

2017

G-000-101.43

**STORMWATER/SPILL RETENTION FACILITY
FIRST YEAR OPERATIONAL REPORT
JULY 30, 1990**

07/30/90

**39
REPORT**

2017

**STORMWATER/SPILL RETENTION FACILITY
FIRST YEAR OPERATIONAL REPORT**

Prepared For

Department Of Energy
Feed Materials Production Center
Site Office

Prepared By

Westinghouse Materials Company of Ohio

July 30, 1990

Stormwater/Spill Retention Facility First Year Operational Report

INTRODUCTION

The Department of Energy (DOE) is required by Special Condition #4 of the Stormwater/Spill Retention Facility (SWRB) Permit-To-Install (PTI), #05-1043, to submit a report to the Ohio Environmental Protection Agency (Ohio EPA). The report is to describe the first year of operation for the expanded SWRB. More specifically, Special Condition #4 is as follows:

One year after the new stormwater retention basin is placed in service, the permittee (DOE) shall submit a report to the Ohio Environmental Protection Agency, Southwest District Office. This report shall describe the current operating procedures for the basin and will provide a summary of the operations history for the basins in the first year. Any operating procedures which differ from those proposed in the PTI application shall be identified, as shall the reasons for making those changes.

This report is submitted to fulfill the requirements of Special Condition #4 of the SWRB PTI. The report is divided into sections discussing background; a chronology of events during the first year of operation; description of events, problems and corrective actions; an evaluation of the Total Suspended Solids (TSS) in SWRB discharge; and SWRB Operating procedures.

The background information summarizes the salient features of SWRB construction and operation as described in the SWRB PTI Application. Table 1 is a chronology to provide a time frame for critical events during the first year of operation. The description of events, problems and corrective actions is furnished to understand what occurred and was done to correct the problems encountered. The monthly TSS SWRB discharge section discusses how the settling operation performed. The SWRB operating procedures section provides a description of current operating procedures and the modifications which have occurred to the operating procedures.

BACKGROUND

This background information summarizes the features of SWRB construction and operation as described in the SWRB PTI Application.

The original 6.5 million gallon SWRB became operational on October 26, 1986. The 6.5 million gallon basin was capable of containing the stormwater runoff volume from approximately a 2-year, 24-hour storm event for the collected areas of the FMPC. A 2-year, 24-hour storm event is defined as the amount of rainfall in a 24-hour duration storm event that has a fifty percent chance of occurring in any one year. At the FMPC, this represents a 7.6 cm (3.0 inch) rainfall in 24 hours.

An expansion of the SWRB was required by Order #6 of the Ohio EPA Directors Findings and Orders (DFO) issued June 26, 1987. The Orders required the basin volume to be expanded to contain the runoff volume from a 10-year, 24-hour storm event. A 10-year,

24-hour storm event has a 10 percent chance of occurring in any one year. For the approximately 163 acres of FMPC process area, administration area and parking lot areas projected for runoff collection (i.e. at the time of PTI submission, all 136 acres of the process area did not flow to the SWRB, but an allowance was made for future collection of the total area); this represents a 10.4 cm (4.1 inch) rainfall. A rainfall of this magnitude produces an estimated 38,600,000 liters (10.2 million gallons) of stormwater runoff. A 4.3 million gallon SWRB addition was completed and placed into service on December 28, 1988. The expanded SWRB provides a two chambered facility with a containment capacity of approximately 10.8 million gallons.

The two chambered basin was installed in lieu of an expanded single basin to address several concerns. These concerns include settling of suspended solids; basin cleanout of the settled solids; repair of the flexible membrane liners (FML), which form the primary containment for the basin chambers; and the need to provide for better control of any spill which enters the SWRB.

Sluice gates were constructed between the existing 6.5 million and the new 4.3 million gallon chambers. Under normal operation, sluice gates installed at the entrance to each chamber control the distribution of the incoming runoff. While the runoff flow is directed to one chamber, the other chamber is allowed to remain in a quiescent condition for 24 hours of settling before being pumped to Manhole 175. The 24 hour period was based on the "Study of Solids Loading and Solids Settling in the FMPC Bionitrification Surge Lagoon and Stormwater Retention Basin" report prepared and issued on June 1, 1987, DOE-76-87, in response to the Ohio EPA DFO #4. In a 24-hour period, the study showed the suspended solids level in the decant were able to reach a 20 mg/l total suspended solids level. After the quiescent chamber has been pumped down, the gates are reversed and the process is repeated.

If a spill enters the storm sewer system and it is not intercepted by the Storm Sewer Lift Station, it can, under normal conditions, be isolated in one of the two chambers of the SWRB. With the spill isolated in one chamber of the SWRB, stormwater is directed to the second chamber. A spill retained in one chamber of the SWRB can be sent to the General Sump or the Bionitrification Surge Lagoon (BSL) for treatment.

Likewise, during cleanout of the basin or during the repair of a leak or tear in the FML, one chamber of the SWRB can be isolated for cleaning or repair while the flow is directed to the second chamber. The cleanout plan section in the PTI stated that the maintenance of the SWRB is based on cleanout when the accumulated sediments reach an average depth of 6 inches which is approximately every two years.

Once filled, the SWRB will take approximately 24 days to empty when pumped out at the 300 gallons per minute discharge capacity, provided no further rainfall occurs during that period. Furthermore, it would take approximately 5 1/2 days to pump out enough volume so that the rainfall from an additional one inch rainfall could be retained. It was clear to the Ohio EPA at the time the PTI was issued that sequential rainfall events, each considerably less than the 10-year 24-hour storm, would result in overflows to Paddy's Run.

The basin construction provides for dual containment of the retained water. The dual containment consists of a primary synthetic FML over a secondary liner of 18 inches of bentonite/soil mixture with an underdrain collection system between the two liners. Any leakage through the FML collects in the underdrain, flows to a collection sump,

and is pumped back into the SWRB. The volume of leakage is recorded and is required by the PTI not to exceed a leakage rate of 40 gallons/acre/day. To prevent the liners from being damaged, a separate collection system installed around the perimeter of each chamber intercepts and collects perched groundwater that exists in the area.

TABLE 1

CHRONOLOGY OF EVENTS DURING THE FIRST YEAR OF OPERATION (Dec. 1988 - Dec. 1989)

DATE	EVENT
December 28, 1988	Expanded Stormwater Retention Basin (SWRB) Operations Started
February 27, 1989	Routine Inspection indicates leak in East SWRB FML
March 4-6, 1989	1.44 inches of sequential rain, melted sleet, and melted snowfall
March 6, 1989	Electrical Conductance Probe (ECP) inspection locates leak in East FML
March 15, 1989	0.35 inches of rainfall
March 20, 1989	1.48 inches of rainfall
March 27, 1989	East SWRB leak sealed with silicone adhesive
March 28-31, 1989	2.40 inches of sequential rainfalls
March 31, 1989	SWRB Overflow Event (Estimated Volume 16,000 gallons)
April 2-4, 1989	0.96 inches of sequential rainfalls
April 4, 1989	SWRB Overflow Event (Estimated Volume 582,000 gallons)
April 6, 1989	0.79 inches of rainfall
April 27-30, 1989	2.74 inches of sequential rainfall
April 29-30, 1989	Near Overflow
May 22-23, 26, 1989	2.89 inches of sequential rainfall
May 25-26, 1989	Near Overflow
June 1, 1989	Submersible pump installed to replace worn west SWRB pump
June 20, 1989	From operator notes; basin close to being emptied
July 12, 1989	Install reworked East SWRB float. Test unsuccessful. Redesign required.
July 28, 1989	Noted East SWRB float discharge line disconnection
August 16, 1989	Noted two 4" tears above water line in the West Small section liner
August 19, 1989	Noted a four foot tear in West Chamber of the SWRB liner near small section overflow
September 29 - October 7, 1989	West Chamber Sediment Removal
October 24, 1989	Contractor patched holes in liner West Chamber of the SWRB
November 6, 1989	New 550 gpm pump installed at SWRB Lift Station

DESCRIPTION OF EVENTS, PROBLEMS, AND CORRECTIVE ACTIONS

Overflow and Near Overflow Events

During the first six months of 1989, the FMPC received greater than 25 inches of rainfall; equivalent to the heaviest rainfall ever experienced in the 37 year history of the FMPC site for that period. Overall, the 1989 rainfall recorded at FMPC was 44.53 inches which was slightly greater than the 30 year average annual rainfall measured at the Greater Cincinnati Airport of 41 inches. The SWRB discharged approximately 0.185 million gallons per day (MGD) of stormwater runoff to Manhole 175 during 1989. Estimated in the FMPC NPDES Application, an average rainfall year would produce a stormwater runoff volume of 0.201 MGD. The slight difference between the 0.185 and 0.201 MGD is attributed to the fact that not all of the 136 acres of the process area allowed for in the design was collected. The collection of the remaining process area was scoped under a separate project (Storm Sewer Improvements project). Total monthly rainfalls, SWRB discharge volume to Manhole 175, TSS concentration (average, maximum, and minimum) for 1989 are listed in Table 2 and plotted in Figure 1.

As can be seen from this rainfall data, the FMPC received greater than 4.1 inches of rainfall (the quantity of rainfall required to fill the SWRB) during each of February, March, April, May, July and August. The occurrence of high rainfall during the successive months of February, March, April, and May resulted in two overflow events on March 31 and April 4 and two near-overflow events on April 29 and May 26. Discharge volumes to Paddy's Run for the two overflow events were estimated to be 16,000 gallons and 582,000 gallons, respectively. On April 29 and May 26, the basin level rose to within inches of the overflow level.

The dryer month of June allowed the SWRB to be emptied for the first time during 1989 (June 20th). Emptying of the basin at that time allowed the high rainfall in July and August to be contained without the threat of an overflow. Overall, it is felt that the SWRB retention/pumpout operation performed as expected. However, plans are underway (see below) to increase the pumpout rate at the SWRB to reduce the potential for future sequential high rainfall events to overflow.

East SWRB Floating Intake

A floating intake device is employed in each chamber of the SWRB. The purpose of these devices is to skim the clearest water from the top of the basins. The design for the floating intake device for the East SWRB chamber was modified from the west chamber's design to enhance the skimming operation. Unfortunately, the new design experienced operational difficulties. The new intake device had a tendency to overturn while being pumped. To correct this recurring problem, several adjustments were made to the device. The final solution was to add an outrigger to increase the skimmer's stability. Since this correction has been implemented, the floating intake device has not overturned.

Table 2

Month	Rainfall Inches	Discharge Volume Gal/day	Total Suspended Solids (mg/l)		
			Average	Maximum	Minimum
December, 1988	2.68	16,500	40.0	40.0	40.0
January, 1989	2.26	193,200	22.3	50.0	6.0
February, 1989	5.18	121,000	40.0	46.0	34.0
March, 1989	6.19	196,000	32.0	68.0	12.0
April, 1989	5.80	216,000	28.0	57.0	11.0
May, 1989	5.28	216,000	27.6	61.0	3.0
June, 1989	1.74	352,000	17.3	59.0	2.0
July, 1989	4.21	170,300	20.3	36.0	5.0
August, 1989	4.57	155,400	50.0	50.0	50.0
September, 1989	1.68	331,600	8.0	11.0	6.0
October, 1989	1.81	94,200	8.0	8.0	8.0
November, 1989	2.87	149,200	28.7	60.0	12.0
December, 1989	2.94	29,800	27.0	27.0	27.0

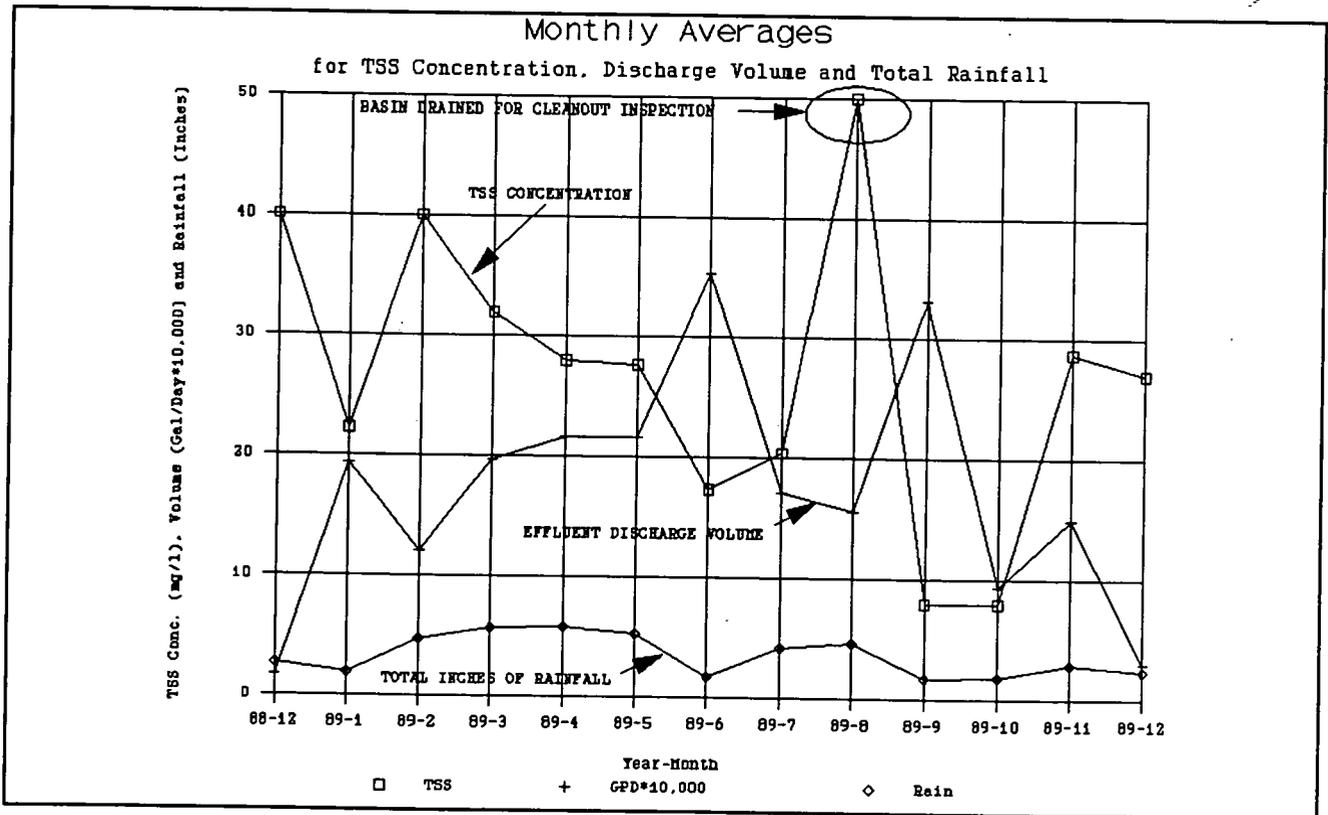


Figure 1

East SWRB Liner Leak

During the week of February 27, a routine inspection of the East Chamber SWRB underdrain sump pump discharge volume monitoring counter revealed that a sudden increase in the liner leakage volume had occurred. This increased volume indicated that a leak had probably developed in the East Chamber FML. A specialized subcontractor performed Electrical Conductivity Probe (ECP) tests during the week of March 6. The testing indicated a signal in the southern third of the basin. Several subsequent rainfalls required water to be retained in the east chamber which delayed inspection of the signal location. Two small slits (approximately 3/8 inch in length each) were found at a crease in the south bottom portion of the East Chamber. The leaks were patched with a silicone adhesive during the week of March 27, shortly before the major rainfall and overflow event on March 31.

Liner Leakage Records

For this report, the SWRB underdrain information data was reviewed. Two instances were recorded that exceeded the operating procedure standards (August 4th and September 2). Per the procedure, if the underdrain sump pump counter exceeds once a day it is to be reported. The number of pump activations for the August 2nd, 3rd, and 4th totaled four times which would then be equal to 1.3 counts per day. On August 1, the FMPC installed a new pump in the west underdrain. The data indicates no long term problems. It can be assumed that calibration of the replacement pump can be the attributed cause of the extra pumpout. On September 2, seven counts for pump activation were reported over a two day period (3.5 counts per day). The groundwater intercept sump had overflowed into the underdrain collector sump. It was found that the groundwater intercept sump pump had been tested and the pump control switch had been left in the OFF position so that other repairs could be made.

Worn Pump Replacement

In June, a submersible pump was installed to temporarily replace the worn west pump at the SWRB pumping pit.

Increase SWRB Pumpout Rate

To reduce the occurrence of the SWRB overflows, it was decided that procurement of a larger discharge rate pump, larger flow meter elements, and installation of an increased power supply were needed. Six inch flow sensors were installed to replace the existing three inch sensors to allow for increased flow. The existing 100 amp circuit breaker feeding the SWRB was removed and a 200 amp disconnect switch with 175 amp fuses was installed along with two 5 Kilowatt "buck-boost" transformers to maximize the power available to the SWRB without installing new larger wire. A new 550 gallon per minute pump was installed in November to replace the west pump.

West Chamber Cleanout

In the PTI application, a solids clean out method for the SWRB was proposed using a mini-dredge and a trailer mounted slurry treatment system for solids filtration and dewatering. Likewise, during cleanout of the basin and the repair of the FML, one chamber was to be isolated for cleaning and repair while the flow is directed to the second chamber.

It was determined from the Bionitrification Surge Lagoon cleanout experience (which occurred after submittal of the SWRB PTI) that cleanout of the SWRB could be accomplished using an industrial vacuum. Because this proved effective, it was decided to change the method for cleanout.

In August, the West Chamber of the SWRB was drawn down to determine the volume and level of the settled solids. Sediment in the larger section of the west chamber was found to be less than an inch in depth and no cleanout was determined to be needed. However, in the smaller section of the west chamber (previously referred to as Emergency Spill Basin) approximately 13 inches of sediment was found. As a delay was experienced in receipt of the FMPC vacuum truck, a subcontracted industrial vacuum service was utilized to allow the most expeditious removal of the sediment from the smaller basin.

In late September, the West SWRB chamber was drained and an industrial vacuum service was contracted to cleanout the west chamber of the SWRB. The cleanout occurred between September 28 and October 9. The solids from the bottom of the SWRB were placed in approximately 700 55-gallon drums and handled as a hazardous waste while waiting for a RCRA analysis to be performed. Subsequent analysis determined that this material was non-hazardous. The sediment will remain stored in drums until a facility on site can process it for shipment and disposal as a low level radiological waste. After the cleanout of the West Chamber, a second contractor was brought in to patch the FML tears that had been discovered earlier. The FMPC industrial vacuum truck to be used on future cleanouts of the SWRB arrived in April 1990.

EVALUATION OF TOTAL SUSPENDED SOLIDS (TSS) DATA IN SWRB DISCHARGE

Monthly average grab-sampled TSS concentration and discharge volume data was plotted (Figure 1) to display the SWRB settling performance. Rainfall data was superimposed on the graph. Improvements in the solid settling in the SWRB can be observed in the graph. Poor performance at the beginning of the plotted period are attributed to several factors. These factors are listed below:

- Rainfall quantity experienced at the FMPC during the first six months of 1989 was equivalent to the 37 year maximum for the FMPC site.
- The SWRB was operated at the "Alert" level (above the top of the inlet control sluice gates) during much of the first six months of operation which negated normal quiescent operation.
- In late July and August, the West SWRB chamber was drawn below minimum normal operating level to determine the level of the sediment collected in the basin. Drawing down the West Chamber to a low level is believed to have caused the floating intake to disturb the sediment as it settled and thereby causing high TSS discharge levels.
- Elevated TSS levels in November caused a NPDES noncompliance at Manhole 175 which were partially due to silt disturbed by the operation of the new 550 gpm pump.

- The FMPC process area had several major renovation construction projects which contributed runoff with elevated TSS concentration level to the SWRB.
- The basin operation was affected by the problems and corrective actions noted previously.

The SWRB effluent monthly average TSS level has been on a decreasing trend as problems were corrected. During late July and August, the pump down of the basin resulted in the higher TSS levels reported. September and October are examples of a culmination of factors with low rainfall, erosion control, construction projects completions, and problem corrections noted earlier in this report. The high TSS level in November is in part attributed to the silt in the pump wet well disturbed. When the 550 gpm Mine Trash Pump was turned on early the high TSS level in December indicated a problem had occurred. Operator investigation later found the floating intake device discharge hose in the East Chamber to be disconnected at the fitting near the bottom of the basin.

Based on the above observations, it is assumed that the SWRB will not always be able to achieve the TSS average discharge values of 20 mg/l that were obtained from the quiescent column settling tests performed as part of DFO #4 discussed previously. Heavy rainfalls and SWRB operational problems like those noted during the first year may continue to cause occasional TSS discharge limitation noncompliances of the combined FMPC effluent at Manhole 175.

Long range planning calls for the possible construction of an Advanced Wastewater Treatment (AWWT) Facility for removal of uranium. Pretreatment for TSS removal will be required for the uranium treatment. The AWWT facility is planned to process the wastewater down stream of the SWRB. The operation of the AWWT facility may be required for consistent achievement of long term acceptable TSS discharge levels at Manhole 175 even though much improvement has been seen.

SWRB OPERATING PROCEDURES

Enclosure 1 is FMPC Standard Operating Procedure (SOP) 43-C-326 entitled "Stormwater Retention Basin Control System Operation". This SOP describes in detail the current operating procedure for the SWRB. Prior to issuance of SOP 43-C-326, the SWRB operation was operated under "Change-in-Operation" (CIO) C89-050.

A CIO is used at the FMPC as an interim Operating Procedure. After an operational performance evaluation period, a CIO must be revised or issued. In this case, CIO C89-050 was issued as SOP 43-C-326 without further revisions.

SOP 43-C-326 represents a detailed operating procedure implementing the operating concepts presented in the PTI application. There have been no operating procedural changes which differ from the concepts proposed in the PTI application.

Enclosure 2 is the SOP 43-C-313 for sludge/sediment removal procedure from the SWRB. The title for the SOP is "Stormwater Retention/Emergency Spill Containment Basin Sludge Removal". From the last page of the procedure, it can be seen that this procedure has received a revision to update the format.

Enclosure 3 is SOP 43-C-314 "Stormwater Retention/Emergency Spill Containment Basin Sampling" procedure. This procedure is in the older format and is in the process of revision as can be seen with the inclusion of CIO C-89-049.

2017

ENCLOSURE 1

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 1 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326
		AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-€-312, 10-07-86	Issue Date: 01-10-90

R
R

1.0 PURPOSE

The purpose of this document is to establish the procedure for controlling the operation of the Stormwater Retention Basin.

2.0 APPLICABILITY

This procedure is applicable to the Stormwater Retention Basin (SWRB) operated by the Water Treatment Plant.

3.0 RESPONSIBILITIES

- 3.1 Water Treatment Plant and Wastewater Supervisors shall be responsible for ensuring that only trained personnel operate the Stormwater Retention Basin control equipment.
- 3.2 Operators shall be responsible for complying with this SOP.
- 3.3 The Utilities Engineers shall be responsible for assisting operators and supervisors during an emergency condition.

4.0 DEFINITIONS

- 4.1 Deleterious Material - Any substance, such as acid, caustic, organic material, or uranium, that could have a harmful affect on the FMPC effluent quality.
- 4.2 SWRB - Stormwater Retention Basin.

5.0 REFERENCES

- 5.1 SOP 43-C-308, "Responding to Out-of-Specification Excursions of Storm Sewer Water Quality"
- 5.2 SOP 43-C-314, "Stormwater Retention/Emergency Spill Containment Basin Sampling"
- 5.3 SOP 43-C-318, "Surge Lagoon Underdrain System"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

- 6.1 A defined safety system is not involved.
- 6.2 Stormwater Retention Basin water shall not be allowed to enter Paddy's Run.
- 6.3 Normal process area protective clothing shall be worn at all times.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 2 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326
		AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities		Supersedes: 43-C-312, 10-07-86
		Issue Date: 01-10-90

R
R

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

- 6.4 Safety glasses shall be worn unless additional eye protection is specified by IRS&T.
- 6.5 Personnel within five feet of the basin or in a water craft shall wear a life jacket.
- 6.6 Tasks involving the use of water craft or any operation outside the restricted walkways to the pump areas shall be performed by at least two persons.
- 6.7 Water craft shall be attached to a secure anchorage on the shore.
- 6.8 Prior to entering a manhole, a "Confined Space Entry Permit" shall be posted at the entrance.
- 6.9 Leather-palm gloves shall be worn when required.
- 6.10 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to Radiological Safety for evaluation. The involved employees shall report to Medical Services at the end of their shift or as directed to submit a urine sample and again report at the start of their next shift to submit another urine sample.

7.0 PROCEDURE

7.1 Inspection

NOTE: Changes in operation, unusual conditions, pump alternations, inspections, operating conditions, verifications, and water level in the SWRB chambers shall be recorded in the "SWRB Daily Log Book."

NOTE: Routine checks shall be performed and documented at four hour intervals, seven days per week.

7.1.1 Verify that valves are correctly configured for the current pumping condition (Refer to Table 1). Record the check on the "Routine Inspection Checklist", Form FMPC-PRO-2688 (See Figure 1).

7.1.1.1 If the valves are not in the designated position, open/close valves as required and inform the supervisor.

7.1.2 Visually inspect the chambers and underdrain sump (See Figure 2). Record the water level on the Inspection Checklist.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 3 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326
		AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R

7.0 PROCEDURE (cont.)

7.1.2.1 If the water level is high, proceed per Item 7.2, 7.3, or 7.4.

NOTE: Any level above two feet in the West chamber and above one and one-half feet in the East chamber is considered high.

7.1.3 Check the "Old Spillway" for leakage.

7.1.3.1 If a leak is discovered, notify the supervisor and proceed as directed.

TABLE 1
PUMPOUT VALVE CONFIGURATION CHART

Gate or Valve	Not Pumping	Pumping from		
		East Chamber	West Chamber Small	Sections Large
East Control Gate	(1)	Closed	Open	Open
West Control Gate	(1)	Open	Closed	Closed
East Chamber Valve	Closed	Open	Closed	Closed
Small West Valve	Closed	Closed	Open	Closed
Large West Valve	Closed	Closed	Closed	Open
Pump Outlet #1 ⁽²⁾	Closed	Open	Open	Open
Pump Outlet #2 ⁽²⁾	Closed	Open	Open	Open

(1) When pumping out the West chamber, the Large West Section shall be emptied before the Small West Section to improve Total Suspended Solids (TSS) settling.

(2) Both pump outlet valves shall remain open for normal operation.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 4 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326
		AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R

7.0 PROCEDURE (cont.)

7.1.4 Check all control equipment, pumps, lines, valves, and gates for indications of wear or failures. Record the results on the Inspection Checklist.

7.1.4.1 Report any discrepancies to the supervisor and proceed as directed.

7.1.4.2 If a pump malfunction has occurred, proceed per Step 7.7.3.

7.1.4.3 If a line is leaking, proceed per Step 7.7.2.

7.1.5 Check the Underdrain Sump Pump Counters. Record on the Inspection Checklist the number of times the sumps have been pumped.

7.1.5.1 If the counter records more than one pumpout per day, proceed per Step 7.7.1.

7.1.6 Record any conditions that could lead to problems in the comment section of the Inspection Checklist.

7.1.7 After inspection is complete, give the Inspection Checklist to the supervisor.

7.2 SWRB Operation

NOTE: Under normal, dry weather flow conditions, the Storm Sewer Lift Station (SSLS), located south of Manhole 34, pumps water out of the 60 inch storm sewer line to the Great Miami River via Manhole 175. When water quality is threatened by Total Suspended Solids greater than 40 mg/l, the SSLS pumps will shut down to allow water to gravity flow down the 60 inch storm sewer line to one of the SWRB chambers for settling.

NOTE: Filling the SWRB chambers shall be alternated. While one chamber is filling (on-line), the other chamber (off-line) shall settle for 24 hours before being pumped to Manhole 175.

7.2.1 Large West Chamber Pumpout (See Figure 2)

NOTE: For optimum solids settling control during the pumpout of the west chamber, pump the Large West Section before the Small West Section.

7.2.1.1 Before leaving the Water Plant, review SWRB log and reports for current operations and check the time of start for 24 hour chamber settling.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 5 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326 AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R7.0 PROCEDURE (cont.)

- 7.2.1.2 Before leaving the process area, ensure that the six inch motored valve near Manhole 34 is open.
- 7.2.1.3 Ensure that the West Chamber Control Gate is closed and the East Chamber Control Gate is open.
- 7.2.1.4 Check the Large West Chamber Floating Intake. Clear the intake of obstructions.
- 7.2.1.5 Open the Large West Section Gate Valve.
- 7.2.1.6 Open pump outlet valves and sequentially start both pumps.
- 7.2.1.7 Record activities in the "SWRB Daily Log Book."
- 7.2.1.8 When the level in the Large West Section is two feet deep, shut down the pumps.
- 7.2.2 Small West Chamber Pumpout (See Figure 2)

NOTE: If stormwater has not overflowed from the Small West Section into the Large West Section, proceed as follows:

- 7.2.2.1 Perform Steps 7.2.1.1 and 7.2.1.2.
- 7.2.2.2 Check the Small West Chamber Floating Intake. Clear the intake of obstructions.
- 7.2.2.3 Close the Large West Section Gate Valve, if the valve is open.
- 7.2.2.4 Open the Small West Section Gate Valve.
- 7.2.2.5 Open pump outlet valves and sequentially start both pumps.
- 7.2.2.6 Record activities in the "SWRB Daily Log Book."
- 7.2.2.7 When the level in the Small West Section is two feet deep, shut down the pumps and close the pump outlet valves.
- 7.2.2.8 Close the Gate Valve.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 6 of 14 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	SOP 43-C-326
		AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R

7.0 PROCEDURE (cont.)

7.2.2.9 Close the East Chamber Control Gate and Open the West Chamber Control Gate.

NOTE: The SWRB is now in the "Not Pumping Valve Configuration" (Refer to Table 1) with the West Chamber on-line and ready for filling.

7.2.3 East Chamber Pumpout (See Figure 2)

7.2.3.1 Before leaving the Water Plant, review the "SWRB Daily Log Book", the reports for current operations, and time of start of 24 hours settling.

7.2.3.2 Before leaving the process area, ensure that the six inch motored valve near Manhole 34 is open.

7.2.3.3 Ensure that the East Chamber Control Gate is closed and the West Chamber Control Gate is open.

7.2.3.4 Check the East Chamber Floating Intake. Clear the intake of obstructions.

7.2.3.5 Open the East Chamber Gate Valve.

7.2.3.6 Open pump outlet valves and sequentially start both pumps.

7.2.3.7 Record activities in the "SWRB Daily Log Book."

7.2.3.8 When the level in the East Chamber is 1.5 feet deep, shut down the pumps and close outlet valves.

7.2.3.9 Close the East Chamber Gate Valve.

7.2.3.10 Close the West Chamber Control Gate and open the East Chamber Control Gate.

NOTE: The SWRB is now in the "Not Pumping Valve Configuration" (Refer to Table 1) with the East Chamber now on-line and ready for filling.

7.3 Underdrain Sump Operation

7.3.1 East Chamber Underdrain Sump

7.3.1.1 Using the depth sensor, check the water depth in the East chamber underdrain sump.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 7 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326
			AREA: Water Treatment
R	Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90
R			

7.0 PROCEDURE (cont.)

- 7.3.1.2 Check the Underdrain Leachate Sump Counter and record the number of pumpouts in the "SWRB Daily Log Book."
- 7.3.1.3 If the counter has recorded more than one pumpout per day, proceed per Item 7.7.1.

NOTE: On the first Monday of each month, the Underdrain and Groundwater Sump Pumps shall be started and the operational condition checked. After testing is concluded, the pumps shall be shut off and the counters reset.

7.3.2 West Chamber Underdrain Sump

- 7.3.2.1 Using the depth sensor, check the water depth in the West chamber underdrain sump.
- 7.3.2.2 If the depth sensor shows an excess of water in the sump, start the sump pumps and transfer the water to the Small West SWRB Chamber.
- 7.3.2.3 Record the times required to pump out the Groundwater and Leachate Sumps in the "SWRB Daily Log Book."
- 7.3.2.4 If the sump is pumped more than once per day, proceed per Step 7.7.1.
- 7.3.2.5 When pumping is complete, shut off the pumps, and open the valves to allow the transfer line to drain.
- 7.3.2.6 Record the activities in the "SWRB Daily Log Book."

7.4 Responding to High Water Levels in the SWRB

- 7.4.1 If the water level in the on-line chamber is below the top of the Control Gate and influent receipt has ended, check the water level in the off-line chamber.
 - 7.4.1.1 If the off-line chamber is being pumped out (Refer to Item 7.2), continue pumping and notify the Water Treatment Plant or Wastewater Supervisor of the condition.
- 7.4.2 If the off-line chamber water is at the minimum level, notify the Water Treatment Plant or Wastewater Supervisor of the condition and proceed as follows:

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 8 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326
			AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90	

R
R

7.0 PROCEDURE (cont.)

7.4.2.1 Close the Control Gate to the on-line chamber.

NOTE: Closing the control gate changes the status of the chamber from on-line to off-line.

7.4.2.2 Open the Control Gate to the off-line chamber.

NOTE: This chamber will now be on-line.

7.4.2.3 After a 24 hour settling period, pump out the current off-line chamber per Item 7.2.

7.4.2.4 Record the activities in the "SWRB Daily Log Book."

7.4.3 If the contents of the on-line chamber is overflowing the Control Gate and into the off-line chamber, check the water level in the off-line chamber.

7.4.4 If the off-line chamber water level is below the top of the Control Gate, notify the Water Treatment Plant or Wastewater Supervisor and the Utility Engineer of the condition and proceed as follows:

NOTE: The Utilities Engineer may inform the EDO, Regulatory Compliance, and Environmental Engineering Managers of the condition.

7.4.4.1 Stop pumping out the off-line chamber.

7.4.4.2 Perform Steps 7.4.2.1 thru 7.4.2.4.

7.4.5 If the water level in the off-line chamber is above the closed Control Gate, notify the Water Treatment Plant or Wastewater Supervisor and Utility Engineer of the condition and proceed as follows:

NOTE: The Utility Engineer shall inform the Emergency Duty Officer, Regulatory Compliance and Environmental Engineering Managers of the condition.

7.4.5.1 Open the Control Gate to the on-line chamber.

7.4.5.2 Open the Control Gate to the off-line chamber.

7.4.5.3 Open the East Chamber Gate Valve.

7.4.5.4 Open the Large West Section Gate Valve.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 9 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326
			AREA: Water Treatment
R R	Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

7.0 PROCEDURE (cont.)

7.4.5.5 Close the Small West Section Gate Valve.

7.4.5.6 If pumps are not operating, open pump outlet valves and start both pumps sequentially.

7.4.5.7 Record activities in the "SWRB Daily Log Book".

7.4.5.8 When the water level is six inches below the top of the closed control gates, reset all gates and valves for pump out of the East Chamber (Refer to Item 7.2).

7.4.6 If the SWRB overflows into Paddy's Run, immediately notify the Water Treatment Plant and Wastewater Supervisors and Utility Engineer of the condition and set all gates and valves for pump out of the East Chamber per Item 7.2.

NOTE: The Utility Engineer shall contact the Emergency Duty Officer, Regulatory Compliance, and Environmental Engineering Managers. The Water Treatment Plant Supervisor and Utility Engineer shall prepare a "Minor Event Report".

7.5 High Total Suspended Solids Alarm

NOTE: A high total suspended solids (TSS) condition shall exist when total suspended solids are more than 40 mg/l.

7.5.1 Shut off pumps and make a visual check of the SWRB.

7.5.1.1 If any discrepancy is discovered, notify the supervisor and proceed as directed.

7.5.2 Check the TSS Recorder and the "SWRB Daily Log Book." Report findings to the Water Treatment Plant/Wastewater Supervisor and the Utility Engineer.

NOTE: The Utility Engineer may inform the Emergency Duty Officer, Regulatory Compliance, and Environmental Engineering Managers of the condition.

7.5.3 Compare TSS readings with previous laboratory sample data. If readings are not consistent, notify the supervisor.

NOTE: The supervisor shall submit a work order to have meter checked for proper operation.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 10 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326 AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities		Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R

7.0 PROCEDURE (cont.)

7.5.4 Check the chamber water level.

7.5.4.1 If the level is less than one foot above minimum, set the valves to the "Not Pumping" configuration (Refer to Table 1).

7.5.4.2 If the level is greater than one foot above minimum, allow a 12 hour settling period and then pump out the chamber per Item 7.2.

7.5.4.3 If the level is above the Control Gate, acknowledge the alarm and proceed per Item 7.4.

7.5.5 Record the occurrence and action taken in the "Daily Log Book."

7.6 High pH or Deleterious Material Release

7.6.1 In case of material release or an alarm condition, proceed as follows:

7.6.1.1 Visually observe the SWRB condition.

7.6.1.2 Check the SWRB Recorders.

7.6.1.3 Report the condition, action taken, and any findings to the Water Treatment Plant and Wastewater Supervisors and the Utility Engineer.

NOTE: The Utility Engineer may inform the Emergency Duty Officer, Regulatory Compliance, and Environmental Engineering Managers of the condition.

7.6.1.4 Take water samples from the SWRB. Send the samples to the Water Treatment Laboratory for analyses (Refer to SOP 43-C-318).

7.6.1.5 Proceed per SOP 43-C-308.

7.6.1.6 Record the occurrence and action taken in the "SWRB Daily Log Book."

7.7 Emergency Operation

7.7.1 Liner Failure

NOTE: If the Underdrain Leachate Sump Counter records more than one pumpout per day, a liner failure may have occurred.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 11 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326
			AREA: Water Treatment
Authorization: Per CIO C89-050 L. Pennington, Utilities		Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

R
R

7.0 PROCEDURE (cont.)

- 7.7.1.1 Report the condition to the Water Treatment Plant and Wastewater Supervisors, and Utility Engineer and proceed as directed.

NOTE: The Utility Engineer shall contact the regulatory Compliance, and Environmental Engineering Managers of the condition. Decisions for repair and operation shall be made by the EDO with recommendations of Regulatory Compliance and Environmental Engineering Managers.

7.7.2 Line Leakage

- 7.7.2.1 Immediately notify Wastewater Supervisor, Water Plant Supervisor, and Utilities Engineer of the condition and proceed as directed.

NOTE: Utilities Engineer may inform the Emergency Duty Officer of the occurrence.

7.7.3 Pump Malfunction

- 7.7.3.1 Turn off malfunctioning pump.
- 7.7.3.2 Close valves to isolate the malfunctioning pump.
- 7.7.3.3 Notify Wastewater Supervisor or Water Plant Supervisor of malfunctioning pump and proceed as directed.

NOTE: The Supervisor shall submit a work order to have the pump repaired.

7.8 Shutdown

- 7.8.1 Turn off all pumps.
- 7.8.2 Set valves to "Not Pumping" valve configuration (Refer to Table 1).

8.C APPLICABLE FORMS

- 8.1 FMPC-PRO-2688, "Stormwater Retention Basin System Routine Inspection Checklist"

OPERATIONS
PROCEDURE

STORMWATER RETENTION BASIN
CONTROL SYSTEM OPERATION

SOP 43-C-326

AREA: Water Treatment

Authorization: Per CIO C89-050
L. Pennington, Utilities

Supersedes:
43-C-312, 10-07-86

Issue
Date: 01-10-90

WMCO STORMWATER RETENTION BASIN SYSTEM
ROUTINE INSPECTION CHECKLIST

Operators _____
Date _____ Time _____ A.M. P.M.

Check the appropriate selection or enter the required information.

PUMPOUT VALVE CONFIGURATION CHART

Gate or Valve	Not pumping	Pumping from		
		East Chamber	West Chamber Small	West Chamber Large
East Control Gate	Note 3	Closed	Open	Open
West Control Gate	Note 3	Open	Closed	Closed
E. Chamber Valve	Closed	Open	Closed	Closed
Small-West Valve	Closed	Closed	Open	Closed
Large-West Valve	Closed	Closed	Closed	Open
Pump Outlet #1	Closed	Open	Open	Open
Pump Outlet #2	Closed	Open	Open	Open

NOTE: 1) To pump out the West chamber, pump the Large-West Section before the Small-West Section to improve Total Suspended Solids (TSS) settling.
2) Both pump outlet valves shall remaining open for normal operation.
3) See procedure 7.2.1.

- Using the valve configuration chart as a guide, are the valves properly configured for the pumping situation? YES () NO ()
- What is the current configuration? _____
Time and date of inflow shut off to off-line basin? _____/_____/_____
- Are all control panels (EAST, SMALL-WEST, LARGE-WEST, and Underdrain) selector switches set for "HAND" operation? YES () NO ()
If NO, set them in "HAND" unless otherwise instructed.
- What is the water level in:
Small-West Chamber Section? _____
Large-West Chamber Section? _____
East Chamber? _____
West Chamber Underdrain Sump Groundwater? _____ Leachate? _____
East Chamber Underdrain Sump Groundwater? _____ Leachate? _____
- Is there any water leakage in the "Old" spillway? YES () NO ()
- What are the current readings for:
Total Suspended Solids _____ mg/l Conductivity _____ mhos
Dissolved Oxygen _____ mg/l pH _____ Totalizer Volume _____ gal.
- East Chamber Underdrain pumpout counter readings
Groundwater _____ Leachate _____
Have the underdrain sumps been pumped more than once per day? _____
- West chamber Underdrain pumpout counter readings
Groundwater _____ Leachate _____
Has underdrain sump been pumped more than once per day? _____
- Enter any observations or comments which you consider important:

Stormwater Retention Basin System
Routine Inspection Checklist
FMPC-PRO-2688
Figure 1

STORMWATER RETENTION BASIN SYSTEM
ROUTINE INSPECTION CHECKLIST
FMPC-PRO-2688
Figure 1

OPERATIONS
 PROCEDURE

STORMWATER RETENTION BASIN
 CONTROL SYSTEM OPERATION

SOP 43-C-326

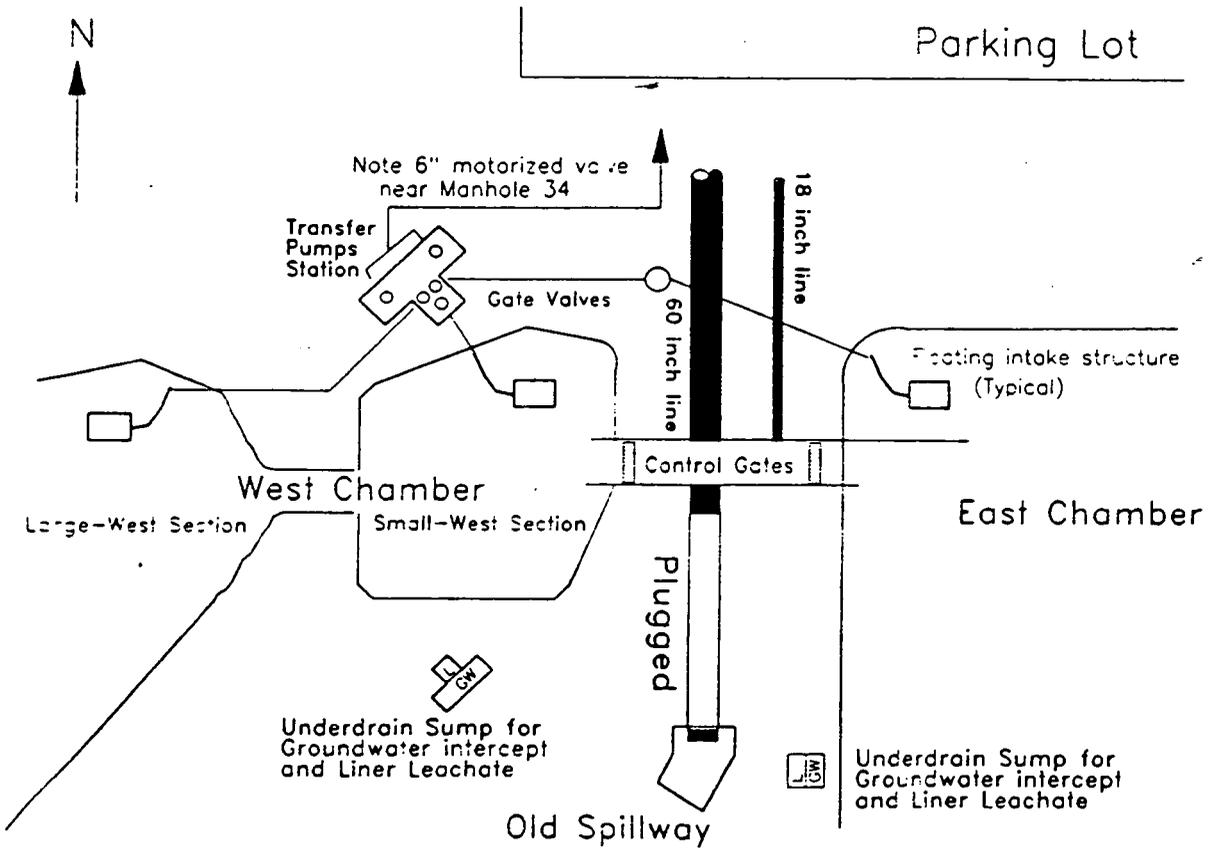
AREA: Water Treatment

Authorization: Per CIO C89-050
 L. Pennington, Utilities

Supersedes:
 43-C-312, 10-07-86

Issue
 Date: 01-10-90

R
 R



STORMWATER RETENTION BASIN
 Figure 2

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 14 of 14 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION		SOP 43-C-326
			AREA: Water Treatment
R R	Authorization: Per CIO C89-050 L. Pennington, Utilities	Supersedes: 43-C-312, 10-07-86	Issue Date: 01-10-90

RECORD OF ISSUE/REVISIONS

<u>DATE</u>	<u>REV.NO.</u>	<u>DESCRIPTION AND AUTHORITY</u>
01-10-90	0	Procedure required per CIO C89-50 (P89-356).
06-29-90	1	Revised to correct superseding data in heading per Request P90-252, initiated by N. K. Weichold.

2017

ENCLOSURE 2

NON-CONTROLLED COPY

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 1 of 5 Revision No. 5678910111213141516171819202122232425	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL		SOP 43-C-313
Authorization: (Signature on File) W. Britton/Pennington, Utilities		Supersedes: NONE	AREA: Water Treatment Issue Date: 10-07-86

1.0 PURPOSE

The purpose of this document is to establish the procedure for removing sludge from the Stormwater Retention Basin.

2.0 APPLICABILITY

This procedure is applicable to the Stormwater Retention Basin (SWRB) located in the Water Treatment Plant Area.

3.0 RESPONSIBILITIES

3.1 Supervisors shall be responsible for the following:

- 3.1.1 Ensuring that only trained personnel check sludge level and remove sludge from the SWRB.
- 3.1.2 Determining when sludge is to be removed.
- 3.1.3 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the process being performed.
- 3.1.4 Providing operators with the required respiratory protection.

3.2 Operators shall be responsible for complying with this SOP.

4.0 DEFINITIONS

NONE

5.0 REFERENCES

- 5.1 SOP 43-C-312, "Stormwater Retention/Emergency Spill Containment Basin System Routine Check and Level Control"
- 5.2 SOP 43-C-314, "Stormwater Retention/Emergency Spill Containment Basin Sampling"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

- 6.1 A defined safety system is not involved.
- 6.2 Leather-palm gloves shall be worn while operating equipment and handling material/containers.
- 6.3 Safety glasses shall be worn at all times.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 2 of 5 Revision No.: 1
OPERATIONS PROCEDURE	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL	SOP 43-C-313 AREA: Water Treatment
Authorization: (Signature on File) W. Britton/Pennington, Utilities	Supersedes: NONE	Issue Date: 10-07-86

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

- 6.4 A life jacket shall be worn by personnel in a watercraft and/or within five feet of the basin.
- 6.5 Respiratory protection provided by the supervisor shall be worn when required.
- 6.6 A second operator shall be present while work is being performed outside of the restricted walkways or while a watercraft is in use.
- 6.7 Watercraft shall be attached to a secure anchorage on the shore.
- 6.8 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to Radiological Safety for evaluation. The involved employees shall report to Medical Services at the end of their shift or as directed to submit a urine sample and again report at the start of their next shift to submit another urine sample.

7.0 PROCEDURE

7.1 Determination of Accumulated Sludge Level

R **NOTE:** The sludge accumulation in the Stormwater Retention and Emergency Spill
R Containment Basin shall be checked on a thirty day basis.

R 7.1.1 Clean out the SWRB when the sludge level reaches 6 inches or once every 2
R years.

NOTE: Records of accumulation and removal of sludge shall be maintained by Operations.

7.1.2 If a high accumulation of sludge is suspected in a basin and the level cannot be determined visually, one of the following procedures may be used to determine the sludge level.

R 7.1.2.1 Lower the basin level (Refer to SOP 43-C-312) until it is possible to
R visually determine the sludge levels.

FMFC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 3 of 5 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL		SOP 43-C-313 AREA: Water Treatment
Authorization: (Signature on File) W. Britton/Pennington, Utilities		Supersedes: NONE	Issue Date: 10-07-86

7.0 PROCEDURE (cont.)

R 7.1.2.2 Using a boat, dip or drag a weighted sample jar a short distance on the
R bottom of the deepest part of the basin. When retrieved, examine the
R jar to determine the sludge levels.

R 7.1.3 Send samples to the Water Treatment Laboratory for analysis of oil and
R grease (O&G), pH, and filterable and non-filterable uranium.

NOTE: The presence of oil, grease, or uranium will require a management decision as to the method of sludge disposal.

7.2 Removal of Sludge

R **NOTE:** If the following method of sludge removal is unacceptable, the
R supervisor may specify other methods, such as a mini-dredge or belt
R filter press, to remove sludge.

NOTE: If it has been determined by the supervisor that accumulated sludge level is too high, the sludge shall be removed.

7.2.1 Ensure that previous samples showed no evidence of hazardous substances.

7.2.2 Using the permanent pumps, transfer as much basin water as permissible to Manhole 175 for disposal into the Great Miami River (Refer to SOP 43-C-312).

R 7.2.2.1 If the water remaining in the basin is greater than the amount of water
R to be used for clean out, use a portable pump and transfer the water to
R the opposite chamber of the SWRB (Refer to SOP 43-C-312).

R 7.2.3 Utilizing pressure hoses, wash remaining sludge to the lowest area of the basin.

R 7.2.4 Using the portable pump, transfer the sludge to containers.

R 7.2.5 Debris that cannot be removed by the trash pump shall be transferred to the container vehicle by hand.

NOTE: Floating debris shall remain until the level is pumped down to where the debris may be retrieved by hand.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 4 of 5 Revision No.: 1	2017
OPERATIONS PROCEDURE	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL	SOP 43-C-313	AREA: Water Treatment
Authorization: (Signature on File) W. Britton/Pennington, Utilities		Supersedes: NONE	Issue Date: 10-07-86

7.0 PROCEDURE (cont.)

7.3 Disposal of Sludge

R 7.3.1 After sludge has been removed, notify the supervisor.

R **NOTE:** The supervisor shall notify Transportation to move the sludge
R container to Plant 8 for processing.

8.0 APPLICABLE FORMS

NONE

OPERATIONS PROCEDURE	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL	SOP 43-C-313 <hr/> AREA: Water Treatment
Authorization: (Signature on File) W. Britton/Pennington, Utilities		Supersedes: NONE <hr/> Issue Date: 10-07-86

RECORD OF ISSUE/REVISIONS

<u>DATE</u>	<u>REV. NO.</u>	<u>DESCRIPTION AND AUTHORITY</u>
10-07-86	N/A	Request for new procedure for Stormwater Retention/ Emergency Spill Containment Basin Sludge Removal per SOP Change Request No. P86-207, initiated by L. Pennington.
11-17-89	1	Revised to incorporate CIOs C89-046 (P89-322) and C89-047 (P89-329) and reformat to current procedure program requirements.

2017

ENCLOSURE 3

WESTINGHOUSE MATERIALS
COMPANY OF OHIO - FMPCPage 1
Page Revision Date:

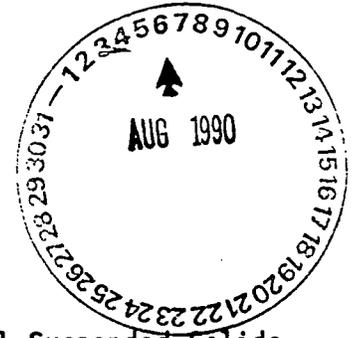
NON-CONTROLLED COPY

PRODUCTION
OPERATIONS
PROCEDURETitle: STORMWATER RETENTION/EMERGENCY
SPILL CONTAINMENT BASIN SAMPLING

SOP 43-C-314 2017

Division: Production
Plant: Water TreatmentAuthorization: W. H. Britton
J. R. Dunaway for W. H. Britton

Supersedes: None

Issue
Date: 10-07-86REFERENCES: SOP 43-C-301
SOP 43-C-308
SOP 43-C-312
SOP 43-C-313
SOP 43-C-701DEFINED SAFETY SYSTEM INVOLVED: _____ YES _____ NO1.0 DESCRIPTION OF OPERATION AND EQUIPMENT

During periods of heavy rainfall and high levels of Total Suspended Solids (TSS), overflow water from Manhole 34 is directed through a 60 inch sewer line to the 577,000 gallon Emergency Spill Basin (ESB). Should the overflow water levels in the ESB become too high, the excess water will spill over into the 5,710,000 gallon Stormwater Retention Basin (SRB). As settling of the Total Suspended Solids takes place, the water must be sampled to determine if TSS levels are within normal limits to allow the pumping of excess water to Manhole 175 for release into the Great Miami River.

Two methods of sampling will be used on the basins. While pumping to Manhole 175 is in progress, an automatic sampler will accumulate a composite sample. During periods when no pumping operations are in progress, it is necessary to manually take "grab" samples from each basin.

NOTE: The automatic sampler is not currently in the system so manual grab samples will now be required even when pumps are operating.

2.0 ENVIRONMENTAL CONSIDERATIONS

- 2.1 It is the intention of Westinghouse Materials Company of Ohio to achieve and maintain those levels of air and water quality which will protect health and promote welfare and safety. The responsibility for limiting the uncontrolled or unintended release of pollutants rests with all personnel.
- 2.2 No water is to be pumped or otherwise discharged under any circumstance from the Stormwater Retention/Emergency Spill Containment System into Paddys Run.

3.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

- 3.1 The normal process area protective clothing and safety glasses are to be worn at all times.
- 3.2 Personnel must wear an approved life jacket in addition to normal process clothing when within five feet of either basin.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 2 Page Revision Date: 11-29-89	2017
OPERATIONS PROCEDURE	SAMPLING THE STORMWATER RETENTION BASIN AND EMERGENCY SPILL CONTAINMENT BASIN	SOP 43-C-314	AREA: Water Treatment
Authorization: Utilities, W. Britton/L. Pennington		Supersedes: None	Issue Date: 10-07-86

3.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

- 3.3 Any operation outside the restricted walkway areas must be carried out by no less than two persons.
- 3.4 While in operation, a boat or other water craft must be attached to a life line which is secured to an adequate anchorage on the shore.
- 3.5 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to Radiological Safety for evaluation. The involved employees shall report to Medical Services at the end of their shift or as directed to submit a urine sample and again report at the start of their next shift to submit another urine sample.

4.0 PROCEDURE

4.1 Access to Storm Retention Basin Area

- 4.1.1 Contact Security and request that the Stormwater Retention Basin fence gate be unlocked. Water Plant Personnel must be on the Controlled Access List for access to this area.
- 4.1.2 All personnel entering the Stormwater Retention Basin area shall wear an approved life jacket when within five feet of the basin.

R 4.2 Samples shall be taken from Small and Large West Basins, East Chambers and
R East and West Underdrains once per week.

- 4.2.1 Samples shall be obtained by lowering a weighted jar, attached to a rope, into the water to be sampled and withdrawing it when full.

4.3 Quart (32 ounce) samples shall be taken as follows (Refer to Figure 1):

CAUTION: CARE SHOULD BE TAKEN NOT TO SAMPLE AT A LEVEL WHICH WILL INCLUDE SETTLED SOLIDS.

- R 4.3.1 Large West Basin - At the sump.
- R 4.3.2 Small West Basin - At the 60 inch sewer spillway.
- R 4.3.3 East Chamber - At the 60 inch sewer spillway.
- R 4.3.4 West Chamber Underdrain - At the West Groundwater Intercept Sump.
- R 4.3.5 East Chamber Underdrain - At the East Groundwater Intercept Sump.

R - MATERIAL REVISED, ADDED, OR DELETED.

CIO NO. C89-049

FMPC
PRODUCTION OPERATIONS

CHANGE IN OPERATION

Effective Date: 02-13-90

Expiration Date: 08-13-90

1. AFFECTED DOCUMENT NUMBER

43-C-314

2. AFFECTED DOCUMENT PAGE NUMBER

3

3. TITLE OR SUBJECT:

Stormwater Retention/Emergency Spill Containment Basin Sampling

4. OPERATION AND AREA AFFECTED:

Taking Samples/Stormwater Retention Basin

5. SAFETY SYSTEM INVOLVED:

YES

NO

X

6. AUTHORIZATION:

L. Pennington, Utilities *L. Pennington*

DEPARTMENT: Operations

7. CHANGE:

1) Figure 1 is replaced as follows:

REQUIRED DOCUMENT ACTION

35

Prepare and issue new document per this CIO.

PRIORITY ASSIGNMENT

Revise affected procedure/specification per this document.

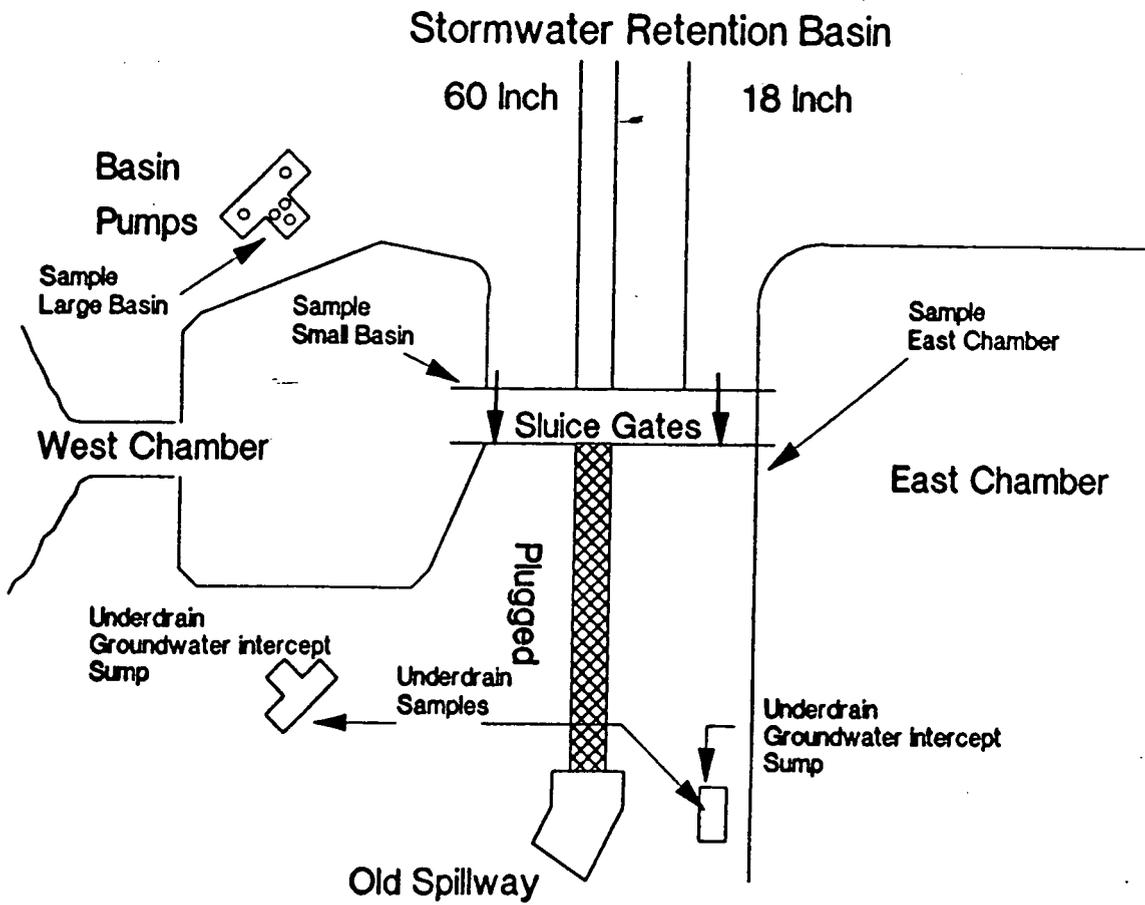
PRIORITY ASSIGNMENT

No procedure/specification action required.

ISSUE INSTRUCTION:

File: file no page 3 SOI: 100-314

ISSUE DATE: 10-07-89 REV: 100-314



Sampling Locations
Figure 1

PRODUCTION
OPERATIONS
PROCEDURE

Title: STORMWATER RETENTION/EMERGENCY
SPILL CONTAINMENT BASIN SAMPLING

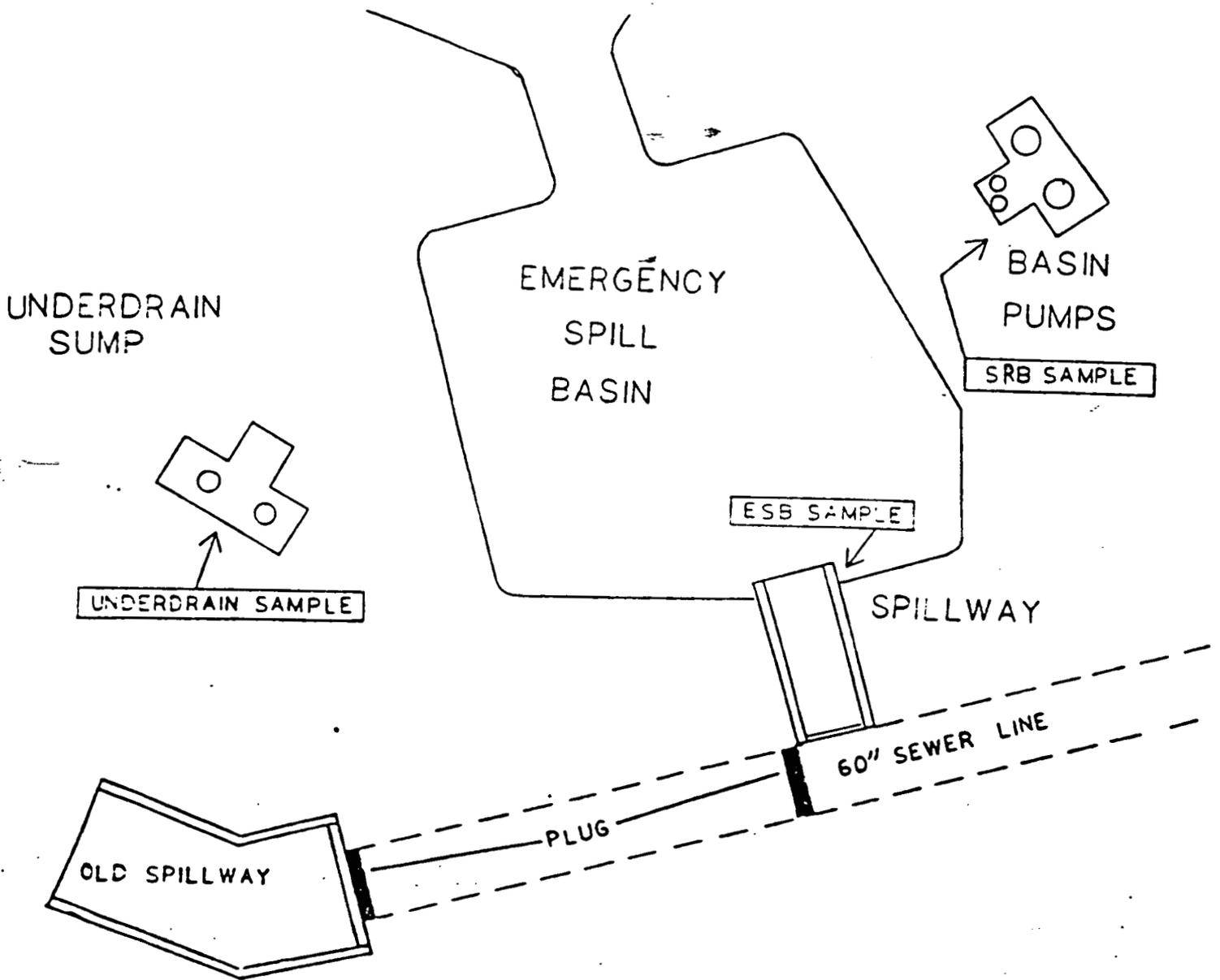
SOP 43-C-314

Division: Production
Plant: Water Treatment

Authorization: W. H. Britton

Supersedes: None

Issue
Date: 10-07-86



SAMPLING LOCATIONS

Figure 1

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC		Page 4 Page Revision Date:	2017
PRODUCTION OPERATIONS PROCEDURE	Title: STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SAMPLING	SOP 43-C-314	
		Division: Production Plant: Water Treatment	
Authorization: W. H. Britton		Supersedes: None	Issue Date: 10-07-86

4.1 Access to Stormwater Retention Basin Area (cont.)

4.4 During periods of pumping, or when pumping is anticipated, an additional one gallon composite sample shall be taken from the discharge of each pump.

4.5 Disposition of Samples

4.5.1 Each sample jar must be properly labeled indicating the following:

- 4.5.1.1 Date sample was taken.
- 4.5.1.2 Time of day sample was taken.
- 4.5.1.3 Location where sample was taken.
- 4.5.1.4 Person taking sample.

4.5.2 Samples shall be handled in accordance with SOP 43-C-301.

4.5.3 Each sample shall be analyzed for, as a minimum, Uranium (U), Oil and Grease (O&G), pH, and Total Suspended Solids (TSS).

4.5.4 If limits of pH (less than 6.5 or greater than 9.0), oil and grease (15 mg/l), or Total Suspended Solids (60 mg/l) are exceeded, pumping activities shall be performed in accordance with SOP 43-C-308, "RESPONDING TO INDICATIONS OF OUT-OF-SPECIFICATION EXCURSIONS OF WATER QUALITY." Any presence of uranium exceeding limits in SOP 43-C-701 shall require a decision by management as to final disposition.

FMPC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 5 Page Revision Date: 11-29-89	2017
OPERATIONS PROCEDURE	SAMPLING THE STORMWATER RETENTION BASIN AND EMERGENCY SPILL CONTAINMENT BASIN	SOP 43-C-314	AREA: Water Treatment
Authorization: Utilities, L. Pennington	Supersedes: None	Issue Date: 10-07-86	

RECORD OF ISSUE/REVISIONS

<u>PAGE</u>	<u>DATE</u>	<u>DESCRIPTION AND AUTHORITY</u>
1 thru 5	10-07-86	Request for new procedure for Stormwater Retention/Emergency Spill Containment Basin Sampling per SOP Change Request No.P86-208, initiated by L. Pennington.
2	11-29-89	Revised to incorporate C89-048 (P89-331).

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>
1	10-07-86
2	11-29-89
3 thru 4	10-07-86
5	11-29-89