11} (5×10^{-9})	24	18	woven	108 (3.2)	woven	108 (3.2)	26.3 [b] (150)	>10	LL
Claymax 600 SP	4.2/45.7 (13.83/150)	1044 kg (2300)	3.7 [a] (0.75)	5×10^{-11} (5×10^{-10})	24	18	woven	108 (3.2)	woven/FML composite	223 (6.6)	26.3 [b] (150)	>10	LC, SIC
Bentomat ST	4.6/45.7 (15/150)	1090 kg (2400)	3.7 [a] (0.75)	5×10^{-11} (5×10^{-9})	24	18	woven	112 (3.3)	nonwoven	203 (6.0)	15.8 [b] (90)	>10	LL, LC, SIC
Bentomat DN	4.6/45.7 (15/150)	1112 kg (2450)	3.7 [a] (0.75)	5×10^{-11} (5×10^{-9})	24	18	geotextile	203 (6.0)	nonwoven	203 (6.0)	26.3 [b] (150)	>10	LL

GSE Lining Technology Inc.

GSE GundSeal	5.3 [c]/61 [b] (17.5/200)	1900 (4200)	0.048 (1.0)	$<4 \times 10^{-14}$ ($<4 \times 10^{-12}$)	28	18	none	NA	smooth geomembrane	0.3–2.0 mm (12–80 mil)	varies w/ GM type	>10	caps, containment
GSE GundSeal Textured	5.3 [c]/62 [b] (17.5/170)	1900 (4200)	0.048 (1.0)	$<4 \times 10^{-14}$ ($<4 \times 10^{-12}$)	28	18	none	NA	textured geomembrane	0.75–2.0 mm (30–80 mil)	varies w/ GM type	>10	caps, containment, slope applications

R002911

Appendix P

Outline of Closure Safety Plan

Frostbite:

- Symptoms: Just before frostbite occurs skin may be flushed, then changes to white or grayish-yellow. Pain may be felt early then may subside. Blisters may appear, affected part feels very cold and/or may be numb. Treatment: Bring victim indoors, cover the frozen area, provide extra clothing and blankets. Rewarm frozen area quickly by immersion in warm water--NOT HOT WATER. DO NOT RUB THE PART. Seek medical attention.

Heat Exhaustion:

- Caused by exposure to heat, either sun or indoors. Symptoms: Near normal body temperature. Skin is pale and clammy. Profuse sweating, tiredness ,weakness ,headache, perhaps cramps, nausea, dizziness and possible fainting. Treatment: Keep victim in lying position and raise feet. Loosen clothing, apply cool wet cloths. If conscious, give sips of water. Seek medical attention immediately.

Sunstroke:

- Symptoms: Body temperature is high. Skin is hot, red and dry. Pulse is rapid. Victim may be unconscious. Treatment: Keep victim in lying position with head elevated. Remove clothing and repeatedly sponge the bare skin with cool water. Seek medical attention immediately.

Poisoning:

- Call the Poison Control Center for instruction on immediate care. If victim becomes unconscious, keep the airway open. If breathing stops, begin rescue breathing. Call EMS immediately.

Poison Ivy:

- Remove contaminated clothing. Wash all exposed areas thoroughly with soap an water. If rash is mild, apply calamine lotion or other soothing skin lotion. If a severe reaction occurs, seek medical attention.

Puncture Wounds:

- If puncture wound is deeper than skin surface, seek medical attention. Serious infection can occur unless proper treatment is received.

Sprains:

- Elevate injured part and apply ice bag or cold packs. Do not soak in hot water. Immobilize affected part and seek medical attention.

Unconsciousness:

- Never attempt to give anything by mouth. Keep victim lying flat, maintain open airway. If victim is not breathing, perform rescue breathing and call EMS immediately.

M. Emergency References
(Post on Site)

Site: See SSS. Scope I.D.: See SSS.

1. Emergency Resources:

* Ambulance	( ) See SSS.
* Hospital Emergency Center	( ) See SSS.
* Hospital Life Line	( ) See SSS.
* Hospital Poison Center	( ) See SSS.
* Local Police	( ) See SSS.
* State Police	( ) See SSS.
* Fire Department	( ) See SSS.
* Explosives Disposal Unit	( ) See SSS.
* Radio Channel	

2. Emergency Contacts:

* Foth & Van Dyke Consulting Physician

Office: (920) 497-7771 - Dr. Kiser Home: ( )

* Corporate Health & Safety Coordinator

Office: (920) 497-2500 - Russell T. Janeshek Home: (920) 469-1556

* Project Coordinator

Office: ( ) Home: ( )

* Agency Contact

Office: ( ) Home: ( )

* National Response Center (800) 424-8802

N. Evacuation/Hospital Routes
(Post on-Site)

In the event that a situation develops necessitating the evacuation of the work area, procedures described in Section L.-2, (Site Evacuation Procedures) will be followed. In addition, Foth & Van Dyke personnel will follow evacuation directions given by local emergency response personnel.

If a serious injury should occur during the course of work activities, Foth & Van Dyke personnel will render emergency First Aid assistance only in a manner consistent with their level of training, and in accordance with established procedures. As general rule, Foth & Van Dyke Personnel will NOT transport injured persons for medical treatment, but will activate the Emergency Medical Services system (EMS) for this purpose. This will also apply in the event of minor, non-life threatening injuries when the location and route to the nearest medical facility is not readily known.

All injuries, regardless of their severity, will be reported to the employee's immediate supervisor, the corporate health safety coordinator, and the human resources department as soon as is practically possible.

Note: Indicate location(s) of nearest telephone(s).

O. Site Safety Plan Review

This document or its equivalent shall be signed by each member of the Foth & Van Dyke site investigation team prior to the first site visit.

I have read and understand the contents of this Site Safety Plan and will comply with its provisions, requirements, and restrictions.

Site: _____

Location: See SSS

Name (print)	Signature	Date

P. Site Safety Plan Follow-Up Report

1. Was the Site Safety Plan Followed?

   _____ Yes _____ No

2. If no, explain all changes to the Site Safety Plan:

   _____

   _____

   _____

   _____

   _____

   _____

   _____

3. Reason for changes:

   _____

   _____

   _____

   _____

   _____

   _____

   _____

4. Report prepared by: _____
   (Site Safety Coordinator)

   Date: _____

5. Report reviewed by: _____
   (Corporate Health & Safety Coordinator)

   Date: _____

Q. Incident Report

Report Number: _____

Site: _____

Location: _____

Name of Affected Individual: _____

Address: _____

Age: _____ Sex: _____ Social Sec No.: _____ - _____ - _____

Description of Incident: _____

_____

_____

Date of Incident: _____ Time of Incident: _____

Work Days Lost? _____ Yes _____ No Number of Days _____

Was Medical Care Required? _____ Yes _____ No

If Yes, Describe Care Received (attach medical record):

_____

_____

Date Care Received: _____ Location: _____

Name of Attending Physician: _____

Outcome of Treatment: _____

_____

Future Preventive Measures/Corrective Action Taken: _____

_____

_____

Report Prepared By: _____ Date: _____

Report Reviewed By: _____ Date: _____

R. Addendum To Site Safety Plan

Use this page to add additional site data or describe any special circumstances that have become apparent after the original preparation of this Site Safety Plan. Include any changes in site conditions, PPE and monitoring modifications and other items as appropriate.

See SSS.

Attachment A

Foth & Van Dyke Health and Safety Plan

Site: See SSS

Date: See SSS

The information presented in this Site Safety Plan is intended solely to describe the health and safety measures applicable to Foth & Van Dyke personnel engaged in field activities at UST investigation, removal, and/or remediation sites. Foth & Van Dyke makes no warranties regarding the accuracy of the site safety plan and nothing contained therein shall be construed as providing recommendations or direction, either expressed or implied, regarding health and safety measures to be taken by anyone other than Foth & Van Dyke personnel. Foth & Van Dyke disclaims all liability for the actions and omissions of non-Foth & Van Dyke personnel. Non-Foth & Van Dyke personnel shall be responsible for complying with site safety plans and local, state, and federal regulations applicable to non-Foth & Van Dyke personnel.

Foth & Van Dyke
Program Safety Plan for Soil/Sludge Removal/Site Investigation/Remediation

Site-Specific Supplement (SSS)

A. Background

1. Site Name: _____
2. Location: _____
3. Client Contact: _____ Phone: _____
4. Site Safety Coordinator: _____ 5. Scope I.D.: _____
6. Site Investigation Team:

Name	Function
_____	Project Manager
_____	_____
_____	_____

7. Plan Prepared by: _____ Date: _____

B. Site Characterization

1. Facility Description: _____
2. Site Status: _____ Active _____ Inactive _____ Unknown
3. Prevailing Wind: From _____ To _____
4. Storage/Disposal Method

Method	Number	Waste Quantity (units)
_____	_____	_____
_____	_____	_____

5. Sensitive Areas (if any)

_____

_____

_____

6. History of Public Complaint and Agency Activities

_____

_____

_____

C. Site Activities

1. Proposed Date(s) of Activities: _____

2. Proposed Scope of Work: (If different than that described in Program Safety Plan)

_____

M. Emergency References
(Post on Site)

Site: _____ Scope I.D.: _____

3. Emergency Resources:

* Ambulance ( ) _____
* Hospital Emergency Center ( ) _____
* Hospital Life Line ( ) _____
* Hospital Poison Center ( ) _____
* Local Police ( ) _____
* State Police ( ) _____
* Fire Department ( ) _____
* Explosives Disposal Unit ( ) _____
* Radio Channel _____

4. Emergency Contacts:

* Foth & Van Dyke Consulting Physician

Office: (920) 497-7771 - Dr. Kiser Home: ( )

* Corporate Health & Safety Coordinator

Office: (920) 497-2500 - Russ Janeshek Home: (920) 469-1556

* Project Manager _____

Office: _____

* Agency Contact _____

Office: ( ) Home: ( )

* National Response Center

(800) 424-8802

R. Addendum to Site Safety Plan

Use this page to add additional site data or describe any special circumstances that have become apparent after the original preparation of the Program Safety Plan and Site-Specific Supplement. Include any changes in, or unusual site conditions, PPE and monitoring modifications, changes in scope of work, and other items as appropriate.

Foth & Van Dyke
Program Safety Plan for Soil/Sludge Removal/Site Investigation/Remediation

A. Background

1. Site Name: See Site Specific Supplement (SSS).

2. Location: See SSS.

3. Client Contact: See SSS. Phone: See SSS.

4. Site Safety Coordinator: See SSS. 5. Scope I.D.: See SSS.

6. Site Investigation Team:

Name	Function
See SSS.	See SSS.

* Project Manager _____ (__/__/__)

* Project Coordinator _____ (__/__/__)

* Corporate Health & Safety Coordinator _____ (__/__/__)

Russell T. Janeshek

B. Site Characterization

1. Facility Description: See SSS.

2. Storage/Disposal Method:

	Method	Number	Waste Quantity (units)
_____	Surface impoundment	_____	_____
_____	Pile	_____	_____
_____	Drum	_____	_____
_____	Tank (above ground)	_____	_____
_____	Tank (below ground)	_____	_____
_____	Landfill	_____	_____
_____	Landfarm	_____	_____
_____	Open dump	_____	_____
_____	Other	_____	_____

3. Containment:

_____ Adequate _____ Moderate _____ Inadequate/poor

_____ Insecure/dangerous Explain: _____

4. Site Status: See SSS

_____ Active _____ Inactive _____ Unknown

5. Waste Accessibility:

Waste easily accessible? _____ Yes _____ No

Explain: _____

6. Exposure Potential: _____

_____ High _____ Moderate _____ Low

7. Waste Categories:

Solid _____ Liquid _____ Gas _____ Sludge _____

Other _____

8. Sensitive Areas: See SSS, if applicable. _____

_____

_____

_____

_____

9. Prevailing Wind: From See SSS. _____ To _____

10. Known, Suspected or alleged Contamination:

_____ Groundwater
_____ Surface water
_____ Air
_____ Drinking water
_____ Sewers and storm drains
_____ Other: Soils (contamination with product from UST[s])

11. Waste Characterization:

_____	Toxic	_____	Soluble	_____	Highly volatile
_____	Corrosive	_____	Infectious	_____	Explosive
_____	Radioactive	_____	Flammable	_____	Reactive
_____	Persistent	_____	Ignitable	_____	Incompatible

12. Potential Hazardous Conditions:

_____ Fire/explosive conditions
_____ Worker exposure/injury
_____ Unstable waste containment
_____ Damage to off-site property
_____ Other: Vehicular & pedestrian traffic, drill rig hazards

13. Site Features and Hazards:

14. History of Public Complaint and Agency Actions:

See SSS, if applicable.

C. Hazard Assessment

Substance	Maximum Concentration (Units)	Medium[1,2]	PEL/TLV[3]	Cancer Status[4]	Route[5]

[1]Environmental Medium: Air (A), Surface Water (SW), Groundwater (GW), Soil (S), Sludge (SL), Drinking Water (DW)

[2]List the maximum concentration for each medium separately.

[3]Use the lower of the two exposure limits (PEL/TLV).

[4]Cancer status; EPA Classification:

Group A: Human carcinogen - Sufficient evidence to support a causal association between exposure and cancer

Group B1: Probable Human Carcinogen - Limited evidence of carcinogenicity in humans.

Group B2: Probable Human Carcinogen - Sufficient evidence of carcinogenicity in animals, inadequate evidence of carcinogenicity in humans.

Group C: Possible Human Carcinogen - Limited evidence of carcinogenicity in animals.

Group D: Not Classified - Inadequate evidence of carcinogenicity in animals.

Group E: No Evidence of Carcinogenicity in Humans - No evidence for carcinogenicity in at least two adequate animal tests or in both epidemiologic and animal studies.

[5]Route: (I)-Inhalation, (A)-Skin absorption, (ING)-Ingestion, (C)-Eye/Skin contact.

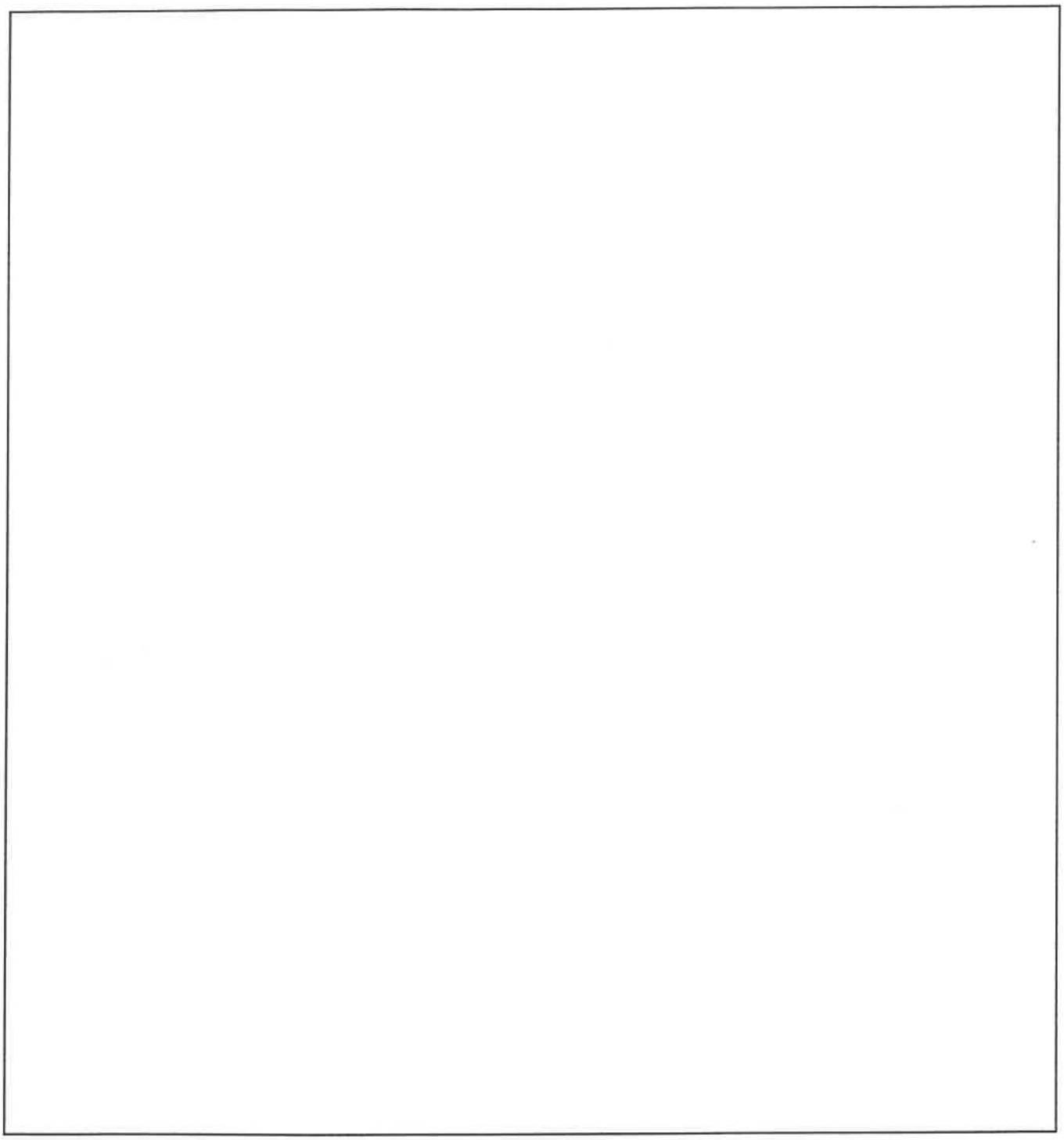
D. Site Activities

1. Proposed Date(s) of Activities:

   See SSS.

2. Proposed Scope of Work:

E. Site Map



Delineate the following: contaminated area(s), clean area(s), restricted area(s), and decontamination zone(s).

F. Medical Requirements

Foth & Van Dyke personnel, whose presence may be required on a hazardous waste site where exposure to toxic or hazardous substances exists, shall participate in the Foth & Van Dyke medical monitoring program as specified in the Group Health and Safety Program. All medical examinations performed for Foth & Van Dyke personnel shall be conducted in accordance with OSHA Standards 29 CFR 1910.120 and 1910.134.

The requirements for a standard medical examination are defined in the Group's Health and Safety Program. However, it may be necessary to require specific clinical tests for certain hazardous waste sites. The specific tests will be determined by the Corporate Health and Safety Coordinator in consultation with the company physician, Senior Toxicologist and/or Site Safety Coordinator and may be based on the results of surveillance monitoring or a circumstance which results in an exposure to a specific substance. Any site specific testing shall be identified below:

1. Site-Specific Clinical Tests:

Parameter	Required Testing	Action Level

2. Site-Specific Surveillance Records

   Records of surveillance monitoring results will be submitted to and maintained by the Corporate Health and Safety Coordinator. A copy of these results will also be placed in the project file.

2. Medical Data Summary:

This form shall be completed by Foth & Van Dyke personnel prior to commencement of activities at a hazardous waste site. It shall be kept at the site for the duration of activities. This form must be delivered to the attending physician when medical assistance is required.

Site: _____

Location: _____

Name: _____

Address: _____

Home Phone: (_____) _____

Height: _____ Weight _____ Age: _____ Sex: _____

In case of emergency contact: _____

Address: _____

_____ Phone: (_____) _____

Allergies: _____

_____

Recent illnesses: _____

_____

Previous exposure to hazardous substances?

_____ Yes _____ No

Current medication: _____

Medical restrictions: _____

Name of personal physician: _____

Address: _____

_____

Phone: (_____) _____

G. Training Requirements

All Foth & Van Dyke personnel must complete at least 40 hours of health and safety training for hazardous waste operations as required by OSHA Standard 29 CFR 1910.120. The training must be updated on an annual basis (eight hours). The dates of certification for all Foth & Van Dyke on-site personnel are recorded below, or are available at the Corporate office.

1. Certification of Health and Safety Training:

Name	Date of Initial Certification	Date of Last Refresher Course

2. Confined Space Entry:

As a general rule, Foth & Van Dyke employees who are engaged in activities at hazardous waste sites are prohibited from entering confined spaces (e.g., trenches, holes, process vessels, storage tanks, etc.). However, if it becomes absolutely necessary to enter confined space to accomplish a required task, the Corporate Health and Safety Coordinator and Project Coordinator will establish specific procedures to be followed on a task-by-task basis.

H. Surveillance/Exposure Monitoring

Calibration and maintenance of monitoring equipment shall be performed in accordance with Foth & Van Dyke Standard Operating Procedures.

1. Monitoring Equipment Checklist:

Type of Equipment	Serial No.	SOP	Date Calibrated
Photovac TIP		XX	
Combustible Gas Ind.		XX	
Draeger Pump or equiv. (Benzene)		XX	N/A

2. Surveillance Methods:

During drilling, excavation, etc., the TIP shall be used to scan each sample collected and to monitor the ambient air and the air in the breathing zones of the Foth & Van Dyke workers at the site. The combustible gas indicator shall be used to scan the ambient air and shall also be used to spot-check the excavation, etc. areas for explosive vapors. The Draeger pump or its equivalent shall be used to obtain benzene readings in the breathing zones of Foth & Van Dyke employees. Draeger Tube, TIP, and explosimeter readings will be recorded and retained in the project file, as per SOP. Personnel exposure monitoring will be done periodically on longer term projects, or on those sites where there is a reasonable possibility that permissible exposure limits may be approached.

Employee exposure records will be maintained as required by federal law.

I. Site Safety Procedures

Site safety procedures are the responsibility of the party performing the task. The excavating/drilling contractor is usually responsible for the following:

1. Perimeter Establishment:

   The contractor will be responsible for establishing a perimeter of appropriate size relating to the activity involved and the size of the site.

2. Site Entry Procedures:

   The necessity for special site entry procedures will be determined on a site-by-site basis by the contractor in consultation with Foth & Van Dyke. If conditions warrant special site entry procedures, these procedures and rationale will be forwarded to Foth & Van Dyke by the contractor and documented in the addendum to the Site-Specific Supplement (SSS) to the Program Safety Plan.

3. Site Control:

   Contractor

   The contractor is responsible for minimizing the potential for contaminant transfers, personnel exposure to hazardous materials, and work place injury.

   Foth & Van Dyke

   The following procedures shall be observed to minimize the potential for contaminant transfer, personnel exposure to hazardous materials, and work place injury relating to Foth & Van Dyke work-related activities:

   a. Follow contractors' procedures for activities around equipment.

   b. Decontaminate all Foth & Van Dyke equipment, instruments, and non-disposable personal protective equipment (PPE).

   c. No disposable items generated by Foth & Van Dyke activities shall be removed from the site.

4. PPE Requirements:

Project Task[1]	Level of Protection (A, B, C, D)
Soil monitoring, sampling	D
Groundwater monitoring, well construction	D
Vapor manifold installation	D

[1]Project Task: soil sampling, drilling, decontamination, etc.

Note: Chemical resistant gloves used in the level D ensemble will also be waterproof and resistant to degradation by water.

5. PPE Modifications:

Orange safety vests are mandatory if working in high-traffic areas or roadways. Full-face, NIOSH-approved, air purifying or supplied-air (air-line or SCBA) respirators will be worn if monitoring of site vapors indicates VOCs in excess of permitted amounts. Other PPE will be worn as necessary to prevent contact with contaminated soils and waters encountered.

6. PPE Selection Criteria:

The primary exposure concern is for benzene, which has been identified as a human carcinogen. PPE selected must be resistant to benzene and other compounds expected to be present. In addition, on sites where PCBs may be encountered (such as waste oil storage facilities), care must be taken to avoid skin contact with soil and water that may be contaminated with this material, as it has been identified as a potential human carcinogen.

7. Respirator Cartridge Type:

Organic Vapor, or combination Organic Vapor/High Efficiency Particulate (HEPA).

8. Action Levels (i.e., limitations to assigned tasks, PPE requirements and rationale, conditions necessitating PPE modifications and/or withdrawal from site):

   Instrument readings from the breathing zone will be taken at a minimum of hourly and whenever there is an indication of a change in background conditions (i.e., new or unusual odors, spills of potentially hazardous materials, smoke, etc.). These readings shall be recorded in the field book.

   Draeger tubes will be will be used when TIP readings consistently exceed five units in the breathing zone.

   If TIP readings consistently exceed 30 units, upgrading to full-face, air purifying respirators will be required. If Draeger tube monitoring indicates the presence of benzene in any concentration, upgrading to full-face, air purifying respirators will be required. Benzene concentrations greater than 10 ppm will require supplied-air respiratory equipment.

   If readings reach or exceed ten percent of the LEL as reported by the combustible gas indicator, cease activities, leave the work area, and allow the site to ventilate.

J. Personal Protective Equipment (PPE)

1. **Level A** protection should be selected when the highest level of respiratory, skin, eye and mucous membrane protection is needed.

   - Positive-pressure, self-contained, breathing apparatus (MSHA/NIOSH approved) **(REQUIRED)**
   - Fully encapsulated, chemical resistant suit **(REQUIRED)**
   - Chemical-resistant inner and outer gloves **(REQUIRED)**
   - Chemical-resistant boots with steel toe and shank **(REQUIRED)**
   - Chemical-resistant coveralls
   - Two-way radio communication **(REQUIRED)**

2. **Level B** protection should be selected when the highest level of respiratory protection is needed, but with a lesser degree of skin and eye protection.

   - Positive-pressure, self contained, breathing apparatus (MSHA/NIOSH approved) **(REQUIRED)**
   - Chemical-resistant clothing (coveralls, hooded two-piece, chemical-resistant splash suit; or disposable chemical-resistant coveralls) **(REQUIRED)**
   - Coveralls (under splash suit)
   - Chemical-resistant inner and outer gloves **(REQUIRED)**
   - Chemical-resistant boots with steel toe and shank **(REQUIRED)**
   - Two-way radio communication
   - Hard hat **(REQUIRED)**

3. **Level C** protection should be selected when the type and concentration of hazardous airborne substance is known, the criteria for using air-purifying respirators is met, and skin and eye exposure is unlikely. Monitoring of the air must be performed to comply with OSHA regulations and to ensure respirator effectiveness.

   - Full face, air-purifying respirator (MSHA/NIOSH approved) with appropriate cartridges **(REQUIRED)**
   - Chemical-resistant clothing (coveralls, hooded two-piece chemical-resistant splash suit; or disposable, chemical-resistant coveralls **(REQUIRED)**
   - Chemical-resistant inner and outer gloves **(REQUIRED)**
   - Chemical-resistant boots with steel toe and shank**(REQUIRED)**
   - Two-way radio communication
   - Hard hat **(REQUIRED)**
   - Escape respirator

4. **Level D** is primarily a work uniform. It shall not be worn on site where respiratory or skin hazards exist.

   - Protective coveralls and protective gloves
   - Boots with steel toe and shank **(REQUIRED)**
   - Hard hat **(REQUIRED)**
   - Safety glasses

Note: A Thermal Luminescent Detector (TLD) badge is required if radiation is present or suspected.

K. Decontamination

1. Personnel Decontamination Procedures:

   Wash hands before eating. Wash gloves, boots, respirators, etc., in warm soapy water. Rinse with clean water. Launder work clothes daily. Discard disposable PPE on site.

2. Sampling Equipment Decontamination Procedures:

   All sampling equipment will be washed in detergent solution, with clean water rinse, followed by distilled water spray rinse, after each sample is taken. All decontamination waste will be left on site for disposal by the site owner or his designee.

3. Waste Disposal Procedures:

   On-site: Excavated contaminated soil to be placed on an impermeable surface (concrete, asphalt) or on gasoline-resistant plastic ground covering, and covered with plastic when complete. Berm perimeter of stockpile area as necessary. Decontamination fluids will be containerized as appropriate and left on site.

   Off-site: Treatment or disposal method for contaminated soil, etc., will depend on analytical results or site owner preference, and may be subject to regulatory agency approval.

L. Emergency Plan

1. Emergency Personnel Responsibilities:

Name	Responsibility
Russell T. Janeshek	Corporate H&S Coordinator
See SSS.	Project Manager

2. Site Evacuation Procedures:

   Proceed upwind from the excavation or work area to a point at least 200 feet away. In the event that conditions warrant it, immediately leave the site and meet at predetermined location. Contact personnel listed above and notify emergency responders. **(Note: Foth & Van Dyke personnel are prohibited from engaging in emergency response procedures.)**

3. Emergency Decontamination:

   Remove all affected PPE or clothing, starting with boots and gloves. Wash all skin areas which have come into contact with product with clean water. Contact Emergency Personnel listed above for further guidance.

4. Emergency Equipment:

   First aid kit with burn supplies. Fire extinguisher (minimum 2.5 lb ABC rated).

5. Emergency Personnel Training Requirements:

   First Aid.

6. First Aid:

Bites:

- Animal Bites: Thoroughly wash the wound with soap and water. Flush the area with running water and apply a sterile dressing. Immobilize affected part until the victim has been attended by a physician. See that the animal is kept alive and in quarantine. Obtain the name and address of the owner of the animal.

- Insect Bites: Remove "stinger" without squeezing if present. Keep affected part below the level of the heart. Apply ice bag. For minor bites and stings apply soothing lotions such as calamine.

Burns and Scalds:

- Minor Burns: DO NOT APPLY VASELINE OR GREASE OF ANY KIND. Apply cold water until pain subsides if there are no areas of open skin. Cover with a dry, sterile dressing. Do not break blisters or remove tissue. Seek medical attention.

- Severe Burns: Do not remove adhered particles of clothing. Do not apply ice or immerse in water. Do not apply any ointments or grease. Cover burns with thick, sterile dressings. Keep burned feet or legs elevated if possible. May need to treat for shock.

- Chemical Burns: Wash away the chemical soaked clothing with large amounts of water. Remove victim's chemical soaked clothing. If dry lime, brush away before flushing. Apply sterile dressing and seek medical attention.

Cramps:

- Symptoms: Cramps in muscles of abdomen and extremities. Heat exhaustion may also be present. Treatment: Same as for heat exhaustion.

Cuts:

- Apply pressure with sterile gauze dressing and elevate the area until bleeding stops. Apply bandage and seek medical attention.

Eyes:

- Foreign Objects: Keep the victim from rubbing his eye. Flush the eye with water. If flushing fails to remove the object, apply a dry protective dressing to both eyes and seek medical attention.

- Chemicals: Flood the eye thoroughly with water for 15 minutes. Cover the eye with a dry sterile pad and seek medical attention.

Fainting:

- Keep the victim lying down. Loosen tight clothing. If victim vomits, roll him onto his side or turn his head to the side. Maintain an open airway. Bathe his face gently with cool water. Unless recovery is prompt, seek medical attention.

Fractures:

- Deformity of an injured part usually means a fracture. If a fracture is suspected, splint the part. DO NOT ATTEMPT TO MOVE THE VICTIM. Seek medical attention immediately.

Attachment 3

Attachment 3

RCRA Part A Permit Application

R002945

OMB# 2050-0024; Expires 04/30/2024

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (Select only one.)

☐	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility, a reverse distributor, and/or generator of ≥ 1,000 kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in **one or more months of the reporting year** (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☑	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

I	L	D	0	0	5	1	7	2	3	2	5

RECEIVED
JUN 05 2025
IEPA-BOL
PERMIT SECTION

3. Site Name

Modern Plating Corporation

4. Site Location Address

Street Address	**701 South Hancock Avenue, PO Box 838**		
City, Town, or Village	**Freeport**		County **Stephenson**
State **IL**		Country **USA**	Zip Code **61032**
Latitude	**42 17'36.30" N**	Longitude **89 35'50.95" W**	☐ Use Lat/Long as Primary Address

5. Site Mailing Address ☐ Same as Location Street Address

Street Address	**PO Box 838**		
City, Town, or Village	**Freeport**		
State **IL**		Country **USA**	Zip Code **61032-0838**

6. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary) **332813**	C.
B.	D.

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 |

OMB# 2050-0024; Expires 04/30/2024

8. Site Contact Information ☐ Same as Location Address

First Name **Brandon**	MI	Last Name **Smith**
Title **President/CEO**		
Street Address **701 South Hancock Avenue, P.O. Box 838**		
City, Town, or Village **Freeport**		
State **IL**	Country **USA**	Zip Code **61032-0838**
Email **brandon.smith@modernplating.com**		
Phone **(815) 235-3111**	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner ☐ Same as Location Address

Full Name **David Servatius**	Date Became Owner (mm/dd/yyyy)

Owner Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

Street Address **701 South Hancock Avenue, P.O. Box 838**		
City, Town, or Village **Freeport**		
State **IL**	Country **USA**	Zip Code **61032-0838**
Email **dave.servatius@modernplating.com**		
Phone **(815) 235-3111**	Ext	Fax
Comments		

B. Name of Site's Legal Operator ☐ Same as Location Address

Full Name **Brandon Smith**	Date Became Operator (mm/dd/yyyy) **7/15/2022**

Operator Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

Street Address **701 South Hancock Avenue, P.O. Box 838**		
City, Town, or Village **Freeport**		
State **IL**	Country **USA**	Zip Code **61032-0838**
Email **brandon.smith@modernplating.com**		
Phone **(815) 235-3111**	Ext	Fax
Comments		

RECEIVED
JUN 05 2025
IEPA-BOL
PERMIT SECTION

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 | **OMB# 2050-0024; Expires 04/30/2024**

10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☑ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c		
	☑	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
	☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
	☐	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
☐ Y ☑ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. *Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.*		
☑ Y ☐ N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.		
☐ Y ☑ N	4. Receives Hazardous Waste from Off-site		
☐ Y ☑ N	5 Recycler of Hazardous Waste		
	☐	a. Recycler who stores prior to recycling	
	☐	b. Recycler who does not store prior to recycling	
☐ Y ☑ N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.		
	☐	a. Small Quantity On-site Burner Exemption	
	☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F006	DOO2	D007				

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 |

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

☐ Y ☑ N		1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
	☐	a. Transporter
	☐	b. Transfer Facility (at your site)
☐ Y ☑ N		2. Underground Injection Control
☐ Y ☑ N		3. United States Importer of Hazardous Waste
☐ Y ☑ N		4. Recognized Trader—If "Yes", mark all that apply.
	☐	a. Importer
	☐	b. Exporter
☐ Y ☑ N		5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
	☐	a. Importer
	☐	b. Exporter

B. Universal Waste Activities

☐ Y ☑ N		1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
	☐	a. Batteries
	☐	b. Pesticides
	☐	c. Mercury containing equipment
	☐	d. Lamps
	☐	e. Aerosol Cans
	☐	f. Other (specify) _____
	☐	g. Other (specify) _____
☐ Y ☑ N		2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☑ N		1. Used Oil Transporter—If "Yes", mark all that apply.
	☐	a. Transporter
	☐	b. Transfer Facility (at your site)
☐ Y ☑ N		2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
	☐	a. Processor
	☐	b. Re-refiner
☐ Y ☑ N		3. Off-Specification Used Oil Burner
☐ Y ☑ N		4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
	☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
	☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 | OMB# 2050-0024; Expires 04/30/2024

D. Pharmaceutical Activities

☐ Y ☑ N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if "Yes", mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
☐	a. Healthcare Facility
☐	b. Reverse Distributor
☐ Y ☑ N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
☐ Y ☑ N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☑ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.

14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☑ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☑ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
	A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility
	B. Expected closure date: _____ mm/dd/yyyy
	C. Requesting new closure date: _____ mm/dd/yyyy
	D. Date closed : _____ mm/dd/yyyy ☐ 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) ☐ 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 | **OMB# 2050-0024; Expires 04/30/2024**

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

17. Electronic Manifest Broker

☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

18. Comments (include item number for each comment)

19. Certification 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 fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy) 5/30/2025
Printed Name (First, Middle Initial Last) **David Servatius**	Title **Owner**
Email **dave.servatius@modernplating.com**	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy) **5/30/2025**
Printed Name (First, Middle Initial Last) **Brandon Smith**	Title **CEO / Presidet**
Email **brandon.smith@modernplating.com**	

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 |

OMB# 2050-0024; Expires 04/30/2024

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name James	MI R.	Last Name Stenberg
Title President/CEO		
Email jim.stenberg@modernplating.com		
Phone (815) 235-3111	Ext	Fax

2. Facility Permit Contact Mailing Address

Street Address 701 South Hancock Avenue, P.O. Box 838		
City, Town, or Village Freeport		
State IL	Country Stephenson	Zip Code 61032-0838

3. Facility Existence Date (mm/dd/yyyy)

04/01/1999

4. Other Environmental Permits

A. Permit Type	B. Permit Number	C. Description
N	F R 0 5 0 1 9 6	Wastewater discharge of treated wastes to the City of Freeport
P	1 7 7 0 2 0 A A L K 4 7 1 1	Air Emissions

5. Nature of Business

Modern Plating Corp. is a large job-shop plating business with capabilities to plate a variety of metals. The main business is electroplating and finishing of metals.

EPA ID Number | I | L | D | 0 | 0 | 5 | 1 | 7 | 2 | 3 | 2 | 5 |

OMB# 2050-0024; Expires 04/30/2024

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity (1) Amount	B. Process Design Capacity (2) Unit of Measure	C. Process Total Number of Units	D. Unit Name
	1	D	8	0	17,610	Y	001	CAMU

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes (1) Process Codes								D. Processes (2) Process Description (if code is not entered in 7.D1))
	1	F	0	0	6	4,489	T	D	8	0						
	2	F	0	0	6	4,489	T	D	8	0						
	3	F	0	0	2											Included with above contaminated soil
	4	F	0	0	6	3,553	T	D	8	0						
	5	F	0	0	2	47	T	D	8	0						

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

Attachments:
Figure A-1a Site Location Map - provides topographical map extending to at least one mile beyond property boundaries, showing outline of the facility, river, drinking water wells for item #8

Drawing A-1B - provides details of intake and discharge structures and CAMU for item #8, latitude/longitude

Figure A-2 Facility Drawing for item #9
Site Photos for item #10

Notes: There is only one treatment, storage, and disposal area, the CAMU. There are no injection wells at this facility.

R002953

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.

Modern Plating Corporation Facility

1217700558700
1217700834900
1217772245200
1217700915200
1217772155800
1217772245400

LEGEND

- Water Wells within 1/4 Mile Radius of Facility
- 1/4 Mile Radius of Facility
- Site Building
- Approximate Property Boundary

NOTES:

1. 7.5' Series USGS Topographic basemap from Esri.com, courtesy of the National Geographic Society and i-cubed.
2. Water well data from IL State Geological Survey. (https://isgs.illinois.edu/ilwater)

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.

Foth

N

0 1,000 2,000 Feet

MODERN PLATING CORPORATION

FIGURE A-1a

SITE LOCATION MAP
MODERN PLATING CORPORATION
701 SOUTH HANCOCK AVENUE
FREEPORT, IL 61032

Date: APRIL 2021	Revision Date:	
Drawn By: BJW1	Checked By: HLH	Project: 20M114

Path: Q:\Modern Plating\20M114\GIS\mxd\RCRA Part B Permit Application\Figure A-1a Site Location Map with Drinking Wells.mxd Date: 5/5/2021

ILD005172325 MODERN PLATING

R002954

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
- 760 DESIGN SUBBASE GRADES
- 3:1 SLOPE RATIO
- 2% SLOPE
- BERM
- DRAINAGE DITCH
- CULVERT
- DESIGN SIDESLOPE RISER
- 6" PERFORATED PIPE

NOTES:

1. SITE LOCATION: SE ¼ OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS.
2. AREA OUTSIDE THE REMEDIATION AREAS IS THE TOPOGRAPHICAL MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. GRADES SHOWN ARE THE TOP OF THE COMPOSITE LINER.

CORRECTIVE ACTION MANAGEMENT UNIT D80

PHASE 1

PHASE 2

LAT/LONG
42° 17' 36.17" N
89° 35' 52.31" W

BERM

SUMPS (INTAKE STRUCTURES)

SIDESLOPE RISER PIPES

SANITARY SEWER LINE (DISCHARGE STRUCTURE)

LEACHATE PUMP HOUSE

DOUBLE ENCASED FORCEMAIN

12" DIA. CMP

MW-6A MW-6B MW-6C MW-7B MW-7C MW-7D MW-8A MW-8B MW-8C MW-9 MW-13 MW-14

MH-6A MH-6B MH-6C MH-6 MH-7

SA

104+00 E 105+00 E 106+00 E 107+00 E 108+00 E 109+00 E

102+00 N 103+00 N 104+00 N 105+00 N

pw:\\PW-APS1.foth.com:PW_IE\Documents\Clients\Modern Plating\0020\M114.00\CAD\Figures\RCRA Part B Incompleteness Response\Drawing A-1B 20m114 Leachate Collection System.dgn
5/5/2021 12:00:21 PM jow

Foth

Foth Infrastructure & Environment, LLC
2121 Innovation Court, Suite 100
P.O. Box 8937
De Pere, WI 54115-5126
Phone 920-497-2500

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 INFRASTRUCTURE AND ENVIRONMENT, LLC. UNAPPROVED USE IS THE SOLE RESPONSIBILITY OF THE UNAUTHORIZED USER.

MODERN PLATING CORPORATION

FREEPORT, ILLINOIS

STEPHENSON COUNTY ILLINOIS

REVISIONS

NO.	BY	DATE	DESCRIPTION
1			RECORD DRAWING OF COMPLETED CONSTRUCTION BY:
2			RECORD DRAWINGS OF COMPLETED CONSTRUCTION CONFORMING TO CONTRACTOR AND / OR OWNERS RECORDS.
3			

DATE

BY

DATE OF PREPARATION

	BY	DATE
SURVEYED		
DRAWN	JOW	MAY 2021
DESIGNED		
CHECKED	HLH	MAY 2021

LEACHATE COLLECTION SYSTEM

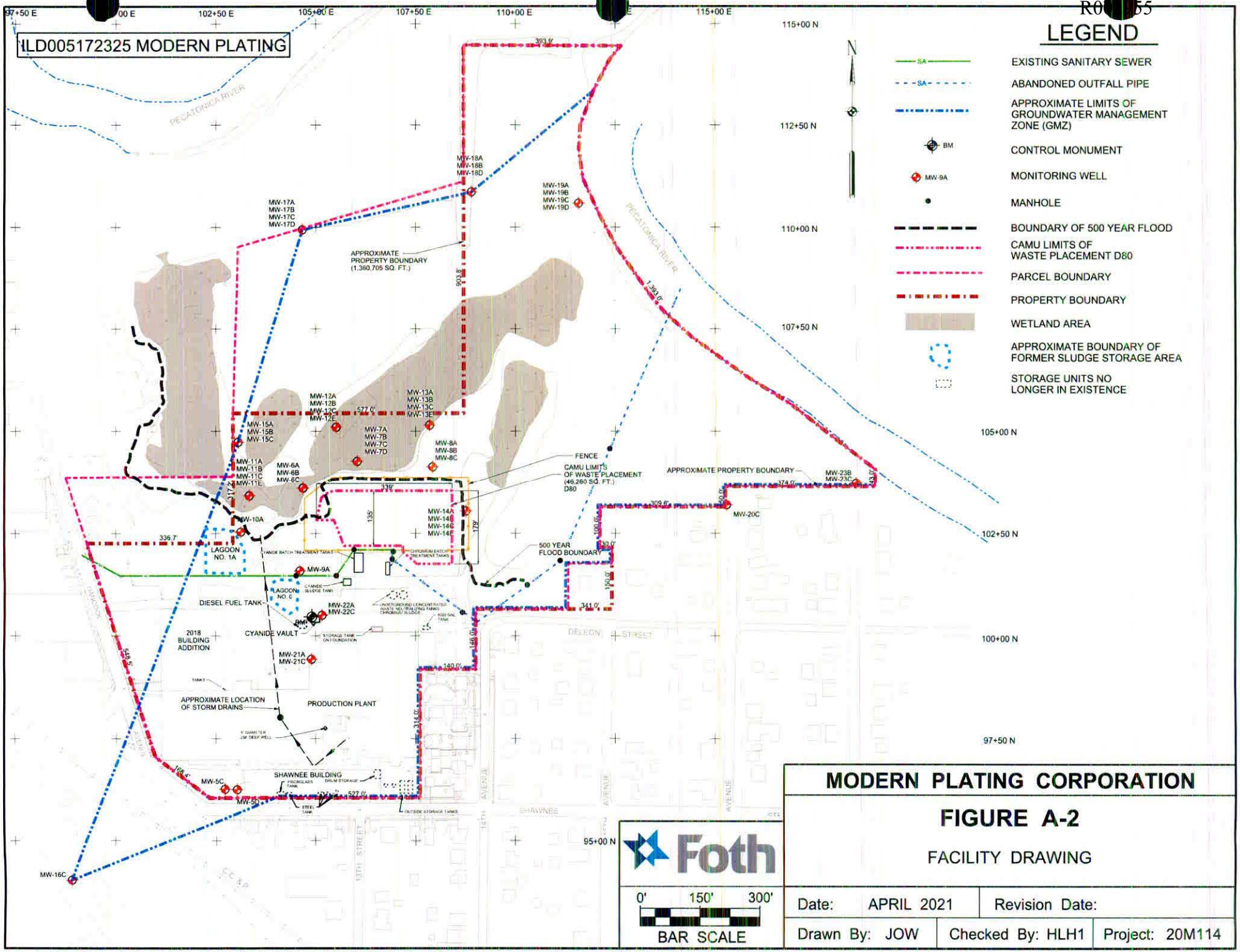
HORIZONTAL SCALE:
0 20' 40'

PROJECT ID: 20M114

A-1B

© 2021 FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

ILD005172325 MODERN PLATING



MODERN PLATING CORPORATION

FIGURE A-2

FACILITY DRAWING

Date: APRIL 2021	Revision Date:
Drawn By: JOW	Checked By: HLH1	Project: 20M114

pw:\\PW-APS1.foth.com:PW_IE\Documents\Clients\Modern Plating\0020M114.00\CAD\Figures\RCRA Part B Incompleteness Response\Figure A-2 20m114 Facility Drawing.dgn
5/5/2021 11:39:24 AM jow

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
1	4/21/21

Direction Photo Taken:
South

Photo Taken By:
D.Servatius

Description:
Water Treatment Plant

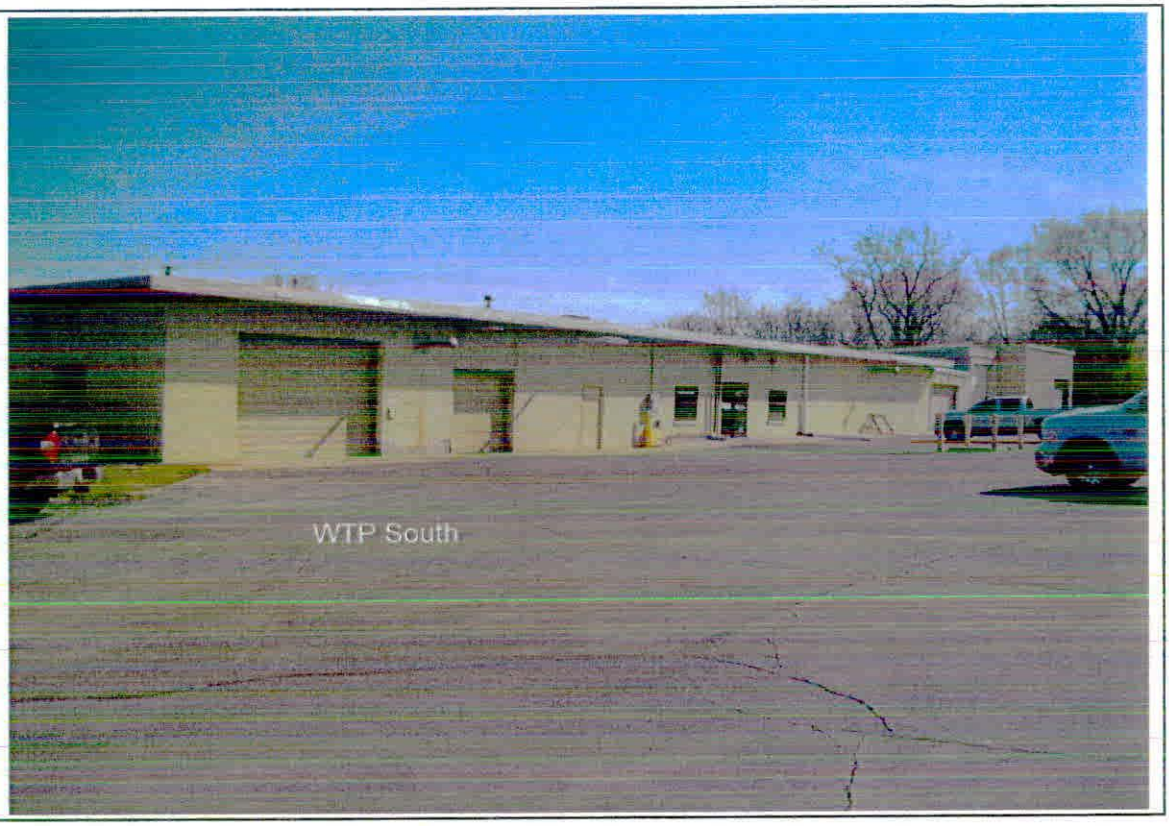


Photo No.	Date:
2	4/21/21

Direction Photo Taken:
West

Photo Taken By:
D.Servatius

Description:
Water Treatment Plant

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
5	4/21/21

Direction Photo Taken: North

Photo Taken By: D.Servatius

Description: Water Treatment Plant

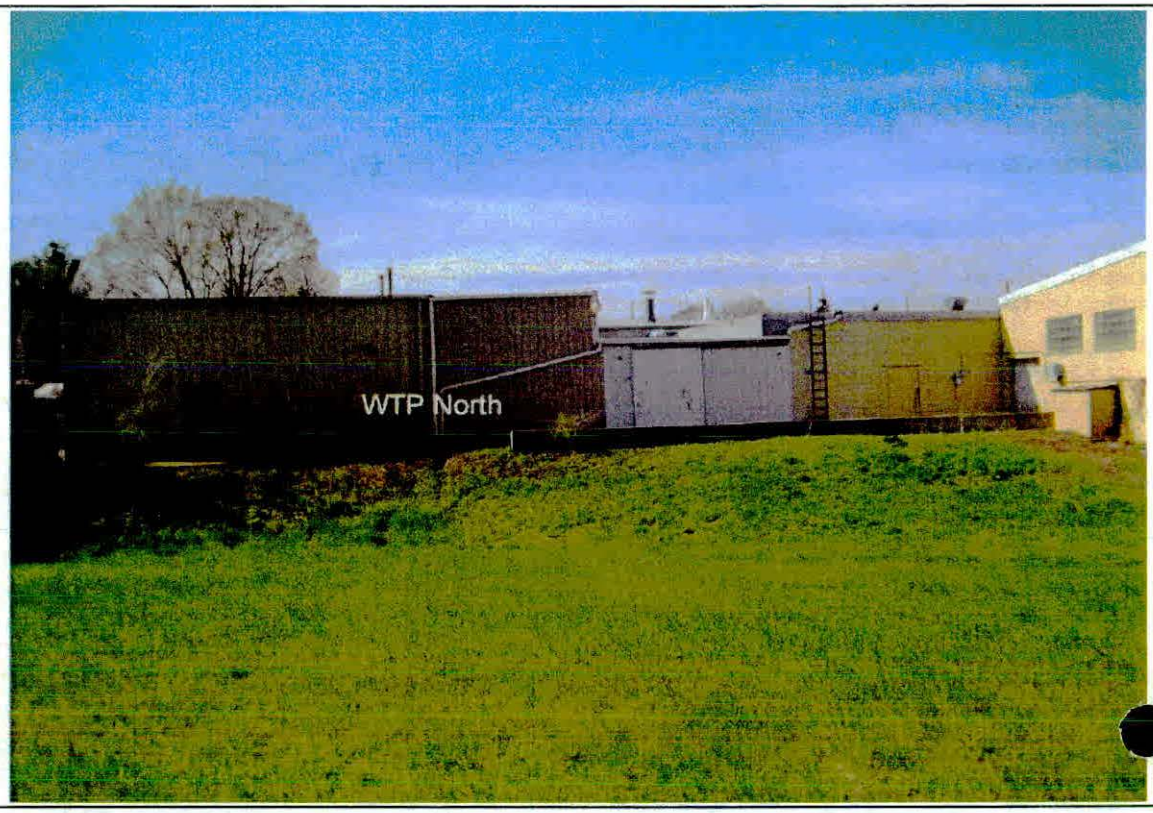
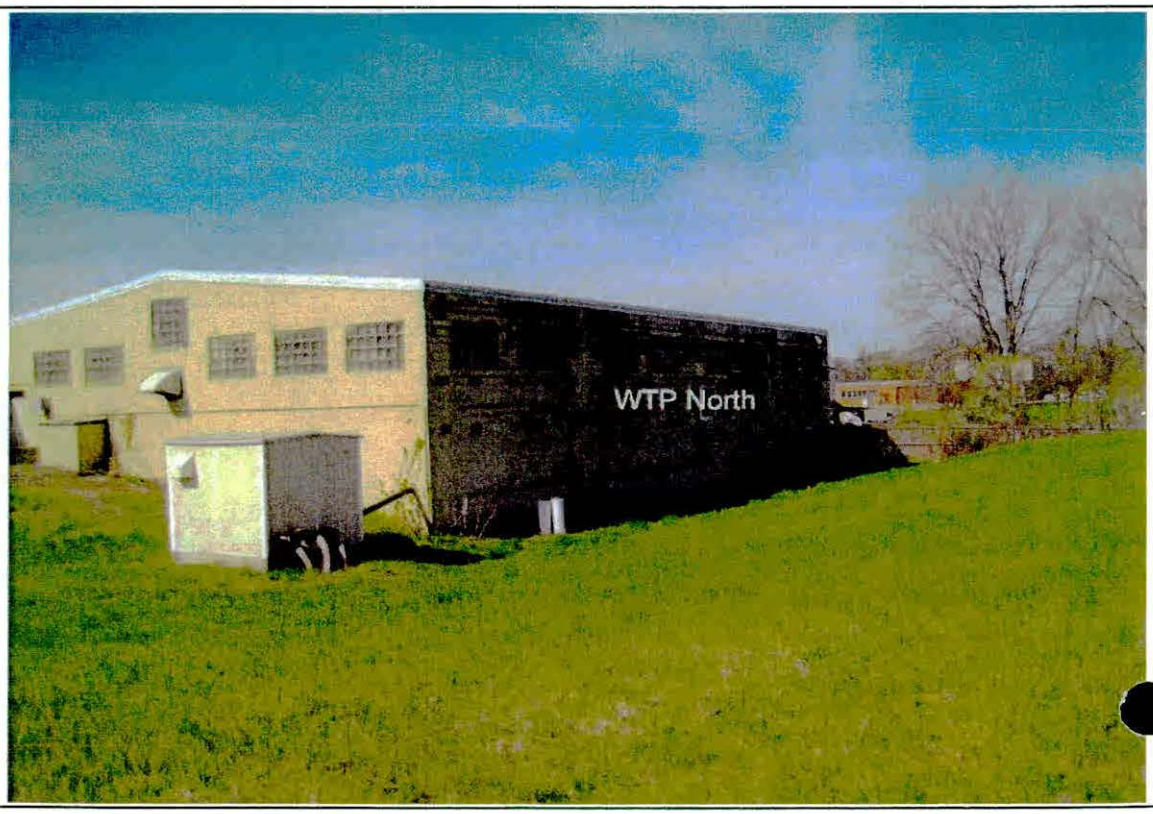


Photo No.	Date:
6	4/21/21

Direction Photo Taken: North

Photo Taken By: D.Servatius

Description: Water Treatment Plant



Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
9	4/21/21

Direction Photo Taken:
North

Photo Taken By:
D.Servatius

Description:
CAMU D80

Photo No.	Date:
10	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
CAMU D80

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
13	4/21/21

Direction Photo Taken:
North

Photo Taken By:
D.Servatius

Description:
CAMU D80

Photo No.	Date:
14	4/21/21

Direction Photo Taken:
Northwest

Photo Taken By:
D.Servatius

Description:
CAMU D80

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
17	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
Water Treatment Plant

Photo No.	Date:
18	4/21/21

Direction Photo Taken:
West

Photo Taken By:
D.Servatius

Description:
Water Treatment Plant

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
21	4/21/21

Direction Photo Taken:

Photo Taken By: D.Servatius

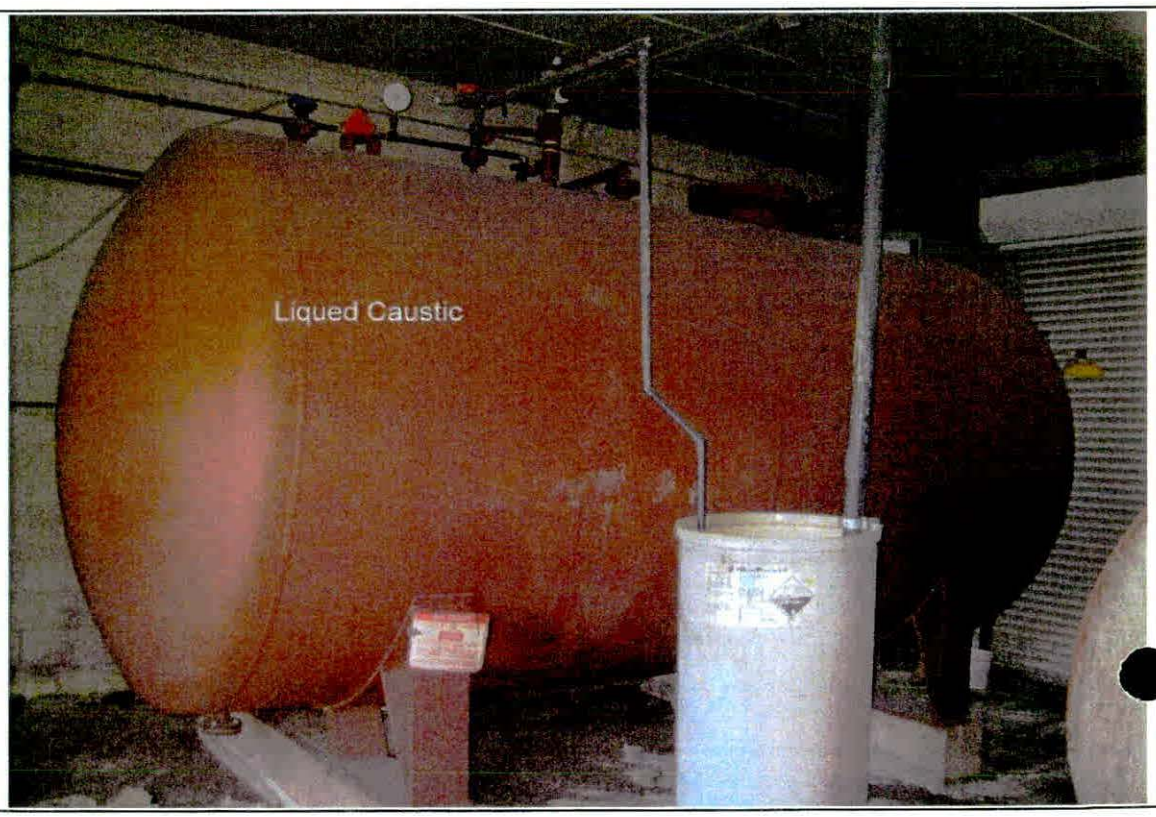
Description: Liqued Caust storage room

Photo No.	Date:
22	4/21/21

Direction Photo Taken:

Photo Taken By: D.Servatius

Description: Liqued Caustic



Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
25	4/21/21

Direction Photo Taken:

Photo Taken By: D.Servatius

Description: Water Treatment Plant Sulfuric storage tank

Photo No.	Date:
26	4/21/21

Direction Photo Taken:

Photo Taken By: D.Servatius

Description: Water Treatment Plant air compressor

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
29	4/21/21

Direction Photo Taken:

Photo Taken By: D.Servatius

Description: Chemical storage area

Photo No.	Date:
30	4/21/21

Direction Photo Taken: West

Photo Taken By: D.Servatius

Description: Modern Plating office

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
33	4/21/21

Direction Photo Taken:
West

Photo Taken By:
D.Servatius

Description:
Central site building

Photo No.	Date:
34	4/21/21

Direction Photo Taken:
West

Photo Taken By:
D.Servatius

Description:
Central site building

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
37	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
Loading dock on S Hancock Ave

Photo No.	Date:
38	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
Building on S Hancock Ave.

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
41	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
Former Shawnee Building

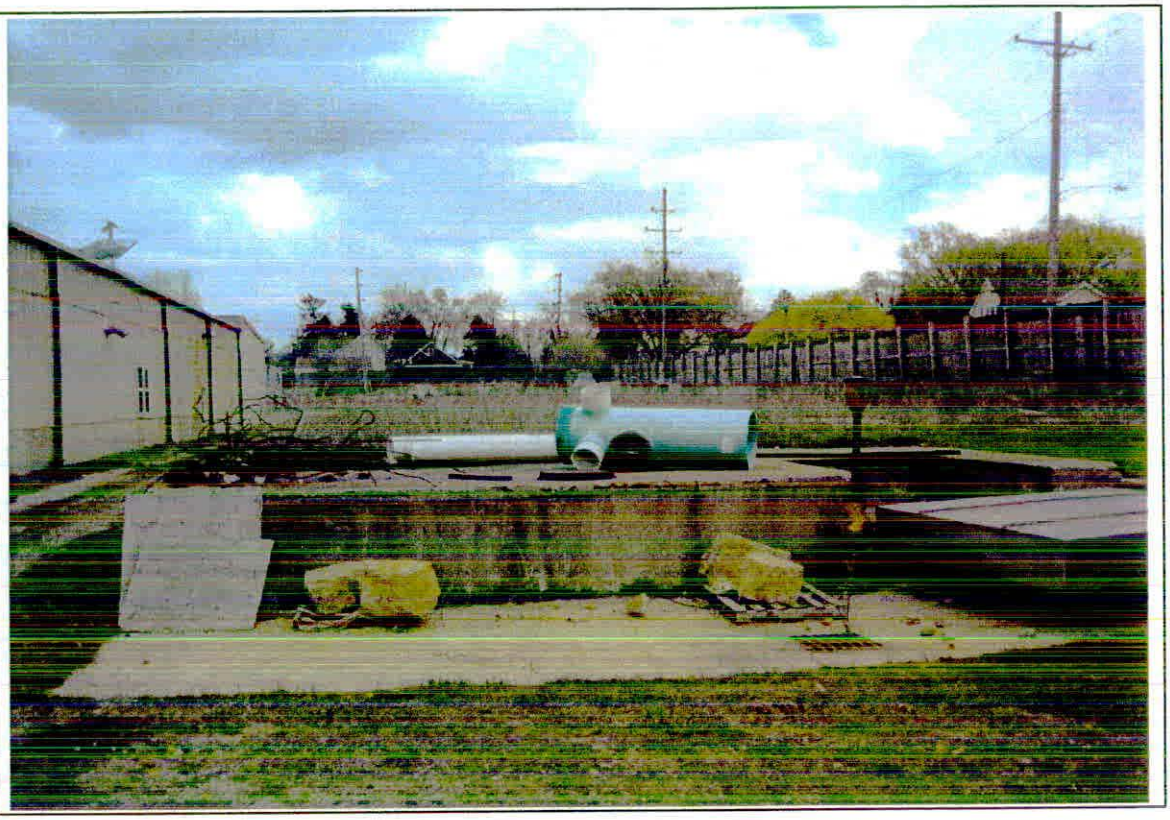


Photo No.	Date:
42	4/21/21

Direction Photo Taken:
South

Photo Taken By:
D.Servatius

Description:
Former Shawnee Building

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
45	4/21/21

Direction Photo Taken:
East

Photo Taken By:
D.Servatius

Description:
SE corner of site

Photo No.	Date:
46	4/21/21

Direction Photo Taken:
West

Photo Taken By:
D.Servatius

Description:
Former Shawnee Building, non-hazardous storage

Foth

Photographic Log

Client's Name:	Site Location:	Project No.
Modern Plating Corp.	701 South Hancock Ave., Freeport IL	20M114

Photo No.	Date:
49	4/21/21

Direction Photo Taken:
South

Photo Taken By:
D.Servatius

Description:
Storage tanks outside eastern site building

Photo No.	Date:
50	4/21/21

Direction Photo Taken:
South

Photo Taken By:
D.Servatius

Description:
Eastern site building

Takeouts

- **Letter from Modern Plating Corp. received 05/11/2021**
- **Takeout from the 1st submittal**

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1770200010 USEPA ID Number: ILD 005172325

Site Name: Modern Plating Corporation

Physical Site Location (street, road, etc.): 701 South Hancock Avenue

City: Freeport Zip Code: 61032-0838 County: Stephenson

Existing RCRA Permit (if applicable): ~~IEPA #1770200010~~ RCRA Post-Closure Permit

Log No. B-167R

II. Owner/Operator Identification

Owner Information

Name: David Servatius

Mailing Address:

701 South Hancock Avenue, P.O. Box 838, Freeport, IL 61032-0838

Contact Name: David Servatius

Phone #: (815) 235-3111

Email: dave.servatius@modernplating.com

Operator Information

Name: James R. Stenberg

Mailing Address:

701 South Hancock Avenue, P.O. Box 838, Freeport, IL 61032-0838

Contact Name: James R. Stenberg

Phone #: (815) 235-3111

Email: jim.stenberg@modernplating.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

RECEIVED
MAY 11 2021
IEPA-BOL
PERMIT SECTION

III. Permit Application Identification

Application Type

- ☐ New Part B Permit
- ☑ Part B Permit Renewal
- ☐ Class 1 Modification
- ☐ Class 1* (prior approval required) Modification
- ☐ Class 2 Modification
- ☐ Class 3 Modification
- ☐ Additional information to supplement UIC Class I application Log Number
- ☐ Remedial Action Plan Permit (RAPP)
- ☐ Sig RAPP Modification
- ☐ Non Sig RAPP Modification
- ☐ Major UIC Modification
- ☐ Minor UIC Modification

This Application Involves

- ☐ Storage
- ☐ Treatment
- ☐ Disposal
- ☐ Incineration
- ☐ Groundwater
- ☐ Corrective Action
- ☐ UIC Class I
- ☐ UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

RCRA Part B Permit Renewal per 35 IAC Part 702.121

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

☒ 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.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

☐ Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information 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.

Owner Name (Printed or Typed): David Servatius

Owner Signature: [signature] Date: 5-4-2021

Title: Owner

RECEIVED
MAY 11 2021
IEPA-BOL
PERMIT SECTION

Operator

I certify under penalty of law that this document and all attachment 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.

Operator Name (Printed or Typed): James R. Stenberg

Operator Signature: _____ Date: 5-3-2021

Title: President/CEO

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 3rd day of May 2021.

Notary Signature: Michael M. Murray

"OFFICIAL SEAL"
MICHAEL M. MURRAY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 10/30/23

Notary Seal

My commission expires on: 10/30/2023

Engineer

I certify under penalty of law that this document and all attachment 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.

RECEIVED
MAY 11 2021
IEPA-BOL
PERMIT SECTION

Engineer Name (Print or Type): Andrea K. Martin

Engineer Signature: _____

Illinois License No.: 062.045871

Expiration Date of License: 11/30/2021

Engineer Phone No. (920) 496-6854

Email: Andrea.Martin@Foth.com

Engineer Address:

2121 Innovation Ct, Suite 300
De Pere, WI 54115

STATE OF ILLINOIS
ANDREA K. MARTIN
#062-045871
LICENSED PROFESSIONAL ENGINEER

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

update list.

Submittal documents (**Jan 08, 2021**) for B-167R2 was updated on February 9th, 2024, according to the letter and attached materials from Modern Plating Corporation received on **May 11,2021**.

Sheets taken out	**Sheets put in**
Front Report Cover	The report cover (new)
	Cover Letter of the submittal of May 7,2021
The RCRA Part B Table of Contents page	The new RCRA Part B Table of Contents page
The Attachment 1 title page and the January 2021RCRA Permit Application form (LPC-PA23)	The new Attachment 1 title page and the May 2021 RCRA Permit Application form (LPC-PA23)
Attachment2 title page and all the contents of Attachment2	The new Attachment2 title page, the new RCRA Part B Table of Contents pages and pages 1-84 of the RCRA Part B Permit Application text
The table title page	The new table title page
	Table C-3, C-4 and F-2
The Figures title page	The new Figure title page
Drawings title page, Drawing NO.2 and Drawing NO.2R	The new Drawings title page, the new Drawing NO.2 and the new Drawing NO. 2R
Appendix H title page and the disk named "Appendix H, Monitoring Well Construction Informational and Boring Logs"	The new Appendix H title page and the Monitoring Well Construction Information and Boring Logs (hard copy)
	The new Appendices T and U
	The new Attachment 3 tab and the RCRA Part A Permit Application, which includes new attachments Figure A-1a, Figure A-1B, Figure A-2, and site photo log

old tracking sheet

new tracking sheet

B-167R2

Foth

cc: Rockford
PMS

Action Required

2121 Innovation Court, Suite 100
P.O. Box 5095
De Pere, WI 54115-5095
(920) 497-2500
foth.com

May 7, 2021

Document Holders of the RCRA Part B Permit Application (Jan. 8, 2021):

Mr. Kenneth E. Smith - Illinois Environmental Protection Agency
Mr. James Blough - Illinois Environmental Protection Agency
Mr. David Retzlaff - Illinois Environmental Protection Agency
Ms. Ashley Huffines - Freeport Public Library
Mr. Dave Servatius - Modern Plating Corporation

RECEIVED
MAY 11 2021
IEPA-BOL
PERMIT SECTION

RE: Renewal Application for RCRA Part B Post-Closure Permit
Modern Plating Corporation, Freeport, Illinois
IEPA#1770200010r

Dear Document Holders:

On behalf of Modern Plating Corporation, of Freeport, Illinois, Foth Infrastructure & Environment, LLC (Foth) is submitting the attached materials to replace those in the Permit Application that was sent to you dated January 8, 2021.

The following materials need to be replaced/added to the per this most recent permit renewal:

- Discard the front Report Cover and replace with the new Report Cover.
- Add the Cover Letter after the new Report Cover.
- Discard the RCRA Part B Table of Contents page and replace with the new page.
- After the Attachment 1 tab, discard the Attachment 1 title page and the January 2021 RCRA Permit Application form (LPC-PA23). Replace with the new Attachment 1 title page and the May 2021 RCRA Permit Application form (LPC-PA23).
- After the Attachment 2 tab, discard all contents. Replace with the new Attachment 2 title page, the new RCRA Part B Table of Contents pages, and pages 1–84 of the RCRA Part B Permit Application text.
- After the Tables tab, discard the Tables title page and replace with the new page.
- Add new Tables C-3, C-4, and F-2 to the Attachment 2 tables.
- After the Figures tab, discard the Figures title page and replace with the new page.
- After the Drawings tab, discard all contents (except the actual plastic pocket). Replace with the new Drawings title page, Drawing No 2, and Drawing No. 2R (insert in the plastic pocket).

- After the Appendix H tab, discard all contents (including disk). Replace with the new Appendix H title page and the Monitoring Well Construction Information and Boring Logs (now provided in hard copy).
- After Appendix S, add the new Appendices T and U.
- After the Appendix U contents, add the new Attachment 3 tab and the RCRA Part A Permit Application, which includes new attachments Figure A-1a, Figure A-1B, Figure A-2, and site photo log.

If you have any questions, please contact Heather Hallett at heather.hallett@foth.com or at (920) 496-6912.

Foth Infrastructure & Environment, LLC

Heather L. Hallett
Project Environmental Scientist

Michael S. Raimonde
Project Manager

Andrea Martin, P.E.
Lead Environmental Engineer

enclosures

cc: PMS

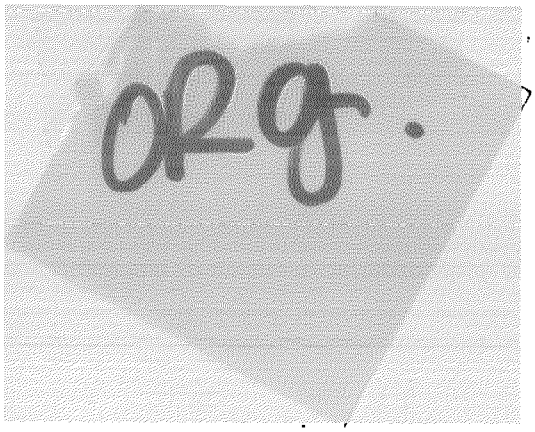
Permit Application B-167R2

RCRA Part B Permit Renewal Application

Project I.D.: 20M114

Modern Plating Corporation
Freeport, Illinois

January 2021



Foth

RCRA Part B Permit Renewal Application

Table of Contents

Attachments

Attachment 1 RCRA Permit Application Form LPC-PA23
Attachment 2 RCRA Part B Permit Application

List of Abbreviations, Acronyms, and Symbols

ALR	action leakage rate
CAMU	Corrective Action Management Unit
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethene
cm/s	centimeters per second
ELUCs	Environmental Land Use Controls
ft	feet
fbgs	feet below ground surface
ft/d	feet per day
ft/ft	foot per foot
Foth	Foth Infrastructure & Environment, LLC
FWSC	Freeport Water & Sewer Commission
FVD	Foth & Van Dyke and Associates, Inc.
GMZ	Groundwater Management Zone
GCL	geosynthetic clay liner
HDPE	high density polyethylene
HWMU	Hazardous Waste Management Unit
H:V	horizontal to vertical
IAC	Illinois Administrative Code
I.D.	inner diameter
IEPA	Illinois Environmental Protection Agency
lbs/cu ft	pounds per cubic foot
LCS	leachate collection system
LDS	leachate detection system
LL	liquid limit
MPC	Modern Plating Corporation
MSL	mean sea level
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
PCB	Pollution Control Board
PL	plastic limit
PPE	personal protective equipment
POTW	publicly owned treatment works
RCRA	Resource Conservation and Recovery Act
SSR	side slope riser
SWMU	Solid Waste Management Unit
TCE	trichloroethylene
UECA	Uniform Environmental Covenants Act
ug/L	microgram per liter
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOCs	Volatile Organic Compounds
WWTP	wastewater treatment plant

Attachment 1

RCRA Permit Application Form LPC-PA23

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m. Monday through Friday (excluding State holidays).

RECEIVED
JAN 08 2021
IEPA-BOL
PERMIT SECTION

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1770200010 USEPA ID Number: ILD 0005172325

Site Name: Modern Plating Corporation

Physical Site Location (street, road, etc.): 701 South Hancock Avenue

City: Freeport Zip Code: 61032-0838 County: Stephenson

Existing RCRA Permit (if applicable): IEPA #1770200010 RCRA Post-Closure Permit

II. Owner/Operator Identification

Owner Information

Name: David Servatius

Mailing Address:

701 South Hancock Avenue, P.O. Box 838, Freeport, IL 61032-0838

Contact Name: David Servatius

Phone #: (815) 235-3111

Email: dave.servatius@modernplating.com

Operator Information

Name: James R. Stenberg

Mailing Address:

701 South Hancock Avenue, P.O. Box 838, Freeport, IL 61032-0838

Contact Name: James R. Stenberg

Phone #: (815) 235-3111

Email: jim.stenberg@modernplating.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- ☐ New Part B Permit
- ☑ Part B Permit Renewal
- ☐ Class 1 Modification
- ☐ Class 1* (prior approval required) Modification
- ☐ Class 2 Modification
- ☐ Class 3 Modification
- ☐ Additional information to supplement UIC Class I application Log Number _____
- ☐ Remedial Action Plan Permit (RAPP)
- ☐ Sig RAPP Modification
- ☐ Non Sig RAPP Modification
- ☐ Major UIC Modification
- ☐ Minor UIC Modification

RECEIVED
JAN 08 2021
IEPA-BOL
PERMIT SECTION

This Application Involves

- ☐ Storage
- ☐ Treatment
- ☐ Disposal
- ☐ Incineration
- ☐ Groundwater
- ☐ Corrective Action
- ☐ UIC Class I
- ☐ UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

RCRA Part B Permit Renewal per 35 IAC Part 702.121

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

☒ 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.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

☐ Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information 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.

Owner Name (Printed or Typed): David Servatius

Owner Signature: _____ Date: 1-4-2021

Title: Owner

Operator

I certify under penalty of law that this document and all attachment 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.

Operator Name (Printed or Typed): James R. Stenberg

Operator Signature: _____ Date: 1-04-2021

Title: President/CEO

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 4 day of January 2021.

Notary Signature: _____

"OFFICIAL SEAL"
MICHAEL M. MURRAY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 10/30/23

My commission expires on: 10-30-2023

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment 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.

RECEIVED
JAN 08 2021
IEPA-BOL
PERMIT SECTION

Engineer Name (Print or Type): Andrea K. Martin

Engineer Signature: _____

Illinois License No.: 062.045871

Expiration Date of License: 11/30/2021

Engineer Phone No. (920) 496-6854

Email: Andrea.Martin@Foth.com

Engineer Address:

2121 Innovation Ct, Suite 300
De Pere, WI 54115

STATE OF ILLINOIS
ANDREA K. MARTIN
#062-045871
LICENSED PROFESSIONAL ENGINEER

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Instructions for
RCRA Permit Application Form LPC-PA23

R002983

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.

RECEIVED
JAN 08 2021
IEPA-BOL
PERMIT SECTION

Attachment 2

RCRA Part B Permit Application

RCRA Part B Permit Renewal Application

Table of Contents

Page

Sections

Section A	Forms, Certifications, Confidentiality, and Public Involvement	1
Section B	Facility Description	5
Section C	Groundwater Monitoring	13
Section D	Procedures to Prevent Hazards	31
Section E	Closure and Post-Closure Requirements	37
Section F	Corrective Action	70
	References	75

Tables

Table B-1	Post-Closure Inspection Schedule and Log for CAMU Landfill
Table B-2	Post-Closure Maintenance Plan for CAMU Landfill
Table B-3	Post Closure Repair Log for CAMU Landfill
Table C-1	Groundwater Sampling Well Summary for GMZ and CAMU
Table C-2	Analytical Methods Summary
Table F-1	Submittals to IEPA (1999 to 2020) on Corrective Action

Figures

Figure B-1	Site Location Map
Figure WR	Wind Rose
Figure C-1	Groundwater Contours – A Wells
Figure C-2	Groundwater Contours – B Wells
Figure C-3	Groundwater Contours – C Wells
Figure C-4	Groundwater Contours – D and E Wells
Figure C-5	Groundwater Management Zone
Figure C-6	Chromium Concentrations in C and D Wells – Class I
Figure C-7	Lead Concentrations in C and D Wells – Class I
Figure C-8	Nickel Concentrations in C and D Wells – Class I
Figure C-9	Tetrachloroethene Concentrations in C and D Wells – Class I
Figure C-10	Trichloroethene Concentrations in C and D Wells – Class I
Figure C-11	Vinyl Chloride Concentrations in C and D Wells – Class I
Figure C-12	Cadmium Concentrations in A and B Wells – Class II
Figure C-13	cis-1,2-dichloroethene Concentrations in A and B Wells – Class II
Figure C-14	Trichloroethene Concentrations in A and B Wells – Class II
Figure C-15	Vinyl Chloride Concentrations in A and B Wells – Class II

Table of Contents *(continued)*

Drawings

Drawing 2R	Existing Conditions
Drawing 2	Extent of Areas Remediated

Appendices

Appendix A	Mailing List and Notice
Appendix B	Surrounding Land Use
Appendix C	CAMU Construction Drawings
Appendix D	CAMU Location Information
Appendix E	IEPA May 25, 1999 Groundwater Management Zone (GMZ) Approval Letter
Appendix F	Soil Testing Summary
Appendix G	Spring 2020 and Fall 2020 Semi-Annual Groundwater Monitoring Reports
Appendix H	Monitoring Well Construction Information and Boring Logs
Appendix I	Emergency Equipment Location Figures
Appendix J	Survey Plat for the CAMU Landfill Documentation
Appendix K	39i Certification for Operating a Waste Management Facility
Appendix L	Letters Received from the IEPA Regarding Corrective Action
Appendix M	CAMU Pumping Log
Appendix N	Post Closure Care Cost Estimate
Appendix O	CAMU Financial Assurance,
Appendix P	Letter of Credit from Amcore Bank
Appendix Q	CAMU Landfill Construction Documentation
Appendix R	Closure Documentation Report
Appendix S	Wastewater Discharge Permit Issued by City of Freeport

A. FORMS, CERTIFICATIONS, CONFIDENTIALITY, AND PUBLIC INVOLVEMENT

A.1 RCRA Part A Application: 702.121, 702.123, 702.126(a) and (d),703.181

The Part A application must be complete and consistent with the Part B application. 703.181 specifies the contents of a Part A application. Signatures must be provided for both the owner and operator of the facility as described in Item A.2.1 below (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility).

This section does not apply because MPC is applying for a renewal of their RCRA Part B Permit.

A.2 Certification Using the LPC-PA23 Form: 703.182

A completed LPC-PA23 form must be included in the application. Completion of this form should ensure the requirements of A.2.1 and A.2.2 below are met.

A.2.1 Facility Certification: 702.121, 703.182, 702.126

Applications must be accompanied by a certification as specified in 702.126(d) signed by authorized representatives of both the owner and operator of the facility (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility). Authorized representatives of an owner or operator which must complete and sign this certification are as follows: (1) for a corporation, a principal executive officer (at least at the level of vice-president); (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively; (3) for a municipal, state, Federal, or other public Agency, either a principal executive officer or ranking elected official. If the application is not signed by representatives other than those just described, information must be provided indicating that the person is authorized to sign RCRA permit applications for the owner or operator.

The required signatures are provided on the RCRA Permit Application Form LPC-PA23 provided in Attachment 1.

A.2.2 Technical Information Certification: 703.182, Illinois Professional Engineering Act

Technical data, such as design drawings, specifications and engineering studies, must be certified (sealed) by a qualified Professional Engineer licensed to practice in the State of Illinois in accordance with Ill. Rev. Stat., par. 5101, Sec. 1 and par. 5119, Sec. 13.1.

Work required to be conducted in developing an application or work required to be conducted for compliance with the RCRA 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. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The IEPA may refer any discovered violation of these laws to the appropriate regulating authority.

All technical data has been certified by Andrea K. Martin, a qualified Professional Engineer licensed to practice in the State of Illinois. Andrea K. Martin's certification is provided in Attachment 1.

A.2.3 391 Certification: Section 39 (i) of Environmental Protection Act

Section 39, Paragraph (i) of the Illinois Environmental Protection Act requires that IEPA conduct an evaluation of prospective owner's or operator's prior experience in waste management operations before it issues a RCRA permit. This paragraph goes on to state that

the IEPA may deny such a permit if the prospective owner or operator or any employee or officer of the prospective owner or operator has a history of:

1. Repeated violations of federal, State, local laws, regulations, standards, or ordinances in the operation of waste management facilities; or
2. Conviction 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 conviction in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition; or
3. Proof of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

IEPA has created a form (available on its internet site) which applicants (the owner and the operator) must use to provide it with the information necessary to make the evaluation described above.

A completed Prior Conduct Certification Form is provided in Appendix K.

A.3 Public Disclosure Exemption Claims and Trade Secret Claims:

Section 7 of the Act; 2 IAC Part 1828; 35 IAC Part 130

Note: A.3.2 thru A.3.5 below are only applicable if an applicant desires to request a public disclosure exemption claim or trade secret claim. Any documents submitted that are not properly marked and justified will not be regarded as exempt and will be released to the public upon request.

No public disclosure exemption is sought for this application.

A.3.1 No Information Claimed Exempt from Public Disclosure

If no information in the application is claimed exempt from public disclosure, the applicant should clearly state this in the cover letter and this subsection of the application. This will release any disclaimers on drawings, plans etc. that are included in the application.

No public disclosure exemption is sought for this application.

A.3.2 Trade Secrets Claims

This claim should be asserted if any portion of the application is regarded as trade secret pursuant to 35 IAC 130.

- Provide claim and justification letter with submittal.
- Stamp each page in red ink "TRADE SECRET" that is to be exempt.
- Provide sanitized version for public review.

No trade secrets are presented in this application.

A.3.3 Exempt or Exempt In-Part Data Claims: 2 Ill. Adm. Code 1828.401

This claim should be asserted if any portion of the application is regarded as exempt or exempt in part pursuant to 2 IAC 1828.401.

- Provide claim and justification letter with submittal.
- Appropriately mark those portions of the application for which the exemption is requested.
- Provide a version of the application for public review which does not contain the information for which the exemption is requested.

There are no exempt or exempt in-part data claims in this application.

A.3.4 Privileged Information: 2 IAC 1828.401

This claim should be asserted if any portion of the submittal is regarded as privileged and meets the definition of privileged information pursuant to 1828.401.

- Provide claim and justification letter with submittal.
- Appropriately mark those portions of the application for which the claim is requested.
- Provide sanitized version for public review.

There is not privileged information in this application.

A.4 Public Participation: Facility Mailing List & Information Repositories:

Environmental Protection Act, Section 39(d): 703.193, 703.248, 705.163

A.4.1 Facility Mailing List:

The Facility Mailing List required to be established and maintained in 35 IAC 765.163(a) is a list of all entities who must be notified of any permit-related activities at a RCRA permitted facility. The application must include the most-recent list the facility has; this list must identify its last revision date and be provided as an attachment to the application. A printed copy and an electronic copy in MS Word format must be provided.

The list must be updated and resubmitted to the IEPA as needed to include individuals who have interacted with the facility such as: those attending the pre-application meeting, respondents to mailings, and those attending the public meeting when a permit modification is requested. IEPA will review and approve all updates prior to using the mailing list. Mailing lists originally developed by IEPA are available from IEPA's RCRA community involvement coordinator.

A facility mailing list is included in Appendix A.

A.4.2 Identification of Repositories:

It is important that information regarding a RCRA permitted hazardous waste management facility be available to the local citizens for review. Thus all information submitted to IEPA in furtherance of a RCRA permit application, with the exception of trade secrets, must be made available to the public at the office of the County Board or governing body of the municipality and also in another location in the host community (or nearest community to the facility) no later than the date the permit application is submitted to IEPA. Provide the name, address, contact person, phone number, and business hours for each repository.

Note: The community repository may not be located at the facility and must be available to the community for review and copying of application documents after regular office hours. Public libraries are recommended repository locations.

The community repository for this RCRA Part B permit renewal application will be the Freeport Public Library. The location and contact person for this repository are as follows:

Ms. Ashley Huffines
Freeport Public Library
100 E. Douglas Street
Freeport, IL 61032
Phone: (815) 233-3000

Hours: *Monday-Thursday 9:00 am to 8:00 pm*
Friday 9:00 am to 6:00 pm
Saturday 10:00 am to 3:00 pm
Sunday closed

A.4.3 Contents of Repository:

The repository contents must include all information submitted to IEPA in furtherance of a RCRA permit application with the exception of trade secrets. The applicant is required to maintain, verify and update the contents of the repositories throughout the application process. Each time information is submitted to IEPA, a copy must also be placed in the repository. Placement of a given submittal in the repository should be documented in the cover letter transmitting the submittal to IEPA.

Repositories must be well-organized and kept up-to-date. A comprehensive inventory of all documents in the repository should be maintained, as well as a brief description of each document listed in the inventory. The applicant should visit each repository on a regular basis to ensure its organization is maintained.

MPC recognizes the importance of keeping the documentation available for public review up to date with any changes taking place during the application review. MPC will assure the contents of the publically available document in the repository is updated throughout the application process.

A.4.4 Public Notice of Repository Availability:

The applicant must provide written notice of the repositories' availability for public review to everyone on the facility mailing list; this notice must include all of the following information:

- Identification and address or map of the facility and the hazardous waste management operations that this permit application addresses.
- A statement that permit application materials have been prepared and are available for community members to review and copy at the repository.
- The location and business hours of the repository.
- A statement that the applicant will update the repository materials periodically during the IEPA's review of the permit application.
- The name, address, and telephone number of the applicant's contact person to address questions regarding the application or to be added to the facility's mailing list for future permit activities.
- A statement "For general information on the hazardous waste management permit program in Illinois, please contact" then provide the address of the IEPA RCRA Community Involvement Coordinator.

This notice must be made no later than the date the permit application is submitted to the IEPA. Documentation that the public notices were made must be included in the application. Specifically provide a copy of the letter sent to individuals on the approved facility mailing list. Indicate the date the letter was sent and the revision date of the mailing list used for the mailings.

Appendix A includes the Public Notice of repository availability, as well as the mailing list used to provide notice. All information noted above is included in the Notice.

B. FACILITY DESCRIPTION

B.1 General Description: 702.123, 703.183(a), 703.183(n), 703.183(s)

B.1.1 Operation of Facility:

Provide the following information about the facility:

1. Identify the owner and operator of the facility as well as the address and size of the facility;

   The facility is owned by Modern Plating Corporation. The MPC facility is located on 19 acres of land at 701 South Hancock Avenue, Freeport, Illinois. The site is located in the SE ¼ of Section 32, Township 27 North, Range 8 East, Stephenson County (refer to Figure B-1). The size of the Resource Conservation and Recovery Act (RCRA) Corrective Action Management Unit (CAMU) is indicated on Drawing 2.

2. Describe the facility in general, its operations, and the specific activities conducted by the applicant that require a permit under RCRA, including the name of the business.

   a. Commercial facilities should identify the types of industry served;

   b. On-site facilities should briefly describe the process(es) involved in the generation of hazardous waste.

   This facility is a job-shop plating business with the capabilities to plate a variety of metals. Materials used in operations include zinc, tin, nickel, iron, and phosphate. Drawings 2R and 2 are maps of the site showing the location of RCRA-regulated CAMU, and Solid Waste Management Units (SWMUs). The facility has operated as an electroplater since 1963 and has a U.S. Department of Labor Standard Industrial Code of 3471 (Plating and Polishing).

   The area is surrounded by a mixture of residential and commercial properties to the south, east, and west. Agricultural property and wetlands exist between the MPC facility and the Pecatonica River located to the north of the facility.

   The original owner of the MPC property was the Arcade Company, a toy and novelty manufacturer which operated on the site from 1885 until the late 1920s or 1930s. The Arcade Company performed casting, forging, stamping, and painting.

   At the beginning of World War II, Rockwell Industries acquired the assets of the bankrupt Arcade Company and reconstructed several buildings on the site. Ordnance supplies (Howitzer shells, rockets (signal), etc.) were produced until about 1946. The plant was then operated on a reduced level until the Korean War, when a higher level of production was resumed. Some local companies rented warehouse space for storage from Rockwell during this period. Rockwell apparently operated the plant for the U.S. government. Some Rockwell operations required large amounts of cooling water (no known wet processing); hence, at some point in the 1940s, a large (24-inch) discharge line was installed to the Pecatonica River. A second sanitary sewer discharge line was also installed. In 1953 - 1954, the Rockwell operation was permanently closed.

   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 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 - 1966, 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 by 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 tile 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. Secondly, 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 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 by 50-feet by 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, then 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 system, 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 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, 1983), 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.

As described in the Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit – Modern Plating Corporation (FVD, 1999), all known contaminated areas at the facility were remediated in 2000/2001. Remediation activities at the site are documented in the reports titled Modern Plating Corporation CAMU Landfill Construction Documentation (FVD, 2001) and Closure Documentation Report (FVD, 2001).

Currently, hazardous waste is being generated at the MPC facility as part of their normal plating operations. Specifically, hazardous waste sludge, with an F006 classification, is generated in the MPC wastewater treatment plant. The generation and disposal of this waste is unrelated to the hazardous waste that what excavated and disposed of in the CAMU. Therefore, this application only deals with the hazardous waste remediated and placed in the CAMU landfill at the MPC facility.

3. A legal description of the facility developed and certified by a professional land surveyor licensed to practice in Illinois.

   A legal description is included in Appendix J.

4. The Tax Property Identification Number(s) of the land which comprises the facility. If more than one Property Identification Numbers are associated with the facility, a scaled drawing showing the boundaries of each parcel within the facility must be provided.

   The Tax Property Identification Number is included in Appendix J.

B.1.2 Hazardous Waste Management Units at the Facility

Identify and briefly describe the hazardous waste management units at the facility.

Note: More information about these units will be provided in Section E of the application.

The following areas and structures were remediated in the initial corrective action, excavating the contaminated soils and depositing into the CAMU. Section E.1.4 provides more detail.

Hazardous waste management units (HWMUs)
Lagoons 1, 2, 3, and Shawnee Building

Solid waste management units (SWMUs)
Lagoons 0, 1A, Cyanide Treatment Vault, Wetlands 1, 1A, II, and III.

Areas of Concern
Outfall Pipe and wastewater release area

Drawings 2R and 2 show the RCRA-regulated CAMU, and the location of areas and structures listed above. There are no active hazardous and solid waste management units currently at the MPC facility.

B.1.3 Solid Waste Management Units at the Facility

Identify and briefly describe the solid waste management units and the facility which are the focus of the RCRA corrective action program at the facility.

The following areas and structures were remediated in the initial corrective action, excavating the contaminated soils and depositing into the CAMU. Section E.1.4 provides more detail.

Hazardous waste management units (HWMUs)
Lagoons 1, 2, 3, and Shawnee Building

Solid waste management units (SWMUs)
Lagoons 0, 1A, Cyanide Treatment Vault, Wetlands 1, 1A, II, and III.

Areas of Concern
Outfall Pipe and wastewater release area

Drawings 2R and 2 show the RCRA-regulated CAMU, and the location of areas and structures listed above. There are no active hazardous and solid waste management units currently at the MPC facility.

B.2 Topographic Map: 702.123(g), 703.183(s), 703.184, 703.185(c), 703.185(d), 724.197

B.2.1 Facility + 1 mile: Provide a topographic map (or Quadrangle map) that extends at least 1 mile beyond the property boundaries. This map must depict the legal boundaries of the facility and surrounding land uses.

Figure B-1 is a topographic map that extends 1 mile beyond the MPC property boundaries. Legal boundaries for MPC facility are provided on Drawing 2R. A surrounding land use map is provided in Appendix B.

B.2.2 Facility + 1000-feet: Provide a topographic map that shows the facility and a distance of 1,000-feet outside the facility's property line, at a scale of 1-inch equal to not more than 200-feet. Multiple maps may be submitted to meet this requirement if necessary. The map(s) must contain/identify the following (If an item does not pertain to the facility, the narrative should indicate why it is not pertinent):

- Map Orientation (north arrow)
- Map Date
- Scale
- Legal boundaries
- Equipment required by Item D.2 below
- Surrounding land uses
- Access controls
- Buildings and Structures
- Storm drains
- Sewers: storm, sanitary and process
- Surface waters including intermittent streams
- Any waste injection or groundwater withdrawal wells (both on-site and off-site).
- Areas in the 100 year flood plain
- Flood control or drainage barriers
- Run-off control systems
- Fire control facilities
- A wind rose
- Existing hazardous waste units
- Solid waste management units

Drawing 2R is a topographic map that extends 1,000-feet beyond MPC's property line at a scale of 1-inch = 200-feet. The base map was prepared from an aerial survey performed by Aero-Metric Engineering of Sheboygan, Wisconsin on November 28, 1986. Drawing 2R includes the following:

- *Map Orientation (north arrow)*
- *Map Date*
- *Scale*
- *Legal boundaries*
- *Equipment required by Item D.2 is located in the production plant identified on Drawing 2R.*
- *Buildings and Structures*
- *Storm drains*
- *Sewers: storm, sanitary and process*
- *Contours sufficient to show surface water flow around facility unit operations*
- *Surface waters including intermittent streams*
- *Any waste injection or groundwater withdrawal wells (both on-site and off-site). There are no waste injection wells.*
- *Areas in the 500 year flood plain*

- *A wind rose is included on Drawing 2R, prepared circa 1998. A more recent wind rose has been prepared (Figure WR).*
- *Loading and unloading areas are shown on Figure C-5. These shipping and receiving areas are associated with the daily operation of the MPC production facility, not with the hazardous waste managed in the CAMU.*

The following items are not included on Drawing 2R:

Surrounding Land Uses
A surrounding land use map is provided in Appendix B.

Access Controls
Access controls at the facility consists of a fence that surrounds the CAMU. The location of this fence is shown on Drawing 7A provided in Appendix C.

Flood Control and Drainage Barriers
Flood control is not shown on Drawing 2R because the CAMU is located outside of the flood zone. Therefore, flood control is not required.

Run-off Control Systems
Run-off control systems are shown on Drawing 7A provided in Appendix C.

Fire Control Systems
Fire control systems are not shown on Drawing 2R. Fire control systems are described in Section D.2 and are primarily focused on the main production facility and activities. The CAMU system has been designed with a gas venting system that minimizes the potential buildup of explosive gases. The electrical control panel on the Leachate Pump Building is built explosion proof fixtures where appropriate. Drawing 12 in Appendix C shows the Leachate Pump Building details.

Existing Hazardous Waste Units
Closed Hazardous waste units and CAMU are shown on Drawing 2.

Solid Waste Management Units
Closed Solid waste management units are shown on Drawing 2.

B.3 Location Standards: 703.184, 724.118

B.3.1 Seismic Standard: Identify any hazardous waste management units within 200-feet (61 meters) of a fault which has had displacement during Holocene time.

Appendix D contains a copy of the map for the State of Illinois reproduced from the "Preliminary Map of Young Faults in the United States, as a Guide to Possible Fault Locations" by Howard, K.A. et al, U.S. Geological Survey, 1978. The approximate site location has been marked on the referenced map which shows that no faults active during the Holocene period exist within 2 miles of the MPC facility and CAMU Landfill.

B.3.2 Floodplain Standard: Document whether or not the facility is located within a 100-year floodplain. The source of data used for this determination must be provided as well as a copy of the relevant flood map produced by the National Flood Insurance Program (NFIP). Appropriate calculations and flood plain maps must be provided when NFIP maps are not available.

Drawing 2R shows the location of the 500-year floodplain, which occurs at a higher elevation and therefore encompasses the 100-year floodplain. The location of this floodplain is as defined on the National Flood Insurance Program (NFIP) Map for the City of Freeport, Illinois, Panel H+1-01, a copy of which is included in Appendix D.

Appendix D also contains information from the U.S. Army Corps of Engineers Rock Island Water Control Center concerning the flood stages of the Pecatonica River near the City of Freeport, Illinois.

B.3.3 Facilities in the 100-year Floodplain: Facilities located within the 100-year floodplain must provide the following information regarding procedures in place to prevent flooding of the facility:

As shown on Drawing 2R, the closed CAMU containing RCRA hazardous waste is located outside 500-year floodplain and therefore is also the outside the 100-year floodplain. Therefore, the following subsections of section B.3.3 do not apply.

B.3.3.1 Engineering Analysis and Structural/Engineering Study

Provide the following regarding information to demonstrate that flooding of the hazardous waste management units will not occur:

1. Provide an engineering analysis that identifies and evaluates the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood.

2. Structural or other engineering study that shows how the design of the hazardous waste management units and flood protection devices at the facility will prevent flooding of the units.

Section B.3.3.1 does not apply because the facility is not located in the 100-year floodplain.

B.3.3.2 Procedures to Remove Waste: In lieu of B.3.3.1 and B.3.3.2, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. This information must include:

1. Timing of movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.

2. The location(s) to which the waste will be moved, and a demonstration that those facilities are eligible to receive hazardous waste in accordance with 702, 703, 724 and 725.

3. The planned procedures, equipment, and personnel to be used, and the means to ensure that such resources will be available in time for such use.

4. The potential for accidental discharge of waste during movement.

Section B.3.3.3 does not apply because the facility is not located in the 100-year floodplain.

B.3.4 Existing facilities not in compliance with 724.118(b): Provide a plan showing how the facility will be brought in compliance and a schedule for compliance with 724.118(b). A variance petition regarding this plan/schedule to come into compliance with 35 IAC 724.118(b) must be filed concurrently with the Illinois Pollution Control Board.

All existing facilities are in compliance. Therefore, Section B.3.4 is not applicable.

B.4 Operating Record: 724.173:

The permittee must keep and maintain a written operating record that includes all the records, reports, notifications, and data required by 35 IAC 724.173 and the conditions in this permit for the entirety of the post-closure care period. Identify the location where the Operating Record is maintained at the facility. Describe the procedures used to record the following information described in 724.173 in the facility's operating record (as such information becomes available) during the post-closure period:

- Records of inspections and repairs,
- Monitoring, testing, or analytical data and corrective action data where required,
- All closure and post-closure cost estimates,
- Annual certification, that a program in place to reduce the volume/toxicity of hazardous waste generated at the facility,

Separate documents may be used provided the requirements of 724.173 are met. A description of where this operating record will be maintained must also be provided.

Inspections and maintenance at the MPC CAMU occur on a regular basis. Tables B-1 and B-2 are the Post-Closure Inspection Schedule and Log and Post-Closure/Maintenance Plan, respectively, and are used at the facility to document inspections and maintenance activities. Completed inspection logs and maintenance records are maintained in a locked filing system at the MPC facility and serve as a record of each inspection. Monitoring, testing, and analytical data, as well as post-closure cost estimates are also housed in the same filing system.

Further details regarding the post-closure inspection schedule and maintenance logs are provided in Section E.6.

C. GROUNDWATER MONITORING

C.1 Exemption from Groundwater Protection Requirements: 703.185, 724.190(b)

If a waiver from the Subpart F groundwater monitoring requirements is requested, the applicant must demonstrate one of the following conditions applies to the facility or exempted under 724.101.

An exemption from groundwater protection requirements 703.185 and 724.190(b) is not being requested. As such, this section and sections C.1.1, C.1.2, and C.1.3 do not apply.

C.1.1 Waste Piles: 724.190(b)(2) and (5)

The waste pile has been designed and operated to meet conditions specified in 724.350(c).

As stated above, this section does not apply since an exemption from the groundwater protection requirements is not being proposed.

C.1.2 Landfill: 724.190(b)(2)

The landfill has been designed and operated to meet conditions specified herein.

As stated above, this section does not apply since an exemption from the groundwater protection requirements is not being proposed.

C.1.3 No Migration: 724.190(b)(4)

No potential for migration of liquid from a regulated unit to the uppermost aquifer exists during the active life of the regulated unit (including the closure period) and the post closure period. Predictions must be based on assumptions maximizing the rate of liquid migration.

As stated above, this section does not apply since an exemption from the groundwater protection requirements is not being proposed.

C.2 Interim Status Groundwater Monitoring Data: 703.185(a)

The applicant must provide, by reference, the location of a summary of the groundwater monitoring data obtained during the interim status period.

Interim groundwater monitoring has not been conducted at the facility. Therefore, this section does not apply. The facility is in post-closure status. Semi-annual groundwater monitor reports are prepared and submitted to IEPA in accordance with the permit.

C.3 Historical Hydrogeological Summary: 703.185(b), 620.210

The applicant must provide an identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property. Include groundwater classification, flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area). A table of hydraulic properties must be submitted which includes at a minimum permeability, sieve analysis, porosity, hydraulic conductivities, etc.

Figures C-1, C-2, C-3, and C-4 display groundwater potentiometric groundwater surface maps for the October 2020 groundwater sampling event. The following is a brief summary of key points with respect to hydrogeologic conditions at the site:

- *Two aquifers were identified at the MPC site including an upper aquifer consisting of permeable alluvial sand and gravel and a bedrock aquifer consisting of Ordovician age Galena and Platteville Group dolomite.*
- *The two aquifers are separated by a clay aquitard that is thin to absent near the bedrock high in the vicinity of the former 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 0.006 ft/ft in the unconsolidated aquifer and 0.008 ft/ft in the dolomite aquifer.*
- *Vertical hydraulic gradients are generally downward except in the area near the wetlands just north of the former lagoons.*
- *The unconsolidated aquifer is permeable with an average measured field hydraulic conductivity of $3.17x10^{-3}$ cm/s. Similarly the dolomite aquifer exhibits an average field hydraulic conductivity of $4.27x10^{-3}$ cm/s.*
- *The permeability of the clay aquitard as measured by lab permeameter tests ranges from $8.5x10^{-8}$ cm/s to $1.2x10^{-7}$ cm/s.*
- *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.*
- *The classification of groundwater per 35 IAC 620 has been an issue of historical discussion on this project. During a meeting with Illinois Environmental Protection Agency (IEPA) and the United State Environmental Protection Agency (USEPA) on September 25, 1997, the issue of groundwater classification was discussed and concluded that groundwater at the site would be classified as Class II groundwater per the provisions of 35 IAC 620.220. However, during a project meeting with IEPA on September 25, 1997 and in the May 25, 1999 approval letter (Appendix E), 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 Foth Infrastructure & Environment, LLC's (Foth) (formerly known as Foth & Van Dyke and Associates, Inc. [FVD]) 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, IEPA has applied the Class I designation to the dolomite aquifer.*

For the unconsolidated aquifer, assuming a hydraulic conductivity of about 7.6 ft/d, a hydraulic gradient based on potentiometric surface maps of 0.01 to 0.005 (ft/ft) and an effective porosity value of 0.2, the average linear velocity of groundwater at the site is approximately 0.4 ft/d. Accounting for retardation, the rate at which dissolved constituents in the groundwater migrate is considerably less than 0.4 ft/d.

For the dolomite aquifer, assuming a hydraulic gradient of 0.006 to 0.08 (ft/ft), a hydraulic conductivity of 3.8 ft/d and a porosity value of 0.15, the average linear velocity of groundwater is approximately 0.2 ft/d to approximately 0.5 ft/d. Again accounting for retardation, the migration rate of dissolve constituents in groundwater within the dolomite will be considerably less the linear velocity of groundwater.

Tables of hydraulic properties such as permeameter data, sieve analysis data, and field measured hydraulic conductivities are provided in Appendix F. Note that data on porosity of the unconsolidated sand and gravel and dolomite are not available.

C.4 Topographic Map Requirements: 703.183(s), 703.185(c)

The applicant must provide on the map required in 703.183(s) a complete legal description of the property boundary along with the following additional information:

The waste management area, the property boundary, the proposed point of compliance, the proposed groundwater monitoring zone (if applicable), the proposed location of groundwater monitoring wells and the information required in 703.185(b).

Drawings 2R and 2 show the MPC facility layout and the location of the CAMU. The complete legal description of the property boundary is noted on Drawing 2R. Figure C-5 shows the location of groundwater monitoring wells included in the May 25, 1999 IEPA approved groundwater monitoring program and the approved groundwater monitoring zone (GMZ). IEPA provided an approval of a Revised GMZ subject to conditions noted in the October 16, 2020 letter to MPC (IEPA, 2020).

A compliance point is not shown because it will not be established at the site until the applicable groundwater protection standards are attained and the GMZ expires. Class I standards of 35 IAC 620.410 apply to the dolomite aquifer and Class II standards of 35 IAC 620.420 apply to the unconsolidated aquifer. When these standards are achieved and the GMZ expires, MPC will submit a proposal to establish a point of compliance to satisfy the regulatory requirements found in 35 IAC 724, Subpart F, and reflect the conditions at the facility.

C.5 Contaminant Plume Description: 703.185(d), 721-Appendix I

The applicant must provide a description of any plume of contamination detected in the groundwater originating from a regulated unit. Identify the concentrations of Part 721, Appendix I constituents (throughout the plume or the maximum concentration of each Appendix I constituent) for the plume of contamination delineated on the topographic map.

The monitoring program for a given unit must be established based on the monitoring data from the facility and be appropriate for the groundwater conditions beneath the regulated unit. Complete only the monitoring program section which is currently appropriate for the facility (C.6: Detection, C.7: Compliance, C.8: Corrective action).

Appendix G provides a summary of groundwater quality monitoring data at the facility from the Fall 2020 report submitted to IEPA, including color bar charts depicting the historical concentrations with time for the wells down gradient of the former lagoons. The principal groundwater contaminants that have been identified at the site are the metals cadmium, chromium, nickel, and lead and the volatile organic compounds (VOCs) tetrachloroethene, TCE, cis-1,2-dichloroethene, (cis-1,2-DCE), and vinyl chloride (VC). Detects of metals are confined to groundwater monitoring wells within the property boundary. Detects of chlorinated ethenes (VOCs) were found primarily in groundwater monitoring wells within the unconsolidated aquifer and extend out to the perimeter wells defined by MW-17A/B, MW-18A/B and MW-19A/B. Figures C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, C-14, and C-15 are iso-concentration figures depicting areas where the parameters of concern are detected above the Class I and Class II standards in the dolomite aquifer and unconsolidated deposit aquifer respectively.

C.6 Detection Monitoring Program: 703.185(f), 724.198

If the presence of hazardous constituents has not been detected in the groundwater at the time of permit application, the applicant must provide sufficient information, supporting data and analyses to establish a detection monitoring program which meets the requirements of 724.198.

A detection monitoring program must include at a minimum the ability to monitor for specific indicator parameters based upon the type and characteristics of waste(s) managed at the facility and to maintain a complete and accurate record and statistical evaluation of all groundwater monitoring data.

The presence of hazardous constituents has been measured in the groundwater that exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420. As such, this section and sections C.6.1 through C.6.8 do not apply.

C.6.1 Indicator Parameters, Waste Constituents, Reaction Products to be Monitored: 703.185(f)(1), 724.198(a)

The applicant must provide a list of indicator parameters, waste constituents or reaction products to be used in providing a reliable indication of the presence of hazardous constituents in the groundwater.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.2 General Monitoring Program Requirements: 703.185(e), 724.197

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.3 Groundwater Monitoring System: 703.185(f)(2), 724.197(a) & (b), 724.198(b)

The detection monitoring system must be installed at the established compliance point and comply with 724.197(a) & (b). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (fbgs): well depth, screen interval, ground surface, and stick-up.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.4 Description of Sampling and Analysis Procedures: 703.185(f)(4), 724.197(d) & (e)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation, and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.5 Evaluation of Groundwater Surface: 724.197(f), 724.198(e)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The applicant must determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.6 Background Quality: 703.185(f)(3), 724.197(g), 724.198(c)

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.7 Statistical Evaluations : 703.185(f)(4), 724.197(h), 724.198(d)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.6.8 Statistically Significant Increases: 724.198(f) & (g)

Using methods required in E.7.7, The applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater. If such evidence exists, specific measures of retesting and IEPA notification must be provided.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater which exceeds the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7 Compliance Monitoring Program: 703.185(g), 724.199

If the presence of hazardous constituents has been detected in the groundwater at the point of compliance at the time of permit application, the applicant must submit sufficient information, supporting data and analyses to establish a compliance monitoring program which meets the requirements of 724.199.

The presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420. There is no point of compliance proposed at the facility. As such, this section and sections C.7.1 through C.7.10 do not apply.

C.7.1 Description of the Monitoring Program: 724.199(a)

The program will be used to determine if compliance standards have been achieved by a regulated unit.

As stated above, there is no point of compliance proposed at the facility, therefore, this section does not apply. The presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.1.1 Waste Description: 703.185(g)(1), 724.193(a), 724.199(a)(1)

The applicant must provide a list of hazardous constituents for groundwater that are reasonably expected to be in or derived from waste(s) in the regulated unit.

As stated above, this section does not apply.

C.7.1.2 Concentration Limits: 703.185(g)(4), 724.194(a), 724.199(a)(2)

The applicant must provide a discussion addressing the appropriate concentration limits for the hazardous constituents in groundwater.

As stated above, this section does not apply.

C.7.1.3 Compliance Point: 724.195, 724.199(a)(3)

The applicant must provide a discussion addressing the compliance point including rationale for location of groundwater monitoring wells utilized to delineate the compliance point.

As stated above, this section does not apply.

C.7.1.4 Compliance Period: 724.196, 724.199(a)(4)

The applicant must provide a discussion addressing the compliance period.

As stated above, this section does not apply.

C.7.2 Alternate Concentration Limits: 703.185(g)(4), 724.194(b)

In situations where the IEPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

Alternate concentration limits are not proposed; this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.2.1 Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater quality.

As stated above, alternate concentration limits are not proposed; this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.2.2 Potential Adverse Effects on Hydraulically Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and potential adverse effects on hydraulically connected surface water quality.

As stated above, alternate concentration limits are not proposed; this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.3 General Monitoring Program Requirements: 703.185(g)(5), 724.197

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.4 Groundwater Monitoring System: 724.197(a), (b) & (c), 724.199(b)

The compliance monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b) and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs, and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (fbgs): well depth, screen interval, ground surface, and stick-up.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.5 Description of Sampling and Analysis Procedures: 703.185(g)(6), 724.197(d) & (e), 724.199(c)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation, and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.6 Background Quality: 724.197(g)

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.7 Statistical Evaluations: 703.185(g)(6), 724.197(h), 724.199(d)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.8 Evaluation of Groundwater Surface: 724.197(f), 724.199(e)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation must take place each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.9 Annual Appendix I: 724.199(g)

The applicant must provide procedures for the Annual Appendix I sampling event. Samples from all monitoring wells at the compliance point must be analyzed for all constituents listed in Appendix I at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.7.10 Statistically Significant Increases: 724.199(h) & (i)

Using methods required in E.8.6, The applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater of the point of compliance. If such evidence exists, specific measures of retesting and IEPA notification must be met.

As stated above, this section does not apply since the presence of hazardous constituents has been measured in the groundwater exceeding the concentration limits established under 35 IAC Part 620.410 and 35 IAC Part 620.420.

C.8 Corrective Action Program: 703.185(h), 724.191(a)(2) & (3), 724.200

If hazardous constituents have been measured in the groundwater which exceed the concentration limits established under 724.194, Table 1, or if groundwater monitoring conducted at the waste boundary indicates the presence of hazardous constituents from the facility in groundwater over background

concentrations, the applicant must submit sufficient information supporting data and analyses to establish a corrective action program which meets the requirements of 724.200.

The corrective action program permitted at the MPC facility consisted of excavating and disposing of RCRA regulated and non-RCRA solid wastes in an on-site CAMU landfill constructed with a double liner, a leachate collection system, a leak detection system, and a composite cap. The construction of the CAMU and excavation and deposition of hazardous solids waste in the CAMU, was completed in August, 2001, and is documented in the reports titled Modern Plating Corporation CAMU Landfill Construction Documentation, July 2001 (FVD, 2001a) and Closure Documentation Report, August 2001 (FVD, 2001b). Currently, the only active part of the original corrective action program permitted on April 11, 2000 is the monitoring and maintenance of the GMZ and post-closure care of the closed CAMU landfill. The IEPA approved a revised GMZ Re-evaluation in a letter dated October 16, 2020 (Appendix L) with conditions and modifications that included low flow sampling and monitored natural attenuation parameter sampling. MPC will perform the low flow sampling and monitored natural attenuation sampling during the first semi-annual sampling event in 2021 and submit the results to IEPA in a Corrective Action modification request with conclusions and proposals.

C.8.1 Description of Corrective Action Program: 703.185(h), 724.200

The program will be used to demonstrate the effectiveness of a corrective action measure.

In accordance with 35 IAC Part 620.250, a GMZ was initially established at the MPC facility on May 25, 1999. In June 2009, a GMZ evaluation report was submitted in accordance with 35 IAC Part 620. In October, 2020, IEPA provided an approval of a current GMZ based on historic monitoring data review. The approval letter (IEPA, 2020) includes additional sampling requirements for the upcoming semi-annual monitoring event. It should be noted that the principal sources of contaminants in the groundwater at the site were derived from the solid wastes that have been excavated and placed in the CAMU landfill.

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 Shawnee building; and soils identified in the wetlands north of the lagoons were disposed of in the 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 Drawing 2R.

The IEPA approved a revised GMZ Re-evaluation in October 16, 2020 (IEPA, 2020) (Appendix E). The Revised GMZ Re-evaluation was approved with conditions for monitoring primary sources of contamination. Primary sources of contamination at this site include the lagoons listed above, the Shawnee 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 note 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 IAC 725, Subpart G.

C.8.1.1 Characterization of Contaminated Groundwater: 703.185(h)(1), 724.200(a)(1)

The applicant must include a characterization of the contaminated groundwater, including concentrations.

Appendix G provides the two 2020 groundwater semi-annual reports that were submitted to IEPA. The groundwater monitoring system is described in the RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, RCRA Log No. B-167R, issued June 9, 2011.

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*

Additional groundwater sampling parameters will be added to the first 2021 semi-annual sampling event, as required by IEPA (2020). For that sampling event, low flow sampling techniques will be employed with the following additional parameters:

- *Laboratory analytes: natural attenuation parameters including ethane/ethane/methane parameters,*
- *Field parameters: oxidation-reduction potential, dissolved oxygen.*

C.8.1.2 Concentration Limits: 703.185(h)(2), 724.194(a), 724.200(a)(2)

The applicant must provide a discussion addressing the appropriate concentration limits for groundwater for each of the hazardous constituents.

Comparative standards indicating concentration limits are as follows:

- *GMZ wells screened in unconsolidated materials (A and B wells) are compared to Class II (35 IAC Part 620.420)*
- *GMA wells screened in dolomite aquifer (C, D and E wells) are compared to Class I (35 IAC Part 620.410)*

C.8.1.3 Compliance Point: 724.195, 724.200(a)(3)

The applicant must provide a discussion addressing the compliance point.

Currently, there is not a compliance point established for this facility because the monitoring wells have not attained the applicable concentration limits provided in the Class I and Class II groundwater compliance standards. 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.

C.8.1.4 Compliance Period: 724.196, 724.200(a)(4)

The applicant must provide a discussion addressing the compliance period.

A 3-year period of no Class I and II exceedance is the compliance period for MPC. Semi-annual monitoring results will continue to be submitted to IEPA until a compliance period is identified and approved, and a compliance point can be established.

C.8.1.5 Construction Detail: 703.185(h)(3)

The applicant must provide detailed plans and an engineering report describing the corrective action to be taken, including all aspects of any groundwater and/or product removal/treatment system.

Additional corrective action activities are not planned at the MPC facility. Construction details for previous corrective actions are documented in the report titled Modern Plating Corporation CAMU Landfill Construction Documentation (FVD, 2001a).

C.8.1.6 Effectiveness of Corrective Action: 703.185(h)(4), 724.200(d) & (g)

The applicant must describe how the groundwater monitoring program will assess the adequacy of the corrective action.

Corrective action efforts at the site have achieved the reduction of groundwater contamination as documented in the semi-annual groundwater reports submitted to IEPA. For the parameters of concern, reduction in groundwater concentrations are documented in the Fall 2020 semi-annual groundwater report provided in Appendix G. 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 and CAMU. The Revised GMZ Re-evaluation was approved, with conditions and modifications, in a letter from IEPA dated October 16, 2020 (IEPA, 2020). MPC will continue to comply with IEPA permits and regulatory requirements.

C.8.2 Alternate Concentration Limits: 724.194(b)

In situations where the IEPA determines, based on information and supporting data provided by The applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

Alternate concentration limits are not being proposed for the MPC facility and the GMZ. As a result, this section and sections C.8.2.1 and C.8.2.2 do not apply.

C.8.2.1 Adverse Effects on Groundwater Quality: 724.193(b)(1), 724.194(b)(1)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater.

As stated above, this section does not apply because alternate concentration limits are not being proposed.

C.8.2.2 Potential Adverse Effects on Hydraulically-Connected Surface Water Quality: 724.193(b)(2), 724.194(b)(2)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on hydraulically connected surface water quality.

As stated above, this section does not apply because alternate concentration limits are not being proposed.

C.8.3 Corrective Action Plan: 703.185(h), 724.200(b), 724.200(c), 724.200(e)

In addition to the other requirements of 724.200, the applicant must provide and describe a corrective action program to remove or treat in place hazardous waste constituents in groundwater between the point of compliance and the downgradient facility boundary, or beyond the facility boundary where necessary to protect human health and the environment.

The corrective action program must begin corrective action within a reasonable time period after the groundwater protection standard is exceeded considering the extent of contamination.

Corrective action activities were completed and onsite wastes were disposed of in the CAMU, which was closed in 2001. The construction and closure of the CAMU are documented in the reports titled Modern Plating Corporation CAMU Landfill Construction Documentation, July 2001 (FVD, 2001a) and Closure Documentation Report, August 2001 (FVD, 2001b). As stated in Section C.8, additional corrective actions are not planned for the MPC facility. As a result, there is no corrective action plan for the facility.

C.8.4 Groundwater Monitoring Program: 703.185(h)(4), 724.192, 724.200(d)

The groundwater monitoring program must be as effective as the program required under C.7 in determining compliance with groundwater protection standards and in determining the success of a corrective action program.

The groundwater monitoring program in place at MPC is described in the Final RCRA Closure Plan and Basis of Design, Modern Plating Corporation (FVD, 1999). The report includes a detailed summary of the GMZ, which was established at MPC in accordance with 35 IAC 620.250. The IEPA approved a revised GMZ Re-evaluation (IEPA, 2020) with conditions and modifications that include low flow sampling for additional laboratory analytes and field parameters for the upcoming Spring 2021 sampling event.

Monitoring well locations are shown in Figure C-5. The sampling protocol was prepared as part of the permit application (FVD, 1999) in accordance with 35 IAC Subtitle G, Chapter I, Parts 703.185(h)(4), 724.192, 724.200(d) and is summarized below in Section C.8.4.3.

C.8.4.1 General Monitoring Program Requirements: 724.197: 703.185(e), 724.197

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of 724.197.

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

The groundwater monitoring program follows the program approved by the IEPA dated May 25, 1999. It has been modified as the program has been implemented as described below. All modifications have been approved by IEPA. A summary of the monitoring wells is provided in Table C-1. The location of the GMZ and associated monitoring wells is provided in Figure C-5. The sampling protocol associated with the monitoring program is summarized in Section C.8.4.3.

The IEPA approved a revised GMZ Re-evaluation (IEPA, 2020) with requirements that include low flow sampling and additional laboratory analytes and field parameters for the upcoming Spring 2021 sampling event. The results will be submitted to IEPA in a Corrective Action modification request with conclusions and proposals as appropriate.

C.8.4.2 Groundwater Monitoring System: 724.197(a) & (b), 724.200(d)

The corrective action monitoring system must be installed at the established compliance point as specified by 724.197(a)(2), 724.197(b), and 724.197(c). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (fbgs): well depth, screen interval, ground surface, and stick-up.

The groundwater monitoring well construction information, boring logs, and well completion reports are provided in Appendix H. A summary of the monitoring wells is provided in Table C-1. This summary table provides information such as well depth, screen interval, and ground surface elevation.

C.8.4.3 Description of Sampling and Analysis Procedures: 724.197(d) & (e)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation, and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

Groundwater monitoring is completed on the wells shown on Figure C-5 for parameters indicated in Table C-2. Field parameters are also collected from all wells sampled for metals (cadmium, chromium, lead, and nickel) and VOCs (tetrachloroethene, trichloroethene, cis-1,2 dichloroethene, and vinyl chloride). Field parameters include pH, specific conductance, temperature, 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 are also recorded and reported. Wells not sampled for organic or inorganic parameters are measured for depth to groundwater to acquire additional data on groundwater elevation and aid in the development of potentiometric surface maps which are submitted annually in October.

The IEPA approved a revised GMZ Re-evaluation (IEPA, 2020) with requirements that include low flow sampling and monitored natural attenuation parameter sampling and additional field parameters. MPC will perform the low flow sampling and monitored natural attenuation sampling by appropriate methods during the first semi-annual sampling event in 2021 and submit the results to IEPA in a Corrective Action modification request with conclusions and proposals.

With the exception of the planned low flow sampling event, wells which are to be sampled for metals and/or VOCs, the following procedures are 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 water level information collected, 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. Natural attenuation sampling field parameters, including oxidation-reduction potential, and dissolved

oxygen, will be collected at this time. 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 meter will be calibrated for pH and conductivity 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 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. Table C-2 provides a summary of the analytical methods that will be followed and includes information on sample container, preservatives, holding times and sample volume.

For the first semi-annual sampling event of 2021, low flow sampling will be conducted and natural attenuation parameters including ethane/ethane/methane, oxidation-reduction potential, and dissolved oxygen will be collected in accordance with IEPA (2020).

C8.4.4 Background Quality: 724.197(g), 724.199(c)

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

The background groundwater monitoring point for the MPC facility is groundwater monitoring well MW-16C, a well no located on MPC property. That well is monitored and documented in semiannual monitoring reports.

C.8.4.5 Statistical Evaluations: 703.185(f), 724.197(h), 724.199(d)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

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 June 2009 is included in Appendix G. The procedures used are as follows:

- *Trends and changes in specific parameters and overall groundwater quality are presented on graphs;*
- *An evaluation of contaminant levels in the groundwater with respect to established clean up levels are presented in tables; and*
- *A graphical evaluation of the groundwater surface data from wells (hydrographs) accompanied with annual potentiometric surface maps of the facility and surrounding area are prepared annually and submitted to IEPA.*

C.8.4.6 Evaluation of Groundwater Surface: 724.197(f), 724.199(e)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the

groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

Annually during the Fall sampling event, the groundwater surface is evaluated via hydrographs and the development of potentiometric surface maps. The groundwater flow rate and direction are also evaluated during the fall event. Groundwater contour maps for the Fall 2020 sampling event are provided on Figures C-1, C-2, C-3, and C-4.

C.8.4.7 Extension of Compliance Period: 724.200(f)

The applicant must provide a discussion addressing the extension of the compliance period. The compliance period during which the groundwater protection standard applies shall be extended until the applicant demonstrates that the groundwater protection standard of 724.192 has not been exceeded for three consecutive years.

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.

The IEPA approved a revised GMZ Re-evaluation (IEPA, 2020) requirements that include low flow sampling and monitored natural attenuation parameter sampling. MPC will perform the low flow sampling and monitored natural attenuation sampling during the first semi-annual sampling event in 2021 and submit the results to IEPA in a Corrective Action modification request with conclusions and proposals as appropriate.

Given that a GMZ has been established and that groundwater remediation is not required per 35 IAC 742.925 it is MPC's 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.

C.8.4.8 Effectiveness of Corrective Action: 724.200(g)

The applicant must provide a discussion addressing the evaluation and reporting of the effectiveness of the corrective action program to the IEPA. The written reports must be submitted semi-annually.

As part of the semi-annual monitoring program and reporting requirements, MPC has been and will continue to provide an assessment of the corrective action program which will focus on concentration trends and the progress towards attaining the 35 IAC 620.410 standards for the dolomite aquifer and the 35 IAC 620.420 standards for the unconsolidated aquifer.

C.8.4.9 Evaluation of the Corrective Action Program: 724.200(h)

The applicant must provide a discussion addressing any determination that the corrective action program no longer satisfies the requirements of 724.200.

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 of notice of that determination.

C.9 Reporting Requirements: 724.197(j)

The applicant must provide a discussion addressing groundwater monitoring data collected and the maintenance of the data in the facility operating record.

MPC will continue to maintain in the facility operating record a copy of the collected groundwater monitoring data. Any changes to the monitoring program will be submitted as an application for a permit modification. MPC will continue to submit to the IEPA semi-annual reports that summarize the semi-annual sampling events and provide an evaluation of the groundwater quality data collected in the GMZ.

D. PROCEDURES TO PREVENT HAZARDS

D.1 Security: 703.183(d), 724.114

The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility. Unless a waiver is granted, the facility must have either a 24-hour surveillance systems, or a barrier and a means to control entry as set forth in Item D.1.2 below.

All RCRA and non-RCRA hazardous waste at the MPC facility has been excavated and placed in the CAMU landfill, which has been closed. As part of the CAMU post-closure care, a fence has been constructed and maintained around the CAMU as a means to control entry to the site.

D.1.1 Waiver from the Security Requirements: Facilities seeking a waiver from the security requirements must demonstrate that:

D.1.1.1 Physical contact with the waste, structures or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and

D.1.1.2 Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 724.

MPC is not seeking a waiver from the security requirements. As a result, section D.1.1 and subsections D.1.1.1 and D.1.1.2 do not apply.

D.1.2 Restricting Entry to the Facility
Describe the means used to restrict entry to the facility.

1. **24-Hour Surveillance System:** Describe the 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) at the facility that continuously monitors and controls entry onto the active portion of the facility; or

   A 24-hour surveillance system is not employed at the MPC facility.

2. **Barrier and Controlled Entry:** Describe the artificial or natural barrier system (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and the means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance or controlled roadway access to the facility).

   All RCRA and non-RCRA hazardous waste at the MPC facility has been excavated and placed in the CAMU landfill, which has been closed. As part of the CAMU post-closure care, a 6-foot high chain-link fence has been constructed around the CAMU to limit human and animal access to the CAMU. The location of the security fence is shown on Drawing 7A located in Appendix C. Details of the security fence materials and construction are also included in Appendix C on Drawing 7B.

D.1.3 Warning Sign: Identify the locations of all warning signs on a scale drawing of the facility. A sign with the legend, "Danger X - Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The sign must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger X - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

Warning signs with the legend, "Danger Hazardous Waste - Unauthorized Personnel Keep Out," are posted at the access control gate to the CAMU and along each of the other 3 sides of the CAMU fence. The signs have a print large enough to be legible from a distance of at least 25 feet.

D.2 Equipment Requirements: 703.183, 724.132, 724.133, 724.134, 724.135

All facilities must be equipped with the equipment and procedures listed in D.2.2 through D.2.8 below in place unless the applicant submits a waiver request as identified in D.2.1 below. The location within the facility of the equipment described in this section must be shown on the drawings required in Section B.2.2 above.

D.2.1 **Waiver: Facilities** seeking a waiver from any or all of the equipment/procedure requirements below. To obtain a waiver, the applicant must demonstrate that none of the hazards posed at the facility would require the particular type of equipment/procedure at issue.

MPC is not requesting a waiver from the equipment requirements. Therefore Section D.3.1 does not apply.

D.2.2 **Internal Communications:** Describe the internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

In accordance with federal and state requirements, MPC maintains an updated version of a Hazardous Waste Contingency Plan (FVD, 1999c, update 2017) addressing internal communications in the event of certain emergency conditions:

- *Fire and/or explosions,*
- *Spills or material release,*
- *Floods.*

First, second, and third shift emergency coordinators and their alternates are listed in FVD (1999c) with both office, home, and cell phone numbers. A telephone paging system and two-way radio supplements internal communications. In the event of a power failure, an emergency generator provides power to operate the telephone system.

Alarm systems are provided for the CAMU systems. The Leachate Pump Building designed and constructed with explosion proof fixtures as appropriate. Leak detection, indicators, and a prominent alarm light are provided on the Building Control Panel. Drawing 12 in Appendix C shows details.

D.2.3 **External Communications:** Describe the device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, state or local emergency response teams.

In accordance with federal and state requirements, MPC maintains an updated version of a Hazardous Waste Contingency Plan (FVD, 1999c, update 2017) addressing external communications in the event of certain emergency conditions:

- *Fire and/or explosions,*
- *Spills or material release,*
- *Floods.*

The Contingency Plan has been provided to the local hospital, fire and police departments, and a local environmental clean up company. External communications are addressed in the plan with contact phone numbers to these organizations. Additionally, emergency contact information for the U.S. Coast Guard, National Response Center, Illinois EPA 24-Hour Hotline, Chemtrec, and

PDC Response, Inc. (CAMU Landfill Spill Response) are included. A decision-making flow chart is included in the Plan.

D.2.4 **Emergency Response Equipment:** Describe the following emergency response equipment present at the facility: portable fire extinguishers; fire control equipment, spill control equipment, and decontamination equipment.

The facility has several types of emergency response equipment in place. Appendix I has two figures from the Contingency Plan (FVD, 1999c updated in 2017). Multipurpose ABC fire extinguishers are located as sown on Figure G-1; fire hydrants and spill equipment are marked on Exhibit 1. The facility includes a sprinkler system. A spill cart is located at the facility for spill response. Decontamination equipment is maintained.

D.2.5 **Water for Fire Control:** Provide a statement signed by an independent fire control professional, or the responsible fire department, certifying that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. The document must include an original signature from the fire control professional or responsible fire department.

MPC will be requesting a signed statement from the appropriate fire control professional to fulfill this requirement. We anticipate forwarding the statement to IEPA by January 31, 2021 to fulfill this requirement.

D.2.6 **Personnel Protection Equipment:** Describe the procedures, structures, and clothing equipment used to protect personnel from undue exposure to hazardous waste.

At a minimum, Level D personal protection equipment (PPE) is worn by personnel when sampling and servicing the CAMU and associated monitoring equipment. In addition, chemical resistant gloves and safety glasses are worn when monitoring groundwater or leachate. Hard hats are worn when an overhead hazard exists. PPE may be added to these minimum requirements based upon the situation. A list of emergency equipment is included in Section G-5 of the Contingency Plan, Hazardous Waste Contingency Plan and Related Documents (FVD, 1999c updated in 2017).

D.2.7 **Testing & Maintenance of Emergency Equipment:** Demonstrate that all facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, is tested, maintained, and calibrated, as necessary to assure its proper operation in time of emergency.

The Contingency Plan (FVD, 1999c updated in 2017) describes testing and maintenance for the emergency equipment.

D.2.7.1 Equipment Testing: Identify all emergency equipment and describe how the equipment is tested, maintained, and calibrated.

The sprinkler signaling system is maintained by the company maintenance department and maintenance reports are filed with the company's insurance carrier. The system is tested monthly utilizing a flow test. Blowdowns on the sprinkler system are conducted annually.

The fire extinguisher equipment is maintained by the safety committee and is reviewed by contract quarterly by Safety Services of Freeport.

Inspection of emergency equipment is performed weekly and is recorded.

Telephones are in daily use and the radio is checked when activities are performed in the waste storage building (reference 35 Ill. Adm. 724.133 and 40 CFR 264.33).

D.2.7.2 Schedule: Provide a testing and maintenance/calibration schedule for all communications, monitoring, safety, spill control, decontamination, and emergency equipment.

The internal communication systems employed in the CAMU leachate detection and leachate collection system are inspected on a regular basis by trained MPC personnel. The leachate detection system alarms are inspected monthly and the leachate collection systems alarms are inspected every 15 days.

D.2.8 Equipment and Power Failure: Describe the procedures, structures, and equipment used to mitigate the effects of equipment failure and power outage.

If power outage occurs for more than 12 hours, an additional emergency generator can be rented from the agencies listed in G-4A of the Contingency Plan (FVD, 1999c updated in, 2017). This generator can be used to power the leachate collection system pumps.

D.3 Inspection Requirements: 703.183(e), 724.115

Describe the inspection procedures followed at the facility. Provide copies of the inspection log and repair log that will be used to document inspections and repairs at the facility in accordance with the RCRA requirements.

Post-closure inspections on the CAMU and associated systems are conducted at the facility on a regular basis. All inspection procedures are outlined in the "Post-Closure Inspection Schedule and Log" contained in Table B-1.

D.3.1 Inspection Log: An inspection log must be maintained which includes all of the items listed below. The log must also include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

Table B-1 provides the "Post-Closure Inspection Schedule and Log," which describes the post-closure inspection plan for the MPC facility. The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities.

D.3.1.1 Items Inspected: Identify each item the owner/operator will inspect at the facility in order to comply with the RCRA requirements. These items include, all RCRA regulated units, monitoring equipment, safety and emergency equipment, security and communication devices, and operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

The "Post-Closure Inspection Schedule and Log" contained in Table B-1 provides inspection requirements for the CAMU and associated systems. Visual inspection and appropriate checks are performed regularly on the Leachate Collection System, the Leak Detection System, the CAMU exterior, erosion control structures, sedimentation basins, CAMU cover system, security equipment, the gas venting system, the groundwater monitoring wells, and the horizontal and vertical benchmarks.

The sprinkler signaling system is maintained by the company maintenance department and reports are filed with the company's insurance carrier. The system is tested monthly utilizing a flow test. Blowdowns on the sprinkler system are conducted annually. The fire extinguisher system is maintained by the safety committee and is reviewed by contract quarterly by Safety Services of Freeport. Inspection of this emergency equipment is performed weekly and is recorded.

D.3.1.2 Types of Problems: Identify the types of problems (e.g., malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, eroding dike).

The types of problems associated with all items inspected as part of the post-closure plan is provided in the "Post-Closure Inspection Schedule and Log" contained in Table B-1. Depending on the item, inspectors look for signs of loss of integrity, corrosion, subsidence, operability, erosion, and breaches.

D.3.1.3 Inspection Frequency: Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.) The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

The inspection frequency associated with all items inspected as part of the post-closure plan is provided in the "Post-Closure Inspection Schedule and Log" contained in Table B-1. Depending on the item, inspection frequency is assigned and performed on an appropriate basis such that developing deterioration will be identified before an item loses operability or functionality.

D.3.2 Repair Log: The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair.
2. The problem identified during the inspection that needs repair.
3. The date the inspection took place.
4. The name of the person who conducted the inspection.
5. The name of the person who makes the corrected repair.
6. The date the repair was made.
7. The efforts carried out in making the repair.
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protection human health, the environment, and the safe operation of the facility.

The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities.

D.3.3 24 Hour Reporting (702.152(f), 703.245(b)): Describe the procedures to be followed if an inspection reveals any noncompliance with the permit which may endanger health of the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

The inspection and maintenance procedures are designed and implemented to prevent CAMU operability issues that might lead to permit noncompliance. Should an issue arise, MPC shall report to the IEPA any noncompliance that may endanger health or the environment. Any such information shall be reported orally within 24 hours from discovery. 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.*

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.*

A written submission shall also be provided within 5 days of the discovery. 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 IEPA may waive the five day written notice requirement in favor of a written report within 15 days. (35 IAC 702.152(l) and 703.245(b))

E. CLOSURE AND POST-CLOSURE REQUIREMENTS

See 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c), 724.328(b), 724.328(c)(1)(B), 724.380(c), 724.401(b)

E.1 Information Regarding the Unit(s) Closed as a Landfill

The foundation for developing an appropriate post-closure care program for a unit closed as a landfill is a thorough understanding of the unit, focusing on its surroundings, construction, operation and closure.

E.1.1 General Information Regarding of the Unit to Receive Post-Closure Care

Identify the unit(s) at the facility which were closed as landfills to which the post-closure requirements of 35 Ill. Admin. 724, Subpart G apply. Among other things, provide:

1. A scaled drawing showing the location and boundaries of the unit within the facility;
2. A copy of IEPA's letter accepting certification of closure of the unit as a landfill;
3. The date that the post-closure care period for the unit began; and
4. A certified copy of the survey plat and post-closure notices filed in accordance with 35 IAC 724, Subpart G or 725, Subpart G with the county in which the facility is located.

1. The location and boundaries of the CAMU are shown on Drawing 2R. A survey plat is provided in Appendix J.
2. The closure plan was approved by the IEPA with the issuance of the RCRA Hazardous Waste Management Post-Closure, Permit No. 1770200010, Log No. B-167, issued April 11, 2000. A copy of this document is included in Appendix L.
3. The post-closure care period began April 11, 2000.
4. A certified survey plat is included in Appendix J.

E.1.2 Geology and Hydrogeology Around/Beneath the Unit

Provide a detailed description of the geology and hydrogeology around/beneath the unit. Of special concern is the presence of silt, sand or other permeable zones around and beneath the unit which, if not properly addressed, could be a conduit for the migration of leachate or landfill gas away from the landfill. This description should be supplemented with boring logs, drawings and cross-sections.

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 feet 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 3.3x10-8 centimeters per second (cm/sec) to 6.8x10-4 cm/sec.

The stratum underlying the organic clay is the alluvial sand and gravel. The sand and gravel ranges in thickness from about 5 feet 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 millimeter). The soil is non-plastic, and laboratory permeabilities ranged from 5.1x10-7 cm/sec to 2.8x10-3 cm/sec.

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 floodplain. 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 8.5x10-8 cm/sec to 1.2x10-7 cm/sec.

Summary of Bedrock Geology within the GMZ

The bedrock at the facility is Ordovician Age Galena and Platteville Group dolomites 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 MW-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 St. 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.

Hydrogeology

Two aquifers were identified at the MPC site including an upper aquifer consisting of permeable alluvial sand and gravel and a bedrock aquifer consisting of Ordovician age Galena and Platteville Group dolomite.

- *The 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 ft 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 hydraulic conductivity of 3.17x10-' cm/s. Similarly the dolomite aquifer exhibits an average field hydraulic conductivity of 4.27x10 -3 cm/s.*
- *The permeability of the clay aquitard as measured by lab permeameter tests ranges from 8.5x10'8 cm/s to 1.2x1 -7 pm/s.*
- *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.*
- *Based on elevation data, it was concluded that four of the five sludge lagoons are at times in contact with the groundwater. Waste Lagoon No. 1A is above the groundwater table (for additional information see data in Appendix C of the September 1997 RCRA Closure Plan).*

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 II 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 (Appendix W), 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 our interpretation of 35 IAC 620.210 and 620.220, the groundwater in the unconsolidated aquifer is typically less than 10 ft below ground surface and thus meets the Class II designation. Based on the permeability and depth of the dolomite aquifer, it is our understanding that IEPA will apply the Class I designation to the dolomite aquifer.

For the unconsolidated aquifer, assuming a hydraulic conductivity of about 7.6 ft/d, a hydraulic gradient based on potentiometric surface maps of 0.01 to 0.005 (ft/ft) and an effective porosity value of 0.2, the average linear velocity of groundwater at the site is approximately 0.4 ft/d.

Accounting for retardation, the rate at which dissolved constituents in the groundwater migrate is considerably less than 0.4 ft/d.

For the dolomite aquifer, assuming a hydraulic gradient of 0.006 to 0.08 (ft/ft), a hydraulic conductivity of 3.8 ft/d and a porosity value of 0.15, the average linear velocity of groundwater is approximately 0.2 ft/d to approximately 0.5 ft/d. Again accounting for retardation, the migration rate of dissolve constituents in groundwater within the dolomite will be considerably less the linear velocity of groundwater.

Information regarding the soils underlying the unit are provided in Appendix F. General soils information is also provided on the construction drawings that are provided in Appendix C.

E.1.3 Characterization of Waste Contaminated Soil Present in the Landfill Unit

Provide a description of the type, quantity and characteristics of the waste and/or contaminated soil remaining in the unit.

Several types of remediation waste have been placed in the CAMU. The wastes placed in the CAMU are defined as F006 and F002 listed sludge wastes which are also contaminated with cyanide, and various metals. A description of the type and quantity of waste associated with each remediated area is provided on Drawing 2.

E.1.4 Initial Closure Activities

Provide a detailed description, as appropriate, of the following initial activities carried out in closing the unit as a landfill:

1. Removal of waste and contaminated soil;
2. Stabilization of material remaining in the unit; and
3. Use of structural fill material to establish final contours.

Removal of Waste and Contaminated Soil

Four hazardous waste management units (HWMUs), four solid waste management units (SWMUs), and two areas of concern were remediated by excavating the contaminated soils and depositing these soils in the CAMU landfill in accordance with the plan outlined in the RCRA Part B Permit Application for Proposed Corrective Action Management Unit (FVD, 1999) and documented in the report titled Closure Documentation Report (Appendix R). The four HWMUs excavated were Lagoon 1, Lagoon 2, Lagoon 3, and the Shawnee Building. The remediated SWMUs consisted of Lagoon 0, Lagoon 1A, Cyanide Treatment Vault, Wetland 1 and 1A, and Wetland II and III. The two areas of concern remediated were the outfall pipe and the wastewater release area.

The CAMU landfill was constructed and closed in a manner to eliminate future environmental impacts from the excavated hazardous wastes. To minimize and eliminate future environmental impacts the CAMU landfill was constructed with a double liner, a leachate collocation system, leak detection system, and a composite cap. Further details regarding the construction of the CAMU landfill are provided in section E.1.2.3.

Remedial action was approved by the IEPA with the issuing of the RCRA Hazardous Waste Management Post-Closure permit for the 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 HWMUs and SWMUs 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, leak detection system, 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. As outlined in the RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit (CAMU), April 11, 2000 (IEPA, 2000) and shown on Drawing 2, the following remediation and closure activities have occurred at the MPC facility:

Lagoon 0, Lagoon 1, Lagoon 1A, Lagoon 2, Lagoon 3

Waste sludges in the listed 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. Excavated soil and electroplating waste was removed from the lagoons and placed in the CAMU. After waste was removed, each area was backfilled with clean soils and compacted in lifts and the surface graded to drain. Additional excavation details regarding the waste types and quantities are provided on Drawing 2.

Cyanide Treatment Vault Area

The concrete cyanide vault was remediated by breaking up and removing the concrete vault. Approximately 2 feet of contaminated soil was excavated from the floor and sidewalls of the cyanide treatment vault. Approximately 200 cubic yards of contaminated soil was excavated and placed in the CAMU. After waste was removed, this area was backfilled with approximately 10 feet of clay soil, compacted in lifts, and the surface was graded to drain. An engineered barrier was also installed over the remediated area.

Shawnee Building

Approximately 30 cubic yards of contaminated soil was excavated from storage areas in the Shawnee building and placed in the CAMU. The remediation was completed by cutting and removing a section of the concrete slab measuring approximately 25 feet by 25 feet and excavating the soil below to a depth of approximately 3 feet. After excavation of the contaminated soil, the excavated area was backfilled with clay soil, compacted in lifts, and the graded to promote drainage.

Wetland Area

Approximately 2,905 cubic yards of contaminated soils were removed from four areas in the Wetland Area and placed in the CAMU. The wetland areas were backfilled and graded with wetland soils that were stockpiled during the excavation of a pond on the former Stephenson Service Co. property, which was purchased by MPC.

Outfall Pipe

An abandoned outfall pipe from the wastewater treatment plant (WWTP) to the Pecatonica River was excavated. An area approximately 30-feet long, 10-feet wide and 10-feet deep was excavated. Contaminated soil from this area was placed in the CAMU. The excavated area was backfilled and graded with clean soil.

Wastewater Release

During construction of the CAMU, a pipeline that transfers wastewater from the manufacturing plant to the WWTP ruptured (IEPA Incident No. 20001377). Approximately 3 cubic yards of soil were contaminated as a result of the spill. This contaminated soil was removed and placed in the CAMU. The excavated area was backfilled and graded with clean soil.

Following the placement of contaminated material in the CAMU, a cover system on top of the CAMU was constructed. The cover systems consisted of the following layers, listed from top to bottom:

- *6 inches of topsoil*
- *18 inches of cover soil*
- *Geocomposite drainage material*
- *40 mil HDPE geomembrane*
- *Geosynthetic clay liner (GCL)*
- *6 inches of grading/venting layer*

Stabilization of material remaining in the unit

After the sludge and contaminated soils generated during the remediation activities were placed in the CAMU and graded using a low ground pressure bulldozer.

Final Contours

A final cover design meeting the requirements of 35 IAC 724.410(a) is proposed for the CAMU Landfill which generally has components as follows:

- *6 inches of topsoil*
- *18 inches of cover soil*
- *Geocomposite drainage layer*
- *40 mil HDPE geomembrane*
- *GCL (soil component of composite cap)*
- *6 inch grading/venting layer*

A registered land surveyor completed a topographic survey of the final waste grades on an approximately 50-foot grid. The final grading is shown on Drawing 2 in Appendix J.

A run-off control system was also installed around the CAMU to prevent erosion of the CAMU cover. In August, 2001, FVD submitted the Closure Documentation Report, August 2001 (FVD, 2001) to the IEPA to formally close the CAMU landfill.

E.1.5 Details Associated with the Closed Unit

Provide a detailed description, as-built drawings, cross-sections, and scaled drawings of the overall unit that includes/shows the following. Of special concern is the vertical elevations associated with each component of the unit. Note: the specific information regarding any leachate collection system, leak detection system and/or gas management system present in the landfill that must be described/shown is identified in Sections E.3 thru E.5 below.

Appendix C contains engineering drawings of the construction of the CAMU that illustrate the information provided in 1 through 8 below.

1. The soils underlying the unit;

   Information regarding the soils underlying the unit are provided in Appendix F. General soils information is also provided on the construction drawings that are provided in Appendix C. The soils underlying the CAMU range from silt and clay with sand and gravel to silty sand with gravel.

2. The bottom liner system of the unit (if any is present);

   - *Geocomposite drainage material (high density polyethylene [HDPE] drainage net sandwiched between two layers of geotextile) with a minimum transmissivity of 3 x 10-5 m2/sec (leachate collection system [LCS])*
   - *60 mil textured HDPE geomembrane (top liner)*
   - *HDPE drainage net (geocomposite on sideslopes) with a transmissivity of 3x10-5 m2/sec or more (leak detection system)*
   - *60 mil textured HDPE geomembrane (upper component of the bottom liner)*
   - *Geosynthetic clay liner (GCL), (lower component of the bottom liner)*
   - *Prepared subgrade consisting of a minimum 1-foot thickness of recompacted fine-grained soils*

3. A description of the base of the unit if it has no constructed liner system;

   Not applicable

4. Any permeable zones around or beneath the landfill and a description of the procedures used to seal off these zones;

   No permeable zones were noted around or beneath the CAMU in the Construction Documentation Report (Appendix Q). 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.

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 'Z-in were removed by hand or using a mechanical lawn rake mounted on a Bobcat.

5. Any cut-off walls or slurry walls constructed outside the landfill boundaries to address migration of leachate or landfill gas from the landfill;

   Not applicable.

6. The final cover system over the unit;

   This was accomplished by constructing a composite cap consisting from top to bottom of a 6-inch topsoil vegetative layer, 18-inches rooting zone, geocomposite drainage layer, 40 mil HDPE textured geomembrane, geosynthetic clay liner (GCL) and a 6-inch venting layer above the wastes. To minimize the migration of fluids from the closed CAMU, a double liner was constructed consisting from top to bottom of a geocomposite (leachate collected layer), a 60 mil textured HDPE geomembrane, a second geocomposite (leak detection layer), a second 60 mil textured HDPE geomembrane, a GCL and 1-foot of compacted fine ground soil. The reports submitted provided evidence that the composite liner and cap are effective in minimizing the migration of fluids.

   The report prepared by FVD titled "Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit," December 1999, contains calculations and a discussion of the equivalency of the composite final cover and the composite liner. Both are considered equal since both include a geocomposite, geomembrane and GCL components.

   The CAMU final cover is vegetated to minimize soil erosion and protect the composite cover. The final cover is graded to drain to a perimeter ditch which drains into a sedimentation basin.

7. The final contours established for the unit; and

   The final contours are shown on Drawing 7A of Appendix C.

8. The run-on and run-off control systems of the unit.

   The final cover has slopes designed 6:1 (horizontal to vertical [H:V]) near the landfill crest and 4:1 (H:V) adjacent to the berm. The slopes are well vegetated and sloped to a perimeter drainage ditch which routes flow to two sedimentation basins located north and west of the CAMU landfill.

   - *Accommodate settling and subsidence so that the cover integrity is maintained.*

The report prepared by FVD titled "Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit," December 1999, included calculations which predicted the settlement expected as the sludge desiccated. The CAMU composite final cover was constructed with flexible materials such as the GCL and 40 mil HDPE geomembrane which are capable of accommodating the expected subsidiaries.

- *Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoil present.*

The report referenced above contains calculations and a discussion of the equivalency of the composite final cover and the composite liner. Both are considered equal since both include a geocomposite, geomembrane and GCL components.

E.2 Contact Person

Provide the name, address and phone number of the person or office to contact about the unit during the post-closure care period. A copy of the post-closure permit and associated approved permit modifications must be maintained by this person/office; a copy of these documents must also be maintained at the facility subject to the permit.

Mr. James Stenberg
Modern Plating Corporation
701 South Hancock Avenue
Freeport, Illinois 61032
Telephone: (815) 235-3111

E.3 Operation of the Leachate Collection System

Note: This section need only be addressed if a leachate collection system is present in the landfill unit.

E.3.1 Quality of Leachate in the Leachate Collection System

1. The leachate needs to be analyzed for the parameters listed below, and the results of annual analyses conducted on representative samples of leachate must be provided in the permit application. This will give an indication of the potential contaminants in a subsurface release from the unit to the groundwater. The leachates need to be analyzed for:

    a. Those constituents for which a public or food processing water supply standard has been established in 35 IAC 302;
    b. Those constituents for which a groundwater quality standard has been established in 35 IAC 620;
    c. The 51 organic chemicals in drinking water described in 40 CFR 141.40.
    d. Any other contaminants expected to be present in the leachate, based on the characteristics of the waste and materials present in the unit.

A list of all the above contaminants is provided as Attachment 1 to this document. This list may be reduced if information is provided indicating that certain listed contaminants are not expected to be present in the leachate.

Attachment 1 noted above refers to the IEPA "Information Which Must be Provided in an Application for a RCRA Post-Closure Permit, November 2019", not provided in this application. Leachate sampling parameters were incorporated in MPC's RCRA Post-Closure Permit (IEPA, 2011) undergoing renewal by this application. Leachate analysis has not been conducted under the current permit because no leachate has been collected since 2010.

2. If the list of analytes has been reduced, provide an analysis for all constituents listed in E.3.1.1 each time the post-closure permit is renewed. Compare the reduced list, to the full list. If no new parameters are detected, the application can propose to resume analyzing leachate for the previously approved reduced list. If any new parameters are detected, they must be added to the reduced list and the list of groundwater monitoring parameters.

   In accordance with the RCRA Post-Closure Permit (IEPA, 2011), representative samples of leachate from Phases 1 and 2 are required to be collected annually and analyzed individually for the following analytes:

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

   The expanded list of analytes could not be analyzed because there was no leachate collected since 2010.

3. If there is more than one leachate sump but the application does not propose to analyze the leachate from each sump, provide justification for how the leachate sample(s) are considered "representative" for a given landfill.

   This section does not apply since, in accordance with the RCRA Post-Closure Permit (IEPA, 2011), representative samples of leachate from Phases 1 and 2 are to be collected annually and analyzed individually.

4. Describe the procedures used to collect, handle, and analyze the leachate samples discussed above. All such efforts must be carried out in accordance with procedures approved/established by IEPA or USEPA.

In accordance with the RCRA Post-Closure Permit (IEPA, 2011), representative samples of leachate from Phases 1 and 2 should be collected annually and analyzed individually. Samples would be collected into lab-provided containers and kept on ice until delivered to the laboratory using chain-of-custody procedures. Sampling has not taken place under the current permit because no leachate has collected in the system since 2010.

E.3.2 Leachate Collection System Within the Landfill

1. Identify the general components of the leachate collection system within the landfill (includes the filter layer, leachate collection layer, leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps, leachate collection wells, leachate removal pumps or other equipment used to remove leachate, manholes, clean-outs, etc.).

   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. Leachate levels are measured in the sumps..

   A piping and instrumentation diagram was not prepared as part of the design. Detail drawings of the construction of the leachate collection system and leak detection system are provided in Appendix C, Drawings 11R and 12.

2. Provide a detailed description of the procedures used to construct the leachate collection system within the landfill. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Identify the contours of the top of the liner system including any leachate collection trenches; the elevation of the lateral leachate collection pipes; the screened interval of any leachate collection wells or monitoring points; and the elevation of the bottom of the leachate collection sumps, wells, manholes and clean-outs.

   Details of the construction of the leachate collection system and leak detection system are provided in Appendix C, on Drawings 11R and 12. Further detail on how the leachate collection system was constructed is provided in Section 12 of the Construction Documentation Report in Appendix Q.

3. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system within the landfill. Specifically:

   a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
   b. Identify each piece of equipment on a piping and instrumentation diagram; and
   c. Describe the operational function and capabilities of each piece of equipment.

   The Construction Documentation Report provided in Appendix Q contains equipment information and the construction details of the leachate collection system. Figures of the leachate collection system and leak detection system are provided in Appendix C, Drawings 11R and 12. A piping and instrumentation diagram was not prepared as part of the design information.

4. If the landfill was designed to meet the requirements of 35 IAC 724.401, then an engineering report must be provided demonstrating that the system was constructed and will be operated in such a manner to prevent the leachate depth over the top liner from exceeding one foot. Appropriate calculations must be provided as part of this demonstration along with justification of all assumed parameters and of the numerical techniques used in making the demonstration.

The landfill was designed to meet the requirements of 35 IAC 724.401. The Construction Documentation Report, included in Appendix Q, provides details about how the leachate collection system was constructed. An engineering report for the CAMU was included in the Plan of Operation for the Corrective Action Management Unit at the Modern Plating Corporation Facility (FVD, 1998). The landfill was constructed as designed in the engineering report. Construction certification was included in the Closure Documentation Report (Appendix R).

During post-closure monitoring, the two CAMU Landfill sumps are checked for the accumulation of liquid on a monthly basis in accordance with 35 IAC 724.403(c), and the leachate levels recorded. The leachate level in each sump is detected by a transducer in the sump riser and displayed on the pump control. If leachate accumulates above the 1-foot pump operating level, it is pumped out and the amount of flow recorded. If the leachate level falls below the pumping level for two consecutive quarters, monitoring will be conducted semi-annually. If anytime during the post-closure period, leachate exceeds the pump operating level in the sumps, the monitoring will revert to monthly until the liquid level again drops below the pump operating level for two consecutive months.

Details of the construction of the leachate collection system and leak detection system are provided in Appendix C, Drawing 11R showing elevations including pump activation levels of the sumps.

5. If it was not necessary for the landfill to meet the requirements of 35 IAC 724.401, then information must be provided regarding the maximum leachate levels which will be present at the leachate removal points and throughout the landfill. An engineering report/analysis of the leachate levels which will be present in the landfill must be provided as well as information from past operations of the leachate collection system which will verify the projected levels.

The landfill was designed to meet the requirements of 35 IAC 724.401 and the leachate level and sump design are described in the preceding response.

E.3.3 Leachate Collection System Outside the Landfill

1. Identify the general components of the leachate collection system which allow for the removal and of the leachate and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:

   a. Provide a detailed description of the procedures used to install the components of leachate collection system mentioned above;

   b. Provide specifications, piping and instrumentation diagram, and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.

   c. Identify the sample point(s) used to collect leachate samples on the piping and instrumentation diagram.

   d. Indicate the locations of the leachate collection system sampling points on a scale drawing of each landfill. Identify the sample points by both the facility and IEPA identification numbers for each sample point.

Installation and construction procedures are documented in the Construction Documentation Report, included in Appendix Q. The report includes diagrams, drawings, and specifications on equipment. Outside the landfill, the leachate collection system routes the leachate to the treatment system.

The leachate collection system has two sumps which are located in the southeast and southwest corner of the Phase 1 and Phase 2 of the CAMU landfill respectively, shown on Drawing 4. Leachate is extracted through underground piping from the sump by a dedicated pump housed in the Leachate Pump Building adjacent to the CAMU. The arrangement is shown on Drawing 12, Appendix C. The pumps discharge to a pretreatment facility operated by MPC. The pretreatment facility treats process water from the plant operations for removal of metals and cyanide and after treatment, the water is discharged to the Freeport Publicly Owned Treatment Works (POTW).

Sampling ports were installed after the original construction. Drawing 12, Appendix C notes IEPA identification numbers as Phase 1 sample port – L301; Phase 2 sample port – L302.

2. Provide detailed information regarding all equipment pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:

   a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
   b. Identify each piece of equipment on a piping and instrumentation diagram; and
   c. Describe the operational function and capabilities of each piece of equipment.

   Details of the construction of the leachate collection system and leak detection system including manufacturer specifications are fully described in Section 12 of the Construction Documentation Report in Appendix Q.

E.3.4 Management of Leachate Collection System (LCS)

Describe how the LCS is managed. Discuss how all parts of the leachate collection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depicts the overall leachate collection system, from the pump within each leachate collection sump/well to the leachate accumulation tank. For each leachate collection sump/well, identify:

   a. The approximate elevation of the bottom of the sump or landfill at that location;
   b. The leachate elevation which activates the pump in each sump or extraction well;
   c. The leachate level which activates the pump within the sump/well;
   d. The leachate elevation when the pump shuts off; and
   e. A description of the instrumentation in place so that the amount of leachate removed from a given sump/well over a given time period can be determined.

   Drawing 11R in Appendix C shows the elevations requested.
   During post-closure monitoring, the two CAMU Landfill sumps are checked for the accumulation of liquid on a monthly basis in accordance with 35 IAC 724.403(c), and the leachate levels recorded. The leachate level in each sump is detected by a transducer in the sump riser and displayed on the pump control. If leachate accumulates above the 1-foot pump operating level, equivalent to an elevation of 757.0 feet, it is pumped out and the amount of flow recorded. If the leachate level falls below the pumping level for two consecutive quarters, monitoring will be conducted semi-annually. If anytime during the post-closure period, leachate exceeds the pump operating level in the sumps, the monitoring will revert to monthly until the liquid level again drops below the pump operating level for two consecutive months. Details of the construction of the leachate collection system and leak detection system are provided in Appendix C. Maintenance and inspections of the leachate collection system and leak detection system is conducted on a regular basis as outlined in Tables B-1 and B-2.

2. Describe the procedures which will be followed to document/record all aspects of the management of the leachate collection system(s). At a minimum, the results of leachate

quality analyses and the amount of leachate removed from a given sump/well each month must be documented in the operating record.

Maintenance and inspections of the leachate collection system and leak detection system are conducted on a regular basis as outlined in Tables B-1 and B-2. The results of annual leachate sampling are filed by MPC and submitted to IEPA.

3. Describe how the collected leachate will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

Leachate is extracted from the sumps by dedicated pumps housed in the Leachate Pump Building adjacent to the CAMU. The arrangement is shown on Drawing 12, Appendix C. The pumps discharge to a pretreatment facility operated by MPC. The pretreatment facility treats process water from the plant operations for removal of metals and cyanide and after treatment, the water is discharged to the Freeport Publicly Owned Treatment Works (POTW).

The wastewater discharge permit issued by the City of Freeport Water & Sewer Commission is provided in Appendix S.

E.3.5 Summary of Leachate Management Program Conducted to Date

Provide information addressing the items in Section E.3.4 regarding the leachate management program implemented during the past ten years. This information should discuss the efficiency of the existing leachate management program or identify deficiencies which must be addressed to ensure leachate is adequately managed in the landfill.

Information about leachate management is submitted to IEPA annually. No deficiencies have been noted regarding the leachate management program.

E.4 Operation of the Leak Detection System: 724.402, 724.403 and 724.404

This subsection must be addressed if a Leak Detection System (LDS) is present in the landfill. The LDS must be capable of detecting, collecting and removing leaks through the upper liner system at the earliest practicable time throughout all areas of the landfill. The LDS must be constructed of a drainage layer along with sumps and pumps of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer.

1. Each landfill unit must have its own set of LDS sumps.

2. Each LDS sump and associated removal system must be designed so that volume of liquid in the LDS sump can be measured and as well as the volume of leachate removed from the sump.

The drawings referenced in this description can be found in Appendix C. The CAMU is divided into two phases, shown on Drawing 4. The LDS sump is separate from and below the LCS sump, shown on Drawing 11R. Although the LCS and LDS share a pump, the piping and valving are configured such that the two systems remain independent. Drawing 12 shows the pumps and piping. The flow meters shown in the Plan view are used to measure whatever is being pumped at the time, thus enabling recordkeeping.

E.4.1 Description of the Leak Detection System Within the Landfill

Provide an engineering report describing how the leak detection system was constructed and will be operated to ensure the requirements of 35 IAC 724.401 are met. Among other things, this report must:

1. Identify the general components of the leak detection system within the landfill (includes the drainage layer, the leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps; manholes, clean-outs, etc.).

The LDS including drainage layer, trenches, piping, level monitoring locations, and sumps are shown on Drawing 11R, Appendix C.

2. Provide a detailed description of the procedures used to construct the leak detection system. Provide specifications and as-built drawings (plan view. detail and cross-sectional) of the installed system. Information of special importance includes: the contours of the top of the liner system; the elevation of the leachate collection pipes; and the elevation of the bottom of the leachate collection sumps, manholes and clean-outs.

   The LDS was constructed under the primary geomembrane and is designed to collect any liquids which leak through the primary liner of the LCS. The leak detection system was constructed in the same manner as the LCS. LDS construction is documented in Construction Documentation Report in Appendix Q. that report describes construction details. The LDS including elevation of piping and sumps are illustrated on Drawing 11R, Appendix C.

3. Provide detailed information regarding all equipment associated with the leak detection system (pumps, monitoring equipment, etc.) within the landfill. Specifically:

   a. Provide information regarding the make. model and specifications of each piece of equipment;
   b. Identify each piece of equipment on a piping and instrumentation diagram;
   c. Describe the operational functions and capabilities of each piece of equipment.

   Details of the construction of the leachate collection system and leak detection system including manufacturer specifications are fully described in Section 12 of the Construction Documentation Report in Appendix Q.

4. Provide the pump operating level for each LDS sump within each landfill unit. This is the maximum level of leachate which can accumulate in each LDS sump before the pump within the sump is activated and leachate is removed from the sump.

   a. This level can be no more than the depth of leachate that can accumulate within the LDS sump without allowing any leachate to back-up into the drainage layer.
   b. This level must also minimize the hydraulic head on the liner of the LDS sump.
   c. Development of the pump operating level for each LDS sump should also take into account the pump activation level and the sump dimensions.

   Drawing 11R (Appendix C) indicates the elevations of various operating sump levels. The LDS system is designed to evacuate sump accumulation to prevent leachate back-up, minimize hydraulic head on the liner of the LDS sump, and account for sump dimensions. The Construction Documentation Report in Appendix Q contains additional details.

5. Provide the action leakage rate (ALR) (in gallons per acre per day) for each LDS sump. The action leakage rate is the maximum design flow, modified by a factor of safety, that the LDS can remove without the fluid head on the bottom liner exceeding l foot. The action leakage rate must include an adequate factor of safety to allow for uncertainties in the:

   a. Design; construction; layout and operation of the system;
   b. Characteristics of the waste and leachate in the landfill;
   c. Likelihood and amounts of other sources of liquids in the LDS and
   d. Proposed response actions

Examples of uncertainties/concerns with the LDS include decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, and overburden pressure.

The action leakage rate (ALR) has been calculated for the CAMU in accordance with Section 724.402 of the IAC. The action leakage rate is defined as the "maximum design flow rate that the leachate detection system can remove without the fluid head on the bottom liner exceeding 1 ft." The action leakage rate is currently permitted at 2,434 gallons per day for each phase. The ALR is included at the bottom of Table B-1.

E.4.2 Description of the Leak Detection System Outside the Landfill

1. Identify the general components of the leak detection system which allow for the removal of the leachate from the landfill and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:

    a. Provide a detailed description of the procedures used to install the components of leak detection system mentioned above.
    b. Provide specifications and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.

    Specifications, installation details. and construction procedures are documented in the Construction Documentation Report, included in Appendix Q. The report includes diagrams, drawings, and specifications on equipment. Outside the landfill, LDS routes collected leakage to the treatment system.

    Appendix C, Drawing 11R and 12 show plan view, detail, elevation, and cross sections of LDS system componence.

2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:

    a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
    b. Identify each piece of equipment on a piping and instrumentation diagram;
    c. Describe the operational function and capabilities of each piece of equipment.

    Details of the construction of the leak detection system and leachate collection system including manufacturer specifications are fully described in Section 12 of the Construction Documentation Report in Appendix Q.

E.4.3 Management of Leachate Accumulating in the Leak Detection System

Describe how the LDS is managed. Discuss how all parts of the leak detection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depict the overall leak detection system, from the pump within each leachate collection sump to the leachate accumulation tank. For each leak detection sump/well, identify:

    a. The approximate elevation of the bottom of the landfill at that location,
    b. The pump operating level,
    c. The leachate level which activates the pump within the sump/well, and
    d. The leachate elevation when the pump shuts off.

The drawings referenced in this description can be found in Appendix C. The CAMU is divided into two phases, shown on Drawing 4. The LDS sump is a separate from and below the LCS sump, shown on Drawing 11R. Various elevations including sump bottom, pump activation elevation, and other supporting information is provided on this drawing.

The CAMU was constructed above an elevation 757.0 feet above mean sea level (ft msl). The sumps in the CAMU were constructed above an elevation of 753.5 ft msl. The interior side slopes of the CAMU were constructed to not be steeper than 3-feet horizontal to 1-foot vertical (3:1). The side slopes on the final cover were constructed to not be steeper than 4:1 adjacent to the exterior berms and not steeper than 6:1 for cover lying directly over wastes. The CAMU was 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.

2. Describe the procedures which will be followed to document/record all aspects of the management of the LDS. At a minimum, the permittee needs to provide documentation of the amount of leachate removed from a given LDS sump over a set time period, and any exceedances of the action leakage rate in the operating record.

3. Describe how the leachate collected in the LDS will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

The two CAMU sumps are checked for the accumulation of liquid on a monthly basis in accordance with 35 IAC 724.403(c), and the leachate levels recorded. The leachate level and presence of leakage in each sump is detected by a transducer in the sump riser and displayed on the pump control. If leachate accumulates above the 1-foot pump operating level, it is pumped out and the amount of flow recorded. The leak detection sumps well be pumped manually, with flow records kept in accordance with the permit.

Monitoring frequency is dictated by the rate of leachate production. If the leachate level falls below the pumping level for two consecutive quarters, monitoring will be conducted semi-annually. If anytime during the post-closure period, leachate exceeds the pump operating level in the sumps, the monitoring will revert to monthly until the liquid level again drops below the pump operating level for two consecutive months. Maintenance and inspections of the leachate collection system and leak detection system is conducted on a regular basis as outlined in Tables B-1 and B-2.

The leachate and leakage is pumped to the MPC pretreatment system where it is mixed with process water. The wastewater discharge permit issued by the City of Freeport Water & Sewer Commission is provided in Appendix S.

E.4.4 Recent Operation of the Leak Detection System

Provide information addressing the items discussed in Section E.4.3 regarding the operation of the LDS during the past ten years. This information should discuss the efficiency of the existing LDS or identify deficiencies which must be addressed to ensure system is operating properly.

During the past 10 years, leachate and leakage have been negligible. Operating data for the last 20 years is provided in Appendix M. No deficiencies have been noted regarding the leachate detection system. Information on leak detection system are provided to IEPA.

E.5 Operation of the Gas Monitoring/Collection System

This subsection must be addressed if the closed unit has a landfill gas monitoring/collection system.

The CAMU is equipped with a passive gas venting system. The gas is neither collected nor monitored.

E.5.1 Detailed Description of the Landfill Gas Collection System

The following information needs to be provided regarding any landfill gas collection system at the facility (in addition to drawings, it is also important to include text describing the various aspects of this system and the chronological history of the installation of this system).

1. A map and detailed drawings showing the location of the collection points and the layout and construction details of the collection system.

2. A description and specifications for all machinery, compressors, flares, piping and appurtenances in the system.

3. A piping and instrumentation diagram as well as other schematics to depict the system's operation.

4. A description of how the landfill gas collection system operates. Describe the information which will be monitored, evaluated and recorded regarding the operation of the system. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

5. Documentation or assurance that the gas collection system meets the following standards:

   a. The system is designed and will be operated such that the limits described in 35 IAC 811.311(a)(l), (a)(2) and (a)(3) will not be exceeded;
   b. The gas collection system will transport gas to a central point or points for processing for beneficial uses or disposal in accordance with the requirements of 35 IAC 811.312;
   c. The gas collection system has been designed to function for the entire design period;
   d. All materials and equipment used in construction of the system have been rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas;
   e. The gas collection system has been designed to withstand all landfill operating conditions, including settlement;
   f. Provisions have been made for collecting and draining gas condensate to a management system meeting the requirements of 35 IAC 811.309;
   g. The gas collection system will not compromise the integrity of the liner, leachate collection or cover systems; and
   h. The gas collection system shall be equipped with a mechanical device, such as a compressor, capable of withdrawing gas, or has been designed so that a mechanical device can be easily installed.

6. A description of the criteria that will be used to determine when operation of the gas collection system may be discontinued.

7. A description of the testing procedures that will be used to assure that the lines from the collection points to the gas processing or disposal facility are air tight.

8. Identify where condensate in the system will be collected and then stored prior to shipment off-site for treatment or disposal. Include a description of all equipment associated with collection and storage of the condensate.

The following information addresses E.5.1(1-8):

The CAMU has a passive gas management system. The system was constructed in accordance with the approved design as presented in the Plan of Operations (FVD, 1998) Details of the construction of the gas monitoring/collection system and leak detection system are provided in Appendix C, Drawing 7B. The gas venting system is shown on Drawing 5 of Appendix C.

The gas venting system was designed to allow gases produced by the waste in the CAMU to passively vent into the atmosphere to prevent gas buildup from occurring beneath the geomembrane cap. The gas venting system consists of 6-in diameter slotted polyethylene pipe installed in the grading/gas venting layer. At four locations along the gas vent pipe, a polyvinyl chloride (PVC) tee connected to a 6-in diameter Schedule 80 PVC riser, and a 180° PVC elbow were installed to allow the gas to vent into the atmosphere. The construction of the gas vent is shown on Drawing 5 of Appendix C.

Maintenance and inspections of the gas monitoring/collection system and leak detection system are conducted on a regular basis as outlined in Tables B-1 and B-2. Gas monitoring is not required in the current RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, RCRA Log No. B-167R, issued June 9, 2011.

E.5.2 Landfill Gas Monitoring Plan

Provide the following information regarding the landfill gas monitoring system's ability to monitor the buildup and composition of landfill gas.

1. A narrative and plan sheets describing the most likely paths of migration for gas generated by the unit and demonstrating that the proposed gas monitoring program will detect any gas buildup and/or migration.

2. Detailed drawings and material specifications of the four types of gas monitoring devices required (i.e., devices within the waste unit, below ground devices around the unit, air ambient monitoring devices and continuous air monitoring devices within buildings) on site or near the facility if there is an indication of gas.

3. A map showing the locations of the below ground monitoring devices and the continuous air monitoring devices.

4. Documentation that the various types of below ground gas monitoring devices:

    a. Are placed at intervals and elevations within the waste to provide a representative sampling of the composition and buildup of gases within the unit.
    b. Are placed around the unit at locations and elevations capable of detecting migrating gas from the ground surface to the lowest elevation of the liner system or the top elevation of the groundwater, whichever is higher.
    c. Are constructed from materials that will not react with or be corroded by the landfill gas.
    d. Have been designed and constructed to measure pressure and allow collection of a representative sample of gas.
    e. Are constructed and maintained to minimize gas leakage.
    f. Do not interfere with the operation of the liner, leachate collection system or delay the construction of the final cover system.

5. A description of the procedures and prerequisite weather conditions for performing ambient air monitoring including the location standards for placement of the monitoring devices and maximum wind speed.

6. A description (narrative or graphic) of the location of the continuous air monitoring devices inside the buildings within the facility (and nearby buildings if applicable).

7. A schedule specifying the frequency and minimum duration of gas monitoring.

8. Identification of the parameters that samples from each type of monitoring device will be analyzed.

9. A description of the procedures which will be used to collect and analyze the various air samples to be obtained as part of the landfill gas monitoring program.

The following information addresses E.5.2(1-9):

The CAMU has a passive gas management system. Details of the construction of the gas monitoring/collection system and leak detection system are provided in Appendix C.

Maintenance and inspections of the gas monitoring/collection system and leak detection system is conducted on a semi-annual basis as outlined in Tables B-1 and B-2. Gas monitoring is not required in the current RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, RCRA Log No. B-167R, issued June 9, 2011.

E.5.3 Landfill Gas Disposal/Processing System

The following information must be provided regarding the gas disposal system or gas processing system at this facility. These systems can be either an on-site or an off-site facility.

1. For on-site facilities (either flare systems or facilities which process the gas for beneficial use) the following information must be provided:
   a. A map showing the location of the facility;
   b. Engineered drawings showing the layout and details of landfill gas processing and disposal system, including compressors, blowers, raw gas monitoring systems, devices used to control the flow of gas from the unit, flares, gas treatment devices, air pollution control devices and monitoring equipment;
   c. A copy of the approved air discharge permit or, if the permit is pending, a copy of the air discharge permit application required by 35 IAC 200 through 245; and
   d. A list of the parameters and constituents for which the gas shall be monitored.

2. For off-site processing facilities the following information must be provided:
   a. A list of the parameters and constituents for which the gas shall be monitored;
   b. A description of the means by which the gas shall be conveyed from the landfill to the off-site processing facility; and
   c. Documentation that the off-site processing facility meets the following requirements:
      (1) The solid waste disposal facility will contribute less than 50 percent of the total volume of gas accepted by the gas processing facility. (Otherwise, the processing facility must be considered a part of the solid waste management facility); and
      (2) The gas processing facility is sized to handle the expected volume of gas.

This section does not apply as it does not include an on-site or an off-site gas disposal facility or gas processing facility.

E.5.4 Summary of the Landfill Gas Collection Monitoring Processing Systems

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.

The CAMU has a passive gas system and neither collects, monitors, nor processes landfill gas.

2. Summarize the operation of the landfill gas collection, monitoring, and processing systems during the past ten years. Describe any adjustments to the design or operation of the systems since the unit was closed.

The CAMU has a passive gas system and neither collects, monitors, nor processes landfill gas. Activities supporting the gas venting system have focused on inspection and maintenance. Table B-2 describes the preventative and corrective maintenance, and materials and equipment requirements. The need for maintenance and repair shall be made on the basis of the results of the post-closure inspections completed as described in Table B-1.

No deficiencies have been noted in the operation of the gas venting system. No significant adjustments have been made to the design or operation of the system since the unit was closed.

E.6 Post-Closure Inspection Plan

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record and where they are located.

Table B-2 describes the preventative and corrective maintenance, equipment requirements and materials needed for the operation and maintenance activities which will occur during the post-closure care period. The need for repair of these items shall be made on the basis of the results of the post-closure inspections completed as described in Table B-1. The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities. Copies of the inspection and repair records are maintained at the facility in a secure file cabinet.

E.6.1 Inspection Log

An inspection log must be maintained which includes all of the items listed below. The log must include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

E.6.1.1 Items Inspected

The plan must identify each item to be inspected in order to comply with the RCRA requirements. These include, but not necessarily limited to:

1. All RCRA regulated units;
2. Monitoring equipment;
3. Safety and emergency equipment;
4. Security control devices;
5. Erosion damage;
6. Cover settlement, subsidence and displacement;
7. Vegetative cover condition;
8. Integrity of run-on and run-off control measures;
9. Cover drainage system functioning;
10. Leachate collection and removal system;
11. Leak detection system;
12. Gas monitoring/extraction system;
13. Condition of the groundwater monitoring wells;
14. Benchmark integrity; and
15. All operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

E.6.1.2. Types of Problems

For each item to be inspected as identified above, describe the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, cracks, eroding berm, etc.).

E.6.1.3. Inspection Frequency

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.). The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

Indicate the facility will be inspected within 24 hours of any rain fall event of 2 or more inches in 24 hours to detect evidence of any of deterioration, malfunctions, or improper operation of run-on and run off systems. Indicate that appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed.

The following information addresses E.6.1(1-3):

Table B-2 describes the preventative and corrective maintenance, equipment requirements and materials needed for the operation and maintenance activities which will be conducted during the post-closure care period. The need for maintenance and repair shall be made on the basis of the results of the post-closure inspections completed as described in Table B-1. Copies of the inspection and repair records are maintained at the facility in a secure file cabinet. The maintenance and inspection logs address the details listed above.

The inspection frequency associated with all items inspected as part of the post-closure plan is provided in the "Post-Closure Inspection Schedule and Log" contained in Table B-1.

E.6.2 Repair Log

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who made the corrected repair;
6. The date the repair was made;
7. The efforts carried out in making the repair;
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities.

E.6.3 24 Hour Reporting (702.152(f), 703.245(b))

Describe the how the Permittee will take the following actions if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

The inspection and maintenance procedures are designed and implemented to prevent CAMU operability issues that might lead to permit noncompliance. Should an issue arise, MPC shall report to the IEPA any noncompliance that may endanger health or the environment. Any such information shall be reported orally within 24 hours from discovery. 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.

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.

A written submission shall also be provided within 5 days of the discovery. 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 IEPA may waive the five day written notice requirement in favor of a written report within 15 days. (35 IAC 702.152(l) and 703.245(b))

E.7 Post-Closure Monitoring Plan

Describe the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting and evaluating the data gathered in accordance with the RCRA requirements.

Indicate that copies of the monitoring reports and data are maintained at the facility as part of the operating record.

E.7.1 Facility Controls

Indicate that the benchmarks used to identify the location of disposal units, solid waste management units, and units/areas covered by an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA) are surveyed at least once every five (5) years.

Benchmarks, labeled as control points, are indicated on the Survey Plat for the CAMU Landfill Documentation included in Appendix J.

E.7.2 Surveys and Corrective Action

Identify the units at the facility that will be surveyed every five years. The following units need to be surveyed at least once every five years:

- Units subject to post-closure requirements per 35 IAC 724.210(b)
- SWMUs with cover systems and/or engineered barriers
- Units/Areas subject to an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA).

The CAMU, identified on Drawings 2 and 2R, will be surveyed every 5 years.

E.7.2.1. Provide the following for the units identified in Item E.7.2:

1. A copy of the survey provided to the IEPA when the unit was certified closed.

2. A copy of the survey for each unit generated every five years since the unit was closed that shows the horizontal and vertical extent of the unit, drainage control structures, leachate collection wells, and groundwater monitoring wells.

3. Scale drawing(s) (1 inch= 200ft) and cross sections that identify those areas of the cover system or engineered barrier that have changed 1 foot or more in elevation since the unit was closed.

4. If corrective action was required in response to a release, damage to the cover system, settlement, erosion, stressed vegetation, or damage to a leachate well, groundwater monitoring well, or benchmark since post-closure care began, identify the date and location of the corrective action on the scale drawings required above. Also, provide copies of the inspection and repair logs that includes the date each incident was discovered, a description of the incident & corrective action taken, and the date corrective action was completed.

5. If corrective action occurred in the same general area 2 or more times since post-closure began, discuss the actions the permittee has implemented to prevent this from happening again.

The following information addresses E.7.2.1(1-5):

The CAMU was surveyed at the completion of construction as documented on Drawing 5 in Appendix C. The drawing documents the final grades at closure with elevation contours provided. This drawing can be used as a basis to evaluate settlement, erosion, and the like. A survey has not been completed since the unit closed.

MPC is planning a survey of the CAMU in 2021, which is the applicable unit at the facility. No corrective actions have been performed.

E.7.3 Leachate Collection System

Describe how the information about the leachate collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information is essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

E.7.3.1. Leachate Quality

Describe the procedures which are followed to monitor the quality of the leachate in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample analysis). Discuss if the concentrations of the constituents in the leachate have changed during the post closure period and any actions taken in response.

These samples should be collected quarterly for the first two years at which time the frequency can be decreased to semi-annually. The samples must be analyzed for the constituents described in Item E.3.1 above.

Leachate quality is required, however, has not been assessed in the last 10 years because no leachate has been generated. When present, in accordance with the RCRA Post-Closure Permit (IEPA, 2011), representative samples of leachate from Phases 1 and 2 would be collected annually and analyzed individually for the following analytes:

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

Leachate samples should be collected during the first quarter inspections and the results are submitted to IEPA.

1. **Summary of Sample Results:** Provide a summary table of the leachate sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.

   No leachate has been produced by the leachate collection system in the last ten years, therefore no leachate samples have been collected.

2. **Parameter Comparison:** Indicate if any of the leachate analyses detected a parameter for which the groundwater is/was not being analyzed and the actions taken if this occurred.

   No leachate has been produced by the leachate collection system in the last ten years, therefore no leachate samples have been collected.

E.7.3.2. Leachate Quantity

1. Provide a record of the amount of liquid removed from each leachate collection sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:

   a. Monthly for each year for each sump since the unit was closed
   b. Annually for each sump since the unit was closed
   c. Annually for each unit since the unit was closed

2. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LCS sumps.

   The following information addresses E.7.3.2(1-2):

   During post-closure monitoring, the two CAMU Landfill sumps are checked for the accumulation of liquid on a monthly basis in accordance with 35 IAC 724.403(c), and the leachate levels recorded. Leachate removal rates for 2003-2020 are included in Appendix M. The data and graph presented show leachate generation rates dropped off to zero since 2010.

E.7.3.3. Leachate Reporting

Describe the procedures followed to electronically report the quality and quantity of leachate generated at the facility to the IEPA.

The leachate quantities generated are measured and reported annually, electronically to IEPA.

E.7.4 Leak Detection System (LDS)724.402, 724.403, 724.404

Describe how the information from the leak detection system for each unit identified in E.7.2 will be monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

E.7.4.1. LDS Leachate Quantity

1. Describe the procedures used to determine the volume of leachate removed from each LDS sump over a given time period. This determination must initially be made monthly If the liquid level in a LDS sump stays below the pump operating level (and thus no leachate is removed during that time period) for two consecutive months, then the amount of liquids in the LDS sump need only be recorded quarterly. Similarly, if the liquid level in a LDS sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps need only be recorded semi-annually. Finally, if the pump operating level for an LDS sump is exceeded during the quarterly or semi-annual monitoring, then monitoring of the amount of leachate removed from that LDS sump must revert back to monthly.

   The LDS sump is inspected for the presence of liquid in accordance with Table B-1. Since 2010, no liquid has been observed in the LDS sump. In the event liquid is present, it is manually pumped and routed through a flow meter and to the MPC pretreatment system. Appendix C Drawing 11R shows the pump, piping, and instrumentation configuration.

2. Provide a record of the amount of liquid removed from each LDS sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:

   a. Monthly for each year for each sump since the unit was closed
   b. Annually for each sump since the unit was closed
   c. Annually for each unit since the unit was closed

   Leachate removal rates for 2003-2020 are included in Appendix M. The data and graph presented show leachate generation rates dropped off to zero since 2010.

3. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LDS sumps.

   Leachate removal rates for 2003-2020 are included in Appendix M. The data and graph presented show leachate generation rates dropped off to zero since 2010.

E.7.4.2. Action Leakage Rate (ALR)

1. Identify the ALR from Section E.4 for each LDS sump, and indicate if the action leakage rate has been exceeded during the post-closure period.

   No leakage has been observed since the CAMU was closed.

2. To determine if the ALR has been exceeded, the owner or operator must convert the monthly flow rate from the monitoring data to an average daily flow rate (gallons per acre per day) for each sump. The average daily flow rate for each LDS sump must be calculated monthly during the post-closure care period, unless IEPA approves a different frequency pursuant to Section 724.403(c)(2).

   No leakage has been observed since the CAMU was closed.

   Describe the response action(s) meeting the requirements of 35 IAC 724.404 that will be implemented if the leachate removal rate exceeds the action leakage rate.

In the event the leachate removal rate exceeds the ALR, MPC will take the following actions:

1. Notify the Agency in writing of the exceedance within seven days of the determination;
2. Submit a preliminary written assessment to the Agency within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
3. Determine to the extent practicable the location, size, and cause of any leak;
4. Determine whether any waste should be removed from the unit for inspection, repairs, or controls;
5. Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
6. Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Agency the results of the determinations specified in subsections (3), (4), and (5) , the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the LDS exceeds the action leakage rate, MPC will submit to the Agency a report summarizing the results of any remedial actions taken and actions planned.

E.7.5 Groundwater Monitoring System

The groundwater monitoring system documentation on well construction information, boring logs, and well completion reports are provided in Appendix H. Figure C-5 shows the location of groundwater monitoring wells included in the May 25, 1999 IEPA approved groundwater monitoring program and the approved groundwater monitoring zone. A summary of the monitoring wells in the monitoring systems is provided in Table C-1. This summary table provides information such as well depth, screen interval, and ground surface elevation. Groundwater monitoring is completed semi-annually.

E.7.6 Gas Collection System

For units required to have a gas collection/ monitoring system, describe how the information about the gas collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

The CAMU has a passive gas management system which vents gas that might be generated under the cover of the structure. There are no collection or monitoring devices in the system.

E.7.6.1. Gas Quality

Describe the procedures followed to monitor the quality of the gas in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample analysis). Discuss how the parameters (Methane, Pressure, Oxygen; and Carbon Dioxide) in the gas system have changed during the post closure period and any actions taken in response to those changes.

1. **Summary of Sample Results:** Provide a summary table of the gas sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.

2. **Parameter Comparison:** Describe the parameter thresholds used to adjust the gas collection system to improve overall efficiency of the system. Describe any major gas system upgrades/ overhauls since post closure began.

   Gas testing of the passive gas system on the CAMU is not required.

E.7.6.2. Gas Quantity

1. Provide a record of the amount of gas removed from each unit at least monthly after closure of the unit identified in E.7.2 above. The following information regarding gas generation rates needs to be provided both in table form and graphically:

   a. Monthly for each year for each unit since the unit was closed.
   b. Annually for each unit since the unit was closed.

   Gas quantity monitoring of the passive gas system on the CAMU is not required.

2. If the gas generation rates are not trending downward during the post closure period, discuss why this is not happening.

   Gas quantity monitoring of the passive gas system on the CAMU is not required.

E.7.6.3. Summary of Results from the Gas Collection / Monitoring System

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.

   The gas vents are inspected visually for plugging monthly. The need for repair of these items shall be made on the basis of the results of the post-closure inspections completed as described in Table B-1. The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities.

   As mentioned above, gas quantity and quality monitoring of the passive gas system on the CAMU is not required.

2. Summarize the operation of the landfill gas collection, monitoring, and processing systems since the unit was closed. Describe any adjustments to the design or operation of the systems since the unit was closed.

   No adjustments have been made to the design or operation of the systems since the unit was closed. No deficiencies have been noted in the operation of the landfill gas collection, monitoring, and processing systems.

E.8 Post-Closure Maintenance Plan

E.8.1 Procedures, Equipment & Material

Describe the preventive and corrective maintenance procedures, equipment and materials that will be required to properly maintain everything needed to provide adequate post-closure care of the unit closed as a landfill. Include the following items in the maintenance plan, as applicable:

1. Repair of security control devices;
   Inspect gates and locks, repair/replace as needed.

2. Erosion damage repair;
   Repair grass cover and erosion damage as needed.
3. Correction of settlement, subsidence and displacement;
   Fill areas of subsidence to maintain cover.
4. Mowing, fertilization and other vegetative cover maintenance;
   Maintain vegetative cover to protect cover.
5. Repair of run-on and run-off control structures;
   Maintain storm water control features by removing silt, leaves, and debris and repair any erosion damage. Hand tools required.
6. Maintenance of any leachate removal system(s) including the flushing of the LCS and LDS;
   Service pumps in accordance with the manufacturer's requirements, clean pump according to the manufacturer's recommendations, clean interior piping annually, inspect liquid level sensor as per manufacturer's O&M manual. Consult O&M manual for equipment and materials needs.
7. Maintenance of any gas monitoring/extraction system;
   Repair any damage to the gas vents. Hand tools may be required.
8. Replacement of groundwater monitoring wells: and
   Damaged monitoring wells should be reported to IEPA and replaced at the direction of their direction.
9. Surveyed benchmarks
   Benchmarks that are damaged should be replaced and re-surveyed.

Table B-2 describes the preventative and corrective maintenance, equipment requirements and materials needed for the operation and maintenance activities which will occur during the post-closure care period. The need for repair of these items shall be made on the basis of the results of the post-closure inspections completed as described in Table B-1. The repair log in Table B-3 is a form that will be used to document completion of repairs identified in the inspection and maintenance activities.

E.8.2 Rationale

Provide the rationale which will be used to determine the need for corrective maintenance activities for each of the items mentioned above.

Corrective maintenance activities will occur for all areas where the post-closure inspections and maintenance plan indicate that potential human or environmental impacts are likely to occur without corrective maintenance and/or the overall CAMU will function more efficiently if corrective maintenance is performed.

E.8.3 Frequency

Provide the frequency for maintaining each of the items mentioned above if it is known. This needs to include, but not be limited to:

1. The frequency for mowing, fertilization and other vegetative cover maintenance, and
   Mow grass semiannually. Perform other maintenance as necessary.
2. Annual maintenance / cleaning of pumps used in the LCS, LDS, and gas collection systems.
   Clean and maintain pumps according to manufacturer's recommendations. Clean interior piping annually. Inspect liquid level sensor according to manufacturer's recommendations.
3. The manufacturer's recommended replacement rate for the pumps used in the LCS, LDS or gas collection systems.
   Replace pumps according to inspection results and manufacturer's recommendations
4. High pressure jet flushing of the LCS and LDS collection pipes and sump every 5 years.
   Clean interior pipes annually.
5. Procedures and scheduling of non-routine maintenance and change-out of equipment.
   Perform non-routine maintenance and replace equipment as needed.

Table B-2 describes the preventative and corrective maintenance, equipment requirements and materials needed for the operation and maintenance activities which will occur during the post-closure care period and states the frequency.

E.9 Survey Plat: 724.216

The application must include documentation that a survey plat was prepared/submitted no later than the submission of the certification of closure for each disposal unit or areas where hazardous waste is left in place. The application must also describe the wording placed on the survey plat.

- The survey plat must indicate the location and dimensions of landfill cells or other disposal units/areas with respect to permanently surveyed benchmarks and the legal boundary of the facility.
- The plat must contain a note, prominently displayed that states: (1) the land has been used to manage hazardous wastes; and (2) the owner's and operator's obligations to restrict disturbance of the units containing hazardous waste in accordance with the applicable Subpart G regulations.
- The plat must be prepared and certified using the wording at 702.126(d)(l) by a professional land surveyor.
- The survey plat must be filed with any local zoning authority or authority with jurisdiction over local land use, the IEPA, and recorded with the land titles.
- If the facility includes a RCRA disposal unit that is already certified closed, provide a copy of the survey plat for that unit.

On July 5, 2001 the field survey of the completed and closed CAMU was performed by Mr. Jim Prehn, Illinois registered land surveyor. The survey plat consisted of surveying the chain-link fence which surrounds the CAMU. The chain-link fence is outside of the CAMU waste limits and was used to generate a meets and bonds survey descriptions for the CAMU. Appendix J contains two 11-inch by 17-inch drawings which include Drawing No. 1 - the Plat of Survey for the CAMU and Drawing No. 2 - Extent of Area Remediated.

Drawing No. 1 includes:

- *Meets and bounds description of the area inside of the chain-link fence which is occupied by the CAMU Landfill.*
- *An Illinois registered land surveyor certification of the survey plat.*
- *The required survey notes from the RCRA Part B Permit Section I, Condition H. 3. and 4. which were included as follows:*
  - *The 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 IEPA approved closure plan (Log No. C-259-M-8).*
  - *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.*
  - *Any fill material removed from the CAMU during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal.*
  - *The use of the area is restricted.*

- *A survey plat and record of the type, location, and quantity of waste materials in the CAMU have been filed with IEPA, the county, and any local zoning authority with jurisdiction over local land use.*

Drawing No. 2 includes:

- *The quantities of wastes which were excavated from the hazardous and solid waste management units on the MPC property.*
- *The locations of the other units which were closed as part of the MPC remediation including Lagoons 0, 1 and 1A, the cyanide vault, Wetlands No. 1, 1A, 2 and 3 and the Shawnee building.*

The survey plat for the CAMU as provided in Appendix J has been filed with the Stephenson County Recorder's Office in Freeport, Illinois. The survey map was filed on July 26, 2001 by Mr. Jim Prehn, licensed land surveyor in the state of Illinois. The record data is as follows: Document No. 200100016096, Box 15, pages 111-116 (each 11" x 17" drawing was recorded as three separate 8.5" x 11" pages).

E.10 Notice in Deed and Certification: 703.183(n), 724.216, 724.217(c), 724.219

The application must include copies, as appropriate, of the notation recorded 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:

- The land has been used to manage hazardous waste.
- Use of these areas is restricted.
- A survey plat and record of the type/location/quantity of material in the disposal units or areas have been filed with the IEPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.
- For hazardous wastes disposed prior to January 12, 1981, identify the type, location and quantity of the hazardous waste to the best of the owner or operator's knowledge and in accordance with any records the owner or operator has kept.

  A certification signed by the owner or operator, that the owner or operator has properly recorded the notification must be developed after this notice has been recorded and submitted to IEPA. This submittal must include a copy of the document in which the notification has been placed.

  For facilities which have already filed: Provide a copy of the notice for the unit and the document in which it was placed, the required notice of or the deed, the application should contain: a certified copy of the filed notice; the document that the notice was placed in, and certification by the owner or operator that it was properly filed.

  The Plat of Survey, discussed in Section E.3, was attached to the deed to the property and serves as an instrument which is normally examined during the title search that will in perpetuity notify any potential purchaser of the property that:

- *The waste material in the CAMU is considered a RCRA hazardous waste;*
- *Use of the area is restricted; and*
- *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.*

E.11 Post Closure Cost Estimate: 703.183(p), 724.244

Provide an estimate of the cost of completing the required post-closure care activities, based on current year costs, including all calculations and supporting information used in developing the estimate. The following must be used in preparing this estimate:

1. Cost estimates must be based on third party costs and cannot include the salvage value form the sales of hazardous wastes, structures or equipment present at the facility.

2. The number of years for which post-closure care must still be provided must be identified.

3. Due to the fact that inflation affects the actual value of a given amount of money over time, the year in which this cost estimate is developed must be clearly identified. It must be noted that inflation will always need to be taken into account to bring estimates from previous year up to the current year.

4. The various tasks need to carry out the required post-closure care activities must be identified as well as the cost associated with each task;

5. The amount of time/materials/efforts needed to complete each task must be provided as well as their unit costs. Justification must be provided for all values used in making these calculations;

6. An estimate of the annual cost of providing all required post-closure care activities should be developed;

7. Some post-closure care activities are not carried out on an annual basis, but at some other frequency. These activities, their frequency, and their cost must be presented.

8. The estimate for providing all required post-closure care activities must be developed using the information in Items 4 and 5 above.

A copy of the most recent post-closure care cost estimate provided to the IEPA must also be provided. In general, these estimates are provided in annual reports and financial assurance documents.

A post closure cost estimate is provided in Appendix N. The cost estimate covers all routine post closure care activities and also accounts for equipment replacement costs prorated to an annual cost. Post closure care for the CAMU landfill is required for an additional 10 years. The information in Appendix N corresponds to the Post Closure Care Cost estimate permit modification submitted by Fehr-Graham and Associates, LLC.

E.12 Financial Assurance Mechanism for Post-Closure Care: 703.183(p), 724.245

Provide a copy of the established financial assurance mechanism for post-closure care of the facility. The mechanism must be one of those described in 724.245. Contact the IEPA Bureau of Land Permit Section to obtain the proper forms and instructions.

MPC has established a Letter of Credit with Amcore Bank as part of the conditions with their current RCRA Part B permit. The Letter of Credit is in the amount of $339,960.00 and has an expiration date of February 24, 2021. The CAMU Financial Assurance document is included in Appendix O. A copy of the latest amendment to the Letter of Credit is provided in Appendix P.

E.13 State Mechanisms: 40 CFR 264.149, 40 CFR 264.150, 40 CFR 264.151, 40 CFR 220.14(b)(18)

If the State of Illinois assumes legal responsibility for compliance with closure, post closure, or liability requirements, or the state assures that state funds are available to cover those requirements, submit a copy of a letter from the state describing the state assumption of responsibility and including the facility EPA ID

number, name, address, and amounts of liability coverage or funds for closure or post-closure care that are assured by the state, together with a letter requesting that the state's assumption of responsibility be considered acceptable.

The State of Illinois does not assume legal responsibility for compliance with post-closure for this site. As such, this section does not apply.

F. CORRECTIVE ACTION (35 IAC 724.201)

35 IAC 724.201 requires that facilities seeking a RCRA permit institute corrective action, as necessary, to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit. The information identified in Items F.1 through F.3 below must be contained in the original RCRA permit application submitted by a facility to allow IEPA to develop permit conditions for ensuring this requirement is met; only the information in Item F.4 below needs to be submitted by facilities seeking a renewed RCRA permit.

MPC is seeking a RCRA permit renewal; therefore, Sections F.1, F.2, and F.3 do not apply.

F.1 Identification of Solid Waste Management Units: (703.187(a))

Identify the SWMUs present at the facility. A SWMU includes any unit where solid waste has been managed in the past and which is not a hazardous waste management unit. Units that are SWMUs include, but are not limited to, the following:

1. Landfills
2. Surface impoundments
3. Waste piles
4. Land treatment units
5. Injection wells
6. Incinerators
7. Tanks (including wastewater treatment units)
8. Container storage areas
9. Waste transfer areas
10. Waste recycling operations

Section F.1 does not apply because MPC is seeking a RCRA permit renewal.

F.2 Characterization of the SWMUs: (703.187(a))

For each solid waste management unit identified above, submit the following information:

1. Type of unit
2. Location on the topographic map required by Item B-2 of the decision guide/checklist
3. Engineering drawings and construction details as available
4. General dimensions
5. Dates when the unit was in operation
6. Description (including physical/chemical characteristics) of the materials/wastes managed in the unit
7. Quantity or volume of waste managed in the unit, if known
8. A description of: (1) the soil types present at the unit; and (2) the geology of the area where the unit is located.
9. An indication of whether the wastes managed in the unit have been removed or still remain in it.

Section F.2 does not apply because MPC is seeking a RCRA permit renewal.

F.3 Characterization of Releases from SWMUs: (703.187(b))

Provide all available information on whether or not any releases have occurred from each of the SWMUs identified above. Reasonable efforts to identify releases must be made, even if releases have not been verified. (A release may include: spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment.) If a determination is made that there has not been any releases from a given SWMU, then a description of the efforts and information used to reach this conclusion must be provided.

The information to be provided regarding any releases from a SWMU, as available, includes:

1. Date of the release
2. Type of waste or constituent released
3. Physical and chemical characteristics of the released material
4. Quantity or volume released
5. Nature of the release (such as spill, overflow, ruptured pipe or tank, etc.).
6. Groundwater monitoring or other analytical data describing the nature/extent of the release.
7. Physical evidence of distressed vegetation or soil contamination
8. Historical evidence of releases, such as tanker truck accidents
9. Any state, local or federal enforcement actions which may address releases
10. Any public citizen complaints about the facility which could indicate a release
11. Any information showing the migration of the release.
12. A detailed description of any remedial activities taken in response to the release.

Section F.3 does not apply because MPC is seeking a RCRA permit renewal.

F.4 Information Required for Renewal Applications: (703.187(c))

Facilities seeking a renewed RCRA permit have likely completed a substantial amount of corrective action under the original permit. IEPA has only been authorized to implement the corrective action program in RCRA permits since April 1990; the USEPA portion of permits issued before this date contained corrective action requirements. For permits issued before April 1990, IEPA likely does not have a complete file of corrective action efforts carried out at the facility, as such efforts were overseen by USEPA. However, for permits issued after April 1990, IEPA already has a complete file of all corrective action efforts carried out to date at the facility.

A summary/description of the corrective action efforts completed to date at the facility must be provided in the application. The level of detail of this summary/description will be dependent on whether IEPA oversaw these corrective action efforts and thus has a complete file of these efforts already. This summary/description will create an administrative record adequate to support the corrective action requirements eventually placed in the renewed permit and will form the foundation for determining future corrective action efforts to ensure the requirements of 35 IAC 724.201 are met.

The MPC facility is seeking a renewed RCRA permit. The current permit for the remedial action at this site is:

RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, RCRA Log No. B-167R, issued June 9, 2011.

The remedial action completed was overseen by IEPA. A summary/description of the corrective action efforts completed to date is provided in the response to Item E.1.2.

F.4.1 Required Information if USEPA Oversaw Initial Corrective Action Program

Facilities applying for a renewed RCRA permit which conducted corrective action efforts in accordance with requirements of the USEPA portion of the original RCRA permit issued to the facility must provide the following information:

1. A detailed chronology of all corrective action correspondence between USEPA and the facility, starting from the issuance of the original permit;

2. Copies of all letters received from USEPA regarding corrective action efforts, starting with the issuance of the original RCRA permit;

3. Copies of all letters and documents sent to the USEPA regarding corrective action efforts conducted in accordance with the original RCRA permit;

4. A detailed discussion of each of the SWMU identified and addressed in accordance with the provision of the facility's original RCRA permit, including: (1) detailed description of each unit as outlined in Item F. 2 above; including layout drawings; (2) a summary of the investigation/ remediation efforts completed to date; and (3) discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.

5. The information in the appropriate portions of Section C (Groundwater Monitoring of this decision guide) regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

Corrective action efforts conducted under the current RCRA permit were overseen by the IEPA. Therefore, Section F.4.1 does not apply.

F.4.2 Required Information if IEPA Oversaw Initial Corrective Action Program

Facilities which carried out corrective action under the requirements of the IEPA portion of the original permit must provide the following information regarding corrective action efforts at the facility:

1. A chronological list of all documents submitted to IEPA regarding the corrective action efforts required by the original RCRA permit and IEPA's response to each submittal. For each document, provide:

    a. The name of the document;
    b. A brief discussion of the contents/purpose of the document;
    c. The date the document was submitted to IEPA;
    d. The person who submitted the document; and
    e. A discussion of IEPA's response to the document (include the date of the response and the general conclusions/requirements in the response).

2. Copies of all IEPA letters, in chronological order, regarding corrective action efforts at the facility (these letters serve as important decision documents and will help to verify corrective action efforts completed to date and what must still be done to complete corrective action responsibilities at the facility).

3. A detailed discussion of each of the SWMUs identified and addressed in accordance with the facility's permit. This must include: (1) detailed description of each unit as outlined in Item F.2 above; (2) a summary of the investigation/remediation efforts completed to date; and (3) a discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.

4. The information in the appropriate portions of Section C (Groundwater Monitoring of this decision guide) regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

Corrective actions conducted at the MPC facility under the current RCRA permit were overseen by the IEPA. A chronological list of all documents submitted to the IEPA regarding corrective action activities is provided in Table F-1. Copies of all letters received from the IEPA, regarding corrective action activities, are provided in Appendix L.

Corrective action at the MPC facility has consisted of the construction of the CAMU landfill and excavation of the contaminated soils present at the HWMUs and SWMUs followed by deposition of this contaminated material into the CAMU landfill. Details regarding the releases to and remediation of the HWMUs and SWMUs have been presented in the reports titled Final RCRA Closure Plan and Basis of Design, Modern Plating Corporation, December 1999 (FVD, 1999), Modern Plating Corporation CAMU Landfill Construction Documentation, July 2001 (FVD, 2001), and Closure Documentation Report, August 2001 (FVD, 2001). The location of the HWMUs and SWMUs, a summary of the wastes released to these areas, and a summary of the remediation of these areas is provided in sections B.1.1, C.8.1, and E.1 of this permit application.

Groundwater monitoring is currently being conducted on a semi-annual basis at the facility and is overseen by the IEPA. A summary of the groundwater monitoring program and GMZ is provided in Section C of this permit renewal application.

F.5 Proposed Interim Measures to be Conducted: (703.187)

An applicant may propose to begin/continue interim measures for the purpose of preventing/mitigating releases from a SWMU before completing a formal RCRA Facility Investigation or Corrective Measures Program. Requests to begin/continue interim measures must contain detailed information about the proposed effort, including:

1. Background information and the unit and surrounding area (including, but not limited to, construction/operation of the unit, wastes managed in the unit; geology/hydrogeology of the area; and discussion/presentation of all sampling/analysis efforts conducted in and around the unit);

2. The objectives of the interim measure. Of special concern is how the measure will prevent/mitigate the release of concern and how it will be integrated into any necessary long-term corrective measures at the facility;

3. Information regarding the design, construction, operation and maintenance of the measure;

4. Schedules for design, construction, and operation of the measure.

It must be noted that it may be necessary to complete a RCRA Facility Investigation and a Corrective Measures Study for the SWMU of concern while the interim measure is being carried out. Such efforts will be necessary if the extent of contamination at the SWMU has not been completely determined or if additional remedial efforts are needed to properly address the contamination resulting from the release in the long term.

Presently there are no interim measures being conducted and no new interim measures are being proposed. As a result, Section F.5 does not apply.

F.6 Cost Estimate for Required Corrective Action: (724.201)

35 IAC 724.201 requires that permitted facilities provide financial assurance for any required corrective action. As such, the application must contain an estimate of the most of the required corrective action efforts to be carried out at the facility.

- If a facility proposes to conduct an interim measure as set forth in Item F.5 above, then an estimate of the cost of these measures must be provided in the application.
- Development/presentation of such an estimate must be carried out in accordance with Item E.5 above. This cost estimate will then form the foundation for the establishment of financial assurance for corrective action in the permit. This estimate will need to be updated, as appropriate, to reflect the cost of carrying out all approved corrective action activities at this facility.
- As each workplan/report associated with corrective action is developed, they must contain cost estimates for carrying out the activities proposed in the workplans and then financial assurance must established for these activities once they are approved.

No interim measures are ongoing and no new measures are being proposed. As a result, Section F.6 does not apply.

F.7 Financial Assurance for Corrective Action: (724.201)

Adequate financial assurance must be provided for any proposed interim measures described in Item F.6 above. Establishment of this financial assurance must meet the requirements of 35 IAC 724, Subpart H and Item E.6 above. Financial assurance for corrective action must be updated, as appropriate, to reflect the current corrective action cost estimate.

Corrective actions are not being proposed for the MPC facility. Therefore, Section F.7 does not apply.

References

Foth & Van Dyke and Associates, Inc., 1998. Plan of Operation for the Corrective Action Management Unit at the Modern Plating Corporation Facility. 1998.

Foth & Van Dyke and Associates, Inc., 1999a. Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit. December 1999.

Foth & Van Dyke and Associates, Inc., 1999b. Final RCRA Closure Plan and Basis of Design, Modern Plating Corporation.

Foth & Van Dyke and Associates, Inc., 1999c. Contingency Plan, Hazardous Waste Contingency Plan and Related Documents. Version Updated by Fehr Graham, 2017.

Foth & Van Dyke and Associates, Inc., 2001a. Modern Plating Corporation CAMU Landfill Construction Documentation. July 2001.

Foth & Van Dyke and Associates, Inc., 2001b. Closure Documentation Report. August 2001.

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, 2011. RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, Log No. B-167R, issued June 9, 2011.

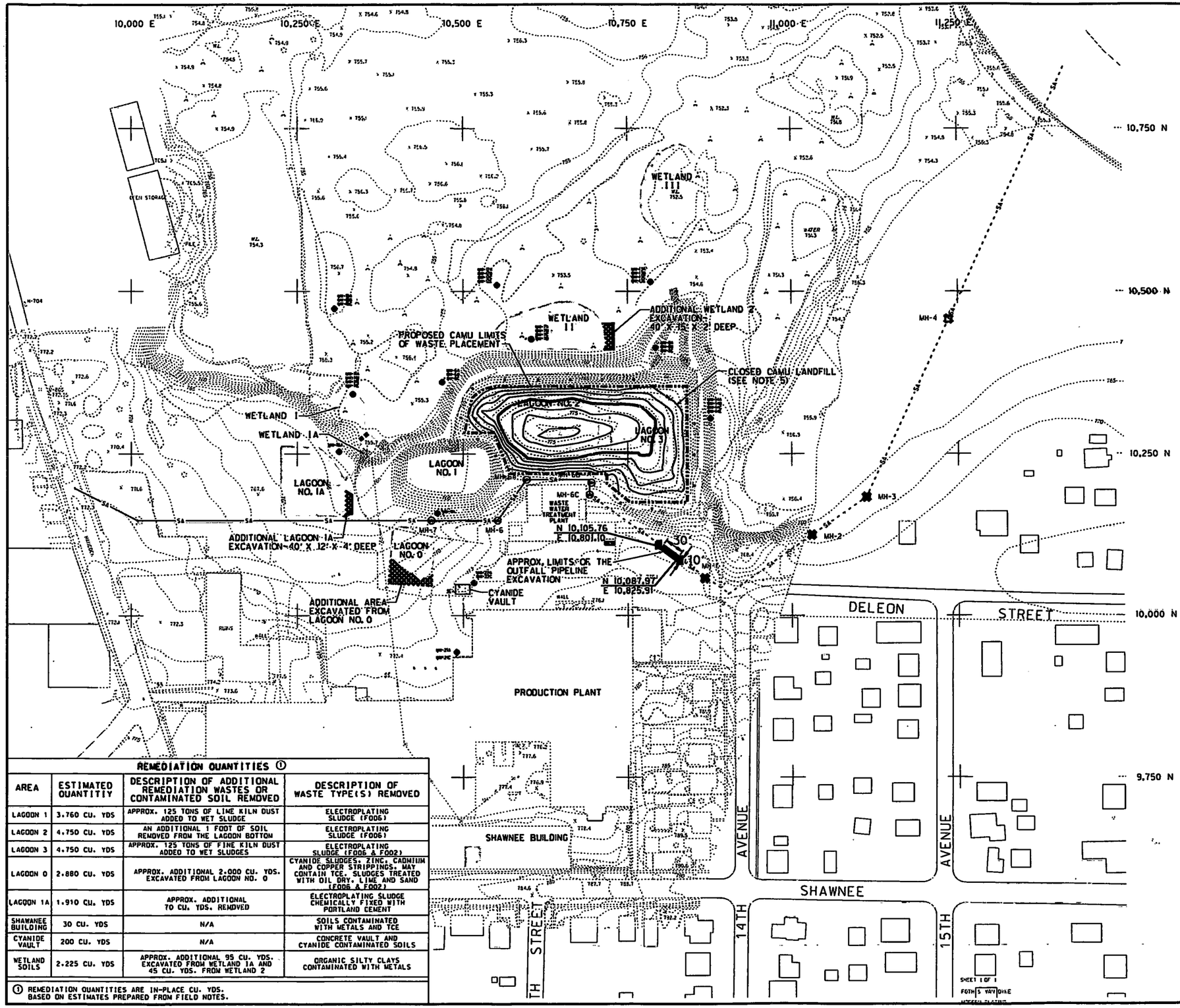
Illinois Environmental Protection Agency, 2020. Letter to Mr. Dave Servatius, RCRA Post-Closure Permit for Modern Plating Corporation, Permit No. 1770200010, Log No. B-167R-CA-3, dated October 16, 2020.

Tables

Figures

Drawings

R003065



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
- —SA— ACTIVE DISHARGE SANITARY SEWER PIPELINE
- - - SA - - - ABANDONED OUTFALL PIPELINE
- AREA EXCAVATED 10' (WIDTH AT EXCAVATION BASE) X 30' (LENGTH) X 7' (DEPTH)
- PIPELINE PLUG NOT IN A MANHOLE
- N 10,087.97 / E 10,825.91 — SPOT LOCATIONS (X, Y)
- AREA EXCAVATED TO REMOVE CHROMATE RINSE WATER CONTAMINATED SOILS
- PIPELINE PLUGGED AND MANHOLE FILLED WITH SOIL
- MW-9A — MONITORING WELL NUMBER AND LOCATION
- BM — CONTROL MONUMENT NUMBER AND LOCATION
- APPROXIMATE BOUNDARY OF EXISTING SLUDGE STORAGE AREA
- PROPOSED CAMU LIMITS OF WASTE PLACEMENT
- EXISTING WETLAND AREA
- STORM DRAIN
- AREAS REMEDIATED (REFER TO SCHEDULE ON THIS DRAWING FOR ESTIMATED QUANTITIES)

REMEDIATION QUANTITIES ①

AREA	ESTIMATED QUANTITIY	DESCRIPTION OF ADDITIONAL REMEDIATION WASTES OR CONTAMINATED SOIL REMOVED	DESCRIPTION OF WASTE TYPE(S) REMOVED
LAGOON 1	3,760 CU. YDS	APPROX. 125 TONS OF LIME KILN DUST ADDED TO WET SLUDGE	ELECTROPLATING SLUDGE (F006)
LAGOON 2	4,750 CU. YDS	AN ADDITIONAL 1 FOOT OF SOIL REMOVED FROM THE LAGOON BOTTOM	ELECTROPLATING SLUDGE (F006)
LAGOON 3	4,750 CU. YDS	APPROX. 125 TONS OF FINE KILN DUST ADDED TO WET SLUDGES	ELECTROPLATING SLUDGE (F006 & F002)
LAGOON 0	2,880 CU. YDS	APPROX. ADDITIONAL 2,000 CU. YDS. EXCAVATED FROM LAGOON NO. 0	CYANIDE SLUDGES, ZINC, CADMIUM AND COPPER STRIPPINGS, MAY CONTAIN TCE. SLUDGES TREATED WITH OIL DRY, LIME AND SAND (F006 & F002)
LAGOON 1A	1,910 CU. YDS	APPROX. ADDITIONAL 70 CU. YDS. REMOVED	ELECTROPLATING SLUDGE CHEMICALLY FIXED WITH PORTLAND CEMENT
SHAWNEE BUILDING	30 CU. YDS	N/A	SOILS CONTAMINATED WITH METALS AND TCE
CYANIDE VAULT	200 CU. YDS	N/A	CONCRETE VAULT AND CYANIDE CONTAMINATED SOILS
WETLAND SOILS	2,225 CU. YDS	APPROX. ADDITIONAL 95 CU. YDS. EXCAVATED FROM WETLAND 1A AND 45 CU. YDS. FROM WETLAND 2	ORGANIC SILTY CLAYS CONTAMINATED WITH METALS

① REMEDIATION QUANTITIES ARE IN-PLACE CU. YDS. BASED ON ESTIMATES PREPARED FROM FIELD NOTES.

NOTES:

1. SITE LOCATION: SE ¼ OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS
2. TOPOGRAPHICAL BASE MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. 500 YEAR FLOOD BOUNDARY TAKEN FROM "NOVEMBER 1976 FLOOD INSURANCE STUDY" BY U.S. DEPARTMENT OF HOUSING & URBAN DEVELOPMENT, FEDERAL INSURANCE ADMINISTRATION.
5. SEE DRAWING NO. 1 CAMU LEGAL DESCRIPTION AND SURVEY MAP FOR DETAILED LEGAL DESCRIPTION OF THE CAMU.

MODERN PLATING CORPORATION

DRAWING NO. 2

EXTENT OF AREAS REMEDIATED

Scale: 0 75' 150' | Date: JULY, 2001

Prepared By: Foth & Van Dyke | By: JOW | 97M015

SHEET 1 OF 1
FOTH & VAN DYKE

Appendix H

Monitoring Well Construction Information and Boring Logs

R003067

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
- PROPOSED FENCE
- SA — EXISTING SANITARY SEWER
- ⚠ APPROXIMATE LIMITS OF NOVEMBER 28, 1986 TOPOGRAPHIC MAP (SEE NOTE 5.)
- MW-9A — MONITORING WELL
- BM — CONTROL MONUMENT
- ⚠ APPROXIMATE PROPERTY LINE
- APPROXIMATE BOUNDARY OF EXISTING SLUDGE STORAGE AREA
- BOUNDARY OF 500 YEAR FLOOD
- PROPOSED CAMU LIMITS OF WASTE PLACEMENT
- WETLAND AREA
- LOADING/ UNLOADING AREA
- ⚠ STORM DRAIN
- ⚠ STORAGE UNITS NO LONGER IN EXISTANCE

NOTES:

1. SITE LOCATION: SE 1/4 OF SECTION 32, T27N, R8E, STEPHENSON COUNTY, ILLINOIS
2. TOPOGRAPHICAL BASE MAP PREPARED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTROL INTERVAL IS ONE FOOT. BENCH MARK IS LOCATED ON THE N.W. CORNER OF THE PUMP STATION CONCRETE SLAB, COORDINATES N 10046.1 E 10491.0, AT ELEVATION 773.82 FEET.
4. 500 YEAR FLOOD BOUNDARY TAKEN FROM "NOVEMBER 1976 FLOOD INSURANCE STUDY" BY U.S. DEPARTMENT OF HOUSING & URBAN DEVELOPMENT, FEDERAL INSURANCE ADMINISTRATION.

⚠ 5. AREA INSIDE HEAVY DASHED LINE IS TOPOGRAPHIC MAP PREPARED BY AERP-METRIC ENGINEERING, SHEYBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: NOVEMBER 28, 1986. AREA OUTSIDE HEAVY DASHED LINE SCANNED AND DIGITIZED BY FOTH & VAN DYKE FROM AIR PHOTOS BY THE SIDWELL COMPANY, 1992

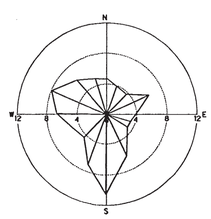
⚠ Property Description:

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.



ANNUAL WIND ROSE
NUMBERS REPRESENT FREQUENCIES (PERCENT) OF WIND DIRECTION

CADD PROJ CODE: 7M15 | PRF NAME: $$PRF$$
DRAWN BY: JOW | DATE: MARCH, 1998
SURVEYED BY: N.A. | DATE: N.A.
SURVEY DATA: N.A.

RECORD DRAWINGS OF CONSTRUCTION CONFORMING TO CONTRACTOR'S RECORDS.

RECEIVED
DEC - 2 1999
N.A. IEPA-DLPC DATE
BY
PERMIT SECTION

NO.	BY	DATE
⚠	DAT	5/18/99
		ADDED MAP DATA
⚠	BY	DATE
⚠	N.W.P.	11-24-99
		APPROVED
⚠	KEM	11/24/99
		REVIEWED
⚠	JMES	11/24/99
		DESIGNED

REVISIONS / REMARKS

Foth & Van Dyke
engineers - architects - scientists

REUSE OF DOCUMENTS
THIS DOCUMENT IS PREPARED 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 THE SOLE RESPONSIBILITY OF THE UNAUTHORIZED USER.

RECEIVED
MAY 22 2000
SITE MANAGEMENT UNIT

PLAN OF OPERATION FOR THE CORRECTIVE ACTION MANAGEMENT UNIT AT THE MODERN PLATING CORPORATION FACILITY FREEPORT, ILLINOIS

EXISTING CONDITIONS

SCALE 0 200' 400'
SCOPE ID 97M015
DRAWING NO. 2R

I:\97m015\poo\7m15z2c.dgn
16 NOV 99 mrs

© 1998 Foth & Van Dyke and Associates, Inc.

Huser, Kelly

From: DoNotReply.EJRequest@illinois.gov
Sent: Wednesday, February 24, 2021 3:07 PM
To: Crites, Mark; Mara.McGinnis@illinois.gov; Frost, Brad; Pressnall, Chris; Sanchez, Cynthia L.; Herr, Alane; Crites, Mark
Subject: Request for EJ Review for Modern Plating Corp | 1770200010 | B-167R2 | Land

A new request has been submitted to the EJ Outreach database.

Source Name: Modern Plating Corp

Activity/Subactivity Type: Permit / RCRA/HW

Decision Due Date:

Reviewer - When the permit is ready to be issued, click this link to view the request. When viewing the request, click the button labeled 'Ready for issuance' to mark the record for EJ Release.

EJ Review Request #4207

Site/Facility Information

Site Name: Modern Plating Corp
Site ID: 170000149015
Bureau Site ID: 1770200010
Bureau: LAND
Address: 701 South Hancock Avenue
EJ Status: 2 - EJ Area, Low Income
City/State/Zip: Freeport, Illinois 61032
Contact Name: James R. Stenberg
Contact Title: Vice President
Contact Address: 701 South Hancock Avenue
Contact City/State/Zip: Freeport, Illinois 61032
Phone: 815-235-3111
Email: jim.stenberg@modernplating.com

Application Information

Reference Number: B-167R2
Activity Type: Permit
Activity Subtype: RCRA/HW
Application Scope/Description:
Renewal application for a post-closure hazardous waste permit.
Other Relevant Information:
No changes to previously permitted activities.
Request Submitted: 2/24/2021
Submitted by: Mark.Crites
Application Received: 1/8/2021
Decision Due:
Reviewer Name: Mark.Crites
Review Status: Review Pending
Review Status Notes:

Additional Permit Information

Waste Type: Hazardous
Operating Status: Closed
Activity Status: Ongoing
Any Changes to footprint of facility, design, or operating procedures, and if construction is required:
No.

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

Date: March 2, 2021

To: BOL File

From: Mark L. Crites, RCRA Permits

Subject: Review Notes

1770200010 – Stephenson County
Modern Plating Corporation
ILD005172325
Permit Log No. B-167R2
RCRA File – 24A
First Completeness Review

A completeness review of this submittal has been conducted. See the attached review note checklist and Post-Closure Permit Checklist for details. 3 completeness deficiencies were identified in this review see Post-Closure Permit Checklist for details. Also, the groundwater aspects of the submittal were reviewed by Paula Stine of the Groundwater Unit. Paula identified 8 completeness deficiencies. See her review for details. A Notice of Deficiency has been prepared including both Paula's comments and mine.

Note that proper 39(i) forms were submitted, and they are complete. No current compliance issues were discovered. Also note that this site is an EJ area and a review has been started with our EJ people.

REVIEW NOTE CHECKLIST
General Information

1770200010 – Stephenson County
Modern Plating Corporation
ILD005172325
Log #: B-167R2

Start of Review (Date)	**02/23/2021**	
Project Manager	MLC	
Groundwater Unit Reviewer	PMS	
Corr. Action Reviewer	MLC	
Brief Description of Project	Second Renewal for Post-Closure Permit	
Site Name/Location	Modern Plating Corporation 701 South Hancock Avenue P.O. Box 838 Freeport, Illinois 61032-0838	
Facility Contact ☒ - Operator ☐ - Owner	Company Attn: James R. Stenberg Same	Phone #: 815-235-3111 Email: jim.stenberg@modernplating.com
Owner ☐ - Same as Facility Contact	David Servatius Same	Phone #:815-235-3111 Email: Dave.servatius@modernplating.com
Consultant	Foth Attn: Andrea K. Martin 2121 Innovation Ct., Suite 300 DePere, WI 54115	Phone #: 920-496-6854 Email: andreamartin@foth.com
Siting (Sec. 3.330 of Act) Cert. of Siting (LPC-PA8)	☐-Yes ☐-No ☒-NA	
Environmental Justice Area (See Procedure I.28) Chrome SWAP EJ Database (EJ DB)	a. EJ Area: ☒-Yes ☐-No ☐-N/A[1] (only applies to permit applications). Should be marked "Yes" if either SWAP or EJ DB evaluation indicates EJ concerns. b. EJ Evaluation: i. SWAP Results: ☐-Not located in EJ Area ☐-Blue (1) Minority ☒-Yellow (2) Low Income ☐-Red (3) Minority & Low Inc. ii. EJ DB Results: ☐-(0) Not EJ Area ☐-(1) Minority ☒-(2) Low Income ☐-(3) Minority & Low Income ☐-(99) Status Unknown	

[1] For Environmental Justice Area reviews, the term "permit applications" means permit applications for various types of waste management facilities, including RCRA corrective actions and (CCDD) fill operations. It does not include uncontaminated soil fil operations (USFO), beneficial use determinations (BUD's) or general correspondence (PS Corr). See Footnote 1 from Procedure I.28.

	iii. If SWAP or EJ DB results identify EJ concerns submit EJ Review request to Community Relations via EJ DB. Complete Item c. below. c. Community Relations EJ Response: • ☐-Complete – No Outreach • ☐-Complete – With Outreach • ☐-Outreach in Progress Document Community Relations response by attaching a copy of the email response to the review notes. Notes:
39(i) Certification 39(i) Cert. form (LPC 643) **a. Review** (See Procedure I.25, 39(i) Investigations Memo & Sec. 39(i) of the Act)	☐-Not Applicable as this is not an application for a RCRA permit, permit modification, waste storage site, landfill/disposal site, transfer station, treatment facility, incinerator, waste transportation, CCDB fill operation, or tire storage site. **Review of 39(i) Certification**: **I. Applicant Information**: ☒-Complete/adequate ☐-Not complete/not adequate **II. Officers & Employees**: ☒-Complete/adequate ☐-Not complete/not adequate **III. Owner, Operator, Officer, and Employee Information**: A. Prior Conduct Identification: ☐-Yes ☒-No: Are one or more of the questions in this section marked "Yes"? If so, an Attachment A must be included (see below). B. Pending Proceedings: ☐-Yes ☒-No: Are one or more of the questions in this section marked "Yes"? If so, an Attachment A must be included (see below). C. Prior Application Information: i. ☐- Yes ☒-No: Are Previously submitted Attachment A's incorporated into this Certification? ii. ☐- Yes ☐-Not complete/adequate: If C.i. is checked yes; are the applications containing the previously submitted Attachment A's identified? **Certification Statement**: ☒-Yes ☐-Not complete/not adequate: Has the certification been signed by responsible corporate officer who meets the requirements of 702.126(a)(1)? **Attachment A – Information for Individual Persons:** Required if item III A. and/or B. above is check Yes. ☒-N/A ☐-Yes ☐-Not complete/adequate: Attachment A has been completed and contains the required information for individuals, identified in Section II that have prior findings, convictions or pending proceedings.
b. FACES Database Review FACES-DB FACES – 39i Guidance FACES User Manual	☐-Yes ☒-No: Facility has more than two consent decrees? If "Yes" request Full Compliance History (FCH), see item c. below. Notes:
c. Full Compliance History (FCH) Review	FCH Requested: ☐-Yes ☒-N/A: If item b above is checked yes request the FCH for the facility from the Waste Reduction and Compliance Section. Date FCH request made:

d. Other Information	**Other Information:** ☐-Yes ☒-No: Other information has been identified that suggest that applicant has not been truthful, or information provided is incomplete. Other information can be from public comments, news reports, personal knowledge, etc.
e. 39i violations identified that may require permit denial.	☐-Yes ☒-No: 39i violations identified that may require permit denial. If yes, a memo to the Unit Manager should be prepared detailing the violations. i. ☐-A memo, dated _____, has been forwarded to the Unit Manager for evaluation.
f. Revised Permit Condition for 39(i)	☒-Yes ☐-N/A: Permit Condition __Will be included in renewal permit when drafted.___ has been revised to require the submittal of 39(i) Certification Forms with all applications (see item 4 of Procedure I.25).
Field Office Section	a. FOS Region/Contact: Email: Phone: b. Field Inspection Required: ☐-Yes ☒-No If yes, a memo/email should be prepared and sent to the FOS contact, copy FOS Regional Manager. i. ☐-A memo/email, dated _____, has been forwarded to the FOS. c. Comments Received from FOS: ☐-Yes ☒-No
CROPA Memo Procedure I.31 CROPA Template	a. ☐-Yes ☒-No: CROPA Memo prepared and Memo sent on _____. i. ☐-Yes ☒-No: Permit(s) required from other Bureaus?
Name Change Requested	a. ☐-Yes ☒-No If yes: • ☐-Reviewer has completed Site Inventory Data Input Form **-OR-** • ☐-Facility has submitted an Illinois EPA Inventory Application.
Right to Know Evaluation Sec. 25d of Act Right-to-Know Evaluation form Right-to-Know Fact Sheet	a. ☒-N/A, no release near the property boundary has been documented, **-OR-** b. ☐-Soil, soil gas and/or groundwater contamination warranted a Right-to-Know Evaluation form be completed. The evaluation determined: • ☐-Further evaluation required. • ☐-Additional information is required to make an evaluation. • ☐-No criteria met, site does not warrant further evaluation. If an evaluation has been conducted the form must be attached to the review notes. Notes:

RCRA POST-CLOSURE PERMIT APPLICATION
COMPLETENESS AND TECHNICAL REVIEW CHECKLIST
November 2019

Facility Name: Modern Plating Corporation
Log No.: B-167R2
State ID No.: 1770200010
USEPA No.: ILD005172325

Date application received: 01/08/2021
Revision No.:
Reviewer: MLC
Review Dates:

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
A	**Forms, Certifications, Confidentiality, and Public Involvement**	**XX**	**XX**		
A.1	**RCRA Part A Application Form**	**N**			No Part A form provided.
A.2	**Certification Using the LPC-PA23 Form**	Y			
A.2.1	Facility Certification	Y			
A.2.2	Technical Information Certification	Y			
A.2.3	39i Certification	Y			
A.3	**Public Disclosure Exemption Claims and Trade Secret Claims**	NA			
A.3.1	No information Claimed Exempt from Public Disclosure	NA			
A.3.2	Trade Secrets Claims	NA			
A.3.3	Exempt or Exempt In-Part Data Claims	NA			
A.3.4	Privileged Information	NA			
A.4	**Public Participation: Facility Mailing List & Information Repositories**				
A.4.1	Facility Mailing	Y			
A.4.2	Identification of Repositories	Y			
A.4.3	Contents of Repository	Y			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
A.4.4	Public Notice of Repository Availability	Y			
B	**Facility Description**	**XX**	**XX**		
B.1	**General Facility Description**	Y			
B.1.1	Operation of Facility	Y			
B.1.2	Hazardous Waste Management Units at the Facility	Y			
B.1.3	Solid Waste Management Units at the Facility	Y			
B.2	**Topographic Map**	Y			
B.2.1	Facility + 1 mile	Y			
B.2.2	Facility + 1000 feet	Y			
B.3	**Location Standards**	Y			
B.3.1	Seismic Standard	Y			
B.3.2	Floodplain Standard	Y			
B.3.3	Facilities in the 100-year Floodplain	Y			
B.3.3.1	Engineering Analysis and Structural/Engineering Study	Y			
B.3.3.2	Procedures to Remove Waste	Y			
B.3.4	Existing Facilities not in Compliance with 35 Ill. Admin Code 724.118(b)	Y			
B.4	**Operating Record**	Y			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
C	**Groundwater Monitoring**	**XX**	**XX**		To be completed by GU.
D	**Procedures to Prevent Hazards**	**XX**	**XX**		
D.1	**Security**	Y			
D.1.1	Waiver from the Security Requirements	Y			
D.1.2	Restricting Entry to the Facility	Y			
D.1.3	Warning Signs	Y			
D.2	**Equipment Requirements**	Y			
D.2.1	Waiver	Y			
D.2.2	Internal Communications	Y			
D.2.3	External Communications	Y			
D.2.4	Emergency Response Equipment	Y			
D.2.5	Water for Fire Control	Y			
D.2.6	Personnel Protection Equipment	Y			
D.2.7	Testing & Maintenance of Emergency Equipment	Y			
D.2.7.1	Equipment Testing	Y			
D.2.7.2	Schedule	Y			
D.2.8	Equipment and Power Failure	Y			
D.3	**Inspection Requirements**	Y			
D.3.1	Inspection Log	Y			
D.3.1.1	Items Inspected	Y			
D.3.1.2	Types of Problems	Y			
D.3.1.3	Inspection Frequency	Y			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
D.3.2	Repair Log	Y			
D.3.3	24 Hour Reporting	Y			
E	**Post-Closure Requirements**	**XX**	**XX**		
E.1	**Information Regarding the Unit(s) Closed as a Landfill**	Y			
E.1.1	General Information Regarding the Unit to Receive Post-Closure Care	Y			
E.1.2	Geology and Hydrogeology Around/ Beneath the Unit	Y			
E.1.3	Characterization of Waste/ Contaminated Soil Present in the Landfill Unit	Y			
E.1.4	Initial Closure Activities	Y			
E.1.5	Details Associated with the Closed Unit	Y			
E.2	**Contact Person**	Y			
E.3	**Operation of the Leachate Collection System**	Y			
E.3.1	Quality of Leachate in the Leachate Collection System	N			Should provide information from pre-2010 leachate analysis.
E.3.2	Leachate Collection System Within the Landfill	Y			
E.3.3	Leachate Collection System Outside the Landfill	Y			
E.3.4	Management of Leachate Collection System	Y			
E.3.5	Summary of Leachate Management Program Conducted to Date	Y			
E.4	**Operation of the Leak Detection System**	Y			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
E.4.1	Description of the Leak Detection System Within the Landfill	Y			
E.4.2	Description of the Leak Detection System Outside the Landfill	Y			
E.4.3	Management of Leachate Accumulating in the Leak Detection System	Y			
E.4.4	Recent Operation of the Leak Detection System	Y			
E.5	**Operation of the Gas Monitoring/ Collection System**	Y			
E.5.1	Detailed Description of the Landfill Gas Collection System	Y			
E.5.2	Landfill Gas Monitoring Plan	NA			
E.5.3	Landfill Gas Disposal/ Processing System	NA			
E.5.4	Summary of the Landfill Gas Collection/ Monitoring/ Processing Systems	NA			
E.6	**Post-Closure Inspection Plan**	Y			
E.6.1	Inspection Log	Y			
E.6.1.1	Items Inspected	Y			
E.6.1.2	Types of Problems	Y			
E.6.1.3	Inspection Frequency	Y			
E.6.2	Repair Log	Y			
E.6.3	24-Hour Reporting	Y			
E.7	**Post-Closure Monitoring Plan**	Y			
E.7.1	Facility Controls	Y			
E.7.2	Surveys and Corrective Action	Y			
E.7.2.1	Provide the Following	Y			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
E.7.3	Leachate Collection System (LCS)	Y			
E.7.3.1	Leachate Quality	Y			
E.7.3.2	Leachate Quantity	Y			
E.7.3.3	Leachate Reporting	Y			
E.7.4	Leak Detection System (LDS)	Y			
E.7.4.1	LDS Leachate Quantity	Y			
E.7.4.2	Action Leakage Rate (ALR)	Y			
E.7.5	Groundwater Monitoring System	Y			
E.7.6	Gas Collection System	Y			
E.7.6.1	Gas Quality	Y			
E.7.6.2	Gas Quantity	Y			
E.7.6.3	Summary of Results from the Gas Collection/ Monitoring System	Y			
E.8	**Post-Closure Maintenance Plan**	Y			
E.8.1	Procedures, Equipment & Materials	Y			
E.8.3	Frequency	Y			
E.9	**Survey Plat**	Y			
E.10	**Notice in Deed and Certification**	Y			
E.11	**Post Closure Cost Estimate**	Y			
E.12	**Financial Assurance Mechanism for Post-Closure Care**	Y			
E.13	**State Mechanisms**	NA			
F	**Corrective Action (CA)**	**N**			**No section F is provided.**

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
F.1	**Identification of Solid Waste Management Units (SWMUs)**	N			
F.2	**Characterization of the SWMUs**	N			
F.3	**Characterization of Releases from SWMUs**	N			
F.4	**Information Required for Renewal Applications**	N			
F.4.1	Required Information if USEPA Oversaw Initial Corrective Action Program	N			
	(1) Chronology of all CA related correspondence between USEPA & facility	N			
	(2) Copies of all letters received from USEPA regarding CA	N			
	(3) Copies of all letters regarding CA sent to USEPA	N			
	(4) Detailed discussion of each SWMU	N			
	(5) Information in Section C regarding any on-going groundwater monitoring/remediation	N			
F.4.2	Required Information if IEPA Oversaw Initial Corrective Action Program	N			
	(1) Chronology of all corrective action efforts completed to date	N			
	(2) Discussion of all CA related correspondence between IEPA and facility & copies of all correspondence	N			
	(3) Detailed discussion of each SWMU	N			
	(4) Information in Section C regarding any on-going groundwater monitoring/remediation effort	N			

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Location	Comments
F.5	Proposed Interim Measures to be Conducted	N			
F.6	Cost Estimate for Required Corrective Action	N			
F.7	Financial Assurance for Corrective Action	N			

Notice of Incompleteness
March 5, 2021

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

217/524-3300

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7020 0090 0000 7313 1959

MAR 05 2021

Modern Plating Corporation
Attn: James R. Stenberg, President
701 S. Hancock Ave.
Freeport, Illinois 61032

RE: 1770200010 – Stephenson County
Modern Plating Corporation
ILD005172325
Permit Log No. B-167R2
RCRA Permit Admin Record File – 24D
Permit NOD

Dear Mr. Stenberg:

Illinois EPA has reviewed the RCRA permit renewal application, dated and received on January 8, 2021 for the above-referenced facility, located at 701 South Hancock Avenue in Freeport, Illinois. A first completeness review on this application has been conducted by Illinois EPA, and a list of deficiencies identified during this review is included in the attached Notice of Incompleteness.

Each of the deficiencies must be addressed before Illinois EPA can continue the completeness review of your permit application. Your response must be submitted in quadruplicate and postmarked no later than May 8, 2021. The response should be in a format that allows incorporation of the new information into the appropriate sections of your application. To allow for a proper review of this new information, the location of the response to each deficiency should be identified in a list cross-referencing these items. Each revised page or drawing must have the revision date identified on them for tracking purposes.

Once the subject application is deemed complete, Illinois EPA will conduct a technical review of the information in the application for compliance with the applicable regulations.

A completed copy of the RCRA permit Application Form LPC-PA23 should be included with your submission. The original and three copies of the new information and certification should be submitted to the following address:

Illinois Environmental Protection Agency
Bureau of Land
Division of Land Pollution Control
Permit Section
P.O. Box 19276
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

If you have any questions regarding groundwater monitoring related issues associated with this application, please contact Paula Stine at 217/557-8770. For any other questions, please contact Mark L. Crites at 217/524-3269.

Sincerely,

Kenneth E. Smith, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

KES:MLC:1770200010-RCRA-B167R2-NOD
wpw
Attachment: Notice of Incompleteness

bcc: BOL File
Rockford Region
Rob Watson
Mark L. Crites
Paula Stine

Notice of Incompleteness – First Completeness Review

1770200010 – Stephenson County
Modern Plating Corporation
ILD005172325
Permit Log No. B-167R2

The following is a list of deficiencies that must be addressed before Illinois EPA can declare the subject RCRA Permit application complete:

1. Section A: No Part A Permit Application was provided. Please included an updated Part A Permit Application with your response.

2. Section C.2: Interim Status Groundwater Monitoring Data was not complete. Although the Permittee did not collect groundwater monitoring data during interim status, the Permittee must provide a general discussion of historical groundwater results collected at the MPC site.

3. Section C.3: Historical Hydrogeological Summary was not complete. A narrative description of the aquifers beneath the MPC site, such as thickness of each aquifer and the location of the aquifers in mean sea level below ground surface, must be provided. In addition, geologic cross-section created from boring log data and a reference map showing the boring locations must also be provided.

4. Section C.4: Topographic Map Requirement was not complete. The Permittee did not include on the topographic map the GMZ boundary, monitoring wells MW23B and MW23C, and contour lines for the entire area of the property. This information must be provided as well as the requirements of 35 Ill. Adm. Code 703.183(s) and 703.185(c).

5. Section C.5: Contaminant Plume Description was not complete. A narrative description of the contaminant plume since the time it was detected and measured maximum concentrations in each plume location, describing the source (regulated unit or other source) must be provided. In addition, changes to the contaminant plume over time using actual measured data must also be provided.

6. Section C.8.1: Description of Corrective Action Program was not complete. To demonstrate compliance with 35 Ill. Adm. Code 724.200, the Permittee must, at a minimum, provide the following items:

   A) A characterization of the contaminated groundwater, including concentrations of hazardous constituents,

   B) The concentration limit for each hazardous constituent found in the groundwater, as set forth in 35 Ill. Adm. Code 724.194,

C) Detailed plans and an engineering report describing the corrective action to be taken, and

D) A description of how the groundwater monitoring program will assess the adequacy of the corrective action.

7. Section C.8.4: Groundwater Monitoring Program was not complete. It is not appropriate to only reference approved letters or reports. A narrative description must be provided. The proposed Groundwater Monitoring Program must be effective in determining compliance with groundwater standards. This section must be revised to include the groundwater monitoring program which meets the requirements of 35 Ill. Adm. Code 703.185(h)(4), 742.192, and 724.200(d).

8. Subsection C.8.4.1: General Monitoring Program Requirements was not complete. It is not appropriate to only reference approved letters or reports. A narrative description must be provided. This section must be revised to include detailed plans and an engineering report descripting the proposed groundwater monitoring program to be implemented to meet the requirements of 35 Ill. Adm. Code 724.197 and 703.185(e).

9. Subsection C.8.4.2: Groundwater Monitoring System was not complete. It is not appropriate to only reference boring logs and completion reports. A narrative description of the corrective action monitoring system must be provided. In addition, paper copies of the boring logs and completion reports must be provided as well as geologic cross-sections derived from the boring logs at the MPC site.

10. Section E.3.1: No historical information on leachate analysis was provided. Please provide this information in your response.

11. Section E.7.5: Groundwater Monitoring System was not complete. It is not appropriate to only reference boring logs and completion reports. A narrative description of the information must be provided. Subsection C.8.4.2 may be referenced if the information required to be submitted in Condition 9 above, is provided and determined to be adequate.

12. Section F: No information from checklist Section F was provided. It is understood that the corrective action activities conducted at the site are historical, but that information should be included in the application. Please provide it with your response.

ASTSWMO POSITION PAPER
POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES

BACKGROUND

Regulations promulgated under the authority of Subtitle C of the Resource Conservation and Recovery Act (RCRA), include provisions regarding the post-closure care of hazardous waste land disposal units. The Subtitle C regulations establish a 30-year post-closure care period as the default requirement (See 40 CFR § 264.117).

These regulations include provisions allowing the 30-year period to be extended or shortened. The 30-year period may be extended if the Environmental Protection Agency (EPA) Regional Administrator (RA) or Director of an authorized State program "finds that the extended period is necessary to protect human health and the environment" and may be shortened if the RA or State Director finds that a reduced period is sufficient to protect human health and the environment. After completion of the established post-closure care period, the owner or operator is required to certify that the post-closure period was performed in accordance with the approved post-closure plan. Similar provisions are found in regulations for nonhazardous waste disposal units promulgated under the authority of Subtitle D of RCRA.

Facilities around the country are approaching or have already arrived at the end of the initial 30-year post-closure period, and many States are grappling with the issue of how to address this situation. ASTSWMO raised several questions and asked EPA to address a number of issues regarding this topic in its October 17, 2012 Position Paper.

While EPA's December 15, 2016 Memorandum addressed several of ASTSWMO's requests, and provides guidance on this issue, it does not fully address all of ASTSWMO's concerns and the situations faced by the States with disposal units at the end of the 30-year post closure period cited in the regulations. Failure to address these concerns may lead to hazardous waste disposal units exiting post-closure care without sufficient controls (including land use restrictions) in place. If this occurs, ASTSWMO is concerned that unregulated development, or even simple neglect of these units will result in the release of hazardous wastes and hazardous constituents. This will ultimately lead to those units/facilities being regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

ASTSWMO members agree that controls need to remain in place in perpetuity if wastes are present in the disposal units. These controls must be required even if the unit has met all the requirements of its post-closure permit and there is currently no groundwater contamination associated with the unit.

1015 18th Street NW, Suite 803, Washington, DC 20036
T: (202) 640-1060 F: (202) 331-3254
www.astswmo.org

ASTSWMO POSITION PAPER
POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES

ISSUES

The Hazardous Waste Subcommittee's Corrective Action and Permitting (CAP) Task Force has highlighted the following as key issues:

- A clear statement is needed from the EPA that there is a presumption that a Subtitle C post-closure care obligation remains as long as hazardous waste remains in a closed land disposal unit, even if there is no evidence of a release after 30 years of post-closure care (although a facility may be able to rebut this presumption on a case-by-case basis),

- The need for a clear statement identifying facility financial assurance obligations during an extended post-closure period, that ensures cost estimates are periodically updated and that financial assurance instruments are maintained to ensure adequate coverage,

- If an alternate enforceable document (such as an order or environmental covenant under the Unified Environmental Covenant Act) can be used in place of a post-closure permit, identification of the minimum controls and restrictions that need to be included in this document or order, and

- Guidance addressing the addition of an emerging or newly listed contaminant to monitoring requirements.

POSITION

The ASTSWMO Board of Directors recommends that EPA either revise the RCRA regulations for post-closure or issue supplemental guidance on the implementation of the post-closure regulations under Subtitle C of RCRA. Such guidance should be congruent with the key issues highlighted in the issues section of this position paper. ASTSWMO remains ready to work with EPA to achieve a mutually satisfactory outcome on this very important issue.

Approved by the ASTSWMO Board of Directors on July 20, 2022 in Park City, UT.

RCRA POST-CLOSURE PERMIT APPLICATION
COMPLETENESS AND TECHNICAL REVIEW CHECKLIST
November 2019

Facility Name : Modern Plating Corp
Log No. : B-167R2
State ID No. : 1770200010
USEPA No. : ILD005172325

Date Application Received : January 8, 2021
Revision No. : First Technical
Reviewer : Aidan Fullriede, Groundwater Unit
Review Dates : March 3, 2025

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Memo Location	Comments
A	**Forms, Certifications, Confidentiality, and Public Involvement**	**XX**	**XX**		**No groundwater related issues; therefore, did not review for completeness**
B	**Facility Description**	**XX**	**XX**		**No groundwater related issues; therefore, did not review for completeness**
C	**Groundwater Monitoring**		**Y**		
C.1	**Exemption from Groundwater Protection Requirements**		N/A	p. 4	Not requesting a waiver.
C.2	**Interim Status Groundwater Monitoring Data**		Y	p. 4	
C.3	**Historical Hydrogeological Summary**		Y	p. 4-6	
C.4	**Topographic Map Requirements**		N	p. 7	Must correct contour intervals for potentiometric surface maps.
C.5	**Contaminant Plume Description**		N	p. 7	Provide WWS.
C.6	**Detection Monitoring Program**		**N/A**	p. 8	
C.7	**Compliance Monitoring Program**		**N/A**	p. 8	

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Memo Location	Comments
C.8	**Corrective Action Program**		N	p. 8	Must provide copy of CAMU construction documentation and closure report in addition to disc copies. For Sections C.8, C.8.1, C.8.1.1, C.8.1.5, C.8.1.6, C.8.3, and C.8.4: MPC must propose a GMZ Re-Evaluation within 90 days of issuance of this Renewal Permit.
C.8.1	Description of Corrective Action Program		Y	p. 9	See C.8.
C.8.1.1	Characterization of Contaminated Groundwater		Y	p. 10	See C.8.
C.8.1.2	Concentration Limits		Y	p. 11	
C.8.1.3	Compliance Point		Y	p. 12	
C.8.1.4	Compliance Period		Y	p. 12	
C.8.1.5	Construction Detail		N	p. 13	Must provide copy of GMZ Re-Evaluation in Appendix L, and revise to describe or reference Appendices C, D, Q, and H. Also see C.8.
C.8.1.6	Effectiveness of Corrective Action		N	p. 13	Reword for clarity regarding GMZ versus corrective action. Also see C.8.
C.8.2	Alternate Concentration Limits		N/A	p. 14	
C.8.3	Corrective Action Plan		Y	p. 14	See C.8.
C.8.4	Groundwater Monitoring Program		N	p. 15	Reword for clarity. See C.8.
C.8.4.1	General Monitoring Program Requirements		N	p. 16	Revise to propose MNA parameters be added to the sampling list.
C.8.4.2	Groundwater Monitoring System		Y	p. 18	
C.8.4.3	Description of Sampling and Analysis Procedures		N	p. 19	Must propose low-flow sampling method (such as bladder pumps).
C.8.4.4	Background Quality		Y	p. 22	

	Section	Complete (Y/N)	Technical Adequacy (Y/N)	Memo Location	Comments
C.8.4.5	Statistical Evaluations		Y	p. 22	
C.8.4.6	Evaluation of Groundwater Surface		Y	p. 23	
C.8.4.7	Extension of Compliance Period		N	p. 23	Revise to reference specific approval letter where Illinois EPA approved demonstration for groundwater ingestion route in accordance with 35 Ill. Adm. Code 742.925, or remove the reference.
C.8.4.8	Effectiveness of Corrective Action		N	p. 23	Revise to reflect comparison to Class I GQSs in both aquifers.
C.8.4.9	Evaluation of the Corrective Action Program		Y	p. 24	
C.9	**Reporting Requirements**		Y	p. 24	
D	**Procedures to Prevent Hazards**	**XX**	**XX**		**No groundwater related issues; therefore, did not review for completeness**
E	**Post-Closure Requirements**	**XX**	**XX**		**Reviewed for completeness for groundwater related issues only**
E.1.2	Geology and Hydrogeology Around/ Beneath the Unit		N	p. 24	Clarify horizontal and vertical gradient discrepancy between E.1.2 and C.3.
E.7.5	Groundwater Monitoring System		Y	p. 27	
F	**Corrective Action (CA)**	**Y**			
F.4.2	(4) Information in Section C regarding any on-going groundwater monitoring/remediation effort		N/A	N/A	Information provided in Section C.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
2520 WEST ILES AVENUE, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JAMES JENNINGS, ACTING DIRECTOR

MEMORANDUM

DATE: March 3, 2025

TO: Collier Sanders, RCRA Unit

FROM: Aidan Fullriede, Groundwater Unit
AF AMB

SUBJECT: Post-Closure Care Cost Estimates included in Permit Application

RE: 1770200010 -- Stephenson County
Modern Plating Corp
ILD005172325
Log No. B-167R2
RCRA Permit - 24A

A technical review has been completed on the groundwater portions of Appendix N of the subject submittal entitled "*RCRA Part B Permit Renewal Application*" (Application; Log No. B-167R2), dated January 8, 2021 and received by the Illinois EPA on January 8, 2021. The Application was submitted by Heather L. Hallet, Andrea Martin, and Michael S. Raimonde of Foth Infrastructure & Environment, LLC (Foth) on behalf of Modern Plating Corporation (MPC) in Freeport, Illinois. A completeness review of the groundwater portions of the subject submittal was completed and approved July 7, 2021. A document entitled, "*RCRA Part B Permit Renewal Application Incompleteness Response*", dated May 7, 2021 and received by the Illinois EPA on May 11, 2021 was submitted as a response to the July 7, 2021 completeness review, and a technical review memorandum was completed by this reviewer on March 3, 2025. Appendix N also requires review; therefore, this additional memorandum is being completed.

BACKGROUND

The site is owned by MPC and is located on 19 acres of land located at 701 South Hancock Avenue, Freeport, IL in Stephenson County. MPC is a job-shop plating business using various materials including zinc, tin, nickel, iron, and phosphate that has operated as an electroplater since 1963, prior to which it was owned by the Arcade Company manufacturing toys and other novelties via casting, forging, stamping, and painting from 1885 until the 1920s or 1930s.

Rockwell industries acquired the assets of the Arcade Company during the onset of World War II and reconstructed several buildings on the site where they produced ordinance supplies for the duration of the War, and again during the Korean War. During this time, some operations required large amounts of cooling water leading to the installation of a 24-inch discharge line to the Pecatonica River to the north. A second sanitary sewer discharge line was also installed

before the Rockwell operation was permanently closed in 1953 – 1954. The Rockwell Charitable Trust sold the site to MPC in 1963 and began operation in 1964.

Unsegregated flow from a single plating machine at the site, consisting of nickel, hexavalent and trivalent chromium, was directed through pipe to the northeast wall of the plant to connect with the existing cooling water discharge line as the Freeport Water and Sewer Commission (FWSC) treatment plant apparently had insufficient capacity to accept MPC flow. Additional plating lines installed throughout the 1960s also discharged to the same pipe until a wastewater treatment system was installed in 1968-1969. During this timeframe, various environmental projects were undertaken including the construction of the first clay-lined impoundment (Lagoon No. 0). The current wastewater treatment plant was put into operation with simultaneous closure of the underground treatment system. Following this, no further disposal, on- or off-site, of untreated wastes occurred. A second lagoon (Lagoon No. 1) was constructed in 1971 but began overflowing an unknown liquid by mid-1972. The center lagoon (Lagoon No. 2) was constructed in 1973 to accommodate the overflow. Erosion caused by flooding led to the imminent collapse of Lagoon No. 1., so a contract was issued to chemically fix the contents of Lagoon No. 1 and place the product in a new pit (Lagoon No. 1A) so that the floor and berms of Lagoon No. 1 could be reconstructed (Illinois EPA Permit 83-316). Note: Illinois EPA Permit 83-316 may be an outdated label format but is not relevant to this review. A third lagoon (Lagoon No. 3) was constructed in 1980 after quality problems arose from the "open-air" treatment and deterioration of the wastewater segregation system.

Trichloroethene (TCE) was sprayed on vegetation overgrowth around the lagoons during 1977-1980, after which mowing or hand-cutting has been performed with no chemical use. TCE was also used for industrial cleaning applications.

MPC received permission from the FWSC and Illinois EPA (January 1982) to connect to the FWSC plant in 1980/1981. As described in the "Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit – Modern Plating Corporation", leading to the approved RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action Management Unit (CAMU) (Log No. B-167), all known contaminated areas were remediated in 2000/2001 and these activities are documented in two (2) MPC reports received on July 9, 2001 and August 6, 2001, respectively (Log No. B-167-CCR and Log No. B-167-M-3) and included as CDs in Appendices Q and R of the Application.

The following areas and structures were remediated in the initial corrective action, which included excavating the contaminated soils and depositing them into the Corrective Action Management Unit (CAMU):

Hazardous Waste Management Units (HWMUs):
Lagoons 1, 2, 3, and Shawnee Building

Solid Waste Management Units (SWMUs):
Lagoons 0, 1A, Cyanide Trcatment Vault, Wetlands I, IA, II, and III

Areas of Concern (AOC):
Outfall Pipe and wastewater release area

There are no active HWMUs or SWMUs currently at MPC. MPC maintains a Groundwater Management Zone (GMZ) around the CAMU and surrounding area.

SUBJECT SUBMITTAL

The subject submittal is provided to renew the existing RCRA Part B Permit for MPC. Appendix N of the Application contains an updated post-closure care cost estimate for MPC. The groundwater portions of Appendix N are reviewed herein.

Appendix N is composed of one table outlining the Item/Description, Estimated Quantity, Unit Cost ($), and Cost ($)/Year for post-closure care at MPC. Items related to groundwater are summarized in a table below: including "Item 5. Environmental Monitoring (semi-annually)" with sub-items as follows:

5. Environmental Monitoring (semi-annually)			
• Groundwater (8 wells for metals, 14 wells for VOCs, 2 times/year)	2 sample events per year	$3496/event	$6992
• Personnel for sample collection	2 sample events per year	$3362/event	$6724
• Preparation and submittal of semi-annual groundwater monitoring report	2/year	$3526/event	$7052
• Preparation and submittal of 5-year minimum GMZ evaluation (includes 5-year well elevation surveying)	1/5 year	$5349	$1070
• Surface water monitoring (2 locations, 2 times/year)	4 samples	$43.67/sample	$175
6. Well Maintenance	1/year	$407/year	$407

Illinois EPA Comments

The following comments apply:

1. The estimates include groundwater costs associated with: (1) reporting of semi-annual groundwater monitoring reports; (2) the personnel hours for groundwater sample collection; (3) an annual figure for well maintenance; and (4) the costs associated with preparing the required 5-year minimum evaluation of the GMZ, which includes

re-surveying of the wells. The costs include a contingency of 10%. However, the costs associated with well maintenance fail to address whether all wells are covered by the estimate. Well maintenance must be assured for all wells in the monitoring system. Also, the costs do not include well abandonment for wells in the groundwater monitoring program. Post-Closure Care cost estimates must include abandonment of all wells, as stated in the February 1, 2023 Illinois EPA response to the previously approved cost estimates (Log No. B-167R-M-13, M-14, and M-15).

2. The provided Post Closure cost estimates cannot be distinguished as coming from a third-party. The estimate must be of adequate detail, including vendor information, to verify the costs provided.

3. The Post-Closure Care cost estimate was provided based on values estimated in 2020, which were up to date at the time of submission. However, MPC must update the cost estimate in Appendix N with the current 2025 numbers, reflecting an inflation rate of 2.4%, increased from the previous year's cost estimate.

ILLINOIS EPA RECOMMENDATIONS

Technical review of Appendix N of the Application, with regards to groundwater, has determined the Post-Closure Care cost estimate to be incomplete. The following costs must be included in the revised Post-Closure Care cost estimate:

1. The Permittee must include the following groundwater-related information in the annual Post-Closure Care cost estimate:

    a. Clarification of the quantity of wells covered under well maintenance; and

    b. Cost of well abandonment for all wells on the property.

2. The Post-Closure Care cost estimate must be based on actual costs from third-party quotes. MPC must include adequately detailed third-party quotes, including vendor-specific information.

3. The Post-Closure Care cost estimate must be updated from the 2020 costs to current 2025 costs, with the current inflation rate of 2.4% above last year's costs.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
2520 WEST ILES AVENUE, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JAMES JENNINGS, ACTING DIRECTOR

MEMORANDUM

DATE: March 25, 2025

TO: Collier Sanders, RCRA Unit

FROM: Aidan Fullriede, Groundwater Unit
AF AMB

SUBJECT: Technical Review - RCRA Part B Permit Application

RE: 177020010 -- Stephenson County
Modern Plating Corporation
ILD005172325
Log No. B-167R2
RCRA Permit Administrative Record - 24D

A technical review has been completed on the groundwater portions of the subject submittal entitled, "*RCRA Part B Permit Renewal Application Incompleteness Response*", dated May 7, 2021, and received by the Illinois EPA on May 11, 2021. The document was submitted as a response to the March 5, 2021 Illinois EPA letter, "*Notice of Incompleteness to the Resource Conservation and Recovery Act (RCRA) Part B Renewal Permit Application*". The original application was dated and received by the Illinois EPA on January 8, 2021. The subject submittal was submitted by Heather L Hallet, Andrea Martin, and Michael S. Raimonde of Foth Infrastructure & Environment, LLC (Foth) on behalf of Modern Plating Corporation (MPC) of Freeport, Illinois. A completeness review of the groundwater portions of the subject submittal was completed and approved July 7, 2021.

ENVIRONMENTAL JUSTICE (EJ), 39(i), FOS, CROPA and RIGHT TO KNOW (RTK)

The SWAP Tool, EJ Database and 39(i) form will be reviewed by the RCRA Unit.

Erica Toledo of Rockford FOS was contacted via email on November 6, 2024 to request comments on the groundwater aspects of the subject submittal. Ms. Toledo replied via email on November 6, 2024 that she did not have any comments on the submittal. A copy of this email is provided with the Post-Closure Permit Checklist, dated November 2019 (Review Notes Checklist; included as Attachment 1 to this memorandum).

A RTK evaluation was initiated in November 2024 and it was determined that insufficient information has been submitted to complete a Right-to-Know evaluation.

BACKGROUND

The site is owned by MPC and is located on 19 acres of land located at 701 South Hancock Avenue, Freeport, IL in Stephenson County. MPC is a job-shop plating business using various materials including zinc, tin, nickel, iron, and phosphate that has operated as an electroplater since 1963, prior to which it was owned by the Arcade Company manufacturing toys and other novelties via casting, forging, stamping, and painting from 1885 until the 1920s or 1930s.

Rockwell industries acquired the assets of the Arcade Company during the onset of World War II and reconstructed several buildings on the site where they produced ordinance supplies for the duration of the War, and again during the Korean War. During this time, some operations required large amounts of cooling water leading to the installation of a 24-inch discharge line to the Pecatonica River to the north. A second sanitary sewer discharge line was also installed before the Rockwell operation was permanently closed in 1953 – 1954. The Rockwell Charitable Trust sold the site to MPC in 1963 and began operation in 1964.

Unsegregated flow from a single plating machine at the site, consisting of nickel, hexavalent and trivalent chromium, was directed through pipe to the northeast wall of the plant to connect with the existing cooling water discharge line as the Freeport Water and Sewer Commission (FWSC) treatment plant apparently had insufficient capacity to accept MPC flow. Additional plating lines installed throughout the 1960s also discharged to the same pipe until a wastewater treatment system was installed in 1968-1969. During this timeframe, various environmental projects were undertaken including the construction of the first clay-lined impoundment (Lagoon No. 0). The current wastewater treatment plant was put into operation with simultaneous closure of the underground treatment system. Following this, no further disposal, on- or off-site, of untreated wastes occurred. A second lagoon (Lagoon No. 1) was constructed in 1971 but began overflowing an unknown liquid by mid-1972. The center lagoon (Lagoon No. 2) was constructed in 1973 to accommodate the overflow. Erosion caused by flooding led to the imminent collapse of Lagoon No. 1., so a contract was issued to chemically fix the contents of Lagoon No. 1 and place the product in a new pit (Lagoon No. 1A) so that the floor and berms of Lagoon No. 1 could be reconstructed (Illinois EPA Permit 83-316). Note: Illinois EPA Permit 83-316 may be an outdated label format but is not relevant to this review. A third lagoon (Lagoon No. 3) was constructed in 1980 after quality problems arose from the "open-air" treatment and deterioration of the wastewater segregation system.

Trichloroethene (TCE) was sprayed on vegetation overgrowth around the lagoons during 1977-1980, after which mowing or hand-cutting has been performed with no chemical use. TCE was also used for industrial cleaning applications.

MPC received permission from the FWSC and Illinois EPA (January 1982) to connect to the FWSC plant in 1980/1981. As described in the "Final RCRA Part B Permit Application for Proposed Corrective Action Management Unit – Modern Plating Corporation", leading to the approved RCRA Hazardous Waste Management Post-Closure permit for the Corrective Action

Management Unit (CAMU) (Log No. B-167), all known contaminated areas were remediated in 2000/2001 and these activities are documented in two (2) MPC reports received on July 9, 2001 and August 6, 2001, respectively (Log No. B-167-CCR and Log No. B-167-M-3) and included as CDs in Appendices Q and R of the Application.

The following areas and structures were remediated in the initial corrective action, which included excavating the contaminated soils and depositing them into the Corrective Action Management Unit (CAMU):

Hazardous Waste Management Units (HWMUs):
Lagoons 1, 2, 3, and Shawnee Building

Solid Waste Management Units (SWMUs):
Lagoons 0, 1A, Cyanide Treatment Vault, Wetlands I, IA, II, and III

Areas of Concern (AOC):
Outfall Pipe and wastewater release area

There are no active HWMUs or SWMUs currently at MPC. MPC maintains a Groundwater Management Zone (GMZ) around the CAMU and surrounding area.

SUBJECT SUBMITTAL

MPC provided a "*RCRA Part B Permit Renewal Application Incompleteness Response*" dated May 7, 2021. The subject submittal is provided in response to deficiencies issued in the Illinois EPA March 9, 2021 completeness review.

With regards to groundwater, a review of Section C (Groundwater Monitoring) and parts of Section E (Post-Closure Requirements) of the RCRA Post-Closure Permit Application Completeness and Technical Review Checklist, dated November 2019 has been completed (included as Attachment 1 to this memorandum).

SECTION C (Groundwater Monitoring)

Rather than completing Section F.4.2 (Required Information if IEPA Oversaw Initial Corrective Action Program) for groundwater, MPC has provided that information in Section C, as recommended by the Illinois EPA. This technical review memorandum will follow the format of Section C, comment accordingly, and will not repeatedly state the facility is following the format of Section C instead of placing all information in Section F.4.2.

Groundwater monitoring is required for the CAMU that now holds the material from the former HWMUs and SWMUs. An established GMZ monitors the region surrounding the CAMU for

metals including cadmium, chromium, lead, and nickel and volatile organic content (VOCs) including tetrachloroethene, trichloroethene, cis-1,2-dicholoroethene, and vinyl chloride.

Exemption from Groundwater Protection Requirements (Section C.1)

MPC is not requesting exemption from the groundwater protection requirements outlined in 35 Ill. Adm. Code 703.185 and 724.190(b); therefore, this section is not applicable.

Illinois EPA Comments Regarding Section C.1

The Illinois EPA has determined that Section C.1 is adequate.

Interim Status Groundwater Monitoring Data (Section C.2)

Interim groundwater monitoring has not been conducted at MPC, and they are in post-closure status. Semi-annual groundwater monitoring reports are prepared and submitted to Illinois EPA in accordance with the permit. This section describes the historical groundwater trends for the parameters of concern. Four (4) metals (lead, chromium, cadmium, and nickel) and four (4) volatile organic compounds (VOCs; tetrachloroethene, trichloroethene, vinyl chloride, and cis-1,2-dichloroethene) have primarily been detected downgradient and adjacent to the former lagoons, which are the presumed source area. As of September 2020, lead exceeds the Groundwater Quality Standards (GQS) in MW-20C and MW-16C, chromium in MW-20C and MW-5D (upgradient), cadmium in MW-9A and MW-22A, and nickel in MW-20C and MW-5D (upgradient). Chlorinated solvents are detected near the former lagoons but in overall lower concentrations, though vinyl chloride exceeds the GQSs in MW-19B and MW-23C. MPC states that many of the plumes seem to have dissipated since the September 2020 sampling event, except for cadmium in shallow wells MW-9A and MW-22A, and vinyl chloride in Mw-19B and MW-23C.

Illinois EPA Comments Regarding Section C.2

The Illinois EPA concurs an interim status period is not applicable and the historical groundwater trends for parameters of concern in Section C.2 is adequate.

Historical Hydrogeologic Summary (Section C.3)

MPC is located in the SE quarter of Section 32, Township 27 North, Range 8 East, Stephenson County in Freeport, IL – just south of the Pecatonica River. Figures C-1, C-2, C-3, and C-4 in the permit application are potentiometric groundwater surface maps for the October 2020 groundwater sampling event.

Hydrogeologic Units

Two (2) groundwater zones have been identified based on hydrogeological investigations: an upper aquifer consisting of permeable alluvial sand and gravel, and a bedrock aquifer consisting of Ordovician-age Galena and Platteville Group dolomite. The aquifers are separated by a clay aquitard that is thin to absent near the bedrock high in the vicinity of the former sludge lagoons and increases to over 70-feet thick near the Pecatonica River.

The dolomite is encountered as shallow as 20-feet below ground surface (Ft-bgs) at MW-5 in the southwest portion of the property and as deep as 130 Ft-bgs in MW-18 on the north side of the property near the Pecatonica River. The upper aquifer was found to be as much as 30-feet thick to the north and extending down to an elevation of ~720-feet above mean sea level (Ft-amsl). To the southwest, the upper aquifer reaches ~2-feet in thickness ranging from 765 to 767 (Ft-amsl).

Hydraulic Aquifer Properties

Groundwater flow in both aquifers is north-northeast with a relatively uniform flow field exhibited in the upper aquifer with a more divergent flow in the bedrock aquifer. Horizontal gradients are approximately 0.006 feet per foot (ft/ft) in the upper aquifer and 0.008 ft/ft in the bedrock aquifer. Vertical hydraulic gradients are generally downward except in the area near the wetlands just north of the former lagoons.

The upper aquifer is permeable with an average measured field hydraulic conductivity of 3.17×10^{-3} cm/s. The dolomite aquifer similarly has an average measured field hydraulic conductivity of 4.27×10^{-3} cm/s. Permeability measurements of the clay aquitard range from 8.5×10^{-8} to 1.2×10^{-7} cm/s. Water exchange between the two aquifers primarily occurs where the clay aquitard is absent near the former lagoons.

For the upper aquifer, assuming a hydraulic conductivity of 7.6 ft/d, a hydraulic gradient of 0.01-0.05 ft/ft, and an effective porosity value of 0.2, the average linear velocity of groundwater at the site can be estimated to be ~0.4 ft/d. Accounting for retardation, the rate at which dissolved constituents in the groundwater migrate is less than 0.4 ft/d.

For the bedrock aquifer, assuming a hydraulic conductivity of 3.8 ft/d, a hydraulic gradient of 0.006-0.08 ft/ft, and a porosity value of 0.15, the average linear velocity of groundwater at the site can be estimated to be ~0.2-0.5 ft/d. Similarly, the rate at which dissolved constituents in the groundwater migrate can be considered less than this range due to retardation.

Hydraulic property data can be found in tables located in Appendix F.

Groundwater Classification

Groundwater in the upper aquifer is classified as 35 Ill. Adm. Code 620.420, Class II while the bedrock aquifer is considered 35 Ill. Adm. Code 620.410, Class I groundwater as determined in the May 25, 1999 Groundwater Management Zone Approval Letter (Log No. C-259-M-7) included as Attachment B in Appendix E. Each aquifer is thus subject to the respective 35 Ill. Adm. Code Part 620 GQSs.

Groundwater Management Zone (GMZ)

A GMZ is established to monitor impacts caused by the release of contaminants from the site. See Drawing 2R for the horizontal extent of the GMZ. MPC uses the MW wells located around the property to establish the boundary.

Illinois EPA Comments Regarding Section C.3

The Illinois EPA has determined the information provided in Section C.3 is adequate.

Topographic map requirements (Section C.4)

This section describes the topographic maps included in the submittal. Drawings 2R and 2 show MPC's layout and the location of the CAMU, including the complete legal description of the property boundary. Figure C-5 shows the location of the groundwater monitoring wells included in the May 25, 1999 Illinois EPA approved groundwater monitoring program and the approved GMZ, which was revised subject to conditions noted in an October 16, 2020 letter to MPC (Log No. B-167R-CA-3). No compliance point is shown because it will not be established until the applicable groundwater protection standards are attained and the GMZ expires. Geologic cross sections are included in Appendix T. Figures C-1 through C-4 display potentiometric groundwater maps. Figures C-6 through C-15 are contaminant plume maps for each contaminant of concern at the relevant well depths.

Illinois EPA Comments Regarding Section C.4

The following comments apply:

1. The Illinois EPA notes the potentiometric groundwater maps in Figures C-1 through C-4 have mismatched contour intervals used to display the data for the different well classifications compared to what each legend states. However, considering the contour interval can still be reasoned, this section is adequate.

Contaminant Plume Description (Section C.5)

The Final RCRA Part B Permit Application for Proposed CAMU included documentation of multiple groundwater contamination plumes and was reviewed as part of the May 25, 1999 Illinois EPA letter (Log No. C-259-M-7). The same Contaminants of Concern (COCs) presented then are present today; cadmium, chromium, lead, nickel, tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride. Groundwater concentrations from the September 2020 sampling event and historical maximum post-closure groundwater concentrations (2004-2020) are presented in Tables C-3 and C-4, respectively. The presumed source area for each plume is the former lagoons. As of the groundwater testing in September 2020, lead exceeded the GQSs in MW-20C and MW-16C, chromium in MW-20C and MW-5D (upgradient), cadmium in MW-9A and MW-22A, and nickel in MW-20C and MW-5D (upgradient). Chlorinated solvents were detected near the former lagoons but in overall lower concentrations, though vinyl chloride exceeds the GQSs in MW-19B and MW-23C. MPC states that many of the historical plumes seem to have dissipated since the September 2020 sampling event, except for cadmium in shallow wells MW-9A and MW-22A, and vinyl chloride in Mw-19B and MW-23C. Figures C-1 through C-4 display the contaminant concentrations of wells throughout the GMZ.

Illinois EPA Comments Regarding Section C.5

The following comments apply:

1. The applicant must revise Section C.5 of the renewal application for MPC to provide a water well survey (WWS) as described in 35 Ill. Adm. Code 1600.210 and the guidance document entitled "Well Survey Procedures at Bureau of Land Permitted Facilities" (provided as Attachment 2 of this memorandum). A discussion must also be included discussing the screened intervals of facility wells compared to well(s) accessing potable water at individual or community water supply wells if any are identified.

DETECTION MONITORING PROGRAM (SECTION C.6)

Section C.6 is not applicable as MPC is undertaking a groundwater corrective action monitoring program required by 35 Ill. Adm. Code 724.201.

Illinois EPA Comments Regarding Section C.6

MPC does not have a Detection Monitoring Program as the regulated units were removed; therefore, the requirements of 35 Ill. Adm. Code 703.185(f) and 724.198 are not applicable, and Section C.6 is adequate.

COMPLIANCE MONITORING PROGRAM (SECTION C.7)

Section C.7 is not applicable as MPC is undertaking a groundwater corrective action monitoring program required by 35 Ill. Adm. Code 724.201.

Illinois EPA Comments Regarding Section C.7

MPC does not have a Compliance Monitoring Program; therefore, the requirements of 35 Ill. Adm. Code 703.185(g) and 724.199 are not applicable, and Section C.7 is adequate.

CORRECTIVE ACTION PROGRAM (SECTION C.8)

This section describes current corrective actions taken at MPC. The corrective action program permitted at MPC consisted of excavating and disposing of RCRA regulated and non-RCRA solid wastes in an on-site CAMU constructed with a double liner, a leachate collection system, a leak detection system, and a composite cap. Construction was completed and documented as reported in the "*Modern Plating Corporation CAMU Landfill Construction Documentation*" and "*Closure Documentation Report*", received by the Illinois EPA on July 9 and August 6, 2001 and included as CDs in Appendices Q and R, respectively (Log Nos. B-167-CCR and B-167-M-3). The only active part of the original corrective action program identified in the approved Permit dated April 11, 2000 (Log No. B-167) is the monitoring and maintenance of the GMZ and post-closure care of the closed CAMU. The revised GMZ Re-evaluation was approved by the Illinois EPA in a letter dated October 16, 2020 (Appendix L) with conditions and modifications that included low flow sampling and monitored natural attenuation sampling during the first semi-annual sampling event in 2021.

Illinois EPA Comments to Section C.8

The following comments apply:

1. The two (2) reports dated July and August 2001 documenting the construction and closure of the CAMU must be included in the Renewal Application in paper format for the original and electronically for additional copies.

2. The information provided in Section C.8 is accurate. However, a review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. Metals including chromium, nickel, and lead have been detected with an increasing trend downgradient of Shawnee Building/Production Plant/former Lagoons No. 1A and 1. Chlorinated solvents including tetrachloroethene, cis-1,2-dichloroethene, and vinyl chloride are continuing to be detected in increasing concentrations downgradient of former Lagoons No. 1, 2, and 3. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate

MPC to submit a proposal to address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

3. The Illinois EPA notes an existing Violation Notice (VN L-2023-00363) which was denied a Compliance Commitment Agreement. This Violation Notice was filed after alleged observation of the pump house for the CAMU being inoperable for an indeterminate amount of time, violating Illinois law, Board regulations, and the Permit. The issue is not being handled by the Permit Section.

Description of Corrective Action Program (Section C.8.1)

Prior to remediation, the site included five (5) sludge storage lagoons that received electroplating wastes from 1968-1983. Lagoons No. 1, No. 2, and No. 3 were RCRA regulated units while Lagoons No. 0 and No. 1A were non-RCRA regulated SWMUs. Lagoon wastes and the contaminated soils from the former cyanide vault, soils below the former Shawnee Building, and soils identified in the wetlands north of the lagoons were disposed of in the CAMU located at the former Lagoons No. 2 and No. 3. A GMZ was established at MPC on May 25, 1999 (Log No. C-259-M-7) in compliance with 35 Ill. Adm. Code Part 620.250. MPC submitted a GMZ evaluation report in June 2009 and a revised GMZ Re-evaluation was approved by the Illinois EPA on October 16, 2020 with conditions and modifications for monitoring primary sources of contamination, including the lagoons, the Shawnee Building, the cyanide vault, and contaminated soils. The CAMU isolates and manages the sources of contamination, promoting groundwater improvements through natural attenuation.

The Illinois EPA 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.

Illinois EPA Comments Regarding Section C.8.1

The following comments apply:

1. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. Metals including chromium, nickel, and lead have been detected with an increasing trend downgradient of Shawnee Building/Production Plant/former Lagoons No. 1A and 1. Chlorinated solvents including tetrachloroethene, cis-1,2-dichloroethene, and vinyl chloride are continuing to be detected in increasing concentrations downgradient of former Lagoons No. 1, 2, and 3. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate MPC to submit a proposal to address the contamination extending

beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

Characterization of Contaminated Groundwater (Section C.8.1.1)

This section characterizes the groundwater contamination, including COC concentrations. The September 2020 semi-annual groundwater monitoring reports are provided in Appendix G. The groundwater monitoring system is described in the Permit (Log No. B-167R), issued June 9, 2011. The current groundwater monitoring program addresses the following COCs:

Volatile Organic Compounds (VOCs)	Metals
Tetrachloroethene (PCE)	Cadmium
Trichloroethene (TCE)	Chromium
Cis-1,2-dichloroethene (DCE)	Lead
Vinyl chloride	Nickel

Sampling results from September 2020 COCs are included in Table C-3 and are compared to relevant 35 Ill. Adm. Code Part 620, Class I and Class II GQSs. Chromium (MW-5D and MW-20C), lead (MW-16C and MW-20C), and nickel (MW-5D and MW-20C) exceed Class I GQSs and cadmium (MW-9A and MW-22A) exceeds Class II GQSs. PCE (MW-6C and MW-7D) and vinyl chloride (MW-11C, MW-15C, MW-17D, and MW-23C) both exceed Class I GQSs whereas cis-1,2-DCE (MW-8A), TCE (MW-8A), and vinyl chloride (MW-6A, MW-7A, MW-8A, and MW-19B) all exceed Class II GQSs.

The Illinois EPA required the following additional sampling parameters be added to the first semi-annual sampling event for 2021:

- Laboratory analytes: natural attenuation parameters ethene/ethane/methane
- Field parameters: oxidation-reduction potential, dissolved oxygen

Illinois EPA Comments Regarding Section C.8.1.1

The following comments apply:

1. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate MPC to submit a proposal to address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal

Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

Concentration Limits (Section C.8.1.2)

Section C.8.1.2 provides the site-specific COCs, their Storet Number, and the applicable 35 Ill. Adm. Code Part 620 Class I and Class II GQSs (mg/L). MPC states that GMZ wells screened in unconsolidated materials (A and B wells) will be compared to the Class II GQSs in 35 Ill. Adm. Code 620.420 and those screened in the dolomite aquifer (C, D, and E wells) will be compared to 35 Ill. Adm. Code 620.410 Class I GQSs. The provided table is stated to show the groundwater protection standards established in the 2011 Permit as set forth in 35 Ill. Adm. Code 724.194:

Hazardous Waste Constituents		**Groundwater Concentration Limits (mg/L)**	
VOCs	**Storet Number**	**Class I**	**Class II**
Tetrachloroethene	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
Metals			
Cadmium	01027	0.005	0.05
Chromium	01034	0.1	1.0
Lead	01051	0.0075	0.1
Nickel	01067	0.1	2.0

Illinois EPA Comments Regarding Section C.8.1.2

The Illinois EPA has determined that the information provided and referenced in Section C.8.1.2 is adequate.

Compliance Point (Section C.8.1.3)

The monitoring wells associated with the established GMZ have not attained the applicable concentration limits provided in the 35 Ill. Adm. Code Part 620, Class I and Class II GQSs and therefore no point of compliance has been established. MPC will continue to abide by the Illinois EPA-approved Permit requirements until the GMZ is deemed compliant, after which a compliance point will be determined. These are the same conditions outlined in the original Permit.

Illinois EPA Comments Regarding Section C.8.1.3

The Illinois EPA has determined the information provided in Section C.8.1.3 is adequate.

Compliance Period (Section C.8.1.4)

The compliance period for MPC is a 3-year period of no 35 Ill. Adm. Code Part 620, Class I and Class II GQS exceedances in the respective Class I and Class II designated aquifers at the site. Semi-annual monitoring results will continue to be submitted to Illinois EPA until a compliance period is identified and approved, and at which point a compliance point can be established.

Illinois EPA Comments to Section C.8.1.4

The information regarding the compliance period provided in Section C.8.1.4 is adequate in accordance with 35 IAC 724.201.

Construction Detail (Section C.8.1.5)

Prior to remediation, the site included five (5) electroplating sludge storage lagoons which received wastes from 1968-1983. The contents of the lagoons and the contaminated soils from the former cyanide vault; soils below the former Shawnee Building; and soils identified in the wetlands north of the lagoons were disposed of in a CAMU per RCRA Part B standards. The CAMU is located at the former locations of Lagoons No. 2 and No. 3. The engineering report for the CAMU is found in Appendix Q.

The GMZ approved to monitor the CAMU is described in the Groundwater Management Zone Re-Evaluation letter report included in Appendix L, dated June 2, 2009 and received by the Illinois EPA on June 5, 2009 (Log No. B-167-CA-1). The letter explains that the CAMU was designed to remediate the primary sources of contamination including the lagoons, the Shawnee Building, the cyanide vault, and contaminated soils. The Illinois EPA recognized that the remediation activities completed do not meet clean closure requirements of 35 Ill. Adm. Code Part 725, Subpart G.

Illinois EPA Comments to Section C.8.1.5

The following comments apply:

1. Appendix L only contains a CD copy of the GMZ Re-Evaluation letter report.

2. MPC must revise this section to describe or reference the engineering reports and construction logs included in the application as Appendices C, D, and Q for the CAMU and Appendix H for the GMZ monitoring wells.

3. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate MPC to submit a proposal to

address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ. A requirement will be added to the Compliance Section of the Draft permit to be issued.

Effectiveness of Corrective Action (Section C.8.1.6)

MPC evaluates the effectiveness of the Corrective Action Program and demonstrates its effectiveness through semi-annual groundwater reports documenting changes and trends in groundwater contamination. The Illinois EPA will continue to review the GMZ every five (5) years along with determination of adequacy of ongoing controls and continued management of the GMZ. MPC states the groundwater monitoring program will continue to be used to assess the adequacy of the corrective action, the GMZ.

Illinois EPA Comments to Section C.8.1.6

The following comments apply:

1. While the information provided in Section C.8.1.6 is accurate, the GMZ alone does not serve as corrective action. Rather, the corrective action is the CAMU itself, which is monitored by the GMZ monitoring wells. With the addition of this comment, this section is considered adequate.

2. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate MPC to submit a proposal to address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

Alternate Concentration Limits (Section C.8.2 and Subsections C.8.2.1 and C.8.2.2)

MPC is not proposing Alternate Concentration Limits (ACLs) so Section C.8.2 and related Subsections are not applicable.

Illinois EPA Comments to Section C.8.2

The Illinois EPA concurs Section C.8.2 and related Subsections C.8.2.1 and C.8.2.2 are not applicable and the information provided is adequate.

Corrective Action Plan (Section C.8.3)

Corrective action activities were completed and onsite wastes were disposed of in the CAMU, which was closed in 2001. As stated in Section C.8, additional corrective actions are not planned for MPC.

Illinois EPA Comments to Section C.8.3

The following comments apply:

1. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate MPC to submit a proposal to address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

Groundwater Monitoring Program (Section C.8.4)

MPC describes the general components of the groundwater monitoring program in this section, and in detail in the following subsections. The groundwater corrective action program includes:

1. The construction of the CAMU which serves as the corrective action and subsequently the basis for the establishment of the GMZ.

2. Determining the quality of groundwater, within the GMZ and in the vicinity of MPC, 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 MPC.

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.

The groundwater monitoring program at MPC is described in Appendix U, including an engineering report. A revised GMZ Re-Evaluation (Log No. B-167R-CA-3) was approved by the Illinois EPA in 2020 to include conditions for low flow sampling for additional laboratory analytes and field parameters.

Monitoring well locations are displayed in Figure C-5, in addition to the GMZ boundary. The sampling protocol was prepared for the original Permit in accordance with 35 Ill. Adm. Code Subtitle G, Chapter I, Parts 703.185(h), 724.192, 724.200, and is summarized in subsections C.8.4.2 and C.8.4.3.

The groundwater monitoring program characterizes the contaminated groundwater by sampling for hazardous constituents and comparing them with limits described in C.8.1.2. The following subsections provide a narrative description of the groundwater monitoring program and explain how the program meets the requirements of 35 Ill. Adm. Code 724.200 and is effective in determining compliance with groundwater standards to satisfy 35 Ill. Adm. Code 703.185(h)(1).

MPC states the groundwater plume appears to be attenuating, suggesting corrective actions have been successful. Additional sampling to confirm these conclusions is underway at the time of this submittal.

Illinois EPA Comments to Section C.8.4

The following comments apply:

1. This section is designed to describe the groundwater monitoring program, not the groundwater corrective action program. This section should instead describe the "groundwater monitoring plan" rather than a "groundwater corrective action." With the addition of this comment, this section is considered adequate.

2. A review of recent groundwater reports suggests contamination is continuing to impact groundwater at MPC. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3) which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs necessitate the facility to submit a proposal to address the contamination extending beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond. It must be noted, direct measures for remediating groundwater may be necessary for continued approval of the GMZ.

General Monitoring Program Requirements (Section C.8.4.1)

The groundwater monitoring program was approved and established by the Illinois EPA dated May 25, 1999 (Log No. C-259-M-7) with modifications implemented as requested and approved by the Illinois EPA. A summary of the monitoring wells is provided in Table C-1. The GMZ boundary and locations of associated monitoring wells are provided in Figure C-5. The sampling protocol is summarized in Section C.8.4.3. In addition to constituent sampling semi-annually during the first and third quarters, the flow rate and direction in the uppermost aquifer is determined at least annually, groundwater surface elevation is measured each time the groundwater is sampled and is reported at least semi-annually, stick-up elevation is measured every five (5) years (or anytime it changes), and the elevation of the bottom of each monitoring well is reported annually. Monitoring, testing, and analytical data obtained will be collected and reported by April 15 for the first quarter samples and October 15 for the third quarter samples in compliance with 35 Ill. Adm. Code 724.197(j). Statistical evaluations are submitted with each report along with a discussion on the effectiveness of the correction action program.

The engineering report and well construction details are located in Appendix U. The sample size and interval described in the report and this section is in accordance with 35 Ill. Adm. Code 724.197(g) to detect releases from the CAMU by providing a sequence of at least 4 samples at a semi-annual interval.

The current groundwater monitoring program addresses the following parameters of concern and field parameters:

Hazardous Waste Constituents	**Groundwater Concentration Limits (mg/L)**		
Volatile Organic Compounds (VOCs)	**Storet Number**	**Class I**	**Class II**
Tetrachloroethene	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
Field Parameters		**Units**	
pH	00400	Standard Units	
Specific Conductance	00094	Micromhos/cm	
Temp. 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

Copper, cyanide, zinc, and the complete SW-846 8010 list of VOCs, including arsenic, are also sampled once annually. The Illinois EPA approved a revised GMZ Re-Evaluation in 2020 with requirements that include low flow sampling and additional laboratory analytes and field parameters for the spring 2021 sampling event, as described above.

Illinois EPA Comments to Section C.8.4.1

The following comments apply:

1. No off-site buildings meet the requirement for an evaluation of the indoor inhalation exposure pathway at this time. Therefore, there is no requirement for such evaluation at this time. However, if an indoor inhalation exposure pathway evaluation were determined necessary in the future, priority will be given to monitoring well MW-16C, located in a residential area upgradient of MPC.

2. Revise Section C.8.4.1 to propose the monitored natural attenuation parameters ethene/ethane/methane, dissolved oxygen, and oxygen-reduction potential be added to the sampling list.

Groundwater Monitoring System (Section C.8.4.2)

The groundwater monitoring network consists of 15 A unit monitoring wells, 11 B unit monitoring wells, 16 C unit monitoring wells, 5 D unit monitoring wells, and 4 E unit monitoring wells. The A and B unit monitoring wells are installed in the shallow unconsolidated 35 Ill. Adm. Code 620.420 Class II-designated aquifer to a depth of between 12 and 26 feet for A unit wells and between 22 and 37 feet for B unit wells. The C, D, and E wells are installed in the bedrock 35 Ill. Adm Code 620.410 Class I-designated aquifer ranging from 23-111 feet, 39-150 feet, and 87-117 feet, respectively. Monitoring wells are constructed of stainless steel with 5-foot stainless steel screen section and a bentonite seal. The well construction and boring logs in Appendix H demonstrate how the wells were installed to meet the requirements in 35 Ill. Adm. Code 724.197(c). Upgradient well MW-16C was installed to represent background groundwater quality for the bedrock aquifer in compliance with 35 Ill. Adm. Code 724.197(a), with all other wells located to monitor the two (2) aquifers cross-gradient and downgradient from the former lagoons and other source material areas at the site based on groundwater flow directions observed. Only one (1) regulated unit exists at the site (the CAMU), so 35 Ill. Adm. Code 724.197(b) does not apply.

Illinois EPA Comments to Section C.8.4.2

The Illinois EPA has determined the information provided in Section C.8.4.2 is accurate.

Description of Sampling and Analysis Procedure (Section C.8.4.3)

Groundwater monitoring is completed on the wells shown on Figure C-5 for parameters indicated in Table C-2, as well as field parameters including pH, specific conductance, temperature, turbidity, depth to water below land surface, and depth to water from top of well casing for all wells sampled for metals and VOCs. The elevation of the top of well casing, ground surface elevation, and well bottom elevation are also recorded. Wells not sampled for organic or inorganic parameters are measured for depth to groundwater for additional data on groundwater elevation and to aid in the development of potentiometric surface maps submitted annually in October.

MPC will perform low-flow sampling and monitored natural attenuation sampling by appropriate methods during the first semi-annual sampling event in 2021 and submit results in a Corrective Action modification request with conclusions and proposals. Apart from the low flow sampling event, wells which are to be sampled for metals and/or VOCs, the following procedures are 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 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 indicator will be decontaminated with a non-phosphate detergent wash and deionized water rinse before air drying. 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 water level information collected, 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 this calculation, each well is purged of three times the volume of water in the monitoring well, or to dryness, using a stainless-steel bailer or submersible pump. Detailed field logs of these procedures will be maintained. Stabilized (<5% fluctuation) readings or the removal of three (3) well volumes will be required prior to sample collection. Field parameters will be taken and recorded before 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 location, in which case the drums will be emptied into MPC's wastewater treatment plant within 90 days, or as soon as conditions permit.

Once recovered, well samples will be removed for pH, specific conductance, and VOCs and/or metals. If wells are purged to dryness, samples being tested for VOCs, specific conductivity, and pH will be collected first. The remaining samples will be collected in the order of their descending volatility as soon as sufficient volume is available for each parameter. Temperature, conductivity, and pH readings will be performed at the well head. Natural attenuation sampling parameters, including oxidation-reduction potential and dissolved oxygen, will be conducted at this time. The meter will be decontaminated between samples and calibrated per manufacturer's recommendations.

Samples will be poured into proper, specifically prepared containers from the stainless-steel bailer, filling the VOC vials first and bottles for metals last.

VOC samples will be placed in sample containers with all headspace eliminated, with a minimum amount of exposure to air, and will be purged to cause minimal agitation. The holding time for VOC samples is seven (7) days from the date of sampling.

The metals sample will not be filtered and will be analyzed for total recoverable metals. This sample will be acidified with nitric acid to a pH less than 2.0.

Another sample will be collected from wells after this process to confirm consistency of field parameters. 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 (1) 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 umber
- 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 the 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

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 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 logbook will be maintained at the laboratory with all pertinent information about the samples being recorded here. All other information will be recorded in the field logbook. Table C-2 provides a summary of the analytical methods followed and includes information on sample container, preservatives, holding times, and sample volume. The field sampler will be responsible for transporting the sample coolers to the laboratory directly or by a shipping service within the hold times.

Illinois EPA Comments to Section C.8.4.3

The following comments apply:

1. MPC states low flow sampling is completed using a submersible pump or stainless-steel bailer. Illinois EPA requires sampling methods which cause as little change in chemistry as possible and minimize disturbance (i.e., avoid impellers, bailers, etc.). Therefore, Section C.8.4.3 must be revised to propose an alternate form of low-flow sampling, such as bladder pumps, which must be utilized for collecting groundwater samples at MPC. Also revise Section C.8.4.3 to describe sampling and analysis procedures for monitored attenuation parameters.

Background Quality (Section C.8.4.4)

The background groundwater monitoring point for MPC is upgradient groundwater monitoring well MW-16C, not located on MPC property. MW-16C is monitored and documented in semi-annual monitoring reports.

Illinois EPA Comments to Section C.8.4.4

The Illinois EPA has determined the information provided in Section C.8.4.4 is adequate. However, it is noted that MPC is not subject to background quality as it is in corrective action, not detection or compliance with respect to current comparisons to background.

Statistical Evaluations (Section C.8.4.5)

The following procedures are used to evaluate the groundwater quality monitoring data and are consistent with historical practice at MPC at the direction of the Illinois EPA:

- Trends and changes in specific parameters and overall groundwater quality are presented on graphs;
- An evaluation of contaminant levels in the groundwater with respect to established clean up levels are presented in tables; and,
- A graphical evaluation of the groundwater surface data from wells (hydrographs) accompanied with annual potentiometric surface maps of MPC and surrounding area are prepared annually and submitted to Illinois EPA.

Illinois EPA Comments to Section C.8.4.5

The Illinois EPA has determined the information provided in Section C.8.4.5 is accurate.

Evaluation of Groundwater Surface (Section C.8.4.6)

The groundwater surface is evaluated via hydrographs and the development of potentiometric surface maps annually during the Fall sampling event. The groundwater flow rate and direction are also evaluated during the Fall event. Groundwater contour maps are provided in Figures C-1, C-2, C-3, and C-4.

Illinois EPA Comments to Section C.8.4.6

The Illinois EPA has determined the information provided and referenced in Section C.8.4.6, in addition to that provided in Section C.8.4.3 (unless otherwise noted in comments to Section C.8.4.3), is adequate.

Extension of Compliance Period (Section C.8.4.7)

The compliance period during which groundwater monitoring applies shall be extended until MPC demonstrates that the 35 Ill. Adm. Code 724.192 groundwater quality standards have been attained.

Given that a GMZ has been established and that groundwater remediation is not required per 35 Ill. Adm. Code 742.925, it is MPC's understanding that groundwater at the site will need to be monitored until such time that the 35 Ill. Adm. Code Part 620 GQSs have not been exceeded for a period of three (3) consecutive years.

Illinois EPA Comments to Section C.8.4.7

The following comments apply:

1. The Illinois EPA has determined that the information provided and referenced in Section C.8.4.7 is adequate with the exception of the reference to "groundwater remediation is not required per 35 Ill. Adm. Code 742.925". Revise Section C.8.4.7 to reference a specific approval letter where Illinois EPA approved a demonstration for the groundwater ingestion route in accordance with 35 Ill. Adm. Code 742.925, or revise/remove the reference.

Effectiveness of Corrective Action (Section C.8.4.8)

As part of the semi-annual groundwater monitoring and reporting requirements, MPC has been and will continue to provide an assessment of the corrective action program which will focus on concentration trends and the progress towards attaining the 35 Ill. Adm. Code 620.410 and 620.420 standards for the dolomite and unconsolidated aquifers, respectively.

Illinois EPA Comments to Section C.8.4.8

The Illinois EPA has determined that the information provided in Section C.8.4.8 is adequate.

Evaluation of Corrective Action Program (Section C.8.4.9)

If it is determined that the corrective action program no longer satisfies the requirements of 35 Ill. Adm. Code 724.200, an application for permit modification to make any appropriate changes to the program will be submitted to the Illinois EPA within 90 days of notice of that determination.

Illinois EPA Comments to Section C.8.4.9

The Illinois EPA has determined that the information provided and referenced in Section C.8.4.9 is adequate.

REPORTING REQUIREMENTS (Section C.9)

MPC will continue to maintain in MPC operating record a copy of the collected groundwater monitoring data. Any changes to the groundwater monitoring program will be submitted as an application for a permit modification. MPC will continue to submit to the Illinois EPA semi-annual reports that summarize the sampling events and provide an evaluation of the groundwater quality data collected in the GMZ.

Illinois EPA Comments to Section C.9

The Illinois EPA has determined that the information provided and referenced in Section C.9 is adequate.

Section E (Post-Closure Requirements)

Geology and Hydrogeology Around/Beneath the Unit (Section E.1.2)

General Geology of the Surrounding Area

MPC location is within the Rock River Hill country of the Ill 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

MPC is located adjacent to the floodplain of the Pecatonica River. The Quaternary deposits in the floodplain consist of Cahokia Alluvium, which is comprised of poorly sorted sand, silt, or clay containing local sandy gravel deposits. This alluvium is approximately 50-100 feet thick in the site area. The upland area consists of Illinoisan age Ogle Till Member of the Glasford Formation, comprised of thin, discontinuous tan to grayish-brown sandy, silty till and interbedded sand and gravel. The Ogle Till Member rests directly on bedrock.

The four (4) major strata at the site are organic clay, alluvial sand and gravel, lacustrine clay, and the dolomite bedrock. The organic clay stratum ranges in thickness from 3-18 feet and consists of dark brown clay with silt and is classified as an OL or CL. The grain size analysis 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 $3.3x10^{-8}$ cm/sec to $6.8x10^{-4}$ cm/sec.

The alluvial sand and gravel stratum ranges in thickness from 5-30 feet and consists of dark brown to light brown fine to coarse sand with gravel. The grain size analysis averages 0-38% gravel, 41-98% sand, and 7-50% P200 (grains $\leq$ 0.075 mm). The soil is non-plastic and laboratory permeabilities ranged from $5.1x10^{-7}$ to $2.8x10^{-3}$ cm/sec. This unit and the overlying organic clay comprise the unconsolidated aquifer.

The lacustrine clay acts as an aquitard between the unconsolidated and bedrock aquifers. The clay ranges in thickness from 7 to greater than 70 feet but was not identified in upland borings outside of the floodplain. This stratum consists of dark-green brown to dark-green gray clay with silt to gray silt with clay and is classified as a CL. The grain size analyses average 0% gravel, <1% sand, 42-68% silt, and 32-58% clay. The liquid limit and plastic index average 41 and 22, respectively. The laboratory permeability ranges from $8.5x10^{-8}$ to $1.2x10^{-7}$ cm/sec.

Summary of Bedrock Geology within the GMZ

The bedrock at MPC is composed of Ordovician Age Galena and Platteville Group dolomites which are underlain by Ancel Group sandstone. The dolomites form the uppermost bedrock unit throughout most of the area. The Galena Group dolomite is medium to coarse grained and partly cherty. The Galena Group overlies the finely crystalline, dense, partially argillaceous dolomite of the Platteville Group, which is also frequently cherty in the upper section while sandy lower in the unit. Both of these groups yield groundwater through joints, bedding planes, fractures, solution channels, etc. The depth to the dolomite bedrock at MPC ranges from 17 feet at MW-5 to 125 feet near the Pecatonica River. The dolomite bedrock is at least 40 feet thick in the vicinity of the site. The two (2) dolomites comprise the bedrock aquifer.

The Ancel Group sandstone underlies the dolomite and includes both the St. Peter sandstone and the Glenwood Formation. The St. Peter Sandstone is occasionally silty, fine- to medium-grained, well sorted, well rounded, with frosted quartz sands, and averages 270 feet thick. The Glenwood Formation consists of interbedded dolomite, sandstone, and shale which is 5-60 feet thick. Neither of these formations were encountered during drilling programs at the site.

Hydrogeology

Groundwater flow in both aquifers is north-northeast with a relatively uniform flow field exhibited in the unconsolidated upper aquifer with a more divergent flow in the dolomite bedrock aquifer. Horizontal gradients are approximately 0.005 ft/ft in the upper aquifer and ranges from 0.01 to 0.006 ft/ft in the dolomite bedrock aquifer. Vertical hydraulic gradients are upwards near the Pecatonica River and downward near the sludge lagoons.

The upper aquifer is permeable with an average measured field hydraulic conductivity of $3.17x10^{-3}$ cm/s. The dolomite bedrock aquifer similarly has an average measured field hydraulic conductivity of $4.27x10^{-3}$ cm/s. Permeability measurements of the clay aquitard range from $8.5x10^{-8}$ to $1.2x10^{-7}$ cm/s. Water exchange between the two (2) aquifers primarily occurs where the clay aquitard is absent near the former lagoons.

For the upper aquifer, assuming a hydraulic conductivity of 7.6 ft/d, a hydraulic gradient of 0.01-0.05 ft/ft, and an effective porosity value of 0.2, the average linear velocity of groundwater at the site can be estimated to be ~0.4 ft/d. Accounting for retardation, the rate at which dissolved constituents in the groundwater migrate is considerably less than 0.4 ft/d.

For the dolomite bedrock aquifer, assuming a hydraulic conductivity of 3.8 ft/d, a hydraulic gradient of 0.006-0.08 ft/ft, and a porosity value of 0.15, the average linear velocity of groundwater at the site can be estimated to be ~0.2-0.5 ft/d. Similarly, the rate at which dissolved constituents in the groundwater migrate can be considered less than this range due to retardation. Groundwater in the upper aquifer is designated Class II in accordance with 35 Ill. Adm. Code Part 620.420 and groundwater in the bedrock aquifer is designated Class I in accordance with 35 Ill. Adm. Code Part 620.410.

Illinois EPA Comments to Section E.1.2

The following comments apply:

1. The horizontal and vertical gradients listed in Section E.1.2 differ from those offered in Section C.3 Historical Hydrogeological Summary. MPC must specify which numbers/directions, if any, are accurate and reflect the current horizontal gradients at the site.

Groundwater Monitoring System (Section E.7.5)

The groundwater monitoring system documentation is provided in Appendix H. Figure C-5 shows the location of groundwater monitoring wells included in the May 25, 1999 Illinois EPA-approved groundwater monitoring program (C-259-M-7) and the approved GMZ. A summary of the monitoring wells is provided in table C-1.

Section C.8.4.2 provides a narrative description of the groundwater monitoring system.

Illinois EPA Comments to Section E.7.5

The Illinois EPA has determined the information referenced in Section E.7.5 is adequate.

ILLINOIS EPA RECOMMENDATIONS

Based on a technical review of the groundwater-related aspects of the subject submittal, the following recommendations apply:

1. Section C.5:

    a. Provide a water well survey (WWS) as described in 35 Ill. Adm. Code 1600.210 and the guidance document entitled "Well Survey Procedures at Bureau of Land Permitted Facilities" provided as Attachment 2 of this memorandum. A discussion must also be included discussing the screened intervals of facility wells compared to well(s) accessing potable water at individual or community water supply wells if any are identified.

2. Section C.8:

    a. Provide a copy of the CAMU Construction Documentation and Closure Documentation Report (Log Nos. B-167-CCR and B-167-M-3) for Appendices Q and R.

3. Sections C.8, C.8.1, C.8.1.1, C.8.1.5, C.8.1.6, C.8.3, and C.8.4:

    a. In accordance with Condition 3 of the correspondence (Log No. B-167R-CA-3), which conditionally approved the submittal entitled, "Revised GMZ Re-Evaluation," dated October 16, 2020, MPC must submit a proposal to address continued exceedances of the 35 Ill. Adm. Code Part 620 GQSs beyond the GMZ boundary. Therefore, a proposal must be submitted within ninety (90) days of the issuance of the Renewal Permit (Log No. B-167R2) to address contamination at the boundary of the GMZ and beyond.

4. Section C.8.1.5:

    a. MPC must revise this section to describe or reference the engineering reports and construction logs included in the application as Appendices C, D, and Q for the CAMU and Appendix H for the GMZ monitoring wells.

5. Section C.8.4.1:

    a. Revise this section to propose the monitored natural attenuation parameters ethene/ethane/methane, dissolved oxygen, and oxygen-reduction potential be added to the sampling list.

6. Section C.8.4.3:

    a. MPC must propose a low-flow sampling method such as bladder pumps.

7. Section C.8.4.7:

    a. Revise Section C.8.4.7 to reference a specific approval letter where Illinois EPA approved a demonstration for the groundwater ingestion route in accordance with 35 Ill. Adm. Code 742.925, or revise/remove the reference.

8. Section E.1.2:

    a. Provide additional information to explain the discrepancy in horizontal and vertical gradients provided in Sections E.1.2 and C.3 in addition to confirming the correct values.

Attachments: (1) Illinois EPA Completeness Checklist, dated November 2019
(2) Well Survey Procedures at Bureau of Land Permitted Facilities

Well Survey Procedures at Bureau of Land Permitted Facilities

In order to determine the impacts and potential impacts to potable water supply wells from soil, soil gas, or groundwater contamination, 35 IAC 1600, Subpart B establishes the minimum standards and requirements for performing water well surveys to ensure these wells are accurately identified and located. All Solid Waste permitted facilities, RCRA permitted facilities, and facilities pursuing RCRA closure, where exceedances of the applicable 35 IAC Part 620 groundwater quality standards (or in the case of RCRA closure, 35 IAC Part 742, Tier 1 groundwater remediation objectives), have the potential to impact potable water supply wells, must determine the existence and location of potable water supply wells as described in 35 IAC Part 1600 and this procedure. This procedure applies to projects that require the location of potable water wells to be identified as part of site investigation, corrective action activities, or Right to Know evaluation.

In order to meet these requirements, the facility in question must submit maps that identify the following:

1. All private, semi-private and non-community water system wells located at the property where the release occurred or within 200 feet of the property boundary where the release occurred;

2. All community water system wells located at the property where the release occurred or within 2,500 feet of the property boundary where the release occurred; and

3. All wellhead protection areas in which all or any portion of the property where the release occurred is located within that zone or area.

The facility must submit verification that all of the below sources have been investigated and the water well survey data (electronic, paper or physical) from these sources have been included on the map. This information shall be obtained from the following sources:

- Illinois State Geological Survey
- Illinois State Water Survey
- Illinois EPA Division of Public Water Supplies
- Illinois Department of Public Health
- County and Municipal Health Departments
- Local water supply entity (i.e., public water districts, public water supply companies), if data is not included in the previous listed sources.

If it is determined that groundwater contamination exceedances of the applicable 35 IAC Part 620, groundwater quality standards (or in the case of RCRA closure the 35 IAC Part 742, Tier 1,

groundwater remediation objectives), are measured or modeled to migrate off-site, the area of the water well survey must be expanded based on the measured and/or modeled groundwater plume.

NOTE: If contamination at a remediation site cannot be modeled due to geological constraints (i.e. bedrock), the information requested above shall be collected inside a survey area to be determined by the Illinois EPA on a site-by-site basis.

Documentation of the results of the water well survey or the expanded water well survey, must include the following information:

- Map(s) to appropriate scale showing the location of community water supply wells, potable water supply wells, and all applicable wellhead protection areas of the wells identified in the survey. The location of the measured and modeled contamination plume shall also be shown on the map(s) if the measured or modeled plume extends off-site.

- Tables of potable water supply wells and their respective wellhead protection areas.

- 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.

- Certification by a Licensed Professional Engineer or Licensed Professional Geologist 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.

When data sources as identified above do not appear to have adequately identified the location of potable wells or site-specific conditions warrant, additional investigation may be required. Such conditions include, but are not 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 water well survey does not appear to identify an accurate number of potable wells for the area when the locational information is compared to aerial photography or local zoning maps which identify residential and commercial structures.

The additional investigation must include, at a minimum, notification in the form of written communication to properties within the water well survey area and may include a physical well survey (e.g. face-to-face interviews with property owners, a reconnaissance survey looking for wellheads, etc.)