

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

February 26, 1975

Subject: Monitoring Report #1  
Metropolitan Waste Water Treatment Plant  
Primary Settling Tanks, St. Paul, Minnesota 7107

Contractor: Kraus-Anderson of Mpls, Inc.

RJS Project: 75:3 75:21

Monitored from basic issue dated 3 February 1975

Contract Completion Dates:

Phase 1 August 1, 1977 (working day 662)

Phase 2 October 1, 1977 (working day 704)

Date of Monitoring: February 20, 1975 (working day 36)

Actions taken:

- Inspected project
- Conferred with Mr. Gene Simpkins, project manager and Mr. Dave Thies re current job status
- Reviewed project progress and projected work
- Conferred briefly with owner and owner consultant re network planning system
- Evaluated current job status

General Summary

Currently piling is being driven at the pipe gallery and has been substantially completed from 1 through 17. The piling contractor broke his driving mandrel and work has come to a temporary halt. However, it is expected to resume again Monday, February 24, 1975 (working day 38). The lag in piling is projected at about 14 working days. It is anticipated presently that a slight change in sequence of the original plan of work will be instituted and that the pile driving operation will be moved to the influent channel area rather than the south pipe gallery area. This is so as to get as much piling driven as possible in the lower areas before flooding.

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Overall, it appears that the lag in excavation and piling over the basic issue is 10 to 15 working days. However, this is measured against early targets that were established as desirable to be critical, particularly at the initial stages of the job.

No evaluation of long lead time delivery items was made at this monitoring since accurate information is not currently available. However, in subsequent monitorings we will plan to review all delivery items on a regular basis.

Ralph J. Stephenson, P.E.

RJS  
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To: Mr. Gene Simpkins, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svec, Executive Vice Pres. & Genl. Mgr.

March 17, 1975

**Subject: Monitoring Report #3**

**Metropolitan Waste Water Treatment Plant**

**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**RJS Project: 75:21**

**Monitored from basic issue dated 3 February 1975**

**Contract Completion Dates:**

**Phase 1 August 1, 1977 (working day 662)**

**Phase 2 October 1, 1977 (working day 704)**

**Date of Monitoring: March 12, 1975 (working day 50)**

**Actions taken:**

- **Inspected project**
- **Conferred with Mr. Gene Simpkins, project manager re job status**
- **Reviewed project progress**
- **Evaluated current job status**

**General Summary**

**Currently the future conduit provision under the pipe gallery in the north half is being built prior to starting the slab on grade in that pipe gallery.**

**At the primary influent conduit, piling is being driven in the low section in an attempt to install these prior to the flood season. At the south pipe gallery, piling is just now getting underway. There are some serious problems with interferences between vertical and batter piling at the tank dividing walls. This matter is being worked on by the Kraus-Anderson office but will require assistance and resolution from the owner and the architect/engineer. Presently it appears that a**

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request has been made to drive the vertical piling and then to try to drive the batter piling through so as to miss the vertical piling. This is the resolution procedure the owner apparently is following at the present time. There is some concern that the two opposite batter piles may interfere with each other at the lower levels. Therefore, it appears that the problem should be resolved prior to any of the batter piles being actually driven. I strongly suggest the Kraus-Anderson office attempt to get this matter cleared before start of pile work rather than concurrent with installation.

Presently it appears that pile driving is 13 to 16 working days behind early starts and early finishes. This takes into account the shift in operations with a concentration of effort being placed upon the primary influent conduit area.

Excavation for the primary settling tanks is well along and substantially complete except for isolated areas which have been left in place for field reasons.

At the drainage pumping station in the north half, two large cast iron sumps that must be cast with the foundation mat are long lead time items, perhaps as much as 8 to 10 weeks after approval of shop drawings. These shop drawings have been approved. It would be desirable if some way of boxing out for the sumps could be accommodated and I suggest efforts be made to get permission for this. One of the problems with these sumps is that they are cast into areas that support walls and slab on grade and therefore, the lack of a wall restrains major work on the base mat work.

It is possible that permission will be given as presently planned to over-size the sump opening and allow the tank to be placed and grouted later which would not hold up construction of concrete work. Permission has been requested of the owner for this.

In summary, work at the primary settling tanks appears to be presently from 13 to 16 working days behind the basic Issue #1 dated February 3, 1975. This is measured against early starts and early finishes. It is to be emphasized that a critical problem exists relative to the vertical and batter piling supporting the bottom slab on grade of the primary settling tanks. In most cases the batter called for on the piling may

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force intersection of batter piling not only with the verticals but with each other. In a quick review of the working drawings with Mr. Simpkins, it appears that there are many areas of conflict which should be resolved prior to the start of field operations. Once driving of the verticals starts, it is going to be increasingly difficult to make any adjustments in the location of batter piles to miss these and to miss each other. Therefore, it is absolutely urgent to focus on this matter immediately and obtain a resolution from the owner and architect/engineer in conjunction with the contractors.

Ralph J. Stephenson, P. E.

RJS  
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To: Mr. Gene Simpkins, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svec, Executive Vice Pres. & Genl. Mgr.

April 21, 1975

**Subject: Monitoring Report #4**  
**Metropolitan Waste Water Treatment Plant**  
**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**RJS Project: 75:21**

**Monitored from basic issue #2 dated March 17, 1975**

**Contract Completion Dates:**

**Phase 1 August 1, 1977 (working day 662)**

**Phase 2 October 1, 1977 (working day 704)**

**Date of Monitoring: April 16, 1975 (working day 75)**

**Actions taken:**

- Inspected project
- Conferred with Mr. Gene Simpkins, Mr. Herb Hansen and Mr. Dave Thies re job status
- Reviewed project progress
- Evaluated current job status

**General Summary**

Currently work at the pipe gallery in the north half is moving very well with pipe gallery walls now under construction. Piling at the south pipe gallery has been substantially completed and construction is beginning on the future influent conduit and the pumping station. Vertical piling in the settling tank areas is about 40% complete and moving well. Batter piling at the primary settling tanks will start about Monday, April 28, 1975 (working day 83). This batter piling probably will be installed moving from west to east at the north side initially. Influent conduit work is moving rapidly with the base slab for all four conduit completed. A portion of the south influent conduit has been poured and stripping is underway. Forming of the second influent conduit to the north is presently in work. This work has been

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started considerably ahead of the present plan since it was considered desirable by Kraus-Anderson to get considerable of this work done early to avoid the flood season and to provide access from north to south along the west edge of the settling tanks and pipe gallery.

Batter piles have been relocated so hopefully they will miss the vertical piling. The sump problem at the pumping station has been resolved and both sumps are presently on the job with one already installed.

A review of the late start and late finish sequences for the 7107 contract shows that all field tasks in this project are currently meeting or ahead of late starts and late finish dates. However, some delivery items must be watched. These are:

From the late start sequence:

- Fabrication of stair nosings has not yet begun. It was due to start no later than March 21, 1975 (working day 57). This is an item undoubtedly cast into early concrete so its delivery to the job site is reasonably critical.

From the late finish sequence:

- Stair nosings have not yet been approved.

In summary, work at the primary settling tanks is moving well and all critical tasks, with the exception of those noted above on deliveries and approvals, are currently meeting target dates between early and late starts and finishes. The work presently is being measured against the basic issue network #2 dated March 17, 1975 and although this network is currently being revised, the work is presently at an early enough stage where this diagram should offer a reasonably good measure of current job status.

It should be pointed out that work on the influent conduit is well ahead of scheduled starting dates. This will be of great help in maintaining uninterrupted job access to all parts of the project throughout the spring and summer months.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Gene Simpkins, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svec, Executive Vice Pres. & Genl. Mgr.  
Mr. Herb Hanson, Superintendent

3-1-111

July 3, 1975

**Subject: Monitoring Report #5**  
**Metropolitan Waste Water Treatment Plant**  
**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**RJS Project: 75121**

**Monitored from basic issue #3 dated April 23, 1975**

**Contract Completion Dates:**

Phase 1 August 1, 1977 (working day 662)

Phase 2 October 1, 1977 (working day 704)

**Date of Monitoring: June 25, 1975 (working day 124)**

**Actions taken:**

- Inspected project
- Conferred with Mr. Lyle Meyer, project manager and Mr. Dave Thies re job status

**Current Strike Status**

On May 20, 1975 (working day 99) iron workers went out on strike. June 2, 1975 (working day 108) inside equipment operators at the sand and gravel plant went on strike, stopping loading of ready mix concrete trucks and thus, delivery of concrete and aggregate to the site. On June 16, 1975 (working day 117) carpenters and laborers went on strike.

To all intents and purposes, the job was totally stepped the morning of June 16, 1975 (working day 117) by tradesmen picketing. However, the project began to slow at the start of the iron workers strike on May 20, 1975 (working day 99) and thus, to all intents and purposes, major lags to current work can be totally or in part traced back to that point and possibly a few days before, due to general slowdowns that normally occur prior to major work shutdowns.



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Presently there is no indication as to when any of these strikes will be over. However, upon the strike settlements, it can be expected that there will be a startup period of from 5 to 10 working days before full productivity is required on the job site. Some of this startup time will be occupied in dewatering and cleanup since it has been difficult to keep the site dry and clean during the strike due to lack of tradesmen.

### General Summary

Work at the primary settling tanks has come to a complete halt due to the strikes and for this reason considerable difficulty is being experienced in maintaining the center section of the project at access building #8 in a dry condition. This is the low spot of the area and normally when the job is manned, dewatering of the excavation is continuous and at a high quality level. However, due to the difficulty of maintaining a trade force on the job to maintain this equipment, water damage is considerable. It is expected that after the strike, a sizable amount of pumping and cleanup will be necessary to restore equipment, and material in place, ready for startup of work.

Evaluating the project against the basic issue #3 dated April 25, 1975, we find that pipe gallery work was slightly ahead of schedule as of the strike start and currently lags by about 16 working days. However, at the primary settling tanks, piling at the 7 and 8 tank currently lags by about 39 working days. Batter and vertical piles at the east half of the tank were due to be completed by May 7, 1975 (working day 91). There remain about 5 working days for their completion. Therefore, measured against the current date gives a lag of 38 working days while the strike has been in effect only about 25 working days.

The delay is due in part to a change in ground conditions found as compared to those expected and a resulting change in owner pile driving criteria. The piling contractor has, as of June 25, 1975 (working day 124), accepted the revised owner criteria and apparently will drive to this criteria when work again resumes. Mr. Meyer reports that as a result of this changed criteria, it may be necessary to drive approximately 200 piling to a greater depth.

Reviewing delivery items at the primary settling tanks, we find that most submittal, approval, fabrication and delivery elements are in substantial conformance to the basic issue network. However,

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I suggest that a policy of meeting once per month or more frequently to review all deliveries in detail with the major subcontractors be instituted now. The review should be made from the material and equipment schedule sheets of the network.

In summary, work at the primary settling tanks as of the start of the strike period was generally in substantial alignment with the basic issue #3 except for pile driving at the northeast section of the tanks proper. The delay there was caused by a need to drive piling deeper due to unexpected subsoil conditions. This matter apparently has been resolved as of the current date. Upon resumption of work, I recommend a new basic issue #4 be prepared and distributed to incorporate revisions in planning required by the strikes.

Ralph J. Stephenson, P.E.

RJS/m

*Please send to  
Lyle Meyer now in charge of Gene Simpkins  
(7107 only)*

To: Mr. Gene Simpkins, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svec, Executive Vice Pres. & Genl. Mgr.  
Mr. Herb Hanson, General Superintendent

December 9, 1975

**Subject: Monitoring Report #6**  
**Metropolitan Waste Water Treatment Plant**  
**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**R.B Project: 75:21**

**Monitored from basic issue #3 dated April 25, 1975 and new basic issue #4 dated August 21, 1975**

**Contract Completion Dates:**

**Phase 1 August 1, 1977 (working day 662)**

**Phase 2 October 1, 1977 (working day 704)**

**Date of Monitoring: December 4, 1975 (working day 237)**

**Actions taken:**

- **Inspected project**
- **Conferred with Mr. Lyle Meyer, project manager and Mr. Dave Thies re job status**
- **Reviewed logic changes prepared in issuing basic issue #4 dated August 21, 1975**

**General Summary**

**As of December 4, 1975 (working day 237) pipe gallery walls are completed, the remaining top deck on the pipe gallery is to be started within the next week and work is continuing on dividing walls and tank slabs on grade in the primary settling areas. Generally all work is currently meeting targets established in the revised basic issue #4 dated August 21, 1975. However, it should be pointed out that this revised issue #4 gives a revised completion date from September 3, 1977 to October 26, 1977.**

**The basic issue #4 includes delays imposed by the several strikes that occurred during the summer. Mr. Thies has detailed each of these strikes on sheet 1 of the revised network diagram.**

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I recommended to Mr. Thies and Mr. Meyer that the new logic plan represented by issue #4 be formalized in a full issue of the network data.

The only work that lags the basic issue #3 dated April 25, 1975 is construction of tank walls, the primary effluent channel and the center tunnel. Essentially the reason for the lags was that in the basic issue #3 work at these areas was imposed as a restraint on other similar activities so that the work was sequenced in a predetermined manner. The revised diagram removed many of the crowing restraints which were reflected in later starts and finishes than in the basic issue #3. Also, there was a time restraint to next spring - April 1, 1976 (working day 320) - placed to the start of work on tank walls and the east primary effluent channel. This too had an impact of pushing the late start and late finish dates on these items to a later point. This change in logic is apparently sound but I recommend that caution be exercised in making such changes to insure that the labor buildup does not exceed the manpower and equipment available. This apparently has been taken into account in this latest revision to the network.

Several deliveries bear watching although at present it appears most major delivery problems have been resolved. Remaining items that should be given particular attention include:

- High level float switch
- All flow meters
- All sensing devices
- Under drain pumps
- Gages
- Back-draft dampers, grills and diffusers
- Controls
- Instrumentation

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**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**These items are being checked regularly but it would be wise to give them special attention since they require long lead times.**

**As a part of our discussion, we reviewed the general interface activities that would allow this plant to become operative and thus permit testing and turnover, and consequent completion of the job. Presently there seem to be many required activities outside the job boundary that must be completed by the owner and other contractors before this particular total plant can be made operative. Supposedly these are being identified in an interface network by the owner. It becomes critical that such interfaces and the dates by which services will be available are clearly defined at as early a date as possible. I suggested to Mr. Meyer and Mr. Thies that they prepare a detailed list of questions regarding interface dates and submit these to the owner for his answers.**

**It will be increasingly important as the project moves on to know when permanent power, for instance, will be available or what will be required to take the discharge of the effluent from the plant. These questions must be answered at an early time to avoid extended involvement in the project past the present Kraus-Anderson target completion goals. It would be appropriate for the field management of the project and top company management to consider these in detail jointly at an early date. Considerable thought has been given this matter by the field management staff and it should now be brought into sharper focus and the owner required to provide positive and definitive statements as to his intent at the interfaces.**

**In summary, the project is currently moving well and with minor exceptions, seems to be in good shape. I suggest the revised logic of the diagram be examined to insure that removal of work movement restraints does not force excessive late manpower and equipment buildup.**

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Lyle Meyer, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Sves, Executive Vice Pres.  
Mr. Herb Hanson, General Superintendent**

*Mr. Craig Maleski, E.P.*

May 11, 1976

**Subject: Monitoring Report #7**

**Metropolitan Waste Water Treatment Plant**

**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**RJS Project: 75:21**

**Monitored from basic issue #5 dated February 6, 1976**

**Contract Completion Dates:**

**Phase 1 August 1, 1977 (working day 660)**

**Phase 2 October 1, 1977 (working day 703)**

**Notes:** Basic Issue #5 shows a revised completion date for Phase One of August 29, 1976 (working day 680) and a corresponding revised completion date for Phase Two of October 26, 1977 (working day 721). It should be further noted that these new dates do not take into account the extension requested in Mr. Meyer's letter of August 22, 1975 for 58 additional calendar days or 24 working days, as a result of strikes encountered during the summer of 1975. There also was a late starting date on the total project which will add additional time to the total contract. However, as of this point, no formal extension has been granted.

**Date of Monitoring: May 4, 1976 (working day 343)**

**Actions taken:**

- Inspected project
- Conferred with Mr. Lyle Meyer, project manager and Mr. Dave Thies re job status
- Evaluated job status

**General Summary**

**Currently work is proceeding on footings, walls, columns and beams in the eight settling tanks somewhat concurrently, moving from west to east.**

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**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**The present monitoring network shows these tanks being completed in order from north to south. However, Mr. Meyer pointed out that probably the tanks will be finished out from west to east, generally two tanks at a time on foundation and wall work, and one tank at a time on construction of columns and beams. He has tentatively set September 1, 1976 (working day 427) as the completion date for tanks 13 and 14 walls.**

**It is the intent to start installation of the sludge collector mechanisms by July 1976. It will take about one month per tank to install the sludge collector equipment and this will be dovetailed with completion of the tank walls.**

**The scum collector building slab will be started shortly. Basic Issue #5 shows scum building work starting late. However, this is because of crewing restraints initially used in the work plan. Revisions will be made to the network at the next updating.**

**Overall, progress on the project appears very good. Mr. Meyer considers he will complete all major concrete work by November 1976. Presently it appears that this can be accomplished.**

**We made a brief review of the current status of equipment shop drawings approvals and delivery. There do not seem to be, from our review, any outstanding problems or difficulties. As with most projects of this type, there are many small, easily missed elements that are critical to operational demands. Therefore, I suggest that Mr. Thies and Mr. Meyer continue their monthly practice of reviewing in detail the status of all delivery items shown in the basic Issue #5.**

**We also reviewed again the need to determine the point at which Kraus-Anderson and the Sewer Board are to consider this plant complete. Since day to day relations in the field on the project appear presently very good, it would be difficult to continually question the owner's field staff about whether interface points for this job will be met by the owner and by other contractors. Nevertheless it is a very real problem and those in charge of the owner's total operation should be aware of the needs of this project relative to other services and facilities. It is a delicate point since on public projects, good day to day field relations are critical to maintain.**

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**RALPH J. STEPHENSON, P. E.  
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**Interface elements of concern include the following:**

- **Provision of permanent power**
- **Interconnections to 7106 and the need there to provide interfaces with owners and other contractors**
- **Disposal of sludge and scum to project 74011, the sludge thickener tanks. It should be noted that a contract for these tanks has not yet been let. Presently it appears as though it may not be let until as late as September 1, 1976 (working day 427). Since there is a large number of these tanks and they are reasonably complex, construction time for them and making them operable could be considerable and might extend far beyond the present completion target for 7107.**
- **A place to send the effluent from the primary settling tanks is also needed.**

**The above is shown to illustrate the strong need for early interface attention so that Kraus-Anderson can complete their work and move out of the project. I believe a high level Kraus-Anderson discussion would be wise at this time since the possibility of involvement with retainage, liquidated damages and other serious difficulties if a late turnover is necessary could be serious. Again, to be emphasized is the need to maintain the present good relationships with the field management staff of the owner.**

**Ralph J. Stephenson, P. E.**

**RJS/m**

**To: Mr. Lyle Meyer, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svec, Executive Vice Pres.  
Mr. Herb Hanson, General Superintendent  
Mr. S. Craig Maleski, P. E., Vice President**



RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

August 23, 1976

**Subject: Monitoring Report #8**  
**Metropolitan Waste Water Treatment Plant**  
**Primary Settling Tanks, St. Paul, Minnesota 7107**

**Contractor: Kraus-Anderson of Mpls, Inc.**

**RJS Projects (75:21)**

**Evaluated from conference with field staff from Kraus-Anderson Kvalsten  
and Lamb**

**Contract Completion Dates:**

**Phase 1 August 1, 1977 (working day 660)**

**Phase 2 October 1, 1977 (working day 703)**

**Note: Basic Issue #5 shows a revised completion date for Phase One of August 29, 1976 (working day 680) and a corresponding revised completion date for Phase Two of October 26, 1977 (working day 721). It should be further noted that these new dates do not take into account the extension requested in Mr. Meyer's letter of August 22, 1975 for 58 additional calendar days or 24 working days, as a result of strikes encountered during the summer of 1975. There also was a late starting date on the total project which will add additional time to the total contract. However, as of this point, no formal extension has been granted.**

**Date of Monitoring: August 17, 1976 (working day 416)**

**Actions taken:**

- **Inspected project**
- **Conferred re project plans with Mr. Dave Thies, Mr. Myron Mickelson, Mr. Gene Simpkins, Mr. Bill Nelson, Mr. Duane Slater and Mr. Jack Herman.**
- **Evaluated job status**

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**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

### General Summary

Currently work is moving very well on the primary settling tanks structure with all concrete expected to be substantially poured out by November 1, 1976 (working day 469). Mechanical and electrical work is following installation of concrete structural elements as closely as possible. Presently major efforts are being concentrated on scum galleries 1 and 2, the scum enclosure building, access building #8 and the pipe gallery. No major piping work has begun yet at the center tunnel and work in the primary tanks is limited to the starting of sprocket and chain installation.

It is the intent to make project 7107 available and ready for receipt of influent from the grit tanks (project 7106) by July 1, 1977 (working day 639). At this point it is anticipated the owner will provide permanent power to the job and that startup of the plant for testing can occur from the pre-treatment project on through into the primary settling tanks. A prerequisite of this, however, is that there be a disposal point for the sludge removed from the influent to be pumped. Under contract 74011, construction of the adjoining sludge tanks, apparently there is included a bypass pipe to the present waste treatment plant. Thus, for testing, it is entirely possible that the bypass pipe will be installed and hooked up so it can be used to receive the sludge.

If it is at all possible, some clear water testing may also be carried out prior to July, possibly as early as May 2, 1977 (working day 596). In respect to testing with clear water, Mr. Mickelson has prepared a test procedure for successive filling of each of the 8 tanks. It would be helpful if this test procedure could be implemented at an early date with clear water since it, in all likelihood, would cut down on the possibility of major flaws being found in the system when testing with true influent was possible. Again, this matter will be evaluated in depth by Kraus-Anderson management in conjunction with the owner.

In summary, the project presently is in good condition. Critical to it will be a disposal outlet for sludge and scum, along with permanent power. Both of these must be made available no later than July 1, 1977 (working day 639) for the project to be maintained on its current schedule.

**Ralph J. Stephenson, P.E.**

RJS/m

**To: Mr. Lyle Meyer, Project Manager  
Mr. Dave Thies, Estimator and Scheduler  
Mr. Jerry R. Svae, Executive Vice Pres.  
Mr. Herb Hanson, General Superintendent  
Mr. S. Craig Moleski, P.E., Vice President**

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

April 29, 1977

Subject: Monitoring Report #9

Metropolitan Waste Water Treatment Plant

Primary Settling Tanks, St. Paul, Minnesota 7107

Contractor: Kraus-Anderson of Mpls, Inc.

RJS Project: 75:21

Evaluated from conference with field staff of Kraus-Anderson

Contract Completion Dates:

Phase 1 August 1, 1977 (working day 660)

Phase 2 October 1, 1977 (working day 703)

Note: Basic Issue #5 shows a revised completion date for Phase One of August 29, 1976 (working day 680) and a corresponding revised completion date for Phase Two of October 26, 1977 (working day 721). It should be further noted that these new dates do not take into account the extension requested in Mr. Meyer's letter of August 22 as a result of strikes encountered during the summer of 1975. There also was a late starting date on the total project which will add additional time to the total contract. Letters have been provided by the owner which acknowledged the need and the justification for a time extension. These will not be acted upon, however, until near the project end.

Date of Monitoring: April 25, 1977 (working day 591)

Actions taken:

- Inspected project
- Conferred re project with Mr. Dave Thies, Mr. Myron Mickelson and Mr. Gene Simpkins
- Evaluated job status

General Summary

As of April 25, 1977 (working day 591) it appears that completion of tank construction work will require about another 40 working days. This will bring completion to June 21, 1977 (working day 631). At this point either

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CONSULTING ENGINEER

clear water or raw sewerage testing of the facility could start provided some project exterior interfaces are satisfied. It is hoped that the tests can be conducted with raw sewerage since this would complete the testing procedure at an earlier date. Testing of the primary tanks is expected to take approximately 98 working days. Thus, the sooner it can begin, the earlier can the tanks be turned over for operation to the owner.

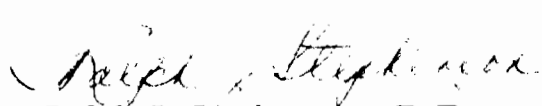
Part of the contract on the tanks required training of operating personnel by Kraus-Anderson. If it is not possible for the plant to provide operating personnel by the time the tanks are tested and ready for turnover, I suggest an arrangement be made by which the training funds are placed in interest bearing escrow to be paid with interest at the time the training occurs. This would allow general requirements on the job to be reduced to the lowest possible degree and hopefully allow Kraus-Anderson staff to move off the job.

Items to be completed on the primary tanks include:

- flights and the machinery
- electrical wiring
- rails, trim and grating
- service water piping
- remaining concrete topping
- site work

It is expected that with the exception of site work most will be substantially complete by June 21, 1977 (working day 631), as noted above. Installation of sod may be deferred until later this year in late summer or early fall due to seasonal requirements.

In summary, the project is moving quite well and it appears that either clear effluent or raw influent testing could begin by June 21, 1977 (working day 631). The testing period will be about 98 working days or shorter. Every effort should be made to shorten this time to improve the total turnover point and eliminate retention on the project. It must be remembered that during the testing period there are apt to be replacements needed for various pieces of equipment that might be found faulty or might develop difficulties during the testing period. Some account has been taken of that but this is an unknown at present.

  
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To: Messrs. Copeland, Hanson, Mickelson, Meyer,  
Simpkins, Svee and Thies