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April 29, 1992

Docket No. 50-461

Document Control Desk  
Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Clinton Power Station  
Annual Environmental Operating Report

Dear Sir:

In accordance with appendix B to Facility Operating License NPF-61, Illinois Power (IP) is submitting the Annual Environmental Operating Report (Attachment 1). This report covers the period January 1, 1991 through December 31, 1991.

Sincerely yours,

F. A. Spangenberg, III  
Manager, Licensing and Safety

WSI/alh

Attachments - 5

cc: NRC Clinton Licensing Project Manager  
NRC Resident Office  
Regional Administrator, Region III, USNRC

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## Annual Environmental Operating Report

The Environmental Protection Plan (EPP) for Clinton Power Station (CPS) requires that the Annual Environmental Operating Report include:

- (A) A list of EPP noncompliances and the corrective actions taken to remedy them.
- (B) A list of all changes in station design or operation, tests, and experiments made in accordance with subsection 3.1 of the EPP which involved a potentially significant unreviewed environmental issue.
- (C) A list of non-routine reports submitted in accordance with subsection 5.4.2 of the EPP.
- (D) Any results and/or assessments for the environmental monitoring programs described in subsection 2.0 of the EPP which were submitted to the respective regulatory agencies during the annual reporting period.

The following provides the Illinois Power response to each listed item.

A. Listing of EPP noncompliances and corrective actions:

1) Noncompliance:

Two water samples obtained from outfalls 004 (Transformer Area Oil/Water Separator) and 005 (Diesel Generator Oil/Water Separator) resulted in an oil and grease concentration of 22 parts per million (ppm) and 42 ppm respectively and resulted in a 30-day average of 16.1 ppm, which exceeded the National Pollutant Discharge Elimination System (NPDES) permit allowable value of 15 ppm.

Corrective Action:

A Maintenance activity had been performed on these oil/water separators. This activity included lowering the water level in the separators with a portable pump. The pump had been left on too long and oil/grease was taken into the pump and discharge line. When the pump was used again, the residual fluid was flushed from the pump and discharge line. Corrective action to prevent recurrence included training appropriate Maintenance Department personnel to increase their understanding of separator operation and providing directions to ensure a clean pump and discharge line are used for the operation.

2) Noncompliance:

On January 16, 1991, the sample analyzed for Biochemical Oxygen Demand (BOD) for outfall 002a (Sewage Treatment Plant Effluent) resulted in 72mg/l (the limit is 60mg/l).

Corrective Action:

The January 16th sample analysis was determined to be an isolated case (possibly from the recent cleaning of sewage treatment system digester plates). Sample analysis on January 23rd and 30th resulted in 27mg/l and 39mg/l, respectively.

3) Noncompliance:

The recorder utilized for continuous monitoring of the temperature for outfall 002 (Discharge Flume) was found to have been inadvertently left in the "OFF" position.

Corrective Action:

The chemistry technician involved was counseled on the importance of ensuring the temperature recorder is left in the "ON" position and is operating prior to leaving the area.

4) Noncompliance:

The temperature recorder located in the Discharge Flume Monitoring Building ceased to function, resulting in a loss of the capability to continuously monitor outfall 002 (Discharge Flume) temperature.

Corrective Action:

The temperature recorder was returned to service. The investigation determined that the probable cause of the inoperability of the temperature recorder was a lightning strike on or near the Discharge Flume Monitoring Building.

5) Noncompliance:

On May 5, 1991, grab samples were not obtained at outfall 002 (Discharge Flume) for the determination of residual chlorine when the chlorine monitor was inoperable. A manual residual chlorine curve was not performed because the monitor was expected to be returned to service before the end of the week, which would have fulfilled the appropriate requirements of the NPDES permit. However, due to unforeseen complications, the monitor was not returned to service until after the Operations Group injected chlorine.

Corrective Action:

Chemistry supervision was counsel'd on maintaining enhanced communication with the Operations Group to ensure compliance with the requirements for monitoring chlorine injections during periods of monitor inoperability.

6) Noncompliance:

The Discharge Flume Continuous Chlorine Monitor for outfall 002 was inoperable. Grab samples were being obtained every fifteen minutes and not every five minutes as required by condition three of the NPDES permit.

Corrective Action:

All chemistry technicians were counseled on the time requirements for obtaining samples for periods when the continuous chlorine monitor is inoperable.

7) Noncompliance:

A water sample obtained from outfall 005 (Diesel Generator Oil/Water Separator) resulted in an oil and grease concentration of 83 ppm. The results of the analysis exceeded the maximum daily oil and grease concentration in this outfall of 20 ppm and a 30-day average concentration of 15 ppm.

Corrective Action:

Due to a concern with operating the pumps which remove the water from the separator, the water was being removed with a portable pump. The portable pump and hose had apparently been stored with oil and grease remaining in them from when they had last been used. No oil reached Clinton Lake due to an oil absorbent boom being placed across the outfall. A new pump and hose was procured and dedicated solely for the task of removing the water from the oil separator.

8) Noncompliance:

A sample taken from outfall 004 (transformer area oil/water separator) did not contain the proper preservative as required by the Environmental Protection Agency procedures. The lack of the preservative invalidated the sample. Since, due to time restraints, a second sample could not be taken to fulfill the permit requirement for the week, a noncompliance with the NPDES permit occurred.

Corrective Action:

Sample bottles utilized for NPDES sampling are prepared by the central laboratory personnel. This preparation includes sample bottle cleaning, labeling and the addition of the required preservative. The chemistry personnel responsible for obtaining the samples were instructed to ensure the bottles are properly labeled and contain the preservative. Also, they were directed not to rinse the bottles prior to obtaining the samples.

9) Noncompliance:

The chlorine concentration for outfall 002 (discharge flume) exceeded the NPDES permit limit of 0.2 ppm when the concentration reached 0.25 ppm. The cause of this problem is suspected to be an unanticipated drop in chlorine uptake. This drop in chlorine demand was associated with a 1.5 degree Fahrenheit drop in the flume temperature and a suspected significant decrease in biological uptake of chlorine.

Corrective Action:

The amount of chlorine and the flow rates at which the chlorine was injected were the same as for the previous three days when the NPDES permit limits were not exceeded. Since this was the first time that a decrease in the biological uptake of chlorine resulting from a drop in temperature was the suspected cause of exceeding the allowed chlorine concentration, continued monitoring was determined to be the most appropriate action to take.

10) Noncompliance:

A sample obtained from outfall 004 (Transformer Area Oil/Water Separator) resulted in an oil and grease concentration of 40 ppm. This was the only sample for the sampling period. Consequently, both the NPDES limits for the daily maximum and 30-day average were exceeded.

Corrective Action:

The oil/water level in the separator had been lowered in response to problems identified with the inlet line to the separator. During the evening, the area around GPS experienced heavy rain which caused a large volume of water to enter the separator causing the existing fluids to mix and exit from the separator. Various containment/oil absorbent booms were installed to ensure oil was not discharged into Clinton Lake from this source. In addition, the inlet line was repaired.

11) Noncompliance:

A NPDES noncompliance occurred during chlorination of the Shutdown Service Water (SX) system. This evolution is completed by injecting sodium hypochlorite into the Plant Service Water (PSW) system. The task is accomplished by opening the cross-tie valves between WS and SX. SX discharges to outfall 007 (Safe Shutdown Service Water System). This chlorination was being performed in order to control microbial activity which had been previously identified in the emergency diesel generator heat exchangers. The concentration of chlorine discharged into outfall 007 was not to exceed 0.05 ppm maximum. The average chlorine concentration for the duration of the chlorination event was not to exceed 0.2 ppm. Due to the location of outfall 007, it cannot be sampled at the discharge point to determine the concentration of chlorine entering Clinton Lake; therefore, other (more conservative) locations on the WS and SX systems were monitored for chlorine concentration which would be expected to result in higher concentrations than discharged from outfall 007. The maximum chlorine concentrations observed at the three different sampling points were 1.4 ppm, 2.1 ppm, and 5.7 ppm.

Corrective Action:

The chlorine injection time was 35-40 minutes. The magnitude of the initial level of chlorine observed was unexpected and the chlorine injection was immediately suspended. The cause of the noncompliance was an inability of Chemistry personnel to adequately control the volume of sodium hypochlorite being injected into WS and SX. This was due to a design inadequacy in the modification installed to perform WS chlorination (i.e., there was not a properly-sized metering valve installed in the chlorination system). All chlorination into WS was subsequently suspended until a proper metering valve was installed in the chlorination system.

The exact concentration of chlorine injected into Clinton Lake is not known, but it is less than the maximum levels observed at the three sampling points. There were no negative impacts observed in the lake.

12) Noncompliance:

The screenwash fish collection basket was being cleaned when it was discovered that the side plate of the basket had separated from the rest of the basket. This allowed approximately 100 to 300 small fish to be returned to Clinton Lake when the traveling screens were backwashed. The release of the fish to the lake constituted a noncompliance of the NPDES permit.

Corrective Action:

The side plate of the fish collection basket was immediately repaired. The fish which were returned to Clinton Lake were retrieved and disposed of properly.

- B. List of changes in station design or operation, tests, and experiments made in accordance with subsection 3.1 of the EPP which involved a potentially significant unreviewed environmental issue:

No changes as described above were made in this time period which involved a potentially significant unreviewed environmental issue.

- C. The following are non-routine reports submitted in accordance with subsection 5.4.2 of the EPP:

- 1) On February 23, 1991, Illinois Power reported a light oil sheen on Clinton Lake at the screenhouse structure of CPS. The total quantity of released oil was estimated to be one quart in a sheen measuring three feet wide and 100 feet long.

The source of oil was determined to be a leaking sight glass fitting on the gearbox of the "B" traveling screen. The oil leaked into the screenwash trough and was carried to a screenwash fish collection basket outside the screenhouse. Ultimately, the oil reached Clinton Lake.

Immediate Corrective Action and/or Counter Measures Taken:

- (a) Oil sorbent booms and pads were immediately deployed to contain and collect the oil.
- (b) The oil was controlled and removed.
- (c) The sight glass was tightened to stop the oil leak.
- (d) Used oil sorbents were disposed of properly.
- (e) No environmental impact was noted after the cleanup of the release.

Additional Preventative Measures Taken or Planned to Minimize the Possibility of Recurrence:

The appropriate Maintenance Department personnel have been reminded to check the fittings on the traveling screen reduction gearboxes for tightness. A vibration

monitoring check was done on these gearboxes, and it was determined that the vibrations from operating the traveling screens did not contribute to loosening this fitting.

- 2) On March 1, 1991, Illinois Power reported an oil sheen on Clinton Lake, west of CPS. The sheen stretched across Clinton Lake.

The source of this oil was determined to be from the Ultimate Heat Sink dredge barge. It is estimated that approximately five gallons of oil was released to Clinton Lake. The dredge barge contains multiple fuels, lubricants and hydraulic systems. It is owned and operated by an outside contractor who dredged the Ultimate Heat Sink in Clinton Lake for Illinois Power.

During the past winter, the dredge barge was laid-up in Clinton Lake. Oil from the barge reached Clinton Lake and was trapped by the lake ice which formed in early January. The lake thawed about one week before the sheen was observed on March 1, 1991. The thawing of the lake surface released the accumulation of oily deposits.

There were two causes of the oil release.

- 1) The dredge barge bilge is periodically pumped out by the contractor to remove seepwater from hull leaks. The bilge area also collects oil residue from minor leaks on the dredge. The water pumped from the bilge and into Clinton Lake contained some oil.
- 2) The rain washed trace oil accumulations from the deck of the barge into Clinton Lake.

Immediate Corrective Action and/or Counter Measures Taken:

- (a) A Containment boom was immediately deployed to contain the sheen. This action prevented oil from reaching shorelines.
- (b) Oil sorbents were used to remove the oil from Clinton Lake.
- (c) The oil release was controlled and removed.
- (d) Used oil sorbents were disposed of properly.
- (e) No environmental impact was noted after the cleanup of the release.



Additional Preventative Measures Taken, or Planned to Minimize the Possibility of Recurrence:

- (a) The owner and employees of the dredge barge were instructed to inform CPS prior to pumping the bilge. The water level in the bilge is now kept at a high level. Only enough water to keep the barge safe from sinking is now removed. This further reduces the chance of discharging oil into Clinton Lake.
  - (b) Oil sorbents were placed inside the bilge to remove oil.
  - (c) An oil containment boom was deployed around the dredge barge and lined with sorbent booms. If oil were released again, the oil would be immediately contained.
  - (d) The deck of the dredge barge was cleaned.
- 3) The dredge barge used to dredge the Ultimate Heat Sink in the Clinton Lake was being dismantled on the shore of the Clinton Lake. On September 3, 1991, Clinton Power Station personnel observed oil spilled on the ground near the barge. An oil stain on the soil measured approximately 50 feet long. The oil stain was approximately 40 feet from the lake. The oil was spilled by the contractor from the dredge barge bilge tank. The oil was a mixture of lube oil and diesel fuel.

Crews were preparing to remove the spilled oil when it began to rain. Rainwater accumulated in the bilge tank and overflowed causing a release. The oily water discharged from the bilge tank and oil residues on the ground were washed into Clinton Lake. This release occurred before crews were able to pump the bilge or clean up the spill on the ground. The quantity of oil released to Clinton Lake was estimated to be one pint.

Immediate Corrective Action and/or Counter Measures Taken.

- (a) Oil sorbent booms and pads were immediately deployed to contain and collect the oil.
- (b) Booms were used to protect additional shorelines from the oil.
- (c) Oil on the ground was scraped from the surface.
- (d) All oil and water was pumped from the bilge tank.

- (e) Used spill materials and the affected soil were disposed of properly.
- (f) The oil and water mixture was pumped into a tanker and the mixture was separated. The water was analyzed and properly treated at Illinois Power's central laboratory. The oil was properly managed in accordance with the CPS waste oil program.
- (g) No environmental impact was noted after the cleanup of the release.

Additional Preventative Measures Taken or Planned to Minimize the Possibility of Recurrence:

All components of the barge were removed by September 13, 1991. With the removal of the barge, the risk of another oil spill from the barge was also removed.

- 4) An oil/water separator located at CPS was taken out of service to perform maintenance. Before the need for maintenance was identified, plant personnel observed a manhole filling with water. The manhole is located immediately upstream of oil/water separator number one (OS1). The normal path of water from this manhole discharges directly to OS1. Since the manhole was filling with water, plant personnel believed that the manhole outlet was plugged. When trying to auger the pipe between the manhole and OS1, plant personnel learned the blockage was located at the separator. The separator was taken out of service and the contents of the separator were pumped. The blockage was found to be caused by poured concrete. The 15-inch pipe had a 13-inch concrete blockage. The poured concrete blockage occurred during construction of the separator.

On September 3, 1991, it rained. Since the manhole was blocked, the rainwater should have accumulated in the area of the manhole. It was the plant's intent to pump the rainwater to OS2. During the separator inspection, it is believed that a small portion of the blockage dislodged and some of the rainwater entered OS1. Since the contents of OS1 were removed for maintenance, the separator did not have its water barrier present while it was filling with water. Some oil residues were discharged from the separator and drained to Clinton Lake.

Immediate Corrective Action and/or Counter Measures Taken:

- (a) Oil sorbent booms and pads were deployed to contain and remove the sheen from Clinton Lake.
- (b) Oil sorbents were used in the discharge drainage channel to collect and remove oil residues.
- (c) An underflow dam was constructed in the discharge drainage channel to Clinton Lake. The underflow dam provided a means to collect all floating products and prevent their discharge to Clinton Lake.
- (d) All traces of oil were removed.
- (e) No environmental impact was noted after the cleanup of the release.

Additional Preventative Measures Taken or Planned to Minimize the Possibility of Recurrence:

- (a) OSI maintenance was completed.
- (b) The underflow dam remained in place through the duration of the OSI maintenance. This provided additional protection during the maintenance of the separator.

D. Results and/or assessment for the environmental monitoring programs described in subsection 2.0 of the EPP which were submitted to the respective regulatory agencies during the annual reporting period:

1. Additional 1990 Clinton Lake Naegleria fowleri Monitoring and Clinton Lake temperature data was provided to the Illinois Environmental Protection Agency on June 18, 1991. Out of 400 samples collected in 1990, there were fifteen positive samples of Naegleria fowleri (five bottom samples and ten surface water samples). The warmest lake water temperature was 88.6°F near Mascoutin Beach on September 6, 1990. Complete information is provided in Attachment 2.
2. The Clinton Lake sedimentation survey for 1991 is provided in Attachment 3. The survey measured the 1991 depths near the Parnell Road Bridge and the DeWitt County Highway 15 Bridge.

3. Illinois Power completed the dredging operations of the CPS Ultimate Heat Sink on January 7, 1991. Attachment 4 is the notification of project completion to the Army Corps of Engineers. Attachment 5 is the Clinton Power Station Ultimate Heat Sink Dredge Disposal Impoundment Submittal of Abandonment Plan.

June 18, 1991

Clinton Lake 1990 Monitoring Report  
for Naegleria fowleri

Purpose

This report summarizes the 1990 Naegleria fowleri monitoring data and water temperature from the Clinton Lake Beach.

Methods and Materials

Water and sediment samples for Naegleria fowleri were collected from 10 locations (Figure 1) on seven dates in 1990. Samples were collected in triplicate and temperatures were recorded at the time of collection (Table 1). Lake temperatures were characterized by temperatures recorded on hourly intervals by DataSondes at six locations in Clinton Lake (Figure 1). Sample analysis and amoebic isolations were similar to those reported in 1988 by Dr. Huizinga in the "Survey of Clinton Lake for the Occurrence of Naegleria fowleri". All field collections and temperature monitorings were performed by Illinois Power's Biological Programs staff and all samples were analyzed by Dr. Harry Huizinga of Illinois State University.

Results and Discussion

A total of 400 samples were collected in 1990 and Naegleria fowleri were isolated from fifteen samples (3.8%) (Table 2). The percentage of Naegleria fowleri was lower than the 5.1% found in 1989 and the 5.3% in 1988.

The distribution of Naegleria fowleri was limited to Sites 1, 2, and 4 which were the sites most influenced by the thermal discharge. In 1989, some Naegleria fowleri were found in areas of the lake not influenced by thermal discharges.

Temperatures at the time of collection ranged from 10°C to 37°C (Table 1). Naegleria fowleri were isolated at temperatures from 29.5 to 37°C, with eleven of the fifteen isolated from temperatures above 35°C. No Naegleria fowleri were found on July 18 following a plant outage, which dropped discharge temperatures more than 10°C.

Daily mean temperature at the Mascoutin Beach between May and October ranged from 11.8 to 31.4°C in 1990 (Table 3). Daily means for the same period in 1989 ranged from 14.1 to 32°C.

Surface samples accounted for ten of the fifteen Naegleria fowleri in 1990. In 1989 bottom samples had a higher incidence (6 of 9) of Naegleria fowleri.

The abundance of non-pathogenic Naegleria species was lower than in previous years. Non-pathogenic amoeba were present in 13% of the 1990 samples, as compared to nearly 26% in 1989 and a high of over 50% in 1986.

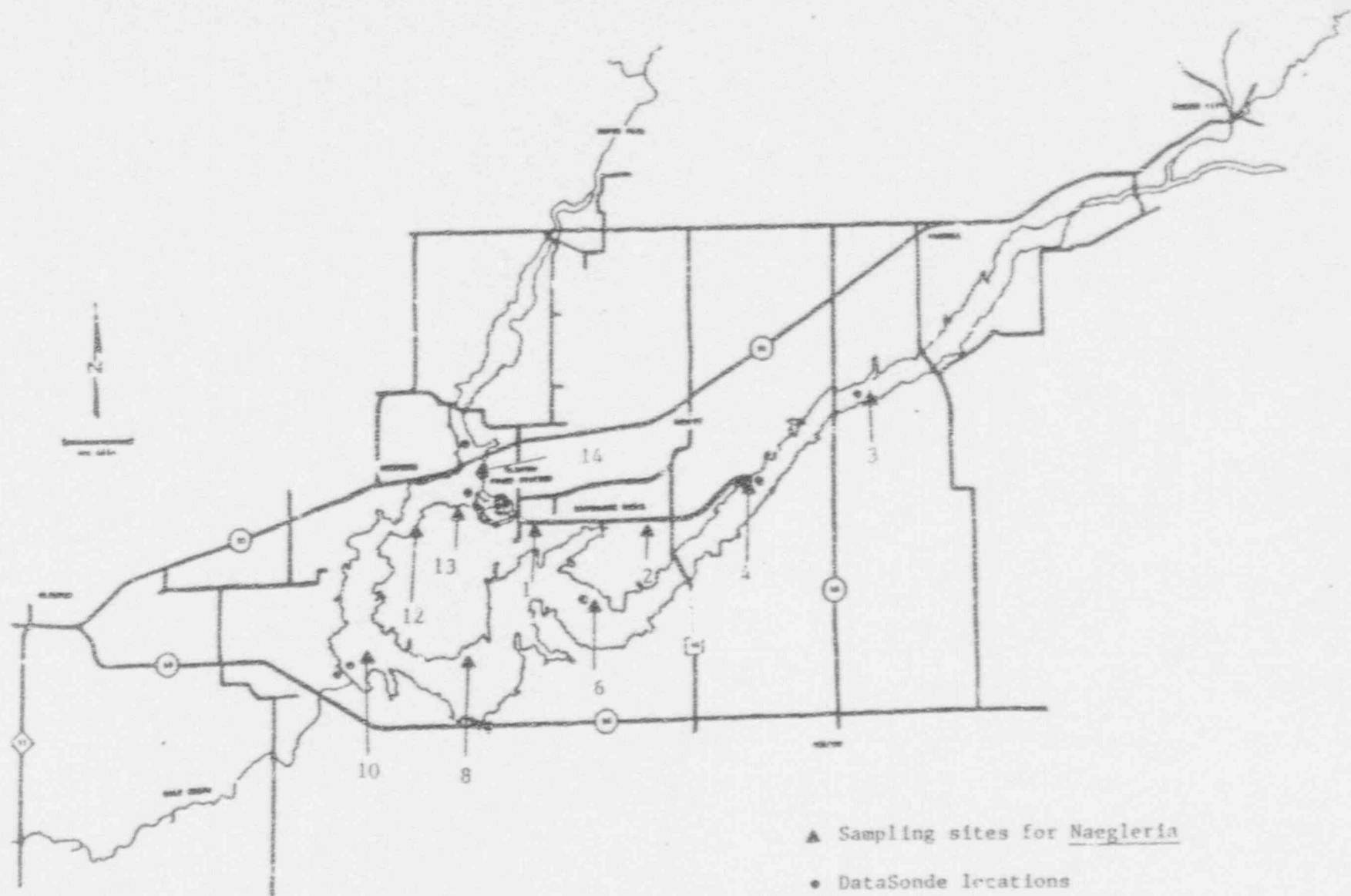


Figure 1. Sampling sites for 1990 *Naegleria fowleri* monitoring at Clinton Lake, Clinton, Illinois.

Table 1. Temperatures ( $^{\circ}\text{C}$ ) of bottom and surface water samples at the time of collection from Clinton Lake, Clinton, Illinois, 1990.

Sites*	Sampling Dates						
	06/07/90	07/05/90	07/18/90	08/01/90	09/07/90	10/03/90	10/30/90
14B1	19.2	26.9	24.2	24.3	27.6	19.2	11.6
14B2	19.1	27.1	24.3	24.3	27.5	19.2	11.8
14B3		27.0	24.2	24.6	27.7	19.2	11.8
14S1	19.5	27.3	24.4	24.6	27.8	19.3	11.7
14S2	19.5	27.3	24.5	24.6	27.7	19.3	11.7
14S3		27.2	24.4	24.6	27.8	19.3	11.7
13B1	19.1	27.2	24.1	23.7	27.4	19.1	11.6
13B2	19.1	27.1	24.0	24.1	27.3	19.2	11.6
13B3		27.0	24.2	24.1	27.5	19.2	11.5
13S1	19.4	27.3	24.4	24.6	27.7	19.3	11.5
13S2	19.4	27.4	24.5	24.6	27.7	19.3	11.5
13S3		27.5	24.4	24.6	27.7	19.1	11.5
12B1	19.3	27.0	24.2	24.3	27.5	19.2	11.8
12B2	19.3	26.6	24.1	24.3	27.4	19.2	11.8
12B3		27.0	24.3	24.5	27.5	19.2	11.9
12S1	19.6	27.5	24.3	24.6	27.3	19.5	11.7
12S2	19.7	27.3	24.4	24.6	27.3	19.5	11.7
12S3		27.4	24.4	24.6	27.3	19.5	11.7
10B1	19.1	23.3	23.1	24.4	25.4	19.2	12.2
10B2	19.1	23.6	23.1	24.6	25.8	19.2	12.3
10B3		23.6	23.7	24.7	26.0	19.2	12.3
10S1	19.5	26.6	23.8	25.1	27.3	19.3	11.8
10S2	19.5	27.0	23.8	25.1	27.3	19.3	11.8
10S3		27.0	23.8	25.1	27.3	19.3	11.8
8B1	20.6	27.3	24.0	25.2	27.3	19.2	11.4
8B2	20.3	27.2	23.9	25.3	27.3	19.1	11.6
8B3		27.2	24.0	25.5	27.4	19.2	11.6
8S1	21.0	26.6	24.0	25.6	27.6	19.2	11.4
8S2	20.9	27.0	24.1	25.6	27.6	19.2	11.5
8S3		27.0	24.0	25.6	27.6	19.2	11.5
6B1	22.4	29.2	24.1	26.5	29.0	21.5	11.4
6B2	22.4	29.2	24.0	26.9	29.1	21.5	11.3
6B3		29.1	24.0	27.0	29.3	21.5	11.3
6S1	22.7	28.6	24.0	27.4	29.6	21.6	11.1
6S2	22.7	28.8	24.3	27.4	29.7	21.6	11.1
6S3		28.9	24.2	27.4	29.7	21.7	11.1



Table 1. (Continued)

Sites*	Sampling Dates						
	06/07/90	07/05/90	07/18/90	08/01/90	09/07/90	10/03/90	10/30/90
4B1	29.5	35.8	24.5	33.0	34.3	27.1	11.9
4B2	30.1	35.8	24.4	33.6	35.5	27.1	11.8
4B3		35.1	24.4	33.8	36.0	27.1	12.1
4S1	30.0	36.5	24.5	34.5	36.6	27.2	11.8
4S2	29.5	36.5	24.5	34.5	36.6	27.2	11.8
4S3		36.5	24.5	34.5	36.7	27.2	11.8
3B1	18.3	24.1	21.6	24.5	28.1	18.7	10.6
3B2	18.4	23.6	21.8	25.0	27.6	18.7	11.0
3B3		23.5	21.5	24.0	27.3	18.7	11.0
3S1	23.9	28.6	23.7	26.0	29.1	19.7	10.0
3S2	23.8	28.6	23.5	26.0	29.2	19.7	10.0
3S3		28.3	23.7	26.0	29.2	19.7	10.0
2B1	29.8	36.7	25.6	34.5	35.1	27.1	13.0
2B2	30.0	36.6	25.6	34.5	35.5	27.1	12.8
2B3		36.2	25.5	34.3	35.8	27.1	13.0
2S1	30.3	37.0	25.7	35.2	36.2	27.2	13.0
2S2	30.5	37.0	25.7	35.2	36.1	27.2	13.0
2S3		37.0	25.8	35.2	36.1	27.2	13.0
1B1	30.8	37.1	26.0	35.3	37.0	27.2	12.4
1B2	30.9	37.1	26.0	35.3	37.0	27.2	12.4
1B3		37.1	26.0	35.3	37.0	27.2	12.4
1S1	30.7	37.1	26.0	35.3	37.0	27.2	12.4
1S2	30.8	37.1	26.0	35.3	37.0	27.2	12.4
1S3		37.1	26.0	35.3	37.0	27.2	12.4

\* The letter B following the site number identifies the sample as a bottom sample and the letter S identifies a surface sample.

Table 2. Samples positive for Naegleria fowleri and non-pathogenic Naegleria species from Clinton Lake, Clinton, Illinois, 1990.

Sites	Sampling Dates						
	06/07/90	07/05/90	07/18/90	08/01/90	09/07/90	10/03/90	10/30/90
14B1			+				
14B2							
14B3			+				
14S1							
14S2							
14S3							
13B1							
13B2							
13B3			+				
13S1							
13S2							
13S3							
12B1	+						
12B2			+				
12B3							
12S1							
12S2							
12S3							
10B1							
10B2				+			
10B3							
10S1							
10S2							
10S3							
8B1							
8B2				+			
8B3							
8S1							
8S2							
8S3							
6B1							
6B2							
6B3							
6S1							
6S2							
6S3							

Table 2. (Continued)

Sites	Sampling Dates						
	06/07/90	07/05/90	07/18/90	08/01/90	09/07/90	10/03/90	10/30/90
4B1	+	+	+				+
4B2	X	+		+	+		
4B3		X	+				
4S1	+	+		X	X		+
4S2	X	X					
4S3		+					+
3B1		+	+				+
3B2			+				
3B3			+	+			
3S1							
3S2							
3S3							
2B1		+		+	+		
2B2	X	+	+				+
2B3		X					+
2S1		X					
2S2		+	+	X	X		+
2S3		+					+
1B1	+	+		X			+
1B2	+	+			+		+
1B3		+	+				+
1S1		X		X	X		
1S2		+					+
1S3		+					+

- no samples collected

X positive for Naegleria foweleri

+ positive for non-pathogenic Naegleria species

Table 3. Daily and weekly mean water temperatures (°F) at the Mascoutin State Park beach at Clinton Lake, Clinton, Illinois, 1990.

Date	Means		Date	Means		Date	Means	
	Daily	Weekly		Daily	Weekly		Daily	Weekly
05/01/90	67.1		06/18/90	82.3		08/05/90	84.5	82.9
05/02/90	68.9		06/19/90	84.1		08/06/90	82.2	
05/03/90	66.0		06/20/90	79.1		08/07/90	82.4	
05/04/90	63.4		06/21/90	81.8		08/08/90	83.1	
05/05/90	63.2		06/22/90	80.2		08/09/90	83.2	
05/06/90	68.1	66.1	06/23/90	77.4		08/10/90	82.7	
05/07/90	68.0		06/24/90	79.6	80.6	08/11/90	84.2	
05/08/90	67.9		06/25/90	80.2		08/12/90	82.8	83.0
05/09/90	67.0		06/26/90	82.0		08/13/90	81.4	
05/10/90	63.6		06/27/90	85.6		08/14/90	83.5	
05/11/90	64.9		06/28/90	84.9		08/15/90	82.8	
05/12/90	63.5		06/29/90	82.3		08/16/90	83.3	
05/13/90	62.3	65.3	06/30/90	82.3		08/17/90	83.7	
05/14/90	62.5		07/01/90	83.2	83.0	08/18/90	85.0	
05/15/90	62.8		07/02/90	83.6		08/19/90	87.2	83.9
05/16/90	63.3		07/03/90	82.2		08/20/90	86.2	
05/17/90	63.3		07/04/90	83.7		08/21/90	84.4	
05/18/90	64.2		07/05/90	87.1		08/22/90	83.4	
05/19/90	64.7		07/06/90	84.6		08/23/90	84.0	
05/20/90	64.9	63.7	07/07/90	84.2		08/24/90	84.2	
05/21/90	63.7		07/08/90	84.6	84.3	08/25/90	83.7	
05/22/90	66.2		07/09/90	85.8		08/26/90	84.8	84.4
05/23/90	67.7		07/10/90	86.8		08/27/90	87.0	
05/24/90	67.5		07/11/90	84.3		08/28/90	87.0	
05/25/90	67.8		07/12/90	80.2		08/29/90	87.6	
05/26/90	69.0		07/13/90	77.3		08/30/90	86.0	
05/27/90	69.8	67.4	07/14/90	75.8		08/31/90	95.7	
05/28/90	69.0		07/15/90	74.8	80.7	09/01/90	84.8	
05/29/90	71.4		07/16/90	75.5		09/02/90	85.6	86.4
05/30/90	71.1		07/17/90	76.2		09/03/90	85.4	
05/31/90	72.5		07/18/90	78.4		09/04/90	86.7	
06/01/90	71.6		07/19/90	79.5		09/05/90	87.3	
06/02/90	71.1		07/20/90	80.3		09/06/90	88.6	
06/03/90	70.3	71.0	07/21/90	79.8		09/07/90	86.7	
06/04/90	72.4		07/22/90	77.5	78.2	09/08/90	85.1	
06/05/90	71.4		07/23/90	77.6		09/09/90	85.0	86.4
06/06/90	72.1		07/24/90	79.9		09/10/90	84.8	
06/07/90	73.8		07/25/90	79.8		09/11/90	84.1	
06/08/90	75.0		07/26/90	78.8		09/12/90	84.6	
06/09/90	77.4		07/27/90	78.9		09/13/90	84.1	
06/10/90	79.8	74.6	07/28/90	79.7		09/14/90	81.3	
06/11/90	78.5		07/29/90	80.8	79.4	09/15/90	80.9	
06/12/90	76.7		07/30/90	81.8		09/16/90	79.3	82.7
06/13/90	78.1		07/31/90	82.0		09/17/90	78.2	
06/14/90	80.3		08/01/90	83.0		09/18/90	77.9	
06/15/90	82.5		08/02/90	83.1		09/19/90	75.8	
06/16/90	82.8		08/03/90	82.0		09/20/90	77.5	
06/17/90	83.5	80.4	08/04/90	83.5		09/21/90	76.0	

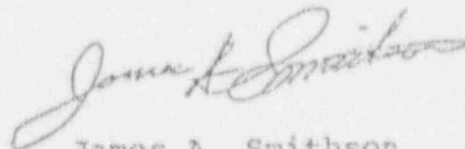
Y-98195  
November 22, 1991

Manager-Licensing & Safety  
V-920

November 18, 1991

RE: Clinton Lake Sedimentation Survey

Attached are the results of the Clinton Lake sedimentation survey for 1991. Annual surveys are required by the CPS Environmental Report - Operating License Stage (Section 6.1.6.8.7). This survey was conducted by EAD-Biological Programs personnel according to Procedure EAD-FB8-1, Rev. 1 on October 31, 1991. Attachments include survey forms and sonar graph recordings conducted along north-south transects adjacent to the Parnell Road Bridge and the DeWitt County Highway 15 Bridge. Two replicate recordings were determined at each bridge.



James A. Smithson  
Supervisor  
Biological Programs

JAS/gw

Attachments

cc: Supervisor, Civil Structural, V-92 **88**  
FBL File, T-33

Clinton Lake Sedimentation Survey Form

Location Dewitt Bridge Date 10-31-91

Height of Elevation Pin Above Water 39 1/2 in.

Depth of Fathometer Transducer Below Surface 8 in.

Fathometer Settings

Elapsed Time of 1st Recording 50 sec.

Paper speed max.

Elapsed Time of 2nd Recording 60 sec.

Sensitivity 6

Suppression off

Gray Line 6

Surface Clutter Suppression 2

Pulse Width 50

Lower Depth Limit 30 ft.

Comments:

100% cloud cover  
wind NW 15-20 mph  
1:10 pm

Persons Conducting Survey:

Ronald J. Williams  
M. Stephen Kelle

Clinton Lake Sedimentation Survey Form

Location Parnell Bridge Date 10-31-91

Height of Elevation Pin Above Water 37 in.

Depth of Fathometer Transducer Below Surface 8 in.

Fathometer Settings Elapsed Time of 1st Recording 1.25 sec.

Paper speed max Elapsed Time of 2nd Recording 1.05 sec.

Sensitivity 6

Suppression OFF

Gray Line 6

Surface Clutter Suppression 2

Pulse Width 50

Lower Depth Limit 10 ft.

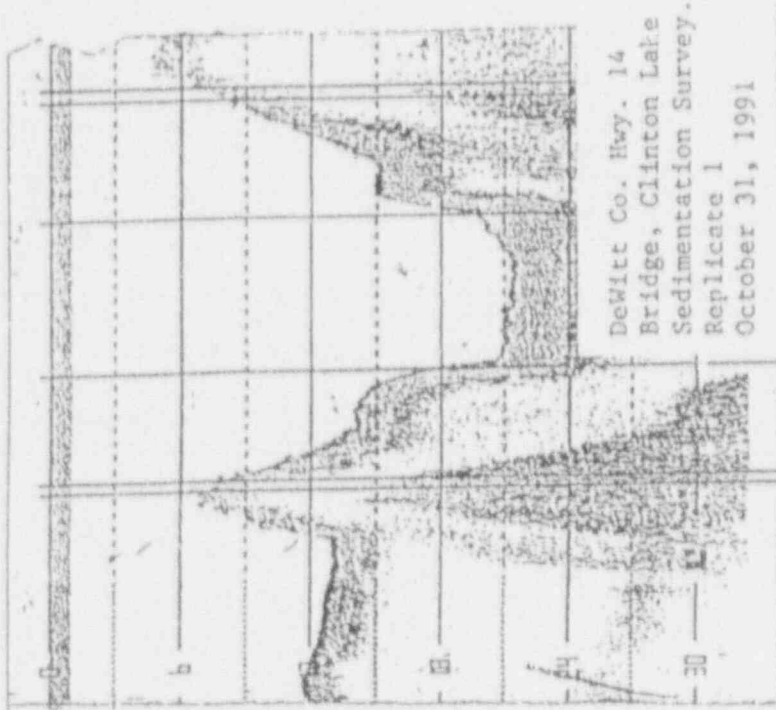
Comments:

100% Cloud cover  
Wind NW 15-20 mph  
12:30 pm

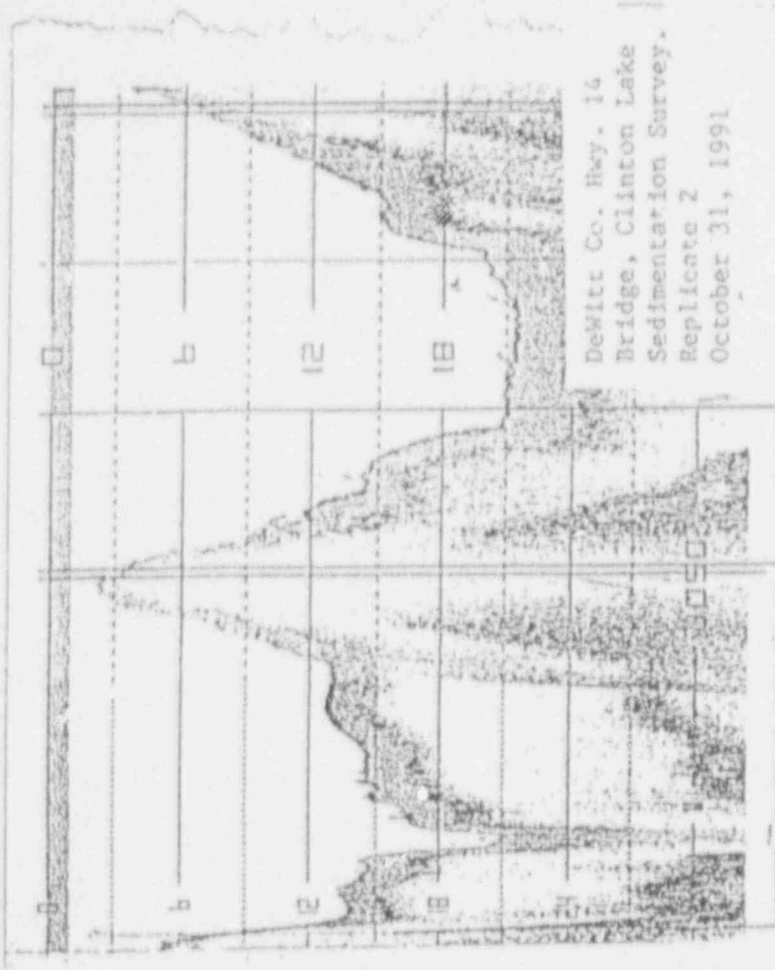
Persons Conducting Survey:

Ronald S. Williams  
M. Stephen Palto

North I II South

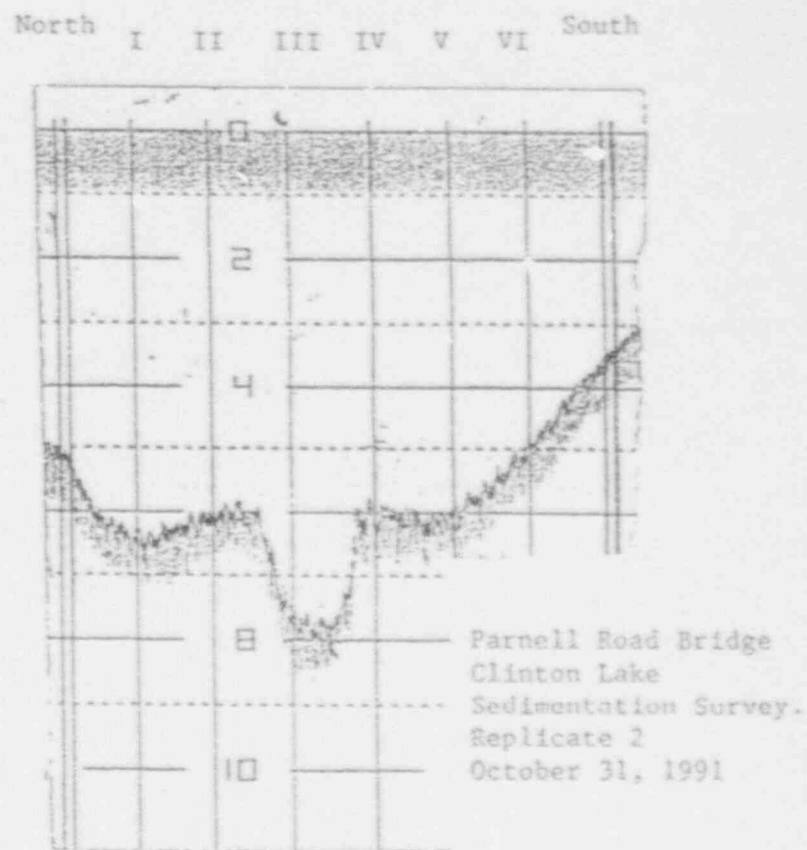
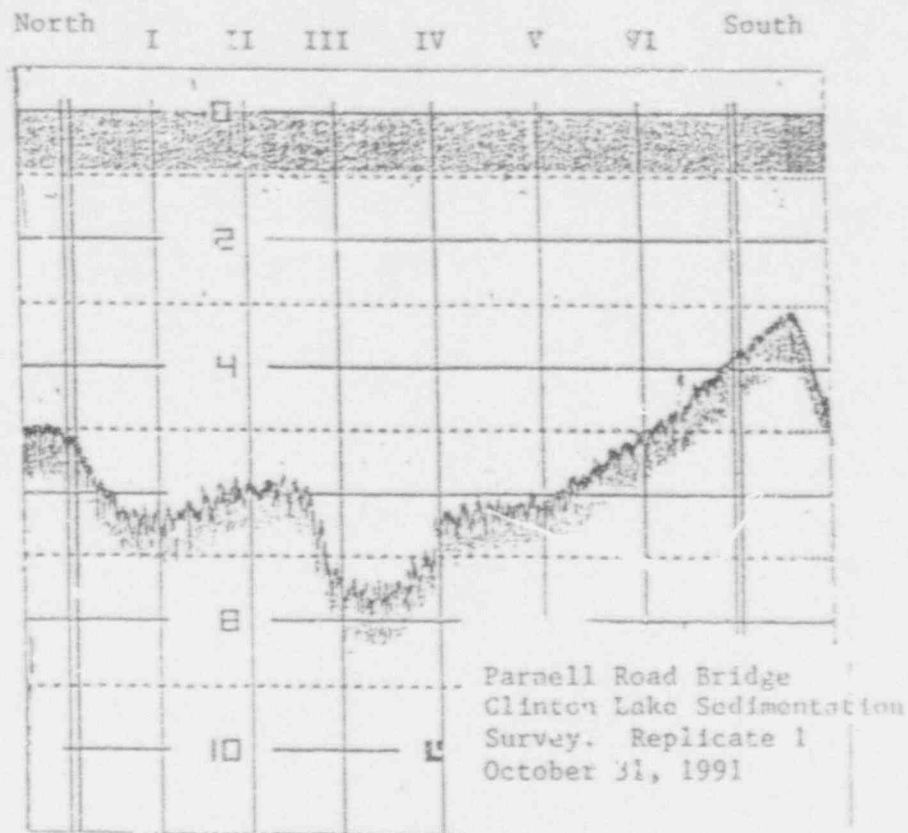


North I II South



Clinton Lake Sedimentation Survey at DeWitt County Highway 14 Bridge on October 31, 1991.  
Double vertical lines indicate north and south shorelines under the bridge.  
Single vertical lines indicate position of supporting piers. Piers are labeled by Roman numerals.  
Depth range was set at 0-30 feet.





Clinton Lake Sedimentation Survey at Parnell Road Bridge on October 31, 1991.  
 Double vertical lines indicate positions at north and south shorelines under the bridge.  
 Single vertical lines indicate piling locations; pilings are labeled at top of graphs  
 by Roman numerals.  
 Depth range was set at 0-10 feet.

# ILLINOIS POWER

500 SOUTH 27TH STREET, P.O. BOX 511, DECATUR, ILLINOIS 62525-1805

Attachment 4

C-601006  
L-61-91(01-16)LP  
8F.130

January 16, 1991

Mr. John Betker  
U. S. Army Corps of Engineers  
Rock Island District  
Clock Tower Building  
P. O. Box 2004  
Rock Island, Illinois 61204-2004

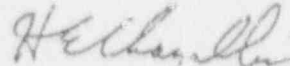
Dear Mr. Betker:

Clinton Power Station  
Ultimate Heat Sink Dredging Project

In accordance with notification requirements contained in Department of the Army Permit No. 18837Z, this letter serves to advise the Corps of Engineers that Illinois Power Company has completed dredging operations at its Clinton Power Station Ultimate Heat Sink Reservoir as of January 7, 1991.

Approximately 70 % of the 352,000 cubic yards of dredge spoils were hydraulically removed and disposed of in a newly constructed 160-acre dredge disposal facility located in sections 27 and 34 of Township 20 North , Range 3 East of the DeWitt, Ill. Quadrangle, DeWitt County, Illinois. Dredge spoils were deposited in the disposal facility and excess water discharged to Clinton Lake via a check dammed drainage ditch.

If you have any questions or comments concerning this project, please direct them to me at: 217/424-6592.



H. E. Charblin

BETKER.HEC:cls

**ILLINOIS POWER**

500 SOUTH 27TH STREET, P.O. BOX 511, DECATUR, ILLINOIS 62525-1805

O-601022  
L60-91(02-25)-LP  
8F.120

February 25, 1991

Mr. Bruce Yurdin  
Division of Water Pollution Control  
Watershed Unit, Permits Section  
Illinois Environmental Protection Agency  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Dear Mr. Yurdin:

Clinton Power Station  
Ultimate Heat Sink Dredge Disposal Impoundment  
Submittal of Abandonment Plan

In accordance with Special Condition No. 5 of the operating permit (No. 1990-EA-0172) which authorized the use of the facility at the Clinton Power Station to dispose of dredge material hydraulically removed from the Ultimate Heat Sink area of Clinton Lake, Illinois Power (IP) would like to conclude this project by submitting an abandonment plan which outlines the future use of this facility.

The dredging operation began on October 4, 1990 and was concluded on December 19, 1990. Approximately 265,000 cubic yards of dredge material was removed from the lake. Further dredging is not expected to occur again for another eight to ten years.

In the interim period between dredging operations, the Biological Programs Section of Illinois Power's Environmental Affairs Department would like to manage the impoundment as a fish and waterfowl production facility. As a fish rearing facility, IP will ensure that it does not rear more than the 20,000 pounds of aquatic animals (native fish species) per year. The water level will likely need to be drawn down periodically during the course of the operation, but it is not expected that the impoundment will discharge more than 30 days per year. Any other discharge which might occur would be related to precipitation causing an overflow. If makeup water is pumped to the impoundment no direct discharge from the pond will result from this action. Accordingly, IP does not feel it is necessary to obtain an NPDES permit for the purpose of raising fish as required by Section 503.101 of Subtitle E: Agriculture Related Pollution.

In addition, the Biological Programs Section intends to operate this fish rearing impoundment as it does any other on the Clinton Power Station property. No artificial feed will be used. If fish management practices dictate manual draining of the pond, samples would be collected to ensure water quality standards are not exceeded. At no time would a manual discharge be expected to result in a compromise of the environmental integrity of Clinton Lake since the dredge material has had time to precipitate and the water has clarified.

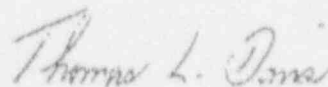
The waterfowl enhancement project will consist of bird nesting areas on the berms which will be protected from predators. The potential also exists for including the Illinois Department of Conservation in this project as management personnel.

IP requests that the Illinois EPA review our proposed abandonment plan at the earliest opportunity. It is our intent to make arrangements to stock the impoundment with fish as soon as possible. Also, IP would like to cease the monitoring of the effluent discharge since the dredging operation was completed in mid-December.

Should any questions arise pertaining to the contents of this letter, please refer them to Roger Cruse at telephone number 217/424-7376 at your convenience.

Sincerely,

ILLINOIS POWER COMPANY



Thomas L. Davis  
Supervisor - Water Pollution  
Control

YURDIN.TLD:cls