2021 Hazardous Waste Scanning Project

File Form Naming Convention.

(*File_Type*).(*Program*).(*Site_Number*).(*YYYY-MM-DD*).(*File_Name*).pdf

Note 1: Each category is separated by a period "."
Note 2: Each word within category is separated by an underscore "_"

Specific File Naming Convention Label:

report. HW. 932017. 1990-09-20. Closure_Certification_Vol 2 .pdf

9320

HAR-1990-4-66-2

CLOSURE CERTIFICATION REPORT FOR HAZARDOUS WASTE PILES AT HARRISON RADIATOR DIVISION OF GMC, LOCKPORT FACILITY

VOLUME II

Prepared for: Harrison Radiator
Division of GMC
Lockport, New York

Prepared by: Snyder Engineering
Grand Island, New York

Date: September 20, 1990

Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

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APPENDIX A (cont.) - PROFESSIONAL ENGINEER INSPECTION REPORTS

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE January 7, 1988 **TIME** 3:45 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 10 degrees F. Southwest wind of approximately 20 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from January 7, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

Haul road was in good condition. Some water and ice present in areas from which sludge was previously removed. However, due to problems with pump freezing water was not being removed from these areas. Work was still proceeding on concrete piers in "A" area for plastics transfer line.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE January 11, 1988 TIME 12:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 10 degrees F. South wind of approximately 25 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from January 11, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed.

Contractors are continuing to build piers in "A" area for plastics transfer line. Three piers have been completed and forms are in place for construction of two more.

All haul roads were in good condition. Water and ice was present in "A", "C" and "D" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison waste-water treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE January 22, 1988 **TIME** 11:30 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 25 degrees F. Southwest wind of approximately 15 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from January 22, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas.

Haul roads were in good shape. Water and ice were present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE January 27, 1988 TIME 2:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 20 degrees F. Southwest wind of approximately 10 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from January 27, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. This sludge was frozen on the surface. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

All haul roads were in good condition. No spill was noted outside sludge storage areas. Water and ice were present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel removed water from these areas and transported it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility. The concrete piers for the plastics transfer line in "A" Area were completed.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE February 4, 1988 **TIME** 4:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 20 degrees F. North wind of approximately 15 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering
86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from February 4, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas. Haul roads were in good shape.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E. Snyder Engineering

OTHERS PRESENT Lloyd Murray SLC Consultants/ Constructors

DATE February 9, 1988 TIME 2:30 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Snowy with a temperature of approximately 25 degrees F. North wind of approximately 20 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

yder Engineering

56 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from February 9, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

All haul roads were in good condition. No sludge spillage was noted outside sludge storage areas. Water and ice were present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel removed water from these areas and transported it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility. The steel pipe racks for the plastics transfer line in "A" Area were being installed.

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE February 18, 1988 TIME 3:15 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 35 degrees F. Southwest wind of approximately 10 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

,nyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from February 18, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. Haul roads were muddy due to recent precipitation.

Contractors are continuing to put up steel in "A" area for plastics transfer line. Water was present in "A", "C" and "D" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E. ~~Snyder Engineering~~ OTHERS PRESENT Lloyd Murray ~~SLC Consultants~~/ Constructors

DATE February 26, 1988 TIME 12:30 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with a temperature of approximately 25 degrees F. Southwest wind of approximately 15 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

ιyder Engineering

,6 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from February 26, 1987 Harrison Radiator Site Inspection

Caterpillar 215BLC and Caterpillar 953 front end loader were present in "C" Area. Caterpillar 215BLC was being utilized to load sludge on Jack Gray trailers which were lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. Drainage ditch around perimeter of "C" Area was also in good condition.

A Caterpillar 215BLC was being utilized to dig a hole for a pier for pipe bridge to cross road in "A" Area. Haul roads were in good condition. Some water and ice was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E. ~~Snyder Engineering~~ OTHERS PRESENT Lloyd Murray ~~SLC Consultants~~/ Constructors

DATE March 4, 1988 TIME 4:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 35 degrees F. North wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from March 4, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas. Haul roads were in good shape.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed. No water was noted in drainage ditch around perimeter of "C" Area.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE March 9, 1988

TIME 11:30 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with rain. Temperature of approximately 40 degrees F. South wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from March 9, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

Haul roads were muddy due to recent precipitation. No sludge spillage was noted outside sludge storage areas. Some water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE March 17, 1988 TIME 1:30 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 40 degrees F. West wind of approximately 20 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from March 17, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. Drainage ditch around "C" Area was in good condition. No sludge spillage was noted outside the containment areas. A Caterpillar 953 front end loader was also present in "C" Area.

Haul roads were dry and in good shape. Some water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility. Work was being performed on completing pipe bridge across "A" Area.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE March 24, 1988 TIME 3:05 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with precipitation and temperature of approximately 45 degrees F. Southeast wind of approximately 15 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from March 24, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. Haul roads were muddy due to recent precipitation.

Some water was present in "A", "C" and "D" Areas in areas from which sludge was previously removed. Harrison personnel did not pump water today from storage areas.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE March 28, 1988 TIME 1:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 40 degrees F. Northwest wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from March 28, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

All haul roads were muddy due to recent precipitation. No sludge spillage was noted outside sludge storage areas. Some water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel removed water from these areas and transported it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE April 7, 1988 TIME 4:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with a temperature of approximately 45 degrees F. North wind of approximately 20 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from April 7, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas. Haul roads were in good shape.

A small amount of water was present in "A", "C" and "D" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE April 12, 1988 TIME 3:45 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 50 degrees F. North wind of approximately 5 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from April 12, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area.

All haul roads were in good condition. No sludge spillage was noted outside sludge storage areas. Some water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel removed water from these areas and transported it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility. The pipe for the plastics transfer line was being installed on the pipe rack across "A" Area.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E. Snyder Engineering OTHERS PRESENT Lloyd Murray ~~SLC Consultants~~/ Constructors

DATE April 22, 1988 TIME 9:15 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 40 degrees F. North wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from April 22, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. A portion of "C" Area was scraped and levelled in areas from which sludge was previously removed. Haul roads were in good shape.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
~~Constructors~~

DATE April 27, 1988 TIME 1:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 45 degrees F. Southeast wind of approximately 25 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from April 27, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. Haul roads were in good shape.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constuctors

DATE May 4, 1988

TIME 1:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 60 degrees F. Southwest wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from May 4, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas. Haul roads were in good shape.

A small amount of water was present in "A"and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE May 14, 1988 TIME 4:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 60 degrees F. Northeast wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from May 14, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. No sludge spillage was noted outside sludge storage areas. Haul roads were in good shape.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE May 20, 1988

TIME 10:45 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with a temperature of approximately 65 degrees F. North wind of approximately 10 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from May 20, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was present in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying and working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside sludge storage areas. A Caterpillar 953 front end loader was also present in "C" Area for peeling back cover and scraping up area from which sludge was previously removed. Haul roads were slightly muddy due to recent precipitation.

A small amount of water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors

DATE May 25, 1988

TIME 11:30 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Cloudy with a temperature of approximately 50 degrees F. North wind of approximately 15 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from May 25, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. The sludge removal working face was in good condition. Cover over "C" Area was in good condition. No sludge spillage was noted outside the containment areas. A Caterpillar 953 front end loader was also present in "C" Area.

Haul roads were muddy due to recent precipitation. Some water was present in "A" and "C" Areas in areas from which sludge was previously removed. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility. Areas "A" and "D" have been staked (100 ft. x 100 ft. grid coordinates) for sampling.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors
Don Owens
Earth Investigations,
Ltd.

DATE June 2, 1988

TIME 9:30 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: Samples taken by Earth Investigations, Ltd. Refer to attachment.

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

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Observations from June 2, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized to load sludge on Jack Gray trailers. Each trailer was lined with plastic prior to loading. Caterpillar 953 front end loader was being utilized to pile dirt up for drying. The sludge working face was in good condition. The site's haul roads were in good condition.

All areas from which sludge was previously removed were relatively dry. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment plant.

Soil samples were being taken in areas from which sludge was previously removed by Earth Investigations, Ltd. under the direction of Mr. Don Owens. Sampling was performed in conformance with EPA SW 846, 3rd Edition. Samples were taken at a depth of 18 inches below the decontaminated surface, or at bedrock if encountered before 18 inches of soil was removed. Samples were taken per approved gridwork patterns. Samples were taken at each designated location for both metals and organics analyses. All augers were steam cleaned between samples and plastic gloves were worn by personnel when taking samples. A field log was maintained, sample chain of custody procedures followed, and soil logs prepared for each sample hole. Each sample hole was backfilled with soil which were removed during the sample taking process.

A field blank was prepared using distilled water. In preparing this blank the distilled water was run through the auger into a sample bottle. A similar blank was taken every eight samples. Based upon my field observations of the sampling work it appeared that this sampling program was conducted in conformance with the approved plans.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E. Snyder Engineering

OTHERS PRESENT Lloyd Murray SLC Consultants/ Constructors

DATE June 8, 1988 TIME 9:30 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 60 degrees F. North wind of approximately 15 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None required.

FOLLOW-UP REQUIRED: Continue pumping water from the sludge storage areas.

SIGNATURE: Richard R. Snyder

Snyder Engineering

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Observations from June 8, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying prior to shipment. No sludge spillage was noted outside the containment areas. A Caterpillar 953 front end loader was also present in "C" Area.

Small amounts of water were present in areas from which sludge was previously removed. Haul roads were in good shape. Harrison personnel were removing water from these areas and transporting it to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors
Mike Herlan
W.T.S., Inc.

DATE June 14, 1988 TIME 1:15 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 80 degrees F. Southwest wind of approximately 15 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None

FOLLOW-UP REQUIRED: None

SIGNATURE: Richard R. Snyder

Snyder Engineering

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Observations from June 14, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading Jack Gray trailers. Each trailer was lined with plastic prior to loading. Some sludge was piled up for drying. No sludge spillage was noted outside the containment areas. Contaminated soil was being loaded on trucks and shipped to SCA. A Caterpillar 953 front end loader was also present in "C" Area.

All areas were dry. Haul roads were in good shape.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Lloyd Murray
SLC Consultants/
Constructors
Mike Herlan
W.T.S., Inc.

DATE June 23, 1988 TIME 11:00 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 70 degrees F. North wind of approximately 20 miles per hour.

OBSERVATIONS:

Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None

FOLLOW-UP REQUIRED: None

SIGNATURE: Richard R. Snyder

Snyder Engineering

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Observations from June 23, 1988 Harrison Radiator Site Inspection

Caterpillar 215BLC was being utilized in Storage Area "C" for loading contaminated soils for shipment to SCA. Each truck was lined with plastic. A Caterpillar 953 front end loader was also present in "C" Area. The last load of sludge from the Harrison site's sludge storage areas was shipped to New Jersey Zinc on June 21, 1988.

All areas from which sludge was removed are dry. Haul roads were in good shape.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder, P.E.
Snyder Engineering

OTHERS PRESENT Don Owens
Earth Investigations, Ltd.

DATE June 29, 1988

TIME 3:00 P.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

Sunny with a temperature of approximately 65 degrees F. West wind of approximately 20 miles per hour.

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: Samples taken by Earth Investigations, Ltd. Refer to attachment.

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: None

FOLLOW-UP REQUIRED: None

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from June 29, 1988 Harrison Radiator Site Inspection

A visual inspection was made of all areas from which sludge was removed. During this inspection no problems were noted. Earth Investigations, Ltd. took last 12 samples from "C" Area for completion of Phase 1 sampling.

Caterpillar 215BLC and Caterpillar 953 were located in "C" Area. Both pieces of equipment were power washed and the wash water was collected in a sump. The wash water was removed by Harrison personel and transported to a receiver at the West Lockport facility. This water was then transferred from the receiver to the Harrison wastewater treatment facility.

A list of activities which took place is as follows:

(a) June 21, 1988 - Last sludge taken from sludge storage areas to New Jersey Zinc
(b) June 27, 1988 - Last contaminated soil taken to SCA
(c) June 28, 1988 - Samples taken of haul roads by Earth Investigations, Ltd. (Note: Per Don Owens no signs of contamination were observed)
(d) June 29, 1988 - Samples (12 locations) were taken in "C" Area by Don Owens of Earth Investigations, Ltd.

Richard R. Snyder

Richard R. Snyder, P.E.

ENGINEERS INSPECTION REPORT

ENGINEER Richard R. Snyder (Snyder Engineering) OTHERS PRESENT Mark Rathke Harrison Radiator

DATE September 27, 1989 TIME 10:00 A.M.

WEATHER: TEMPERATURE PRECIPITATION WIND DIRECTION

OBSERVATIONS: Refer to attachment.

SAMPLES COLLECTED: None

PROBLEMS: None

CORRECTIVE ACTIONS IMPLEMENTED: Additional contaminated soil removed and shipped to Chemical Waste Management in Model City, New York.

FOLLOW-UP REQUIRED: Harrison will review analytical results from samples taken after completion of additional soil removal.

SIGNATURE: Richard R. Snyder

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

Observations from September 27, 1989 Harrison Radiator Site Inspection

An inspection was made on September 27, 1989 of Harrison Radiator's former wastewater treatment plant sludge storage areas. A Phase I soil sampling and analytical program was conducted after completion of sludge removal. Based upon the results from this program a few areas were identified which required additional soil removal.

Contaminated soil was removed from these areas by SLC Consultants/Constructors from 9/11/89 through 9/19/89. Soils were removed using a 215 BLC Caterpillar excavator. Material was loaded into Buffalo Fuel Corporation trucks (lined with plastic) and hauled to Chemical Waste Management in Model City, New York.

A summary of the amounts of soil removed from the various areas is as follows:

Area D (Area approximately 20 ft. x 30 ft. in Northeast corner)	- 123.6 tons

Area C haul road (Northeast section approximately 100 ft. long x 12 ft. wide x 2 ft. deep at northeast end) - 298.02 tons

Area E (Soil pile near railroad tracks) - 679.5 tons

Area C (Area approximately 60 ft. x 80 ft. x 2.5 ft. deep) - 459.49 tons

Each of these areas was resampled in the locations where additional soil was removed.

Richard R. Snyder

Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

June 21, 1990

Subject: June 21, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the June 21, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed to date in implementation of regrading requirements for former sludge storage areas,
2) Inspect work completed to date on removal of stone haul roads and installation of stone roads leading to the site's ground water monitoring wells,
3) Review status of site work scheduled for implementation during week of June 25, 1990, and
4) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 750 bulldozer,
3) John Deere 550G bulldozer, and
4) Two tandem dump trucks.

Work Completed: 1) Fall 1989 removed approximately thirty truck loads of material from a contaminated area (determined by soil analysis) located to the West of Area "C". This area has been

almost completely filled in with on site fill soil.
2) Gravel roads have been constructed from Plant Road No. 7 in both North and South directions to locations of ground water monitoring wells located in fields West of "C" Area.
3) Excavated stone haul road on North side of "C" Area and utilized some of the stone in constructing roads to locations of ground water monitoring wells; excess stone was stockpiled East of "C" Area.
4) Built 2 stone roads to ground water monitoring wells located East of "C" Area.
5) Clean fill dirt from various areas of Harrison plant is being stockpiled South of former "E" Area for future use.
6) A small section of "A" Area stone haul road was previously removed since it was shown during sampling and analysis to be slightly contaminated.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Push in berms in "C" Area and place additional fill material as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Need to re-grade field in location of Area "E" (previously removed).
3) "A" Area stone haul road will be removed and small gravel road constructed along railroad tracks East of "A" Area and to ground water monitoring wells located in "A" Area.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

June 28, 1990

Subject: June 28, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the June 28, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from June 21, 1990 through June 28, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of July 2, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 750 bulldozer,
3) John Deere 850B bulldozer,
4) John Deere 550G bulldozer, and
5) Two tandem dump trucks.

Work Completed from 6/21/90 through 6/28/90: 1) Filled in "D" sludge storage area by pushing in berms; excess dirt from berms will be moved to "C" Area and utilized as fill material.

2) Completed rough grading of former "D" sludge storage area.
3) Continued to work on "C" Area as berms were pushed in and rough grading initiated. Some additional fill material will be required to bring the western portion of "C" Area up to the required elevations.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in "C" Area as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Re-grade field in location of Area "E" (previously removed).
3) Complete rough grading in "C" Area.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

July 5, 1990

Subject: July 5, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the July 5, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from June 28, 1990 through July 5, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of July 9, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 750 bulldozer,
3) John Deere 850B bulldozer,
4) John Deere 550G bulldozer, and
5) Two tandem dump trucks.

Work Completed from 6/29/90 through 7/5/90: 1) Continued to work on "C" Area as fill material was placed in the western portion of "C" Area up to the required elevations and rough

grading was completed.
2) Started pushing in berms in "A" Area.
3) Met with Gary Catlin of SLC to discuss soil testing program.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Push in "A" Area berms and provide fill as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Modify Area "A" access road.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

July 12, 1990

Subject: July 12, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the July 12, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from July 5, 1990 through July 12, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of July 16, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 744E front end loader,
3) John Deere 850B bulldozer,
4) Rubber tired Terrex off road loader,
5) Two tandem dump trucks.

Work Completed from 7/5/90 through 7/12/90: 1) Moved excess dirt from "D" Area to "A" Area where it was utilized as fill,
2) Continued work on leveling "A" Area berms and started

grading NOrth end of "A" Area,
3) Dug up truck turn around at north end of "A" Area and stockpiled stone,
4) Rubber tired Terex (loaded) off road hauler (approximate weight 50 tons over 6 tires) utilized to compact soils,
5) Soil testing was completed by Glynn Geotechnical Engineering to evaluate compaction of site soils,
6) Low permeability nature of soil placed in former waste sludge storage areas was demonstrated by rain water lying on top of compacted soils in "A" Area,
7) Stripped vegetation from top soil and fill piles south of "B" Area.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in various areas as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

July 20, 1990

Subject: July 20, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the July 20, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from July 12, 1990 through July 20, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of July 23, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 744E front end loader,
3) Rubber tired Terex off road hauler, and
4) Two tandem dump trucks.

Work Completed from 7/13/90 through 7/20/90: 1) Moved additional fill material into former "A" and "C" sludge storage areas using tandem trucks,
2) Moved soil capable of supporting vegetative growth into

former sludge areas on North side of Plant 7 road.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in "A" Area as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Complete grading in "C" Area.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

July 25, 1990

Subject: July 25, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the July 25, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from July 21, 1990 through July 25, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of July 30, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Caterpillar 215BLC tracked excavator,
2) John Deere 744E front end loader,
3) Rubber tired Terex off road hauler, and
4) Two tandem dump trucks.

Work Completed from 7/21/90 through 7/25/90: 1) Moved additional fill material into former "A" and "C" sludge storage areas using tandem trucks, and
2) Worked on grading "C" Area.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in "A" Area as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Complete grading in "C" Area.
3) Complete final grading in "E" Area.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

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August 3, 1990

Subject: August 3, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the August 3, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from July 25, 1990 through August 3, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of August 6, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) D68E Komatsu bulldozer,
2) Rubber tired Terex off road hauler

Work Completed from 7/25/90 through 8/3/90: 1) Completed revisions to gravel road in "A" Area.
2) Completed grading of former "C" sludge storage area.
3) Leveled and graded topsoil in location of former "E" sludge storage area.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in "A" Area as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

August 6, 1990

Subject: August 6, 1990 Soil Sampling at Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the August 6, 1990 soil sampling at the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Obtain Shelby tube samples for determinations of soil permeabilities at various locations in the former wastewater treatment plant sludge storage areas.
2) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Personnel Present: Al Hopkins - Glynn Geotechnical
Richard Snyder - Snyder Engineering

Sampling: Took Shelby tube samples for permeability determinations as follows:

1) "C" Area - 3 samples
2) "D" Area - 1 sample
3) "A" Area - 4 samples

Each tube was sealed with wax prior to shipment to testing laboratory.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

August 10, 1990

Subject: August 10, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the August 10, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from August 3, 1990 through August 10, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation during week of August 13, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) Komatsu D68E bulldozer,
2) Five tandem dump trucks hauling soil capable of supporting vegetative growth.

Work Completed from 8/3/90 through 8/10/90: 1) Moved soil capable of supporting vegetative cover into former "A" sludge storage area using tandem trucks,
2) Graded Area "A" both prior to and after application of soil capable of supporting vegetative cover.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional fill material in "A" Area as required to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Disc and hydroseed all former sludge storage areas.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

August 21, 1990

Subject: August 21, 1990 Soil Sampling at Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the August 21, 1990 soil sampling at the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Obtain Shelby tube samples for determinations of soil permeabilities at various locations in the former wastewater treatment plant sludge storage areas.
2) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Personnel Present: Lloyd Murray - SLC Consultants/Constructors
Mark Seider - Glynn Geotechnical
Richard Snyder - Snyder Engineering

Sampling: Took Shelby tube samples for permeability determinations as follows:

1) "C" Area - 4 samples
2) "D" Area - 2 samples
3) "A" Area - 6 samples

In most locations dug down approximately 6 inches prior to obtaining Shelby tube samples. Each tube was sealed with wax prior to shipment to testing laboratory.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

August 28, 1990

Subject: August 28, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the August 28, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from August 10, 1990 through August 28, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation after August 28, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) John Deere 744E front end loader,
2) Komatsu D68E bulldozer.

Work Completed from 8/10/90 through 8/28/90: 1) Moved additional soil capable of supporting vegetative growth into former "A" and "C" sludge storage areas using tandem trucks,
2) Filled in low spots and regraded to minimize potential for standing water.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future. These work segments include the following:

1) Place additional soil capable of supporting vegetative cover in "A" Area as required and regrade to achieve desired grades. The entire area will be covered with soil capable of supporting vegetative growth.
2) Disc and hydroseed all former sludge storage areas.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

September 12, 1990

Subject: September 12, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the September 12, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from August 28, 1990 through September 12, 1990 in implementation of regrading requirements for former sludge storage areas,
2) Review status of site work scheduled for implementation after September 12, 1990, and
3) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the approved Closure Plan for the Hazardous Waste Piles dated September 17, 1987.

Equipment on Site: On site heavy construction equipment was supplied by SLC Consultants/Constructors, Inc. and consisted of the following:

1) John Deere 744E front end loader,
2) TW-35 Ford tractor equipped with disc and cullipacker.

Work Completed from 8/28/90 through 9/12/90: 1) Moved additional soil capable of supporting vegetative growth into former "A" and "C" sludge storage areas using tandem trucks,
2) Filled in low spots and regraded to minimize potential for standing water,
3) Disced all areas and picked up rocks,
4) Cullipacked approximately half of "A" Area, "D" Area, and

"E" Area,
5) Hydroseeded "D" Area, "E" Area, and approximately 1/2 of "A" Area.

Future Work: The following is a brief summary of the work segments which will be initiated during the near future to complete the approved closure plan's requirements. These work segments include the following:

1) Cullipack "C" Area and remainder of "A" Area,
2) Hydroseed "C" Area and remainder of "A" Area.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

Snyder Engineering

86 Countryside Lane • Grand Island, New York 14072 • 716-773-5661

September 15, 1990

Subject: September 15, 1990 Inspection of Former Wastewater Treatment Plant Sludge Storage Areas at Harrison Radiator in Lockport, New York

Objective: The objectives of the September 15, 1990 site inspection of the former wastewater treatment plant sludge storage areas at Harrison Radiator in Lockport, New York were as follows:

1) Inspect work completed from September 12, 1990 through September 15, 1990 in completing closure of former sludge storage areas in compliance with the NYSDEC approved interim status closure plan dated September 17, 1987 and
2) Provide compliance with inspection requirements by an independent professional engineer as stipulated in the interim status closure plan dated September 17, 1987.

Equipment on Site: No heavy construction equipment was present at the site.

Work Completed from 9/12/90 through 9/15/90: 1) Cullipacked "C" Area and remainder of "A" Area,
2) Hydroseeded "C" Area and remainder of "A" Area.

Future Work: No additional work should be required other than groundwater monitoring at the site. Closure has been completed per the NYSDEC approved interim status closure plan dated September 17, 1987.

Richard R. Snyder

Prepared by: Richard R. Snyder, P.E.

APPENDIX B - APRIL 9, 1990 CORRESPONDENCE FROM P.R. COUNTERMAN (NYSDEC) TO M. RATHKE (HARRISON RADIATOR)

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

APR 9 1990

Mr. Mark W. Rathke
Senior Environmental Engineer
Harrison Radiator Div. of GMC
200 Upper Mountain Road
Lockport, NY 14094

RE: Closure Plan for Waste Piles
Phase II Soil Sampling and Analytical Reports dated August 25, 1989 and December 4, 1989

Dear Mr. Rathke:

The New York State Department of Environmental Conservation (NYSDEC) has completed the review of the Phase II Soil Sampling and Analytical Reports dated August 25, 1989 and December 4, 1989. The Phase II analysis was required to demonstrate that no Appendix IX hazardous constituents remain in the soils beneath the waste piles in excess of EPA recommended health based criteria.

Based on the review of the Analytical Reports submitted, the NYSDEC concludes that Harrison Radiator has removed all waste, waste residues and contaminated soils from the waste pile area. The remaining soils do not contain hazardous constituents at concentrations above background or above health based criteria related to direct contact (ingestion or inhalation). Therefore, remaining soils do not pose a present or future threat to human health or the environment. Harrison Radiator may backfill the waste pile area and grade the surface to the natural topography as per the closure plan. The Department's evaluation of the soil sampling events and a summary of the groundwater monitoring status is enclosed.

However, at the present time the Department does not have sufficient groundwater monitoring data to make a determination regarding the impact, if any, that the waste pile operation has had on the groundwater resource. The quarterly groundwater sampling program to be implemented in June 1990, should provide the NYSDEC with adequate data. This data (usually three years) will be reviewed and a decision will be made at a later date as to whether or not post-closure care will be needed for the waste piles. Uncontaminated groundwater (i.e., no threat to human health or the environment) is a requirement for "clean closure".

If you have any questions, you may contact Mr. Ravi Pilar, of my staff, at 518/457-9253.

Sincerely,

Paul R. Counterman, P.E.
Director
Bureau of Hazardous Waste Facility Management
Division of Hazardous Substances Regulation

Enclosure

cc: w/o enc. - A. Bellina, EPA Region II
L. Violanti, Region 9
R. Pilar, DEC Albany

bcc: w/o enc. - L. Whitbeck

Waste Pile Closure Evaluation

HARRISON RADIATOR DIVISION OF GMC

LOCKPORT

A. Introduction

Harrison Radiator Division (HRD) of General Motors Corporation in Lockport had five (5) waste piles which stored wastewater treatment plant sludge. An interim status closure plan[1] dated September 17, 1987 was approved by the New York State Department of Environmental Conservation (NYSDEC) on March 7, 1988. The approved closure plan required HRD to remove the waste, waste residues and contaminated soils and conduct soil testing in 2 phases. The objective of HRD is to close the waste piles in a manner which satisfies Section 373-3.12(g)(1) which states:

> At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 371.1(d)(4) applies of this Title;

This regulatory standard is commonly referred to as the "clean closure" demonstration. Such a demonstration, if successful, means that HRD will not have to provide post closure care because there would be no waste residues remaining at or above levels of human health or environmental concern following completion of the closure activities.

B. Phase I Soil Sampling

Following excavation and off-site disposal of the waste pile sludges, Phase I testing for selected indicator parameters was done in May and June 1988. The prescreening Phase I sampling and analysis was done to determine if there were any "hot spots" (contaminated areas) which may need further excavation prior to Phase II (Appendix IX) soil analysis. Each waste pile area was divided into 10,000 sq. ft. major grid, and sampling locations were randomly selected for Phase I analysis. The samples were analyzed for selected finger print parameters (based on the waste analysis of the waste stored) and the analytical data was evaluated against the health based criteria recommended by the USEPA. A total of eighty-three (83) samples were analyzed and the Phase I analytical report[2] was submitted to NYSDEC for review and approval on September 22, 1988. The Department's review concluded that the Phase I analytical data did not show elevated levels of indicator parameters in the subsoils, as compared to the health based criteria. Therefore, HRD was informed to proceed with the next step, Phase II sampling.

C. Phase II Soil Sampling

Phase II analysis was required to demonstrate to the Department that no Appendix IX hazardous constituents remain in the soils beneath the waste piles. This is to assure that the contaminants left in the soils, if any, will not adversely impact any environmental media including groundwater, surface water or the atmosphere in excess of EPA recommended limits. Therefore, HRD took soil samples every 40,000 sq. ft. and analyzed them for Appendix IX hazardous constituents. The analytical report of this Phase II sampling event was submitted to the Department through a letter dated August 25, 1989[3]. The facility took soil samples, as per the report, during November 15 and 18, 1988 at approximately 18" below the surface. Twenty-one (21) samples were taken from the five waste pile areas, and one each from two (2) soil piles, which were created in 1988 as a result of construction of a railroad spur. Three (3) background samples were also taken. All samples were analyzed by Free-Col Laboratories in Pennsylvania which is a commercial laboratory certified by the NYS Department of Health and under the Environmental Laboratory Approval Program (ELAP).

The Department had asked HRD in the past to characterize the sludge stored in the waste piles. Certain parameters were identified in the waste in significant quantities and these predominant constituents are considered to be "indicator parameters". Therefore, the analytical data submitted was evaluated for these indicator parameters. All the other organics were below detection limits.

EPA guidance recommends comparison of the concentration present in the soil to the health based criteria developed by the EPA Office of Solid Waste, Characterization and Assessment Division, Technical Assessment Branch to determine if contamination still remains.

The indicator parameters for HRD's sludge and the respective EPA recommended health based criteria are as follows:

Chromium (Trivalent)	8000 ppm (Ref. 4)
Chromium (Hexavalent)	400 ppm (Ref.4)
Copper	Not available (22 ppm to 62 ppm range background - Ref.3)
Lead	500 ppm (Ref. 5)
Zinc	20,000 ppm (Ref. 6)
Tetrachloroethylene	14 ppm (Ref. 7)
Trichloroethylene	64 ppm (Ref. 7)
Vinyl Chloride	0.30 ppm (Ref. 7)
Carbon Disulfide	8000 ppm (Ref. 4)

The health based criteria for copper has not been established by the USEPA and therefore, the background levels for copper will be used for comparison. The background levels are obtained from the background soil samples analyzed under Phase II analysis.

The Phase II sampling highest and lowest concentration of each indicator parameter for each waste pile (waste pile A, B, C, D and E) is tabulated in the Appendix. The last table (Soil Piles 1 and 2) indicates the results of samples

taken from the soil piles, the material excavated from the waste pile "E" area during the railroad spur construction at the HRD facility.

Seven (7) samples analyzed indicated test results not consistent with previous analyses (see page 5 of HRD letter dated August 25, 1989 - Ref. 3). Therefore, resampling was done for these locations (Phase II A - Ref.3) and analyzed for indicator metals only.

Based on Phase II A analytical results, Soil Pile No. 2 was considered contaminated (chromium, lead and zinc) and therefore removed as hazardous waste. Soil pile 1 was not removed because analysis showed that levels of metals were either within background or slightly above background. Organics were below detection limits. In all cases, constituent levels were substantially below levels of public health or environmental concern.

Analysis of Phase II A sampled from "C" area confirmed the relatively high inconsistent readings from Phase II and therefore, required resampling (Phase II B-Ref. 8) after further excavation. Four samples were taken on September 5, 1989 and analyzed for indicator metals. The analytical data from 2 samples indicated elevated levels of copper, lead and zinc. HRD excavated more soil (approximately 3 ft. deep) in that specific area of Waste Pile "C" and repeated the sampling and analysis in Phase II C.

The Phase II C analytical results (HRD report dated December 4, 1989 - Ref. 8) of the retested soils in "C" area are summarized as follows:

Sample Number	Chromium	Copper	Lead	Zinc
1	19.0	22.0	17.0	70.2
2	16.8	23.8	20.8	80.2
3	20.0	20.0	23.0	74.4
4	12.9	19.8	24.8	85.3
Criteria	400	22 - 62	500	20,000

All the above concentrations are below the criteria.

D. Roadcut Samples

Roadways that were constructed to provide access to the waste piles along the east side of "A" storage area and north side of "c" area were also sampled (5 samples each) and analyzed for indicator parameters.

Samples taken at 6", 18" and 30" below the top of roadway. One background sample from a location which did not come into contact with the sludge was also taken.

All organics tested were below detection limits for all samples. Copper and Lead were found to be above the criteria levels at 2 sampling locations (4C and 5A - attachment 12 spreadsheet of August 25, 1989 report - Ref. 3). Therefore, additional sampling was done at those two locations. A total of 12 samples were taken at 6" and 18" depth and analyzed for metals. These samples indicated area "A" to be (See attachment 16 of August 25, 1989 report) within the action levels, but 3 samples from area "C" showed higher levels of Lead

and Copper. This particular area was further excavated (100' x 12' wide and 24" -28" deep) and 3 additional samples (Phase II A) were taken and analyzed for metals. The analysis of these samples showed no remaining contamination.

E. Soil Impact and Exposure through soil media

Harrison Radiator has removed all waste, waste residues and contaminated soils from the waste pile areas. Remaining soils do not contain hazardous constituents at concentrations above background, or above health based criteria related to direct contact (i.e. ingestion or inhalation). Therefore, remaining soils do not pose a present or future threat to human health or the environment.

F. Air Impact and Exposure through air media

HRD has removed all the waste which contained volatile organics and disposed them off-site. Therefore, there are no volatile organics left in the waste pile area for possible exposure through air media.

G. Surface Water Impact and Exposure through surface water media

Since all the contaminated soils have been removed and HRD will grade the areas to the natural topography, the possibility of exposure through surface water has been eliminated.

H. Groundwater Impact and Exposure through Groundwater Media

HRD installed wells at four different times during the operation and closure of the waste piles as part of the program to develop an adequate detection monitoring system. As more information was gathered, some wells were found to be inadequate because of location or construction and were replaced. An adequate monitoring system was finished in February of 1990 and will be sampled this spring (1990) to gather data to aid in the development of a site-specific parameter list. A long term sampling program will be implemented in June 1990. Sampling in June, September, December and March will hopefully avoid the worst winter months and allow HRD to collect representative quarterly samples. An annual report will be submitted each March 1 evaluating the data, and the raw data will be submitted quarterly to the NYSDEC.

Data from the older wells indicates the levels of metals in the groundwater have been gradually decreasing over the last few years. Groundwater from the facility flows towards south or southeast, and there are no downgradient receptors to be impacted. There is no exposure to the groundwater at the facility, because there are no springs, and the depth to groundwater from the surface ranges from about 2.5 to 10 feet.

Once a sufficient amount of data (usually three years) has been obtained from the new monitoring system, the information will be reviewed and a decision will be made as to whether or not post-closure care will be needed.

References

1. Harrison Radiator Division of GMC. Closure and Post-closure plan, September 17, 1987.

2. Phase I - Pre-screen soil Analysis results; Letter from Mark Rathke to NYSDEC dated September 22, 1988.

3. Phase II - Appendix IX and Wastepile Roadway Soil Analysis Results; Letter from Mark Rathke to NYSDEC dated August 25, 1989.

4. Section 8 of the RCRA Facility Investigation Guidance, May 1989 Interim Final; Table 8-7

5. OSWER Directive #9355.4-02 dated September 7, 1989 from USEPA (Attached).

6. Health Effect Assessment Summary Table A, (3rd Quarter FY 1989) by EPA.

7. Health Effect Assessment Summary Table B, (3rd Quarter FY 1989) by EPA.

8. Phase II Appendix B and C Soil Analysis Results; Letter from Mark Rathke to NYSDEC dated December 4, 1989.

APPENDIX

Initial
Phase II Sampling
WASTE PILE A (All units in ppm)

Constituent	Criteria	Highest	Lowest	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	172 (Total)*	12.3 (Total)	<5 - 27
Copper	-	27.9	16.9	22 - 62
Lead	500	10.8	7.2	3.5 - 43
Zinc	20,000	80.8	66.6	78 - 232
Tetrachloroethylene	14	<.005		
Trichloroethylene	64	<.005		
Vinyl Chloride	0.30	<.010		
Carbon Disulfide	8,000	<.025		

* Resampling indicated chromium level within background (i.e. 15ppm).

Initial
Phase II Sampling
WASTE PILE B (All units in ppm)

Constituent	Criteria	Highest	Lowest	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	29.2 (Total)	6.0 (Total)	<5 - 27
Copper	-	19.8	15.9	22 - 62
Lead	500	24.0	3.5	3.5 - 43
Zinc	20,000	193	46.2	78 - 232
Tetrachloroethylene	14	<.005		
Trichloroethylene	64	<.005		
Vinyl Chloride	0.30	<.010		
Carbon Disulfide	8,000	<.025		

Initial
Phase II Sampling
WASTE PILE C (All units in ppm)

Constituent	Criteria	Highest	Lowest	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	50.6 (Total)	10.8 (Total)	<5 - 27
Copper	-	140.0*	14.0	22 - 62
Lead	500	94.0*	4.60	3.5 - 43
Zinc	20,000	2730*	32.2	78 - 232
Tetrachloroethylene	14	<.005		
Trichloroethylene	64	<.005		
Vinyl Chloride	0.30	<.010		
Carbon Disulfide	8,000	<.025		

* These areas with levels significantly above background were excavated and resampled under Phase II A, B and C, to confirm that remaining soil was consistent with background measurements.

Initial
Phase II Sampling
WASTE PILE D (All units in ppm)

Constituent	Criteria	Highest	Lowest	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	24.1 (Total)	21 (Total)	<5 - 27
Copper	-	54.6	13.0	22 - 62
Lead	500	24.5	8.7	3.5 - 43
Zinc	20,000	92.2	71.1	78 - 232
Tetrachloroethylene	14	<.005		
Trichloroethylene	64	<.005		
Vinyl Chloride	0.30	<.010		
Carbon Disulfide	8,000	<.025		

Initial
Phase II Sampling
WASTE PILE E (All units in ppm)

Constituent	Criteria	Highest	Lowest	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	42.1 (Total)	16.7 (Total)	<5 - 27
Copper	-	28.9	17.0	22 - 62
Lead	500	11.60	4.57	3.5 - 43
Zinc	20,000	114	44.9	78 - 232
Tetrachloroethylene	14	<.005		
Trichloroethylene	64	<.005		
Vinyl Chloride	0.30	<.010		
Carbon Disulfide	8,000	<.025		

Initial
Phase II Sampling
SOIL PILE 1 (All units in ppm)

SOIL PILE I

Constituent	Criteria	Analytical Result	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	41.0 (Total)	<5 - 27
Copper	-	28.0	22 - 62
Lead	500	63.7	3.5 - 43
Zinc	20,000	305	78 - 232
Tetrachloroethylene	14	<.005	
Trichloroethylene	64	<.005	
Vinyl Chloride	0.30	<.010	
Carbon Disulfide	8,000	<.025	

SOIL PILE 2 (All units in ppm)

SOIL PILE II (Excavated and Disposed Off-Site)

Constituent	Criteria	Analytical Result	Site Background (Range)
Chromium	400 (Hexavalent) 8000 (Trivalent)	89.8 (Total)	<5 - 27
Copper	-	56.8	22 - 62
Lead	500	140.0	3.5 - 43
Zinc	20,000	725	78 - 232
Tetrachloroethylene	14	<.005	
Trichloroethylene	64	<.005	
Vinyl Chloride	0.30	<.010	
Carbon Disulfide	8,000	<.025	

Enclosure 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 7 89

OSWER Directive #9355.4-02

MEMORANDUM

SUBJECT: Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites.

FROM: Henry L. Longest II, Director
Office of Emergency and Remedial Response

Bruce Diamond, Director
Office of Waste Programs Enforcement

TO: Directors, Waste Management Division, Regions I, II, IV, V, VII and VIII
Director, Emergency and Remedial Response Division, Region II
Directors, Hazardous Waste Management Division, Regions III and VI
Director, Toxic Waste Management Division, Region IX
Director, Hazardous Waste Division, Region X

PURPOSE

The purpose of this directive is to set forth an interim soil cleanup level for total lead, at 500 to 1000 ppm, which the Office of Emergency and Remedial Response and the Office of Waste Programs Enforcement consider protective for direct contact at residential settings. This range is to be used at both Fund-lead and Enforcement-lead CERCLA sites. Further guidance will be developed after the Agency has developed a verified Cancer Potency Factor and/or a Reference Dose for lead.

BACKGROUND

Lead is commonly found at hazardous waste sites and is a contaminant of concern at approximately one-third of the sites on the National Priorities List (NPL). Applicable or relevant and appropriate requirements (ARARs) are available to provide cleanup levels for lead in air and water but not in soil. The current

National Ambient Air Quality Standard for lead is 1.5 ug/m^3. While the existing Maximum Contaminant Level (MCL) for lead is 50 ppb, the Agency has proposed lowering the MCL for lead to 10 ppb at the tap and to 5 ppb at the treatment plant(1). A Maximum Contaminant Level Goal (MCLG) for lead of zero was proposed in 1988(2). At the present time, there are no Agency-verified toxicological values (Reference Dose and Cancer Potency Factor, ie., slope factor), that can be used to perform a risk assessment and to develop protective soil cleanup levels for lead.

Efforts are underway by the Agency to develop a Cancer Potency Factor (CPF) and Reference Dose (RfD), (or similar approach), for lead. Recently, the Science Advisory Board strongly suggested that the Human Health Assessment Group (HHAG) of the Office of Research and Development (ORD) develop a CPF for lead, which was designated by the Agency as a B2 carcinogen in 1988. The HHAG is in the process of selecting studies to derive such a level. The level and documentation package will then be sent to the Agency's Carcinogen Risk Assessment Verification Exercise (CRAVE) workgroup for verification. It is expected that the documentation package will be sent to CRAVE by the end of 1989. The Office of Emergency and Remedial Response, the Office of Waste Programs Enforcement and other Agency programs are working with ORD in conjunction with the Office of Air Quality Planning and Standards (OAQPS) to develop an RfD, (or similar approach), for lead. The Office of Research and Development and OAQPS will develop a level to protect the most sensitive populations, namely young children and pregnant women, and submit a documentation package to the Reference Dose workgroup for verification. It is anticipated that the documentation package will be available for review by the fall of 1989.

IMPLEMENTATION

The following guidance is to be implemented for remedial actions until further guidance can be developed based on an Agency verified Cancer Potency Factor and/or Reference Dose for lead.

Guidance

This guidance adopts the recommendation contained in the 1985 Centers for Disease Control (CDC) statement on childhood lead poisoning(3) and is to be followed when the current or predicted land use is residential. The CDC recommendation states that "...lead in soil and dust appears to be responsible for blood levels in children increasing above background levels when the concentration in the soil or dust exceeds 500 to 1000 ppm". Site-specific conditions may warrant the use of soil cleanup levels below the 500 ppm level or somewhat above the 1000 ppm level. The administrative record should include background documents on the toxicology of lead and information related to site-specific conditions.

The range of 500 to 1000 ppm refers to levels for total lead, as measured by protocols developed by the Superfund Contract Laboratory Program. Issues have been raised concerning the role that the bioavailability of lead in various chemical forms and particle sizes should play in assessing the health risks posed by exposure to lead in soil. At this time, the Agency has not developed a position regarding the bioavailability issue and believes that additional information is needed to develop a position. This guidance may be revised as additional information becomes available regarding the bioavailability of lead in soil.

Blood-lead testing should not be used as the sole criterion for evaluating the need for long-term remedial action at sites that do not already have an extensive, long-term blood-lead data base(1).

EFFECTIVE DATE OF THIS GUIDANCE

This interim guidance shall take effect immediately. The guidance does not require that cleanup levels already entered into Records of Decisions, prior to this date, be revised to conform with this guidance.

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[1] In one case, a biokinetic uptake model developed by the Office of Air Quality Planning and Standards was used for a site-specific risk assessment. This approach was reviewed and approved by Headquarters for use at the site, based on the adequacy of data (due to continuing CDC studies conducted over many years). These data included all children's blood-lead levels collected over a period of several years, as well as family socio-economic status, dietary conditions, conditions of homes and extensive environmental lead data, also collected over several years. This amount of data allowed the Agency to use the model without a need for extensive default values. Use of the model thus allowed a more precise calculation of the level of cleanup needed to reduce risk to children based on the amount of contamination from all other sources, and the effect of contamination levels on blood-lead levels of children.

REFERENCES

1. 53 FR 31516, August 18, 1988.
2. 53 FR 31521, August 18, 1988.
3. Preventing Lead Poisoning in Young Children, January 1985, U.S. Department of Health and Human Services, Centers for Disease Control, 99-2230.

APPENDIX C - GLYNN GEOTECHNICAL PERMEABILITY REPORTS

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES
6503 CAMPBELL BLVD. • LOCKPORT, N.Y. 14094 • 716 / 625-6933

LETTER OF TRANSMITTAL

30

TO:
SLC Consultants
6362 Robinson Rd
Lockport NY 14094

DATE: 7-~~17~~-90
ATTENTION: Charlie Evans
SUBJECT: Sludge Pond Remediation
Harrison Radiator
PROJECT NO: 90-0167

WE ARE SENDING ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA _____

☐ SAMPLES ☐ SHOP DRAWINGS ☒ LABORATORY TEST DATA
☐ LITERATURE ☐ ENGINEERING DRAWINGS ☐ REPORT
☐ PLANS ☒ FIELD TEST DATA ☐ _____

RECEIVED
JUL 31 1990
SLC

COPIES	DATE	REV. NO.	DESCRIPTION
1	7-12	90-01	FIELD OBSERVATION REPORT
1	7-12	90-01	I. P. D. T. REPORT
1	7-17	90-01	GRAIN SIZE REPORT
1	7-17	90-01	COMPACTION TEST DATA
1	7-26	—	PERMEABILITY RESULTS

THESE ARE BEING SENT:

☐ FOR YOUR APPROVAL ☐ APPROVED AS SUBMITTED ☐ _____
☒ FOR YOUR USE ☐ APPROVED AS NOTED ☐ _____
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SINCERELY,
Glynn Geotechnical Engineering
Alan R Hyslop

DISTRIBUTION

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FIELD OBSERVATION REPORT

PROJECT NO. 90-0167 REPORT NO. 90-01 PAGE 1 OF 1

PROJECT: HARRISON RADIATOR DAY THURSDAY DATE 7-12-90

SUBJECT: TEST PAD - SLUDGE PONDS TIME 9:30 - 12:00

WEATHER: CLOUDY, 30°F PHOTOS-YES ___ NO X

TEST PAD IN PLACE - A LARGE UNCOMPACTED FILL AREA ABOUT 1' TO NATIVE SOIL 50' x 200' ±

COMPACTION ATTAINED VIA RUBBER TIRED TEREX (LOADED OFF ROAD HAULER (APROX WEIGHT 50 TON OVER 6 TIRES)

SEE I.P.D.T. REPORT 90-01
4 PERM TUBES TAKEN
4 TAKEN TO BACK UP FIRST 4 DUE TO GRAVEL IN CLAY

ITEMS REQUIRING FURTHER ATTENTION:

NONE

PERSONNEL CONTACTED:

NONE

DISTRIBUTION:

SLC -

REPORT BY: Alan R. Staples

6503 CAMPBELL BLVD. • LOCKPORT, N.Y. 14094 • 716/625-6933

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

IN PLACE DENSITY TESTING

Report No. 90-01 Project HARRISON RAD - SLUDGE POND REMEDIATION

Client S.L.C. Project No. 90-0167

Contractor S.L.C. Date 7-12-90

Technician AL HOPKINS Time 9:30 - 12:00

Test No.	Proctor Code	Probe Depth	DD	%M	%PR	Location/ Elevation
1	1	6"	97.6	10.5	79.7	TEST PAD - IN PLACE
2			104.7	11.2	85.4	TEST PAD - IN PLACE
3			107.9	11.0	88.1	2 ROUNDS - PERM 2A TAKEN
4			107.4	10.4	87.7	2 ROUNDS - PERM 2B TAKEN
5			103.2	11.0	84.2	4 ROUNDS - PERM 4A TAKEN
6			106.8	10.5	87.2	4 ROUNDS - PERM 4B TAKEN
7			104.7	10.3	85.5	6 ROUNDS - PERM 6A TAKEN
8			105.5	10.0	86.1	6 ROUNDS - PERM 6B TAKEN
9			111.3	9.3	90.9	8 ROUNDS - PERM 8A TAKEN
10			107.2	11.3	87.5	8 ROUNDS - PERM 8B TAKEN

Remarks:

Proctor Code	Maximum Density (PCF)	Optimum Moisture %	Material Type and Source
1	122.5	11.9	FILL MATERIAL
2			
3			

REPORT BY: Alan R Hopkins

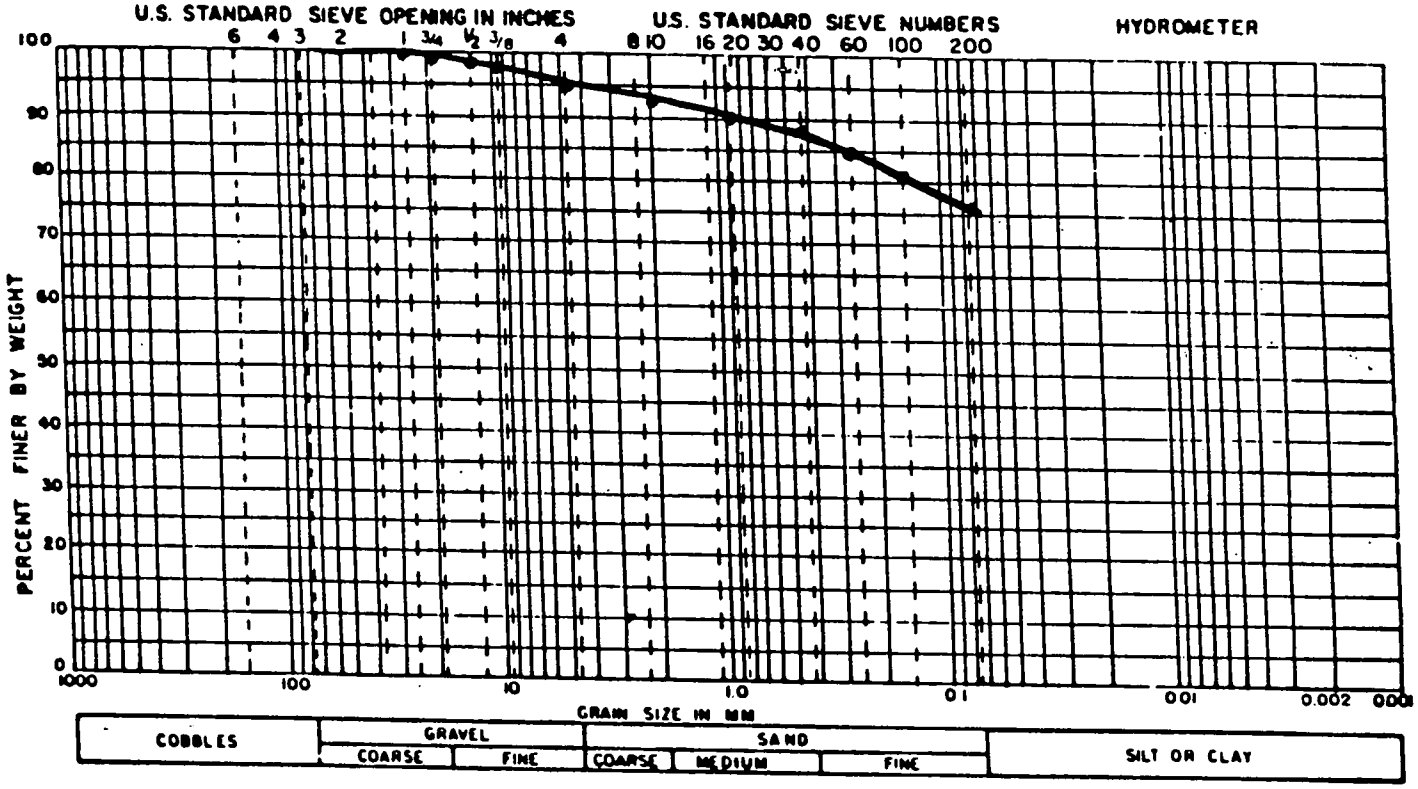
REVIEWED BY:

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

GRAIN SIZE REPORT

PROJECT: Sludge Pond Remediation
LOCATION: Harrison Radiator
CLIENT: SLC
SAMPLE DESCRIPTION: Fill Material
SAMPLE CLASSIFICATION: CL-lean CLAY w/sand

DATE REPORTED: 7-17-90
PROJECT NO.: 90-0167
SAMPLE NO.: 90-01
DATE SAMPLED: 7-12-90
DEPTH: --



SIEVE SIZE	% FINER	REQUIREMENT
1"	100	
3/4"	99	
#4	95	
#20	88	
#100	81	
#200	76	

PROCTOR DATA: 122.5 PCF @ 11.9 %
METHOD: ASTM D 1557-C

PHYSICAL PROPERTIES		
NATURAL MOISTURE 9.5 %		
ATTERBERG LIMITS		
LL	PL	PI
D10	D30	D60
Cu (D60 / D10)		
Cc ($D30^2$ / (D10xD60))		

REPORT BY: Alan R. Hopkins
REVIEWED BY: Mark W. Glynn, P.E.

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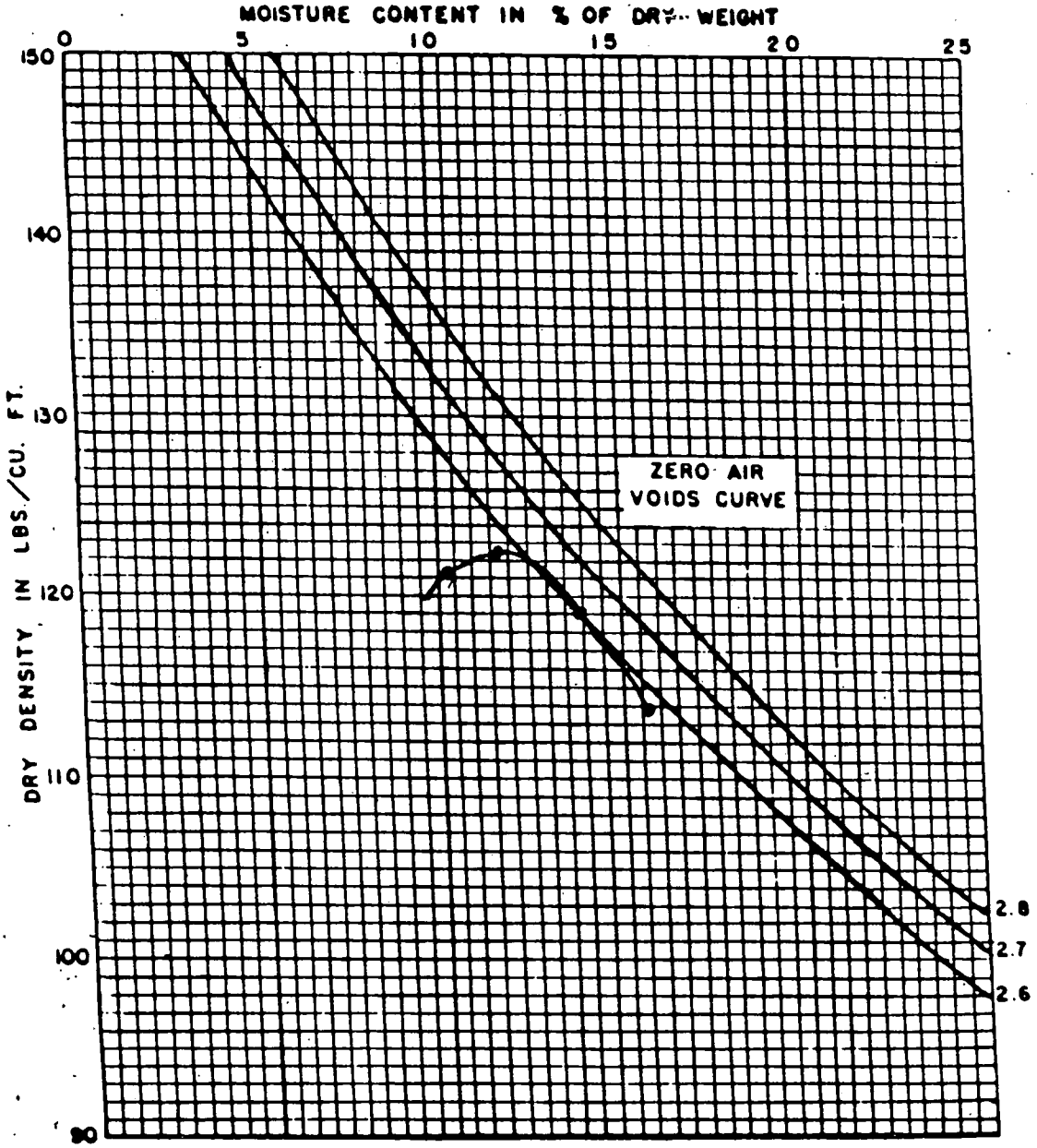
Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

COMPACTION TEST DATA

PROJECT: Sludge Pond Remediation
LOCATION: Harrison Radiator
CLIENT: SLC
SAMPLE DESCRIPTION: Fill Material
SAMPLE CLASSIFICATION: CL-lean CLAY w/ sand

DATE REPORTED: 7-17-90
PROJECT NO.: 90-0167
SAMPLE NO.: 90-01
DATE SAMPLED: 7-12-90
DEPTH: —



MAXIMUM DRY DENSITY 122.5 P.C.F. AT 11.9 % MOISTURE

COMPACTION METHOD A.S.T.M. D 1557-C

REPORT BY

REVIEWED BY

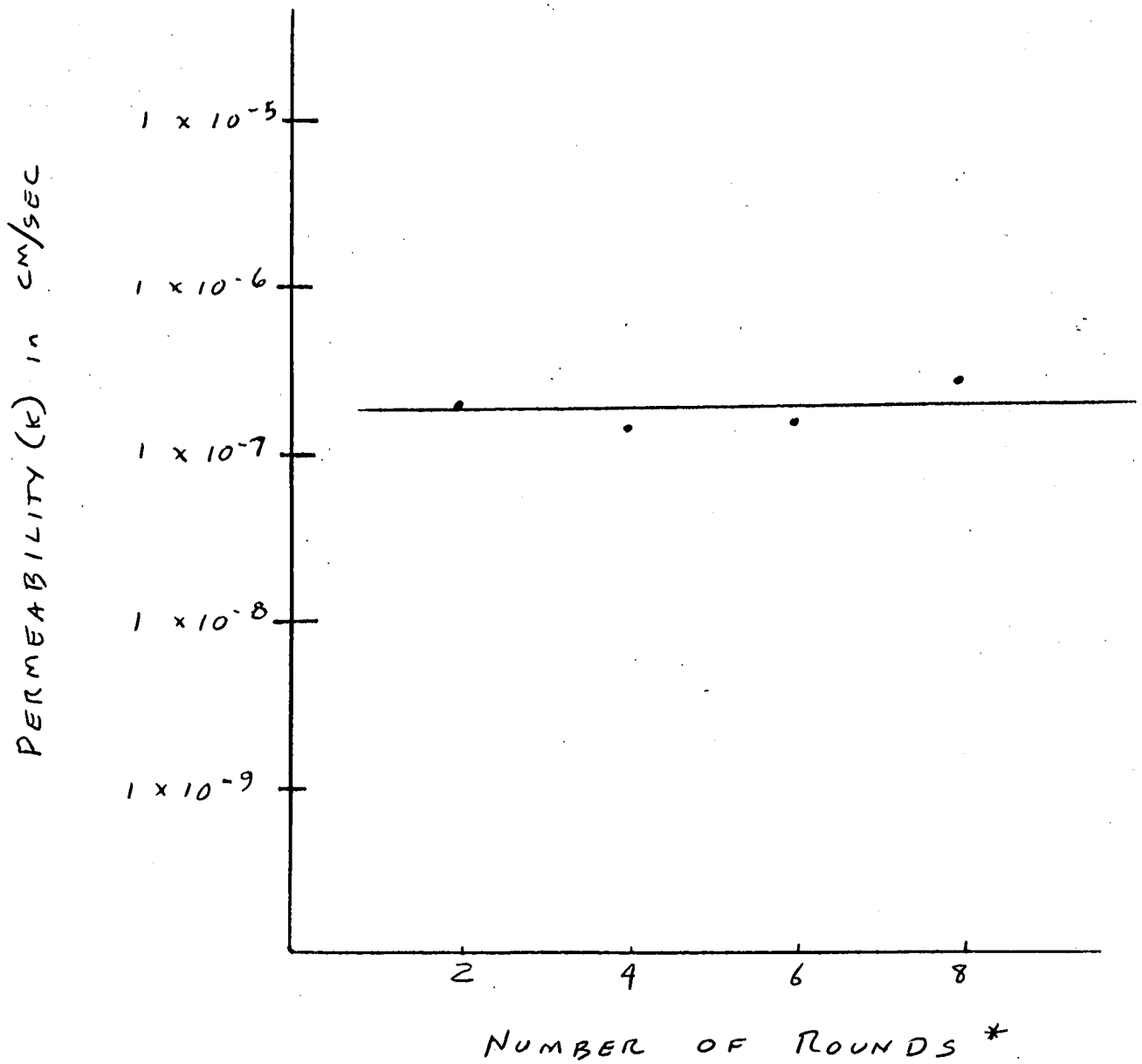
6503 CAMPBELL BLVD. • LOCKPORT, N.Y. 14094 • 716/625-6933

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

TEST PAD

PROJECT HARRISON RADIATOR
SUBJECT TEST PAD ANALYSIS
ENGINEER HOPKINS, S.E.T.
DATE 7-90

PROJECT NO. 90-0167
SHEET 1 OF 1
CHECKED BY
DATE



* A ROUND CONSISTS OF DRIVING OVER AN AREA ONCE.

ENGINEER Al Hopkins
DATE ASSIGNED 7/18/90
DATE DUE

JOB No. 90S867-01
JOB NAME Glynn Geotechnical
Harrison Radiator
Sludge Pond Remediation
Test Pad

DATE REC 7/18/90
DATE CMP 7/26/90
REC BY DG
Page No

SUMMARY OF LABORATORY TEST RESULTS

BORING and SAMPLE No	DEPTH feet	CLASSIFICATION	PERM k cm/sec	NATURAL WATER CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT	ATTERBERG LIMITS PLASTIC LIMIT	UNCON COMPRESS STRESS (tsf)	UNCON COMPRESS STRAIN (%)	UNIT DRY WGT (pcf)	SPECIFIC GRAVITY	GRAIN SIZE SIEVE	GRAIN SIZE HYDR.	OPT MOIST	CONSOLID	TRIAXIAL UU	TRIAXIAL $\overline{CIU}$	TRIAXIAL CELL PRESSURE (psi)	TRIAXIAL BACK PRESSURE (psi)
			Initial						Initial									
2A			3.1×10^{-7}	15.3					91.1									
4A			1.6×10^{-7}	11.4					112.9									
6A			2.0×10^{-7}	12.1					104.8									
8A			4.6×10^{-7}	10.6					118.9									

* See Test Curves V TEST COMP and CHECKED ● TEST IN PROGRESS

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	07-20-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-01
Sample Number	:	2 A	Tested By	:	MB
Description	:	CLAY			

Cell Number : 9 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	2.66	Final Height (in)	:	2.66
Initial Diameter (in)	:	2.89	Final Diameter (in)	:	2.83
Initial Wet Weight (g)	:	481.20	Final Wet Weight (g)	:	515.60
Wet Density (pcf)	:	104.97	Wet Density (pcf)	:	117.29
Moisture Content %	:	15.26	Moisture Content %	:	23.43
Dry Density (pcf)	:	91.07	Dry Density (pcf)	:	95.02

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	6.40
Length, L	(in)	:	2.66
Area, A	(sqin)	:	6.29
Head, h	(psi)	:	8.00
Time, t	(min)	:	95
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 3.09E-07 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	07-22-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-01
Sample Number	:	4 A	Tested By	:	MB
Description	:	CLAY			

Cell Number : 7 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	2.70	Final Height (in)	:	2.70
Initial Diameter (in)	:	2.84	Final Diameter (in)	:	2.86
Initial Wet Weight (g)	:	507.40	Final Wet Weight (g)	:	545.70
Wet Density (pcf)	:	112.91	Wet Density (pcf)	:	119.74
Moisture Content %	:	11.37	Moisture Content %	:	19.73
Dry Density (pcf)	:	101.39	Dry Density (pcf)	:	100.01

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	8.40
Length, L	(in)	:	2.70
Area, A	(sqin)	:	6.42
Head, h	(psi)	:	8.00
Time, t	(min)	:	240
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 1.60E-07 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	07-22-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-01
Sample Number	:	6 A	Tested By	:	MB
Description	:	CLAY			

Cell Number : 18 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	2.45	Final Height (in)	:	2.26
Initial Diameter (in)	:	2.84	Final Diameter (in)	:	2.86
Initial Wet Weight (g)	:	427.20	Final Wet Weight (g)	:	460.40
Wet Density (pcf)	:	104.77	Wet Density (pcf)	:	120.70
Moisture Content %	:	12.13	Moisture Content %	:	20.97
Dry Density (pcf)	:	93.43	Dry Density (pcf)	:	99.77

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	20.00
Length, L	(in)	:	2.26
Area, A	(sqin)	:	6.42
Head, h	(psi)	:	8.00
Time, t	(min)	:	380
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 2.01E-07 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	07-22-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-01
Sample Number	:	8 A	Tested By	:	MB
Description	:	CLAY			

Cell Number : 12 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	3.25	Final Height (in)	:	3.17
Initial Diameter (in)	:	2.84	Final Diameter (in)	:	2.89
Initial Wet Weight (g)	:	643.30	Final Wet Weight (g)	:	690.00
Wet Density (pcf)	:	118.93	Wet Density (pcf)	:	126.30
Moisture Content %	:	10.63	Moisture Content %	:	18.61
Dry Density (pcf)	:	107.50	Dry Density (pcf)	:	106.48

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	10.00
Length, L	(in)	:	3.17
Area, A	(sqin)	:	6.56
Head, h	(psi)	:	8.00
Time, t	(min)	:	115
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 4.56E-07 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

Glynn Geotechnical Engineering
GEOTECHNICAL AND CIVIL ENGINEERING SERVICES

FIELD OBSERVATION REPORT

PROJECT NO. 90-0167 REPORT NO. 90-02 PAGE 1 OF 1

PROJECT: HARRISON RADIATOR DAY MONDAY DATE 6-6-90

SUBJECT: SLUDGE POND REMEDIATION TIME 10:00-12:45

WEATHER: OVERCAST 60°F PHOTOS-YES ___ NO X

MET WITH MR DICK SNYDER.
8 PERM TUBES WERE TAKEN PER THE ATTACHED DRAWING.

ITEMS REQUIRING FURTHER ATTENTION:

PERSONNEL CONTACTED:

DISTRIBUTION:

REPORT BY: Allan R Glynn

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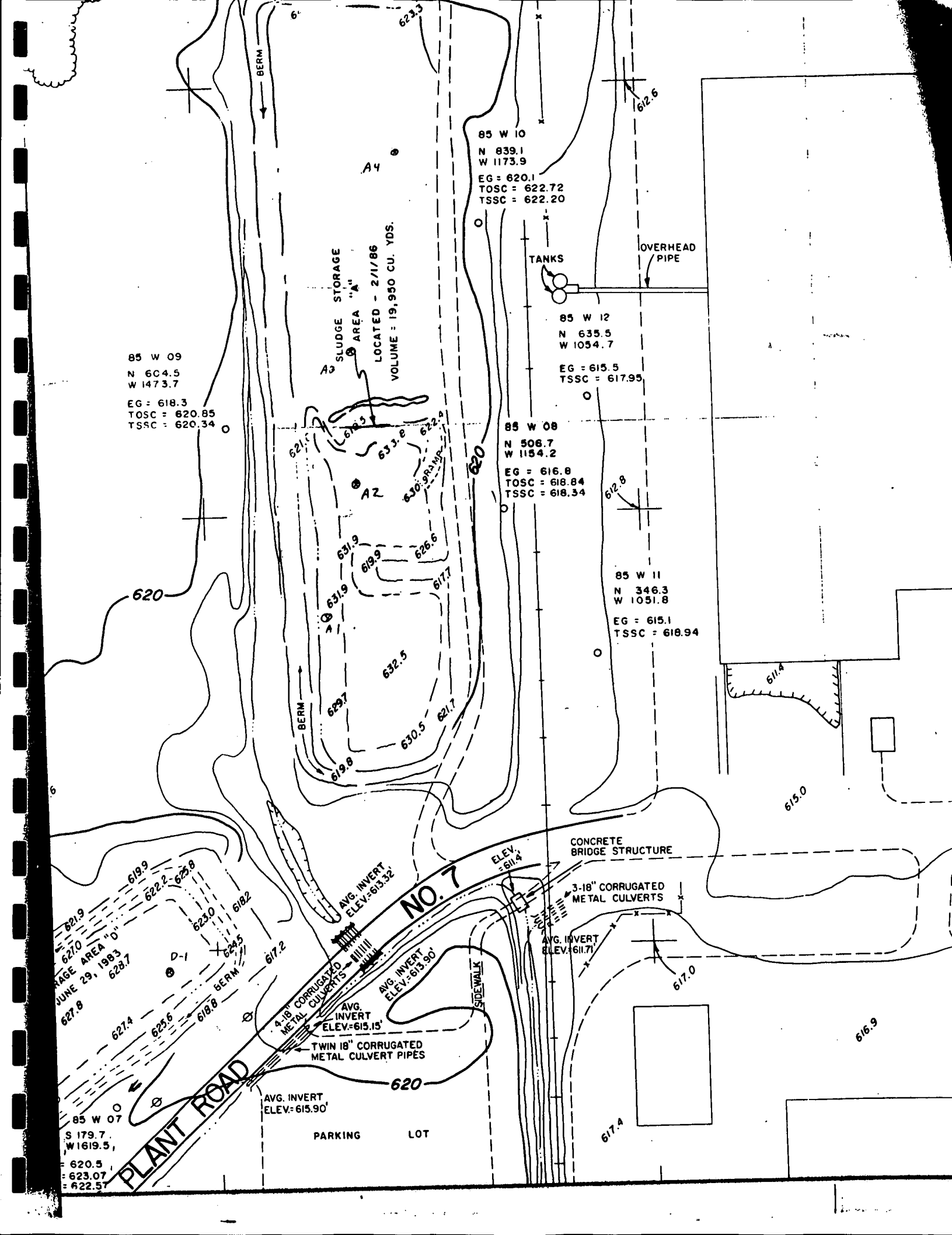
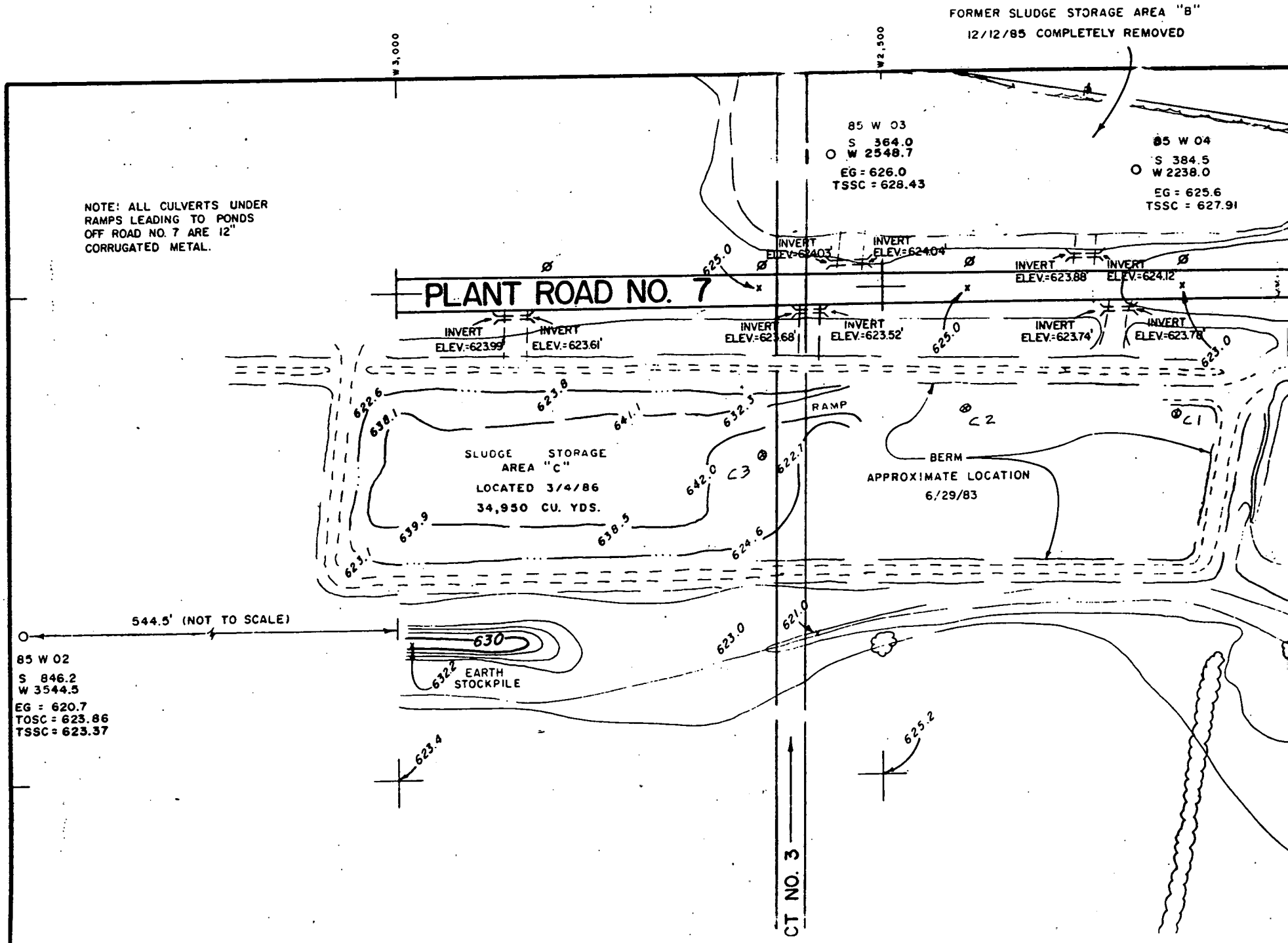
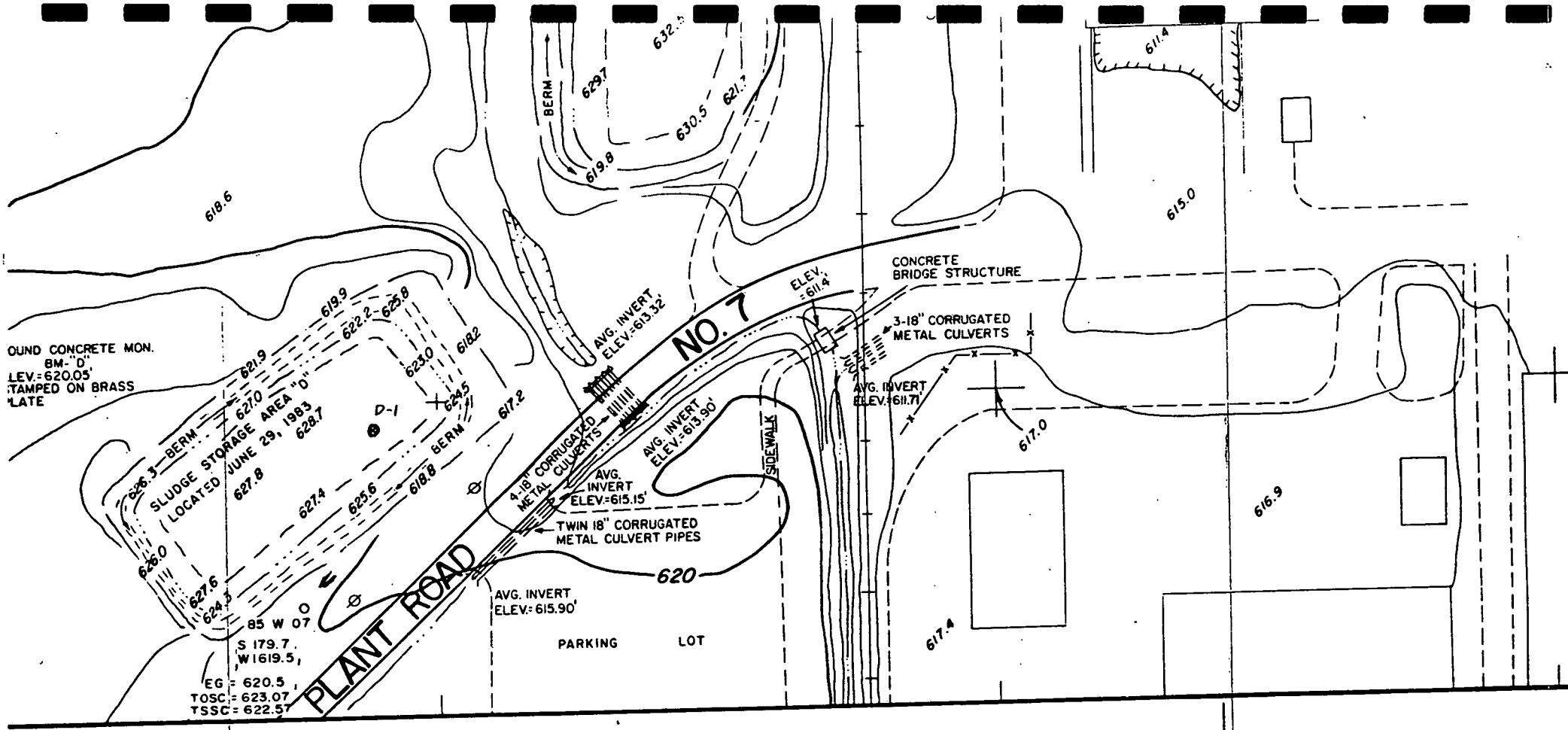

BERM
623.3
612.6
85 W 10
N 839.1
W 1173.9
EG = 620.1
TOSC = 622.72
TSSC = 622.20
A4
SLUDGE STORAGE AREA "A"
LOCATED - 2/11/86
VOLUME = 19,950 CU. YDS.
A3
TANKS
OVERHEAD PIPE
85 W 12
N 635.5
W 1054.7
EG = 615.5
TSSC = 617.95
85 W 09
N 604.5
W 1473.7
EG = 618.3
TOSC = 620.85
TSSC = 620.34
85 W 08
N 506.7
W 1154.2
EG = 616.8
TOSC = 618.84
TSSC = 618.34
633.8
622.4
621.0
630
RAMP
620
A2
612.8
631.9
619.9
626.6
617.7
631.9
A1
632.5
629.7
621.7
630.5
619.8
BERM
620
85 W 11
N 346.3
W 1051.8
EG = 615.1
TSSC = 618.94
611.4
615.0
619.9
622.2
625.8
621.9
627.0
623.0
618.2
624.5
617.2
627.8
627.4
625.6
618.8
D-1
BERM
AVG. INVERT ELEV.=613.32
NO. 7
ELEV. =611.4
CONCRETE BRIDGE STRUCTURE
3-18" CORRUGATED METAL CULVERTS
AVG. INVERT ELEV.=611.71
617.0
4-18" CORRUGATED METAL CULVERTS
AVG. INVERT ELEV.=615.15'
AVG. INVERT ELEV.=613.90'
SIDEWALK
TWIN 18" CORRUGATED METAL CULVERT PIPES
620
616.9
PLANT ROAD
AVG. INVERT ELEV.=615.90'
PARKING LOT
617.4
85 W 07
S 179.7,
W 1619.5,
= 620.5
= 623.07
= 622.57


FORMER SLUDGE STORAGE AREA "B"
12/12/85 COMPLETELY REMOVED
W 3,000
W 2,500
85 W 03
S 364.0
W 2548.7
EG = 626.0
TSSC = 628.43
85 W 04
S 384.5
W 2238.0
EG = 625.6
TSSC = 627.91
NOTE: ALL CULVERTS UNDER RAMPS LEADING TO PONDS OFF ROAD NO. 7 ARE 12" CORRUGATED METAL.
PLANT ROAD NO. 7
INVERT ELEV.=624.03'
INVERT ELEV.=624.04'
INVERT ELEV.=623.88'
INVERT ELEV.=624.12'
INVERT ELEV.=623.99'
INVERT ELEV.=623.61'
INVERT ELEV.=623.68'
INVERT ELEV.=623.52'
INVERT ELEV.=623.74'
INVERT ELEV.=623.78'
625.0
625.0
625.0
622.6
638.1
623.8
641.1
632.5
RAMP
C2
C1
SLUDGE STORAGE AREA "C"
LOCATED 3/4/86
34,950 CU. YDS.
642.0
C3
622.7
BERM
APPROXIMATE LOCATION
6/29/83
639.9
638.5
624.6
623.1
544.5' (NOT TO SCALE)
85 W 02
S 846.2
W 3544.5
EG = 620.7
TOSC = 623.86
TSSC = 623.37
630
632.2
EARTH STOCKPILE
623.0
621.0
623.4
625.2
CT NO. 3



1	3
2	4

SHEET 3 OF 4

L
(SUCCE
2470 STOELTING ST. (BERGHOL

TOPOGRAPHIC SURVEY OF HARRISON RAD	
LOCATION TOWN AND CITY OF LOCKPORT	
DATE OF AERIAL PHOTOGRAPHY BY EL C	
SCALE 1"=100'	OWNER- HARRISON RA
JOB NO. 2949-T	SURVEY REQUESTED BY

ENGINEER Al Hopkins
DATE ASSIGNED 8/13/90
DATE DUE

JOB No. 90S867-02
JOB NAME Glynn Geotechnical
Harrison Radiator
Sludge Pond Remediation

DATE REC. 8/13/90
DATE CMP. 8/21/90
REC. BY DG
Page No.

90-0167

SUMMARY OF LABORATORY TEST RESULTS

BORING and SAMPLE No	DEPTH - feet	CLASSIFICATION	PERM k cm/sec	NATURAL WATER CONTENT (%)	ATTERBERG LIMITS		UNCON. COMPRESS.		UNIT DRY WGT (pcf)	SPECIFIC GRAVITY	GRAIN SIZE		OPT MOIST	CONSOLID.	TRIAXIAL			
					LIQUID LIMIT	PLASTIC LIMIT	STRESS (tsf)	STRAIN (%)			SIEVE	HYDR.			U.U	$\overline{CIU}$	CELL PRESSURE (psi)	BACK PRESSURE (psi)
A1		Disturbed																
A2		Disturbed							104.9									
A3		Disturbed							100.5									
A4		Disturbed							117.2									
C1		Disturbed							103.0									
C2		Disturbed							95.8									
C3			2.3×10^{-8}	15.5					117.4									
D1		Disturbed							112.8									

* See Test Curves V TEST COMP and CHECKED ● TEST IN PROGRESS

S 21.0(11-88)

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	8-21-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-02
Sample Number	:	C 3	Tested By	:	JB
Description	:	CLAY W/ ROCK FRAGMENTS			

Cell Number : 20 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	4.08	Final Height (in)	:	4.00
Initial Diameter (in)	:	2.85	Final Diameter (in)	:	2.90
Initial Wet Weight (g)	:	927.60	Final Wet Weight (g)	:	952.80
Wet Density (pcf)	:	135.65	Wet Density (pcf)	:	137.26
Moisture Content %	:	15.50	Moisture Content %	:	14.10
Dry Density (pcf)	:	117.44	Dry Density (pcf)	:	120.30

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	0.90
Length, L	(in)	:	4.00
Area, A	(sqin)	:	6.61
Head, h	(psi)	:	8.00
Time, t	(min)	:	260
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 2.27E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

ENGINEER Al Hopkins

DATE ASSIGNED 8/31/90

DATE DUE

JOB No. 90S867-03

JOB NAME Glynn Geotechnical
Harrison Radiator
Sludge Pond Remediation
90-0167

DATE REC. 8/30/90

DATE CMP. 9/13/90

REC. BY DG

Page No.

SUMMARY OF LABORATORY TEST RESULTS

BORING and SAMPLE No.	DEPTH - feet	CLASSIFICATION	PERM k cm/sec	NATURAL WATER CONTENT (%) Initial	ATTERBERG LIMITS LIQUID LIMIT	ATTERBERG LIMITS PLASTIC LIMIT	UNCON. COMPRESS. STRESS (tsf)	UNCON. COMPRESS. STRAIN (%)	UNIT DRY WGT. (pcf) Initial	SPECIFIC GRAVITY	GRAIN SIZE SIEVE	GRAIN SIZE HYDR.	OPT MOIST	CONSOLID.	TRIAXIAL U.U.	TRIAXIAL $\overline{CIU}$	TRIAXIAL CELL PRESSURE (psi)	TRIAXIAL BACK PRESSURE (psi)
A1			1.4×10^{-8}	13.5					121.1									
A2			1.3×10^{-8}	15.5					117.1									
A3			1.0×10^{-4}	18.4					109.2									
C1			4.3×10^{-8}	17.0					107.9									
D1			1.5×10^{-8}	21.0					106.5									

Initial

V TEST COMP and CHECKED

● TEST IN PROGRESS

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	: GLYNN GEOTECNICAL	DATE	: 9-13-90
Project Location	: HARRISON RADIATOR	Job No.	: 90S867-03
Sample Number	: A1	Tested By	: J.B.
Description	: CLAY		

Cell Number : Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	4.09	Final Height (in)	:	4.10
Initial Diameter (in)	:	2.85	Final Diameter (in)	:	2.85
Initial Wet Weight (g)	:	942.40	Final Wet Weight (g)	:	960.50
Wet Density (pcf)	:	137.47	Wet Density (pcf)	:	139.77
Moisture Content %	:	13.50	Moisture Content %	:	16.20
Dry Density (pcf)	:	121.12	Dry Density (pcf)	:	120.29

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	0.68
Length, L	(in)	:	4.10
Area, A	(sqin)	:	6.38
Head, h	(psi)	:	8.00
Time, t	(min)	:	340
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 1.38E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	: GLYNN GEOTECNICAL	DATE	: 9-13-90
Project Location	: HARRISON RADIATOR	Job No.	: 90S867-03
Sample Number	: A2	Tested By	: J.B.
Description	: CLAY		

Cell Number : Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	1.85	Final Height (in)	:	1.83
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.80
Initial Wet Weight (g)	:	404.90	Final Wet Weight (g)	:	413.60
Wet Density (pcf)	:	135.29	Wet Density (pcf)	:	139.70
Moisture Content %	:	15.50	Moisture Content %	:	18.20
Dry Density (pcf)	:	117.13	Dry Density (pcf)	:	118.19

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	1.75
Length, L	(in)	:	1.83
Area, A	(sqin)	:	6.16
Head, h	(psi)	:	8.00
Time, t	(min)	:	420
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 1.34E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	: GLYNN GEOTECNICAL	DATE	: 9-13-90
Project Location	: HARRISON RADIATOR	Job No.	: 90S867-03
Sample Number	: A3	Tested By	: J.B.
Description	: CLAY		

Cell Number : Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	3.23	Final Height (in)	:	3.20
Initial Diameter (in)	:	2.80	Final Diameter (in)	:	2.80
Initial Wet Weight (g)	:	675.40	Final Wet Weight (g)	:	693.30
Wet Density (pcf)	:	129.25	Wet Density (pcf)	:	133.92
Moisture Content %	:	18.40	Moisture Content %	:	18.20
Dry Density (pcf)	:	109.17	Dry Density (pcf)	:	113.30

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	18.50
Length, L	(in)	:	3.20
Area, A	(sqin)	:	6.16
Head, h	(psi)	:	8.00
Time, t	(min)	:	1
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 1.04E-04 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	: GLYNN GEOTECNICAL	DATE	: 9-13-90
Project Location	: HARRISON RADIATOR	Job No.	: 90S867-03
Sample Number	: C-1	Tested By	: J.B.
Description	: CLAY		

Cell Number : Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	: 3.74	Final Height (in)	: 3.83
Initial Diameter (in)	: 2.87	Final Diameter (in)	: 2.85
Initial Wet Weight (g)	: 802.70	Final Wet Weight (g)	: 824.40
Wet Density (pcf)	: 126.27	Wet Density (pcf)	: 128.42
Moisture Content %	: 17.03	Moisture Content %	: 21.00
Dry Density (pcf)	: 107.90	Dry Density (pcf)	: 106.14

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	2.80
Length, L	(in)	:	3.83
Area, A	(sqin)	:	6.38
Head, h	(psi)	:	8.00
Time, t	(min)	:	420
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 4.34E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	: GLYNN GEOTECNICAL	DATE	: 9-13-90
Project Location	: HARRISON RADIATOR	Job No.	: 90S867-03
Sample Number	: D-1	Tested By	: J.B.
Description	: CLAY		

Cell Number : Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	3.22	Final Height (in)	:	3.30
Initial Diameter (in)	:	2.85	Final Diameter (in)	:	2.88
Initial Wet Weight (g)	:	695.70	Final Wet Weight (g)	:	709.60
Wet Density (pcf)	:	128.91	Wet Density (pcf)	:	125.64
Moisture Content %	:	21.01	Moisture Content %	:	22.90
Dry Density (pcf)	:	106.53	Dry Density (pcf)	:	102.23

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	1.20
Length, L	(in)	:	3.30
Area, A	(sqin)	:	6.51
Head, h	(psi)	:	8.00
Time, t	(min)	:	440
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 1.50E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

ENGINEER Al Hopkins
DATE ASSIGNED 8/31/90
DATE DUE

JOB No. 90S867-03
JOB NAME Glynn Geotechnical
Harrison Radiator
Sludge Pond Remediation
90-0167

DATE REC. 8-30-90
DATE CMP. 9/19/90
REC. BY DG
Page No.

SUMMARY OF LABORATORY TEST RESULTS

BORING and SAMPLE No	DEPTH - feet	CLASSIFICATION	Initial PERM k cm/sec	NATURAL WATER CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT	ATTERBERG LIMITS PLASTIC LIMIT	UNCON COMPRESS. STRESS (tsf)	UNCON COMPRESS. STRAIN (%)	Initial UNIT DRY WGT (pcf)	SPECIFIC GRAVITY	GRAIN SIZE SIEVE	GRAIN SIZE HYDR.	OPT MOIST	CONSOLID	TRIAXIAL UU	TRIAXIAL $\overline{CIU}$	TRIAXIAL CELL PRESSURE (psi)	TRIAXIAL BACK PRESSURE (psi)
A3		Back-up	4.8×10^{-8}	15.8					103.5									
A4			6.7×10^{-8}	17.7					102.8									
C2			3.1×10^{-8}	16.3					104.5									

* See Test Curves V TEST COMP and CHECKED ● TEST IN PROGRESS

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	9-19-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-03
Sample Number	:	A3	Tested By	:	DG
Description	:	CLAY			

Cell Number : 14 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	3.91	Final Height (in)	:	3.95
Initial Diameter (in)	:	2.88	Final Diameter (in)	:	2.84
Initial Wet Weight (g)	:	802.40	Final Wet Weight (g)	:	822.50
Wet Density (pcf)	:	119.90	Wet Density (pcf)	:	125.11
Moisture Content %	:	15.80	Moisture Content %	:	19.10
Dry Density (pcf)	:	103.54	Dry Density (pcf)	:	105.05

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	3.00
Length, L	(in)	:	3.95
Area, A	(sqin)	:	6.33
Head, h	(psi)	:	8.00
Time, t	(min)	:	420
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 4.83E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	9-19-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-03
Sample Number	:	A4	Tested By	:	DG
Description	:	CLAY			

Cell Number : 14 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	3.32	Final Height (in)	:	3.32
Initial Diameter (in)	:	2.88	Final Diameter (in)	:	2.86
Initial Wet Weight (g)	:	685.10	Final Wet Weight (g)	:	701.50
Wet Density (pcf)	:	120.99	Wet Density (pcf)	:	124.97
Moisture Content %	:	17.70	Moisture Content %	:	21.40
Dry Density (pcf)	:	102.79	Dry Density (pcf)	:	102.94

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	15.50
Length, L	(in)	:	3.32
Area, A	(sqin)	:	6.44
Head, h	(psi)	:	8.00
Time, t	(min)	:	1300
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 6.68E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

SUMMARY OF TRIAXIAL PERMEABILITY TEST RESULTS

Client	:	GLYNN GEOTECHNICAL	DATE	:	9-19-90
Project Location	:	HARRISON RADIATOR	Job No.	:	90S867-03
Sample Number	:	C2	Tested By	:	DG
Description	:	CLAY			

Cell Number : 14 Fluid : DEAIRED WATER B-Parameter : 1

Physical Property Data

Initial Height (in)	:	2.90	Final Height (in)	:	2.87
Initial Diameter (in)	:	2.88	Final Diameter (in)	:	2.83
Initial Wet Weight (g)	:	601.20	Final Wet Weight (g)	:	603.00
Wet Density (pcf)	:	121.55	Wet Density (pcf)	:	127.13
Moisture Content %	:	16.30	Moisture Content %	:	20.70
Dry Density (pcf)	:	104.51	Dry Density (pcf)	:	105.33

Test Parameters

Cell Pressure	(psi)	:	55.00
Head Water	(psi)	:	50.00
Tail Water	(psi)	:	42.00

Permeability Input Data

Flow, Q	(cc)	:	8.50
Length, L	(in)	:	2.87
Area, A	(sqin)	:	6.29
Head, h	(psi)	:	8.00
Time, t	(min)	:	1350
Temp, T	(Deg C)	:	23.0

Computed Permeability

PERMEABILITY, K = 3.12E-08 (cm/sec) at 20 Degrees C

J & L TESTING CO, INC.

APPENDIX D - MARCH 7, 1988 CORRESPONDENCE FROM P.R. COUNTERMAN (NYSDEC) TO M. RATHKE (HARRISON RADIATOR)

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

MAR 07 1988

Thomas C. Jorling
Commissioner

Mr. L. E. Chamberlin
Superintendent, Environmental Services
Harrison Radiator Div. of GMC
200, Upper Mountain Road
Lockport, NY 14094

Dear Mr. Chamberlin:

Re: Closure Plan for Waste Piles
EPA ID No. NYD002126852

The Closure Plan for the Hazardous Waste Piles at Harrison Radiator Division of GMC, Lockport facility has met the applicable regulatory requirements of 6NYCRR Subpart 373-3.7. Therefore, approval of the Closure Plan dated September 17, 1987 as amended by the attached "Conditions for Closure" is hereby granted. The "Conditions for Closure" have been revised to incorporate information pertaining to detection limits for soil analysis and the QA/QC data required to be submitted to the Department.

All closure activities must be performed in accordance with the approved Closure Plan. Please note that this approval in no way precludes your responsibility to submit a Closure Certification as described in the Closure Plan.

Closure of the Waste Piles is not complete until such time as the engineering certification of the closure is approved by this office.

If you should have any questions or comments regarding this matter, please contact Mr. Ravi Pilar at (518)457-9253.

Sincerely,

Paul R. Counterman

Paul R. Counterman, P.E.
Director
Bureau of Hazardous Waste Facility Permitting

Enclosures

cc: w/enc. - K. Eng, EPA
R. Mitrey, DEC Region 9
R. Pilar, DEC Albany
J. Moran, DEC Albany
S. Seigel, EPA Region II

HARRISON DIV.
GENERAL MOTORS CORP.
RECEIVED
MAR 14 1988
ENVIRONMENTAL ACTIVITIES

cc: W. Kirsch
O. Buskirk
J. Walls
D Kuhn
M. Ratajs
R. Kinney

Revised March 3, 1988

ATTACHMENT A

CONDITIONS FOR CLOSURE

The Closure Plan is acceptable to the New York State Department of Environmental Conservation (NYSDEC) with the addition of the following conditions:

1. Detection levels for the Phase II analysis of the soil samples (refer to Page 78 of the Closure Plan) must be low enough to allow a health based determination to be made, i.e., below health based levels for carcinogens or systemic toxicants in the soil matrix. To assist in the selection of detection levels, copies of the Table 8-6 "Health Based Criteria for Carcinogens" and Table 8-7 "Health Based Criteria for Systemic Toxicants" from the Draft RCRA Facility Investigation Guidance (Revised 12/87) are enclosed.

   Where prevailing detection standards or criteria are low and media samples appear grossly contaminated, the laboratory shall apply all appropriate clean-up procedures necessary to eliminate or minimize matrix interferences. The primary objective will be to achieve the lowest method detection limit for each released constituent in the matrix to be analyzed. Sample dilution shall not be deemed an acceptable clean-up procedure and should only be considered when contaminant concentrations exceed the upper bound of the calibration data.

2. All analytical data generated by a laboratory will require validation by the Bureau of Hazardous Waste Facility Permitting Chemists. In order to carry out the validation process, all the laboratory data outlined in (attached) Appendix I should be submitted to the Department.

3. Upon submission of the Appendix IX analytical data on soil samples, the NYSDEC will make a determination of allowable limits of hazardous constituents that can remain and still achieve the status of clean closure. These allowable limits to be established by the Department will be based on health based exposure levels. If no recommended exposure limits exist for a hazardous constituent, then background soil analysis data will be utilized for comparison. If HRD fails to satisfy the criteria for clean closure, a post-closure permit may be required for the waste piles to be capped and monitored as a landfill.

4. The acceptance of the Closure Plan and the physical closure of the waste piles does not preclude HRD's responsibility to continue the on-going groundwater monitoring program at the facility. A Post-Closure Plan, and eventually a Post-Closure Permit, may be

required for the waste piles if a groundwater investigation currently on-going at Harrison Radiator demonstrates that the waste piles have adversely affected the groundwater quality as a result of the migration of hazardous constituents. The final determination of the groundwater investigation will ultimately determine the nature and extent of post-closure actions including any necessary groundwater monitoring, assessment and remediation requirements. If the groundwater investigation demonstrates that the waste piles have affected the groundwater quality, a separate public notice announcing a comment period will be published regarding the post-closure status of the waste piles. In the meantime, Harrison Radiator will continue to monitor wells and conduct the groundwater investigation to determine the impact, if any, of the waste piles on groundwater quality.

5. Harrison Radiator must comply with the closure performance standard in 373-3.7(b) as well as certification of closure in 373-3.7(f). Refer to Attachment B for the information required to be provided to the Department to demonstrate compliance with 373.7(f) and the approved Closure Plan.

6. In section 3.2.a of the Closure Plan the reference to Simple Random Sampling is incorrect. The correct reference is Section 9.1.1.3.1 of SW-846, Third Edition.

7. The landfill inspection report form is on page 114 and not on page 127 as mentioned in the contingency post-closure plan.

8. Change the last paragraph of subtask 2.3 on page 96 to read:

   In-situ measurements will be made of groundwater level, pH and specific conductance. Hexavalent Chromimum will be analyzed by Harrison Radiator because the short holding time does not feasibly permit the use of a contract lab. All other parameters will be tested by an analytical laboratory(approved by DEC) under direct contract to Harrison.

9. Delete the first sentence of Section 4.5 on page 106 of the Closure Plan and insert the following paragraph: Once an approved groundwater monitoring network is installed and functioning, sampling and analysis will be conducted to demonstrate that:

   1) NYS groundwater standards (or upon NYSDEC approval background levels, if greater than State standards) have not been exceeded for a period of three consecutive years, and;

   2) A comparison of downgradient with upgradient data indicate no statistically significant increases (or pH decreases) have occurred for a period of three consecutive years. If a statistically significant increase (or pH decrease) occurs, an assessment program following the intent of 6NYCRR 373-3.6(d)(4)(iv) must be implemented. If the statistically significant increase is false, the regular sampling and analysis program shall be resumed. If the assessment program indicates a valid impact on the groundwater regime, the the Post-Closure Permit Application shall be called in.

APPENDIX I

COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

A. Parameter requested.

B. Sample Number, Matrix, and:

1. Date collected
2. Date extracted and/or digested
3. Date analyzed.

C. Results

1. Sample Results
2. Duplicate
3. Blank
4. Spike; spike duplicate
5. Surrogate recoveries, if applicable.

D. Supporting QA/QC

1. Methodology
2. Method detection limits, instrument detection limits
3. Linear curves
4. Percent solids
5. Calculations
6. Cleanup procedures.

In addition to submitting the above, all sample data and its QA/QC data as specified in SW-846, 3rd edition, Chapter 1, must be maintained accessible to NYSDEC either in hard copy or on magnetic tape or disk (computer data files). The data, if requested by NYSDEC, should be formatted as described in SW-846, 3rd edition, Chapter 1. This requirement may be changed in the future to mandate computer data files, accessible to NYSDEC on request.

This does not obviate the requirement to do the QA/QC specified in each individual EPA-approved method.

Table 8-6. Health-Based Criteria for Carcinogens[1]

Constituent	CAS No.	Class (A, B, C)[2]	Oral Exposure Route RSD[3]			Inhalation Exposure Route RSD[3]	
			CPF (mg/kg/day)$^{-1}$	Soil (mg/kg)	Water (µg/l)	CPF (mg/kg/day)$^{-1}$	Air (µg/m^3)
Acrylamide[4]	79-06-1	B	3.85E+00	9.09E-02	9.09E-03	3.85E+00	9.09E-04
Acrylonitrile	107-13-1	B	5.4E-01	6.5E-01	6.5E-02	2.4E-01	1.5E-02
Aldrin	309-00-2	B	1.7E+01	2.1E-02	2.1E-03	1.7E+01	2.1E-04
Aniline[4]	62-53-3	C	2.6E-02	1.3E+02	1.3E+01	2.59E-02	1.35E+00
Arsenic[4]	7440-38-2	A	1.58E+01	2.22E-02	2.22E-03	1.51E+01	2.32E-04
Benz(a)anthracene[4]	56-55-3	B	3.12E+00	1.12E-01	1.12E-02	3.12E+00	1.12E-03
Benzene[4]	71-43-2	A	2.87E-02	1.22E+01	1.22E+00	2.87E-02	1.22E-01
Benzidine	92-87-5	A	2.3E+02	1.5E-03	1.5E-04	2.3E+02	1.5E-05
Benzo(a)pyrene[4]	50-32-8	B	1.15E+01	3.04E-02	3.04E-03	1.15E+01	3.04E-04
Beryllium[4]	7440-41-7	B	4.90+00	7.14E-02	7.14E-03	8.40E+00	4.17E-04
Bis(2-chloroethyl) ether	111-44-4	B	1.1E+00	3.2E-01	3.2E-02	1.1E+00	3.2E-03
Bis(chloromethyl) ether (BCME)[4]	542-88-1	A	9.45E+00	3.70E-02	3.70E-03	9.45E+00	3.70E-04
Cadmium	7440-43-9	B	--	--	--	6.1E+00	5.7E-04
Carbon tetrachloride	56-23-5	B	1.3E-01	2.7E+00	2.7E-01	1.3E-01	2.7E-02
Chlordane	57-74-9	B	1.3E+00	2.7E-01	2.7E-02	1.3E+00	2.7E-03
1-Chloro-2, 3-epoxypropane (Epichlorohydrin)	106-89-8	B	9.9E-03	3.5E+01	3.5E+00	4.8E-03	7.3E-01
Chloroform	67-66-3	B	6.1E-03	5.7E+01	5.7E+00	8.1E-02	4.3E-02
Chloromethyl methyl ether[4] (CMME)	107-30-2	A	9.45E+00	3.70E-02	3.70E-03	9.45E+00	3.70E-04
Chromium (hexavalent)	7440-47-3	A	--	--	--	4.1E+01	8.5E-05
DDD	72-54-8	B	2.4E-01	1.5E+00	1.5E-01	--	--
DDE	72-55-9	B	3.4E-01	1.0E+00	1.0E-01	--	--
DDT	50-29-3	B	3.4E-01	1.0E+00	1.0E-01	3.4E-01	1.0E-02
Dibenz(a,h) anthracene[4]	53-70-3	B	4.90E+01	7.14E-03	7.14E-04	4.90E+01	7.14E-05
1,2-Dibromo-3-chloropropane[4] (DBCP)	96-12-8	B	2.21E+01	1.58E-02	1.58E-03	2.21E+01	1.58E-04

Note: These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

Table 8-6. (continued)[1]

Constituent	CAS No.	Class (A, B, C)[2]	Oral Exposure Route RSD[3]			Inhalation Exposure Route RSD[3]	
			CPF (mg/kg/day)$^{-1}$	Soil (mg/kg)	Water (ug/l)	CPF (mg/kg/day)$^{-1}$	Air (ug/m^3)
1,2-Dibromoethane	106-93-4	B	7.0E+01	5.0E-03	5.0E-04	7.6E-01	4.6E-03
Dibutylnitrosamine	924-16-3	B	5.4E+00	6.48E-02	6.48E-03	5.4E+00	6.48E-04
1,2-Dichloroethane	107-06-2	B	9.1E-02	3.8E+00	3.8E-01	9.1E-02	3.8E-02
1,1-Dichloroethylene	75-35-4	C	6.0E-01	5.8E+00	5.8E-01	1.2E+00	2.9E-02
Dichloromethane (Methylene chloride)	75-09-2	B	7.5E-03	4.7E+01	4.7E+00	1.4E-02	2.5E-01
1,3-Dichloropropene	542-75-6	B	1.8E-01	1.9E+00	1.9E-01	--	--
Dieldrin	60-57-1	B	1.6E+01	2.2E-02	2.2E-03	1.6E+01	2.2E-04
Diethylnitrosamine	55-18-5	B	1.5E+02	2.3E-03	2.3E-04	1.5E+02	2.3E-05
Diethylstilbestrol[4] (DES)	56-53-1	A	4.90E+02	7.14E-04	7.14E-05	4.90E+02	7.14E-06
2,4-Dinitrotoluene	121-14-2	B	3.08E-01	1.14E+00	1.14E-01	--	1E-01
1,4-Dioxane	123-91-1	B	4.90E-03	7.14E+01	7.14E+00	4.90E-03	7.14E-01
1,2-Diphenylhydrazine	122-66-7	B	8.0E-01	4.4E-01	4.4E-02	8.0E-01	4.4E-03
Ethylene oxide[4]	75-21-8	B	3.50E-01	1.00E+00	1.00E-01	3.50E-01	1.00E-02
Heptachlor	76-44-8	B	4.5E+00	7.8E-02	7.8E-03	4.5E+00	7.8E-04
Heptachlor epoxide	1024-57-3	B	9.1E+00	3.8E-02	3.8E-03	9.1E+00	3.8E-04
Hexachlorobenzene[4]	118-74-1	B	1.72E+00	2.03E-01	2.03E-02	1.72E-02	2.03E-01
Hexachlorobuta-diene	87-68-3	C	7.8E-02	4.5E+01	4.5E+00	7.8E-02	4.5E-01
Hexachlorodibenzo-p-dioxin	19408-74-3	B	6.2E+03	5.6E-05	5.6E-06	6.2E+03	5.6E-07
Hexachloroethane	67-72-1	C	1.4E-02	2.5E+02	2.5E+01	1.4E-02	2.5E+00
Hydrazine	302-01-2	B	3.0E+00	1.2E-01	1.2E-02	1.02E+01	3.43E-04
Hydrazine sulfate	10034-93-2	B	3.0E+00	1.2E-01	1.2E-02	--	--
Lindane (gamma-Hexachlorocyclo-hexane)	58-89-9	C	1.3E+00	2.7E+00	2.7E-01	1.3E+00	2.7E-02
3-Methyl-cholanthrene[4]	56-49-5	B	9.45E+00	3.70E-02	3.70E-03	9.45E+00	3.70E-04
4,4-Methylene-bis-(2-chloroaniline)[4]	101-14-4	B	1.65E-01	2.12E+00	2.12E-01	1.65E-01	2.12E-02
Nickel[5]	1440-02-0	A	--	--	--	8.40E-01	4.17E-03
Nickel (refinery dust)	7440-02-0	A	--	--	--	8.4E-01	4.2E-03

Note: These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

Table 8-6. (continued)[1]

Constituent	CAS No.	Class (A, B, C)[2]	Oral Exposure Route RSD[3]			Inhalation Exposure Route RSD[3]	
			CPF (mg/kg/day)$^{-1}$	Soil (mg/kg)	Water (µg/l)	CPF (mg/kg/day)$^{-1}$	Air (µg/m^3)
Nickel subsulfide	12035-72-2	A	--	--	--	1.7E+00	2.1E-03
2-Nitropropane[4]	79-46-9	B	9.45E+00	3.70E-02	3.70E-03	9.45E+00	3.70E-04
N-Nitrosodi-ethanolamine	1116-54-7	B	2.8E+00	1.3E-01	1.3E-02	--	--
N-Nitrosodimethyl-amine (Dimethyl-nitrosamine)	62-75-9	B	5.1E+01	6.9E-03	6.9E-04	5.1E+01	6.9E-05
N-Nitrosodi-N-propylamine	621-64-7	B	7.0E+00	5.0E-02	5.0E-03	--	--
N-Nitroso-N-methylethylamine	10595-95-6	B	2.2E+01	1.6E-02	1.6E-03	--	--
N-Nitroso-N-methyl urea[4]	684-93-5	B	3.01E+02	1.16E-03	1.16E-04	3.01E+02	1.16E-05
N-Nitroso-pyrrolidine	930-55-2	B	2.1E+00	1.7E-01	1.7E-02	2.1E+00	1.7E-03
PCB's	1336-36-2	B	7.7E+00	4.5E-02	4.5E-03	--	--
Pentachloronitro-benzene[4]	82-68-8	C	2.56E-01	1.37E+01	1.37E+00	2.56E-01	1.37E-01
Perchloroethylene (Tetrachloro-ethylene)	127-18-4	C	5.1E-02	6.9E+01	6.9E+00	2.5E-01	1.4E-01
Pronamide (Kerb)[4]	23950-58-5	C	--	--	--	--	2E+00
Reserpine[4]	50-55-5	B	1.05E+01	3.33E-02	3.33E-03	1.05E+01	3.33E-04
1,1,2,2-Tetrachloroethane	79-34-5	C	2.00E-01	1.75E+01	1.75E+00	2.00E-01	1.75E-01
Thiourea[4]	62-56-6	B	1.93E+00	5.18E-01	5.18E-02	1.93E+00	5.18E-03
Toxaphene	8001-35-2	B	1.1E+00	3.2E-01	3.2E-02	1.1E+00	3.2E-03
1,1,2-Trichloroethane	79-00-5	C	5.7E-02	6.1E+01	6.1E+00	5.7E-02	6.1E-01
Trichloroethylene	79-01-6	B	1.1E-02	3.2E+01	3.2E+00	1.3E-02	2.7E-01
2,4,6-Trichlorophenol	88-06-2	B	2.0E-02	1.8E+01	1.8E+00	2.0E-02	1.8E-01

1 These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

2 The EPA Carcinogen Classification system is discussed in 51 FR 33992-34003 (Guidelines for Carcinogen Risk Assessment)

3 See Table 8-2 for the appropriate intake assumptions used to derive these criteria.

4 Indicates criteria undergoing EPA review.

Table 8-7 Health-Based Criteria for Systemic Toxicants[1]

Constituent	CAS No.	RfD[2] (mg/kg/day)	Soil (mg/kg)	Water (µg/l)
Acetonitrile	75-05-8	6E-03	1E+02	2E+02
Aldicarb	116-06-3	1E-03	2E+01	4E+01
Aldrin	309-00-2	3E-05	5E-01	1E+00
Allyl alcohol	107-18-6	5E-03	9E+01	2E+02
Aluminum phosphide	20859-73-8	4E-03	7E+00	1E+01
Antimony	7440-36-0	4E-04	7E+00	1E+01
Barium	7440-39-3	5E-02	9E+02	2E+03
Barium cyanide	542-62-1	7E-02	1E+03	2E+03
Benzidine	92-87-5	3E-03	3E+01	7E+01
Beryllium	7440-41-7	5E-03	9E+01	2E+02
Bi..2-ethylhexyl) phthalate	117-81-7	2E-02	3E+02	7E+02
Bromoform	75-25-2	2E-02	3E+02	7E+02
Bromomethane	74-83-9	4E-04	7E+00	1E+01
Calcium cyanide	592-01-8	4E-02	7E+02	1E+03
Carbon disulfide	75-15-0	1E-01	2E+03	4E+03
Carbon tetrachloride	56-23-5	7E-04	1E+01	2E+01
Chlordane	57-74-9	5E-05	9E-01	2E+00
Chlorine cyanide	506-77-4	5E-02	9E+02	2E+03
Chlorobenzene	108-90-7	3E-02	5E+02	1E+03
1-Chloro-2,3 epoxypropane (Epichlorohydrin)	106-89-8	2E-03	3E+01	7E+01
Chloroform	67-66-3	1E-02	2E+02	4E+02
Chromium (III)	16065-83-1	1E+00	2E+04	4E+04
Chromium (VI)	7440-47-3	5E-03	9E+01	2E+02
Copper cyanide	544-92-3	7E-02	1E+03	2E+03
Cresols	1319-77-3	5E-02	9E+02	2E+03
Cyanide		2E-02	3E+02	7E+02
Cyanogen	460-19-5	4E-02	7E+02	1E+03
2,4-D	94-75-7	1E-02	2E+02	4E+02
DDT	50-29-3	5E-04	9E+00	2E+01
Di-n-butylphthalate	84-74-2	1E-01	2E+03	4E+03

Note: These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

Table 8-7 (continued)[1]

Constituent	CAS No.	RfD[2] (mg/kg/day)	Soil (mg/kg)	Water (ug/l)
Dichlorodifluoro-methane	75-71-8	2E-01	3E+03	7E+03
1,1-Dichloroethylene	75-35-4	9E-03	2E+02	3E+02
Dichloromethane (Methylene chloride)	75-09-2	6E-02	1E+03	2E+03
2,4-Dichlorophenol	120-83-2	3E-03	5E+01	1E+02
1,3-Dichloropropene	26952-23-8	3E-04	5E+00	1E+01
Dieldrin	60-57-1	5E-05	9E-01	2E+00
Diethyl phthalate	84-66-2	8E-01	1E+04	3E+04
Dimethoate	60-51-5	2E-02	3E+02	7E+02
2,4-Dinitrophenol	51-28-5	2E-03	3E+01	7E+01
Dinoseb	88-85-7	1E-03	2E+01	4E+01
Diphenylamine	127-39-4	3E-02	5E+02	1E+03
Disulfoton	298-04-4	4E-05	7E-01	1E+00
Endosulfan	115-29-7	5E-05	9E-01	2E+00
Endothal	145-73-3	2E-02	3E+02	7E+02
Heptachlor	76-44-8	5E-04	9E+00	2E+01
Heptachlor epoxide	1024-57-8	1E-05	2E-01	4E-01
Hexachlorobuta-diene	87-68-3	2E-03	3E+01	7E+01
Hexachlorocyclo-pentadiene	77-47-4	7E-03	1E+02	2E+02
Hexachloroethane	67-72-1	1E-03	2E+01	4E+01
Hydrogen cyanide	74-90-8	2E-02	3E+02	7E+02
Hydrogen sulfide	7783-06-4	3E-03	5E+01	1E+02
Isobutyl alcohol	78-83-1	3E-01	5E+03	1E+04
Lindane (hexa-chlorocyclohexane)	58-89-9	3E-04	5E+00	1E+01
Maleic hydrazide	108-31-6	5E-01	9E+03	2E+04
Methomyl	16752-77-5	3E-02	5E+02	1E+03
Methyl ethyl ketone	78-93-3	5E-02	9E+02	2E+03

Note: These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

Table 8-7 (continued)[1]

Constituent	CAS No.	RfD[2] (mg/kg/day)	Soil (mg/kg)	Water (ug/l)
Methyl mercury	22967-92-6	3E-04	5E+00	1E+01
Methyl parathion	298-00-0	3E-04	5E+00	1E+01
Nickel	7440-02-0	2E-02	3E+02	7E+02
Nitric oxide	10102-43-9	1E-01	2E+03	4E+03
Nitrobenzene	98-95-3	5E-04	9E+00	2E+01
Nitrogen dioxide	10102-44-0	1E+00	2E+04	4E+04
Octamethylpyro-phosphoramide	152-16-9	2E-03	3E+01	7E+01
Osmium tetroxide	20816-12-0	1E-05	2E-01	4E-01
Parathion	56-38-2	3E-04	5E+00	1E+01
Pentachlorobenzene	608-93-5	8E-04	1E+01	3E+01
Pentachloronitro-benzene	82-68-8	3E-03	5E+01	1E+02
Pentachlorophenol	87-86-5	3E-02	5E+02	1E+03
Perchloroethylene (Tetrachloro-ethylene)	127-18-4	1E-02	2E+02	4E+02
Phenol	108-95-2	4E-02	7E+02	1E+03
Phenyl mercuric acetate	62-38-4	8E-05	1E+00	3E+00
Phosphine	7803-51-2	3E-04	5E+00	1E+01
Potassium cyanide	151-50-8	5E-02	9E+02	2E+03
Potassium silver cyanide	506-61-6	2E-01	3E+03	7E+03
Pronamide (Kerb)	23950-58-5	8E-02	1E+03	3E+03
Pyridine	110-86-1	1E-03	2E+01	4E+01
Selenious Acid	7782-49-2	3E-03	5E+01	1E+02
Selenourea	630-10-4	5E-03	9E+01	2E+02
Silver	7440-22-4	3E-03	5E+01	1E+02
Silver cyanide	506-64-9	1E-01	2E+03	4E+03
Silvex (2,4,5-TP)	93-72-1	8E-03	1E+02	3E+02
Sodium cyanide	143-33-9	4E-02	7E+02	1E+03
Strychnine	57-24-9	3E-04	5E+00	1E+01
1,2,4,5-Tetrachlorobenzene	95-94-3	3E-04	5E+00	1E+01

Note: These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

Table 8-7 (continued)[1]

Constituent	CAS No.	RfD[2] (mg/kg/day)	Soil (mg/kg)	Water (ug/l)
2,3,4,6-Tetrachlorophenol	58-90-2	3E-02	5E+02	1E+03
Tetraethyl lead	78-00-2	1E-07	2E-03	4E-03
Thallic oxide	1314-32-5	4E-04	7E+00	1E+01
Thallium acetate	563-68-8	5E-04	9E+00	2E+01
Thallium carbonate	6533-73-9	4E-04	7E+00	1E+01
Thallium chloride	7791-12-0	4E-04	7E+00	1E+01
Thallium nitrate	10102-45-1	5E-04	9E+00	2E+01
Thallium selenite	12039-52-0	5E-04	9E+00	2E+01
Thallium sulfate	10031-59-1	3E-04	5E+00	1E+01
Thiram	137-26-8	5E-03	9E+01	2E+02
Toluene	108-88-3	3E-01	5E+03	1E+04
1,2,4-Trichlorobenzene	120-82-1	2E-02	3E+02	7E+02
1,1,1-Trichloroethane	71-55-6	9E-02	2E+03	3E+03
1,1,2-Trichloroethane	79-00-5	2E-01	3E+03	7E+03
Trichloromonofluoromethane	75-69-4	3E-01	5E+03	1E+04
2,4,5-Trichlorophenol	95-95-4	1E-01	2E+03	4E+03
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	93-76-5	3E-03	5E+01	1E+02
1,2,3-Trichloropropane	96-18-4	6E-03	1E+02	2E+02
Vanadium pentoxide	1314-62-1	2E-02	3E+02	7E+02
Warfarin	81-81-2	3E-04	5E+00	1E+01
Zinc cyanide	557-21-1	5E-02	9E+02	2E+03
Zinc phosphide	1314-84-7	3E-04	5E+00	1E+01

1 These criteria are subject to change and will be confirmed by the regulatory agency prior to use.

2 See Table 8-2 for the appropriate intake assumptions used to derive these criteria.

APPENDIX E - CERTIFICATION STATEMENT FOR COMPLETION OF CLOSURE FOR WASTE STORAGE PILES EPA I.D. #NYD002126852 PER INTERIM STATUS CLOSURE PLAN DATED SEPTEMBER 17, 1987 AND APPROVED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ON MARCH 7, 1988

September 18, 1990

Re: Certification Statement for Completion
of Closure for Waste Storage Piles
EPA I.D. #NYD 002 126 852
per Interim Status Closure Plan
Dated September 17, 1987 and Approved
by the New York State Department of
Environmental Conservation on March 7, 1988

CERTIFICATION:

I certify under penalty of law that the waste storage piles (EPA I.D. #NYD 002 126 852) were closed in conformance with the Interim Status Closure Plan (dated September 17, 1987) and approved by the New York State Department of Environmental Conservation on March 7, 1988. As described in the facility's Closure Certification Report (as prepared by Snyder Engineering and dated September 15, 1990) all hazardous waste, hazardous waste residues, and contaminated soils have been removed from the locations of the former waste storage piles.

This certification is made on behalf of General Motors Corporation and the independent professional engineer responsible for closure certification.

William A. Kirsch

William A. Kirsch
Harrison Radiator Division of General Motors
Manager - Plant Engineering and Environmental Activities

Richard R. Snyder

Richard R. Snyder, P.E.
License Number NY54616
Snyder Engineering