STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0127132
Owner:	S-S-S Lumber Company, Inc.
Address:	P.O. Box 474, Louisiana, MO 63353
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	S-S-S Lumber Company, Inc.
Facility Address:	10415 Highway 79 South, Louisiana, MO 63353
Legal Description:	See pages 2, 3, and 4
UTM Coordinates:	See pages 2, 3, and 4
Receiving Streams:	See pages 2, 3, and 4
First Classified Stream and ID:	
USGS Basin & Sub-watershed No.:	

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

SIC - 1422, 4491, 1442 and 5032
Industrial stormwater runoff / mining, crushing and shipping of limestone rock / dredging of river sand and gravel / storing and shipping of limestone, sand and gravel, rock, fertilizer, bauxite, coal, grain, clay, and salt.
Total design flow from all outfalls is greater than 1 MGD.

See pages 2, 3, and 4

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

June 6, 2008
Effective Date

July 6, 2011
Revised Date

Sara Parker Pauley, Director, Department of Natural Resources

June 5, 2013
Expiration Date

Irene Crawford, Regional Director, Northeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 – Stormwater Runoff – SIC #1442

Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669509, Y=4367044
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #002 **Eliminated**

Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669498, Y=4367192
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Outfall #003 – Stormwater Runoff – SIC #1442

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669442, Y=4367268
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #004 **Eliminated**

Legal Description:	SW ¼, NE ¼, Sec 20, T54N, R1W, Pike County
UTM Coordinates:	X=669414, Y=4367307
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Outfall #005 **Eliminated**

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669385, Y=4367346
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Outfall #006 – Stormwater Runoff – SIC #1442

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669341, Y=4367401
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #007 – Stormwater Runoff – SIC #4491

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669316, Y=4367434
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #008 – Stormwater Runoff – SIC #1442

Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669437, Y=4367147
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #009 – Stormwater Runoff – SIC #4226

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=669174, Y=4367382
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #010 – Stormwater Runoff – SIC #1422

Legal Description:	SW ¼, NW ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=668417, Y=4367190
Receiving Stream:	Tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #011 – Stormwater Runoff – SIC #1422

Legal Description:	NE ¼, SW ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=668883, Y=4366891
Receiving Stream:	Tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #012 – Stormwater Runoff – SIC #1422

Legal Description:	Land Grant 2768, Pike County
UTM Coordinates:	X=667730, Y=4367446
Receiving Stream:	Tributary to Noix Creek (U)
First Classified Stream and ID:	Noix Creek (P) (00011)
USGS Basin & Sub-watershed No.:	(07110004 – 110001)

Actual flow is dependent upon precipitation.

Outfall #013 – Stormwater Runoff – SIC #1442

Legal Description:	SE ¼, NW ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=668819, Y=4367208
Receiving Stream:	Tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #014 – Stormwater Runoff – SIC #1442

Legal Description:	SW ¼, SW ¼, Sec. 19, T54N, R1W, Pike County
UTM Coordinates:	X=666999, Y=4366635
Receiving Stream:	Tributary to Noix Creek
First Classified Stream and ID:	Noix Creek (P) (00011)
USGS Basin & Sub-watershed No.:	(07110004 – 110001)

Actual flow is dependent upon precipitation.

Outfall #015 – Stormwater Runoff – SIC #1442

Legal Description:	NE ¼, SW ¼, Sec. 20, T54N, R1W, Pike County
UTM Coordinates:	X=668925, Y=4367043
Receiving Stream:	Tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

Outfall #016 – Stormwater Runoff – SIC #1442

Legal Description:	NE ¼, SW ¼, Sec. 30, T54N, R1W, Pike County
UTM Coordinates:	X=667464, Y=4365137
Receiving Stream:	Unnamed tributary to Buffalo Creek (U)
First Classified Stream and ID:	Buffalo Creek (P) (00014)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Actual flow is dependent upon precipitation.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001, 003, 006, and 008 Outfalls from primary SIC code #1442 and with the first classified receiving stream as the Mississippi River.						
Stormwater Flows (Note 1)						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
pH - Units	SU	*		*	once/quarter***	grab
Total Suspended Solids (TSS)	mg/L	*		*	once/quarter***	grab
Ammonia as N (NH_3)	mg/L	*		*	once/quarter***	grab
Nitrate as N (NO_3)	mg/L	*		*	once/quarter***	grab
Nitrate plus Nitrite Nitrogen	mg/L	*		*	once/quarter***	grab
Aluminum (Al), Dissolved	mg/L	*		*	once/quarter***	grab
Oil & Grease (O&G)	mg/L	*		*	once/quarter***	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/quarter***	grab
Precipitation (Note 2)	inches	*		*	daily	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Non-Stormwater Flows (Notes 3 and 4)						
Flow	MGD	*		*	daily****	24 hr. estimate
pH - Units	SU	**		**	once/month****	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/month****	grab
Total Suspended Solids (TSS)	mg/L	*		*	once/month****	grab
Oil & Grease	mg/L	15		10	once/month****	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Best Management Practices Plan	See 40 CFR 122.44 (k) & 10 CSR 20-6.200				Plan remains on-site, subject to inspection and updated no less than every 5 years	

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PART I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #007 Including all outfalls from primary SIC code #4491 and the first classified receiving stream as the Mississippi River.						
Stormwater Flows (Note 1)						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
pH - Units	SU	**		**	once/quarter***	grab
Total Suspended Solids (TSS)	mg/L	*		*	once/quarter***	grab
Ammonia as N (NH_3)	mg/L	*		*	once/quarter***	grab
Nitrate as N (NO_3)	mg/L	*		*	once/quarter***	grab
Aluminum (Al), Dissolved	mg/L	*		*	once/quarter***	grab
Oil & Grease (O&G)	mg/L	*		*	once/quarter***	grab
Settleable Solids (SS) (Note 7)	mL/L/hr	0.5		0.5	once/quarter***	grab
Precipitation (Note 2)	inches	*		*	daily	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Aluminum (Al), Total Recoverable	mg/L	*		*	once/year	grab
Iron (Fe), Total Recoverable	mg/L	*		*	once/year	grab
Lead (Pb), Total Recoverable (Note 6)	mg/L	*		*	once/year	grab
Zinc (Zn), Total Recoverable (Note 6)	mg/L	*		*	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Non-Stormwater Flows (Notes 3 and 4)						
Flow	MGD	*		*	daily****	24 hr. estimate
pH - Units	SU	**		**	once/month****	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/month****	grab
Total Suspended Solids (TSS)	mg/L	70		35	once/month****	grab
Iron (Fe), Total Recoverable	mg/L	7.0		3.5	once/month****	grab
Oil & Grease	mg/L	15		10	once/month****	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Best Management Practices Plan	See 40 CFR 122.44 (k) & 10 CSR 20-6.200				Plan remains on-site, subject to inspection and updated no less than every 5 years	

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PART I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #009 Including all outfalls from primary SIC code #4226 and the first classified receiving stream as the Mississippi River.						
Stormwater Flows (Note 1)						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
pH - Units	SU	*		*	once/quarter***	grab
Total Suspended Solids (TSS)	mg/L	*		*	once/quarter***	grab
Ammonia as N (NH_3)	mg/L	*		*	once/quarter***	grab
Nitrate as N (NO_3)	mg/L	*		*	once/quarter***	grab
Aluminum (Al), Dissolved	mg/L	*		*	once/quarter***	grab
Oil & Grease (O&G)	mg/L	*		*	once/quarter***	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/quarter***	grab
Precipitation (Note 2)	inches	*		*	daily	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Non-Stormwater Flows (Notes 3 and 4)						
Flow	MGD	*		*	daily****	24 hr. estimate
pH - Units	SU	**		**	once/month****	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/month****	grab
Total Suspended Solids (TSS)	mg/L	*		*	once/month****	grab
Oil & Grease	mg/L	15		10	once/month****	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Best Management Practices Plan	See 40 CFR 122.44 (k) & 10 CSR 20-6.200				Plan remains on-site, subject to inspection and updated no less than every 5 years	

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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #010, 011, 013, and 015 Including all outfalls from primary SIC code #1422 and the first classified receiving stream as the Mississippi River.						
Stormwater Flows (Note 1)						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
pH - Units	SU	*		*	once/quarter***	grab
Total Suspended Solids (TSS) (Note 5)	mg/L	*		*	once/quarter***	grab
Ammonia as N (NH_3) (Note 5)	mg/L	*		*	once/quarter***	grab
Nitrates as N (Note 5)	mg/L	*		*	once/quarter***	grab
Aluminum (Al), Dissolved (Note 5)	mg/L	*		*	once/quarter***	grab
Oil & Grease (O&G) (Note 5)	mg/L	*		*	once/quarter***	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/quarter***	grab
Precipitation (Note 2)	inches	*		*	daily	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Non-Stormwater Flows (Notes 3 and 4)						
Flow	MGD	*		*	daily****	24 hr. estimate
pH - Units (Note 5)	SU	**		**	once/month****	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/month****	grab
Total Suspended Solids (TSS) (Note 5)	mg/L	*		*	once/month****	grab
Oil & Grease	mg/L	15		10	once/month****	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Best Management Practices Plan	See 40 CFR 122.44 (k) & 10 CSR 20-6.200				Plan remains on-site, subject to inspection and updated no less than every 5 years	

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #012, 014, and 016 Including all outfalls from primary SIC code #1422 and the first classified receiving stream as Noix Creek or Buffalo Creek.						
Stormwater Flows (Note 1)						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
pH – Units (Note 5)	SU	*		*	once/quarter***	grab
Total Suspended Solids (TSS) (Note 5)	mg/L	*		*	once/quarter***	grab
Ammonia as N (NH_3) (Note 5)	mg/L	*		*	once/quarter***	grab
Aluminum (Al), Dissolved (Note 5)	mg/L	*		*	once/quarter***	grab
Oil & Grease (O&G) (Note 5)	mg/L	*		*	once/quarter***	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	*		*	once/quarter***	grab
Precipitation (Note 2)	inches	*		*	daily	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE October 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Non-Stormwater Flows (Notes 3 and 4)						
Flow	MGD	*		*	daily****	24 hr. estimate
pH - Units (Note 5)	SU	**		**	once/month****	grab
Settleable Solids (SS) (Note 5)	mL/L/hr	1.5		1.0	once/month****	grab
Total Suspended Solids (TSS) (Note 5)	mg/L	70		70	once/month****	grab
Oil & Grease	mg/L	15		10	once/month****	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE August 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Best Management Practices Plan	See 40 CFR 122.44 (k) & 10 CSR 20-6.200				Plan remains on-site, subject to inspection and updated no less than every 5 years	

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PART I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

*** Monitor only when a discharge occurs. Report as "no discharge" when a discharge does not occur during the reporting period. See table below for quarterly sampling:

Sample discharge at least once for the months of:		Report is due:
January, February, March	(1st Quarter)	April 28
April, May, June	(2nd Quarter)	July 28
July, August, September	(3rd Quarter)	October 28
October, November, December	(4th Quarter)	January 28

**** Monthly monitoring for non-stormwater discharges. Report as "no discharge" when a discharge does not occur during the reporting period.

Note 1 Stormwater samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater, that result in a discharge. Storm events include rainfall as well as run-off from the melting of frozen precipitation. Samples shall be collected prior to or at the property boundary or before the discharge enters waters of the state on the property. The permittee may simply report "no discharge" if no discharge actually occurs during the reporting period or if the watershed upstream of an outfall has met the following conditions: (1) there are no exposed materials (disturbed, processed, or stored) within the watershed, (2) there have been no activities that have occurred within the watershed within the previous 12 months, and (3) there have been no exceedances of any effluent or benchmark limitations at that outfall within the previous 12 months. Reporting "no discharge" shall include a note on the discharge monitoring report and in the SWPPP documenting the above conditions. Please also refer to Special Condition 3.

Note 2 Precipitation is to be monitored daily. A single outfall may be designated as representative of the site. The record may be obtained from a nearby monitoring station.

Note 3 Samples shall be collected at least once per month during periods of operation only. When the facility is not in operation or when there are no non-stormwater discharges, report as "no discharge" on the monthly report. Please also refer to Special Condition 3.

Note 4 Non-stormwater discharges shall include only wastewater generated from process-related activities such as truck washing (without added detergents, acids, caustics, solvents, or other additives) and all dry-weather discharges from processing plants and mine-pit dewatering. In addition, non-stormwater discharges may include return water from aggregate dredging operations on the Mississippi River.

Note 5 These parameters each have a benchmark limit. See Section C below for further information.

Note 6 Please see Special Condition 12 for required hardness data in the Mississippi River.

Note 7 The effluent limitations at Outfall #007 for Settleable Solids in stormwater discharges may be exceeded during a precipitation event exceeding the 10-year, 24-hour statistical storm (4.6 inches of rainfall or an equivalent volume of snowmelt within 24 hours).

C. SAMPLING REQUIREMENTS AND BENCHMARKS

1. The department may require additional sampling and reporting as a result of illegal discharges, compliance issues, complaint investigations, or evidence of off site impacts from activities at the facility. If such an action is needed, the department will specify in writing the sampling requirements, including such information as location and extent. It is a violation of this permit to fail to comply with said written notification.

2. This permit stipulates pollutant benchmarks applicable to the facility's discharge. The benchmarks do not constitute direct numeric effluent limitations. A benchmark exceedance alone, therefore, is not a permit violation. If a sample exceeds an effluent limitation or a benchmark concentration, the permittee must review the facility's Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMPs) to determine whether any improvements and/or additional controls are needed to reduce that pollutant in the facility's stormwater discharge(s). Failure to review the SWPPP and determine whether BMPs need to be improved and implement such improvements will be a permit violation.

C. SAMPLING REQUIREMENTS AND BENCHMARKS (continued)

3. The following Benchmarks are considered necessary to protect existing water quality. These shall be sampled as specified in "Table A" above. The BMPs at the facility shall be designed to meet these Benchmark limitations during rainfall events up to at least the two (2)-year, 24-hour precipitation event.

Outfalls 010, 011, 012, 013, 014, 015, and 016

Parameter	**Benchmark Limits**
pH	The benchmark limit shall be a range of 6.5 to 9.0 standard units as an instantaneous grab sample. The resulting pH is not to be averaged. A benchmark exceedance would be outside this range.
Total Suspended Solids	50 mg/L
Settleable Solids	1.0 mL/L/hr
Ammonia as N (NH_3)	The benchmark limit shall be the resulting concentration of the equation for acute criteria, as found in 10 CSR 20-7.031, on page 29: $[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$, where the pH is in standard pH units. Alternatively, the permittee may use Table B1 (Cool & Warm-Water Fisheries), on page 27 of 10 CSR 20-7.031. For example, the Ammonia benchmark limitation at a pH of 7.8 S.U. would be 12.1 mg/L.
Aluminum, Dissolved	0.750 mg/L
Oil & Grease	10 mg/L

Outfalls 010, 011, 013, and 015

Parameter	**Benchmark Limits**
Nitrates as N	10 mg/L

Outfalls 001, 003, 006, 007, 008, and 009

Parameter	**Benchmark Limits**
Settleable Solids	2.0 mL/L/hr

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. This permit does not authorize the discharge of waters other than stormwater and associated discharges as specified in Table A for each outfall. Associated discharges include pit dewatering and truck washing (without added detergents, acids, caustics, solvents, or other additives). *See Note 4 above.*

3. Report as "no discharge" when a discharge does not occur during the reporting period. Reporting "no discharge" means that the permittee took reasonable action to ensure the outfall did not have a discharge at any time during the reporting period. Please also refer to the Standard Conditions Part I for requirements of representative sampling.

4. All outfalls must be clearly marked in the field and clearly identified on a map that is kept on file at the onsite facility office.

D. SPECIAL CONDITIONS (continued)

5. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
   (1) One hundred micrograms per liter (100 µg/L);
   (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
   (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
   (4) The level established in Part A of the permit by the Director.

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

(c) That the effluent limit established in part A of the permit will be exceeded.

6. Water Quality Standards

(a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.

(b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
   (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
   (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
   (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
   (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
   (5) There shall be no significant human health hazard from incidental contact with the water;
   (6) There shall be no acute toxicity to livestock or wildlife watering;
   (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
   (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Storm Water Pollution Prevention Plan (SWPPP)

(a) The permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be kept on-site and a copy shall be sent to the DNR upon request. The existing SWPPP must be updated within 90 days of permit issuance to contain the following provisions and be implemented within 120 days. The permittee shall select, install, use, operate, and maintain the Best Management Practices (BMPs) prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

   Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

   In lieu of developing a separate Best Management Practices Plan required by this permit, the SWPPP may incorporate the requirements of the Best Management Practices Plan to comply with 40 CFR 122.44 (k) & 10 CSR 20-6.200.

(b) The SWPPP must include the following:
   (1) An assessment of all storm water discharges associated with the facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
   (2) A listing of specific BMPs and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water.
   (3) A schedule for implementing the BMPs.
   (4) A narrative explaining how RCRA and CERCLA requirements for this type of operation are being met.

D. SPECIAL CONDITIONS (continued)

7. Storm Water Pollution Prevention Plan (SWPPP) (continued)

(5) An assessment of all chemical handling and storage procedures are required to be addressed under the conditions of this section.
(6) Provisions for preventing the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehousing activities and prevent the contamination of storm water from these substances.
(7) A provision for designating an individual to be responsible for environmental matters.
(8) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance areas. Upon request, proof of training shall be submitted to the department.
(9) The SWPPP must contain a list of all benchmark and effluent exceedances and details of the resulting review and associated modifications to the SWPPP and BMPs based on those exceedances.
(10) The SWPPP must include a schedule for twice per month site inspections and brief written reports. The inspections must include observation and evaluation of all stormwater pollution prevention structures, stormwater treatment structures, stormwater outfalls, and of the facility in general, to ensure that structures are properly maintained and effective and that any Best Management Practices are continually implemented and effective. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. The permittee must document these inspections with a brief written report or checklist. The reports must note any spills, leaks, or maintenance needs of any of the structures or practices. The reports must also document action taken to correct or repair deficiencies. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct should be documented on the submitted Annual Report. Inspection reports must be kept on site with the SWPPP and maintained for a period of at least five years. These must be made available to DNR personnel upon request.
(11) A provision for material or other waste material piles to be managed to control the amount of precipitation that is allowed to infiltrate.
(12) The SWPPP must include an analysis of the Best Management Practices (BMPs) **for any new outfalls** (as of September 2008). This analysis is a structured evaluation of BMPs that are reasonable and cost effective. The evaluation should include practices that are designed to be 1) non-degrading 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring that the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the Antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(2).

(c) Permittee shall adhere to the following minimum Best Management Practices:
(1) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
(2) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
(3) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP’s such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

D. SPECIAL CONDITIONS (continued)

7. Storm Water Pollution Prevention Plan (SWPPP) (continued)

(4) Provide good housekeeping practices on the site to keep solid waste from entry into waters of the state.
(5) Provide sediment and erosion control sufficient to prevent or control sediment loss off the property.
(6) Minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.
(7) Spill Prevention and Response Procedures. The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur.
(8) Erosion and Sediment Controls. The permittee must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Where necessary, use flow velocity dissipation devices at discharge locations and within outfall channels to reduce erosion and/or settle out pollutants.
(9) Dust Generation and Vehicle Tracking of Industrial Materials. The permittee must minimize generation of dust and tracking of raw, final, or waste materials.
(10) Before releasing water that has accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of a sheen. When the presence of hydrocarbons is indicated, this water must be tested for Total Petroleum Hydrocarbons (TPH) prior to being discharged, taken to a WWTP for treatment, or taken to another permitted/licensed facility for recycling. The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However, the permittee may alternatively use other approved testing methods (i.e. EPA 1664). If the concentration for TPH exceeds 10 mg/L, the water shall be taken to a WWTP for treatment or another permitted/licensed facility for recycling.

(d) The purpose of the SWPPP, and the BMPs listed therein, is to prevent, or to sufficiently reduce, pollutants from entering waters of the state. A deficiency of the combined BMPs used within an outfall's watershed means that they were not effective in sufficiently reducing pollution [10 CSR 20-2.010(56)] in an outfall's discharge to below the effluent limitations and/or benchmark concentrations as listed in this permit. Corrective action means the facility took steps to eliminate the deficiency. Routine maintenance, such as removing sediment from a sedimentation basin, is not considered a deficiency that requires notification. Constructing a new sedimentation basin in response to observed impacts to the receiving stream is an example of a deficiency that requires notification on the submitted Annual Report. It is a violation:
(1) When a numeric effluent limitation in Table A is exceeded in the discharge,
(2) When a water quality criteria violation is discovered in the receiving stream that is directly attributed to the facility's discharge,
(3) When corrective action is not taken after identifying a deficiency of a BMPs, and/or
(4) When the permittee does not, upon discovering a deficiency, (i) review and update the SWPPP with needed changes and (ii) determine whether improvements need to be made to the BMPs, and (iii) implement the changes/improvements to the BMPs that have been determined to be necessary.

8. In accordance with, and in addition to, Standard Conditions Part I, the permittee is to notify the department by telephone within 24 hours of becoming aware of any event that may endanger health or the environment. Leaving a message on a department staff member's voicemail does not satisfy this reporting requirement. During holidays, during the weekends, after normal business hours, or if the permit holder cannot reach regional office staff for any reason, the permit holder is instructed to report the situation to the department's 24-hour Environmental Emergency Response hotline at (573) 634-2436. In addition, the permittee shall submit to the department a written report with five (5) days of the time the permittee becomes aware of the circumstances. The written report shall include a description of the discharge or situation and cause of any noncompliance, the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent `recurrence of the non-complying discharge. These events include but are not limited to (a) any spill, of any material, that leaves the property of the facility and (b) any spill, of any material outside of secondary containment and exposed to precipitation, greater than 25 gallons or an equivalent volume of solid material.

Federal Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

9. An **annual operating report** must be submitted to the Northeast Regional Office by **October 28** of each year (notwithstanding any reporting requirements contained in the attached "Standard Conditions"). The report shall detail any unusual occurrences such as spills, overflows, fish kills, fire-fighting activities, flooding, other upsets at the facility, and any deficiencies/corrections of BMPs as required by Special Condition 7. This report will specifically include, but is not limited to, loss or spills of any fertilizer, fuel, oil, and/or paint. The report shall also detail any remedial work undertaken to recover any spilled material or to clean up the site. The report must also indicate if nothing unusual occurred. Please include your permit number with the report.

10. Substances, regulated by federal law under the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that are transported, stored, or used for maintenance, cleaning or repair, shall be managed according to RCRA and CERCLA. This permit does not authorize the discharge of any hazardous substances.

11. Permittee shall maintain records of all pumped discharges that enter surface waters of the state. These records must include the date and time(s), an estimate of the volume, and the location of each discharge.

12. For hardness-dependent metals, the permittee must obtain hardness data from the receiving water, in this case the Mississippi River. The permittee may select one of three methods to determine hardness, including; individual grab sampling, grab sampling by a group of operators which discharge to the same receiving water, or using third-party data. Regardless of the method used, the permittee is responsible for documenting the procedures used for determining hardness values. Once the hardness value is established, the permittee is required to include this information in each discharge monitoring report submitted to the department (with the original testing date) so that appropriate comparisons can be made between the submitted monitoring results and the corresponding water quality criterion. The permittee is also required to retain all report and monitoring data for at least three years in accordance with Standard Condition Part I. The three method options for determining hardness are detailed in the following sections:

    (a) *Permittee Samples for Receiving Stream Hardness.* This method involves collecting samples in the receiving water and submitting these to a laboratory for analysis. If the permittee elects to sample the receiving water(s) and submit samples for analysis, hardness must be determined from the closest intermittent or perennial stream downstream of the point of discharge. The sample can be collected during either dry or wet weather. Collection of the sample during wet weather is more representative of conditions during stormwater discharges; however, collection of in-stream samples during wet weather events may be impracticable or present safety issues.

    Hardness must be sampled and analyzed using approved methods as described in 40 CFR Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants).

    (b) *Group Monitoring for Receiving Stream Hardness.* The permittee can be part of a group of permittees discharging to the same receiving waters and collect samples that are representative of the hardness values for all members of the group. In this scenario, hardness of the receiving water must be determined using 40 CFR Part 136 procedures and the results shared by group members. To use the same results, hardness measurements must be taken on a stream reach within a reasonable distance of the discharge points of each of the group members.

    (c) *Collection of Third-Party Hardness Data.* The permittee can submit receiving stream hardness data collected by a third party provided the results are collected consistent with the approved 40 CFR Part 136 methods. These data may come from a local water utility, previously conducted stream reports, TMDLs, peer reviewed literature, other government publications, or data previously collected by the permittee. Data should be less than 10 years old.

REPORTING OF EFFLUENT AND/OR BENCHMARK EXCEEDANCES

If any of the sampling results from any of the outfalls show any exceedance of a numeric effluent limitation or a numeric benchmark limitation listed within this permit, written notification shall be made to the Missouri Department of Natural Resources and submitted with the next Discharge Monitoring Report. Notification shall indicate the date(s) of sample collection, the analytical results, and permit number, and shall include a statement concerning the revisions or modifications in management practices that are being implemented to address the exceedance that occurred. Please also refer to Special Condition #8 for additional reporting concerning any event that may endanger health or the environment

After an exceedance of a benchmark or effluent limitation, a sample of stormwater discharge resulting from the next rainfall greater than 0.1 inches (that occurs after implementing the necessary changes to BMPs) shall be collected from outfalls at which the exceedance occurred and for the parameter that was exceeded. Analytical results of this additional sample shall be submitted in writing to the Missouri Department of Natural Resources with the next DMR (this section supersedes Standard Conditions Part I, Section B: Noncompliance Notification).

PERMIT TRANSFER

This permit may be transferred to a new owner by submitting an "Application for Transfer of Operating Permit" signed by the seller and buyer of the facility, along with the appropriate modification fee.

PERMIT RENEWAL REQUIREMENTS

Unless this permit is terminated, the permittee shall submit an application for the renewal of this permit no later than six (6) months prior to the permit's expiration date. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

TERMINATION

In order to terminate this permit, the permittee shall notify the department by submitting Form J, included with the State Operating Permit. The permittee shall complete Form J and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination. A closure plan shall be submitted to the department and approved prior to initiating closure activities.

DUTY OF COMPLIANCE

The permittee shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal. This permit authorizes only the activities described in this permit.

Missouri Department of Natural Resources
Fact Sheet / Statement of Basis
S-S-S Lumber Company, Inc.
MO-0127132

A Statement of Basis (Statement) gives pertinent information regarding the applicable regulations and rationale for the development of the NPDES Missouri State Operating Permit (operating permit). This Statement includes Wasteload Allocations, Water Quality Based Effluent Limitations, and Reasonable Potential Analysis calculations as well as any other calculations that effect the effluent limitations of this operating permit. This Statement does not pertain to operating permits that include sewage sludge land application plans and variance procedures, and does not include the public comment process for this operating permit.

A Statement is not an enforceable part of an operating permit.

Part I – Facility Information

Facility Type: IND (Quarry and Marine Cargo Handling, etc.)
Facility SIC Codes: 1422 (Crushed and Broken Limestone), 1442 (Construction Sand and Gravel), 4226 (Special Warehousing and Storage, Not Elsewhere Classified), 4491 (Marine Cargo Handling), and 5032 (Brick, Stone, and Related Construction Materials).

Facility Description:

The SSS, Inc., facility is located just south of Louisiana, Missouri. The existing site is an operating limestone quarrying and crushing facility, located near the Mississippi River. The location also supports the operation of material handling and storage services that are operated in conjunction with the quarry. The material handling services include loading and unloading grain, coal, salt, bauxite, fertilizer, rock, and clay. The primary receiving waters for this site are the Mississippi River and two tributaries to the Mississippi (Noix Creek and Buffalo Creek). This facility consists of 16 outfalls. Three are inactive and have been deleted from the permit by the United States Environmental Protection Agency (EPA). The facility's active areas cover over 850 acres.

As stated by the permittee, the correct corporate name, as registered with the Missouri Secretary of State's office is, "S-S-S Lumber Company, Inc." Use of this nomenclature is preferred by the permittee. According to the permittee, aliases such as SSS, Inc.; S.S.S. Inc., S-S-S, Inc.; and SSS Lumber Co. in general reference would also be correct.

This permit modification is to review the permit conditions based on current regulation and current department policy, based on a directive from the Missouri Clean Water Commission. See the minutes from the November 3, 2010, meeting.

The following are the currently active outfalls:

Outfall #001 – Stormwater Runoff from sand and gravel storage piles. Actual acres reported as 3.56.
SIC #1442 (Construction Sand and Gravel)

Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926106/-09101493
UTM Coordinates:	X=669509, Y=4367044
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 0.299 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 16,916 gallons. The water flowing through the site from a 10-year, 24-hour storm event would be approximately 0.44 MGD based on the precipitation falling over the watershed area.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 250 feet.

Outfall #002	**Eliminated** – runoff is sheet flow
Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926154/-09101496
UTM Coordinates:	X=669498, Y=4367192

Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)

Outfall #003 – Stormwater Runoff from sand and gravel storage piles, including limestone. Actual acres reported as 1.62.
SIC #1442 (Construction Sand and Gravel)
Legal Description: SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude: +3926179/ -09101519
UTM Coordinates: X=669442, Y=4367268
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)
Design flow previously reported as 0.272 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 0 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 0.20 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be within 50 feet.

Outfall #004 **Eliminated** – discharge pipe has been plugged
Legal Description: SW ¼, NE ¼, Sec 20, T54N, R1W, Pike County
Latitude/ longitude: +3926192/-09101530
UTM Coordinates: X=669414, Y=4367307
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)

Outfall #005 **Eliminated** – runoff is sheet flow
Legal Description: SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude: +3926205/-09101542
UTM Coordinates: X=669385, Y=4367346
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)

Outfall #006 – Stormwater Runoff from gravel crushing areas and storage piles (including limestone, fertilizer, and bauxite). Actual acres reported as 3.31.
SIC #1442 (Construction Sand and Gravel)
Legal Description: SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude: +3926223/-09101560
UTM Coordinates: X=669341, Y=4367401
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)
Design flow previously reported as 0.556 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 72,798 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 0.41 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be within 50 feet.

Outfall #007 – Stormwater Runoff from loading and unloading areas (including sand and gravel, limestone, fertilizers, coal, and bulk salt). Actual acres reported as 0.51.
SIC #4491 (Marine Cargo Handling)
Legal Description: SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude: +3926234/-09101570
UTM Coordinates: X=669316, Y=4367434
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.: (07110004 – 110002)
Design flow previously reported as 0.129 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 2,493 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 0.064 MGD.

Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be within 50 feet.

Outfall #008 – Stormwater Runoff from a steel storage yard and warehouse areas. Actual acres reported as 9.12.
SIC #1442 (Construction Sand and Gravel)

Legal Description:	NW ¼, SE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926140/-09101522
UTM Coordinates:	X=669437, Y=4367147
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 2.299 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 37,144 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 1.14 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 290 feet.

Outfall #009 – Stormwater Runoff from a material storage area (including bulk commodities, typically raw bauxite). Actual acres reported as 1.55.
SIC #4226 (Special Warehousing and Storage, Not Elsewhere Classified),

Legal Description:	SW ¼, NE ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926218/-09102030
UTM Coordinates:	X=669174, Y=4367382
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 0.391 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 22,895 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 0.19 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 530 feet.

Outfall #010 – Stormwater Runoff from quarry areas through a settling pond. Storage in the watershed includes salt and limestone. Actual acres reported as 44.8.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	SW ¼, NW ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926161/-09102348
UTM Coordinates:	X=668417, Y=4367190
Receiving Stream:	Unnamed tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 3.764 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 500,000 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 5.60 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 0.5 mile. The unnamed tributary enters the first classified at approximately the confluence of Noix Creek and the Mississippi River. The influence of the Mississippi River on this discharge is such that the discharge is essentially to the Mississippi River. This is a change from the previous permit.

Outfall #011 – Stormwater Runoff from quarry areas with sand/gravel and limestone piles. The stormwater is rerouted to a settling pond at Outfall #015, therefore discharge from this outfall is expected only during extreme events. Actual acres reported as 19.42.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	NE ¼, SW ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926061/-09102156
UTM Coordinates:	X=668883, Y=4366891
Receiving Stream:	Unnamed tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 1.632 MGD.

Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 0 gallons. The permittee stated that this outfall flows to Outfall #015 and will normally discharge only during an extreme precipitation event.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 2.43 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 0.5 mile.

Outfall #012 – Stormwater Runoff from quarry areas with limestone piles. Actual acres reported as 294.6.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	Land Grant 2768 (SW ¼, NE ¼, Sec 19, T54N, R1W), Pike County
Latitude/ longitude:	+3926249/-09103033
UTM Coordinates:	X=667730, Y=4367446
Receiving Stream:	Unnamed tributary to Noix Creek (U)
First Classified Stream and ID:	Noix Creek (P) (00011)
USGS Basin & Sub-watershed No.:	(07110004 – 110001)

Design flow previously reported as 24.751 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 239,973 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 36.80 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 50 feet.

Outfall #013 – Stormwater Runoff from quarry areas with limestone piles and a steel storage yard. Actual acres reported as 8.4.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	SE ¼, NW ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ longitude:	+3926164/-09102180
UTM Coordinates:	X=668819, Y=4367208
Receiving Stream:	Unnamed tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 0.706 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 0 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 1.05 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 0.4 mile.

Outfall #014 – Stormwater Runoff from quarry areas with limestone piles. Actual acres reported as 237.5.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	SW ¼, SW ¼, Sec. 19, T54N, R1W, Pike County
Latitude/ longitude:	+3925591/-09103346
UTM Coordinates:	X=666999, Y=4366635
Receiving Stream:	Unnamed tributary to Noix Creek (U)
First Classified Stream and ID:	Noix Creek (P) (00011)
USGS Basin & Sub-watershed No.:	(07110004 – 110001)

Design flow previously reported as 19.954 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 193,461 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 29.66 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 440 feet.

Outfall #015 – Stormwater Runoff from a quarry area through a settling pond. Storage includes sand/gravel and limestone. Actual acres reported as 36.3, including 19.42 acres that flow from outfall #11.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	NE ¼, SW ¼, Sec. 20, T54N, R1W, Pike County
Latitude/ Longitude:	+3926110/ -09102137
UTM Coordinates:	X=668925, Y=4367043
Receiving Stream:	Unnamed tributary to Mississippi River (U)
First Classified Stream and ID:	Mississippi River (P) (03699)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow previously reported as 7.624 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 73,922 gallons.

The water flowing through the site from a 10-year, 24-hour storm event would be approximately 2.11 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 0.4 mile.

Outfall #016 – Stormwater Runoff from a quarry area with limestone storage. Actual acres reported as 30.9.
SIC #1422 (Crushed and Broken Limestone)

Legal Description:	NE ¼, SW ¼, Sec. 30, T54N, R1W, Pike County
Latitude/ Longitude:	+392510.20/ -0910316.50
UTM Coordinates:	X=667464, Y=4365137
Receiving Stream:	Unnamed tributary to Buffalo Creek (U)
First Classified Stream and ID:	Buffalo Creek (P) (00014)
USGS Basin & Sub-watershed No.:	(07110004 – 110002)

Design flow reported in the application as 3.781 MGD.
Facility reported the calculated peak runoff, based on the Rational Equation and a two-year, 10-minute storm event, as 25,170 gallons.
The water flowing through the site from a 10-year, 24-hour storm event would be approximately 3.86 MGD.
Actual flow is dependent upon precipitation.
Distance to first classified receiving water is estimated to be approximately 2.0 miles.

The 10-year, 24-hour storm event in this area is approximately 4.6 inches. This was the value used when calculating rainfall falling over a watershed.

The total design flow was previously reported as 66.158 MGD. The permittee argued that the design flow was previously reported as a peak flow in cubic feet per second (CFS), which was translated to the permit as a 24-hour flow. The permittee argued that the rainfall intensity is a major factor in flow through each outfall. The permittee then provided, as a part of this application, calculated discharge in gallons based on the rational equation and actual rainfall at each outfall. The total calculated flow reported for all outfalls was 1,184,772 gallons, or 1.184 MGD, even when including a value of zero (0) for three outfalls.

The purpose of this modification is to review the permit conditions based upon current regulation and department policy. Another application was being processed concurrently to add outfall #016 to the permit. This application has been approved and the permit modified.

OUTFALL(S) TABLE:

Outfall	Design Flow, as reported by the permittee, based on the Rational Method (MGD / cfs)	Treatment Level †	Effluent type	Distance to Classified Segment (mi)
#001	0.017 / 0.03	BMPs	stormwater	< 0.1
#002	previously eliminated	Outfall Eliminated	stormwater	~ 0.0
#003	reportedly 0 at the design storm	none	stormwater	~ 0.0
#004	previously eliminated	Outfall Eliminated	stormwater	~ 0.0
#005	previously eliminated	Outfall Eliminated	stormwater	~ 0.0
#006	0.073 / 0.11	BMPs	stormwater	~ 0.0
#007	0.002 / 0.004	BMPs	stormwater	~ 0.0
#008	0.037 / 0.06	BMPs	stormwater	< 0.1
#009	0.023 / 0.04	BMPs	stormwater	~ 0.1
#010	0.500 / 0.77	BMPs (including a retention pond)	stormwater	~ 0.5
#011	reportedly 0 at the design storm	none (diverted to Outfall #015)	stormwater	~ 0.5
#012	0.240 / 0.37	none	stormwater	< 0.1
#013	reportedly 0 at the design storm	none	stormwater	~ 0.4
#014	0.193 / 0.30	none	stormwater	~ 0.1
#015	0.074 / 0.11	BMPs (including a retention pond)	stormwater	~ 0.4

#016	0.025 / 0.04	BMPs (Hickenbottom dry dam upstream of outfall and berms on pit floor)	stormwater	~ 2.0

† See the *Outfall-specific descriptions* subsection of the Comment section for further information on the specific BMPs in place (as reported by the permittee) at the time of permit issuance. This fact sheet is attempting to document the initial conditions at the facility by which future BMPs and required modifications to BMPs will be measured.

Modification Rationale:

The department received an application from the permittee on July 16, 2010, to modify the permit to add an additional outfall. The permittee, on approximately June 21, 2010, had contacted the department regarding this requested modification. During the review, it was determined that the EPA had recently performed a site inspection of the facility. The first comment letter from the department was sent to the permittee on October 28, 2010. It was later noted that the EPA had issued an Administrative Compliance Order (dated October 1, 2010) to the permittee for violations of Missouri State Operating Permit MO-0127132 and the Clean Water Act. A representative from the facility gave a presentation before the Missouri Clean Water Commission on November 3, 2010, regarding the EPA inspection and administrative order and requested that the current operating permit be modified. The Clean Water Commission directed the permittee to submit a permit modification request to the department for review. The permittee therefore submitted a second application on November 23, 2010, to modify the rest of the stormwater operating permit. The permittee requested to continue with the July 16, 2010, modification to the permit (adding an outfall) before the second modification was processed. That first operating permit modification was issued on February 8, 2011.

This draft permit includes modifications based on a review of current department policy, current regulation, currently-existing Missouri general permit templates for similar processes, and the 2008 EPA Multi-sector General Permit (MSGP).

Receiving Water Body's Water Quality & Facility Performance History:

This facility has numerous documented violations. The previous public notice for this permit's renewal provided an Appendix B of violations from 2002 through 2006. The permit was then reissued on June 6, 2008, with some changes to the limitations. Since the permit was reissued, the facility has had several Notices of Violations (NOVs) and a Letter of Warning (LOW). The permittee has consistently submitted a cover letter with each DMR explaining the exceedances and other higher-than-normal concentrations seen from sampling. The permittee has also submitted a response to each NOV or LOW with additional explanations. This correspondence can be seen in Appendix I. A summary of the most recent response (as of the drafting of this fact sheet), is listed below.

1. NOV #NER2010121514015046 was issued on December 17, 2010, for exceeding the effluent limitations for the parameter of Aluminum at Outfall #001; Aluminum, Nitrates, Chemical Oxygen Demand, and Total Suspended Solids at Outfalls #006 and #007; Aluminum, Chemical Oxygen Demand, and Total Suspended Solids at Outfalls #008; Chemical Oxygen Demand at Outfall #010; and Aluminum and Total Suspended Solids at Outfall #012. These data were reported on the October 2010 Discharge Monitoring Report (DMR).

   The permittee submitted a cover letter explaining the violations and why they may have occurred. This can be seen in Appendix I. [Cover letter to October 2010 Discharge Monitoring Report (received November 1, 2010).]

   The department received a written response on January 3, 2011, (dated December 30, 2010) in which the permittee stated that the following actions had taken place:

   At outfall #001, the sumps have been maintained and old material that had accumulated has been removed, this will allow for more material to settle out from the discharge stream. In addition a new layer of ¾" x 3/8" pea gravel was added as a gravel filter. The water will now have to settle out in sump #1, pass through a silt fence, settle in sump #2, pass through a second silt fence, pass through the gravel berm, settle in an open area and then pass through sand bags filled with river gravel before being discharged. This material should effectively filter the water before it exits from the facility through outfall 001.

   At outfall #006, the inlet pipe sock has been replaced and additional gravel has been added to the discharge route for the material. All water that exits out this pipe now must travel through at least two forms of filtration before being discharged. The additional filtration should result in increased water quality.

   At outfall #007, the existing best management practice of the gravel check dam has been maintained by replacement of the gravel that acts as a gravel filter at the inlet. The company is currently investigating the impacts to the site if this pipe was to be filled with concrete and plugged, thus eliminating the outfall. This may not be a possible alternative but the option will be discussed.

   At outfall #010 there have been no additional activities conducted. The outfall was sampled during a period when the pond level was being purposely reduced. The water being discharged was sampled at the siphon

pipe. The resultant sample came back showing an exceedance on chemical oxygen demand. This settling pond is a relatively stagnant pond located in a valley surrounded by trees. After receipt of the sample results the facility questioned the lab as to the purported causes, especially since other elements of the sample returned in compliance. The lab indicated that the COD was typically the result of decaying organic matter. The facility inquired to a local soil scientist with regards to what may have caused a COD bump and the scientist indicated that dead or decaying leaf matter was the most likely source of the COD excursion for the pond.

At outfall 12 there have been no additional activities conducted. The water sample that showed the excursions were taken on 9/20/10 after a weekend of heavy rain in which the facility received over 4.3 inches of rain. The rain caused the settling pond upstream to discharge and flow downstream to the sample point. At the time of the 9/20/10 collection the estimated flow was 85 gallons per minute, which for the test area is quite a high flow rate. The heavy flow in conjunction with the heavy rain disturbed an unusual amount of sediments, which contained natural background aluminum and resulted in a bump in the discharge effluent for the outfall. Additional typical BMPs such as gravel berms, silt fence, settling sumps etc. unless extremely over designed would have been overwhelmed by this amount of rain. A follow up sample taken immediately after the results were received on 9/20/10 indicated that both aluminum and TSS were well within discharge limits. The unusual rain circumstance and volume nearly met the 4.6" rain limit for alternate effluent characteristics; because of this the facility believes that its existing upstream pond and practices would be sufficient for most rainfall events.

The facility will continue to follow the NPDES permit sample requirements to monitor the targeted outfalls to see what kinds of impacts result from the completed installation of additional controls.

Further, on January 3, 2011, the department received an e-mail from the permittee with a request to add the following as supplemental information to their response dated December 30, 2010:

The facility sampled the impounded water at outfall 10 for COD on 12/27/10. The sample results were not available until after the NOV response was submitted. The sample results were available on Dec 30, 2010 in the PM and showed a value of 75 mg/L for COD in the impoundment at outfall 010. It is likely that the breakdown of leaves and other detritus have stabilized. Please note that this sample was NOT from a discharge, but rather from the impoundment, and that the sample was within compliance levels.

A copy of this correspondence can be seen in Appendix I.

2. NOV #NER2010052412124392 was issued on June 14, 2010, for exceeding the daily maximum and monthly average final effluent limitations for the parameter of Aluminum and the monthly average final effluent limitation for the parameter of Total Suspended Solids at Outfall #001 and for exceeding the monthly average final effluent limitation for the parameter of Total Suspended Solids at Outfall #015 (as reported on the April 2010 DMR).

   The permittee submitted a cover letter with the DMR and another response to the NOV. They can be seen in Appendix I: Cover letter to April 2010 Discharge Monitoring Report (received April 19, 2010) and the Response to NOV #NER2010052412124392 (received on June 22, 2010).

3. NOV #NER2010051114005040 was issued on May 14, 2010, for exceeding the daily maximum and monthly average final effluent limitations for the parameters of Nitrate as N and Aluminum at Outfall #006 and for exceeding the daily maximum and monthly average final effluent limitations for the parameters of Nitrate as N, and Aluminum at Outfall #007 (as reported on the October 2009 DMR). In addition, the permittee failed to report sample results for Biochemical Oxygen Demand for Outfall #007.

   The permittee submitted a cover letter with the DMR and another response to the NOV. They can be seen in Appendix I: Cover letter to October 2009 Discharge Monitoring Report (received October 26, 2009) and the Response to NOV #NER2010051114005040 (received on May 24, 2010)

4. NOV #NER2009061614405280 was issued on June 23, 2009, for exceeding the effluent limitation parameters (on the April 2009 DMR) of Total Suspended Solids and Aluminum at Outfall #001; Aluminum and Nitrate as N at Outfall #006; Aluminum, Nitrate as N, and Chemical Oxygen Demand at Outfall #007; and Total Suspended Solids and Aluminum at Outfall #008.

   The permittee submitted a cover letter with the DMR and another response to the NOV. They can be seen in Appendix I: Cover letter to April 2009 Discharge Monitoring Report (received April 20, 2009) and the Response to NOV #NER2009061614405280 (received on July 13, 2009).

5. NOV #NER2009012914015046 was issued on February 3, 2009, for exceeding the effluent limitation parameters (on the October 2008 DMR) of Total Suspended Solids, Total Phosphorus, and Aluminum at Outfall #001; Chemical Oxygen Demand at Outfall #006; Settleable Solids, Chemical Oxygen Demand, Total Phosphorus, Aluminum, Nitrate as N, and Total Suspended Solids at

Outfall #007; Total Suspended Solids at Outfall #008; Total Suspended Solids at Outfall #009; and Total Suspended Solids and Chemical Oxygen Demand at Outfall #010.

The permittee submitted a cover letter with the DMR, a response to the NOV, and a follow-up response. They can be seen in Appendix I: Cover letter to October 2008 Discharge Monitoring Report (received October 27, 2008), the Response to NOV #NER2009012914015046 (received on February 25, 2009), and a Follow-up response to NOV #NER2009012914015046 (received on Mar 19, 2009).

The last compliance inspection conducted at the facility was performed by the EPA on January 25, 2010. The inspection report, dated July 14, 2010, listed several observations, including the following:

- pH data was potentially not valid due to its exceeding the required hold time.
- There were several comments regarding potential issues with the required effluent monitoring and submitted DMRs.
- The facility failed to report violations properly (verbally within 24 hours followed by a written summary within five days).
- The permittee was not checking each outfall after every major rainfall to determine if the outfall was discharging (and was still reporting "no discharge" on some of these outfalls).
- There were also potential issues with the SWPPP and monthly site inspections.
- The retention pond at Outfall #010 had a seep at the toe of the dam that is not monitored.

On October 1, 2010, the EPA issued a Findings of Violation and Order for Compliance (CWA 07-2010-0156). The facility was cited for violations of effluent limitations, failure to properly conduct compliance monitoring, failure to report non-compliance, failure to amend the permit to reflect site conditions, failure to install and maintain best management practices, and failure to properly conduct monthly inspections. As stated above, a representative of the facility went before the Missouri Clean Water Commission, regarding the permit in light of the EPA inspection and order, and made requests to modify the permit. The Commission ordered the permittee to submit an application request, which was received on November 23, 2010. This draft permit is a response to that application.

The last compliance inspection conducted by the Missouri Department of Natural Resources' Northeast Regional Office was conducted on February 24, 2009. The facility was found to be operating in non-compliance at the time of the inspection, and a LOW was sent on April 3, 2009. The noted violations included a failure to clearly mark the outfall in the field, a failure to conduct monthly site inspections, and a failure to maintain Best Management Practices. On April 13, 2009, the Northeast Regional Office received the requested response (See Appendix I). It was also noted in the inspection report that the facility was issued NOVs on June 25, 2008, (for exceeding the monthly average effluent limitations at outfalls #001, #006, and #007 as noted on the April 2008 DMR) and on February 3, 2009, (for exceeding permit effluent limitations at outfalls #001, #006, #007, #008, #009, and #010 as noted on the October 2008 DMR).

An Environmental Assistance Visit was conducted at the facility on September 23, 2008. At the time of that visit, the requirements of Missouri State Operating Permit MO-0127132 were discussed, and the Storm Water Pollution Prevention Plan drafted by the facility was reviewed.

The permit was last issued by the department on June 6, 2008. As stated above, the draft permit was modified on February 8, 2011, to add Outfall #016.

Comments:

Permittee Requests

As part of the application to modify the permit, received on November 23, 2010, the permittee requested several actions by the department. Several of these items, and the department's response, are as follows:

1. The permittee stated on page one of their application cover letter that general permits should be considered when developing effluent limits and permit conditions for the pending site-specific permit. The letter also requested on page 2 for consideration to issuing general permits for this facility in lieu of a site-specific permit.

   The limits and conditions contained in the applicable general permits were considered where appropriate; however the department believes that permitting this facility under just general permits is not appropriate at this time. For example, in September 2008, the facility discharged an ammonia concentration of 1,600 mg/L through Outfall #006. The permit writer therefore determined that this and other parameters that were discharged at unusually high concentrations provide a reasonable case to require the permittee to maintain a site-specific permit at this time. See the list below for each outfall. The department would consider permitting this facility under general permits in the future if the permittee can show compliance with this permit and that there is no undue concern. At renewal, it is recommended that the facility review all sampling data and request another review, if appropriate, to determine if general permits can be issued for this facility.

2. The permittee stated that the site-specific permit issued to the facility included numerical effluent limits for outfalls that were not required to have numerical limits when the permit was first written and that the effluent violations committed by the facility would not have happened if the permit had been written to normal standards, which may have been assigned arbitrarily and capriciously.

   The site-specific permit for this facility was originally drafted based on a Water Quality Review Sheet (WQRS), dated August 15, 2001. As justification for several parameters included in the permit, the WQRS relied on Best Professional Judgment (BPJ) of the permit writer without sufficient documentation. In addition, the 2008 reissuance was originally developed (in August 2007) by the EPA Region 7 and issued by the department. The most recent permit was put on public notice on April 4, 2008, and issued on June 6, 2008. The permit's fact sheet retained several parameters from the previous permit without regard to their appropriateness but removed several parameters due to "no reasonable potential."

   At this time, we are reviewing and reevaluating the permit based on current regulation and law. Anti-backsliding is also an issue that is being reviewed to determine if a parameter can be legally removed from the permit in light of federal regulation. Please see the Derivation and Discussion of Limits/Monitoring sections below for further information on each outfall and each pollutant parameter.

3. On pages 4 and 8 of the application cover letter, the permittee discussed other public terminals on the Missouri side of the river. The permittee listed possible operating permits issued to these facilities but did not list all of the activities that occur at the facilities.

   It cannot be determined from the submitted information that SSS, Inc., has the same activities as the listed facilities. A site-specific permit was issued to SSS, Inc., in order to cover all activities conducted at the site. We are reviewing the submitted application and proposed modifications based on the activities at the facility, the water quality standards in Missouri Clean Water Commission regulations 10 CSR 20, Chapter 7, and the federal regulations contained in 40 CFR (and the 2008 EPA Multi-sector general permit).

4. On page 4 and 5 of the application cover letter, under a section entitled "Requested Modifications," the permittee listed the following requests:

   (a) The permittee requested that the permit modification be retroactive to April 7, 2007.

   Please note that the current permit was issued on June 6, 2008, for a five-year term. The Missouri State Operating Permit acts as a National Pollutant Discharge Elimination Permit (NPDES). The permit modification can only affect the current permit as of the day it is issued. We have no authority to make any changes retroactive. The modifications that will be made to the current permit will be placed on public notice for a minimum of 30 days before it is issued as a revised permit. The modifications will become effective as of the date listed on the revised permit.

   (b) The permittee requested that the permit not have any numeric effluent limitations on discharges.

   A Missouri State Operating Permit is designed to limit discharges from a facility from violating the water quality standards for Waters of the State and to ensure the permittee is meeting the minimum technology standards (e.g. BMPs for stormwater discharges). In addition, the general permits that could be issued for the activities conducted at this facility usually contain numeric limitations as well as other conditions and requirements. However, some operating permits permitting the discharge of stormwater allow for target benchmarks as a basis for modifying BMPs. In addition, this facility discharges to the Mississippi River for some outfalls. When drafting this permit, all options for protecting water quality were considered.

   At this time, we are including target benchmarks and required technology-based effluent limitations (e.g. required non-quantitative conditions such as physical and operational BMPs) in the permit. This permit is primarily for discharging stormwater that may potentially be contaminated; therefore the benchmark limitations will provide the permittee with a point of reference at which the SWPPP is to be reviewed and BMPs are potentially to be updated. Effluent limitations, especially on the Mississippi River, do not necessarily provide a sufficient standard, since rainfall events are typically non-regular and do not produce a consistent flow. In addition, the flow in the Mississippi River is high enough that dilution in the Zone of Initial Dilution and the Mixing Zone allow this facility to meet water quality standards using their current BMPs. Monitoring is still being required, however numeric effluent limitations are being removed in several instances. Please see the Derivation and Discussion of Limits/Monitoring sections below for further information on individual parameters.

   (c) The permittee requested that the department allow temperature to be reported in either Fahrenheit or Celsius for reports prior to November 3, 2010.

The current and previous operating permits clearly specify units for each parameter listed in the permit. The current permit requires that temperature be reported in degrees Celsius. Please note that this is a requirement for all Missouri State Operating Permits and that degrees Fahrenheit can be converted to degrees Celsius before entering the data onto the Discharge Monitoring Report (DMR) to be submitted. This permit will require monitoring only for Temperature, which will be required to be reported in degrees Celsius (°C).

(d) The permittee requested that the department allow the facility to report "no discharge" by using either the number zero (0), a blank cell, or the words "no discharge" or "no observed discharge" for all reports prior to November 3, 2010.

The original permit, issued in 2001, clearly specified in its Special Conditions that a no-flow condition is to be reported as "no discharge". In addition, the currently-effective permit (issued in 2008) includes the following direction:

- Under the three asterisks at the bottom of each Table A: "Monitor only when a discharge occurs. Report as 'no discharge' when a discharge does not occur during the reporting period."
- Special Condition 5 states: "Report as no-discharge when a discharge does not occur during the report period."

The new, modified permit will also require the permittee to report a no-flow condition during a monitoring period as "no discharge" on the DMR form. The Stormwater Pollution Prevention Plan (SWPPP) requires monthly inspections of all outfalls in part to determine whether a discharge has occurred. Those inspections and observed conditions must be documented in the SWPPP reports. Further, please be aware that reporting as "no discharge" during a period of no flow is required in all Missouri State Operating Permits.

(e) The permittee requested that the SWPPP be understood that only those outfalls with Best Management Practices (BMPs) will be inspected monthly unless otherwise provided in the SWPPP.

The currently-effective permit, in Special Condition 6.(e) states that "the SWPPP must include a schedule for monthly site inspections and a brief written report." In addition, the condition requires that "the inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken." Special Condition 7 also provides a prohibition against violating water quality standards (10 CSR 20-7.031), both specific and general criteria. The monthly inspections are required to determine both effectiveness of the BMPs and also if different and/or additional BMPs are required at an outfall. This special condition is consistent with the Clean Water Commission regulations, with other Missouri stormwater permits, and with permitting policy. Please also be aware that the EPA publication entitled "Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators" (EPA 833-B-09-002), in Section 5.A. (page 26), recommends "conducting routine inspections when measurable precipitation falls during normal business hours."

This permit will now require twice per month inspections, which is intended to include all outfalls that potentially discharge stormwater. The increase in frequency of inspections is to ensure the permittee is regularly evaluating their BMPs while also taking into account the removal of several parameters for testing. During the inspections, the permittee is to determine if the current BMPs are effective and if additional BMPs are necessary. For outfalls without BMPs, twice per month inspections are required to determine if general water quality criteria are being violated at that outfall and to establish if BMPs should be installed.

(f) The permittee requested that, as of November 3, 2010, the permit require the permittee to monitor all outfalls on a quarterly basis and report the same effluent parameters listed under the prior permit dated June 6, 2008.

To clarify, please be aware that Missouri State Operating Permits for stormwater often require monthly inspections of all outfalls and their BMPs and often require sampling of effluent parameters at each outfall on a quarterly basis. In addition, this operating permit does not affect or modify the EPA's October 1, 2010, Order for Compliance. Furthermore, the effluent parameters listed in the currently effective permit (dated June 6, 2008) were evaluated as to appropriateness and completeness.

The current permit will require monitoring only, when appropriate, for stormwater effluent parameters with benchmark limitations. Exceeding a benchmark limit is not of itself a violation. If the permittee exceeds the benchmark limit, the permittee is required to review the SWPPP and determine if any modifications to the BMPs are necessary. It will be a violation if the permittee exceeds a benchmark limitation and fails to review the SWPPP. Continuing to exceed benchmark limitations may be cause for a department compliance inspection.

This permit will also require monitoring on a quarterly basis at each outfall. At renewal, it is recommended that this frequency be re-evaluated to determine if increased or decreased monitoring is appropriate.

5. On page 5 of the application's cover letter, the permittee requested that Total Petroleum Hydrocarbons (TPH) be removed, since Oil & Grease (O&G) is also in the permit.

Each sampling parameter in the permit is designed to measure a specific pollutant. Oil and Grease measures any compound that is soluble in hexane, which can include petroleum-based fuels and greases but also includes plant oils, waxes, and cooking grease. The TPH test as originally written is no longer performed because Freon was used to extract the samples and Freon can no longer be purchased. The TPH test has been replaced by the Petroleum Fractions/OA-2 test, which indentifies by fuel fraction what type of petroleum contamination might be present in water. Results are reported as TPH as unleaded gasoline, TPH as Diesel Fuel, TPH as Hydraulic Oil, etc.

During review, the permittee submitted the following information:

> In 1999, the department inspected the facility and found that around fueling stations there was evidence that during fueling operations there had been minor spills that had accumulated into the first few inches of the unprotected soil. The facility hired MECO engineering to conduct site investigations and recommend different remediation options. In 2000 the facility completed remediation operations at the fuel sites. As part of the remediation operations the contaminated soil was removed and properly disposed of and concrete fueling pads were poured in order to prevent recontamination. A remediation report was submitted to the department in 2001 detailing actions taken to prevent recontamination. The department issued a letter dated November 28, 2001, recognizing that the remediation efforts had been completed. The outfalls that would possibly be affected by fuel site #1 would be outfall #1 and outfall #8. Fuel site #2 might affect outfall #10 and outfall #11, and #15.

In consideration that the fuel was cleaned up and that Oil & Grease can detect petroleum-based products, it was determined that Oil & Grease is sufficient for this permit. Please see the Derivation and Discussion of Limits/Monitoring sections below for further information on specific parameters.

6. The permittee requested to remove Total Suspended Solids (TSS) from the permit for stormwater discharges.

   TSS was moved from effluent limitations to benchmark limits for each outfall, since there is no numeric Water Quality Standard for TSS. The parameter was originally put into the permit based on Best Professional Judgment (BPJ). TSS is used as an effluent limitation in several general permits for stormwater and associated discharges in addition to a benchmark limit in other general permits, such as the MO-R80C and the MO-R23A. Please see the Derivation and Discussion of Limits/Monitoring sections below for further information on anti-backsliding and the benchmarking concentration.

7. The permittee requested to add approval for allowing non-stormwater discharges (such as mine dewatering and wash water/return water from aggregate dredging operations) similar to that allowed in the general quarry permit and general sand and gravel permit. The permittee also stated that the extent of the proposed discharges would be quite limited.

   This discharge is an associated discharge and is being added to the permit, based on the permission granted in the general permits. For all new discharges, the SWPPP must contain a structured antidegradation analysis regarding BMPs and treatment options to prevent the discharges from impacting the receiving streams. The permit will contain a condition to meet this requirement within 90 days from issuance. These discharges will contain effluent limitations as required by state and federal regulations, as well as requirements suggested in the 2008 EPA Multi-sector general permit.

8. The permittee requested to remove the monitoring requirement for Aluminum because "the background soil contains many thousands of percent more Aluminum than what the permit allows to be discharged." The permittee stated that the native sand mined from the river is over six percent alumina. The permittee also stated that the general clay-mining permit was written without consideration for Aluminum and that Missouri clay generally contains 30 percent Aluminum compounds.

   Please note that the facility formerly stored open stockpiles of bauxite in addition to crushing bauxite. The current application and SWPPP still describe the facility as loading/unloading bauxite, in addition to storing the bauxite under cover. The permittee stated that they do not perform bauxite mining. The facility is required to evaluate and implement BMPs that will reduce the contamination of stormwater with pollutants such as Aluminum.

   Each outfall in the permit was evaluated for the need to add/retain effluent limits for Total Recoverable Aluminum, or alternatively Dissolved Aluminum. At this time, Total Recoverable Aluminum was removed, since the water quality standard is a dissolved standard. Dissolved Aluminum monitoring was added to determine if this facility has reasonable potential to violate water quality in the receiving stream. Benchmark limits were added to the outfalls discharging to the Buffalo and Noix Creeks. The Mississippi River has sufficient flow that there is no reasonable potential to violate water quality at the levels discharged.

9. The permittee requested, on page 5 of the cover letter, "that the design flow of the facility be modified because the current design is in excess by a factor of ten what is probable for the facility." The permittee provided two attachments: Appendix C, which provided the actual rainfall since January 2008, and Attachment 5.0, which is a runoff calculation sheet for estimating stormwater

runoff at each outfall. These values were used to determine the "design flow" for each outfall, thus the design flow for this facility has changed.

The permittee should specify the statistical storm event, and its associated rate of stormwater flow, on which the BMPs at this facility are designed such that discharges from the facility will be controlled and meet permit requirements. This must be documented in the SWPPP.

10. The permittee included, on page 6 of the cover letter, specific requests for each outfall. These were evaluated, and the reasoning behind retaining or removing the limit (or changing to monitoring only with a possible benchmark limit) is discussed in the fact sheet's Derivation and Discussion of Limits/Monitoring sections. See below.

Outfall-specific descriptions and a discussion of past exceedances, anomalies, and adaptive management used at the facility

In addition to the above-listed modifications requested by the permittee, the application provided much information describing the facility. An Attachment 3.0 was provided to fulfill the requirement of EPA Form 2F, Section IV.B. Narrative Description of Pollutant Sources. The following is a discussion/description of each outfall (and a discussion of the BMPs currently installed and/or being used at the time this fact sheet was created) based on the submitted narrative (combined with the descriptions in the submitted SWPPP) and a discussion of previously-documented exceedances and past high concentrations of pollutants for that outfall. Please see the Derivation and Discussion of Limits/Monitoring sections for each outfall for a full explanation of which pollutant was removed or retained with an accompanying justification. In addition, for each of the following outfalls, please see Appendix I for additional explanations of each exceedance and/or unusually high sample result. Finally, please see Appendix II for a summary of the initial conditions at the site (the current BMPs) at the time this fact sheet was drafted.

- **Outfall #001** is described in the SWPPP as receiving runoff from sand and gravel storage piles, roadways, and a train track crossing. No other activities or material are described in this watershed. The permittee, on page 6 of the application cover letter, specifically requested to remove Aluminum from the monitoring requirements.

  The highest concentration of Aluminum analyzed at this outfall since 2007 was 6.3 mg/L in September 2008 with a monthly average of 3.6 mg/L in that month. The highest Ammonia concentration was reported as 5.8 mg/L in March 2008. The highest Nitrate concentration was reported as 7.52 mg/L in March 2009. The highest TSS concentration was reported as 880 mg/L in September 2008 with an average of 474.5 mg/L in that month.

  As noted, some of the documented TSS concentrations are unusually high. Please see Appendix I for the permittee's explanation of why the anomaly occurred and what changes were made at the facility. For example, the cover letter of the October 2008 DMR stated that there was a major flood condition on the Mississippi River and its tributaries during this period. The letter said that the flood conditions resulted in several of the discharge points being inundated and river sediment being places along the entire riverfront area thereby affecting the test results such as solids. Further, the permittee stated in their October 2009 letter that they added additional sediment fencing and had encouraging plant growth in order to reduce the TSS and Nitrogen levels. In their April 2010 letter, the permittee stated that minor exceedances occurred after several minor rainfall events resulted in a very low-flow discharge. The permittee explained that the sampling bottle could not fit into the flow, thus the lid to the bottle was used to fill other bottles for sampling (thus possibly disturbing sediment and contaminating the sample). Further, the permittee stated that the Mississippi River has been at flood stage the previous week and had backed water and river sediment up into the discharge channel. In the June 2010 correspondence, the permittee stated regarding this outfall that the current filters appear to be doing an adequate job and that special care will be taken not to disturb sediments in the bottom of the flow regime while obtaining samples. In the November 2010 correspondence, the permittee stated that an exceedance of Aluminum occurred after three days of rain events resulting in a minor discharge (one gallon per minute), so a hole was dug in order to place the sampling bottle in the flow path thus possibly introducing contamination. The permittee also stated that the existing BMPs that are in place for this outfall appear to be making a positive contribution to the discharge water quality (but that natural background levels of Aluminum are a problem). During a June 8, 2011, meeting between the department, the permittee, and the EPA, this sampling of very low flows was discussed; the permittee stated that they learned this was not a proper way to sample and had changed their practices (the department and EPA agreed, and a section was added to this fact sheet regarding representative sampling). Finally, in the January 2011 correspondence, the permittee stated that the sumps have been maintained and old material that had accumulated has been removed thus allowing for more material to settle out. The permittee stated that a new layer of ¾ inch to 3/8 inch pea gravel was added as a gravel filter. The permittee stated that the stormwater flow thus had to settle out in sump #1, pass through a silt fence, settle in sump #2, pass through a second silt fence, pass through a gravel berm, settle in an open area, then pass through sand bags filled with river gravel before being discharged.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include dual settling basins, silt fences, and a gravel check dams. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

The current BMPs have been modified by the permittee based on past exceedances. A benchmark was provided for Settleable Solids as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #002** is described as eliminated. The current permit states that the flow is sheet flow. The submitted SWPPP states that solids may be discharged. The SWPPP states that the area includes sand unloading facilities and a building and is located on the waterfront. The previous permit's fact sheet stated that "on-site observations by the U.S. Environmental Protection Agency Missouri state coordinator for NPDES permitting has yielded the following results: outfalls 002 & 005 may be eliminated due to sheet flow; outfall 004 may be eliminated because the outfall pipe has been plugged . . ."

- **Outfall #003** is described in the SWPPP as receiving runoff from the sand and gravel piles and from a small storage shed. The application also describes the storage and handling of limestone. The permittee specifically requested to remove TSS, COD, and Aluminum from the monitoring requirements.

  The DMRs submitted since 2007 have consistently reported no discharge.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include covered storage buildings. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  A benchmark was provided for Settleable Solids as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #004** is described as eliminated. Both the current permit and the application state that the pipe has been plugged. The submitted SWPPP states that solids may be discharged. The SWPPP states that the area receives runoff from material handling operations and is located on the waterfront. The application states that the materials in the area are river sand and gravel, limestone, and fertilizers. The previous permit's fact sheet stated that "on-site observations by the U.S. Environmental Protection Agency Missouri state coordinator for NPDES permitting has yielded the following results: outfalls 002 & 005 may be eliminated due to sheet flow; outfall 004 may be eliminated because the outfall pipe has been plugged . . ."

- **Outfall #005** is described as eliminated. Both the current permit and the application state that the flow is sheet flow. The submitted SWPPP states that solids may be discharged. The SWPPP states that the area includes runoff from unloading operations and is located on the waterfront. The previous permit's fact sheet stated that "on-site observations by the U.S. Environmental Protection Agency Missouri state coordinator for NPDES permitting has yielded the following results: outfalls 002 & 005 may be eliminated due to sheet flow; outfall 004 may be eliminated because the outfall pipe has been plugged . . ."

- **Outfall #006** is described in the SWPPP as receiving runoff from waterfront gravel crushing facilities and from an area used for storing screened sand and gravel. The SWPPP states that the outfall is a direct pipe to the Mississippi River. The application lists river sand and gravel, limestone, fertilizers, and bauxite. The application states that loading operations do not take place in the rain and that the operational areas are swept after use. The SWPPP states that the primary pollutants are suspended solids and other dissolved elements from the material handling operations. No specific requests were made for this outfall.

  The highest reported concentration of Ammonia discharged from this outfall since 2007 was 1,600 mg/L in September 2008. The next highest was 498 mg/L in September 2009. A site-specific permit is required for this facility due at a minimum to the history at this outfall. The highest concentration of COD was 250 mg/L in March 2007. The highest concentration of TKN was 210 mg/L in March 2007. The highest concentration of Aluminum was 5.1 mg/L in March 2007. The highest concentration of Nitrate Nitrogen was 724 mg/L in September 2009. The highest concentration of TSS was 610 mg/L in March 2007; the next highest was 410 mg/L in March 2008. The submitted application lists the tested Ammonia concentration as 72.7 mg/L, the Total Nitrogen concentration as 150 mg/L, and the Nitrate concentration as 66.4 mg/L.

  Some of the documented pollutant concentrations are unusually high, such as for Ammonia as Nitrogen. Please see Appendix I for the permittee's explanation of why the anomaly occurred and what changes were made at the facility. For example, the cover letter of the October 2008 DMR stated that the result was attributed to runoff from either urea storage or ammonium nitrate loading operations. The permittee stated that the outfall was flowing at three gallons per minute (3 gpm) at the time of sampling and ceased shortly after the sample was taken. The permittee stated that a follow-up sample would be scheduled. It was also explained that there was a period of flooding around this time, thus causing many sampling problems.

In the response letter to the NOV, the permittee stated that the sample event corresponded with a two-day rainfall event (2.5 inches and 1.3 inches) with high intensity. The response letter also stated that the permittee was implementing a better cleanup procedure and that the follow-up test results were much lower. Further, the permittee stated that they were going to be conducting an ongoing investigation into how to reduce or eliminate future violations of the permit (including better cleanup practices, possible rerouting/diverting stormwater, and possible filtration devices). In the October 2009 correspondence, the permittee stated that the inlet of Outfall #006 had been rebuilt, thus providing a marked decrease in solids and Aluminum (even though they were still facing challenges associated with materials handling processes). The permittee stated that the inlet was modified so that stormwater passes through a material designed to remove silts, debris, and oil from the water. The permittee stated that this material, in conjunction with a redesign on the inlet pipe, had contributed to an improvement to discharge quality when compared to past results. The permittee also stated that the high nitrates were due to materials handling operations at the bagging operation. They stated that stormwater had been diverted away from a certain storage building and rerouted to an evaporation area. The permittee then stated that they had instituted a new practice that required workers to place spilled or contaminated material into a sealed container on multiple occasions during the day instead of waiting for a period at the end of the day to clean up, thus reducing the chance that the material will come into contact with water. Further, the permittee stated that they dug a sump to collect contaminated water, which would then be pumped into a storage container. The water and collected spilled material was then to be returned to the manufacturer for recycling. In the May 2010 correspondence, the permittee also stated that their employee refresher classes include training on their SWPP and SPCC plans with a special emphasis on the primary handling facility near Outfalls #006 and #007 and fuel sites. Further, the permittee noted the difficulties surrounding this outfall, since there is little area available to reroute the water or to hold the water for longer periods of time in order to allow settling. The permittee said that the locations of the outfalls make it impractical to seal completely the discharge pipes, since the water would then collect under and around the material handling systems thus causing damage. The permittee said that the dock was originally constructed by placing fill material over sunken and anchored river barges, so excavation is not practical. The permittee then said that the existing pipes were installed when the dock was constructed and that passive filtering devices (such as silt fences) do work to reduce suspended solids. In the April 2010 correspondence, the permittee stated that the facility was recently inspected by EPA and that the inspector provided suggestions regarding management practices that were immediately implemented. The permittee stated that the discharge pipes for Outfalls #006 and #007 were only eight to 12 inches above normal river stage, so samples were difficult to obtain due to the then high river stage. The permittee also said that it is impossible during flood events to obtain a sample that reflects the quality of water as flowing through the BMPs. The permittee said that the river water that floods the property during these events can skew sample results to where they are not indicative of facility operations. In the November 2010 correspondence regarding recent exceedances, the permittee stated that the dirt from the stormwater ditch for this outfall had been excavated and placed into a beneficial use in the quarry reclamation area; they said that maintaining the ditch flow will likely reduce contact time with the water and may improve future water quality. In addition, the permittee said that the outfall was tested after the river receded from flood levels, thus possibly introducing into the samples some river sediment deposited during the floods. The permittee further said that the outfall was estimated to be flowing at only two gallons per minute when sampled but quit shortly after. Finally, the permittee said that they have expanded the ditch line leading to the outfall, removed the uppermost sediments, and replaced the gravel that was used as a gravel check dam. They said that they will further clean up the sand, gravel, and river mud deposited by the flood around the pipe inlet, thus trying to improve the discharge quality. Then, in the January 2011 correspondence, the permittee said that the inlet pipe sock had been replaced and additional gravel had been added to the discharge route for the material; all discharges would then have to travel through at least two forms of filtration before being discharged.

As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include a Hickenbottom-style inlet on the pipe (see http://www.hickenbottominc.com/), gravel check dams, fabric filter socks, and expanded ditches to provided settling time. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

The current BMPs have been modified by the permittee based on past exceedances. In addition, the department is aware that this watershed includes a concentrated activity (heavy handling of equipment) in a small area, thus a higher-than-normal benchmark was provided for Settleable Solids (a target concentration of 2.0 mL/L/hr). A benchmark was provided for Settleable Solids as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #007** is described in the SWPPP as receiving runoff from loading and unloading areas and as discharging directly to the Mississippi River. The SWPPP states that the primary pollutants are suspended solids and other dissolved elements from the material handling operations. The SWPPP states that the concrete pad is regularly swept. The application described the materials as sand and gravel, limestone, fertilizers, coal, and bulk salt. The fertilizer, when stored, is described as being stored in a building. The salt is described as being stored in exhausted quarry areas with a limestone floor. In the submitted application, the permittee did not make any specific requests to remove pollutant parameters for this outfall.

The highest concentration of Aluminum reported from this outfall since 2007 was 19 mg/L in September 2008 with a monthly average of 9.79 mg/L in that month. The highest reported concentration of Ammonia was 273 mg/L in March 2009. The highest concentration of COD was 1,000 mg/L in September 2008 with a monthly average of 735 mg/L in that month. The highest concentration of TKN was 99 mg/L in September 2007. The highest concentration of Nitrate Nitrogen was 140 mg/L in September 2008 with a monthly average of 76 in that month. The highest concentration of TSS was 2,000 mg/L in September 2008 with a monthly average of 1,085 mg/L in that month. The submitted application lists the tested Ammonia concentration as 3.51 mg/L, the Total Nitrogen concentration as 1,200 mg/L, the Nitrate concentration as 36.2 mg/L, and the Aluminum concentration as 1.97 mg/L.

Please see Appendix I. The following discussion is in addition to the above information listed for Outfall #006, which also applies, as the outfalls are similar in location and nature. In the October 2009 correspondence, the permittee stated that the discharge was about one gallon per minute. In the May 2010 correspondence, the permittee stated that they put in place a system where stormwater has to pass though washed pea gravel, silt fence, wire mesh screen, and a filter sock before being discharged. In addition, the permittee stated that high nitrate values are thought to be from materials handling operations and thus instituted a more aggressive clean up program. They also discussed the employee training program and the difficulties with this outfall and #006, as stated above. In the April 2010 correspondence, the permittee stated that the facility was recently inspected by EPA and that the inspector provided suggestions regarding management practices that were immediately implemented. The permittee stated that the discharge pipes for Outfalls #006 and #007 were only eight to 12 inches above normal river stage, so samples were difficult to obtain due to the then high river stage. The permittee also said that it is impossible during flood events to obtain a sample that reflects the quality of water as flowing through the BMPs. The permittee said that the river water that floods the property during these events can skew sample results to where they are not indicative of facility operations. In the November 2010 correspondence, the permittee stated that Outfall #007 experienced a flow of about one gallon per minute for a short while. They said that the watershed for the outfall is typically swept clean after use, however small amounts of material still remain on the concrete and on the conveyor frames that affect the samples. The permittee said that they filter the water through a pea gravel filter, a filter sock, and a wire mesh screen. They also said that the pea gravel is regularly replaced as sediments collect on top of the gravel. Further, the permittee said that, with sample analysis between Outfalls #006 and #007 so nearly identical, it is suspected that the elevated river levels and their deposited material contributed as much to the excursions as any of the facility activities. The pea gravel was then removed and fresh gravel added as a filter for the pipe discharge. They said that they will continue to maintain the pea gravel, sweep the area after use, and maintain the dock in a responsible manner. In the January 2011 correspondence, the permittee stated that the existing BMP of the gravel check dam had been maintained by replacement of the gravel that acts as a gravel filter at the inlet. They said that they were currently investigating the impacts to the site if the pipe were to be filled with concrete and plugged (thus eliminating the outfall).

As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include gravel check dams, silt fences, and fabric sediment filter socks on the pipe inlet. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

The current BMPs have been modified by the permittee based on past exceedances. As for Outfall #006, a higher-than-normal benchmark could have been provided for Settleable Solids due to having a concentrated activity in a small area; however the outfall already required numeric limits for SS on stormwater discharges based on an ELG. This will be used as the benchmark indicator for needing to examine the SWPPP and BMPs. The parameter of Settleable Solids will be used as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. In addition, a benchmark of 2.0 mL/L/hr (SS) will be considered a benchmark for non-stormwater discharges (as well as the numeric limitations for TSS, as required by an ELG). It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #008** is described in the SWPPP as being at the edge of a steel storage yard, which also receives runoff from the office, shop, and warehouse areas. The SWPPP states that the primary pollutants are suspended solids and other dissolved elements from the warehouse. The application describes the materials as steel and construction materials. No specific requests were made for this outfall.

  The highest reported concentration of Ammonia was 6 mg/L in March 2007. The highest concentration of TSS was 120 mg/L in September 2008.

  Please see Appendix I. In the October 2009 correspondence, the permittee stated that additional silt fences had resulted in a cleaner discharge. In the November 2010 correspondence, the permittee stated that they installed a dual silt fence barrier within the watershed.

As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include dual silt fence barriers. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

A benchmark was provided for Settleable Solids as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #009** is described in the submitted SWPPP as being an outfall located on the northern edge of the property that receives runoff from material storage buildings. The application states that there are stored bulk commodities, typically raw bauxite. The application also states that the building protects the materials from stormwater and that the materials will not dissolve in stormwater. The permittee specifically requested to remove COD, Ammonia, and Phosphorus from the monitoring requirements.

  The highest reported concentration of Aluminum since 2007 was 0.32 mg/L in September 2008, though the DMRs have usually reported "no discharge." The highest concentration of Ammonia was 0.2 mg/L in September 2008. The highest reported COD was 50 mg/L in March 2010. The highest Nitrates concentration was 5.2 mg/L in September 2008, with a monthly average concentration of 2.9 mg/L in that month. The highest concentration of Phosphorus was 0.21 mg/L in September 2008. The highest TSS was 250 mg/L in September 2008 with a monthly average of 154.5 mg/L in that month. Again the permittee usually has reported no discharge in the last three years for this outfall.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include silt fences and gravel check dams in addition to covered storage buildings. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  A benchmark was provided for Settleable Solids as a target indicator to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #010** is described in the SWPPP as receiving runoff from mined out areas of the quarry and as being the discharge from the lowest point of the dam crest of a settling pond. The SWPPP said that the pond does not currently contain an engineered discharge structure (a spillway or outfall pipe). The application lists salt, limestone piles, and a limestone crusher operation in the watershed. In addition, the application states that the salt will be loaded/unloaded and stored under cover (with drainage passing through multiple settling areas). The permittee specifically requested to remove BOD, COD, Ammonia, TKN, Nitrate, Phosphorus, Hexane, Aluminum, Magnesium, TPH, Ethylbenzene, Xylene, Benzene, and Toluene from the monitoring requirements.

  The DMR submitted on October 27, 2008, stated that this outfall normally does not discharge but was pumped during that period in anticipation of certain activities. Two other discharges are recorded, both in 2010. The only parameters with unusual reported concentration were COD with a high of 230 mg/L in September 2008 (with a monthly average concentration of 185 mg/L) and a TSS high concentration of 73 mg/L in September 2008 (monthly average of 40.3 mg/L).

  Please see Appendix I. In the January 2011 correspondence, the permittee stated that no additional activities had been conducted in the watershed but that the effluent sample was taken during a period when the sediment pond was being purposely drawn down. They said that the water in the pond is relatively stagnant and located in a valley surrounded by trees, thus it was possible that decaying leaf matter may have caused the excursion for COD. The department also received a follow-up e-mail from the permittee asking that a statement be added to the response, which stated that the facility sampled the impounded water at Outfall #010 for COD on December 27, 2010. They said that the results were available on December 30 and showed a value of 75 mg/L and that it was likely that the breakdown of leaves and other detritus have stabilized. They said that the sample was not from a discharge but rather from the impoundment.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include a settling pond, the use of tarps on salt storage piles, and berms. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

  This outfall was previously listed with Noix Creek as the first classified receiving stream. The unnamed tributary discharges to a location that is approximately the confluence of Noix Creek and the Mississippi River. Since the Mississippi River is

obviously the controlling flow at this confluence, the first classified stream was changed to the Mississippi River for this permit.

- **Outfall #011** is described in the SWPPP as receiving runoff from the quarry area and as having high suspended solids from the limestone piles. The SWPPP also said that the water is rerouted to a settling pond at Outfall #015, therefore the discharge will only be during extreme events where the ditch is overtopped. The application stated that the outfall has not discharged in over three years. The application list the materials present as river sand and gravel in addition to limestone piles. The permittee specifically requested to remove COD, Ammonia, Phosphorus, and Aluminum from the monitoring requirements.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include rerouting the discharge to Outfall #015. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #012** is described as a remote outfall receiving runoff from the quarry area. The only material listed in the application for this outfall is limestone. The permittee specifically requested to remove COD, Ammonia, Nitrates, Phosphorus, and Aluminum from the monitoring requirements.

  The highest reported concentration of Aluminum was 3.47 in September 2010, with a monthly average of 1.9 in that month. The highest Oil & Grease concentration was 7.88 mg/L in March 2007. The highest TSS was 83 mg/L in September 2010, with a monthly average of 47.5 in that month.

  Please see Appendix I. In the November 2010 correspondence, the permittee stated that the outfall was sampled after a total of 4.35 inches of rain over the previous days and still exhibited a high flow rate of about 80 gallons per minute. The retested the outfall nine days later (at a much lower flow) and found both TSS and Aluminum within limits. They said that the TSS was due to the volume and nature of the disturbance caused by the high amounts of rainfall. In the January 2011 correspondence, the permittee again said that no additional activities had been conducted within the watershed. They said that typical BMPs such as gravel berms, silt fences, settling sumps, etc., unless extremely overdesigned would have been overwhelmed by the amount of rain received. They said that the unusual rain circumstances and volume nearly met the 4.6-inch level for alternate effluent characteristics and that they believe the existing upstream pond and practices would be sufficient for most rainfall events. They said that they will continue to monitor the outfalls to see what kinds of impacts result from the complete installation of additional controls.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include berms on the pit floor. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #013** is described in the SWPPP as monitoring discharges from an old area of the quarry through a small swale (as opposed to a confined channel), which only flows under severe storm conditions. The application lists the materials present as limestone and that contained within a steel storage yard. The permittee specifically requested to remove Ammonia, Nitrates, Phosphorus, and Aluminum from the monitoring requirements.

  According to the submitted DMRs, the facility has not discharged through the outfall since at least 2007.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. No BMPs were listed as being used in the watershed of this outfall. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #014** is described as a remote outfall monitoring quarry discharges from pits 6, 7, and 8 with upstream mining operations and surrounding woodlands. The application lists limestone as the only contributing material. The permittee specifically requested to remove Ammonia and COD from the monitoring requirements.

  The submitted DMRs do not show any exceedances or high concentrations.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include berms on the pit floor. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #015** is described as being an outfall monitoring a settling pond that catches runoff from the quarry area. The application lists contributing materials as river sand and gravel in addition to limestone stockpiles. The permittee specifically requested to remove Ammonia and COD from the monitoring requirements.

  The only parameter that shows any unusual elevations was TSS with a high of 274 mg/L in March 2010.

  Please see Appendix I. In the April 2010 correspondence, the permittee stated that they had received a massive cloudburst that caused the settling pond to discharge. They said that the basin was overwhelmed by the intensity of the rainfall (reportedly 10 times the 25-year, 24-hour storm) and the resulting sediment load. In the June 2010 correspondence, the permittee stated that the intensity was approximately two inches per hour and that no modifications were to be made to the outfall at that time. They added that the excursion was an excellent case as to why rainfall intensity and not just overall volume should be used as a trigger for alternate effluent limits. Then they listed the actual 25-year, 24-hour storm as 5.6 inches (with an average intensity of 0.23 inches per hour). They said that the cloudbursts common during the spring and early summer often have far greater intensities and that their runoff collects more material than a slow steady rain that could deposit 5.6 inches in 24 hours. They said that rainfall events that deposit three inches in one to two hours are relatively common and result in flashfloods, damaged roadways, and high amounts of debris being collected in the stormwater. They said that these events can carry two-inch rocks from gravel roads and may have an intensity up to 12 times that of the 25-year, 24-hour storm.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include berms on the pit floor. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

- **Outfall #016** is described in the application as having limestone as a contributing material. The SWPPP does not yet include this outfall as the permittee submitted an application in July 2010 to add this outfall. The first application to modify the permit (to add the outfall) described the activities to be performed in the new watershed to be crushed and broken limestone mining and its associated processes. The description also stated that the underlying limestone will be removed and transported to the crusher to be prepared for end use. No bulk materials are to be stored in the watershed. Best management practices were proposed. This draft permit is making Outfall #016 consistent with the rest of the permit.

  As of June 9, 2011, the permittee provided a summary table of BMPs currently being used at the facility. The listed BMPs being used in the watershed of this outfall include Hickenbottom dry dams upstream of outfall and berms on the pit floor. **Please see Appendix II for a more detailed summary of BMPs in use at the facility.**

  The permittee submitted a draft evaluation of BMPs, which will fulfill the requirements for an antidegradation review when it is complete. The required benchmarks were provided as target indicators to verify that sufficient BMPs are being used to meet a technology-based standard. It is the judgment of the permit writer that the currently-listed BMPs meet technology-based requirements.

A discussion of department expectations regarding Representative Sampling

During the drafting of this permit, the department and the EPA questioned several unusually high effluent concentrations reported by the permittee on past DMRs. For example, from Outfall #006, the permittee reported a concentration of 1,600 mg/L in September 2008. See the section above and Appendix I for a complete discussion of the nature of these anomalies and the changes that took place after the results were obtained. On June 8, 2011, during a meeting with the department, the EPA, and the facility, it was noted that the permittee was unsure about sampling methods and exact requirements for when to sampling during times of flood or extremely low flow.

Representative Sampling is described primarily in Standard Condition I, Part I (General Conditions), Section A (Monitoring and Reporting). Standard Conditions are required for all Missouri State Operating Permits. The requirement for representative sampling as contained in the standard conditions is as follows:

a. Samples and measurements taken as required herein shall be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

It is to be understood that no sample will be required when an outfall's watershed is flooded (and within about seven days after such a flood in order to provide the permittee sufficient time to clean up accumulated river sediment left behind from such a flood) such that a reasonable sample is not possible. It is also to be understood that no sample is required when the effluent discharge is so small that a standard sampling container cannot obtain a sample without disturbing the underlying sediment. The permittee previously stated that past samples have been obtained by digging holes to capture sufficient water to sample or by using the cap of the sampling container and repeatedly transferring the stormwater to the sampling bottle. It is reasonable to assume that this will not capture a representative sample. The permittee is not required to obtain a sample in these low-flow conditions, but the permittee is advised to document and justify such non-sampling events. In addition, it is recommended that the permittee explore ways and methods for obtaining a representative sample, such as installing a reasonable structure sufficient to capture a sample actually representative of the stormwater flowing through an outfall. The SWPPP should contain a discussion of when sampling will occur and should describe the general conditions when sampling is not expected to occur (such as during flooding events). The facility staff should also be trained on when and why sampling will or will not take place.

Additional permits covering activities by this facility

During the review, it was also determined that Wayne B. Smith Inc., an associated industry, obtained a dredging permit (Permit #P-2646; based on Section 404 CWA, 33 CFR 325, and 33 USC 403) from the U.S. Army Corp of Engineers in August 2008. This permit allows the facility to commercially dredge up to 125,000 tons of sand, on a yearly basis, from the Mississippi River (at approximately river mile 281.5). The facility is to use suction dredging and is allowed by the 404 permit to load the materials onto barges, with excess water and materials discharged back into the river at the dredging location. The current permit expires on July 31, 2018. This activity is the basis for using the MO-G698 and MO-G50 general permit templates when assessing needed limitations in this permit.

Use Attainability Analyses of the receiving stream

The department does not document any Use Attainability Analyses (UAAs) in Pike County for Noix Creek, Buffalo Creek, or any other receiving stream from this facility. See the following website: http://www.dnr.mo.gov/env/wpp/wqstandards/uaa/uaa_pike.htm.

Hardness data required by Special Condition #12

The permittee is required to collect hardness data when monitoring for hardness-dependent metals (as at Outfall #007). The languages used for Special Condition #11 originally came from Appendix J (Calculating Hardness in Receiving Waters for Hardness Dependent Metals) of the EPA 2008 Multi-Sector General Stormwater Permit. For the third option (Collection of Third-Party Hardness Data), the permittee is allowed to submit data from a local water utility, previously conducted stream reports, TMDLs, peer reviewed literature, other government publications, or data previously collected by the permittee. The EPA permit provides the following information:

> Water quality data for many of the nation's surface waters are available on-line or by contacting EPA or a state environmental agency. EPA's data system STORET, short for STOrage and RETrieval, is a repository for receiving water quality, biological, and physical data and is used by state environmental agencies, EPA and other federal agencies, universities, private citizens, and many others. Similarly, state environmental agencies and the U.S. Geological Service (USGS) also have water quality data available that, in some instances, can be accessed online. "Legacy STORET" codes for hardness include: 259 hardness, carbonate; 260 hardness, noncarbonated; and 261 calcium + magnesium, while more recent, "Modern STORET" data codes include: 00900 hardness, 00901 carbonate hardness, and 00902 noncarbonate hardness; or the discrete measurements of calcium (00915) and magnesium (00925) can be used to calculate hardness. Hardness data

historically has been reported as "carbonate," "noncarbonate," or "Ca + Mg." If these are unavailable, then individual results for calcium (Ca) and magnesium (Mg) may be used to calculate hardness using the following equation:

$$\text{mg/L } CaCO_3 = 2.497 \text{ (Ca mg/L)} + 4.118 \text{ (Mg mg/L)}$$

When interpreting the data for carbonate and non-carbonate hardness, note that total hardness is equivalent to the sum of carbonate and noncarbonate hardness if both forms are reported. If only carbonate hardness is reported, it is more than likely that noncarbonate hardness is absent and the total hardness is equivalent to the available carbonate hardness.

Stormwater runoff and reasonable potential

When determining if an outfall has the reasonable potential to violate water quality in a receiving stream from its stormwater discharges, the following regulations were considered:

40 CFR 122.44(d)(1)(i): *Limitations must control all pollutants or pollutant parameters (either conv, non-conv, or toxic), which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State Water Quality Standard, including State narrative criteria for water quality.*

40 CFR 122.44(d)(1)(ii): *When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when WET testing), and where appropriate, the appropriate dilution of the effluent in the receiving water.*

A Reasonable Potential Analysis (RPA) is a tool used to determine if any given pollutant from any given facility's effluent has the reasonable potential to "cause or contribute to excursions of water quality criteria." This is used to determine if the facility's discharges have potential to cause or contribute to excursions of Missouri's Water Quality Standards for any give pollutant, while including effluent variability, dilution (if applicable), etc. True (statistical) RPAs are used with numeric criteria with continuous flow, which is not applicable for stormwater discharges. Where both effluent testing data and other important factors exist, we need to exercise discretion in the determination of the need for a limit. The permitting authority should employ the principle of independent application of the data and information that characterizes the effluent (via a Reasonable Potential Determination (RPD)). In other words, effluent data alone, showing toxicity at the receiving water concentration (RWC), may be adequate to demonstrate the need for a limit for toxicity or for individual toxicant. In this case, the establishing of non-numeric, technology-based effluent limits and other BMPs via a SWPPP are the primary treatment technology used for controlling stormwater discharges. The permitting authority is then required to consider whether TBEL are sufficient to maintain WQS. If the facility has previously violated water quality, then they may need an actual effluent limit for a pollutant, however it is difficult to determine which flow to use to calculate the water quality impact due to a discharge from a particular storm event (e.g. the point sources are non-continuous flow). In the case of this permit, a potential limit was calculated based on the design flow provided by the facility and compared to the actual discharges reported by the facility. A determination was then made as to whether the facility required monitoring for a parameter or a numeric effluent and/or benchmark limitation. Please see the below sections.

Review of previously-issued operating permits for this facility

The original site-specific Missouri State Operating Permit for this facility was issued on October 19, 2001. The permit included a description for 13 outfalls (001 to 013). The Effluent Limitations and Monitoring Requirements Table (Table A) included monitoring and limitations for Dry Weather Flows and for Stormwater Flows. There was one table for all 13 outfalls. The permit also required the development of a SWPPP.

The original site-specific permit's fact sheet stated that effluent limitations for Total Settleable Solids, Total Suspended solids, Chemical oxygen Demand, Total Petroleum Hydrocarbons, Oil & Grease, and pH were all commonly found in Missouri Operating Permits. The fact sheet stated that effluent limitations for Ammonia as N, Nitrate as N, Total Phosphorous, and Aluminum were "based on Missouri Ground-water criterion for the protection of drinking water supply (10 CSR 20-7.031)" with the actual numeric limitations "supplied by the Water Pollution Control Program (WPCP), Planning Section." Further, the fact sheet said that Flow, Biochemical Oxygen Demand, Total Nitrogen (Kjeldahl), Conductivity, Benzene, Toluene, Ethylbenzene, and Xylenes (Total) were included "to monitor the levels of each in order to indicate their effects on stream quality."

The Water Quality Review Sheet, dated August 15, 2001, stated that the facility handled limestone, bauxite, ammonium nitrate, urea, wholesale stone, and bulk fuel in addition to truck and equipment washing. The WQRS also stated that there was fuel contamination in the area of Outfall #008 in 1999. The following parameters were justified by citing "Permit's section best professional judgment": Settleable Solids, TSS, COD, BOD, Total Nitrogen (Kjeldahl), Total Phosphorous, and Conductivity. The following parameters were cited as being a "criterion": Ammonia as N, Nitrate as N, Aluminum, and Oil & Grease. Outfall #008 recommended monitoring only

for Benzene, Toluene, Ethylbenzene, and Xylenes (Total) due to the presence of truck washing and fueling areas in addition to the previous soil remediation for fuel spills. The permittee indicated that this was actually an accumulation through time of drips at fueling sites that resulted in hydrocarbon contamination in the permeable gravel areas around the fuel sites. The permittee stated that the areas have since been replaced with concrete pads that discharge to spill sumps and that the contamination was remediated.

The permit was renewed in 2008. The fact sheet stated that several parameters were removed due to "no reasonable potential" and several other parameters were retained from the previous permit.

Review of flow in the Mississippi River

Flow data was obtained from an automated U.S. Geological Survey, National Water Information System database, located at: http://waterdata.usgs.gov/mo/nwis/sw. This data was from the first available stream gage located downstream from the facility, specifically "USGS 05587450 Mississippi River at Grafton, IL." The data obtained was from April 1, 1933 through to January 9, 2011, however periods of no data were observed. Missing data included flow from February 1, 1938, though to September 30, 1939, and from October 1, 1981, through December 31, 1981. This flow data was then input into a department-created, low-flow calculator, found on the department's server (on January 6, 2011) at the following location:
H:\Guidance & Information - WP\WATER POLLUTION\WP Permitting\Permit Writing Guidance\Permit Calculators\7Q10new.xls.
The following low-flow values were obtained:

1Q10 = 18,900 cfs 7Q10 = 22,449 cfs 30Q10 = 26,009 cfs

Since data was missing from the above data record, all data before 1981 was clipped (removed). Using just data from 1982 to the present, the following values were obtained. These values were used to determine if there is reasonable potential for the facility's discharges to violate water quality in the Mississippi River and thus to determine if a pollutant parameter could be justifiably removed from the permit.

1Q10 = 23,817 cfs 7Q10 = 30,685 cfs 30Q10 = 35,242 cfs

The permittee also provided to the department a website as an alternate source for river flows (http://water.weather.gov//ahps2/hydrograph.php?wfo=lsx&gage=lusm7&view=1,1,1,1,1,1,1,1). The site provides river stages in feet rather than river flow in cubic feet per second (cfs). Further, it is to be noted that the facility is located within the lock and dam system, which allows river navigation even when the flow is reduced.

A discussion of limits and monitoring for sediment (Total Suspended Solids and Settleable Solids) on the Mississippi River

The permittee and their consultant questioned the reasonableness of limits or monitoring for Total Suspended Solids (TSS) on outfalls that discharge to the Mississippi River, since the river has a relatively high background concentration of TSS. It is to be noted that the EPA Multi-Sector General Permit requires a TSS limit of 100 mg/L for several sectors as a technology-based benchmark limit.

Sediment can also be used as an indicator pollutant showing the likelihood of other unknown pollutants that could have been picked up by stormwater and be flowing into waters of the state. Minimum technology-based limits will ensure that the facility contains sufficient technological controls to reduce the concern of any unknown pollutants being discharged along with the stormwater. The actual sediment benchmark required in this permit for discharges to classified streams other than the Mississippi River and to unclassified tributaries to the Mississippi River is 50 mg/L, as suggested by other Missouri general permits such as the MO-R80C and R23A. The benchmark being required on outfalls that discharge directly to the Mississippi River is 2.0 mL/L/hr for Settleable Solids. Settleable Solids was chosen as a benchmark on these outfalls mainly as an indicator to verify that the technology-based effluent limits are being met. The value of 2.0 mL/L/hr was used for several reasons. First, the previous numeric limit for most of these outfalls was 1.5 mL/L/hr as a daily maximum. In addition, the G49, G50, and R24 general permits also require 1.5 mL/L/hr as a numeric limitation for Settleable Solids. However, some of these outfalls (specifically Outfall #006 and Outfall #007) consist of a concentrated activity in a relatively small area. There is little room for the permittee to install and upgrade numerous BMPs (especially on #006 and #007). In addition, the river floods this area, thus introducing significant river sediment onto the dock and into low areas of these watersheds. The EPA was consulted, and Mr. John Dunn suggested a slightly higher value for sediment due to these conditions. A target benchmark of 2.0 mL/L/hr was therefore chosen.

General permits considered when drafting this permit:

1. MO-G698, issued March 14, 2008. This permit is for the discharge of wash water, storm water and return water from aggregate dredging operations on the Missouri and Mississippi Rivers. The permit requires monthly monitoring for Flow, Settleable Solids, Total Suspended Solids, pH, and Oil & Grease for Process and Wash Waters. The only effluent limitations are for Oil & Grease (10 mg/L as a monthly average and 15 mg/L as a daily maximum) and for pH (limited to a range of 6.5 to 9.0

standard pH units). The permit requires BMPs to be followed. Requirement 4.(e) specifically requires that the permittee perform monthly inspections on prevent pollution structures plus an additional inspection on these structures within 24 hours of each rainfall event of one inch or more. The permittee is also required to inspect the facility in general to ensure that BMPs are continually implemented and remain effective.

Based partially on the MO-G698 general permit, this draft permit for S-S-S Lumber Company removed limits for outfalls discharging to the Mississippi River in the absence of an effluent limit guideline. The permittee is required to monitor for many pollutants for the remainder of the permit term. In addition, the permittee is required to perform twice-monthly inspections of all outfalls to determine if BMPs are working or if new or different BMPs are necessary. For outfalls without BMPs, the permittee is to determine if BMPs are necessary.

2. MO-G49, issued October 6, 2006. This permit is for stormwater and other specified discharges from limestone and other rock quarries, concrete, glass, and asphalt industries. The permit requires annual monitoring for Flow, Settleable Solids (1.0 mg/L as a monthly average and 1.5 mg/L as a daily maximum), Oil & Grease (10 mg/L as a monthly average and 15 mg/L as a daily maximum), and pH (limited to a range of 6.0 to 9.0 standard pH units) for stormwater discharges. The permit also allows non-stormwater discharges (such as mine pit dewatering and truck washing) with quarterly monitoring for Flow, Total Suspended Solids (70 mg/L as a monthly average and 70 mg/L as a daily maximum), Oil & Grease (10 mg/L as a monthly average and 15 mg/L as a daily maximum), and pH (limited to a range of 6.0 to 9.0 standard pH units). An emergency exceedance of stormwater effluent limitations for Settleable Solids is permitted by the general permit due to precipitation exceeding the highest 1-in-10-year, 365-day rainfall or the highest 25-year, 24-hour storm event. Requirement 8 specifically requires the permittee to perform monthly inspections "of all storm water pollution prevention structures, storm water and wastewater treatment structures, and of the facility in general to ensure that structures are properly maintained and effective, and that any Best Management Practices are continually implemented and effective."

3. MO-G50, issued June 1, 2010. This permit is for discharge of wash water or storm water from sand and/or gravel mining, washing, sorting or storage facilities. The permit requires quarterly monitoring for Flow, Settleable Solids (1.0 mg/L as a monthly average and 1.5 mg/L as a daily maximum), Oil & Grease (10 mg/L as a monthly average and 15 mg/L as a daily maximum), and pH (limited to a range of 6.5 to 9.0 standard pH units) for stormwater discharges. The permit also allows process and wash water discharges with monthly monitoring for Flow, Settleable Solids (1.0 mg/L as a monthly average and 1.5 mg/L as a daily maximum), Total Suspended Solids (70 mg/L as a monthly average and 110 mg/L as a daily maximum), and pH (limited to a range of 6.5 to 9.0 standard pH units). The permit includes a requirement (#2) for the permittee to develop a structured evaluation of BMPs in order to meet the antidegradation requirement for new outfalls or discharges. Requirement #3 specifically states, "the purpose of the SWPPP and the BMPs listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective action means the facility took steps to eliminate the deficiency. Routine maintenance, such as removing sediment from a sedimentation basin, is not considered a deficiency. Constructing a new sedimentation basin in response to observed impacts to the receiving stream is an example of a deficiency that requires notification."

   This permit was used as a basis for assigning quarterly monitoring for stormwater discharges and monthly monitoring for non-stormwater discharges. The permit also included the above-listed requirement 3 with changes.

4. MO-R80C, issued October 5, 2007, and revised July 1, 2010. This permit is for firms engaged in motor freight, watercraft transportation, warehousing activities and U.S. Postal Service maintenance facilities. The permit specifically requires the development and implementation of a SWPPP and includes benchmarks for Oil & Grease (10 mg/L) and Total Suspended Solids (50 mg/L). The permit states that the benchmarks are "considered necessary to protect existing water quality and shall not be exceeded during discharges resulting from a precipitation event exceeding 0.1 inches during a 24 hour period." The permit also states that "the BMPs at the facility should be designed to meet these Benchmarks during rainfall events up to the 1-in-10 year, 24-hour rain event."

5. MO-R80E, currently expired as of March 17, 2010. This permit was for stormwater runoff from Water Transportation facilities, including establishments with Standard Industrial Classification (SIC) major group code 44XX, such as those conducting freight transportation. The permit specifically requires the development and implementation of a SWPPP and the submittal of an annual report. Sampling is to be made at the request of the department. This permit was replaced by the MO-R80C general permit.

6. MO-R23A, issued March 12, 2010. This is a more recent general permit template that was used as a basis for more recent permitting language. The permit includes requirements for a SWPPP, more in-depth benchmarking, and a requirement for a structured evaluation of BMPs based on the antidegradation requirements. The fact sheet stated that "Because the discharge is storm water, and therefore short duration, acute water quality standards applied where available." It was specifically noted that effluent limits for TSS were modified to benchmarks without being considered backsliding.

7. The EPA Multi-sector General Permit (2008 version), located at http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf. The official title of this permit is the **Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP).** Please see the following websites for further information (active as of April 7, 2011):
   http://cfpub.epa.gov/npdes/stormwater/msgp.cfm
   http://cfpub.epa.gov/npdes/stormwater/indust.cfm
   http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf
   http://www.epa.gov/npdes/pubs/msgp2008_finalfs.pdf
   http://www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf

The EPA general permit includes the following provisions that were considered when drafting this permit:

Section 1.2

Where corrective action is triggered by an event that does not itself constitute permit noncompliance, such as an exceedance of an applicable benchmark, there is no permit violation provided you take the required corrective action within the relevant deadlines.

Section 2.

In the technology-based limits included in Part 2.1 and in Part 8, the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

Section 2.1 Control Measures.

You must select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part 2.1.1, meet the non-numeric effluent limits in Part 2.1.2, and meet limits contained in applicable effluent limitations guidelines in Part 2.1.3. ...

Section 2.1.2 Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT)

The permit requires several limitations and conditions, such as the following: Minimize Exposure, Good Housekeeping, Maintenance, Spill Prevention and Response Procedures, Erosion and Sediment Controls, Management of Runoff, Salt Storage Piles or Piles Containing Salt, Sector Specific Non-Numeric Effluent Limits, Employee Training, Non-Stormwater Discharges, Waste, Garbage and Floatable Debris, Dust Generation and Vehicle Tracking of Industrial Materials.

Section 2.1.3 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

The permit requires several conditions, such as the following applicable condition:

Table 2-1. Applicable Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limit
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D	See Part 8.J.9

Section 2.2 Water Quality-Based Effluent Limitations.

Section 2.2.1 Water Quality Standards

Your discharge must be controlled as necessary to meet applicable water quality standards.

EPA expects that compliance with the other conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your discharge causes or contributes to an exceedance of applicable water quality standards, you must take corrective action as required in Part 3.1, document the corrective actions as required in Parts 3.4 and 5.4, and report the corrective actions to EPA as required in Part 7.2.

Section 4.1.3 Exceptions to Routine Facility Inspections

<u>*Inactive and Unstaffed Sites:*</u> The requirement to conduct routine facility inspections on a quarterly basis does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. Such a facility is only required to conduct an annual comprehensive site inspection in accordance with the requirements of Part 4.3. To invoke this exception, you must maintain a statement in your SWPPP pursuant to Part 5.1.5.2 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). …

Section 6.2.1 (Benchmark Monitoring)

This permit stipulates pollutant benchmark concentrations that may be applicable to your discharge. The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your control measures and to assist you in knowing when additional corrective action(s) may be necessary to comply with the effluent limitations in Part 2.

Section 6.2.1.2 (under <u>*Natural background pollutant levels)*</u>

If . . . you determine that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, you are not required to perform corrective action or additional benchmark monitoring provided that:

- The average concentration of your benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background;

- You document and maintain with your SWPPP . . . your supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. You must include in your supporting rationale any data previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your stormwater discharge . . .

Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring.

Section 8 (Sector-Specific Requirements for Industrial Activity)

Subpart H – Sector H – Coal Mines and Coal Mining-Related Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities.

8.H.1 Covered Stormwater Discharges.

The requirements in Subpart H apply to stormwater discharges associated with industrial activity from Coal Mines and Coal Mining-Related facilities.

8.H.2.2 *Discharges Subject to Stormwater Effluent Guidelines.* (See also Part 1.1.4.4) Not authorized by this permit: stormwater discharges subject to an existing effluent limitation guideline at 40 CFR Part 434.

Subpart J – Sector J – Non-Metallic Mineral Mining and Dressing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities.

8.J.8 Sector-Specific Benchmarks

Table 8.J-1 identifies benchmarks that apply to the specific subsectors of Sector J. These benchmarks apply to both your primary industrial activity and any co-located industrial activities, which describe your site activities.

Table 8.J-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector J1. Sand and Gravel Mining (SIC 1442, 1446)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L
Subsector J2. Dimension and Crushed Stone and Nonmetallic Minerals (except fuels) (SIC 1411, 1422-1429, 1481, 1499)	Total Suspended Solids (TSS)	100 mg/L

8.J.9 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part 6.2.2.1 of the permit)

Table 8.J-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.J-2		
Industrial Activity	Parameter	Effluent Limit
Mine dewatering discharges at crushed stone mining facilities (SIC 1422 - 1429)	pH	6.0 - 9.0
Mine dewatering discharges at construction sand and gravel mining facilities (SIC 1442)	pH	6.0 - 9.0

Subpart Q – Sector Q – Water Transportation

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities

8.Q.6 Sector-Specific Benchmarks. (See also Part 6 of the permit.)

Table 8.Q-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector Q1. Water	Total Aluminum	0.75 mg/L

Transportation Facilities (SIC 4412-4499)	Total Iron	1.0 mg/L
	Total Lead[1]	Hardness Dependent
	Total Zinc[1]	Hardness Dependent
[1] The benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:		

The fact sheet of the Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) states the following:

II.B. Structure of This Permit / Terminology

II.B.2. Regarding Conformance of this Permit to Recent Court Decisions

Effluent Limitations in the Permit

The ***technology-based effluent limitations*** set forth in Part 2.1.2 require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically practicable and achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. (See Part 2.1.2.1). In addition, permittees are required to: (1) use good housekeeping practices to keep exposed areas clean (See Part 2.1.2.2), (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges (See Part 2.1.2.3), (3) minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur (See Part 2.1.2.4), (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants (See Part 2.1.2.5), (5) divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in your discharges (See Part 2.1.2.6), (6) enclose or cover storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces (See Part 2.1.2.7), (7) achieve any additional non-numeric limits stipulated in the relevant sector-specific section(s) of Part 8 of this permit (See Part 2.1.2.8), (8) train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team (See Part 2.1.2.9), (9) eliminate non-stormwater discharges not authorized by an NPDES permit (See Part 2.1.2.10), (10) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged (See Part 2.1.2.11), (11) minimize generation of dust and off-site tracking of raw, final or waste materials (see Part 2.1.2.12), and (12) meet any applicable numeric effluent limitations based on EPA's effluent limitation guidelines (See Part 2.1.3). And, to meet the non-numeric effluent limitations in Part 2.1.2 and meet the effluent limitations guidelines-based limits in 2.1.3, the permit requires dischargers to select control measures (including best management practices) to address the selection and design considerations in Part 2.1.1.

In addition to the technology-based effluent limitations, Parts 2.2.1 – 2.2.3 and Parts 1.1.4.7 and 1.1.4.8 of the eligibility criteria contain the ***water quality-based effluent limitations*** in the permit. The permittee must control its discharge as necessary to meet applicable water quality standards. EPA expects that compliance with the technology-based effluent limitations and other terms and conditions in this permit will meet this effluent limitation. However, if at any time the permittee, or EPA, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions as required in Part 3.1, and conduct follow-up monitoring as required in Part 6.3; as well as report the exceedances(s) to EPA as required in Parts 6.3.1 and 7.3. (See Part 2.2.1). Furthermore, EPA may impose additional water quality-based limitations on a site-specific basis, or require the discharger to obtain coverage under an individual permit, if information in an NOI, required reports, or from other sources indicates that, after meeting the water quality-based limitations in this section, the discharges are not controlled as necessary to meet applicable water quality standards. (See Part 2.2.1). Part 2.2.2 describes the permit requirements that apply to discharges to water quality impaired waters. This part is broken into requirements for: (1) existing discharges to an impaired water with an EPA approved or established TMDL (See Part 2.2.2.1), (2) existing discharges to an impaired water without an EPA approved or established TMDL (See Part 2.2.2.2), and (3) new discharges to an impaired water (See Part 2.2.2.3). And, Part 2.2.3 contains antidegradation requirements.

"Term and Condition" to Provide Information in a SWPPP

Distinct from the effluent limitation provisions in the permit, Part 5 of the permit requires the discharger to prepare a Stormwater Pollution Prevention Plan (SWPPP) for its facility before submitting its Notice of Intent (NOI)

for permit coverage. The SWPPP, together with the additional documentation requirements (see Part 5.4), is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the effluent limits set forth in Part 2.

The requirement to prepare a SWPPP is not an effluent limitation, instead it documents what practices the discharger is implementing to meet the effluent limitations in the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. CWA section 502(11). Instead, the requirement to develop a SWPPP is a permit "term or condition" authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, "[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate." The SWPPP requirements set forth in the MSGP are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it updated is no different than other information collection conditions, as authorized by section 402(a)(2), in other permits.

Based in part on the above information contained within the EPA 2008 Multi-sector permit and its associated fact sheet, it is determined that this permit will contain required conditions but do not necessarily need numeric effluent limitations for stormwater. The permit will require the permittee to follow certain conditions, which must be documented in the SWPPP. In addition, the permit will contain numeric benchmarks when applicable (e.g. when an outfall discharges to a receiving stream other than to the Mississippi River).

Please see the below sections for further information.

A discussion of Technology-based limits vs. Water Quality-based limits as it relates to this permit

Much of the following discussion was taken from the fact sheet for the EPA Multi-Sector General Permit (MSGP, 2008 version). It is good to note that, in the standard permitting process, technology-based and water-quality-based effluent limits are to be developed and then compared in order to determine which is the more stringent. The most protective effluent limit is then used in the permit, whether a numeric value (e.g. a maximum concentration discharged) or a restrictive narrative condition (to be met with BMPs). In addition, a permit writer must look at backsliding in order to ensure the permit is at least as restrictive as the previous permit (unless certain conditions are met).

The EPA MSGP contains effluent limits that correspond to required levels of technology-based control (BPT, BCT, BAT) for various discharges under the Clean Water Act (CWA). Where an effluent limitation guideline (ELG) applies, the requirement must be incorporated into the permit as an effluent limitation. Where EPA has not yet issued an ELG, EPA is supposed to determine the appropriate technology-based level of control based on best professional judgment (BPJ). See CWA section 402(a)(1) and 40 CFR § 125.6. Because of the nature of stormwater discharges, it is sometimes infeasible to use numeric effluent limits to demonstrate the appropriate levels of control for stormwater. In such situations, the CWA authorizes EPA to include non-numeric effluent limits in NPDES permits. The MSGP includes a number of such non-numeric effluent limits. Several of these require facilities to "minimize" various types of pollutant discharges. Consistent with the control level requirements of the CWA, EPA clarified in the MSGP that the term "minimize" means to reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically achievable (BAT) and practicable (BPT) in light of best industry practice. EPA determined that the technology-based numeric and non-numeric effluent limits in the MSGP, taken as a whole, constitute BPT for all pollutants, BCT for conventional pollutants, and BAT for toxic and nonconventional pollutants that may be discharged in industrial stormwater. Many of the narrative (non-numeric) conditions in the site-specific operating permit for SSS were therefore based in large part on conditions in the EPA MSGP.

The MSGP also cites two court cases that provide justification for including the non-numeric limits. In the first, Natural Res. Def. Council, Inc. v. EPA, 673 F.2d 400, 403 (D.C. Cir. 1982) (noting that "section 502(11) defines 'effluent limitation' as 'any restriction' on the amounts of pollutants discharged, not just a numerical restriction"; holding that section of CWA authorizing courts of appeals to review promulgation of "any effluent limitation or other limitation" did not confine the court's review to the EPA's establishment of numerical limitations on pollutant discharges, but instead authorized review of other limitations under the definition). The second was Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369 (D.C. Cir. 1977), in which the D.C. Circuit stressed that when numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels.

Again, the MSGP defined the term "minimize" to provide a clear definition as to what is required of the discharger under the MSGP. To meet the effluent limits that require the discharger to "minimize" pollutants, permittees are required to select, design, install and implement control measures that reduce or eliminate discharges of pollutants in stormwater to the extent achievable. These control measures must reflect best industry practice considering their technological availability and economic practicability (BPT) and

achievability (BAT). Toxic and nonconventional pollutants are controlled in the first step by BPT and in the second step by BAT. In addition the second level of control is "increasingly stringent." Further, because the BAT levels of control are BMPs and pollution prevention measures, they will also control conventional pollutants. Therefore the MSGP fact sheet focused on BAT rather than BCT or BPT for conventional pollutants.

To determine technological availability and economic achievability , operators need to consider what control measures are considered "best" for their industry, and then select and design control measures for their site that are viable in terms of cost and technology. As stated on page 35 of the MSGP fact sheet, EPA believes that for many facilities minimization of pollutants in stormwater discharges can be achieved without using highly engineered, complex treatment systems (e.g., chemical precipitation). The specific limits included in the MSGP emphasize effective "low-tech" controls, such as minimizing exposure to stormwater (albeit, without significantly increasing impervious surfaces), regular cleaning of outdoor areas where industrial activities may take place, proper maintenance of equipment, diversion of stormwater around areas where pollutants may be picked up, minimization of runoff through infiltration and flow dissipation practices, and effective advanced planning and training (e.g., for spill prevention and response).

The CWA requires that discharges from existing facilities, at a minimum, must meet technology-based effluent limitations reflecting, among other things, the technological capability of permittees to control pollutants in their discharges. Technology-based effluent limitations are in many cases established by EPA in regulations known as effluent limitations guidelines (ELGs). EPA establishes these regulations for specific industry categories or subcategories after conducting an in-depth analysis of that industry. Where EPA has not issued effluent guidelines for an industry, EPA and State permitting authorities establish effluent limitations for NPDES permits on a case-by-case basis based on their best professional judgment. See 33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3(c)(2).

The CWA establishes two levels of pollution control for existing sources. In the first stage, existing sources that discharge pollutants directly to receiving waters were initially subject to effluent limitations based on the "best practicable control technology currently available" (BPT). See 33 U.S.C. § 1314(b)(1)(B). BPT applies to all pollutants. In the second stage, existing sources that discharge conventional pollutants are subject to effluent limitations based on the "best conventional pollutant control technology" (BCT). See 33 U.S.C. §1314(b)(4)(A) and 40 C.F.R. §401.16 (this regulation lists the conventional pollutants as BOD, TSS, pH, Fecal Coliform, and Oil & Grease). Further, existing sources that discharge toxic pollutants or "nonconventional" pollutants (i.e., pollutants that are neither "toxic" nor "conventional") are subject to effluent limitations based on "best available technology economically achievable" (BAT). See 33 U.S.C. §1311(b)(2)(A) and 40 C.F.R. §401.15 (this lists toxic pollutants).

All NPDES permits are required to contain technology-based limitations. See 40 CFR §§122.44(a)(1) and 125.3. CWA sections 301(b)(1)(A) for (BPT); 301(b)(2)(A) for (BAT); and 301(b)(2)(E) for (BCT). The technology-based limits in the EPA MSGP represent the BPT (for conventional, toxic, and non-conventional pollutants), BCT (for conventional pollutants), and BAT (for toxic pollutants and non-conventional) levels of control for the applicable pollutants. When EPA has not promulgated effluent limitation guidelines for an industry, or if an operator is discharging a pollutant not covered by the effluent guideline, permit limitations may be based on the best professional judgment (BPJ) of the permit writer (based on 33 U.S.C. § 1342(a)(1) and 40 CFR 125.3(c)). According to the fact sheet of the MSGP, most of the technology-based limits in the permit are based on BPJ decision-making because no ELG applies. However, the permit also includes technology-based limits based on stormwater-specific ELGs (see Table 1-1 of the MSGP).

The BPJ limits in the MSGP are in the form of non-numeric (non-quantitative or narrative) requirements. Again, under EPA's regulations, non-numeric effluent limits are authorized in lieu of numeric limits, where "numeric effluent limitations are infeasible." See 40 CFR 122.44(k)(3). EPA interpreted the CWA to allow BMPs to take the place of numeric effluent limitations under certain circumstances. Regulation 40 C.F.R. §122.44(k), entitled "Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs ...)," provides that permits may include BMPs to control or abate the discharge of pollutants when: (1) "authorized under section 402(p) of the CWA for the control of stormwater discharges"; or (2) "numeric effluent limitations are infeasible."

Numeric effluent limitations are not always feasible for industrial stormwater discharges as such discharges pose challenges not presented by the vast majority of NPDES-regulated discharges. Stormwater discharges can be highly intermittent, are usually characterized by very high flows occurring over relatively short time intervals, and carry a variety of pollutants whose source, nature and extent varies. The variability of effluent and efficacy of appropriate control measures makes setting uniform effluent limits for stormwater extremely difficult. Because it is often not reasonable to use traditional wastewater treatment technologies to control industrial stormwater discharges due to the absence of a steady flow of wastewater, control measures for such discharges tend to focus on pollution prevention and BMPs. EPA therefore determined that it is not feasible for the Agency to calculate numeric, technology-based limits for many of the discharges covered under the MSGP permit and, based on the authority of 40 CFR 122.44(k), chose to adopt non-numeric effluent limits. The BAT/BPT/BCT effluent limits in the MSGP are therefore expressed as specific pollution prevention requirements for minimizing the pollutant levels in the discharge. In the context of the MSGP, these requirements represent the best technologically available and economically practicable and achievable controls. According to the fact sheet of the MSGP, EPA has long maintained that the combination of pollution prevention approaches and structural management practices

required by the narrative limits are the most environmentally sound way to control the discharge of pollutants in stormwater runoff from industrial facilities to meet the effluent limits.

According to the MSGP, EPA generally does not mandate the specific control measures operators must select, design, install and implement. It is up to the operator to determine what must be done to meet the applicable effluent limits. For example, Part 2.1.2.1 of the MSGP requires operators to minimize the exposure of raw, final, and waste materials to stormwater and runoff. How this is achieved will vary by facility. If feasible, some or all activities may be moved indoors. Even if activities or products cannot be moved indoors, they may be "covered" by roofing and/or tarps. In addition, some activities may be limited to times when exposure to precipitation is not likely. Each of these control measures is acceptable and appropriate in some circumstances. In this respect, the non-numeric effluent limits in the MSGP are analogous to more traditional numeric effluent limits, which also do not require specific control technologies as long as the limits are met. Moreover, the MSGP requires permittees to comply with non-numeric technology-based effluent limits by implementing control measures. Control measures can be actions (including processes, procedures, schedules of activities, prohibitions on practices and other management practices), or structural or installed devices to prevent or reduce water pollution. The achievement of these non-numeric limits will result in the reduction or elimination of pollutants from the operator's stormwater discharge. Such limits constitute this permit's technology-based limits, expressed narratively per 40 CFR 122.44(k), and are developed using best professional judgment (BPJ).

The previous permit contained numeric limits, however, as discussed above, numeric limitations for stormwater are difficult to justify. Even so, when converting to non-numeric limitations (and associated benchmarks), it is still necessary to ensure the facility is meeting both the water-quality-based effluent limits and required technology-based effluent limits. In the State of Missouri, Water Quality Standards can be obtained from Missouri Clean Water Commission regulation 10 CSR 20-7.031. In the case of stormwater, the outfall only flows during wet-weather events, therefore it is reasonable to rely on the acute standard. In regards to Technology-based limits, normally a permit writer would refer to 10 CSR 20-7.015 (the effluent regulations regarding discharges from domestic sources and from Publically Owned Treatment Works (POTWs)), however this regulation does not adequately address stormwater discharges, Regulation 10 CSR 20-6.200 (regulations regarding stormwater permitting) does not address technology-based limits either, though section (6)(B)2. B. and C. respectively state that effluent limitations shall be based in part on "effluent guidelines promulgated by the department or Environmental Protection Agency" and "best professional judgment of the permit writer."

The EPA 2008 MSGP was consulted to determine what best management practices might be required and what target benchmarks were used (based on the EPA's expectation of best conventional technology (BCT) being used at the facility). In addition, the sector-specific ELGs were consulted. The MSGP was specifically reviewed to determine EPA requirements for technology-based limits (specifically section 2.1.2 (Non-Numeric Technology-Based Effluent Limits), section 2.1.3 (Numeric Effluent Limitations Based on Effluent Limitations Guidelines), and the benchmarks and other requirements such as found under parts 8.H.8, 8.J.8, 8.J.9, and 8.Q.6) as follows:

1. Section 8.H.8 was consulted since Outfall #007 included coal piles (though this was not a direct correlation to the primary SIC code used). The benchmarks required in the MSGP are Total Aluminum (0.75 mg/L), Total Iron (1.0 mg/L), and Total Suspended Solids (100 mg/L). Since this outfall discharges directly to the Mississippi River, no benchmarks were required. Monitoring is still being required at this time for these parameters. There is not expected to be any reasonable potential to violate water quality in the Mississippi River, though monitoring is required so that a review can be performed during renewal. Non-narrative conditions are still being in the permit as basic technology effluent limitations.
2. Section 8.J.9 was consulted, since the primary SIC codes for the facility are included in this sector. The required benchmarks to determine if upgrades are required for the best management practices (whether structural controls or operational procedures) are for Nitrate plus Nitrite Nitrogen (0.68 mg/L) and Total Suspended Solids (100 mg/L). It is to be noted that there is no standard for Nitrite in Missouri regulation, and the standard for Nitrate applies only to a drinking water supply and for protection of groundwater. Since the receiving stream is neither of these, no limit or benchmark was imposed. It was determined that there is nothing to protect by imposing a limit or benchmark for these pollutants. A benchmark was required for Nitrates on Outfalls 010, 011, 013, and 015 (streams that flow to the Mississippi through an unclassified tributary but not directly to the Mississippi). The Missouri Acute Water Quality Standard was used, though the benchmark in the EPA MSGP was more stringent (but again was not reasonable to apply). In this case, the facility is expected to protect the unclassified tributary to the Mississippi as a precaution (reasonable potential is not expected once the pollutant enters the first classified stream). There was also an ELG of pH from 6.0 to 9.0. This was used as a benchmark as shown below.
3. Section 8.Q.6 was consulted, since the facility includes a SIC code for a marina at the dock. Benchmarks are required in the MSGP Total Aluminum (0.75 mg/L), Total Iron (1.0 mg/L), Total Lead (hardness dependent), and Total Zinc (hardness dependent). Since this outfall discharges directly to the Mississippi River, no benchmarks were required. Monitoring is still being required at this time. There is not expected to be any reasonable potential to violate water quality in the Mississippi River, though monitoring is required so that a review can be performed during renewal. Non-narrative conditions are still being in the permit as basic technology effluent limitations.

No other technology-based limits were suggested by the EPA MSGP (whether benchmarks or effluent limit guidelines), therefore Missouri Acute Water-Quality Standards were used for the other parameters that appeared to need benchmarks. The intent was to ensure that the stormwater discharged is not acutely toxic. The narrative conditions (many of which mirror those in the MSGP) ensure that the minimum technology-based effluent limits (which are required as a part of permitting) are included in the permit.

Based on the above discussion, it is believed that the more stringent of technology-based limitations and the water quality-based limitations are included in this permit when reasonable and feasible. In addition, anti-backsliding was considered and determined to be met (see the explanations in the individual derivation and discussion sections for each outfall).

It is to be noted that benchmarks are required in the draft permit for SSS for outfalls not discharging directly to the Mississippi River and are as follows:

Outfalls 010, 011, 012, 013, 014, 015, and 016

Parameter	**Benchmark Limits**
pH	The benchmark limit shall be a range of 6.5 to 9.0 standard units as an instantaneous grab sample. The resulting pH is not to be averaged. A benchmark exceedance would be outside this range.
Total Suspended Solids	50 mg/L
Settleable Solids	1.0 mL/L/hr
Ammonia as N (NH_3)	The benchmark limit shall be the resulting concentration of the equation for acute criteria, as found in 10 CSR 20-7.031, on page 29: $[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$, where the pH is in standard pH units. Alternatively, the permittee may use Table B1 (Cool & Warm-Water Fisheries), on page 27 of 10 CSR 20-7.031. For example, the Ammonia benchmark limitation at a pH of 7.8 S.U. would be 12.1 mg/L.
Aluminum, Dissolved	0.750 mg/L
Oil & Grease	10 mg/L

Outfalls 010, 011, 013, and 015

Parameter	**Benchmark Limits**
Nitrates as N	10 mg/L

Outfalls 001, 003, 006, 007, 008, and 009

Parameter	**Benchmark Limits**
Settleable Solids	2.0 mL/L/hr

These benchmarks are explained further in the derivation and discussion sections found below for each outfall. Again, no benchmarks are being required for discharges directly to the Mississippi River as there was no reasonable potential to violate water quality standards when taking into account anomalies (as explained by the permittee) in sample results and the large dilution factor of the Mississippi River.

A discussion of BMPs

The technology-based (mainly narrative) requirements of this permit are not meant to require specific best management practices that must be used at the facility. Instead the narratives are meant to provide direction for the permittee to minimize pollutants from entering stormwater (to the extent reasonable) and to remove pollutants (to the extent reasonable) once they have entered the stormwater. BMPs are expected to be updated as needed to meet these narrative requirements and to meet the listed benchmarks. Further, the BMPs are expected to be described fully in the SWPPP. The BMPs selected for the site may be structural (physical) or non-structural (operational/procedural) and must be documented in the SWPPP.

The following is from the fact sheet of the EPA MSGP (on page 36):

> "BMPs should be a suite of stormwater controls that are effective at pollution prevention and reduction AND are also economically reasonable and appropriate in light of current industry practice for your type of facility. 'Best' refers to cost-effective measures using controls appropriate for the situation that will result in the necessary pollutant reductions. Prevention measures, such as keeping areas clean, storing materials inside, and properly maintaining equipment will usually be sufficient."

The MSGP fact sheet also stated the following:

> The specific limits included in the MSGP emphasize effective "low-tech" controls, such as minimizing exposure to stormwater (albeit, without significantly increasing impervious surfaces), regular cleaning of outdoor areas where industrial activities may take place, proper maintenance of equipment, diversion of stormwater around areas where pollutants may be picked up, minimization of runoff through infiltration and flow dissipation practices, and effective advanced planning and training (e.g., for spill prevention and response).

The EPA also provides websites and tools that assist the permittee in selecting some common structural and operational BMPs (e.g. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm). The BMPs used at the site must be documented in the SWPPP.

Please see Appendix II for a description of the BMPs that were being used at the facility at the time this fact sheet was drafted. These BMPs constitute the initial conditions existing at the site and are expected to change as conditions change and as the permittee evaluates and modifies the SWPPP and BMPs.

DMR data reviewed during the drafting of this permit

Please be aware that the information in this fact sheet, regarding data submitted by the facility as their Discharge Monitoring Reporting, was downloaded from the Missouri Department of Natural Resources Clean Water Information System (MoCWIS) database as a "DMR History By Permit" on January 6, 2011.

Explanation of the notes and footnotes for Table A, Effluent Limitations and Monitoring Requirements

Asterisks:

- * This is a common notation for requiring sampling and analysis but with no effluent limitation required. In this permit, monitoring may be required without an effluent limit but requiring a benchmark limit as explained in a later section.
- ** As required by 10 CSR 20-7.031(4)(E) and 10 CSR 20-7.015(9)(G)1., the pH shall be limited to 6.5 to 9.0. This is a common notation.
- *** This is a common notation for quarterly sampling, requiring the permittee to sample once per quarter when there is a discharge.
- **** This notation was added to specify that when there are no non-stormwater discharges, the permittee is still to submit a discharge monitoring report. The report shall state "no discharge" in those months. The permittee specifically stated that non-stormwater discharges would be rare.

Notes:

Note 1 This is a common notation in Missouri stormwater permits, with an added statement specifying that the permittee is not required to sample under certain conditions. These conditions are as follows:

(1) there are no exposed materials (disturbed, processed, or stored) within the watershed,
(2) there have been no activities that have occurred within the watershed within the previous 12 months, and
(3) there have been no exceedances of any effluent or benchmark limitations at that outfall within the previous 12 months.

It was determined that the permittee should not be required to sample when the site is inactive. This was suggested from the EPA 2008 permit in Section 4.1.3. and other general permits. The first part was also suggested by 10 CSR 20-6.200(2)(C)1.F. and taken from similar general permits such as the MO-G49 (requirement 2), the MO-R23A requirement #2.

Note 2 This notation is to allow the permittee to obtain precipitation data that is representative of the entire site. The note also clarifies that rainfall is to be obtained daily, not just during sampling events. This is deemed necessary, since sampling is dependent upon precipitation. This was also suggested by 10 CSR 20-6.200(2)(C)1.E.(VI).

Note 3 This note is to allow the facility to report "no discharge" for non-stormwater discharges when there are no discharges or when the facility is not operating. This is a reminder to submit a discharge monitoring report. This is suggested by other general permits, such as the MO-G50 (Note 2).

Note 4 This is a note suggested by the applicable general permits. It limits what non-stormwater discharges may occur.

Note 5 This is a reminder only. The permittee is reminded that there is a benchmark limit for these parameters, even though there is no effluent limitation.

Note 6 This is a reminder only. The permittee is required to obtain and report a hardness value for the receiving water. This was suggested by the EPA 2008 MSGP.

Note 7 Regulation 40 CFR §434.22(b) requires certain effluent limitations. Regulation 40 CFR §434.63(a) and (d) then provides alternate effluent limitations when the facility experiences discharges "caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume)" and discharges "caused by precipitation within any 24 hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume)." Essentially, non-stormwater discharges must meet effluent limitations for Total Suspended Solids, Total Iron, and pH. Stormwater discharges must meet effluent limitations for pH and, during precipitation less than the 10-year, 24-hour storm event, Settleable Solids effluent limits. This notation provides the alternate effluent limitation, allowing the facility to exceed the Settleable Solids limits during the qualifying storm event.

Explanation of Section C regarding benchmark limitations contained within this permit

Requirement #1 This condition was taken from general permits such as the MO-R23A, which includes requirements and conditions for benchmarking. This is a reminder that the department may ask for additional sampling if deemed necessary.

Requirement #2 This condition was taken from general permits such as the MO-R23A, which includes requirements and conditions for benchmarking. This provides an explanation of how benchmarking works and when a violation would occur relating to benchmarks. The goal of a review of BMPs should be to figure out how to keep pollutants from entering stormwater or, if that is not feasible, how to remove the pollutants from stormwater before discharge so that compliance with effluent limits and benchmarks is achieved during the next storm event. If, during renewal of the permit or upon permittee request for modification of the permit, it is determined that a benchmark is not feasible, even though the permittee has reviewed the SWPPP and made appropriate changes to the BMPs, the benchmark concentration may be modified (raised/made less stringent). In addition, a benchmark concentration may be lowered (made more stringent) if it is determined that the facility is not properly reviewing the SWPPP and/or not making sufficient changes to the BMPs with the intent of achieving compliance with the set effluent limits or benchmarks.

Requirement #3 This condition was modeled after the same condition in similar general permits, such as the MO-R23A. The minimum design storm for which the BMPs should be designed was set at the two (2)-year, 24-hour storm event, because the permittee specified the two (2)-year storm when setting their stormwater design flow for each outfall. The benchmark limits were primarily set at the water quality standard and at monthly limits in similar general permits.

Explanation of the Special Conditions contained within this permit

Condition #1 This is a requirement in all Missouri State Operating Permits.

Condition #2 This condition was suggested by applicable general permits, such as the MO-G49 (Note 2 and applicability 2) and the MO-G50 (applicability 1).

Condition #3 This condition is common to most Missouri State Operating Permits with an added explanation that the permittee must take reasonable action to ensure an outfall has not discharged during the reporting period when reporting "no discharge" during that period. This is intended to mean that the permittee is to observe each outfall for a discharge at least once per month and during large rainfall events that are likely to produce a discharge. Once a discharge is sampled from an outfall, the permittee is still expected to observe each outfall at least once per month to determine if any general water quality criteria are being violated and if the BMPs for that outfall are effective or need to be increased and/or upgraded. This requirement was added to clarify the applicability of reporting of "no discharge," as the permittee requested to not inspect every outfall during every month. Please also note that twice per month inspections of BMPs are also required by this permit. In addition, a reference to Representative Sampling was included to emphasize that the permittee must sample only flows that are representative of the normal flows contributed by the facility (without contamination of a sample by stirring up sediment trying to take a sample or due to sediment deposited by flooding along the Mississippi River). See the discussion in this fact sheet regarding Representative Sampling.

Condition #4 This is a requirement in all Missouri State Operating Permits with the added requirement for outfalls to be clearly identified on a map kept at the onsite office. This was deemed applicable, since the SWPPP must document all outfalls. The permittee has already created such a map. This map is to be updated with the addition of any new outfalls.

Condition #5 This is a requirement in all Missouri State Operating Permits.

Condition #6 This is a requirement in all Missouri State Operating Permits. This is also taken from 10 CSR 20-7.031(3).

Condition #7 This Special Condition is an amalgamation of several requirements.

- Condition 7(a) This part is common to stormwater operating permits. The last sentence was retained from the previous permit.
- Condition 7(b) This section specifies what must be included in the facility's SWPPP.
  - Condition 7(b)(1) This is a common requirement for a SWPPP and is listed in many general permits, such as the MO-R80C, MO-R23A, MO-G50,
  - Condition 7(b)(2) This is a common requirement for a SWPPP and is listed in many general permits, such as the MO-G50, MO-R80C, and MO-R23A.
  - Condition 7(b)(3) This is a common requirement for a SWPPP and is listed in many general permits, such as the MO-R80C and the MO-R23A.
  - Condition 7(b)(4) This is a common requirement for a SWPPP and was retained from the previous permit.
  - Condition 7(b)(5) This condition was deemed necessary due to the previous fuel spill at the facility. Several parameters are being removed, so this requirement was included to ensure the permittee documents their handling, storage, and containment of all chemicals, including fuels. This is also suggested by section 2.1.2.4 of the EPA 2008 MSGP.
  - Condition 7(b)(6) This condition was deemed necessary due to the previous fuel spill at the facility. Several parameters are being removed, so this requirement was included to ensure the permittee documents their handling, storage, and containment of all chemicals, including fuels. This is also to document the facility's application of condition 7(c)(1). Further, this condition is suggested by section 2.1.2.4 of the EPA 2008 MSGP.

Condition 7(b)(7) This condition was retained from the previous permit and is a common requirement for a SWPPP in Missouri stormwater permits.

Condition 7(b)(8) This condition was retained from the previous permit. This was also suggested by sections 2.1.2.9, 8.J.5.1, and 8.J.6.4 of the EPA 2008 MSGP.

Condition 7(b)(9) This condition was deemed necessary due to the addition of benchmarking in this permit. The permittee is to document all exceedances and updates based on such exceedances.

Condition 7(b)(10) This condition has been used in other Missouri stormwater permits and is deemed necessary to ensure that the permittee is regularly reviewing their practices and outfalls. The language clarifies that all outfalls need to be observed, since documenting any potential general water quality criteria violations must be a part of the inspections. In addition, the language also clarifies that the permittee does not need to notify the department of all minor corrections of deficiencies. The permittee previously mentioned that it would be a reporting burden to notify the department of every correction or maintenance activity conducted at the facility. The twice per month inspection frequency was suggested from section 8.J.4.2.1 of the EPA 2008 MSGP and is deemed necessary to ensure that the permittee regularly monitors the BMPs and outfalls. Further, it is recommended that the permittee obtain photographic evidence when necessary to document a reason for or correction of a violation.

Condition 7(b)(11) This condition was retained from the previous permit with the deletion of the suggested BMPs. This condition was also suggested by sections 2.1.2.1, 2.1.2.6, 2.1.2.7 of the EPA 2008 MSGP. It is still recommended that the permittee consider using the following Best Management Practices at the facility:

1. Limit storage time of materials to prevent degradation and generation of leachate;
2. Divert storm water around material piles with ditches, swales, and/or berms;
3. Cover and/or enclose material piles to prevent contact with storm water by using silos, van trailers, sheds, roofs, buildings, or tarps;
4. Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.

Condition 7(b)(12) This condition is a requirement that is in newer stormwater permits, such as the MO-R23A and MO-G50 general permits. This condition is also required by 10 CSR 20-7.031(2). The condition is applicable to any discharge that is added to the permit as of September 1, 2008, which is the date the Antidegradation Implementation Procedure went into effect. The actual Antidegradation Implementation Procedure was specifically written for wastewater discharges but applies in principle to stormwater discharges as well. The website describing the implementation is located at the following website: http://www.dnr.mo.gov/env/wpp/permits/antideg-implementation.htm. As of January 6, 2011, the following presentation was linked within this webpage, describing the method of applying antidegradation to stormwater: http://www.dnr.mo.gov/env/wpp/permits/ADsth2o.pdf

Condition 7(c) This section specifies the minimum Best Management Practices that must be followed by the permittee. These also represent non-numeric, technology-based effluent limitations as used in the EPA 2008 MSGP. These are being required in lieu of numeric effluent limitations for stormwater discharges.

Condition 7(c)(1) This condition is deemed necessary due to the fueling sites at the facility. It is also in accordance with section 2.1.2.4 of the EPA 2008 MSGP.

Condition 7(c)(2) This condition is deemed necessary due to the fueling sites at the facility. It is also in accordance with section 2.1.2.1 of the EPA 2008 MSGP.

Condition 7(c)(3) This condition is deemed necessary due to the fueling sites at the facility. It is also in accordance with section 2.1.2.1 of the EPA 2008 MSGP.

Condition 7(c)(4) This condition is deemed necessary in order to protect general water quality criteria of each receiving stream. It is also in accordance with sections 2.1.2.2 and 8.J.4.1.2 of the EPA 2008 MSGP.

Condition 7(c)(5) This condition is deemed necessary in order to protect general water quality criteria of each receiving stream. It is also in accordance with sections 2.1.2.5, 2.1.2.6, 8.J.4.1.1, and 8.J.5.2 of the EPA 2008 MSGP.

Condition 7(c)(6) This condition was taken from section 2.1.2.1 of the EPA 2008 MSGP and is deemed necessary in order to protect general water quality criteria of each receiving stream and comply with antidegradation requirements where applicable.

Condition 7(c)(7) This condition was taken from section 2.1.2.4 of the EPA 2008 MSGP and is deemed necessary in order to protect general water quality criteria of each receiving stream. It is also deemed applicable due to the fueling sites located at the facility.

Condition 7(c)(8) This condition was taken from sections 2.1.2.5, 2.1.2.6, 8.J.4.1.1, and 8.J.5.2 of the EPA 2008 MSGP and is deemed necessary as a common-sense extension of permit requirements

in order to meet applicable permit limits and benchmarks in addition to protecting the general water quality criteria of each receiving stream.

Condition 7(c)(9) This condition was taken from section 2.1.2.12 of the EPA 2008 MSGP and is deemed necessary in order to prevent the transfer of contaminants from one watershed to other watersheds. Effluent and benchmark limits are outfall specific, therefore transferring contaminants to other watersheds may not allow them to be identified in the resulting discharges.

Condition 7(c)(10) This condition is deemed necessary due to the fueling sites at the facility. Certain numeric effluent limits and monitoring previously required due to concerns about the fuel sites are being removed from this permit. This condition is added to the permit at this time to ensure no fuel contamination is missed. Further, the condition requires that the facility handle potential spills before they are released into the watershed of an outfall. This condition also directs the facility on how potentially contaminated stormwater is to be handled.

Condition 7(d) This condition provides definitions and explains the purpose of the SWPPP. The condition also provides further direction on when exceeding a benchmark would lead to a permit violation. This condition was taken from similar general permits but was modified based on communication with the permittee. The original permit language stated that the purpose of the SWPPP and BMPs is to "prevent pollution", while the language used in this permit is that the SWPPP and BMPs are "to prevent, or to sufficiently reduce, pollutants." In addition, the original language used the phrase "deficiency of a BMP", while this permit defines "deficiency of the combined BMPs used within an outfall's watershed." An added phrase about routine maintenance was taken from the MO-G50 general permit. It was explained that it is a violation to exceed a numeric effluent limit. It was also explained that it is a violation to cause a water quality violation "directly attributed to the facility's discharge." Further, it was explained that it is a violation when a deficiency is discovered and the facility does not (i) review and update the SWPPP with needed changes and (ii) determine whether improvements need to be made to the BMPs, and (iii) implement the changes/improvements to the BMPs that have been determined to be necessary. The intent of the department is to have the facility prevent, to the extent possible, pollutants from entering stormwater. If stormwater comes into contact with manufacturing, processing, or raw material storage areas, it is then the intent of the department to have the facility use reasonable and cost effective BMPs in order to reduce the pollutant loading resulting from stormwater contact. If the BMPs are not working, then the permittee is expected to make a review of the SWPPP and BMPs in order to determine what reasonable and cost effective changes need to be made. The facility must meet effluent limitations as set in the permit (some of which are federal effluent guidelines) and attempt to meet benchmark concentrations. If the facility can prove to a reasonable degree that they have attempted to meet the benchmarks but have been unable to do so, then the benchmarks can be modified. The burden of proof is on the permittee to show that the facility has attempted to make changes and meet the limits and benchmarks. Another process that is recommended when reviewing the SWPPP and BMPs is to go through a structured analysis of the BMPs as outlined in Special Condition 7.(b)(12).

Condition #8 This Special Condition was taken from similar general permits, such as the MO-R23A. Further, this is originally based on a condition in Standard Condition Part I. The language was modified to expand the definition to any event that may endanger health or the environment. This is deemed necessary due to fueling sites located at the facility and covers other potential spills and potential threats at the facility. This condition also provides emergency contact information for the permittee.

Condition #9 This Special Condition was taken from condition 2 of the most recent MO-R80E general permit template. The requirement to submit an annual report provides an opportunity for the permittee to report certain events and conditions while not requiring reporting at a frequency that might be a reporting burden. The permittee stated that certain conditions, such as reporting every "correction of a deficiency" or every minor maintenance activity was unreasonable.

Condition #10 This Special Condition was taken from similar general permits, such as the MO-R80C and MO-R80E. This explanation is deemed necessary due to the fuel sites located at the facility.

Condition #11 This Special Condition is being included to require documentation for all non-stormwater discharges. This is being required for two reasons. First, the most recent permit does not provide for non-stormwater discharges. The permittee stated that these discharges will not occur often. While sampling is only being required once per month, the permittee will be required to document the total volume of all discharges. This extra information is to be documented in the SWPPP. Secondly, the EPA 2008 MSGP does not allow non-stormwater discharges, so this permit is requiring the permittee to monitor these discharges more closely.

Condition #12 This Special Condition is being required, since the permit includes monitoring for hardness-dependent metals. The language was suggested by Appendix J of the EPA 208 MSGP (Calculating Hardness in Receiving Waters for Hardness Dependent Metals). The permittee is being required to obtain a value for hardness once during the permit cycle. This is so that appropriate comparisons can be made between the quarterly monitoring results and the corresponding water quality criterion.

Requirement entitled "Reporting of Effluent and/or Benchmark Exceedances"

The condition explains that an exceedance requires reporting with the next DMR but includes a reference to Special Condition #8 for events that may endanger health or the environment (these are to be reported within 24 hours as required by Standard Condition Part I). This condition also requires that the permittee is to obtain an additional sample (during the next applicable rainfall that occurs after necessary changes have been made to BMPs) for the pollutant that was exceeded and from the outfall where the exceedance occurred. If the next applicable rainfall does not occur until the next quarter, this condition may be met be regular sampling. Please also note that Special Condition 7(b)(10) requires that "minor repairs or maintenance must be corrected within seven (7) days." This is deemed necessary to ensure that the permittee is reviewing the SWPPP and updating BMPs as necessary to meet permit effluent limits and benchmarks and to mitigate continuing exceedances.

Requirements entitled "Permit Transfer", "Permit Renewal Requirements", "Termination", and "Duty of Compliance"

These conditions are included in every Missouri State Operating Permit issued from the Missouri Department of Natural Resources' Northeast Regional Office.

Additional comments:

Some facilities have collected a grab sample and shipped the sample to a laboratory for analysis. This is not the correct procedure. pH is to be taken instantaneously, in the field, whenever possible. pH holding time is limited to no more than 15 minutes from taking the grab sample, as required by Standard Method for the Examination of Water and Wastewater.

Part II – Operator Certification Requirements

Not Applicable ☒; This facility is not required to have a certified operator.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☒
Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed tributary to Mississippi River	U	N/A	General Criteria	07110004	Central Plains/ Cuivre/ Salt
Mississippi River	P	03699	LWW, AQL, SCR, DWS, IND, WBC-A***		
Unnamed tributary to Noix Creek	U	N/A	General Criteria	07110004	Central Plains/ Cuivre/ Salt
Noix Creek	P	00011	LWW, AQL, WBC-B***		
Unnamed tributary to Buffalo Creek	U	N/A	General Criteria	07110004	Central Plains/ Cuivre/ Salt
Buffalo Creek	P	00014	LWW, AQL, WBC-B***		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).
** - Ecological Drainage Unit
*** - UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE (The crossed-out flows were listed in the previous permit's fact sheet)**:**

RECEIVING STREAM (U, C, P)	OUTFALLS TO:	LOW-FLOW VALUES (CFS)		
		1Q10	7Q10	30Q10
Tributary to Mississippi River (U)	010, 011, 013, 015	0	0	0
Mississippi River (P)	001, 003, 006, 007, 008, 009	23,817	30,685	35,242
Tributary to Noix Creek (U)	012, 014	0	0	0
Noix Creek (P)		0.1	0.1	1.0
Tributary to Buffalo Creek (U)	016	0	0	0
Buffalo Creek (P)		0.1	0.1	1.0

MIXING CONSIDERATIONS TABLE: Outfalls: #003, #006, #007 and #009 (all discharge directly to Mississippi River) (listed from the previous permit)

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(b)] ‡		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
5,954	7,671	8,810	595	767	881

‡ It is to be noted that the regulation 10 CSR 20-7.031(4)(A)4.B.(III)(b) specifies that the ZID is to be one-tenth (0.1) of the mixing zone volume of flow AND no more than 10 times the effluent design flow volume unless the use of diffusers or specific mixing zone studies can justify more dilution. It is also to be noted that there is no reasonable design flow value used for stormwater outfalls and no definition for stormwater design flow in Missouri regulation or EPA guidance. The fact sheet of the MSGP acknowledges that stormwater numeric limitations are difficult. If a Waste Load Allocation (WLA) were to be used to calculate numeric limits for an outfall, a design flow would have to be specified.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ - The modifications in this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 § CFR 122.44.

Please see the individual justifications contained within the Derivation and Discussion of Limits/Monitoring sections for each outfall.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☒ - The permittee provided a SWPPP as part of the application to modify the permit. The SWPPP included proposed Best Management Practices (BMPs) to be used at the site, however a structured cost-benefit analysis was not provided at that time. The requirement for an antidegradation review necessitates that any new discharges (or discharges of potentially contaminated stormwater) must include, in the SWPPP, an analysis of the BMPs to be used at the site. This analysis is to be a structured evaluation of BMPs that are reasonable and cost effective. The evaluation is also to include practices that are designed to be (a) non-degrading (b) less degrading, or (c) degrading of water quality. The chosen and implemented BMPs are to be the most reasonable and cost effective while ensuring that the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must also demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the

facility. This structured analysis of BMPs serves as the Antidegradation Review, fulfilling the requirements of the Missouri Clean Water Commission's regulation 10 CSR 20-7.031(2). The SWPPP, including this analysis, is to be updated regularly as needed.

During review of the previous modification (to add Outfall #016), the department's Northeast Regional Office requested that the permittee submit a SWPPP updated with the required structured analysis. The permittee did not submit the analysis, as requested in a department comment letter. The permittee was therefore given 90 days from permit issuance to modify the SWPPP to include the structured evaluation of BMPs at the facility. The analysis in the SWPPP is not required to be approved by the department; however it must be provided to department personnel upon each inspection. This modification will also allow the permittee to have 90 days from issuance to update the facility SWPPP. The permittee stated by letter dated March 27, 2011, that a structured evaluation has already been incorporated into the SWPPP as an addendum.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(8)(A)10.], when a Continuing Authority under paragraph 10 CSR 20-6.010(3)(B)1. or 2. is expected to be available for connection within the next five (5) years, any operating permit issued to a permittee under this paragraph, located within the service area of the paragraph (3)(B)1. or 2. facility, shall contain a certain special condition.

Not Applicable ☒; Since this facility is permitted only for stormwater and associated discharges, this requirement does not apply.

POLLUTANTS OF CONCERN (POC) & BENCHMARK LIMITATIONS:
This permit stipulates pollutant benchmarks applicable to the facility's discharge. The benchmarks do not constitute direct numeric effluent limitations. A benchmark exceedance alone, therefore, is not a permit violation. Benchmark monitoring data are used primarily to determine the overall effectiveness of a SWPPP and to assist the permittee in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration, the permittee must review the facility's SWPPP and chosen BMPs to determine whether any improvement or additional controls are needed to reduce the concentration of that pollutant in the facility's stormwater discharge(s). Failure to improve BMPs and achieve compliance with the Benchmarks is a permit violation.

The chosen POCs are parameters that were taken from other general permits and/or the EPA 2008 Multi-sector general permit, or were parameters that had water quality criteria associated with activities identified as being present at the facility. Please see the Derivation and Discussion of Limits/Monitoring section below for further information on each individual pollutant. Each benchmark limitation was set at the water quality standard [from 10 CSR 20-7.031] or taken as a technology-based limit from another operating permit (such as the EPA 2008 Multi-sector general permit). The exceptions, for example, were Total Suspended Solids and Settleable Solids. The philosophy of target benchmark limitations was taken from recent general-permits templates such as the MO-R80C, the MO-R23A, and the EPA 2008 Multi-sector general permit.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:
Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Not Applicable ☒; This condition is not applicable to the permittee for this specific facility, since there is no domestic sewage.

COMPLIANCE AND ENFORCEMENT:
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ☒; The permittee/facility is not currently under Water Protection Program enforcement action.

REASONABLE POTENTIAL ANALYSIS (RPA):
Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards.

Not Applicable ☒; A RPA was conducted for this facility during the previous permit renewal. An actual RPA was not conducted for this facility during the current review, since this facility currently discharges only stormwater. One purpose of this modification is to review the reason why each parameter was included in the original site-specific permit. Each parameter was then either removed as having no reasonable potential for exceeding the water quality standard or converted to a benchmark limitation, thus requiring the permittee to review/modify the facility's SWPPP. It is recommended that a Reasonable Potential Determination be performed at renewal. Please see the below Derivation and Discussion of Limits/Monitoring sections for specific justifications regarding each parameter removed from this permit.

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Not Applicable ☒; This facility is not a POTW and discharges primarily stormwater. Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSOS), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:
Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Not Applicable ☒; This facility is permitted for primarily stormwater discharges and does not have a wastewater collection system. Therefore this facility is not required to develop or implement a program for maintenance and repair of a collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated sanitary-sewage wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ☒; This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure. Additionally, in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ☒;
A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan. A SWPPP was previously developed for compliance with the currently-effective permit. The Best Management Practices Plan required by this permit may be incorporated into the existing SWPPP. As part of the concurrent modification to add Outfall #016, the

permittee was given 90 days to incorporate into the SWPPP a structured evaluation (antidegradation) of BMPs for the new outfall. The permittee shall be given another 90 days to incorporate new requirements from this modified permit into the SWPPP.

The facility's SWPPP is required to document the "feasibility" of no exposure and/or no discharge.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

VARIANCE:
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law § 644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law § 644.006 to 644.141.

Not Applicable ☒; This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA)
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined the total amount of pollutant that may be discharged into that stream without endangering its water quality.

Not Applicable ☒; No WLAs were calculated for this permit. This is a re-evaluation of the permit to determine the limits that are necessary and that are based on current Water Quality Standards. It was the judgment of the permit writer that benchmark limitations are sufficient for this facility, since this forces the permittee to review their SWPPP and potentially update their BMPs in order to be considered in compliance with the terms, conditions, and limits of the permit. The benchmark limits were set using acute water quality criteria, when possible, since the discharge is stormwater only.

In addition, several parameters were proposed to be removed from the permit, such as those being discharged to the Mississippi River. A generic wasteload allocation calculation is shown below for the Mississippi River. The flow to the receiving stream is not shown below, since the "design flow" from each outfall is based on a statistical storm event and the actual flow is based on an actual precipitation event. The below dilution equation demonstrates that there is no reasonable potential for this facility regarding parameters discharged to the Mississippi River. It was determined that imposing effluent or benchmark limits for those outfalls is not justifiable. If more information is desired, including the specific reasonable potential determination and/or the wasteload allocation calculations, please contact the department.

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where	C = downstream concentration	(value must be below the water quality standard)
	Cs = upstream concentration	(background concentration in the stream)
	Qs = upstream flow	(the flow in the receiving stream without the facility discharge)
	Ce = effluent concentration	(what the facility is allowed to discharge so that it will not impact the receiving stream)
	Qe = effluent flow	(the flow from the facility)

This equation can be rearranged to the following: $Ce = [(Qs + Qe) \times C - (Qs \times Cs)] / Qe$

Chronic wasteload allocations are determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID). Since stormwater discharges are dependent upon rainfall, only acute criteria apply to this facility.

Equation: $Ce = [(Qs + Qe) \times C - (Qs \times Cs)] / Qe$ See WLA section above.

Acute WLA: $C_e = ((595 + Qe)C – (595 * Cs))/Qe$

This equation would use the 1Q10 value at the end of the zone of initial dilution for acute Ammonia criteria. This value is about 595 cfs in the Mississippi River (23,817 cfs × 0.25 × 0.1 = 595 cfs). The equation would use the 30Q10 for chronic Ammonia, though this does not make sense for non-continuous stormwater discharges. For other parameters, the 7Q10 is to be used at the end of the zone of initial dilution for acute criteria (30,685 cfs × 0.25 × 0.1 = 767 cfs). It is to be noted that the ZID is not to be more than 10 times the design flow [10 CSR 20-7.031(4)(A)4.B.(III)(b)], however there is no listed design flow for stormwater that can be justified by regulation.

LTA_a = (acute C_e) × (0.321) [CV = 0.6, 99th Percentile]

MDL = LTA_a × (3.11) [CV = 0.6, 99th Percentile]
AML = LTA_a × (1.19) [CV = 0.6, 95th Percentile, n =30]

The above calculation was performed to determine if the pollutants of concern for this facility reasonably required an effluent or benchmark limit for discharges to the Mississippi River. It was determined that the dilution is sufficient such that having effluent limitations imposed on the discharge to the Mississippi is not reasonable or justified. Monitoring is still being required for all pollutants of concern in order to identify any unidentified impacts and to determine if future action may be required. Impacts are still possible from an actual product or chemical spill.

Please see the below Derivation and Discussion of Limits/Monitoring sections for further information regarding each parameter.

WLA MODELING:
Not Applicable ☒; A WLA study was either not submitted or determined not applicable by department staff.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Not Applicable ☒; At this time, the permittee is not required to conduct a WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable ☒; The Mississippi River segment (Water Body ID #00001) is listed on the 2002 Missouri 303(d) List for Chlordane and PCB contamination. See http://www.dnr.mo.gov/env/wpp/waterquality/2002_303d_list.pdf. A TMDL was approved on November 3, 2006. See the following websites: http://www.dnr.mo.gov/env/wpp/tmdl/0001-1707-3152-mississippi-r-record.htm and http://www.dnr.mo.gov/env/wpp/tmdl/0001-1707-3152-mississippi-r-tmdl.pdf.

☒ – This facility is not considered to be a source of the above listed pollutants or considered to contribute to the impairment of the Mississippi River.

Part V – Effluent and Benchmark Limits Determination

Please note that non-numeric effluent limits are being imposed for the outfalls at this facility. The EPA has determined that the permit writer's Best Professional Judgment should be used when there are no ELGs or other guidance in determining technology-based effluent limits for stormwater when a numeric limit is not feasible. Please see the above discussion in the comment section.

Outfall #001

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Nitrate plus Nitrite ($NO_3 + NO_2$)	mg/L	9	*		*	Y	**
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #001 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. The MO-G50 general permit fact sheet stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard.

- **Total Suspended Solids (TSS)**. Monitoring only. The effluent limitation was taken from the MO-G50 general permit template. The fact sheet of the general permit stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges.

Stormwater Discharges for Outfall #001 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however the Mississippi River is great enough flow that the documented discharges from this facility do not show reasonable potential to violate water quality and the MO-G698 general permit template does not include actual pH limitations for discharges to the Mississippi River. The 2008 EPA MSGP also does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by

the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." This was based on 10 CSR 20-7.031(4)(E). The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. There is no reasonable potential for this discharge to violate the water quality of the Mississippi River. This was also the case during the drafting of the original permit. Backsliding is therefore not an issue, according to 40 CFR § 122.44(l)(2)(i)(B)(2). This parameter should be re-evaluated at renewal.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this discharge to violate water quality, even general water quality criteria, from stormwater discharges due to solids being discharged. The highest concentration reported to have been discharged from this facility within the previous three years was 880 mg/L. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This parameter should be re-evaluated at renewal.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter but recalculated the limits based on the receiving stream being unclassified. The outfall is located sufficiently close to the Mississippi River and on the facility's working property that the discharge's receiving stream is essentially the classified segment. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 1.01 mg/L. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 7.52 mg/L. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Nitrate plus Nitrite Nitrogen**. Monitoring only. This parameter is being required, since the EPA 2008 Multi-sector general permit requires benchmarking for this parameter for subsector J1 (Sand and Gravel Mining under SIC code 1442). Neither a numeric effluent limitation nor a numeric benchmark are being required, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is not expected to be reasonable potential for this facility to violate water quality from stormwater discharges. This parameter will be evaluated upon renewal for reasonable potential to violate water quality. The fact sheet for the EPA 2008 MSGP stated that the benchmark value was obtained from the National Urban Runoff Program median concentration. This was originally developed in the EPA 1995 MSGP. The Federal Register notice of the original 1995 permit (60 FR 50825, FR DOC # 95-23257, Federal Register / Vol. 60, No. 189 / Friday, September 29, 1995 / Notices), said that "EPA selected the median concentration from the National Urban Runoff Program as the benchmark for total suspended solids (TSS) and for nitrate plus nitrite as nitrogen. EPA believes the median concentration, which is the mid-point concentration (half the samples are above this level and half are below) represents concentration above which water quality concerns may result."

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids being discharged. The highest concentration reported to have been discharged from this facility within the previous three years was 0.4 mL/L/hr. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard. This parameter should be re-evaluated at renewal.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural

background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Further, the permittee stated that the original permit combined all the outfalls into one Effluent Limitations and Monitoring Requirements Table with no regard for what processes took place in individual watersheds upstream from each outfalls. Bauxite loading/unloading and storage is conducted onsite, but not in this watershed. The highest concentration reported to have been discharged from this facility within the previous three years was 6.3 mg/L for Total Aluminum. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant retained from the previous state operating permit. The highest concentration reported to have been discharged from this facility within the previous three years was 1.1 mg/L. This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)).

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products". The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L. This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month

Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #003

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	S
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Nitrate plus Nitrite ($NO_3 + NO_2$)	mg/L	9	*		*	Y	**
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90

Total Phosphorous (P)	mg/L	9	Parameter removed	Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed	Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200				
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.				

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #003 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. The MO-G50 general permit fact sheet stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard.

- **Total Suspended Solids (TSS)**. Monitoring only. The effluent limitation was taken from the MO-G50 general permit template. The fact sheet of the general permit stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges.

Stormwater Discharges for Outfall #003 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the

responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. This outfall is not reported to have a discharge within the previous three years.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however the Mississippi River is great enough flow that the documented discharges from this facility do not show reasonable potential to violate water quality and the MO-G698 general permit template does not include actual pH limitations for discharges to the Mississippi River. The 2008 EPA MSGP also does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." This was based on 10 CSR 20-7.031(4)(E). The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. There is no reasonable potential for this discharge to violate the water quality of the Mississippi River, which was also true during the original drafting of this permit. Backsliding is therefore not an issue, according to 40 CFR § 122.44(l)(2)(i)(B)(2). This parameter should be re-evaluated at renewal.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This parameter should be re-evaluated at renewal.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, removed the effluent limit for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that there was "no ammonia potential due to the high limitation values allowed by the mixing zone in the Mississippi River." The monitoring requirement was kept. This parameter should be re-evaluated at renewal.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on

February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Nitrate plus Nitrite Nitrogen**. Monitoring only. This parameter is being required, since the EPA 2008 Multi-sector general permit requires benchmarking for this parameter for subsector J1 (Sand and Gravel Mining under SIC code 1442). Neither a numeric effluent limitation nor a numeric benchmark are being required, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is not expected to be reasonable potential for this facility to violate water quality from stormwater discharges. This parameter will be evaluated upon renewal for reasonable potential to violate water quality. The fact sheet for the EPA 2008 MSGP stated that the benchmark value was obtained from the National Urban Runoff Program median concentration. This was originally developed in the EPA 1995 MSGP. The Federal Register notice of the original 1995 permit (60 FR 50825, FR DOC # 95-23257, Federal Register / Vol. 60, No. 189 / Friday, September 29, 1995 / Notices), said that "EPA selected the median concentration from the National Urban Runoff Program as the benchmark for total suspended solids (TSS) and for nitrate plus nitrite as nitrogen. EPA believes the median concentration, which is the mid-point concentration (half the samples are above this level and half are below) represents concentration above which water quality concerns may result."

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard. This parameter should be re-evaluated at renewal.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution

Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Further, the permittee stated that the original permit combined all the outfalls into one Effluent Limitations and Monitoring Requirements Table with no regard for what processes took place in individual watersheds upstream from each outfalls. Bauxite loading/unloading and storage is conducted onsite, but not in this watershed. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)).

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "more commonly found by accumulation in lakes" and that it was "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)).

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products". This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #006

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	S
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Nitrate plus Nitrite ($NO_3 + NO_2$)	mg/L	9	*		*	Y	**

Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #006 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. The MO-G50 general permit fact sheet stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard.

- **Total Suspended Solids (TSS)**. Monitoring only. The effluent limitation was taken from the MO-G50 general permit template. The fact sheet of the general permit stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges.

Stormwater Discharges for Outfall #006 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however the Mississippi River is great enough flow that the documented discharges from this facility do not show reasonable potential to violate water quality and the MO-G698 general permit template does not include actual pH limitations for discharges to the Mississippi River. The 2008 EPA MSGP also does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." This was based on 10 CSR 20-7.031(4)(E). The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. There is no reasonable potential for this discharge to violate the water quality of the Mississippi River, which was also true during the original drafting of this permit. Backsliding is therefore not an issue, according to 40 CFR § 122.44(l)(2)(i)(B)(2). This parameter should be re-evaluated at renewal.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 182 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, removed the effluent limit for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by

the department's Northeast Regional Office, stated that there was "no ammonia potential due to the high limitation values allowed by the mixing zone in the Mississippi River." The monitoring requirement was kept. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 1,600 mg/L, which is still estimated to be below the concentration for reasonable potential but is still an unusually high value for normal discharges of Ammonia. The requirement to implement a SWPPP and maintain BMPs and other narrative effluent limits is still required, since fertilizer loading/unloading and storage is conducted within the watershed of this outfall.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 724 mg/L.

- **Nitrate plus Nitrite Nitrogen**. Monitoring only. This parameter is being required, since the EPA 2008 Multi-sector general permit requires benchmarking for this parameter for subsector J1 (Sand and Gravel Mining under SIC code 1442). Neither a numeric effluent limitation nor a numeric benchmark are being required, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is not expected to be reasonable potential for this facility to violate water quality from stormwater discharges. This parameter will be evaluated upon renewal for reasonable potential to violate water quality. The fact sheet for the EPA 2008 MSGP stated that the benchmark value was obtained from the National Urban Runoff Program median concentration. This was originally developed in the EPA 1995 MSGP. The Federal Register notice of the original 1995 permit (60 FR 50825, FR DOC # 95-23257, Federal Register / Vol. 60, No. 189 / Friday, September 29, 1995 / Notices), said that "EPA selected the median concentration from the National Urban Runoff Program as the benchmark for total suspended solids (TSS) and for nitrate plus nitrite as nitrogen. EPA believes the median concentration, which is the mid-point concentration (half the samples are above this level and half are below) represents concentration above which water quality concerns may result."

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised

on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 1 mL/L/hr.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Bauxite loading/unloading and storage is conducted onsite within this watershed. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 1.75 mg/L for Total Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 162 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the

original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.219 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products". This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #007

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**

Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	1	70		35	N/A	**
Iron (Fe), Total Recoverable	mg/L	1	7.0		3.5	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	1	6.5-9.0		6.5-9.0	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	1,9	0.5 (Note 7)		0.5 (Note 7)	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	N	S
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Aluminum (Al), Total Recoverable	mg/L	9	*		*	Y	0.75/-/0.75
Iron (Fe), Total Recoverable	mg/L	9	*		*	N/A	**
Lead (Pb), Total Recoverable	mg/L	9	*		*	N/A	**
Zinc (Zn), Total Recoverable	mg/L	9	*		*	N/A	**
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Biochemical Oxygen Demand (BOD_5)	mg/L	9	Parameter removed			Y	45/-/30
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit
Note 7 The effluent limitations at Outfall #007 for Settleable Solids may be exceeded during a precipitation event exceeding the 10-year, 24-hour statistical storm event (4.6 inches of rainfall or equivalent), based on 40 CFR §434.63(a) and (d).

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #007 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). Regulation 40 CFR §434.22(b) requires a pH limit of 6.0 to 9.0 for discharges from coal storage piles and associated discharges. The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of items such as sand/gravel, fertilizers, coal, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. The MO-G50 general permit fact sheet stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard.

- **Iron (Fe), Total Recoverable**. The effluent limitation was taken from 40 CFR §434.22(b), since the facility stated that coal is stored within the watershed of this outfall. Regulation 40 CFR §§ 434.10, 434.11(f), and 434.20 describe the applicability of this regulation to "discharges from . . . coal preparation plant associated areas . . . including discharges which are pumped, siphoned, or drained from . . . coal storage, refuse storage, and ancillary areas." Even though this outfall discharges to the Mississippi River, the regulation requires this effluent limitation.

- **Total Suspended Solids (TSS)**. The effluent limitation was taken from 40 CFR §434.22(b) for discharges from coal storage piles and associated discharges (this is a technology-based limitation). In addition, the MO-G50 general permit template also requires limits on non-stormwater discharges. The fact sheet of the general permit stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the MO-G50 general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, effluent limitations are required by 40 CFR §434. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, coal, and bulk salt. In addition, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential.

Stormwater Discharges for Outfall #007 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). In addition, regulation 40 CFR §434.22(a) and (d) require a pH limit of 6.0 to 9.0 for discharges from coal storage piles and associated discharges. Since the federal regulation requires an effluent limitation, a limit is being imposed even though this outfall discharges to the Mississippi River. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, coal, and bulk salt.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 1,085 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, removed the effluent limit for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that there was "no ammonia potential due to the high limitation values allowed by the mixing zone in the Mississippi River." The monitoring requirement was kept. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 273 mg/L, which is still estimated to be below the concentration for reasonable potential but is still an unusually high value for normal discharges of Ammonia. The requirement to implement a SWPPP and maintain BMPs and other narrative effluent limits is still required, since fertilizer loading/unloading and storage is conducted within the watershed of this outfall.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 140 mg/L.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Settleable Solids**. Regulation 40 CFR §434.63(a) requires an effluent limitation for discharges from coal storage piles and associated discharges (this is a technology-based limitation); 40 CFR §434.63(d) allows an exceedance during discharges resulting from precipitation exceeding the 10-year, 24-hour precipitation event or equivalent snowmelt. Further, these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. This numeric limitation will also be considered a benchmark to alert the permittee that they need to reassess the SWPPP and BMPs. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for stormwater discharges. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, coal, and bulk salt. The highest concentration reported to have been discharged from this outfall within the previous three years was 1.9 mL/L/hr.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Bauxite loading/unloading and storage is conducted onsite within this watershed. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal. This outfall is listed as SIC code 4491, but the associated processes include storage and/or loading/unloading of sand/gravel, fertilizers, and bulk salt. This parameter is being required for the remainder of this permit term to assess reasonable potential. The highest concentration reported to have been discharged from this facility within the previous three years was 19 mg/L for Total Aluminum.

- **Aluminum (Al), Iron (Fe), Lead (Pb), and Zinc (Zn), Total Recoverable**. Monitoring only. Section 8.Q.6 of the 2008 EPA MSGP requires these parameters as sector-specific benchmarks. This permit will impose monitoring only for these parameters on this outfall due to its primary SIC code being 4491 and due to the sector-specific benchmarks suggested by the 2008 EPA MSGP. These are being imposed at once per year for the remainder of this permit term to identify if there is any reasonable potential to violate water quality due to discharges from this outfall.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Biochemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for BOD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The

original permit, issued on October 19, 2001, included monitoring only for this parameter. The fact sheet stated that this monitoring requirement was included "to monitor the levels of each in order to indicate their effects on stream quality." The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, imposed limits of 45 mg/L as a daily maximum and 30 mg/L as a monthly average for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "monitoring requirement has been retained from the previous state operating permit" and that "effluent limitations have been established in accord with 10 CSR 20-7.015(8)(B)D.(I). No further information or calculations were provided. This parameter is now being removed from the permit. Backsliding is not an issue, since BOD is not a water quality standard and should not have been included in the original permit for stormwater discharges (40 CFR 122.44(l)(2)(i)(B)(2)). The referenced regulation, correctly written as 10 CSR 20-7.015(8)(B)3.D.(I), referred to setting BOD_5 limits for an existing facility based on past performance; the limits were then possibly taken from regulation 10 CSR 20-7.015(8)(B)1., which is 45 mg/L as a weekly average and 30 mg/L as a monthly average. Using this regulation to impose limitations on this facility was an incorrect interpretation of the regulations, since 10 CSR 20-7.015(8)(B) is for facilities discharging "primarily domestic wastewater" and not for stormwater facilities. In addition, this outfall is discharging to the Mississippi River and there is no reasonable potential to violate the water quality of the receiving stream from this facility's discharge, even taking into account the past discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 25 mg/L.

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 1,000 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 4.2 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Aluminum (Al), Total Recoverable	once/year	once/year
Iron (Fe), Total Recoverable	once/year	once/year
Lead (Pb), Total Recoverable	once/year	once/year
Zinc (Zn), Total Recoverable	once/year	once/year
Best Management Practices Plan	at least every five years	during inspection

Outfall #008

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50

Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Nitrate plus Nitrite ($NO_3 + NO_2$)	mg/L	9	*		*	Y	**
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #008 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. The MO-G50 general permit fact sheet stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard.

- **Total Suspended Solids (TSS)**. Monitoring only. The effluent limitation was taken from the MO-G50 general permit template. The fact sheet of the general permit stated that the "effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality." The limit was therefore retained in the general permit for non-stormwater discharges. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges.

Stormwater Discharges for Outfall #008 – Derivation and Discussion of Limits/Monitoring

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however the Mississippi River is great enough flow that the documented discharges from this facility do not show reasonable potential to violate water quality and the MO-G698 general permit template does not include actual pH limitations for discharges to the Mississippi River. The 2008 EPA MSGP also does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." This was based on 10 CSR 20-7.031(4)(E). The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. There is no reasonable potential for this discharge to violate the water quality of the Mississippi River, which was also true during the original drafting of this permit. Backsliding is therefore not an issue, according to 40 CFR § 122.44(l)(2)(i)(B)(2). This parameter should be re-evaluated at renewal.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 120 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter but recalculated the limits based on the receiving stream being unclassified. The outfall is located sufficiently close to the Mississippi River and on the facility's working property that the discharge's receiving stream is essentially the classified segment. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 0.44 mg/L. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 9.41 mg/L.

- **Nitrate plus Nitrite Nitrogen**. Monitoring only. This parameter is being required, since the EPA 2008 Multi-sector general permit requires benchmarking for this parameter. Neither a numeric effluent limitation nor a numeric benchmark are being required, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is not expected to be reasonable potential for this facility to violate water quality from stormwater discharges. This parameter will be evaluated upon renewal for reasonable potential to violate water quality. The fact sheet for the EPA 2008 MSGP stated that the benchmark value was obtained from the National Urban Runoff Program median concentration. This was originally developed in the EPA 1995 MSGP. The Federal Register notice of the original 1995 permit (60 FR 50825, FR DOC # 95-23257, Federal Register / Vol. 60, No. 189 / Friday, September 29, 1995 / Notices), said that "EPA selected the median concentration from the National Urban Runoff Program as the benchmark for total suspended solids (TSS) and for nitrate plus nitrite as nitrogen. EPA believes the median concentration, which is the mid-point concentration (half the samples are above this level and half are below) represents concentration above which water quality concerns may result."

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for stormwater discharges. The original

permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mL/L/hr.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Further, the permittee stated that the original permit combined all the outfalls into one Effluent Limitations and Monitoring Requirements Table with no regard for what processes took place in individual watersheds upstream from each outfalls. Bauxite loading/unloading and storage is conducted onsite, but not in this watershed. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 0.938 mg/L for Total Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 93 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.3285 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products". This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #009

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	N	S
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	**
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #009 – Derivation and Discussion of Limits/Monitoring

The primary SIC code for this outfall is 4226, which is for Special Warehousing and Storage. However Subpart P of the 2008 EPA MSGP applies to these stormwater discharges and any co-located industrial activities. Since the watershed leading to this outfall

includes the storage of raw bauxite and "other bulk commodities," general permits such as the MO-G50 and MO-G698 were also considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G50 requires limits for this parameter. Finally, 40 CFR § 436.32 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. This parameter is being required for the remainder of this permit term to assess reasonable potential. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 general permit. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. A target benchmark of 2.0 mL/L/hr for SS is being imposed. The reason for this is that SS can be an indicator of BMP effectiveness and would fulfill the requirement for a technology standard. This parameter is being required for the remainder of this permit term to assess reasonable potential.

- **Total Suspended Solids (TSS)**. Monitoring only. The effluent limitation was taken from the MO-G50 general permit. This outfall discharges to the Mississippi River, however, and does not at this time show reasonable potential to violate water quality, even general water quality criteria, of the receiving stream. However, monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring is being required as a basis for monitoring BMP effectiveness. This parameter is being required for the remainder of this permit term to assess reasonable potential.

- **Oil & Grease**. The effluent limitation was taken from the MO-G50 and MO-G698 general permit templates. This is a conventional pollutant, according to the general permit's fact sheet. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum. For this permit, the limit is being applied to non-stormwater discharges (as in the MO-G698 for discharges to the Mississippi River), while the MO-G50 only imposes the limit for stormwater discharges. This parameter is being required for the remainder of this permit term to assess reasonable potential.

Stormwater Discharges for Outfall #009 – Derivation and Discussion of Limits/Monitoring

The primary SIC code for this outfall is 4226, which is for Special Warehousing and Storage. However Subpart P of the 2008 EPA MSGP applies to these stormwater discharges and any co-located industrial activities. Since the watershed leading to this outfall includes the storage of raw bauxite and "other bulk commodities," general permits such as the MO-G50 and MO-G698 were also considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however the Mississippi River is great enough flow that the documented discharges from this facility do not show reasonable potential to violate water quality and the MO-G698 general permit template does not include actual pH limitations for stormwater discharges to the Mississippi River. The 2008 EPA MSGP also does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. There is no reasonable potential for this discharge to violate the water quality of the Mississippi River, which was also true during the original drafting of this permit. Backsliding is therefore not an issue, according to 40 CFR §

122.44(l)(2)(i)(B)(2). This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G50 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality, even general water quality criteria, from stormwater discharges due to solids. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). There is no water quality standard for solids other than general water quality criteria. This parameter should not have been included in this permit as a numeric effluent limitation. Further, Special Condition 7(c) contains non-numeric effluent limitations that are designed to protect water quality similar to limits for solids. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 250 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, removed the effluent limit for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that there was "no ammonia potential due to the high limitation values allowed by the mixing zone in the Mississippi River." The monitoring requirement was kept. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter is being required for the remainder of this permit term to assess reasonable potential. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 5.2 mg/L.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G50 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001,

stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. The numeric limitation is now being removed from this permit, since the discharge is to the Mississippi River. The flow in the Mississippi River is sufficiently high so that there is no reasonable potential for this facility to violate water quality from stormwater discharges. Backsliding is not an issue, since there is/was no reasonable potential (40 CFR 122.44(l)(2)(i)(B)(2)). This parameter should not have been included in this permit as a numeric effluent limitation. This parameter should be re-evaluated at renewal. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Settleable Solids**. This parameter was previously removed as a permit limitation. It is being put back into this permit in order to provide a target benchmark of 2.0 mL/L/hr for assessing the efficiency of BMPs in the watershed of the outfall as meeting a technology standard. Stormwater discharges may pick up particulates as the water flows along the ground to the outfalls. The BMPs in this watershed should be designed so that they remove the majority of the solids prior to discharge. As per a discussion with the permittee, imposing a benchmark for SS is acceptable and can be met with the BMPs that were current as of the drafting of this fact sheet.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being removed. First, the discharge is to the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. Second, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. This parameter, therefore, is being kept in the permit, but the monitoring requirement is being converted to Dissolved Aluminum. Bauxite loading/unloading and storage is conducted onsite within this watershed. There is no reasonable potential and the parameter should not have been included in the permit for this outfall, therefore removing the numeric effluent limit does not violate the anti-backsliding requirement. The dissolved portion of this parameter will now be required and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential. The highest concentration reported to have been discharged from this facility within the previous three years was 0.32 mg/L for Total Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 50 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G50 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet

(WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.21 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Nitrate plus Nitrite ($NO_3 + NO_2$)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #010

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	N	S
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Biochemical Oxygen Demand (BOD)	mg/L	9	Parameter removed			Y	65/-/45
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Nitrogen Kjeldahl (TKN)	mg/L	9	Parameter removed			Y	*/-/*
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Hexane	mg/L	9	Parameter removed			Y	*/-/*
Magnesium	mg/L	9	Parameter removed			Y	*/-/*
Conductivity	mg/L	9	Parameter removed			Y	*/-/*
Ethylbenzene	mg/L	9	Parameter removed			Y	*/-/*
Xylene (Total)	mg/L	9	Parameter removed			Y	*/-/*
Benzene	mg/L	9	Parameter removed			Y	*/-/*
Toluene	mg/L	9	Parameter removed			Y	*/-/*
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable

S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #010 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) to an unnamed tributary, which then flows and discharges just upstream of the confluence of Noix Creek and the Mississippi River. The outfall is approximately 0.5 mile from the classified waterbody. For this draft permit, it was assumed that the first classified waterbody was the Mississippi, since the influence of the Mississippi is expected to exceed the smaller Noix Creek at this location. The unnamed tributary is expected to be a wet-weather ditch that is to be protected for general water quality criteria and acute effects from toxics. In addition, this outfall will be protected by benchmarks. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. This parameter is being required for the remainder of this permit term to assess reasonable potential. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 and MO-G49 general permits. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter was taken from the MO-G49 general permit. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires 70 mg/L for non-stormwater discharges but has no fact sheet to justify this limit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 and MO-G698 general permit templates. This is a conventional pollutant, required by a number of general permits and taken from 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum.

Stormwater Discharges for Outfall #010 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater to an unnamed tributary, which then flows and discharges just upstream of the confluence of Noix Creek and the Mississippi River. The outfall is approximately 0.5 mile from the classified waterbody. For this draft permit, it was assumed that the first classified waterbody was the Mississippi, since the influence of the Mississippi is expected to exceed the smaller Noix Creek at this location. The unnamed tributary is expected to be a wet-weather ditch that is to be protected for general water quality criteria and acute effects from toxics. In addition, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is

assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs. The highest concentration reported to have been discharged from this facility within the previous three years was 73 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, imposed more strict effluent limits at this outfall. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for stormwater discharges, especially in an unnamed tributary. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for a drinking water supply. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for a drinking water supply use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion. The highest concentration reported to have been discharged from this facility within the previous three years was 0.41 mg/L.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter is being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to the Mississippi River via an unnamed tributary, so the discharge must be protected for general water quality criteria. The highest concentration reported to have been discharged from this facility within the previous three years was 0.3 mL/L/hr.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being converted to a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. The first classified waterbody is the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. In addition, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of

Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The dissolved portion of this parameter will now be required as a benchmark limit and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum. The highest concentration reported to have been discharged from this facility within the previous three years was 0.25 mg/L for Total Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Biochemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for BOD on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included monitoring only for this parameter. The fact sheet stated that this monitoring requirement was included "to monitor the levels of each in order to indicate their effects on stream quality." The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, imposed limits of 65 mg/L as a daily maximum and 45 mg/L as a monthly average for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "monitoring requirement has been retained from the previous state operating permit" and that "effluent limitations have been established in accord with 10 CSR 20-7.015(8)(B)A. No further information or calculations were provided. This parameter is now being removed from the permit. Backsliding is not an issue, since BOD is not a water quality standard and should not have been included in the original permit for stormwater discharges (40 CFR 122.44(l)(2)(i)(B)(2)). The referenced regulation, correctly written as 10 CSR 20-7.015(8)(B)3.A., referred to setting BOD_5 limits for a domestic wastewater lagoon when a water quality impact study has been conducted. Using this regulation to impose limitations on this facility was an incorrect interpretation of the regulations, since 10 CSR 20-7.015(8)(B) is for facilities discharging "primarily domestic wastewater" and not for stormwater facilities. In addition, this outfall is discharging to the Mississippi River and there is no reasonable potential to violate the water quality of the first classified receiving stream from this facility's discharge. BOD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unnamed tributary to the Mississippi River; it is assumed that dissolved oxygen will not be impacted from these discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). COD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unnamed tributary to the Mississippi River; it is assumed that dissolved oxygen will not be impacted from these discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 230 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.62 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. Further, the unnamed tributary is still protected by the Oil & Grease benchmark and does not have a specific criterion for this parameter. The highest concentration reported to have been discharged from this facility within the previous three years was 5 mg/L.

- **Total Nitrogen Kjeldahl (TKN), Hexane, Magnesium, Conductivity, Ethylbenzene, Xylene (Total), Benzene, Toluene**. Parameters removed. These parameters are being removed from the permit, since they are monitoring only and there is no indication that there is any reasonable potential to violate water quality. These parameters were assumed to have been included in the permit based on the 1999 fuel spill at Outfall #008. The original permit, issued on October 19, 2001, included monitoring only for these parameters. The fact sheet stated that these parameters (other than Hexane and Magnesium) were included "to monitor the levels of each in order to indicate their effects on stream quality." The water quality review sheet (WQRS), dated August 15, 2001, stated that TKN and Conductivity were included based on BPJ and that Ethylbenzene, Xylenes, Benzene, and Toluene were included only for Outfall #008 based on the fact that the outfall collects stormwater from truck washing and fueling areas. No other basis for these parameters was provided. The renewal, dated June 6, 2008, kept the monitoring requirement for these parameters. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that TKN and Conductivity were retained from the previous permit and that Magnesium, Ethylbenzene, Xylene, Benzene, and Toluene monitoring were "retained from the previous operating permit" with a citation of 10 CSR 20-7.031(3)(I), which stated the following: "Waters in mixing zones and unclassified waters which support aquatic life on an intermittent basis shall be subject to the following requirements: 1. The acute toxicity criteria of Tables A and B and the requirements of subsection (4)(B)" This discharge is only stormwater. Further, there are no acute criteria for these parameters. In addition, the original concern, a fuel spill, has been cleaned up. Finally, there is no indication that there is reasonable potential to violate water quality of the receiving stream from any of these parameters. The highest concentrations reported to have been discharged from this facility within the previous three years for these parameters are as follows:

Total Nitrogen Kjeldahl	2.3 mg/L	Hexane	< 5 mg/L
Magnesium	31.5 mg/L	Conductivity	9,520 µS/cm
Ethylbenzene	< 5 mg/L	Xylene	< 5 mg/L
Benzene	< 5 mg/L	Toluene	< 5 mg/L

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter

Nitrate as N (NO_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #011

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Nitrate as N (NO_3)	mg/L	9	*		*	N/A	**
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable

S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #011 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. This parameter is being required for the remainder of this permit term to assess reasonable potential. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 and MO-G49 general permits. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter was taken from the MO-G49 general permit. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires 70 mg/L for non-stormwater discharges but has no fact sheet to justify this limit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 and MO-G698 general permit templates. This is a conventional pollutant, required by a number of general permits and taken from 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum.

Stormwater Discharges for Outfall #011 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal and process area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall. The facility has reported "no discharge" for the past three years.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, imposed more strict effluent limits at this outfall. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for stormwater discharges, especially in an unclassified tributary.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the parameter was contained in the original permit and the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control

Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, deleted this parameter with no explanation in the fact sheet. This parameter is being added as a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for a drinking water supply. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for a drinking water supply use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter is being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to the Mississippi River via an unnamed tributary, so the discharge must be protected for general water quality criteria.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being converted to a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. The first classified waterbody is the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. In addition, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The dissolved portion of this parameter will now be required as a benchmark limit and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was retained from the previous state operating permit. This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). COD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unnamed tributary to the Mississippi River; it is assumed that dissolved oxygen will not be impacted from these discharges.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)).

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. Further, the unnamed tributary is still protected by the Oil & Grease benchmark and does not have a specific criterion for this parameter.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter

Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #012

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	1.5		1.0	N/A	**
Total Suspended Solids (TSS)	mg/L	9	70		70	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Nitrate as N	mg/L	9	Parameter removed			Y	15/-/10
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #012 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) from a quarry area to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to a P-class stream. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. This parameter was taken from the MO-G50 and MO-G49 general permits. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above. The effluent limit is taken directly from the general permits.

- **Total Suspended Solids (TSS)**. This parameter was taken from the MO-G49 general permit. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires an effluent limit of 70 mg/L for non-stormwater discharges, which is being maintained in this permit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 general permit template. This is a conventional pollutant, required by a number of general permits and based on 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum for non-stormwater discharges.

Stormwater Discharges for Outfall #012 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater from a quarry area to an unclassified tributary, a wet-weather ditch, which then flows and discharges to a P-class stream. The unclassified tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict than the original permit. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. Further, the 2008 EPA MSGP, in Section 8.J.8., requires a benchmark limit for this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L, similar to the monthly limit in the existing permit. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs. The highest concentration reported to have been discharged from this facility within the previous three years was 83 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, imposed calculated limits. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for stormwater discharges, especially in an unclassified tributary. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised

on February 28, 2008, by the department's Northeast Regional Office, stated that this parameter was a conventional pollutant for the protection of aquatic life, retained from the previous operating permit. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion. The highest concentration reported to have been discharged from this facility within the previous three years was 7.8 mg/L.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the effluent limitations "were retained from the previous state operating permit. This parameter is now being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to an unclassified tributary, so the discharge must be protected for general water quality criteria. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being converted to a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. The natural background aluminum content in the soil is high. In addition, the EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. Further, 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The dissolved portion of this parameter will now be required as a benchmark limit and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum. The highest concentration reported to have been discharged from this facility within the previous three years was 3.47 mg/L for total Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Nitrates as N**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for Nitrates on a non-"drinking water source" waterbody. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." Backsliding is not an issue, since there is no water quality standard for Nitrates on this stream, and the parameter should not have

been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.415 mg/L.

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). COD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unclassified waterbody; it is assumed that dissolved oxygen will not be impacted from these discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 50 mg/L.

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a "conventional pollutant more commonly found by accumulation in lakes" and that it was "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). The highest concentration reported to have been discharged from this facility within the previous three years was 0.108 mg/L.

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. Further, the unnamed tributary is still protected by the Oil & Grease benchmark and does not have a specific criterion for this parameter. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter

pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #013

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Nitrate as N (NO_3)	mg/L	9	*		*	Y	15/-/10
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	** was previously Total Recoverable at 0.75/-/0.75
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Total Phosphorous (P)	mg/L	9	Parameter removed			Y	1.0/-/1.0
Total Petroleum Hydrocarbons	mg/L	9	Parameter removed			Y	15/-/10
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #013 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 and MO-G49 general permits. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter was taken from the MO-G49 general permit. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires 70 mg/L for non-stormwater discharges but has no fact sheet to justify this limit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 and MO-G698 general permit templates. This is a conventional pollutant, required by a number of general permits and taken from 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum.

Stormwater Discharges for Outfall #013 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal and process area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding

requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall. The facility has reported "no discharge" for the past three years.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, made the limitation even more strict. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. The discharge is stormwater and the flow is to the Mississippi River via an unnamed tributary, so the discharge must be protected for general water quality criteria. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, imposed more strict effluent limits at this outfall. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for stormwater discharges, especially in an unclassified tributary.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the parameter was contained in the original permit and the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for a drinking water supply. The discharge is stormwater and the flow is to the Mississippi River via an unclassified tributary, so the discharge must be protected for acute limits for a drinking water supply use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit" and that the parameter was a conventional pollutant. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter is being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to the Mississippi River via an unnamed tributary, so the discharge must be protected for general water quality criteria.

- **Aluminum (Al), Dissolved**. Monitoring only. The current permit required monitoring for Aluminum (e.g. Total Recoverable Aluminum) with an effluent limitation of 0.75 mg/L as daily maximum and as a monthly average. The original permit, issued on October 19, 2001, included the same numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." This parameter will still be required in the permit, since the parameter was in the existing permit and the facility handles bauxite. However, the numeric limit is being converted to a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. The first classified waterbody is the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. In addition, the natural background aluminum content in the soil is high. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The dissolved portion of this parameter will now be required as a benchmark limit and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Phosphorous, Total**. Parameter removed. This parameter is being removed from the permit, since there is no water quality standard for Phosphorous on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mg/L as a monthly average and as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a "conventional pollutant more commonly found by accumulation in lakes" and that it was "retained from the previous state operating permit." This parameter is now being removed from the permit. Backsliding is not an issue, since Phosphorous is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)).

- **Total Petroleum Hydrocarbons**. Parameter removed. This parameter is being removed from the permit, since there is no specific water quality standard for total petroleum hydrocarbons. In addition, Oil & Grease is also included in the monitoring requirements, which would identify any spills within the watershed. The original permit, issued on October 19, 2001, included numeric effluent limitations of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, did not include this parameter in its recommendations. No other basis for this parameter was provided. The renewal, dated June 6, 2008, kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "retained from the previous permit and were an "indicator of contamination by hydrocarbon (fuel and lubricant) products." This parameter is now being removed from the permit. Backsliding is not an issue, since the dilution on the Mississippi River is sufficient to assume "no reasonable potential" to violate water quality in the Mississippi River and the parameter is assumed to have been put in the permit due to the 1999 fuel spill issue, which was previously cleaned up. The fuel spill was only at Outfall #008, therefore this parameter should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). In addition, there have been substantial changes at the facility (40 CFR 122.44(l)(2)(i)(A)), namely the fuel spill was cleaned up. Further, the unnamed tributary is still protected by the Oil & Grease benchmark and does not have a specific criterion for this parameter.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #014

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	1.5		1.0	N/A	**
Total Suspended Solids (TSS)	mg/L	9	70		70	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	**
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #014 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) from a quarry area to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to a P-class stream. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged.

- **Settleable Solids**. This parameter was taken from the MO-G50 and MO-G49 general permits. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above. The effluent limit is taken directly from the general permits.

- **Total Suspended Solids (TSS)**. This parameter was taken from the MO-G49 general permit. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires an effluent limit of 70 mg/L for non-stormwater discharges, which is being maintained in this permit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 general permit template. This is a conventional pollutant, required by a number of general permits and based on 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum for non-stormwater discharges.

Stormwater Discharges for Outfall #014 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater from a quarry area to an unclassified tributary, a wet-weather ditch, which then flows and discharges to a P-class stream. The unclassified tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall. This outfall was added as part of the 2008 renewal.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, added this outfall and made the limitation even more strict than the original permit. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark

limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. Further, the 2008 EPA MSGP, in Section 8.J.8., requires a benchmark limit for this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L, similar to the maximum monthly-average limit in the existing permit. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs. The highest concentration reported to have been discharged from this facility within the previous three years was 12 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, added this outfall and imposed calculated limits. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for stormwater discharges, especially in an unclassified tributary. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this parameter was a conventional pollutant for the protection of aquatic life. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion. The highest concentration reported to have been discharged from this facility within the previous three years was 6 mg/L.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily

maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant for the protection of aquatic life. This parameter is now being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to an unclassified tributary, so the discharge must be protected for general water quality criteria. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Aluminum (Al), Dissolved**. Monitoring only. This outfall was added as a part of the 2008 renewal. The current permit did not require Aluminum to be monitored. The original permit, issued on October 19, 2001, included numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will now be required in the permit, since the facility handles bauxite and there is a question about Aluminum content in the background soils. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The permit will contain a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. This parameter should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "suggested by MOR23A128 for chemical and lubricant manufacturing." This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). COD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unclassified tributary; it is assumed that dissolved oxygen will not be impacted from these discharges. The highest concentration reported to have been discharged from this facility within the previous three years was 70 mg/L.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month

Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #015

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N/A	**
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N/A	**
Settleable Solids (SS)	mL/L/hr	9	*		*	N/A	**
Total Suspended Solids (TSS)	mg/L	9	*		*	N/A	**
Oil and Grease (O&G)	mg/L	2,9	15		10	N/A	**
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	70/-/50
Ammonia as N (NH_3)	mg/L	9	*		*	Y	Apr 1 – Oct 31 3.7/-/1.9 Nov 1 – May 31 7.5/-/3.7
Nitrate as N (NO_3)	mg/L	9	*		*	N/A	**
Aluminum (Al), Dissolved	mg/L	9	*		*	Y	**
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Chemical Oxygen Demand (COD)	mg/L	9	Parameter removed			Y	120/-/90
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #015 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. Backsliding is not an issue, since the existing permit did not contain provisions for non-stormwater discharges. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G698 general permit includes this parameter for process and wash water (non-stormwater discharges), even on the Mississippi River. In addition, the MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. This parameter is being required for the remainder of this permit term to assess reasonable potential. pH is not to be averaged.

- **Settleable Solids**. Monitoring only. This parameter was taken from the MO-G50 and MO-G49 general permits. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter was taken from the MO-G49 general permit. This outfall discharges to an unnamed tributary to the Mississippi River. While the Mississippi River has sufficient flow to assume no reasonable potential, general water quality must be protected in the unnamed tributary. Monitoring will ensure protection against the discharge contributing to an excursion above water quality standards. Monitoring (and a benchmark limit) is being required as a basis for monitoring BMP effectiveness. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires 70 mg/L for non-stormwater discharges but has no fact sheet to justify this limit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 and MO-G698 general permit templates. This is a conventional pollutant, required by a number of general permits and taken from 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum.

Stormwater Discharges for Outfall #015 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater to an unnamed tributary, a wet-weather ditch, which then flows and discharges directly to the Mississippi River through the facility's main terminal and process area. The outfall is approximately half of a mile from the Mississippi River. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted

effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. This next section will also contain individual justifications for backsliding of effluent limits beyond this assumption. General permits such as the MO-G49 and MO-G698 were considered when reviewing required parameters for sampling at this outfall. The original permit, issued on October 19, 2001, did not include this outfall. The outfall was added during the 2008 renewal.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E) and was already in the existing permit. The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 6 – 9 pH units. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on a criterion and based on 40 CFR 436.22 (Effluent limitation guidelines for Mineral Mining and Processing Point Source Category). The federal regulation, however, is for non-stormwater and does not apply to stormwater. The renewal, dated June 6, 2008, added this outfall and made the limitation even more strict than the original permit. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been changed to reflect the requirements for industrial stormwater." The numeric effluent limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Temperature (°C)**. Parameter removed. This is a common parameter added to assess violations of associated Ammonia limits (with chronic limits), however chronic ammonia limits are not contained within this permit. Acute Ammonia toxicity is dependent only on pH.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 50 mg/L as a monthly average and 70 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, added this outfall and kept the effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that "Effluent limitations have been retained from previous state operating permit." The numeric limitation is now being converted to a benchmark limit for stormwater discharges similar to the transfer in the March 2010 MO-R23A general permit. The benchmark limit shall be 50 mg/L. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs. The highest concentration reported to have been discharged from this facility within the previous three years was 274 mg/L.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 0.9 mg/L as a monthly average and 10.0 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table B) for 26 °C and a pH of 8 assuming a general warm-water fishery. No further basis was provided for this parameter. The renewal, dated June 6, 2008, added this outfall and imposed calculated limits. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, calculated water-quality-based effluent limits assuming acute and chronic criteria in the unnamed tributary with no degradation allowed. This parameter is being converted to a benchmark, which is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. The current permit has limits calculated for acute and chronic criteria. In this case, backsliding is not an issue, since chronic criteria should not have been considered for

stormwater discharges, especially in an unclassified tributary. The highest concentration reported to have been discharged from this facility within the previous three years was 0.2 mg/L.

- **Nitrate as N**. Monitoring only. This parameter is being required, since the parameter was contained in the original permit and the facility handles fertilizer. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, added this outfall but did not add this parameter. This parameter is being added as a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for a drinking water supply. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for a drinking water supply use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and the parameter was already in the permit. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 10 mg/L as a monthly average and 15 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - chronic). No further basis was provided for this parameter. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this parameter was a conventional pollutant for the protection of aquatic life. This parameter is being converted to a benchmark limit, which is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater and the flow is to the Mississippi River, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Settleable Solids**. Monitoring only. This parameter is being required, since these are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 1.0 mL/L/hr as a monthly average and 1.5 mL/L/hr as a daily maximum (with the waiving of effluent limits during rainfall events exceeding the 25-year, 24-hour storm event). The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." The WQRS recommended that the permit contain a special condition requiring that general criteria be maintained, since the BPJ may not be fully protective of beneficial uses. No other basis for this parameter was provided. Discharges from this outfall were also limited by the requirement to develop a SWPPP, implement BMPs, and to follow other narrative effluent limitations. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that this was a conventional pollutant for the protection of aquatic life. This parameter is being converted to a benchmark limit, which is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to the Mississippi River via an unnamed tributary, so the discharge must be protected for general water quality criteria.

- **Aluminum (Al), Dissolved**. Monitoring only. This outfall was added as a part of the 2008 renewal. The current permit did not require Aluminum to be monitored. The original permit, issued on October 19, 2001, included numeric effluent limitations. The fact sheet stated that this effluent limit was based on Missouri groundwater criterion for the protection of drinking water supply (with the value supplied by the Water Pollution Control Program). The attached WQRS, dated August 15, 2001, stated that the criterion was from 10 CSR 20-7.031 (Table A - Acute) with the chronic limit set at the acute value. This parameter will now be required in the permit, since the facility handles bauxite and there is a question about Aluminum content in the background soils. The permit will contain a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. The first classified waterbody is the Mississippi River and there is no reasonable potential to violate water quality for Total Recoverable Aluminum. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The dissolved portion of this parameter will be required as a benchmark limit and should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Chemical Oxygen Demand**. Parameter removed. This parameter is being removed from this permit, since there is no water quality standard for COD on the Mississippi River. In addition, the MO-G49 general permit does not require this parameter. The original permit, issued on October 19, 2001, included a numeric effluent limitation of 90 mg/L as a monthly average and 120 mg/L as a daily maximum. The fact sheet stated that this effluent limit is a value that is commonly found in Missouri Operating Permits. The water quality review sheet (WQRS), dated August 15, 2001, stated that this parameter was imposed based on "best professional judgment." No other basis for this parameter was provided. The renewal, dated June 6, 2008, added this outfall and imposed effluent limits for this parameter. The fact sheet, dated August 8, 2007, by EPA and revised on February 28, 2008, by the department's Northeast Regional Office, stated that the limits were "suggested by MOR23A128 for chemical and lubricant manufacturing." This parameter is now being removed from the permit. Backsliding is not an issue, since COD is not a water quality standard and should not have been included in the original permit (40 CFR 122.44(l)(2)(i)(B)(2)). COD is primarily an indicator of protection for dissolved oxygen and general water quality criteria. In this case, the discharge is stormwater to an unnamed tributary to the Mississippi River; it is assumed that dissolved oxygen will not be impacted from these discharges.

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Nitrate as N (NO_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Outfall #016

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action, due to facility modification, permit violations, and/or documented violations of water quality standards, may contain new operating permit terms and conditions that supersedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
NON-STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	1,2	6.5-9.0		6.5-9.0	N	S
Settleable Solids (SS)	mL/L/hr	9	1.5		1.0	N/A	**
Total Suspended Solids (TSS)	mg/L	9	70		70	N	S
Oil and Grease (O&G)	mg/L	2,9	15		10	N	S
STORMWATER DISCHARGES							
Flow	MGD	1	*		*	N	S
pH – units	SU	9	*		*	Y	6.5-9.0
Settleable Solids (SS)	mL/L/hr	9	*		*	Y	1.5/-/1.0
Total Suspended Solids (TSS)	mg/L	9	*		*	Y	**
Ammonia as N (NH_3)	mg/L	9	*		*	Y	**
Aluminum (Al), Dissolved	mg/L	9	*		*	N	S
Oil and Grease (O&G)	mg/L	9	*		*	Y	15/-/10
Precipitation	inches	9	*		*	N	S
Temperature (in °C)	°C	9	Parameter removed			Y	*/-/*
Best Management Practices Plan	See 40 CFR 122.44 (k) and 10 CSR 20-6.200						
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* Monitoring requirement only
** Parameter not previously established in previous state operating permit.
N/A Not applicable
S Same as previous operating permit

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET test Policy

Non-stormwater Discharges for Outfall #016 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater (and also non-stormwater) from a quarry area to an unnamed tributary, a wet-weather ditch, which then flows and discharges over two miles to a P-class stream. The unnamed tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall. This outfall was included in the concurrent (2011) public notice as an added outfall.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU). The MO-G49 requires limits for this parameter. Finally, 40 CFR § 436.22 and part 8.J.9 of the EPA 2008 MSGP both require pH limitations for mine dewatering and process-generated pollutants. pH is not to be averaged. This effluent limit was retained from the previous state operating permit.

- **Settleable Solids**. This parameter was taken from the MO-G50 and MO-G49 general permits. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The MO-G49 permit template imposes Settleable Solids for stormwater discharges, while the MO-G50 permit template imposes Settleable Solids limits for non-stormwater discharges as well. The benchmark limit will be set at 1.0 mL/L/hr, which is taken from the MO-G49 and MO-G50 permits as stated above. The effluent limit is taken directly from the general permits.

- **Total Suspended Solids (TSS)**. This parameter was taken from the MO-G49 general permit. Effluent limits (and a benchmark limit) are being required to protect general water quality criteria in the classified water body and its unclassified tributary. The benchmark limit will be set at 50 mg/L, which is the current limit for stormwater discharges in the current permit. The general permit requires an effluent limit of 70 mg/L for non-stormwater discharges, which is being maintained in this permit. This effluent limit was retained from the previous state operating permit.

- **Oil & Grease**. The effluent limitation was taken from the MO-G49 general permit template. This is a conventional pollutant, required by a number of general permits and based on 10 CSR 20-7.031, Table A. The effluent limitation is imposed for protection of aquatic life at 10 mg/L monthly average and 15 mg/L daily maximum for non-stormwater discharges. This effluent limit was retained from the previous state operating permit.

Stormwater Discharges for Outfall #016 – Derivation and Discussion of Limits/Monitoring

This outfall discharges stormwater from a quarry area to an unclassified tributary, a wet-weather ditch, which then flows over two miles and discharges to a P-class stream. The unclassified tributary is to be protected for general water quality criteria and acute effects from toxic pollutants. For this permit, this outfall will be protected by benchmark limitations, since stormwater discharges are non-continuous and are mainly controlled through Best Management Practices and narrative effluent limitations. The MO-R23A general permit converted effluent limits to benchmark limits without conflicting with anti-backsliding, therefore it is assumed that the anti-backsliding requirements of 40 CFR § 122.44 are met. General permits such as the MO-G49 were considered when reviewing required parameters for sampling at this outfall. This outfall was included in the concurrent (2011) public notice as an added outfall. Please note that limits were included in the first 2011 public notice, since the permittee requested limits similar to the general permit for quarries (MO-G49). At this time, the department is reassessing its method for imposing effluent versus benchmark limitations for stormwater discharges, therefore effluent limits were originally put into the permit and are now being converted to benchmark limitations as shown below.

- **Flow**. Monitoring only. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **pH**. Monitoring only. This is a common pollutant parameter that was taken from 10 CSR 20-7.031(4)(E). The standard effluent limitation range is from 6.5 to 9.0 standard pH units (SU), however this outfall is for stormwater discharges that are protected by narrative effluent limits and benchmark limits. The 2008 EPA MSGP does not require numeric limits for pH for stormwater discharges. The benchmark limit shall be 6.5 to 9.0 standard pH units. If the pH of the discharge falls outside this range, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event.

- **Total Suspended Solids (TSS)**. Monitoring only. This parameter is being required as an indicator for general water quality criteria. These are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. In addition, the MO-G49 general permit requires this parameter for process and wash water. Further, the 2008 EPA MSGP, in Section 8.J.8., requires a benchmark limit for this parameter. The benchmark limit shall be 50 mg/L, similar to outfalls #012 and #014. If the TSS of the discharge exceeds this value, the permittee will be required to reassess the SWPPP and BMPs and retest this parameter at the next rainfall event. This is assumed to be protective of general water quality criteria from stormwater discharges and allows the permittee to determine if an extremely high-intensity, short-duration rainfall that causes an exceedance really should require updating of the BMPs.

- **Total Ammonia Nitrogen**. Monitoring only. This parameter is being kept as monitoring only, since the facility handles fertilizer, and this is consistent with outfalls #012 and #014. The benchmark is being set at the acute water quality criterion equation in 10 CSR 20-7.031 Table B, footnote 2. This parameter should be re-assessed at renewal to determine if there is any reasonable potential to violate water quality from this discharge.

- **Oil & Grease**. Monitoring only. This parameter is being required, since the MO-G49 permit contains this parameter for stormwater discharges and it is consistent with outfalls #012 and #014. The benchmark limit is being set at 10 mg/L based on 10 CSR 20-7.031 Table A for protection of aquatic life. The discharge is stormwater, so the discharge must be protected for acute limits for the protection of aquatic life use. Since the only criterion is a chronic criterion (10 CSR 20-7.031(4)(A)), the benchmark limit was set to the chronic water quality criterion.

- **Settleable Solids**. Monitoring only. This parameter is being required as an indicator for general water quality criteria. These are stormwater discharges that will likely pick up particulates as the water flows along the ground to the outfalls. The BMPs should be designed so that they remove the majority of the solids prior to discharge. Monitoring and/or limiting this parameter will help protect general water quality in the receiving stream. Further the MO-G49 permit contains this parameter for stormwater discharges, and this is consistent with outfalls #012 and #014. The benchmark limit is being set at 1.0 mL/L/hr based on the limit contained within the MO-G49 general permit template. The discharge is stormwater and the flow is to an unclassified tributary, so the discharge must be protected for general water quality criteria.

- **Aluminum (Al), Dissolved**. Monitoring only. This parameter is being required in the permit, since the facility handles bauxite and there is a question about Aluminum content in the background soils. In addition, this is consistent with outfalls #012 and #014. The EPA 2008 multi-sector permit, in Section 6.2.1.2 (under Natural background pollutant levels), takes into account the natural background concentrations. In addition 10 CSR 20-7.031 (Table A) shows that the water quality standard for Aluminum is 750 µg/L (0.75 mg/L) for AQL (Protection of Aquatic Life) and 10 CSR 20-7.031(4)(B)2.A.(II) requires that this parameter be analyzed for dissolved metals. The permit will contain a benchmark limitation, which is being set to the acute water quality standard for dissolved Aluminum. This parameter should be re-evaluated at renewal. This parameter is being required for the remainder of this permit term to assess reasonable potential for dissolved Aluminum.

- **Precipitation**. Monitoring only. This parameter is deemed necessary, since stormwater discharges are dependent upon the amount of precipitation.

- **Best Management Practices Plan**. Requirement for Industrial stormwater discharges. See 40 CFR 122.44(k) and 10 CSR 20-6.200(1)(C). This is consistent with the rest of this permit and is required to satisfy the antidegradation evaluation requirement of regulation 10 CSR 20-7.031(2).

- **Minimum Sampling and Reporting Frequency Requirements**.

PARAMETER	Sampling Frequency	Reporting Frequency
Non-stormwater Discharges		
Flow	once/day	once/month
pH – units	once/month	once/month
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/month	once/month
Oil and Grease (O&G)	once/month	once/month
Stormwater Discharges		
Flow	once/quarter	once/quarter
pH – units	once/quarter	once/quarter
Settleable Solids (SS)	once/month	once/month
Total Suspended Solids (TSS)	once/quarter	once/quarter
Ammonia as N (NH_3)	once/quarter	once/quarter
Aluminum (Al), Dissolved	once/quarter	once/quarter
Oil and Grease (O&G)	once/quarter	once/quarter
Precipitation	daily	once/quarter
Best Management Practices Plan	at least every five years	during inspection

Part VI – Administrative Requirements

Based on preliminary staff review and the application of applicable standards and regulations, the department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

Original Date of Factsheet: February 7, 2011
Factsheet updated on: April 7, 2011
Date of Public Notice: April 15, 2011

Submitted by

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Post-Public Notice Update: June 30, 2011

It is to be noted that a comment letter was received from the EPA on May 16, 2011, regarding the April 15 public notice of the draft permit for SSS. A meeting was then held between representatives for the EPA, representatives for the department, and representatives for SSS. During the meeting, the EPA clarified that the factsheet should explain the history of the site (including any anomalies in exceedances or high values being reported), show that adaptive management is being used at the facility, describe what the department expects in the way of representative sampling (not sampling during flood events or when the act of sampling would stir up sediment, etc.), document that the currently used BMPs meet Best Conventional Technology (BCT) (will they meet the current benchmarks, etc.), and that the factsheet should document that the included benchmarks are the more restrictive of technology-based versus water-quality-based concentrations and values. EPA also stated that the factsheet should document the currently-used BMPs (whether physical or operational) as the initial site conditions by which future changes to BMPs can be measured. The factsheet should also document and justify that the department is reasonably confident the facility will generally meet proposed limits now and whether there is reasonable potential to violate water-quality standards in the future.

During a later discussion with a representative of the EPA, it was decided that an indicator parameter should be required on the outfalls that flow to the Mississippi River in order to assess the efficiency of BMPs as meeting a technology standard. The fact sheet was then updated to provide a discussion of technology-based versus water-quality-based effluent limits (in addition to several other updates to the fact sheet language). Monitoring for Settleable Solids was added back to Outfall #009 and a benchmark for Settleable Solids was added to all discharges to the Mississippi River.

Further, Appendix I (a list of correspondence from the permittee regarding exceedances) and Appendix II (a description of current BMPs being used at the facility as of the drafting of the fact sheet) were also added.

Appendix I – Summary of correspondence received from S-S-S Lumber Company during the current permit cycle regarding exceedances, high sample-result concentrations, and the response to the last department inspection.

1. Response to NOV #NER2010121514015046 (received on January 3, 2011).
2. Cover letter to October 2010 Discharge Monitoring Report (received November 1, 2010).
3. Response to NOV #NER2010052412124392 (received on June 22, 2010).
4. Cover letter to April 2010 Discharge Monitoring Report (received April 19, 2010).
5. Response to NOV #NER2010051114005040 (received on May 24, 2010).
6. Cover letter to October 2009 Discharge Monitoring Report (received October 26, 2009).
7. Response to NOV #NER2009061614405280 (received on July 13, 2009).
8. Cover letter to April 2009 Discharge Monitoring Report (received April 20, 2009).
9. Follow-up response to NOV #NER2009012914015046 (received on Mar 19, 2009).
10. Response to NOV #NER2009012914015046 (received on February 25, 2009).
11. Cover letter to October 2008 Discharge Monitoring Report (received October 27, 2008).
12. Response to April 3, 2009, Letter of Warning, based on the February 24, 2009, compliance inspection (received on April 13, 2009)

5.200 Pike

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WAYNE B. SMITH INC

http://www.waynebsmithinc.com

12-30-10

RECEIVED
JAN 03 2011
Northeast Regional Office

Mr. Brant Farris
Missouri Department of Natural Resources
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV # NER2010121514015046
Response Letter

Mr. Harris,

As part of NOV # NER2010121514015046 issued on December 17, 2010 the MODNR required that the offices of SSS, Inc. submit a letter explaining the steps taken to prevent re-occurrence of the violation. The violation noted that outfalls #001, #006, #007, #008, #010, #012 experienced excursions from the permitted discharge limits as established in the NPDES permit.

In order to prevent a reoccurrence, the following actions have taken place. At outfall #001, the sumps have been maintained and old material that had accumulated has been removed, this will allow for more material to settle out from the discharge stream. In addition a new layer of ¾" x 3/8" pea gravel was added as a gravel filter. The water will now have to settle out in sump #1, pass through a silt fence, settle in sump #2, pass through a second silt fence, pass through the gravel berm, settle in an open area and then pass through sand bags filled with river gravel before being discharged. This material should effectively filter the water before it exits from the facility through outfall 001.

At outfall #006 , the inlet pipe sock has been replaced and additional gravel has been added to the discharge route for the material. All water that exits out this pipe now must travel through at least two forms of filtration before being discharged. The additional filtration should result in increased water quality.

At outfall #007, the existing best management practice of the gravel check dam has been maintained by replacement of the gravel that acts as a gravel filter at the inlet. The company is currently investigating the impacts to the site if this pipe was to be filled with concrete and plugged, thus eliminating the outfall. This may not be a possible alternative but the option will be discussed.

At outfall #010 there have been no additional activities conducted. The outfall was sampled during a period when the pond level was being purposely reduced. The water being discharged was sampled at the siphon pipe The resultant sample came back showing an exceedence on chemical oxygen demand. This settling pond is a relatively

stagnant pond located in a valley surrounded by trees. After receipt of the sample results the facility questioned the lab as to the purported causes, especially since other elements of the sample returned in compliance. The lab indicated that the COD was typically the result of decaying organic matter. The facility inquired to a local soil scientist with regards to what may have caused a COD bump and the scientist indicated that dead or decaying leaf matter was the most likely source of the COD excursion for the pond.

At outfall 12 there have been no additional activities conducted. The water sample that showed the excursions were taken on 9/20/10 after a weekend of heavy rain in which the facility received over 4.3 inches of rain. The rain caused the settling pond upstream to discharge and flow downstream to the sample point. At the time of the 9/20/10 collection the estimated flow was 85 gallons per minute, which for the test area is quite a high flow rate. The heavy flow in conjunction with the heavy rain disturbed an unusual amount of sediments, which contained natural background aluminum and resulted in a bump in the discharge effluent for the outfall. Additional typical BMPs such as gravel berms, silt fence, settling sumps etc. unless extremely over designed would have been overwhelmed by this amount of rain. A follow up sample taken immediately after the results were received on 9/29/10 indicated that both aluminum and TSS were well within discharge limits. The unusual rain circumstance and volume nearly met the 4.6" rain limit for alternate effluent characteristics; because of this the facility believes that its existing upstream pond and practices would be sufficient for most rainfall events.

The facility will continue to follow the NPDES permit sample requirements to monitor the targeted outfalls to see what kinds of impacts result from the completed installation of additional controls.

If you have any questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

Mr. Michael T. Stevinson
WBS/SSS/HEX
P.O. Box 474
Louisiana, MO 63353
Ph: 573-754-4566
Fax: 573-754-4565

SSS Inc
p.ne
5.200

Farris, Brant

From: Mike Stevinson [mstevinson@waynebsmithinc.com]
Sent: Monday, January 03, 2011 10:10 AM
To: Farris, Brant
Subject: NOV response

Mr. Farris,

On Dec 30th I mailed out a response to the NOV #NER2010121514015046. FYI I had not rec'd a NOV with the corrected dates. However, while preparing the written response I sampled the impoundment that is associated with outfall #010. During the last DMR this was reported as having a high COD value. In the response, I note that it was likely due to organic composition. As a follow up, I wanted to have you include the following note in the response.

The facility sampled the impounded water at outfall 10 for COD on 12/27/10. The sample results were not available until after the NOV response was submitted. The sample results were available on Dec 30, 2010 in the PM and showed a value of 75 mg/L for COD in the impoundment at outfall 010. It is likely that the breakdown of leaves and other detritus have stabilized. Please note that this sample was NOT from a discharge, but rather form the impoundment, and that the sample was within compliance levels.

Thank you for your time.

Michael T. Stevinson
Supervisor/Mine Engineer
PH: 573-754-4566
WAYNE B. SMITH INC., SSS, INC.
10415 Highway 79 South
P.O. Box 474
Louisiana, MO 63353

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WAYNE B. SMITH INC

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October 26, 2010

RECEIVED
NOV - 1 2010
Northeast Regional Office

Missouri Department of Natural Resources
Water Pollution Control Program
Northeast Regional Office
1709 Prospect Drive, Suite A
Macon, MO 63552-2602

Re: Bi Annual Discharge Monitoring Report – Permit # MO 0127132

To whom it may concern:

Please find the Bi-annual Discharge Monitoring Report enclosed for site-specific permit # MO-0127132. This submittal covers the reporting period from April 1, 2010 through September 30, 2010 and includes the following:

- DMR for flows
- Precipitation report for this period. This report provided by Minh Hoac, Environmental Specialist for Hercules, Inc. located 1/2 mile south of our facility.
- Explanations for noncompliance.

A total of nine outfalls had observed discharges for the sampling period. The outfalls were checked for flow conditions multiple times during the months of the monitoring period. Six of the nine outfalls sampled experienced an excursion in at least one parameter. As of the date of this DMR submittal, the facility is in discussions with the EPA with regards to compliance issues found during their first quarter 2010 inspection. The results of the administrative process are pending.

Outfall location #001 experienced an excursion for total aluminum on 9/2/2010. The aluminum was 1.76 mg/L. The sample was obtained after three days of rain events, with the third day filling the settling areas to where there was a very minor discharge at the outfall. This sample was obtained with all BMPs in place, but there was a very low flow volume of approximately one gallon per minute. To obtain the sample, a small hole was dug in the flow line so that a bottle could be placed into a depression in the flow to obtain a sample. The aluminum is likely the result of the sediment that was included in the sample. The outfall would have returned to compliance shortly after sampling when the flow ceased on the evening of 9/2/2010. The existing BMPs that are in place for this outfall appear to be making a positive contribution to the discharge water quality at the

site. But the natural background levels of aluminum for the site are a problem for this outfall and its associated limit, thus any sediment introduced during the sampling process or carried in the flow regime will likely result in violations.

Outfall location #006 experienced effluent excursions for TSS, COD, Nitrate, and aluminum in the 9-2-2010 sample. The nitrate levels are possibly the result of water contact with nitrate remnants that is handled as part of our river operations. It is suspected that some areas of soil contained enough residual nitrates to influence the samples. The dirt from the ditch that the water follows has been excavated and placed into a beneficial use in a quarry reclamation area. Maintaining the ditch flow will likely reduce contact time with the water and may improve future water quality. The aluminum may be from background levels or from material handling. Since this outfall was tested after the river receded from its summer long flood levels it is possible the sediments deposited during the flood influenced the samples. The suspended solids are the result of storm water in contact with river sediments deposited at the site. The COD spike is also likely the result of summer long floods and high water levels deposition of materials into the pipes and watersheds. The amount of organic material deposited in the river sediments is likely substantial, likewise the COD may possibly be impacted by nitrates and sediments in the water sample. This outfall was estimated to be flowing at two gallons per minute at the time of sampling and ceased discharge shortly after the sample was taken. In order to reduce the chance of excursions the facility has expanded the ditch line leading to the outfall, removed the uppermost sediments, and replaced the gravel that was used as a gravel check dam. The facility will continue to clean up sand, gravel, and river mud deposited by the flood around the pipe inlet, this should improve the discharge quality.

Outfall location #007 experienced effluent excursions TSS, COD, Nitrate, and aluminum in the 9-2-2010 sample. At the time of the sample the discharge was a barely evident and was recorded as one gallon per minute. The outfall returned to a "no discharge" status at around 2:30 PM on 9-2-2010. The resultant analytical values are the result of testing for total concentrations of the element aluminum in the water sample where the particles of sand or sediment are suspended. The watershed for this outfall is typically swept clean after use, however there will remain small amounts of material on the concrete and on the conveyor frames that affect the water samples in a negative manner. This outfall had filtered the water through a pea gravel filter that was suggested for installation by the EPA inspector, a filter sock and a wire mesh screen. The pea

gravel is regularly replaced as sediments collect on top of the gravel. With sample analysis between outfalls 006 and 007 so nearly identical, it is suspected that the elevated summer river levels and their deposited material contributed as much to the excursions as any of the facility activities, because the facility activities within the pipe watersheds differ, yet the analysis showed similar results. After the field sample results were obtained, the pea gravel was removed and fresh gravel added as a filter for this pipe discharge. In order to reduce the chance of excursions the facility will continue to maintain the pea gravel filter, sweep the area after use, and maintain our dock in a responsible manner.

Outfall location #008 had an excursion on 9-2-2010 for total suspended solids of 53 mg/L , 93 on COD and a 0.775 mg/L of Aluminum. The aluminum likely is within effluent limits when you consider the accuracy tolerances of the test method and will not be addressed. This outfall receives runoff from a steel storage yard with gravel surfacing, the suspended silt is responsible for the TSS violation, which it should be noted was within the daily limits but was 3 mg/L in excess of the monthly average limits. This sample was obtained from water passing though a dual silt fence barrier BMP. The TSS level represents a decrease from historical samples at this point and reflects positively on the use of the recent installation of silt fence for a BMP at this outfall. The cause for the COD excursion at this outfall is in unknown. There are no facility material handling practices near the outfall, and the outfall sample point is high enough above flood stage as not to be impacted for the majority of the summer high water stages. The outfall ceased flow within twenty four hours and was not re-sampled before the end of the reporting period. BMP practices will be maintained for this outfall.

Outfall location 012 had an excursion on 9-20-10 from TSS and aluminum. The outfall was sampled after a total of 4.35" of rain over the previous days and still exhibited a high flow rate of about eighty gallons per minute due to the excessive runoff. The outfall was retested on 9-29-10 at a much lower flow rate for only TSS and aluminum, the resulting analysis showed that both parameters were well within limits. The aluminum is likely from sediments contained in the sample, the total suspended solids was due to the volume and nature of the disturbance caused by the high amounts of rainfall. This outfall receives runoff from exposed geologic stratigraphy that includes shale formations which contain between six percent and thirteen percent alumina and the local soil contains several percent alumina, all which can be contributors to high

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aluminum numbers. This outfall is historically a "good" with a handful of occasional suspended solids and aluminum excursions, usually both on the same sample.

The remaining sampled quarry outfalls of 014 and 015 showed no excursions from effluent limits. An outfall that was requested to be added to the permit in July 2010 is outfall 016, and it was also sampled during this period. Outfall 016 receives runoff from both disturbed and undisturbed portions of the quarry. This outfall was tested for all parameters and showed no effluent violations. This is interesting to note, because in one past sample submitted with the application information showed elevated background aluminum levels. It appears that 016 may also have background aluminum that will show up in sediments after major rain events.

If you need anything further, please feel free to contact me by phone at (573) 754-4566 or by mail at the address provided below.

Sincerely,

Mike Stevinson
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6-21-10

RECEIVED
JUN 22 2010
Northeast Regional Office

Mr. Brant Farris
Missouri Department of Natural Resources
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV # NER2010052412124392
Response Letter

Mr. Harris,

As part of NOV # NER2010052412124392 issued on June 14, 2010 the MODNR required that the offices of SSS, Inc. submit a letter explaining what steps will be taken to prevent re-occurrence of the violation. The required information was addressed with the submittal of the DMR but will be repeated for clarification and compliance with the N.O.V. requirements. The violation noted that outfalls #001, #015 experienced excursions from the permitted discharge limits as established in the NPDES permit.

Outfall location #001 experienced an excursion for Total Aluminum and Total Suspended Solids on 4/3/2010. The Aluminum was 1.08 mg/L and the Total Suspended Solids were 55mg/L. The outfall returned to compliance by 4/4/2010 when it ceased its intermittent flow. The cause for non-compliance is most likely related to a particle, or particles, of material picked up from the bottom of the flow stream at the discharge point during the sampling process. The discharge rate at the time of sampling was approximately 0.5 GPM, which required the sample bottles to be filled with the lids from the bottles being repeatedly dipped into the sample stream. The disturbance of the flow regime introduced foreign material likely causing an excursion on the TSS and Total Aluminum values. As has been stated in past NOV discussions, the background aluminum existing in the sand located in the Mississippi river is many times in excess of our permit limits, so any sediment disturbed by, and included in, the sampling process is likely to cause an excursion. The parameters of the permit were also very slightly exceeded, in fact the TSS was within parameters for a daily maximum. The current filters that are in place appear to be doing an adequate job improving discharge water quality. In order to prevent reoccurrence, special care will be taken not to disturb sediments in the bottom of the flow regime while obtaining the sample.

Outfall location #015 experienced effluent excursions for Total Suspended Solids in the 4/5/2010 sample. The TSS was 274 mg/L after a massive cloudburst occurred at

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our facility. The settling basin was overwhelmed by the intensity of the rain fall and the resulting influx of sediment bearing water. The intensity of the rainfall was ten times the intensity of the 25 year 24 hour storm for this location, or approximately 2 inches per hour. Settable Solids for the same event were measured at 0.2mL/L/hr, well within the permit limits and well within the settleable solid limits for most storm water permits. This outfall returned to compliance by the afternoon of 4/6/10 when the structure ceased to discharge. No modifications will be made at this outfall as a result of this excursion. For normal storm events, the structure provides adequate settling time to prevent excursions of the permit limits.

The recent excursion of outfall 015 is an excellent case of why rainfall storm intensity, not just overall volume, should be used to trigger alternate effluent limits on storm events. For this region, in order to trigger an alternate limit, there must be a total rainfall event of 5.6 inches of rain, the twenty-five year, twenty four hour storm. The average intensity of the twenty-five year, twenty four hour storm is 0.23 inches of rain per hour. The cloudbursts that are common during the spring and earlier summer often have far greater intensities and their runoff collects more material than a slow steady rain which could deposit 5.6" of rain in twenty four hours. Rainfall events which deposit 3" of rain in one to two hours are relatively commonplace and result in flash floods, damaged roadways, and high amounts of debris being collected in the storm water, yet based on Missouri's interpretation of the alternate effluent standard, these storm events would never trigger the alternate effluent limits, regardless of the fact that events of this magnitude can carry 2" rocks from gravel roads and may have an intensity up to twelve times that of the twenty-five year, twenty four hour storm.

The facility will continue to monitor its outfalls and follow the NPDES permit sample requirements. If you have any questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

Mr. Michael T. Stevinson
WBS/SSS/HEX
P.O. Box 474
Louisiana, MO 63353

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April 16, 2010

RECEIVED
APR 19 2010
Northeast Regional Office

Missouri Department of Natural Resources
Water Pollution Control Program
Northeast Regional Office
1709 Prospect Drive, Suite A
Macon, MO 63552-2602

Re: Bi Annual Discharge Monitoring Report – Permit # MO 0127132

To whom it may concern:

Please find the Bi-annual Discharge Monitoring Report enclosed for site-specific permit # MO-0127132. This submittal covers the reporting period from October 1, 2009 through March 31, 2010 and includes the following:

- DMR for Stormwater flows
- Precipitation report for this period at SSS, Inc. This report provided by Minh Hoac, Environmental Specialist for Hercules, Inc. located 1/2 mile south of our facility.
- Explanations for noncompliance.

A total of six outfalls had observed discharges for the sampling period. The outfalls were checked for flow conditions multiple times during the months of the monitoring period. Outfalls were checked for flow conditions on 10/30/09, 11/18/09, 12/29/09, 1/25/10, 1/26/10, 2/26/10, 3/16/10, 3/30/10, 4/3/10 and 4/5/10. The facility was also inspected in January by the Environmental Protection Agency and storm water outfalls were inspected and samples were obtained by the inspector where there were flows. The inspector made several suggestions regarding management practices and those suggestions have been implemented at outfall 006 and 007. Two of the six outfalls sampled experienced an excursion in at least one parameter. Both outfalls that experienced excursions were sampled just after the end of the observation period in an effort to collect data for the DMR. Rainfall for the months of February and March was sporadic and early events were not able to be captured. Two of the outfalls, outfall #006 and #007 were likely discharging to the river for portions of the sample period but because of the high river stage, as seen in figures 1 and 2 , discharge samples could not be obtained.

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Phone: (573) 754-4566 Fax: (573) 754-4565

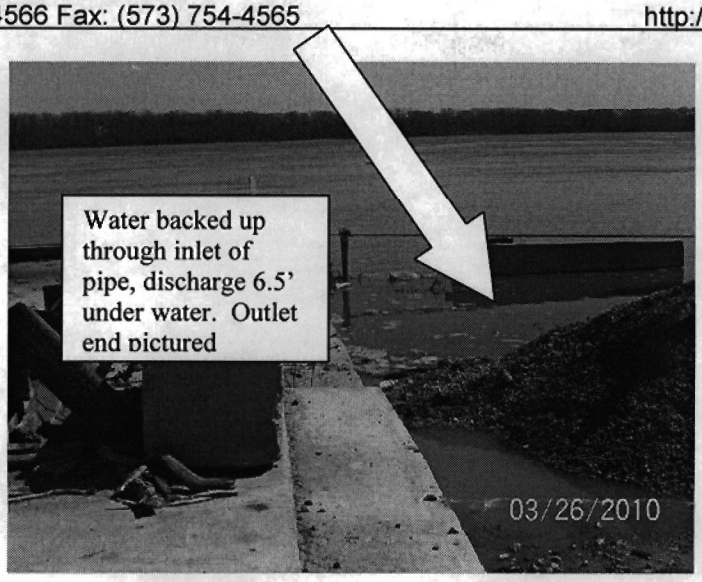

Figure 1. Outfall #006, Discharge- 6.5' water over pipe outlet

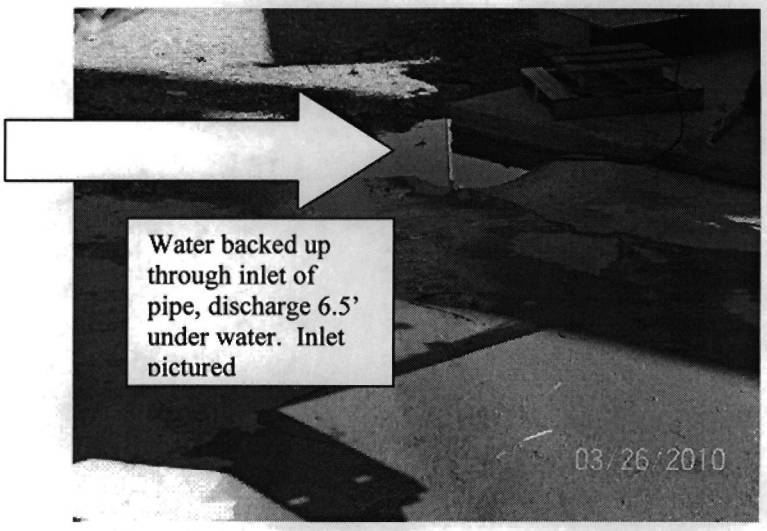

Figure 2. Outfall #007, River backed up through inlet

The discharge pipes for outfalls #006, #007 are only eight to twelve inches above normal river stage, therefore unless the river is at or below normal pool, the samples are difficult to obtain. During flood events, such as those pictured, it is impossible to obtain a sample that reflects the quality of the water as discharged through the BMP in place for the outfalls. The river water that floods the property during these events can skew sample results to where they are not indicative of facility operations. The river and dock area was inundated for the first two weeks of March. As of the date of this letter, 4/16/10, the river level has not returned to normal pool and remains above the discharge pipes at

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outfall #6 and outfall #7. I have also attached a chart detailing the river stage for 2010. Any level above 13 feet would be difficult to sample at the outfall of the pipe. When the river was at normal pool there was often not a rainfall event that would have resulted in a discharge that could be sampled.

Outfall location #001 experienced an excursion for total suspended solids and total aluminum on 4/3/2010. The TSS was 55 mg/L and the total aluminum was 1.08 mg/L. The sample was obtained after several minor rainfall events eventually filled the settling areas and resulted in a discharge at the outfall. This sample was obtained with all BMPs in place but there was a very low flow volume. When the sample was obtained the flow was so low that a bottle could not be placed in to the flow. The lid to a bottle had to be used to fill other bottles for sampling. It is theorized that the suspended solids resulted from the bottom of the sample channel being disturbed by repeated dipping of the lid in order to capture the water. The Mississippi river had been at flood stage the previous week and had backed water up into the discharge channel from this outfall, this may have deposited additional sediments on the channel bottom that were disturbed by the sampling modified sampling technique. The aluminum is likely the result of the sediment that was picked up in the sampling process. As discussed in previous correspondence, the aluminum limits for our outfalls are quite limited when considering the background aluminum present in the river sand. The river sand has been analyzed by Holcim, Inc. and indicated to contain between 6% and 7.6% aluminum oxide, most likely sourced from corundum common to igneous rocks in the watershed of the upper Mississippi river. The current effluent limit of .75mg/L of Al is equivalent to .75 parts per million, the sand is 6% Al2O3 by weight, which would indicate that there would be 60,000 parts of Al203 per million parts of sand. If analyzed the sand would result in 30,000 parts per million of aluminum in the natural river sand. The likelihood exists that if a portion of the sand is included in a water sample as a non filterable residue, that residue would contribute enough aluminum to cause an exceedence of the effluent limit. Furthermore, the dissolved aluminum for this outfall was analyzed at .040 mg/L which indicates that whatever aluminum is in the sample is in a form that is not likely to be soluble in a stable pH environment. The outfall would have returned to compliance shortly after sampling when the flow ceased on the evening of 4/3/2010. It may also be noted that the TSS result is within the daily maximum concentration and only 5 mg/L over the monthly average. The existing BMPs that are in place for this outfall appear to be making a positive contribution to the discharge water quality at the site.

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Outfall location #015 experienced effluent excursions for total suspended solids in the 4-5-2010 sample. The TSS was 274 mg/L after a massive cloudburst that caused the settling pond that is monitored by the outfall to discharge. The settling basin was overwhelmed by the intensity of the rain fall and the resulting sediment load. The intensity of the rainfall was ten times the intensity of the 25 year 24 hour storm for this location. Settable solids for the same event were measured at 0.2mL/L/hr, well within the permit limits and well within the settleable solid limits for most storm water permits. . This outfall was also sampled by the EPA's Environmental Specialist David Pratt on his visit on 1/25/10. Sample results from that visit have not yet become available to WBS, but I would anticipate that the sample obtained showed no deviations from out permit limits. This outfall returned to compliance by the afternoon of 4/6/10 when the structure ceased to discharge.

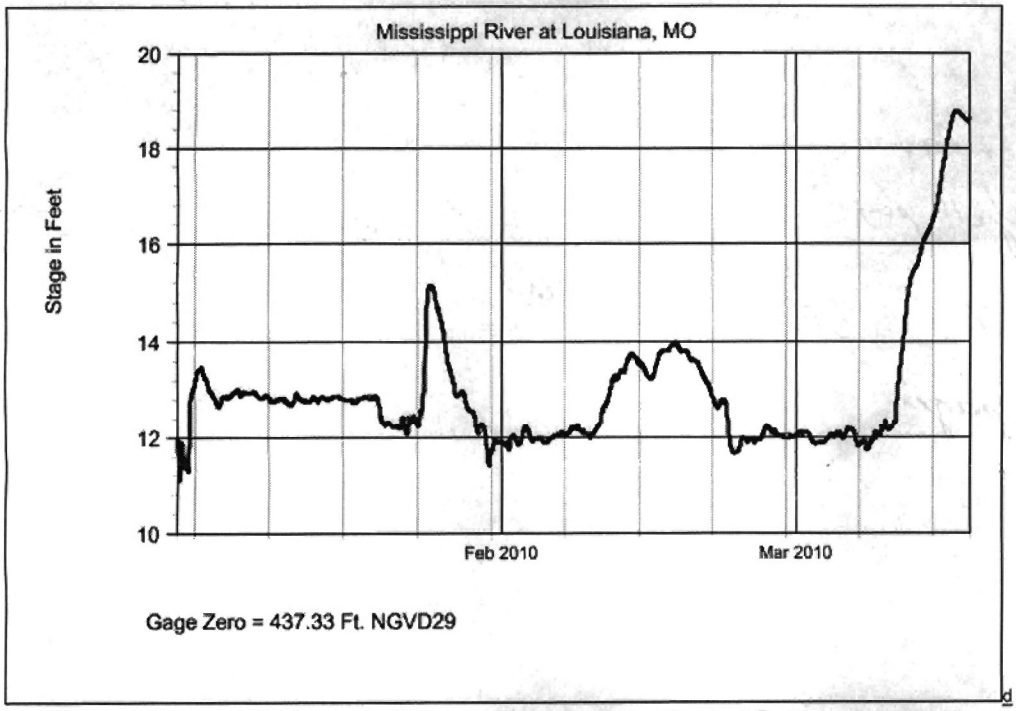
The remaining four outfalls sampled did not experience any excursions. Most significantly this includes outfall number nine where an enhanced BMP appears to be working to reduce the TSS that is discharging from the property. The remaining quarry outfalls 012 and 014 which monitor quarry operations did not experience any excursions and continue to reflect minimal impacts from site work. The outfalls are located on the property boundaries to monitor our facilities possible impacts on adjacent properties.

If you need anything further, please feel free to contact me by phone at (573) 754-4566 or by mail at the address provided below.

Sincerely,

Mike Stevinson
Supervisor/ Engineer
SSS, Inc.
P.O. Box 474
Louisiana, MO 63353
Ph: 573-754-4566

Mississippi River at Louisiana, MO
(Central Time Zone)



Flood Stage
On Off
Record High Stage
On Off
Record Low Stage
On Off
Low Water Reference
On Off
Historic Year
None
View Graph

US Army Corps of Engineers - St. Louis District - Water Control Center - Contact Us

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5-21-10

RECEIVED
MAY 24 2010
Northeast Regional Office

Mr. Brant Farris
Missouri Department of Natural Resources
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV # NER2010051114005040
Response Letter

Mr. Harris,

As part of NOV # NER2010051114005040 issued on May 14,2010 the MODNR required that the offices of SSS, Inc. submit a letter explaining the cause for non-compliance, exact dates of non-compliance, date outfall returned to compliance, and steps taken to prevent re-occurrence of the violation. Much of the required information was addressed with the submittal of the DMR but will be repeated for clarification and compliance with the N.O.V. requirements. The violation noted that outfalls #006, #007 experienced excursions from the permitted discharge limits as established in the NPDES permit.

Outfall location #006 experienced an excursion for total aluminum and nitrate on 9/20/2009. The nitrate was 724 mg/L and the total aluminum was 3.16 mg/L. For reference the dissolved aluminum was <0.05 mg/L in the same sample. The outfall returned to compliance by 9/20/09 when it ceased to flow. The outfall was re-sampled on 10/1/09 where the total aluminum was reduced to 0.392 mg/L, the outfall ceased flowing late in the day of 10/1/09. In order to prevent a reoccurrence, WBS has modified the inlet so that water flow passes through a material designed to remove silts, debris, and oil from water. This material, in conjunction with a redesign on the inlet pipe, has contributed to an improvement to discharge quality when compared to past results.

Outfall location #007 experienced effluent excursions in nitrate and total aluminum from a sample obtained on 9/20/09. The nitrate value was 36.2 mg/L and the aluminum was 1.97 mg/L. At the time of the sample the discharge was a barely evident and was recorded as 1 gpm. Provided the very small watershed of this outfall it returned to a "no discharge" status the evening of 9/20/09. The resultant analytical values are the result of testing for total concentrations of the element aluminum in the water sample where the particles of bauxite or sand are suspended. The dissolved aluminum of the sample was <0.05 mg/L. In order to help prevent reoccurrence of the excursions, WBS

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has in place a system which requires the water to pass through washed pea gravel, silt fence, wire mesh screen and a filter sock before being discharged. The failure to report biological oxygen demand as noted on the DMR was a clerical oversight. The sample tested at a level of less than 5mg/L for BOD on 9/20/09. More care will be taken on future DMRs to insure that all effluent parameters are accounted for on the DMR forms.

The high nitrate values recorded during the sampling are thought to be from material handling operations. When WBS became aware of the elevated levels, the facility instituted a new practice which directs workers to place spilled material that could contribute to elevated nitrate levels into a sealed container on multiple occasions during the day, instead of waiting until the end of the day to clean up. This reduces the chance that the material will come into contact with water. Furthermore, WBS is attempting to collect water that might be high in nitrates. The material is then is then returned to the manufacturer of the bulk material where the manufacturer can evaporate the water and recover the nitrogen rich product. This practice has been instituted and followed for over six months now, but the success of this practice has not yet been evaluated though outfall testing. However, the change in cleanup practices cannot be having a negative effect.

Employee refresher classes continue to include training on our SWPP and SPCC plans that are in effect on the site. The training included the elements of the plans and the importance of cleanup operations in order to reduce storm water contact with industrial materials, with special emphasis on the primary material handling facility near outfalls #006 and #007 and fuel sites.

In previous correspondence to the Department, WBS has discussed the difficulties surrounding controlling discharge at outfall #006 and outfall #007. These two outfalls present the most difficulty in improving their discharge because there is little area available to reroute the water, or hold the water for longer periods of time to allow for settling. The locations of the outfalls make it impractical to completely seal the discharge pipes. If sealed, the water would collect under and around our material handling systems, leading to the eventual destruction of those mechanical systems. The method of dock construction utilized at the site makes the implementation of buried mechanical separation systems very difficult. The dock was originally constructed by placing fill material over sunken and anchored river barges. As a result, there are no practical methods of excavating in the area of the riverfront without encountering either the barges or materials used to anchor those barges. The existing pipes were installed when the

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dock was constructed. Passive treatment devices such as septic tanks, or other gravity based methods would also be difficult to install near the existing outfalls for the same reasons. Passive filtering devices such as the silt fence installed on outfall #006 do work to reduce suspended solids, and their maintenance is relatively simple, but their positive effect on dissolved material is unknown.

Since the time of the DMR submittal the facility was also subjected to an inspection by the Federal EPA for compliance with the current NPDES permit. The inspector conducted a thorough evaluation of the facility and its outfalls. The inspector made recommendations for the facility that are being reviewed and implemented. Amo0ng other things he recommended adding pea gravel as a filter to the inlet side of outfall 007 to remove sediments from entering the pipe. This suggestion was immediately implemented and appears that it should have a positive effect

The facility will continue to follow the NPDES permit sample requirements to monitor the targeted outfalls to see what kinds of impacts result from the completed installation of additional controls. It is hoped that the improvements will eliminate the need for further conference, conciliation, or persuasion and meet the requirements of our NPDES permit.

If you have any questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

Mr. Michael T. Stevinson
WBS/SSS/HEX
P.O. Box 474
Louisiana, MO 63353
Ph: 573-754-4566
Fax: 573-754-4565

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October 19, 2009

RECEIVED
OCT 2 6 2009
Northeast Regional Office

Missouri Department of Natural Resources
Water Pollution Control Program
Northeast Regional Office
1709 Prospect Drive, Suite A
Macon, MO 63552-2602

Re: Bi Annual Discharge Monitoring report – Permit # MO 0127132

To whom it may concern:

Please find the Bi-annual Discharge Monitoring Report enclosed for site-specific permit # MO-0127132. This submittal covers the reporting period from March 31, 2009 through October 1, 2009 and includes the following:

- DMR for Stormwater flows
- Precipitation report for this period at SSS, Inc. This report provided by Minh Hoac, Environmental Specialist for Hercules, Inc. located 1/2 mile south of our facility.
- Explanations for noncompliance and action taken to prevent reoccurrences

The new permit monitoring requirements removed outfalls 2, 4 and 5 from our facility. The new permit also modified the monitoring requirements for some of the remaining outfalls. A total of six outfalls had observed discharges for the sampling period. The outfalls were checked for flow conditions multiple times during the months of the monitoring period. Outfalls were checked for flow conditions on 4/21/09, 5/28/09, 6/30/09, 8/17/09, 9/20/09. Samples were obtained on 9/20/09 for most of the areas, a final sample for a quarry outfall was also taken on 10/1/09 after a period of rainfall. Two of the six outfalls sampled experienced an excursion in at least one parameter during the observation period. WBS has made progress in improving outfall discharge quality, specifically with regards to total settleable solids at outfalls 1, 6 and 8. At outfall 001, the addition of another segment of silt fence and the encouragement of plant growth resulted in a marked increase in water quality reducing the total suspended solids and nitrogen levels. At outfall 8, the additional silt fence resulted in a cleaner discharge. Finally, the total rebuild of the inlet of outfall 6 has resulted in a marked decrease in solids, and aluminum even though we still face challenges in parameters associated with materials handling processes.

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Outfall location #006 experienced an excursion for total aluminum and nitrate on 9/20//2009. The nitrate was 724 mg/L and the total aluminum was 3.16 mg/L. For reference the dissolved aluminum was <0.05 mg/L in the same sample. The outfall returned to compliance by 9/20/09 when it ceased to flow. The outfall was re-sampled on 10/1/09 where it continued to have a high nitrate value but the total aluminum was reduced to 0.392 mg/L. This outfall is one of the two most challenging outfalls to maintain compliance with at the site. As described in an earlier NOV response we have modified the inlet so that water flow passes through a material designed to remove silts, debris, and oil from water. This material, in conjunction with a redesign on the inlet pipe, has contributed to an improvement to discharge quality when compared to past results.

The high nitrate values recorded this month are due to material handling operations at our bagging operation. In the past a storage building was determined to be the cause of elevated nitrogen levels, but any storm water that would have come in contact with stored materials has been directed away from the outfall and forced to an evaporation area. The most recent elevated levels are the result of material handling operations that have occurred during the summer. When WBS became aware of the most recent sample data, WBS instituted measures to prevent or reduce the high nitrogen levels. WBS has instituted a new practice which requires workers to place spilled or contaminated material into a sealed container on multiple occasions during the day instead of waiting for a period at the end of the day to clean up. This reduces the chance that the material will come into contact with water. Furthermore, WBS has dug a sump to collect contaminated water, which will then be pumped into a storage container. The water and collected spilled material is then returned to the manufacturer where the manufacturer evaporates the water and recovers the nitrogen rich product. Following this process should result in a marked decrease in nitrogen levels.

Outfall location #007 experienced effluent excursions in nitrate and total aluminum from a sample obtained on 9/20/09. The nitrate value was 36.2 mg/L and the Aluminum was 1.97 mg/L. At the time of the sample the discharge was a barely evident and was recorded as 1gpm. Provided the very small watershed of this outfall it returned to a "no discharge" status the evening of 9/20/09. The resultant analytical values are the result of testing for total concentrations of the element aluminum in the water sample where the particles of bauxite or sand are suspended. The dissolved aluminum of the sample was <0.05 mg/L.

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The remaining quarry outfalls 012 and 014 did not experience any excursions These outfalls monitor the stockpile areas and runoff from mined areas of the quarry. The outfalls are located on the property boundaries to monitor our mining effects on adjacent properties. Outfalls 1 and 8, monitoring areas of discharge near the riverfront, did not experience any excursions from the permit limits.

If you need anything further, please feel free to contact me by phone at (573) 754-4566 or by mail at the address provided below.

Sincerely,

Mike Stevinson
Supervisor/ Engineer
WBS/SSS/HEX
P.O. Box 474
Louisiana, MO 63353
Ph: 573-754-4566

5.110 SSS
Pike

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WAYNE B. SMITH INC

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7-8-09

RECEIVED
JUL 13 2009
Northeast Regional Office

Mr. Brant Farris
Missouri Department of Natural Resources
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV #NER200906161445280
Response Letter

Mr. Harris,

As part of NOV # NER200906161445280 issued on June 23, 2009 the MODNR required that the offices of SSS, Inc. submit a letter detailing how the facility would prevent a re-occurrence of the effluent limits established in the NPDES permit.

The violation noted that outfalls #001, #006, #007, #008 all experienced excursions from the permitted discharge limits as established in the NPDES permit.

As shown in facility correspondence dated 3-16-09 in regards to NOV #NER2009012914015046, the facility has taken steps to improve the water quality at its outfalls. The steps have reduced effluent levels but still did not prevent an excursion from the effluent limits established in the site NPDES permit. After results from sampling conducted on 3/24/09 became available, and after it was noted that discharges continued to exceed permit limitations, the facility installed additional filtration devices at outfalls #001 and #008.

As can be seen in the following photographs, outfall #001 was upgraded with an additional section of silt fence placed upstream of the gravel filled filtration bags. There have not been additional samples taken after the installation in order to determine the effectiveness of the additional fence.

Silt Fence before gravel filter

Gravel Filter Bags

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At outfall #008 it was noted that the small section of silt fence installed would not provide adequate settling time for particles attempting to discharge from outfall #008. The facility has installed an additional longer silt fence into position upstream of outfall #8. This properly installed silt fence should result in a lowering of the amount of solids exiting through the outfall.

As reported in the discharge monitoring report submitted 4/16/09, outfall #006 and outfall #007 were discharging but the outlet ends of the pipes were under water. This prevented the conventional sampling of the facility's discharge water, and may have contributed to the excursions.

In an effort to insure better clean up practices at our operations, the latest employee MSHA annual refresher class included a module on our SWPP and SPCC plans that are in effect on the site. The training included the elements of the plans and the importance of cleanup operations in order to reduce storm water contact with industrial materials, with special emphasis on the primary material handling facility near outfall #007.

In previous correspondence to the Department, WBS has discussed the difficulties surrounding controlling discharge at outfall #006 and outfall #007. These two outfalls present the most difficulty in improving their discharge because there is little area available to reroute the water, or hold the water for longer periods of time to allow for settling. Also, since the discharges are point source pipe outfalls which discharge

directly into the receiving stream, there is no alternative area to treat the water downstream.

Outfall #006 and #007 have had historical excess nitrogen values. WBS theorizes that the nitrogen is sourced from material handling and storage operations. The load out operators have been instructed in the proper handling of material to reduce waste and to reduce contact with storm waters. It may take some time for the DMR's to show the benefits of the improved material handling operations and the effects of the impervious diversion berm installed in early March 2009. This berm appears to be working and rainwater is blocked from flowing to the outfalls. Due to their locations, complete sealing of the outfalls to eliminate the discharge is not a practical solution. If sealed the water would collect under and around our material handling systems, leading to the eventual destruction of those mechanical systems. The method of dock construction utilized at the site makes the implementation of mechanical separation systems very difficult. The dock was originally constructed by placing fill material over sunken and anchored river barges. As a result, there are no practical methods of excavating in the area of the riverfront without encountering either the barges or materials used to anchor those barges. The existing pipes were installed when the dock was constructed. Passive treatment devices such as septic tanks, or other gravity based methods would also be difficult to install near the existing outfalls for the same reasons. Finally, the expected maintenance, installation, and operating costs may make these types of installations cost prohibitive. Passive filtering devices such as the silt fence installed on outfall #006 do work to reduce suspended solids, and their maintenance is relatively simple, but they do not affect dissolved materials which contribute to nitrogen excursions.

After much review of alternative methods to improve discharge at the site, the facility has decided to modify the inlet of outfall #006 in such a manner as to allow it to function like a perforated field hickenbottom. Surrounding the pipe inlet will be graded and washed gravel and sand. This material will act as a filter and the water should seep out of the site through the perforated walls of the inlet in all but the largest storms, in which case the water will discharge by running out the pipe and being filtered though a pipe sock material made from recycled polypropylene fibers designed to remove foreign matter and oil from storm water.

At outfall #007 the pipe is installed as low as it can practically go and is surrounded by concrete. There are no practical ways to modify the inlet. However, after some research, WBS has found a product that might improve water quality that can be used inside the pipe. It operates by being placed inside the pipe and floating along the top of the water as the water is discharged. The material is designed to primarily absorb

oil, but it can also be used as a filter media. The facility will purchase and install the unit and further monitoring will evaluate its effectiveness.

WBS will continue to follow the NPDES permit sample requirements to monitor the targeted outfalls to see what kinds of impacts result from the completed installation of additional controls. It is hoped that the improvements will eliminate the need for further changes and meet the requirements of our NPDES permit.

If you have any questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

Mr. Michael T. Stevinson
WBS/SSS/HEX
P.O. Box 474
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Ph: 573-754-4566
Fax: 573-754-4565

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WAYNE B. SMITH INC

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April 16, 2009

RECEIVED
APR 20 2009
Northeast Regional Office

Missouri Department of Natural Resources
Water Pollution Control Program
Northeast Regional Office
1709 Prospect Drive, Suite A
Macon, MO 63552-2602

Re: Bi Annual Discharge Monitoring report – Permit # MO 0127132

To whom it may concern:

Please find the Bi-annual Discharge Monitoring Report enclosed for site-specific permit # MO-0127132. This submittal covers the reporting period from October 1, 2008 through March 31, 2009 and includes the following:

- DMR for Stormwater flows
- Precipitation report for this period at SSS, Inc. This report provided by Minh Hoac, Environmental Specialist for Hercules, Inc. located 1/2 mile south of our facility.
- Explanations for noncompliance.

The new permit monitoring requirements removed outfalls 2, 4 and 5 from our facility. The new permit also modified the monitoring requirements for some of the remaining outfalls. A total of six outfalls had observed discharges for the sampling period. The outfalls were checked for flow conditions multiple times during the months of the monitoring period. Outfalls were checked for flow conditions on 10/30/08, 11/21/08, 2/26/09 and 3/24/09. Four of the six outfalls sampled experienced an excursion in at least one parameter during the observation period. This observation period also included a period of minor flood conditions on the Mississippi River. The river and dock area was inundated for the first two weeks of March. As of the date of this letter, 4/16/09, the river level has not returned to normal pool and remains above two of our discharge pipes at outfall #6 and outfall #7.

Outfall location #001 experienced an excursion for total suspended solids and total aluminum on 3/24/2009. The TSS was 212 mg/L and the total aluminum was 3.16 mg/L. The sample was obtained after several minor rainfall events eventually filled the settling areas and resulted in a discharge at the outfall. This sample was obtained after correcting BMP deficiencies that were reported during the Department's February 24,

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2009 inspection. The outfall returned to compliance by 3/26/09 when it ceased to flow. The sample was obtained from a flow that was correctly passing through two settling areas, two silt fence walls and a wall of sandbags that are filled with natural river gravel.

Outfall location #006 experienced effluent excursions for nitrate and aluminum in the 3/24/09 sample. The nitrate levels are a result of water contact with fertilizer that is handled as part of our river operations. The aluminum is a result of having bauxite particles in the sample. This outfall was estimated to be flowing at one gallon per minute at the time of sampling and ceased discharge shortly after the sample was taken. The sample had to be obtained from the inlet side of the discharge pipe, and the water that was sampled was not passing through the BMP. The sample had to be obtained this way because it was evident that the pipe was discharging, but since the receiving river level was above the discharge end of the pipe, a sample could not be taken at the discharge point. Therefore, this sample is *not* indicative of the filtering success of the inlet end silt fence. The actual quality of the discharge would be estimated to be slightly better that these submitted results, but given the requirement for discharge sampling and no fixed date for the river to return to normal pool, the sample had to be taken in this manner.

Outfall location #007 experienced effluent excursions from in chemical oxygen demand, total aluminum and nitrate from a sample obtained on 3/24/09. At the time of the sample the discharge was a barely evident and was recorded as 0.25gpm. Provided the very small watershed of this outfall it returned to a "no discharge" status the evening of 3/24/09. The resultant analytical values are the result of testing for total concentrations of the element aluminum in the water sample where the particles of bauxite or sand are suspended. The watershed for this outfall is typically swept clean after use, however there will remain small amounts of material on the concrete and on the conveyor frames that affect the water samples in a negative manner. The screen that is used at this outfall will not prevent small particles from discharging. Similarly to outfall #6, this outfall also had to be sampled from the inlet side due to the fact that its discharge point was under water on this date

Outfall location #008 had an excursion on 3/24/2009 for total suspended solids of 57 mg/L and 0.938 mg/L of aluminum. This excursion is due to typical storm delivery of surface sediment in storm runoff. All other parameters passed at this outfall. The outfall stopped discharging shortly after the end of the rainfall events. This outfall receives runoff from a steel storage yard with gravel surfacing, the suspended silt is responsible

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for the TSS violation, which it should be noted was within the daily limits but was 7 mg/L in excess of the monthly average limits. This sample was obtained after a silt fence barrier was installed upstream of the outfall point. The TSS level represents a decrease from historical samples at this point and reflects positively on the use of the recent installation of silt fence for a BMP at this outfall.

The remaining quarry outfalls 012 and 014 did not experience any excursions. These outfalls monitor the stockpile areas and runoff from mined areas of the quarry. The outfalls are located on the property boundaries to monitor our mining effects on adjacent properties.

This DMR represents the second DMR submitted under the newly revised operating permit, and the first after the installation of new sediment controls at some of the outfalls. If you need anything further, please feel free to contact me by phone at (573) 754-4566 or by mail at the address provided below.

Sincerely,

Mike Stevinson
Supervisor/ Engineer
SSS, Inc.
P.O. Box 474
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Ph: 573-754-4566

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RECEIVED
MAR 1 9 2009
Northeast Regional Office

3-16-09

Mr. Brant Farris
Missouri Department of Natural Resources
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV #NER2009012914015046
Response Letter

Mr. Harris,

In response to NOV #NER2009012914015046 on February 20, 2009 the offices of SSS, Inc. submitted a letter detailing reasons for noncompliance with the current NPDES permit and offering options to enhance our compliance with the current NPDES permit. In addition, shortly after our response letter was submitted, a NPDES compliance inspection of our facility was conducted by Environmental Specialist, Darryl McCullough. During this inspection we discussed possible options to improve discharge quality at our outfalls. Three of those suggestions have already been implemented, at outfall #001, outfall #008, and outfall #009.

As promised in our February, 20th 2009 letter, WBS investigated each of the outfalls that were most likely to be in violation and have already made improvements to three of those outfalls. Two of the changes made were as a result of discussions with Environmental Specialist, Darryl McCullough. As can be seen in the following figures at outfall 008 WBS has installed a barrier preceding the outfall sampling point which consists of two sections of silt fence across the ditch that is normally sampled. At outfall #009 the outfall was blocked with a combination of silt fence and coarse gravel. The silt fence was initially laid down flat on the ground and then filled with gravel, the fence was then folded on top of the gravel pile and then fence was covered in coarse gravel. The flow path and multi layer filtering should improve discharge water quality.

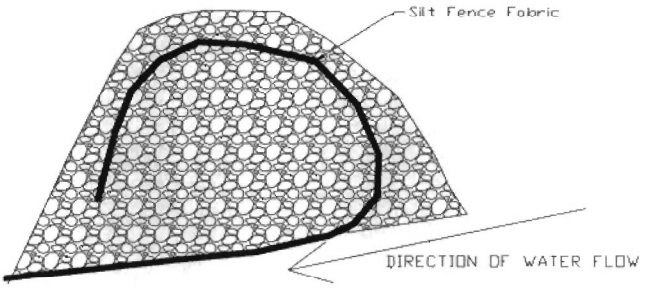

Figure 1: Outfall 09 Example Cross Section

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Figure 2: Outfall #8 Silt fence

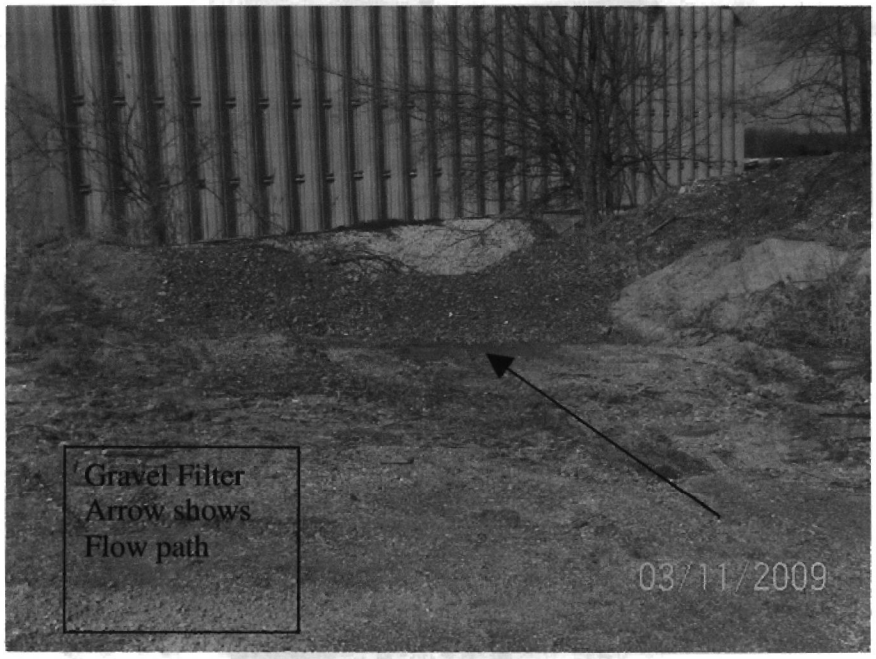

Figure 3: Outfall #9 gravel and fence

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In an effort to insure better clean up practices at our operations, the latest employee training class included a module on our SWPP and SPCC plans that are in effect on the site. The training included the elements of the plans and the importance of cleanup operations in order to reduce storm water contact with industrial materials.

The final two outfalls which are currently unchanged and unmodified are outfall #006 and #007. These two outfalls present the most difficulty in improving their discharge because there is little to no area available to reroute the water, or hold the water for longer periods of time to allow for settling. Also since the discharges are point source pipe outfalls which discharge directly into the receiving stream there is no alternative area to treat the water downstream. Additionally, high river stages, such as our current conditions, contribute to the degradation of our water quality even after the water recedes. As can be seen in the following photos, the during flood events the water level is high enough at both outfalls that their inlets become completely submerged. Once the river reaches this level, the river contains large amounts of debris and silt which is left behind when the water recedes. It is possible that materials in this silt will influence the water samples at a later date.

Figure 6 Outfall 006 Inlet Area Flooded

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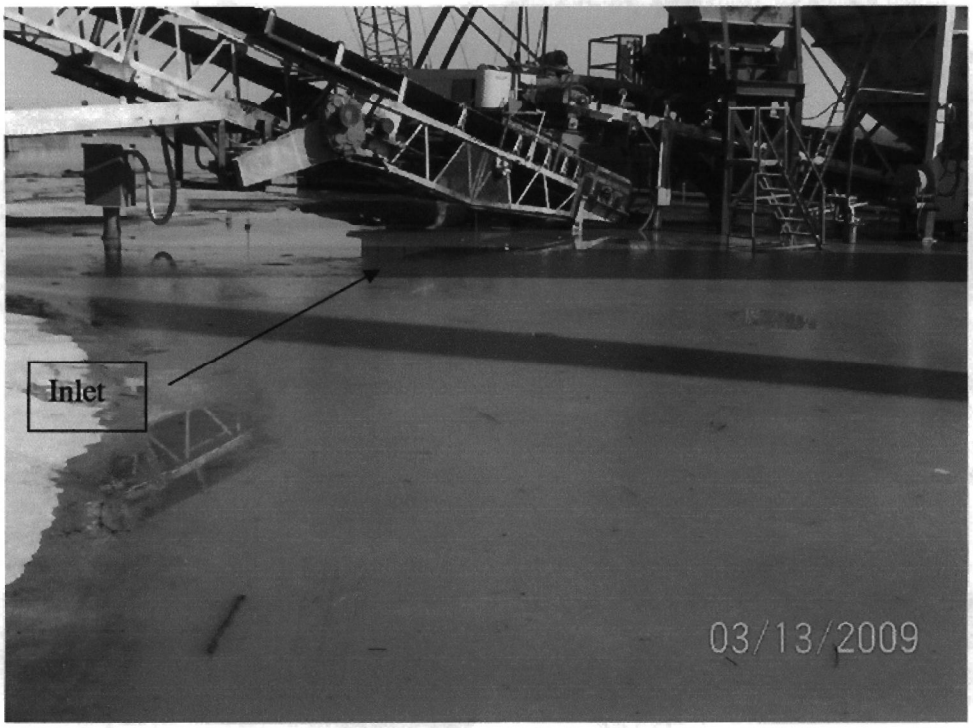

Figure 7 Outfall 007 Inlet Flooded

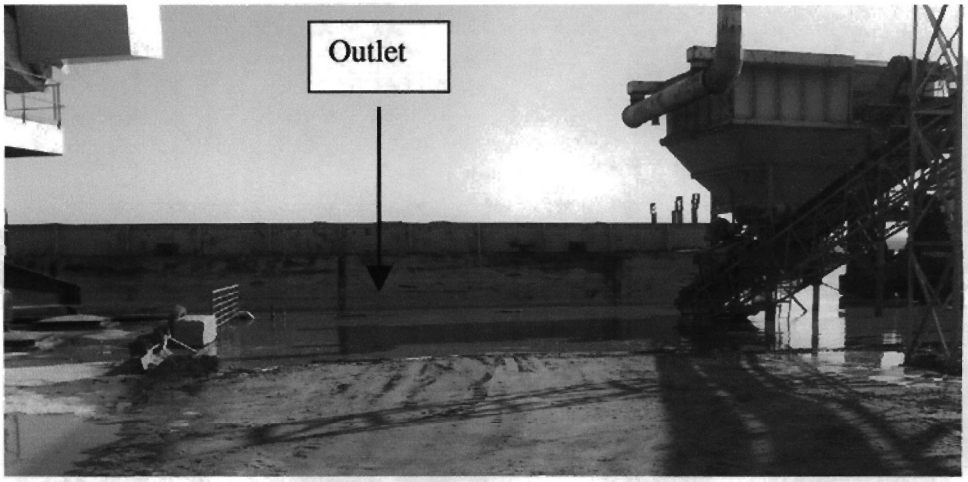

Figure 8: Outfall 6 Discharge 7' below water on 3-13-09

The results of the 9/29/08 sampling data displayed abnormally high values at outfall #006 for nitrogen. WBS theorizes that the nitrogen is sourced from material handling and storage operations. The current investigation revealed that stored materials

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had come into contact with rainwater immediately upstream from the inlet to outfall #006 due to a contractor's poor truck loading practices. As a result, WBS has verbally reprimanded the contractor responsible for the off site material loading and delivery and instructed them on proper cleanup and maintenance procedures which are in accordance with our SWPP plan. Furthermore, WBS has made additional efforts to block any tainted storm water from entering outfall #006 by enhancing a small diversion berm upstream of the inlet to outfall #006. The water will now be required to pool and evaporate.

Outfalls #006 and #007 remain the most difficult outfalls to improve. Due to their locations, complete sealing of the outfalls to eliminate the discharge is not a practical solution because they are currently responsible for draining water that would otherwise collect under and around our material handling systems. Investigations of mechanical separation of discharge water at outfalls #006 and #007 were not productive. The current dock location and method of dock construction introduces severe difficulty in implementing mechanical systems. The dock was constructed by placing fill material over sunken and anchored river barges. As a result, there are no practical methods of excavating in the area of the riverfront without encountering either the barges or materials used to anchor those barges. Passive treatment devices such as septic tanks, or other gravity based methods would also be difficult to install near the existing outfalls for the same reasons. Finally, the expected maintenance, installation, and operating costs may make these types of installations cost prohibitive. Passive filtering devices such as the silt fence installed on outfall #006 do work to reduce suspended solids, and their maintenance is relatively simple, but they do not affect dissolved materials which contribute to nitrogen loading.

WBS will continue to monitor the targeted outfalls to see what kinds of impacts result from the completed installation of additional controls. It is hoped that the improvements will eliminate the need for further changes and meet the requirements of our NPDES permit. SSS, Inc. appreciates the opportunity to comment on NOV #NER2009012914015046 and to explain steps taken by the facility to resolve the offending discharges.

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If you have any questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

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RECEIVED
FEB 25 2009
Northeast Regional Office

2-20-09

Mr. Brant Farris
1709 Prospect Drive
Macon, MO 63552

Re: SSS, Inc. NOV #NER2009012914015046

Mr. Harris,

On February 6, 2009 the offices of SSS, Inc. received a notice of violation #NER2009012914015046 regarding discharges in violation of effluent limits established by NPDES permit #MO-0127132. In the Department's letter your offices noted each outfall violation and the permit's associated limits. The Department recognized that the causes for non-compliance were explained in a letter submitted with the discharge monitoring reports, but the NOV further requires that SSS, Inc. explain what steps will be taken to eliminate future violations. Included in this letter is an initial explanation of the steps that will be taken in order to eliminate or reduce violations of our NPDES permit.

First, I would like to ask the Department to recognize that on 9/4/2008 several water samples were obtained at our facility. The rainfall event that prompted the sample resulted in multiple excursions from the limits established in the NPDES permit. This rainfall event was a two day event that resulted in 2.5 inches of rain on 9/3 and 1.3 inches of rain on 9/4, in two major cloudburst actions. The intensity of the rainfall event during its duration was likely in excess of the average intensity of a 25yr-24hr storm of .23 inches per hour. This rain event also caused many local creeks to flood. Such major rain events result in much more material being suspended and carried in the local water flows. Secondly, I would like to offer that the facility voluntarily resampled its outfalls to determine if they were in compliance during a follow up storm event and to more accurately determine the best methods to reduce our impact on the environment. What the follow up samples were intended to show was the dramatic *reduction* in the effluent discharge values from the offending outfalls. In nearly every case, the outfalls that showed excursions had dramatically reduced levels of pollutants in the follow up sample and many were shown to be in compliance with their daily effluent limits for the storm water discharge. The reductions were due to both a reduced rainfall amount as well as better cleanup of the concrete material storage pads and drainage areas at outfall #7. The Department chose to highlight the fact that the DMR samples not only violated the daily

maximum values but averaged effluent results and demonstrated that monthly average limits were also violated.

After reviewing the outfalls most susceptible to violations, SSS, Inc. will be conducting an ongoing investigation into how to reduce or eliminate future violations of the NPDES permit. The investigations will focus on several areas. The first will be to see if better clean up practices can be implemented into the SWPPP in order to reduce storm water contact with offending materials. Secondly, SS, Inc. will investigate the possibility of rerouting storm water or diverting storm water around the problem outfalls. SSS, Inc will also investigate what mechanical separation or filtering devices are available that can be implemented cost effectively to reduce the number of excursions at the facility. Finally, SS, Inc. will investigate eliminating all point source discharges from the facility through regrading, pouring concrete, or some other method which would eliminate the uses of pipes and confined channels for our discharges.

Though the Department may not recognize our progress we have succeeded in reducing the number of excursions at our facility in the past two years, by following the aforementioned steps. Outfalls #2, #5 were recognized as sheet flow outfalls in our newest NPDES permit and eliminated. Outfall #4 was plugged to prevent discharge. Outfall #9 has been blocked, though it was not removed from the NPDES permit it will likely not flow except in rare occasions. Outfall #10 is a no discharge outfall under normal circumstances. The only reason it was sampled last period is because the impoundment water level had to be lowered below its normal level by pumping, and water samples were obtained and reported for this discharge. Outfall #11, while still in place, will not likely have any more reports because the facility has rerouted the water that used to pass though #11 to outfall #15. SSS, Inc. continues to work to find ways to fulfill the ultimate goal of the NPDES program-eliminating facility discharges.

After reviewing all of the SSS, Inc. outfalls, it is evident that each outfall has faced particular difficulties, but there are only a few problem outfalls remaining. Resolving discharge variances with the NPDES limits will be more arduous at the remaining outfalls. Outfall #1 has problems primarily with TSS and aluminum, but has also had excursions in nitrate, ammonia, and phosphorus. Outfall #6 is a pipe discharge that primarily has problems with ammonia, TSS, and COD. Outfall #7, a pipe discharge point, has significant problems with nitrate, TSS, aluminum, phosphorus and COD. Outfall #8, a ditch flow, primarily has problems with TSS, and aluminum, with

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occasional problems with nitrate and ammonia. Outfalls #12, #13, #14, #15 are remote quarry outfalls and are only likely to experience TSS excursions during large rain events. They monitor the property perimeter and show that activities on the quarry property are not impacting our neighbors. If these latter outfalls do experience an excursion, it is likely evidence of background pollution from natural runoff processes.

SSS, Inc. will investigate outfalls #1, #6, #7, and #8 for ways to improve or eliminate discharges as discussed above. SSS, Inc. will submit an additional written report explaining the result of our investigation by March 31, 2009. The report will either explain what courses of action were taken to improve the discharge from the outfall or will propose alternative courses of action that SSS, Inc. will discuss with the Department to obtain improved discharge quality.

SSS, Inc. appreciates the opportunity to comment on NOV #NER2009012914015046 and to explain steps taken by the facility to resolve the offending discharges. If you have any questions or comments please feel free to contact me by phone or mail.

Sincerely,

Mr. Michael T. Stevinson
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S-S-S Inc

RECEIVED
OCT 27 2008
Northeast Regional Office

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October 20, 2008

Missouri Department of Natural Resources
Water Pollution Control Program
Northeast Regional Office
1709 Prospect Drive, Suite A
Macon, MO 63552-2602

Re: Bi Annual Discharge Monitoring report – Permit # MO 0127132

To whom it may concern:

Please find the Bi-annual Discharge Monitoring Report enclosed for site-specific permit # MO-0127132. This submittal covers the reporting period from April 1, 2008 through September 30, 2008 and includes the following:

- DMR for Stormwater flows
- Precipitation report for this period at SSS, Inc. This report provided by Minh Hoac, Environmental Specialist for Hercules, Inc. located 1/2 mile south of our facility.
- Explanations for noncompliance.

This is the first DMR that falls under the renewed and modified NPDES permit. The new permit monitoring requirements removed outfalls 2, 4 and 5 from our facility. The new permit also modified the monitoring requirements for some of the remaining outfalls. A total of nine outfalls had observed discharges for the sampling period. The outfalls were checked for flow conditions multiple times during the months of the monitoring period. Outfalls were checked for flow conditions on 7/24, 9/3, 9/4, 9/8, and 9/29. Rainfall events initiated the observations. Six of the nine outfalls sampled experienced an excursion in at least one parameter during the observation period, though on more than one occasion the excursion was on the monthly average and not on the daily maximum. This observation period also experienced major flood conditions on the Mississippi River and its tributaries. The flood conditions resulted in several of the discharge points being inundated and river sediment being placed along our entire riverfront area, it is likely that the flood may have impacted some of the test results especially the solids concentrations. The river peaked in late June at the third highest level in recorded history.

Outfall location #001 experienced for total suspended solids and total phosphorus on 9/4/2008. The TSS was 880 mg/L and the total phosphorus was 1.1 mg/L. The sample was obtained after massive rainfall amounts which resulted in a higher than average sediment load. The phosphorus was just 0.1 mg/L out of compliance. The outfall returned to compliance on 9/5/08 when it ceased to flow. A follow up sample resulted in a greatly reduced total suspended solids number of 69 mg/L, while still being an excursion this represents a significant reduction of effluent contaminant. As with all outfalls, a limit of 50 mg/L for a stormwater event is very difficult to achieve.

Outfall location #006 experienced effluent excursions for chemical oxygen demand and ammonia as nitrogen on a 9/29/08 sample. The ammonia result was abnormally high at 1600 mg/L. The result is likely attributed to runoff from either urea storage or ammonium nitrate loading operations. Please note that this level is many times what has normally been found at this outfall. WBS will schedule a follow up sample at the earliest opportunity. This outfall was flowing at three gallons per minute at the time of sampling and ceased discharge shortly after the sample was taken. Additionally please consider that this outfall discharges into a receiving stream with a nominal flow rate of 37 million gallons per minute, our flow represents a .000008% contribution to the overall flow from this outfall.

Outfall location #007 experienced effluent excursions from total suspended solids, settleable solids, chemical oxygen demand, nitrate as N, total phosphorus, and total aluminum from samples obtained on 9/4 and 9/29. The initial samples were taken during heavy rainfall events. On 9/4/08 the total suspended solids were 2k mg/L, settleable solids were 1.9 mg/L, COD was 1k mg/L, nitrate was 12 mg/L, total phosphorus was 4.2 mg/L, and aluminum was 9.2 mg/L. Provided the very small watershed of this outfall it returned to a "no discharge" status on 9/5/08 and the evening of 9/29. A follow up sample taken on 9/29 showed greatly reduced values of total suspended solids and COD and compliance values for total phosphorus and aluminum. Flow at the time of the initial sample was 30 gpm or .00008% of the receiving stream and the follow up was 0.5 gpm. The suspended solids excursions are from the suspension of particulates washed to the outfall from our concrete unloading area and from the surrounding conveyor belts. The accompanying analytical values are the result of testing for total concentrations of those elements in the particles suspended in the water samples. The watershed for this outfall is typically swept clean after use, however there will remain trace amounts of material on the concrete and on the conveyor frames that affect the water samples in a negative manner.

Outfall location #008 had an excursion on 9/4 and 9/29 for total suspended solids of 82 mg/L and 120 mg/L respectively. This excursion is due to typical storm delivery of surface sediment in storm runoff. All other parameters passed at this outfall. The outfall stopped discharging shortly after the end of the rainfall events. This outfall receives runoff from a steel storage yard with gravel surfacing, the surfacing material is erodible and is likely responsible for the excursion.

Outfall location #009 had an excursion on 7/24 and 9/4 for total suspended solids of 250 mg/L and 59 mg/L respectively. This excursion is due to typical storm delivery of surface sediment in storm runoff. All

other parameters passed at this outfall. The outfall stopped discharging shortly after the end of the rainfall events. This outfall receives runoff from a small entrance area to two enclosed storage buildings. The outfall ceased discharge shortly after the sample times.

Outfall #010 had the first sample ever taken done during this period. The outfall did not experience a normal discharge. The outfall acts as a settling basin for quarry operations. Certain planned quarry operations were expected to have an impact on the water volume in the settling basin, as a result it was determined to lower the water level by pumping in order to eliminate any discharges that might occur due to reduced sediment volume. The test results are from the pumped water. As seen on the attached DMR, total suspended solids and COD were slightly elevated. Normal fall pond turnover and detritus material are likely responsible for the elevated numbers. After the reduced water level target was reached, discharging ceased. It is not likely that this pond will experience a typical stormwater discharge, as it does not normally discharge by itself due to the high volume of storage available in relation to its watershed.

The remaining quarry outfalls 012, 014, and 015 did not experience any excursions. These outfalls monitor the stockpile areas and runoff from mined areas of the quarry. The outfalls are located on the property boundaries to monitor our mining effects on adjacent properties. Outfalls 003,011,013 had no observed discharges.

This DMR represents the first DMR submitted under the newly revised operating permit. It is anticipated that the amount of excursions under the new permit will be reduced from past DMRs. If you need anything further, please feel free to contact me by phone at (573) 754-4566 or by mail at the address provided below.

Sincerely,

Mike Stevinson
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SSS, Inc.
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Pike

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MO-0127132

RECEIVED
APR 13 2009
Northeast Regional Office

4-9-09

Ms. Irene Crawford
Missouri Department of Natural Resources
Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552

Re: 4-3-09 Letter of Warning Response Letter
Per Inspection of Darryl McCullough

Ms. Crawford,

This letter is being submitted in response to the Letter of Warning issued April 3, 2009 to the offices of SSS, Inc. with regards to certain "unsatisfactory features" found during your Department's site inspection. The Department's Letter of Warning requested information to be submitted by April 24, 2009 explaining the company's actions to resolve the "unsatisfactory features" found at the site.

Unsatisfactory feature #1: Outfall failed to be clearly marked in the field.

Action: Outfall markers were replaced by 3/16/09 as can be seen in Figure 2.0 in the SSS, Inc. response to NOV NER2009012914015046. For the Department's convenience, the same figure is also included in this document as Figure 1.0. In order to avoid loss of markers by theft or accidental dislodging, they will be driven deeper into the ground.

Unsatisfactory feature #2: Failure to conduct monthly site inspections.

Action: Monthly site inspections are being conducted and recorded per the company NPDES permit. It should be noted that visual site inspections are part of daily operations; unfortunately there was a failure to insure that the inspections were recorded in a timely manner. It should also be noted that written records were properly recorded for the previous twenty-seven month time period, and were available for review, at the time of the inspection. Finally, it should be noted that during the Environmental Assistance Visit conducted without prior notice on September 28, 2008 that these inspection records were found to be in proper order.

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Unsatisfactory feature #3: Failed to Maintain BMP's

Action: BMP's have been repaired and improved as shown in the SSS, Inc. response to NOV NER2009012914015046 submitted to the Department on 3/16/09. It should be noted that outfall #1, still did have a functioning silt fence, and both settling areas were still functioning. Only a small portion of the initial silt fence had been undermined, as reported during the inspection.

With regards to the inspector's "recommendations", SSS, Inc. has already examined different methods to increase compliance with the effluent limitations which are imposed by the NPDES permit. Many of these issues were discussed in detail and can be found in the SSS, Inc. response to NOV NER2009012914015046 submitted to the department on 3/16/09. In that response you will see that several suggestions made by the inspector during his visit have already been implemented.

Figure 1: Outfall #8 Silt fence

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If there are any additional questions or comments please feel free to contact me by phone at 573-754-4566 or conventional mail at the address below.

Sincerely,

Michael T. Stevinson

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Appendix II – Summary of the initial conditions at the facility regarding Best Management Practices.

The following pages are intended to show the BMPs (both physical and operational) that were in use at the time this fact sheet was drafted. These BMPs are expected to change as conditions at the site change, according to permit requirements. These specific BMPs do not necessarily represent minimum requirements of the permit and are merely the means to fulfill the effluent limitations as embodied in the numeric and narrative conditions contained within the permit.

The following description of the facility's Best Management Practices were obtained from the June 2011 version of the Stormwater Pollution Prevention Plan. This will be considered the initial conditions at the facility by which future changes can be compared.

5.0 BEST MANAGEMENT PRACTICES

Storm water management controls, or best management practices (BMPs) will be implemented where practicable to reduce the amount of pollutants in storm water discharged from the site. The site will utilize two primary types of controls, source area controls and structural controls. These two controls are designed to work together to protect the receiving waters of the United States. This SWPPP is designed to monitor and evaluate the best management practices that are in place for the site and, if necessary, suggest improvements. The following sections describe the facility source area controls. Sections in 5.2 describe structural controls.

5.1 SOURCE AREA CONTROLS

Source control involves minimizing the generation of excessive runoff and pollution of storm water at or near its source. To the extent practicable and cost effective, the use of source area controls and best management practices are used to control runoff at the site.

5.1.1 PREVENTIVE MEASURES

The site utilizes a variety of preventive measures to prevent storm water contamination. Among the preventive measures is the use of locks and signage in the tank farms and warehouse so that only appropriate personnel have access to the diesel, gasoline, and stored chemicals at the site. When possible, barrels are also stored under roof wherever possible so that fugitive storm water can not come into contact with any contaminants located on or around the barrels. Bulk tank farms are located within active secondary containment systems so that storm water cannot discharge from the site without being examined for visible contamination. The riverfront area of the site is monitored with closed circuit security cameras, and sensitive areas controlled by gating and fences. The quarry site is gated and locked when not in use.

5.1.2 GOOD HOUSEKEEPING

Good housekeeping practices are designed to maintain a clean and orderly work environment. This will reduce the potential for materials to come into contact with storm water. An example would be the clean up of material spilled during bagging operations at the number five system near the riverfront, during multiple periods during the day. With the contaminated material that is swept up being containerized so that it can be returned to the manufacturer for recycling. The following practices are included in our good housekeeping routine.

GOOD HOUSEKEEPING		
AREA	TASK	FREQUENCY
Tank Farms	Pumping Storm Water Pit	When needed
Mobile Equipment Shop	Sweep Shop	When Needed
Riverfront	Clean up at #1 Dock	After Operation/ when needed
Riverfront	Clean up at other Docks	After Operation/ when needed
Mobile Equipment Shop	Catch Pans	Whenever needed
Tank Farms	Keep Fill Nozzles In Holders	Whenever Needed
Crusher /Quarry	Maintain Clean Working Face	When Loading and Hauling
Warehouse	Adequate storage space for materials	Daily/When needed
Warehouse & Shop	Barrels and Materials Clearly Labeled.	As Required

5.1.3 PREVENTATIVE MAINTENANCE

Preventative Maintenance involves the regular inspection, testing, and cleaning of facility equipment and operational systems. These inspections help uncover conditions that may lead to a release of materials. The following equipment and activities are included in the preventive maintenance program:

PREVENTIVE MAINTENANCE		
EQUIPMENT	TASKs	FREQUENCY
Tank Farms	Check for Leaks and Drips	1/4ly by SPCC, when OP.
Riverfront #2 Crusher	Check for Leaks	Whenever Operated
Riverfront #2 Crusher	Clean up Spilled Material	As Required
Limestone Crusher	Check for Oil Leaks	Whenever operated
Limestone Crusher	Clean up Spillage and lime	As required
Warehouse	Check for Leaks	During Daily Routine
Mobile equipment	Check for Leaks/ Bad hoses	Before Startup and operation.
Tank Farms	Visually inspect for thin tanks, leaky fitting and pumps	Quarterly

5.1.4 MONTHLY SITE EVALUATION

The current NPDES permit requires a monthly evaluation of BMP's used to prevent contaminates in storm water runoff. Records of the inspections must be kept on file with the SWPPP. These inspections are to be kept as an appendix at the end of this document and, per the NPDES permit, are to be made available to the MODNR upon request. A member of the SWPPP team shall acknowledge in the records that source area BMP's are being observed.

5.1.5 SPILL PREVENTION AND RESPONSE PROCEDURES

Spill and leaks together are the largest cause of industrial storm water pollution. Thus, this SWPPP specifies material handling procedures and storage requirements for significant materials. In a separate SPCC plan, equipment and procedures necessary for cleaning up spills and preventing the spilled materials from being discharged. Employees have been made aware of the proper procedures, or have been directed to ask their supervisors before handling questionable materials.

SPILL PREVENTION AND RESPONSE PROCEDURES		
AREA	MATERIAL PRESENT	RESPONSE PLAN LOCATION
Tank Farm	Oil and Fuels	Engineering Office
Warehouse	Oil, Waste Oil, Lubricants	Engineering Office
Riverfront	Bulk Materials	Engineering Office
Quarry	Oil and Grease	Engineering Office
Mobile Equipment	Hydraulics, and Fuel	Engineering Office
Crusher	Hydraulics, Grease	Engineering Office
Quarry Transformer	Transformer Oil	Engineering Office
River Transformers	Transformer Oil	Engineering Office

5.1.6 EMPLOYEE TRAINING PROGRAM

The following is a description of the employee training programs to be implemented to inform appropriate personnel at all levels of responsibility of the components included in the SWPPP. The following table represents the minimum training guidelines to be implemented at the site. The storm water pollution prevention team is dedicated to training employees in pollution prevention whenever the opportunity presents itself. Since the team members are also front line supervisors for the site, pollution prevention can easily be integrated into the everyday direction of employees and the task training of new employees. Formal records of employee training will be maintained for the new hire training and the annual refresher training. Annual refresher and new hire training will include discussions on the requirements of permits,

the compliance with those permits, and other elements of the SWPPP. Topics covered may be housekeeping, preventive maintenance, and spill prevention and most of all the importance of the individual employee to be aware of their responsibility to prevent pollution while completing their work assignments. These training records will be retained for a period of three years. The Receipt of Training form is included as an appendix.

EMPLOYEE TRAINING PROGRAM		
TOPIC	EMPLOYEES INCLUDED	FREQUENCY
Housekeeping	All field personnel	New Hire & Annual Refresher
Preventive Maintenance	All field personnel	New Hire & Annual Refresher
Spill Prevention/ SWPPP	All field personnel	New Hire & Annual Refresher
BMP Inspection	Team Leaders and Members	Annually
Material Handling	Job Specific	When Required

5.1.7 BULK STORAGE PROTECTION

Bulk storage piles will be managed using best management practices that are appropriate for the material being stored. In some cases, such as salt, this means the material will be protected from stormwater by covering the entire storage pile, or by placing it inside buildings. These piles will be uncovered during times of adding to or taking away from the piles, but will remain protected from storm water to the extent practicable. Other dissolvable bulk materials that cannot be practically covered shall be isolated from storm water runoff through the use of storm water berms and conveyances to the extent practical. If diverting the water around the stockpiles is not possible, then the water shall be managed so that it shall not leave the property without passing through other site best management practices located at the outfalls. Sand and gravel, limestone or other products that are not easily dissolved will not be covered.

5.2 STORMWATER TREATMENT STRUCTURAL CONTROLS

Despite an operation's best efforts, structural control measures may still be necessary to control pollutants that are still present in the storm water after the non structural controls have been implemented. The site currently utilizes several types of BMP's to treat storm water runoff to reduce and manage contaminated storm water prior to discharge. The following sections describe structural controls that are used at the facility.

5.2.1 DIVERSIONS/BERMS

The site uses several diversions that channel storm water away from unauthorized discharge locations and directs the runoff through the sampling points. Diversions are also used in the quarry area to limit the discharge of water that is not controlled in a containment basin. Floor berms are also constructed around the mining areas, which limit the impact of mining operations to the immediate zone of mining.

5.2.3 CONTAINMENT

The site utilizes containment or settling ponds and sumps to allow settling time for particles before water is allowed to discharge from the property. Outfall 01 utilizes small constructed sumps, while other outfalls utilize settling ponds such as outfall 010, 015, and 012.

5.2.4 FILTERS

The site uses several different types of filters to improve water quality at the outfall. These filters include a geotextile filter fabric that can also absorb large quantities of oils. These products are sold under the trade name Ultra Pipesock or Ultra Trench Filter. Common silt fence is also used to control sediment. Gravel or sand check dams may also be used to improve water quality. The facility also uses straw bales or other temporary measures in especially in combination with reseeding efforts.

5.2.5 HICKENBOTTOMS

The site may utilize hickenbottom style inlet pipes to slow the water discharge through a pipe allowing for settling. These may be used in combination with a small settling area to form a dry dam. These hickenbottms and dry dams provide time for the solids to settle out yet and allow for a discharge of water so that no permanent impoundments are created. An example can be found upstream of outfall 016.

5.2.6 TARPS

The site uses tarps to prevent stormwater from coming into contact with materials. Tarps may also be used to prevent material contact with the ground from bulk materials, thereby enhancing the ease of cleanup operations. The primary use of tarp is for protecting customer salt pile from coming in contact with rainwater. The tarp covers the pile and is also

held in place by sandbags and sand piles along the toe of the tarp. The sand placed along the bottom edge of the tarp also minimizes the water undermining the pile. The pile is also graded before tarp placement so that the water will drain from the tarp and not collect in a pool on top of the salt pile.

5.2.7 SEEDING/VEGETATION

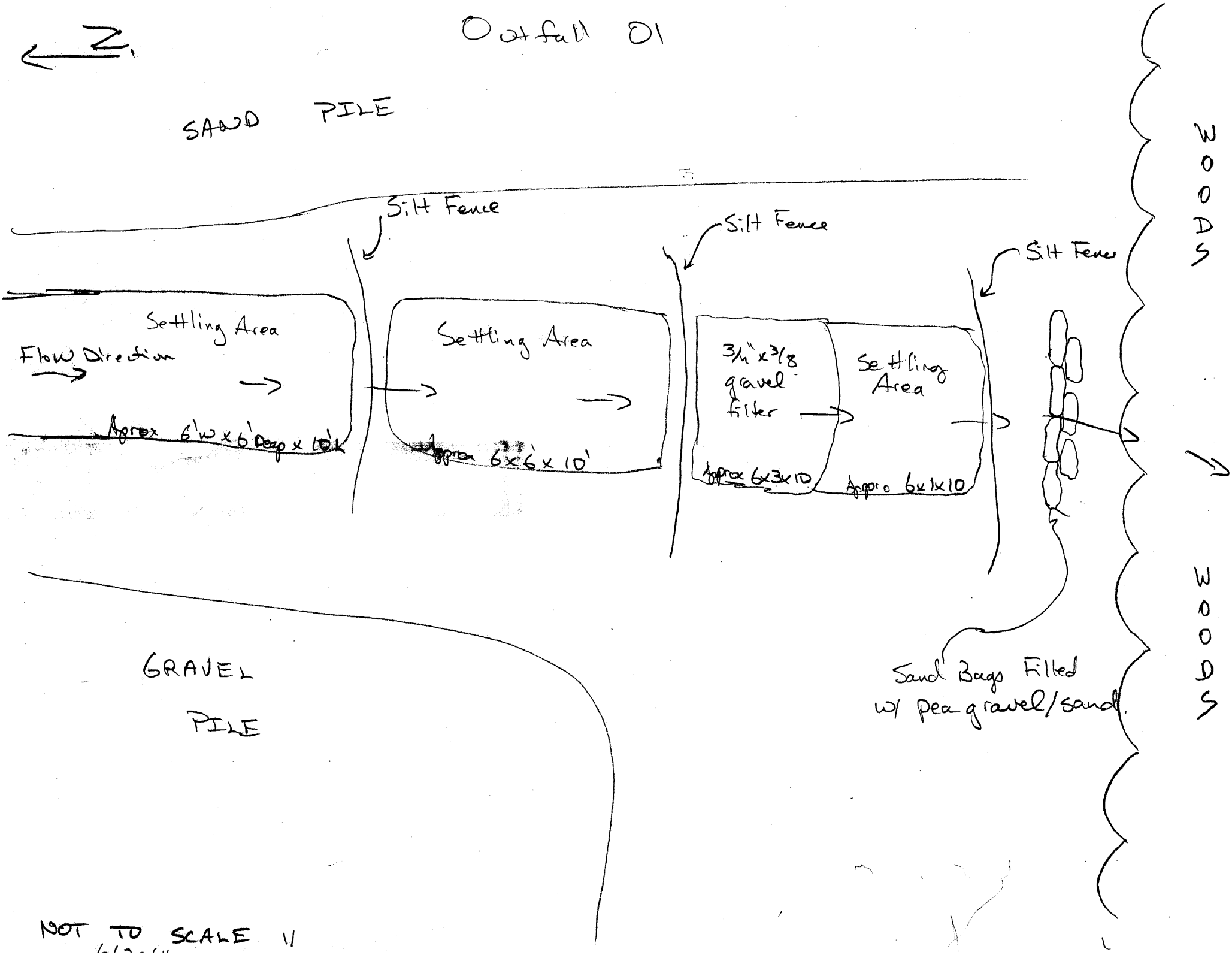
The site uses seeding and revegetation to establish a root system to reduce runoff of materials from bare soil areas that have been reclaimed or final graded.

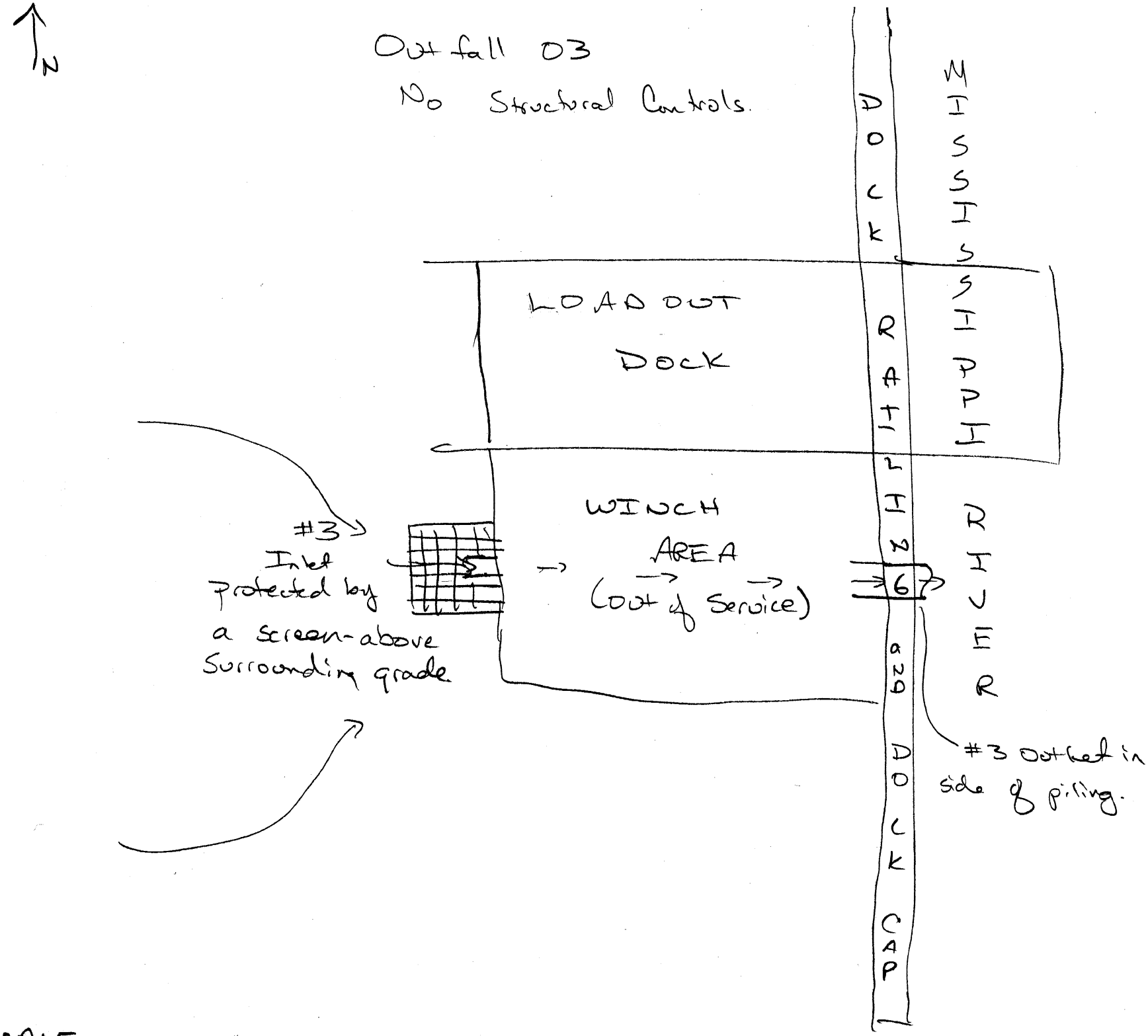
5.2.8 RECYCLING/EVAPORATION

The site may use evaporation areas to reduce the amount of water that may have come into contact with contaminates. This may be incorporated through the use of settling ponds, or pumps and spray systems. The primary evaporation area exists upstream of outfall 010. A large area of mined out floor contains variable amounts of water which acts as an evaporation area and as a settling area for the runoff from material storage areas.

Outfall #	Structural Controls at outfall point	Other Structural Controls in Basin
001	Dual settling basin, silt fences and gravel check dam	none
002	Outfall Eliminated	Outfall Eliminated
003	none	covered storage buildings
004	Outfall Eliminated	Outfall Eliminated
005	Outfall Eliminated	Outfall Eliminated
006	Hickenbottom style inlet on pipe, gravel check dam, fabric filter sock	expanded ditches to provided settling time
007	gravel check dam, silt fence, and fabric sediment filter sock on pipe inlet	none
008	dual silt fence barrier	none
009	silt fence and gravel check dam	covered storage buildings
010	settling pond	tarped storage pile of salt, berms
011	rerouted to outfall 15	none
012	none	berms on pit floor
013	none	none
014	none	berms on pit floor
015	settling pond	berms on pit floor
016	hickenbottom dry dam upstream of outfall	berms on pit floor

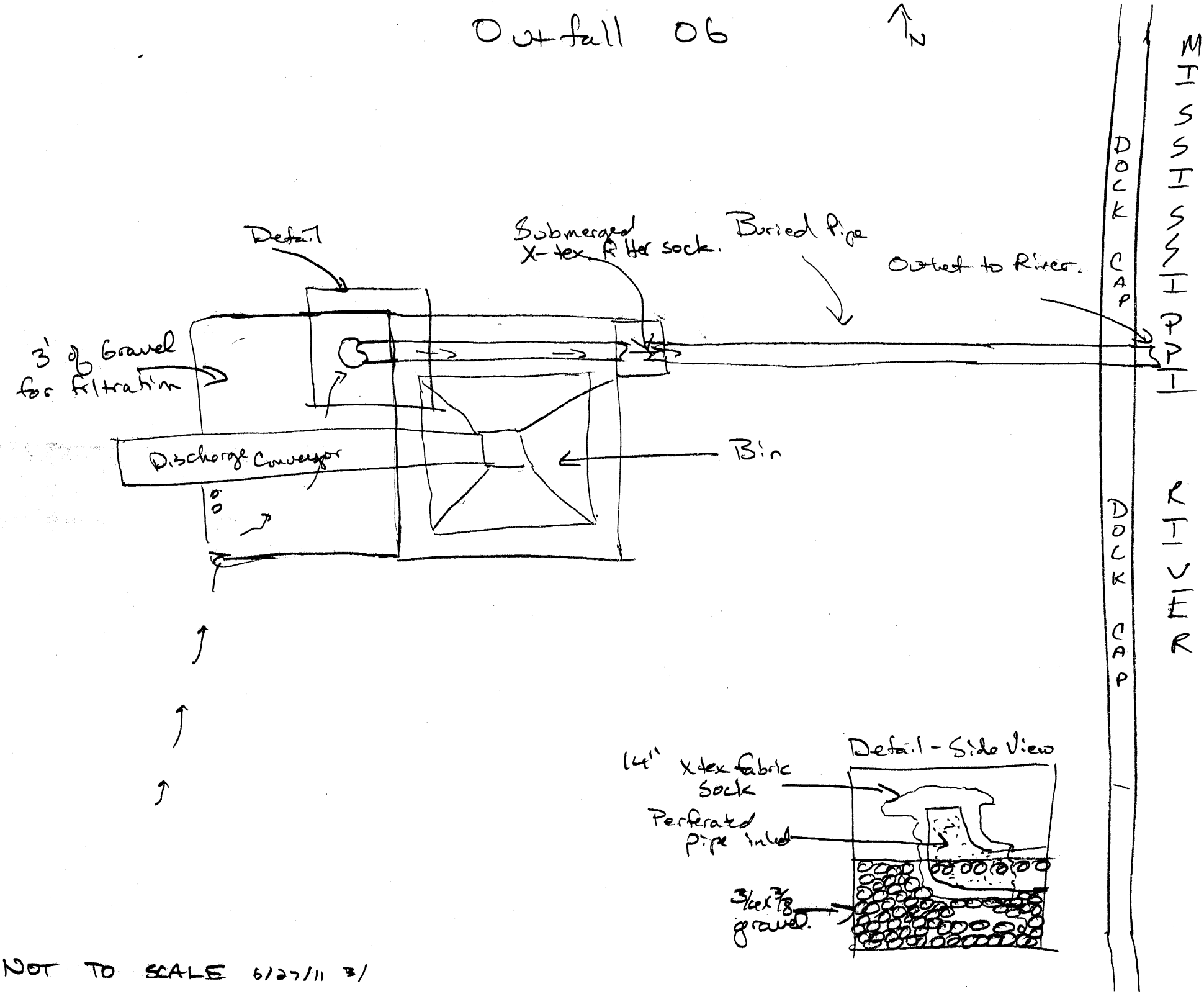
In addition, what follows are sketches of structural BMP's currently in use at the facility. This includes sketches of active outfalls and their structural controls as well as sketches of certain areas of the operation and details the various controls in those areas.


N
Outfall 01
SAND PILE
Silt Fence
Silt Fence
Silt Fence
Settling Area
Flow Direction
Approx 6'w x 6'Deep x 10'L
Settling Area
Approx 6x6x10'
3/4" x 3/8 gravel filter
Approx 6x3x10
Settling Area
Approx 6x1x10
WOODS
WOODS
WOODS
GRAVEL PILE
Sand Bags Filled w/ pea gravel/sand.
NOT TO SCALE



NOT TO SCALE 6/27/11 21

Outfall 06



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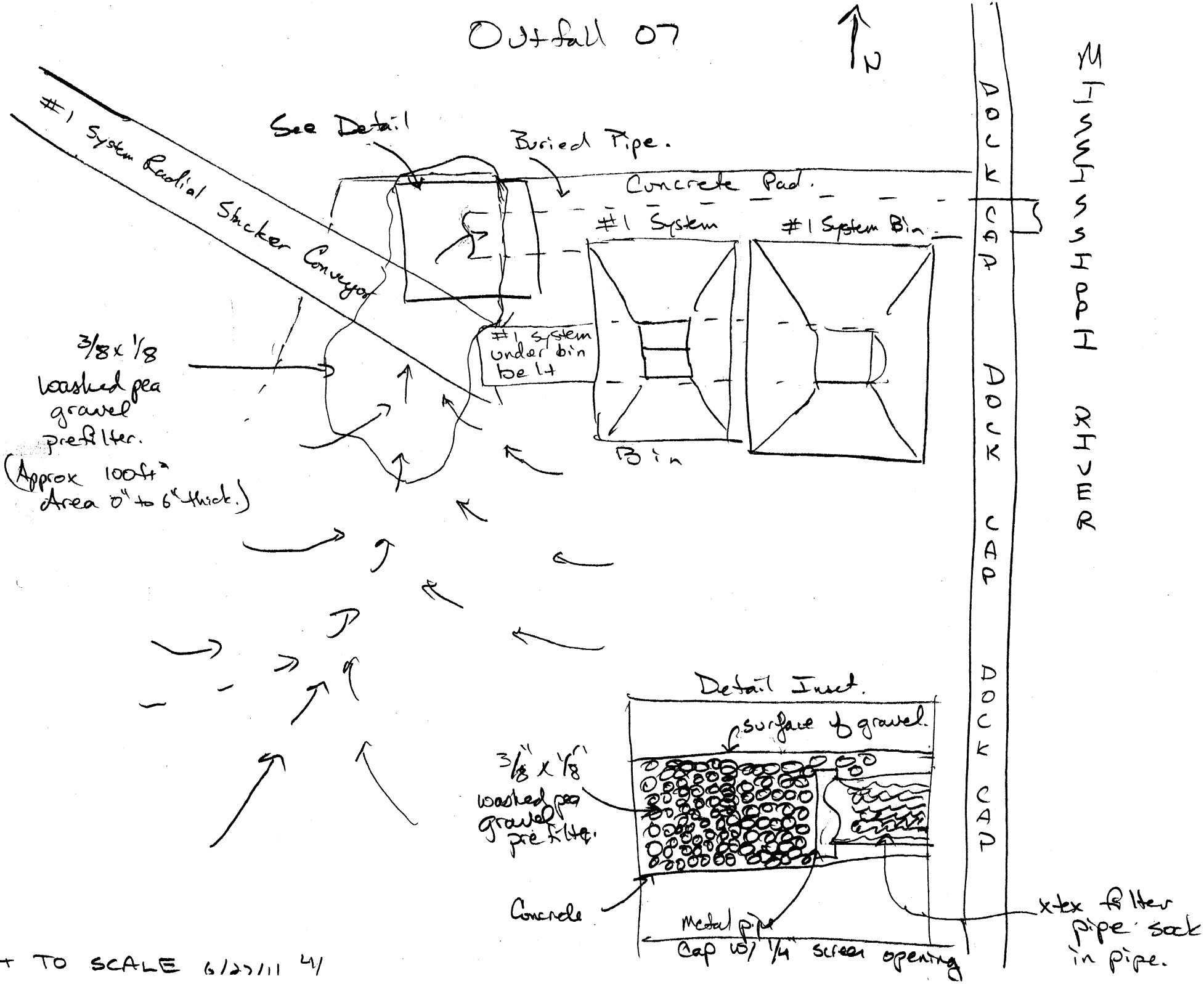
Outfall 07

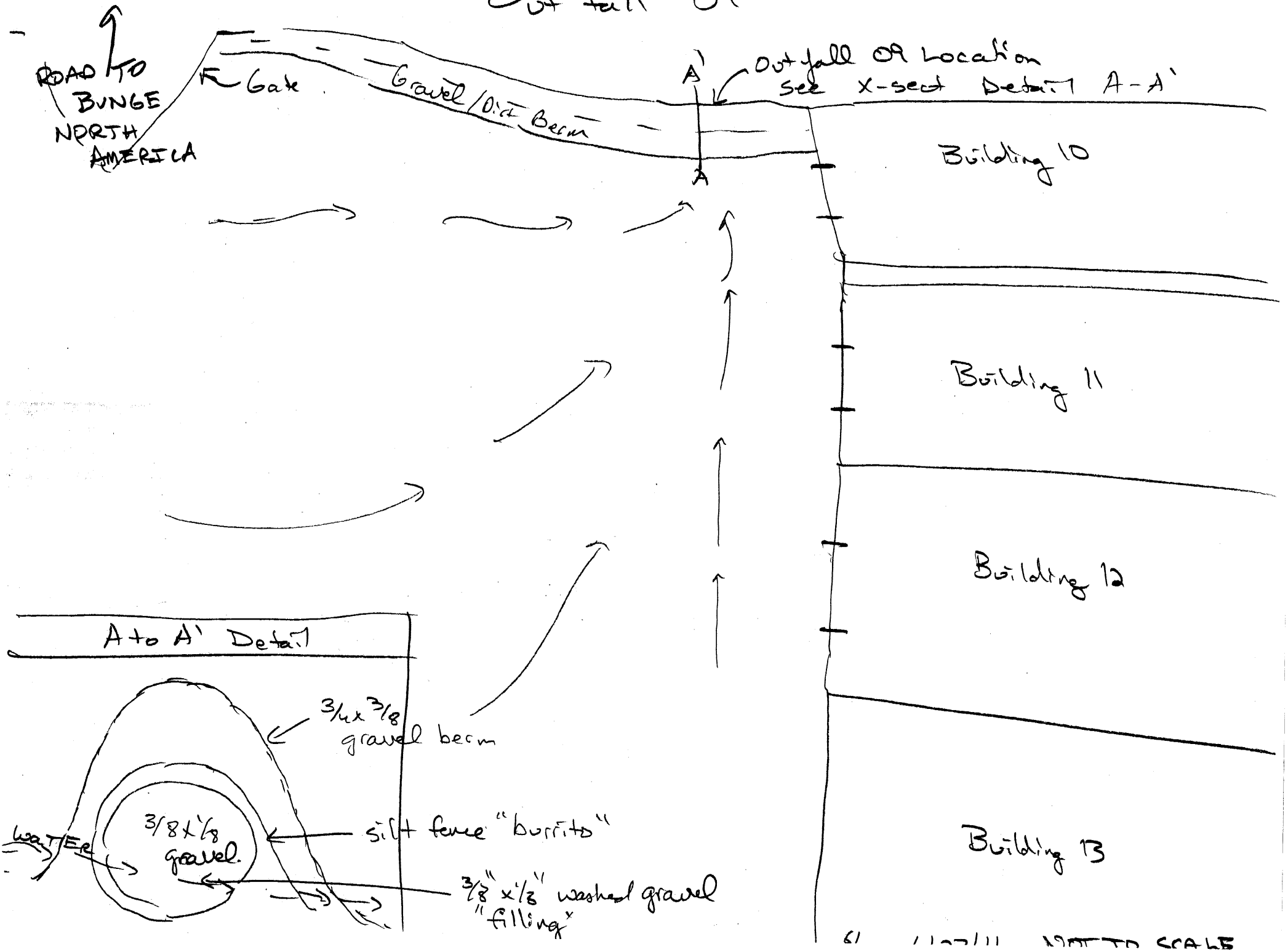


NOT TO SCALE 6/27/11 4/

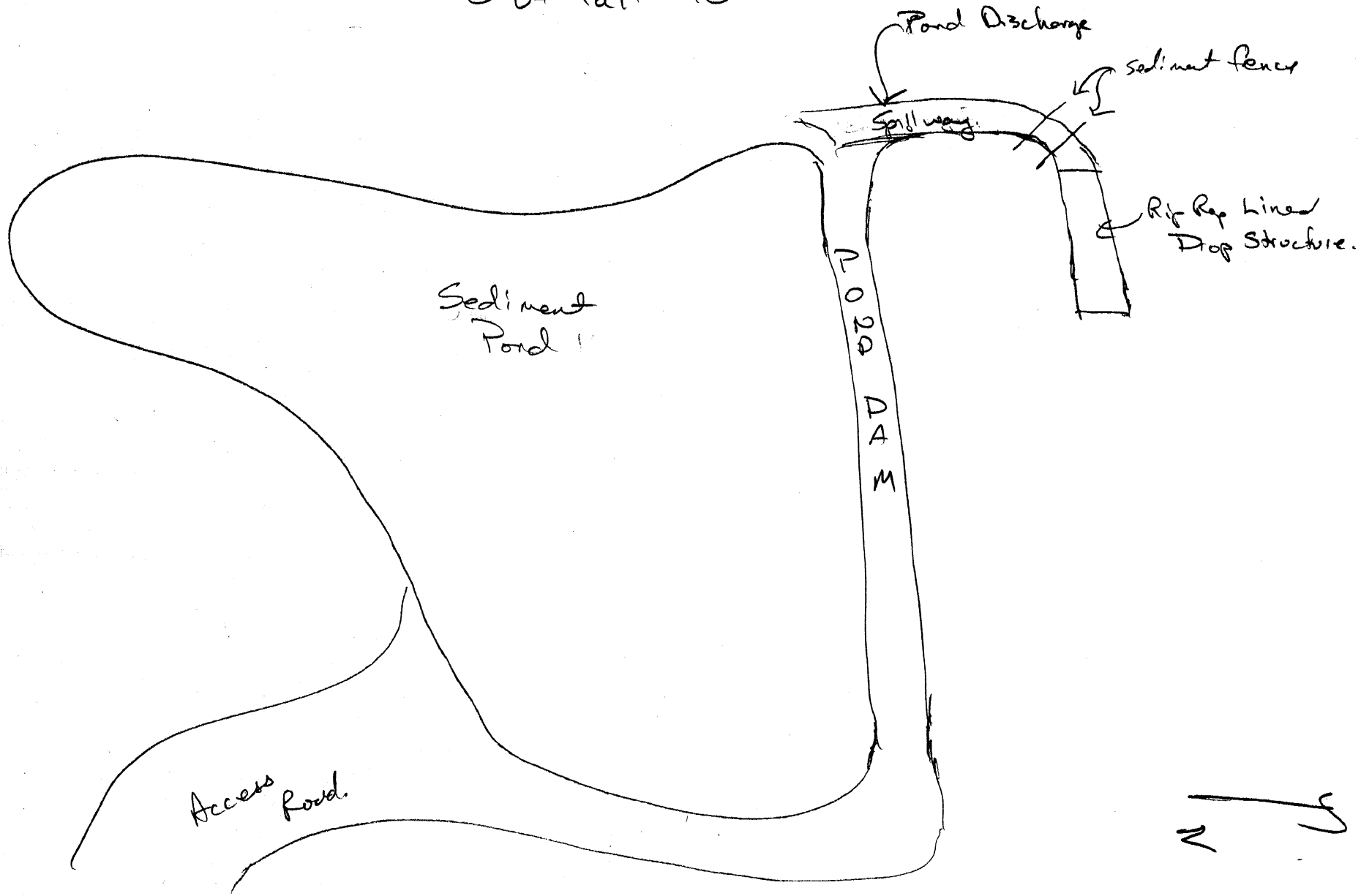
NOT TO SCALE

ACCESS RD
Steel Traydown Racks
ACCESS RD
Steel Storage Area Racks.
(Grass Filter Strips)
ACCESS RD.
Steel Storage Area.
Grass / Filter Strip
ACCESS RD.
SOCR BUILDING.
Outfall 02
Steel
Grass/Filter Strips
Storage.
Sand bags
Silt fence
Grass Filter Strips
Sand bags
Silt fence
N

Out fall 09

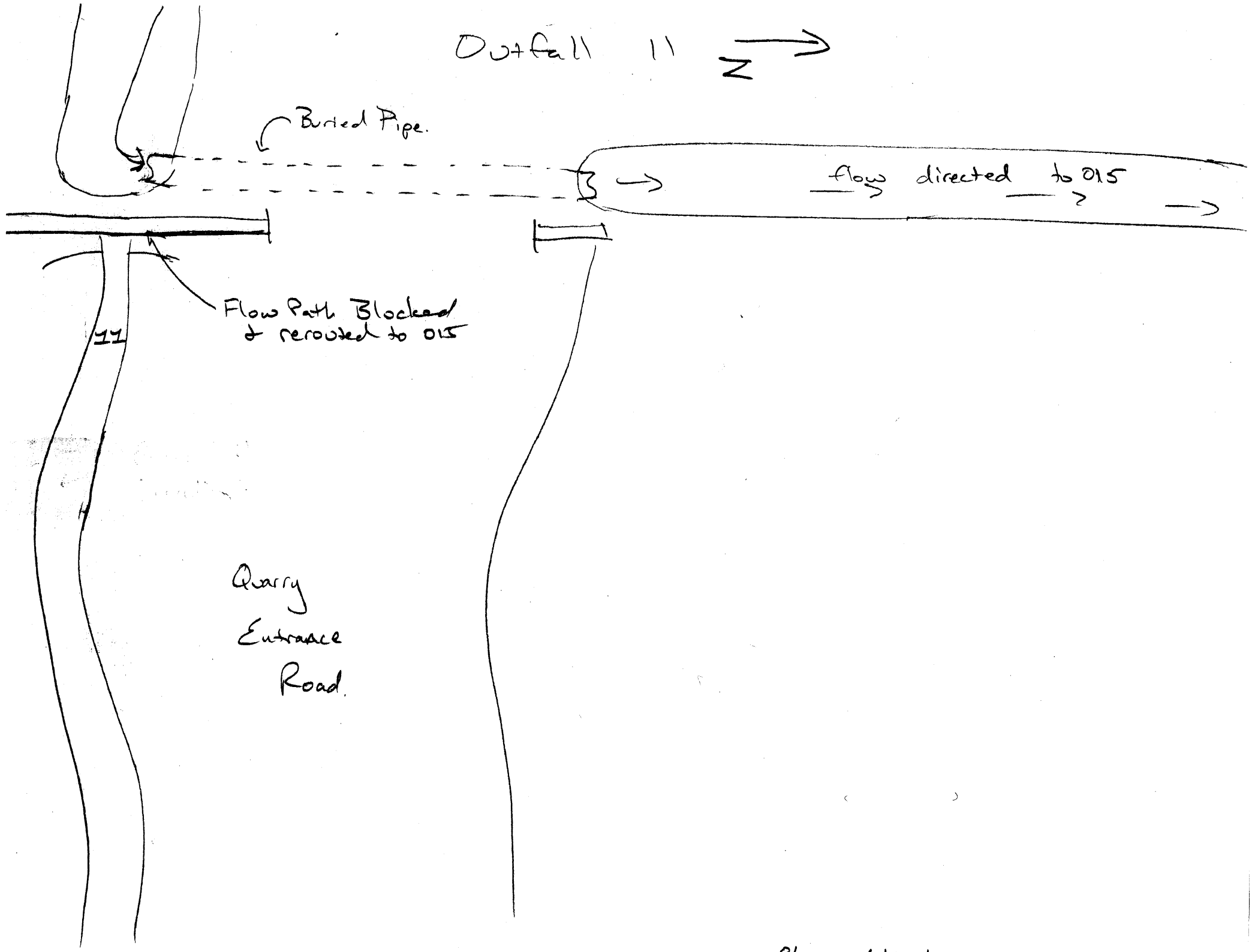

ROAD TO BUNGE NORTH AMERICA
Gate
Gravel/Dirt Berm
A'
A
Outfall 09 Location
See X-sect Detail A-A'
Building 10
Building 11
Building 12
Building 13
A to A' Detail
3/4x3/8 gravel berm
silt fence "burrito"
3/8x1/8 gravel
WATER
3/8" x 1/8" washed gravel "filling"

Outfall 10



* Note - spillway added to pond 4/2011 to remove emergency drawdown pipe

7/ 6/27/11 NOT TO SCALE



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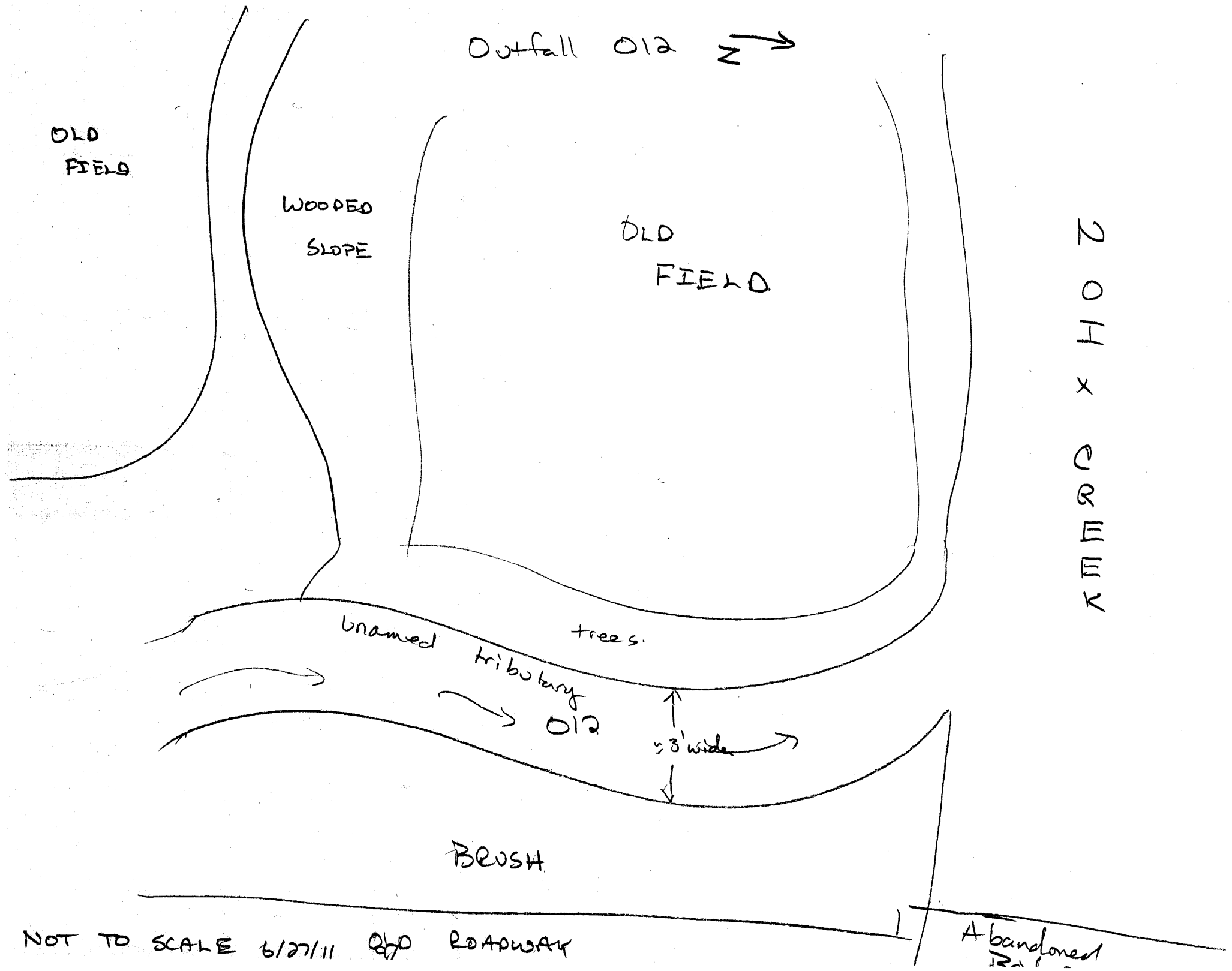
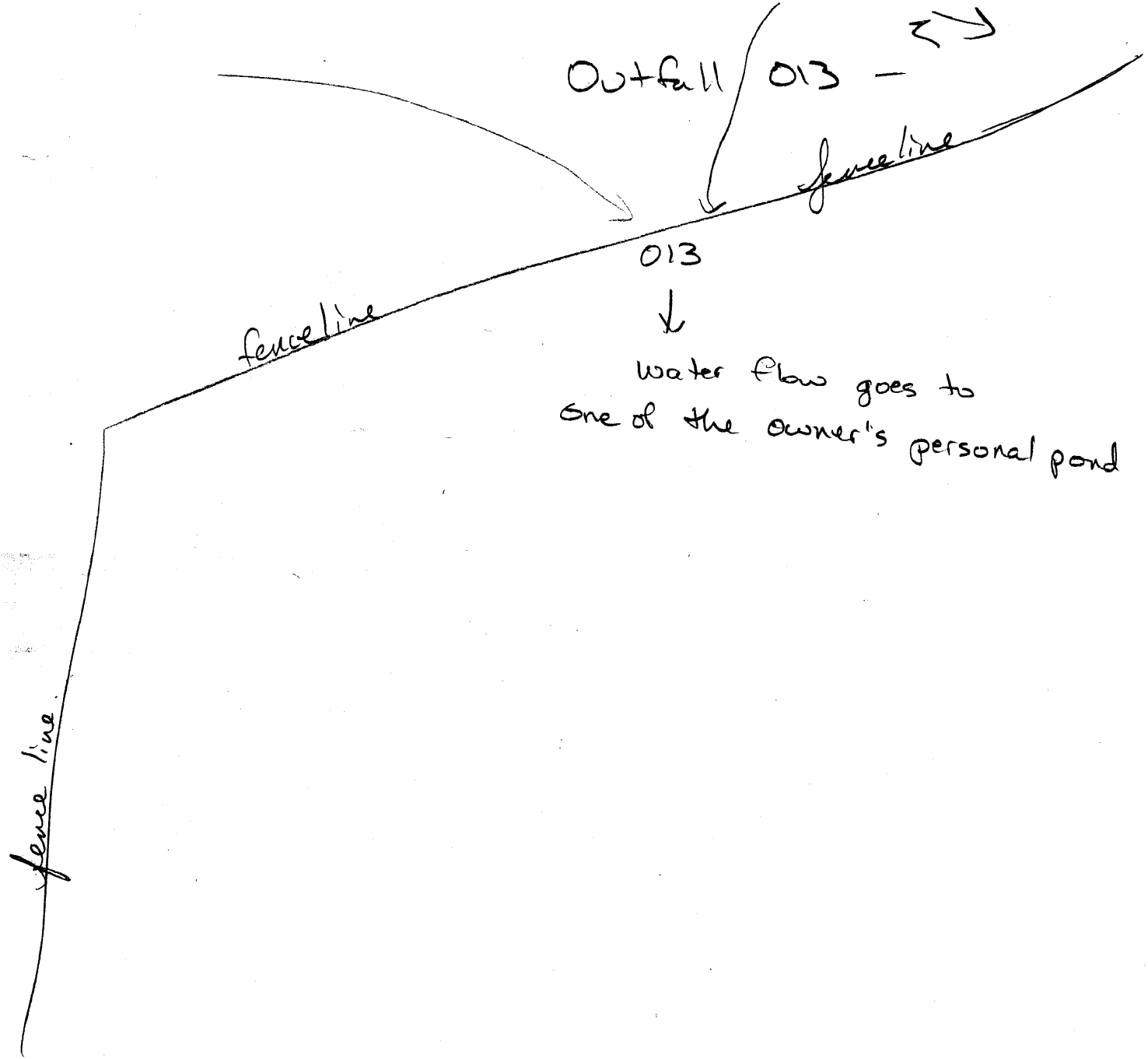
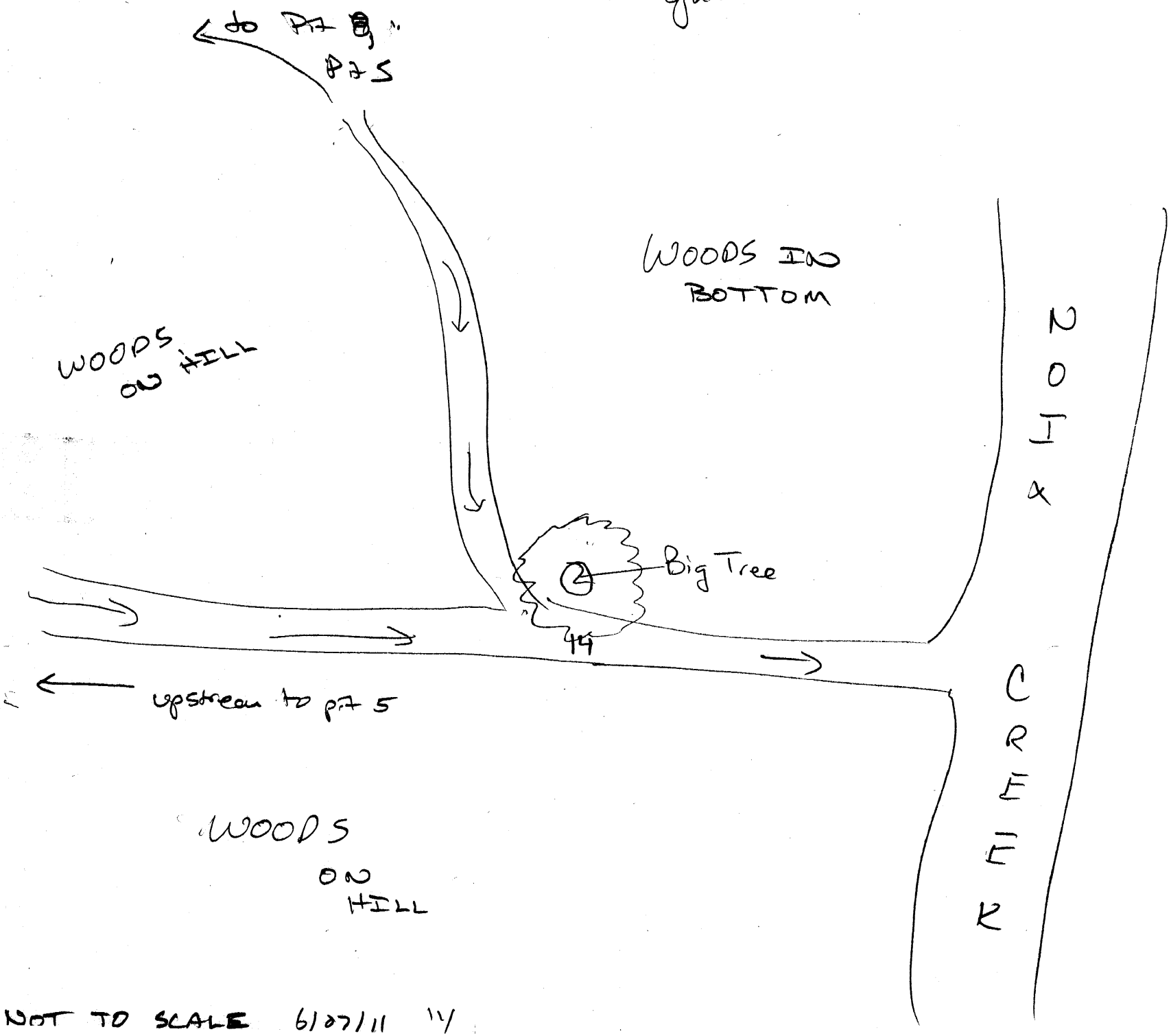

Outfall 012
N
OLD FIELD
WOODED SLOPE
OLD FIELD
NOIX CREEK
trees.
unamed tributary
012
~3' wide
BRUSH
NOT TO SCALE 6/27/11
Old ROADWAY
Abandoned



* This outfall is not located in a confined and discrete conveyance

NOT TO SCALE 6/27/11 10/

Out fall 014



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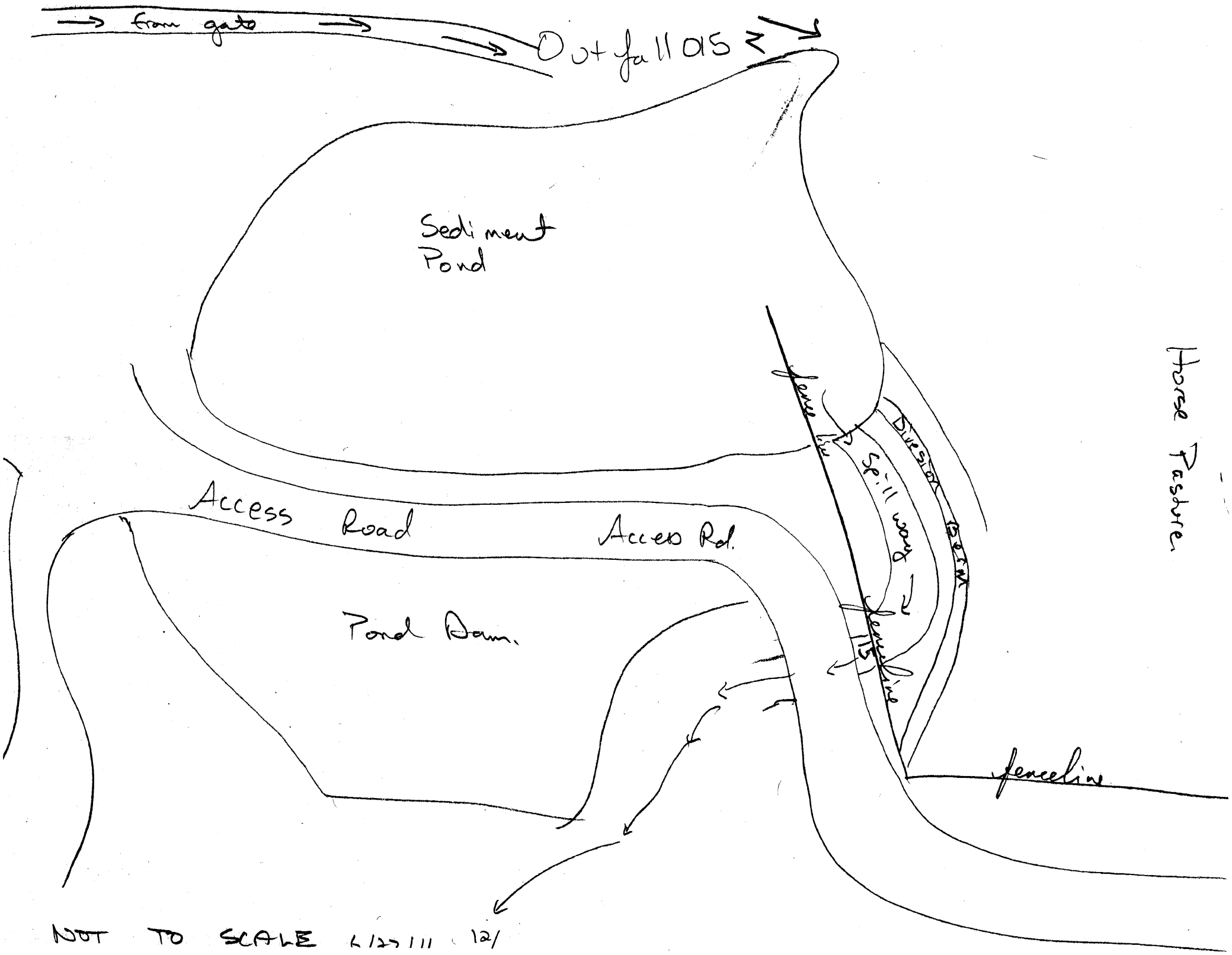

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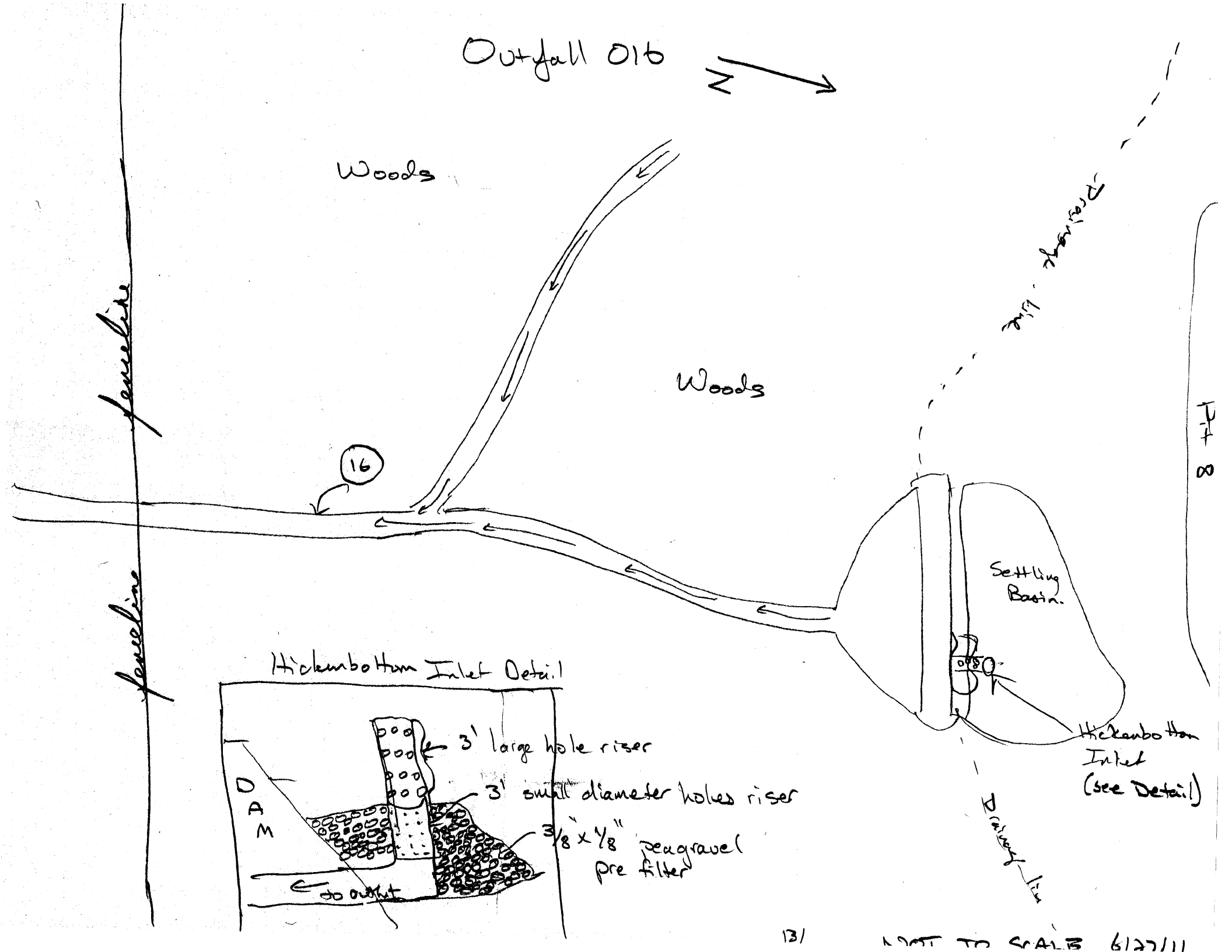
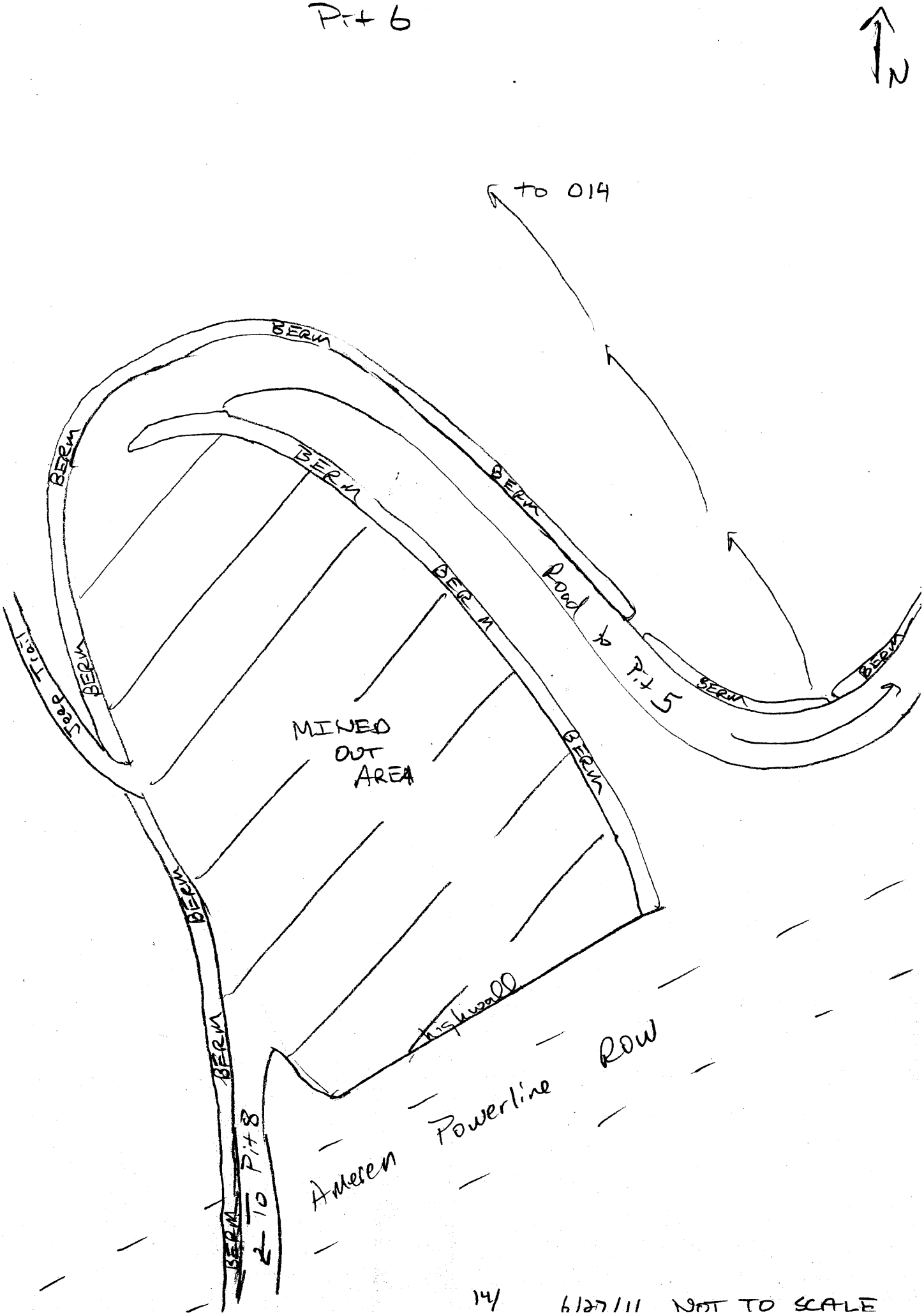

Outfall 016
N
Woods
Woods
fenceline
fenceline
16
Settling Basin
Hickenbotham Inlet (see Detail)
Hickenbotham Inlet Detail
3' large hole riser
3' small diameter holes riser
3/8" x 1/8" peagravel pre filter
DAM
to outlet
NOT TO SCALE 6/27/11

Pit 6



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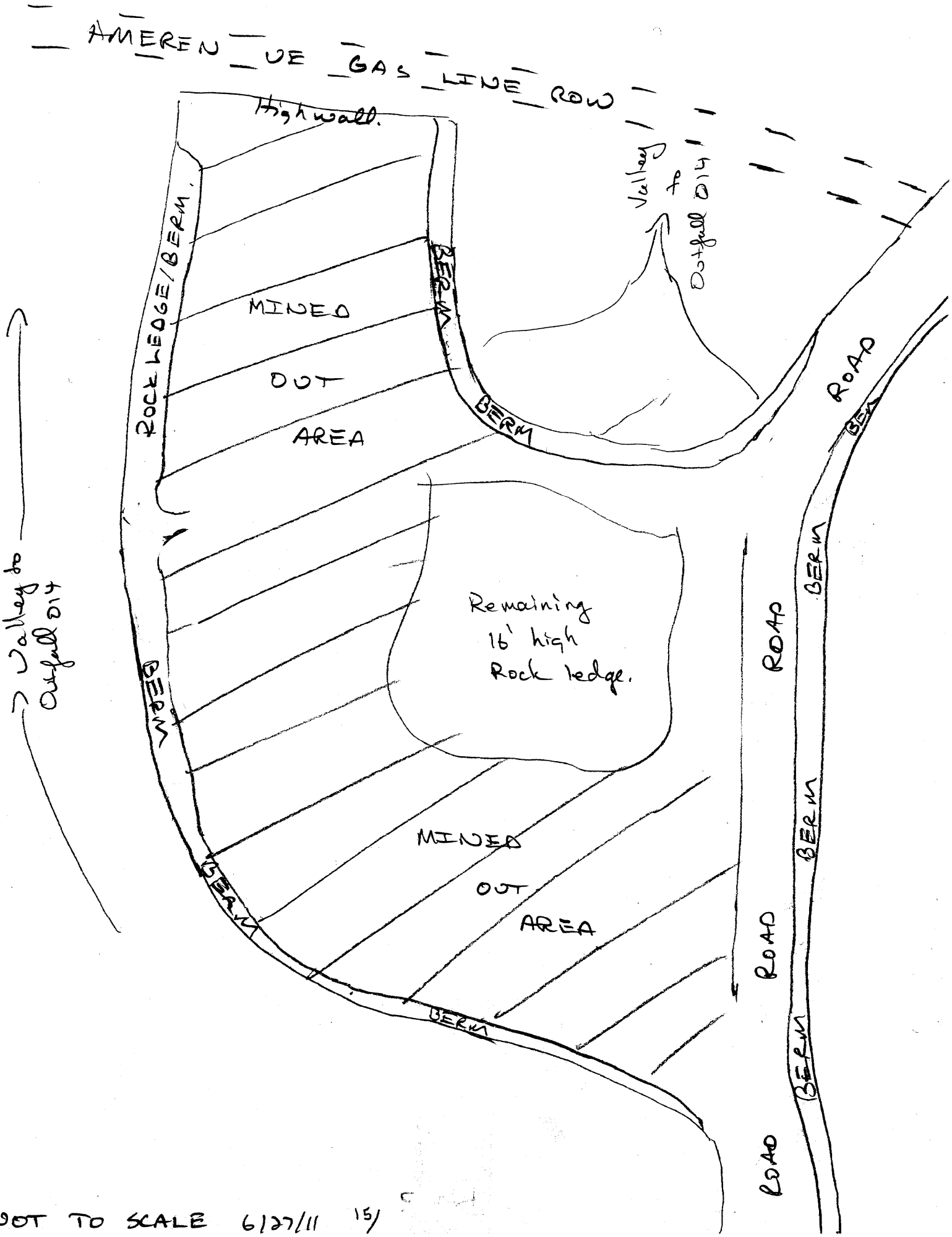
Pit 5



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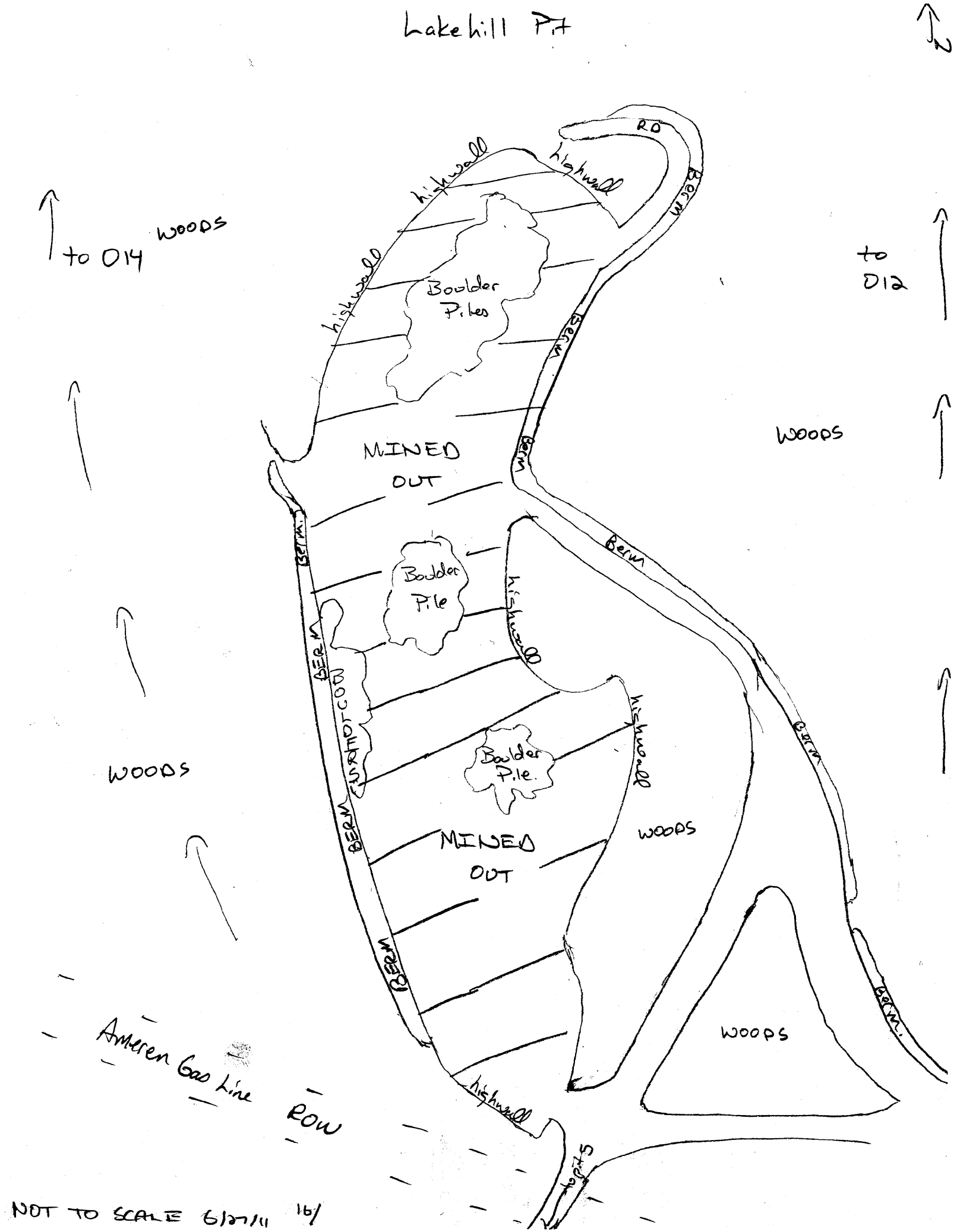
Lakehill Pit



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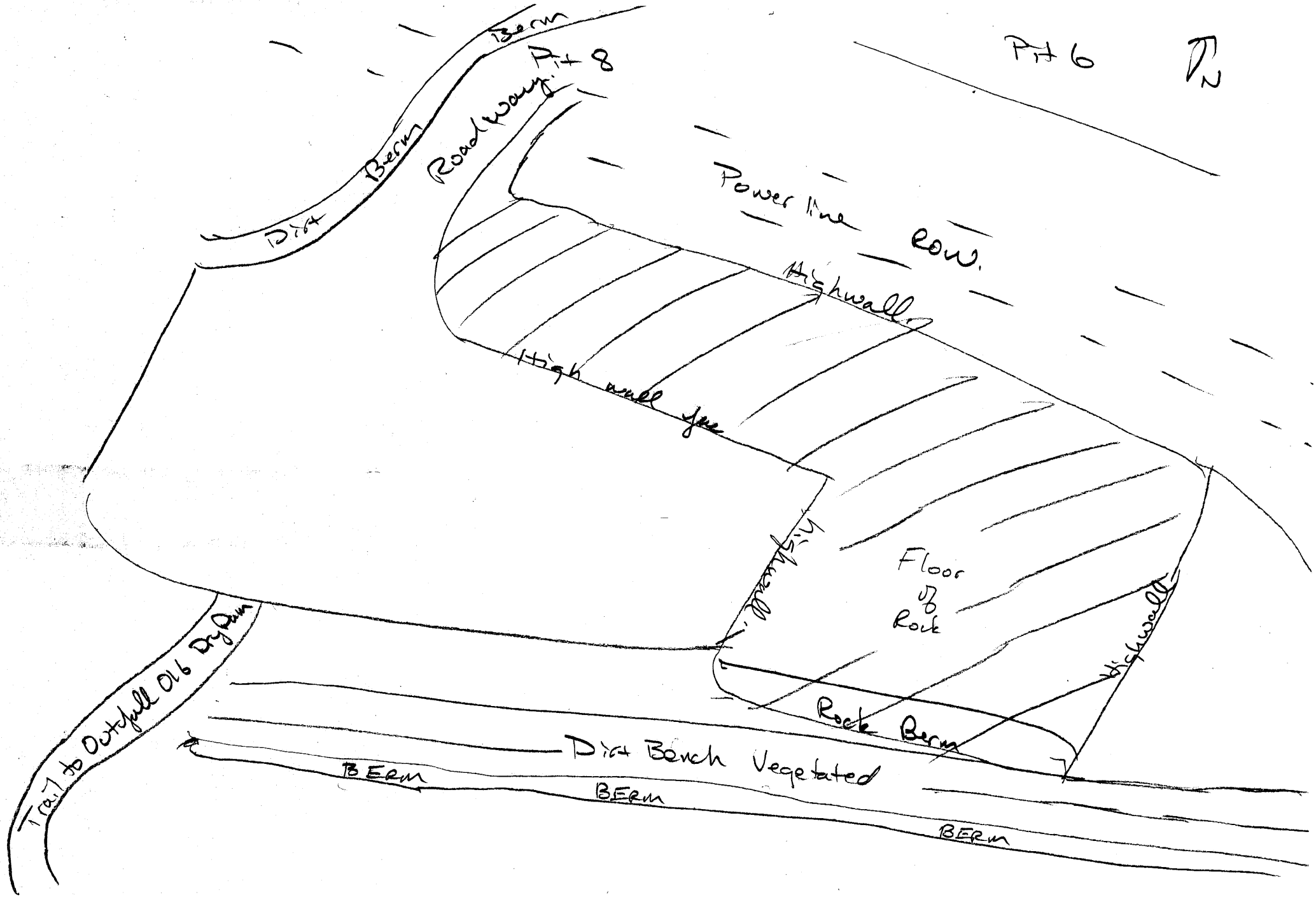

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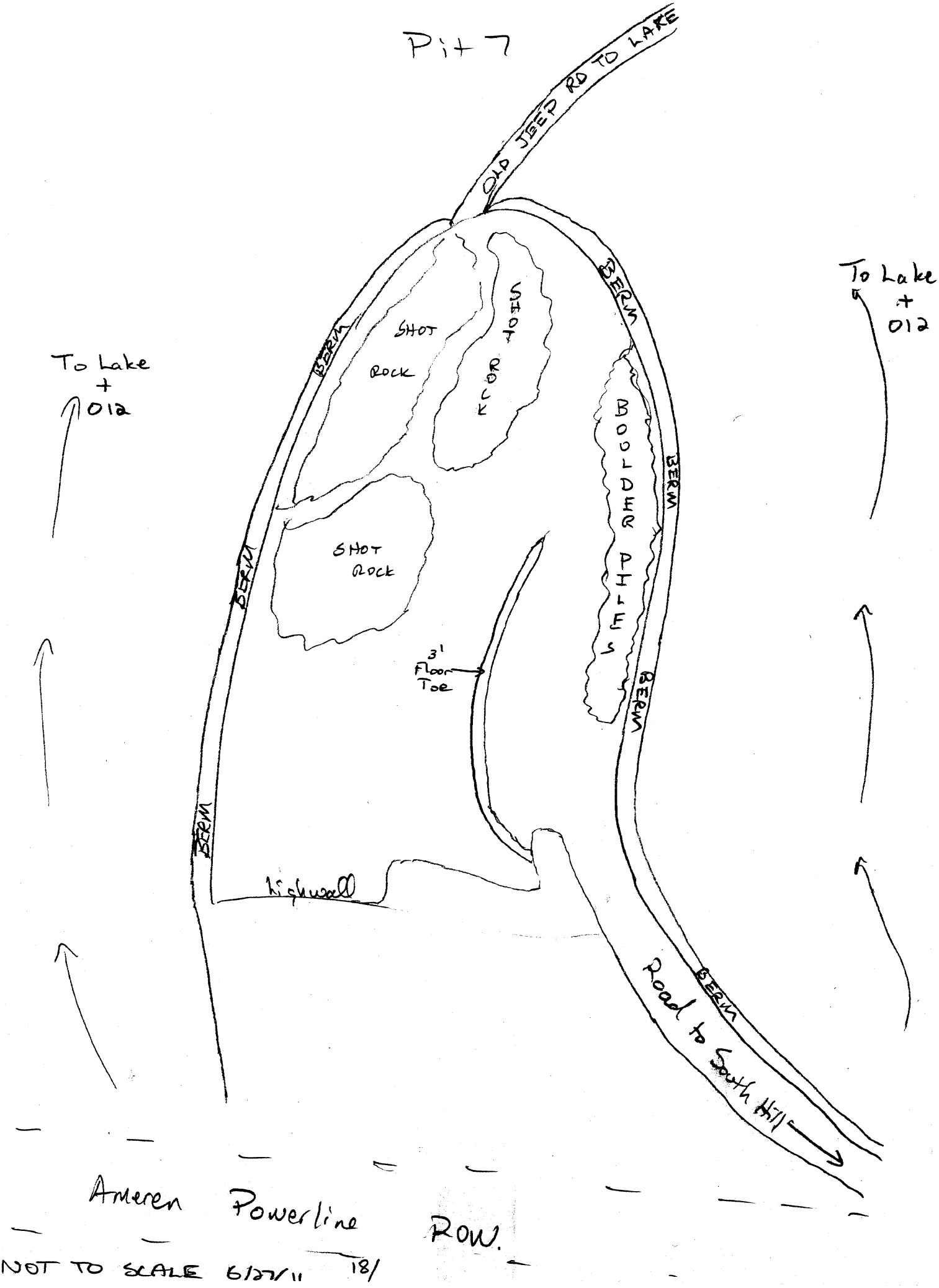

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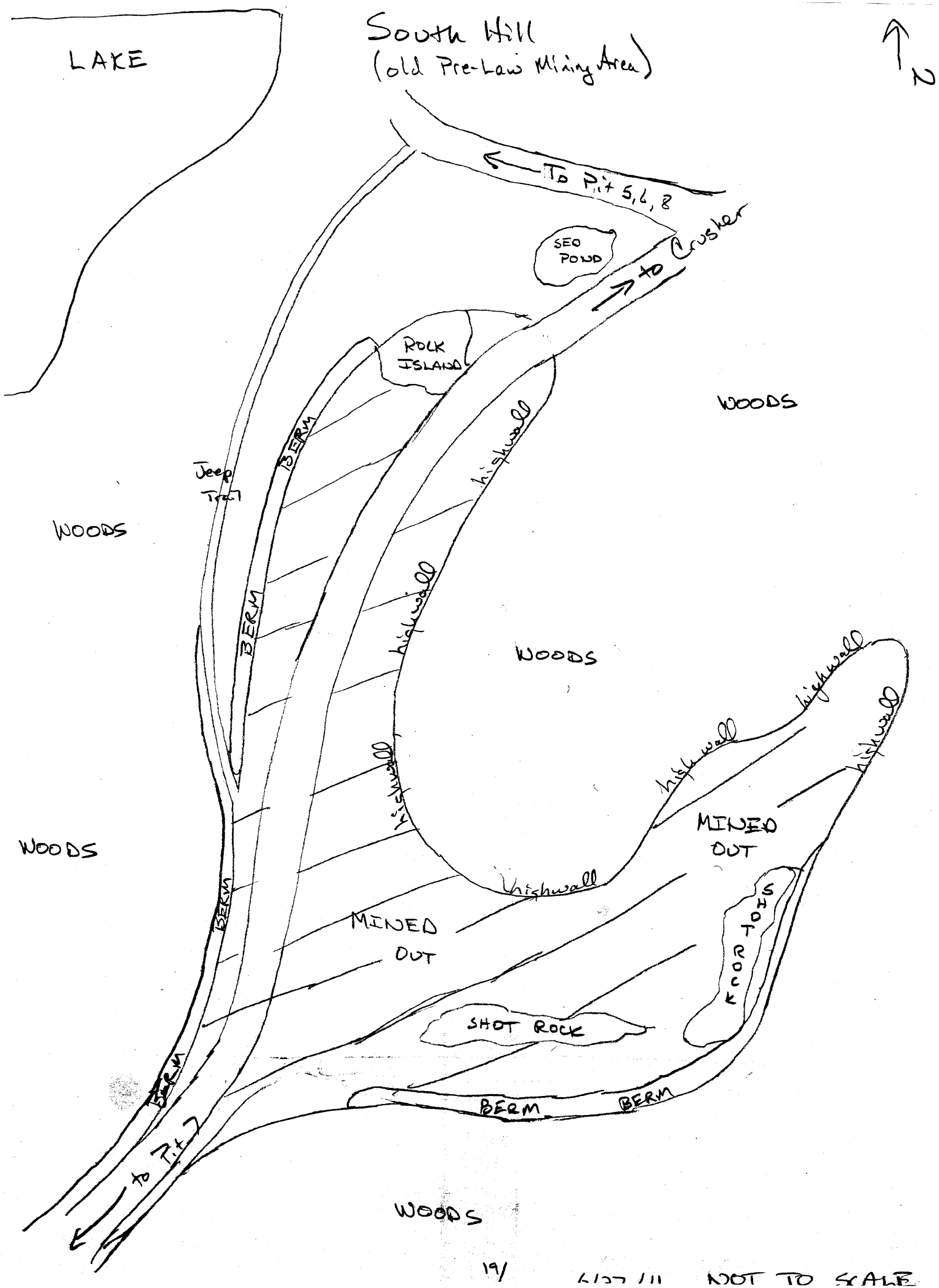

19/

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