K&A
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October 31, 1997

Mr. Rick Warrington
P.O. Box 790
Keshena, WI 54135

Re: Monthly O&M Report for the Oconomowoc Groundwater Treatment Facility

Dear Mr. Warrington:

Attached is the Monthly O&M Report for October, 1997, for the above referenced project. Questions regarding this report should be directed to Syed Ihtheshamuddin at the treatment plant. The treatment plant phone number is (920) 474-4529.

Thank you for your cooperation and assistance with this project.

Sincerely,

Syed Ihtheshamuddin

Syed Ihtheshamuddin , Project Manager
Kapur & Associates

cc: Arne Thomsen, USACE, St. Paul District
Steve Peterson, USACE, Omaha District
Randy Sitton, USACE
Tom Williams, USEPA
Paul Kozol, WDNR
Mike Boehlar, Black and Veatch

MONTHLY OPERATIONS AND MAINTENANCE REPORT
FOR THE
OCONOMOWOC ELECTROPLATING
GROUNDWATER TREATMENT FACILITY

2572 Oak Street
ASHIPPUN, WISCONSIN

Prepared for:

Warrington Builders, Inc.
P.O. Box 790
Keshena, WI 54135

Prepared by:

Kapur & Associates, Inc.
7711 North Port Washington Road
Milwaukee, Wisconsin 53217

October 1997

1.0 Introduction

This report is submitted to provide information concerning the equipment maintenance work completed, and operations and maintenance (O&M) problems encountered at the Oconomowoc Electroplating Groundwater Treatment Plant during the month of October, 1997. O&M problems that led to plant shut down are discussed in the *Monthly Monitoring Report for the Oconomowoc Electroplating Groundwater Treatment Facility.*

The equipment maintenance work completed during the month of October includes:

1. Cyanide Metals Treatment (CP-440):
- Repaired main disconnect switch for the control panel.
- Repaired leak in the flocculation tank (RMT-301).
2. Clarifier (C-400):
- Replaced the seal in the clarifier thickening drive.

The continuing O&M difficulties from the previous month include:

1. Sodium Hypochlorite Feed System:
- The Rosemount Level Element at the sodium hypochlorite tank (SCT-250) is corroding and leaking.
2. Sodium Hydroxide:
- Pump surge supressors for pumps SHP-361 and SHP-262 are leaking.
3. Tertiary Filter (TF-600):
- Level of sand in the filter is below the recommended level.
4. NPDES Station (NMS-740): Measuring probes need to be calibrated.
5. All sampling ports provide evidence of corrosion of the process piping (iron pipes).
6. Sulfuric Acid Feed System: Corrosion of electrical conduits.

New O& M difficulties encountered in October include:

1. Influent Pumps:
- Both influent pumps (TFP-110 & -111) had reduced pumping capacity.
2. Sludge Pumps:
- Both sludge pumps (TSP-410 & 411) stopped working.
3. Compressor:
- One of the compressor unit is not working.

2.0.0 Process Difficulties

O&M Work Completed During the Month of October:

CSK Technical Inc. completed the outstanding warranty work related to the following items:

2.0.1 Cyanide Metals Treatment (CP-440)

- Repaired the Main Disconnect Switch at the Cyanide Metals Treatment Control Panel (CP-440).
- Repaired the leak in the flocculation tank (FT-311) with sealer and coated the tank with coal tar epoxy.

2.0.2 Clarifier (C-400)

- Replaced the seal in the clarifier thickening drive.

Continuing O&M Difficulties from Previous Month:

The O&M problems listed are repeated from September O&M report. None of the O&M difficulties contributed to exceedence of effluent permit limits. For other related information regarding plant shut down times, see the *Monthly Monitoring Report for the Oconomowoc Electroplating Groundwater Treatment Facility.*

2.1.1 Sodium Hypochlorite Feed System

The Rosemount Level Element at the sodium hypochlorite tank (SCT-250) is corroding and leaking. The equipment manufacturer has noted that the level measurement element ordered for the contract, has carbon steel flange, which is highly susceptible to corrosion by 15% sodium hypochlorite. This problem does not affect the treatment plant operation immediately, however, if left unattended, will lead to problems in the future.

2.1.2 Sodium Hydroxide Pumps

Surge suppressors for the sodium hydroxide pumps (SHP-361 & SHP-262) continue to leak. This problem does not affect the plant operation at this time. However, the equipment supplier should be contacted to remedy the situation.

2.1.3 Tertiary Filtration System

Extra 1,000 pounds of sand were added to the existing sand in the tertiary filter. This has helped the efficiency of the filter operation. The sand level is not alarmingly low at this time, however, the filter manufacturer has recommended that an additional 12 inches of filter media be added for optimum operation of the filter.

2.1.4 NPDES Station

The temperature and conductivity measuring probes for the effluent at the NPDES Station (NMS-740) are out of calibration. These need be calibrated by a certified technician.

2.1.5 Iron Pipes

Laboratory analysis of the plant effluent samples continue to have high concentration of iron. This problem was discussed in the earlier reports.

2.1.6 Sulfuric Acid Feed System

Due to the corrosive nature of the chemical, the area surrounding the sulfuric acid feed system is exposed to corrosive fumes. Over the past year's operation, this has caused severe corrosion of the electrical conduits. This is a potentially dangerous situation and should be corrected by replacing the conduits with non-corrosive material. In addition, the feed pumps pressure relief system, which has been disconnected, still needs to be installed.

New O&M Difficulties Encountered During the Month of October include:

Note: Mr. Arne Thomsen (USACE) has issued Notice to Proceed to repair and service these equipment in order to continue the plant operation.

2.2.1 Influent Pumps

The plant has been designed for a flow rate of 30 to 35 gallons per minute (gpm) of influent flow rate. However, both influent pumps (TFP-110 & 111) have been pumping in the range of about 20 gpm during October. The pump impellers have been known to be clogged with sludge from EQT-100. In order to restore the pump capacity and service the pumps and the motors, the pumps need to be checked and serviced by manufacturer's representatives.

2.2.2 Sludge Pumps

The sludge pump, TSP-410 has not been working since January 1997. On October 28, the other sludge pump, TSP-411 stopped working. In order to keep the plant operating and prevent sludge carry over into the sand filter, the sludge pumps need to be repaired and serviced.

2.2.3 Compressor

One of the compressor units stopped working on September 27. The plant has since been working on one compressor unit. In order to not to overwork the second compressor unit and prevent major problems in future, both compressor need to be serviced and repaired.

3.0. Other Recommendations

3.0.01. Backup Mechanical Equipment and Spare Parts

A manufacturer recommended spare parts list for the mechanical equipment at the plant is being prepared. This list will provide the operators with spare parts under normal maintenance situations. This list, however, will not be exhaustive to include all situations, and in some cases, replacement equipment will be necessary.