

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-0044563

Owner: Iowa-Missouri Conference of Seventh-day Adventists
Address: P.O. Box 65665, West Des Moines, IA 50265

Continuing Authority: Iowa-Missouri Conference of Seventh-day Adventists
Address: P.O. Box 65665, West Des Moines, IA 50265

Facility Name: Sunnydale Adventist Academy Wastewater Treatment Facility
Facility Address: 6818 Audrain Road 9139, Centralia, MO 65240

Legal Description: See Pages 2 and 3
UTM Coordinates: See Pages 2 and 3

Receiving Stream: See Pages 2 and 3
First Classified Stream and ID: See Pages 2 and 3
USGS Basin & Sub-watershed No.: See Pages 2 and 3

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

FACILITY DESCRIPTION

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.

July 25, 2012
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

July 24, 2017
Expiration Date


John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Sunnydale Adventist Academy WWTF

Permitted Feature #001 – School and Plastics Foam Products Industry – SIC #8211/3086 – No Certified Operator Required

Domestic and Industrial Wastewater No-discharge System

Three-cell domestic lagoon / single-cell storage basin / wastewater irrigation / sludge is retained in lagoon.

Design population equivalent is 300.

Design flow is 42,400 gallons per day (1-in-10 year design including net rainfall minus evaporation).

Average design flow is 30,000 gallons per day (dry weather flows).

Design sludge production is 1.9 dry tons per year.

Legal Description: E ½, E ½, SW ¼, Sec. 36, T52N, R12W, Audrain County
UTM Coordinates: X= 567642, Y= 4344428

Receiving Stream: Unnamed tributary to Long Branch Creek (U)
First Classified Stream and ID: Long Branch Creek (C) (00139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Receiving Stream Watershed: a gaining stream setting that flows into Long Branch Creek, a C-class stream.

Facility Type:

No-discharge Storage and Irrigation System for annual flows into gaining stream.

Design Basis:

	<u>Avg Annual</u>
Design dry weather flows:	<u>30,000 gpd</u>
Design with 1-in-10 year flows:	<u>42,400 gpd</u>
Design PE: <u>300</u>	

Storage Basin:

Freeboard for basin: 2 feet

Storage volume (minimum to maximum water levels): ~13,998,000 gallons

Storage Capacity:

Design for Dry weather flows: 467 days
Design with 1-in 10 year flows: 330 days

Land Application:

Legal Description: N ½, SW ¼ and S ½, NW ¼, Sec. 36, T52N, R12W, Audrain County
UTM Coordinates: X=568035, Y=4344804

Irrigation Volume/year: ~14,746,000 gallons at design loading (including 1-in-10 year flows)

Irrigation areas: 62 acres at design loading (62 acres total available)

Maximum application rates: 0.5 inch/hour; 1.0 inch/day; 3 inches/week; 12 inches/year

Field slopes: less than four (4) percent

Equipment type: center pivot irrigator

Vegetation: row crops

Application rate is based on: hydraulic loading rate

Permitted Feature #002 – Center Pivot Land Application Field

Legal Description: NW ¼, Sec. 25, T52N, R12W, Audrain County
UTM Coordinates: X=568018, Y=4346787

Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

FACILITY DESCRIPTION (continued)

Permitted Feature #003– Center Pivot Land Application Field

Legal Description: SW ¼, Sec. 30, T52N, R11W, Audrain County
UTM Coordinates: X=569607, Y=4345957
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #004– Center Pivot Land Application Field

Legal Description: N ½, NE ¼, Sec. 36, and S ½, SE ¼, Sec. 25, T52N, R12W, Audrain County
UTM Coordinates: X=568781, Y=4345594
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #005– Center Pivot Land Application Field

Legal Description: NW ¼, Sec. 31, T52N, R11W, Audrain County
UTM Coordinates: X=569596, Y=4345183
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #006– Center Pivot Land Application Field

Legal Description: N ½, SW ¼, and S ½, NW ¼, Sec. 36, T52N, R12W, Audrain County
UTM Coordinates: X=568040, Y=4344820
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #007– Center Pivot Land Application Field

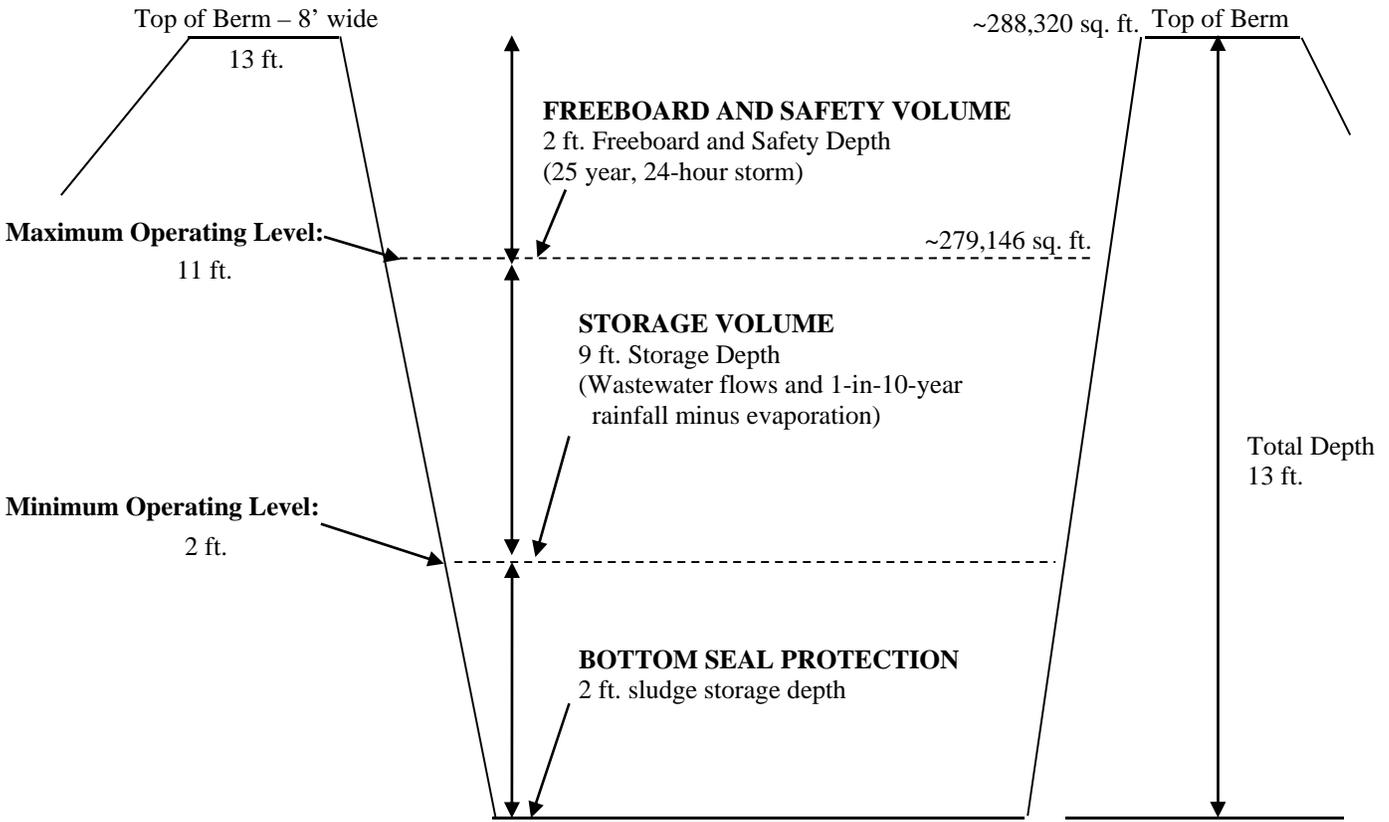
Legal Description: E ½, Sec. 36, T52N, R12W, Audrain County
UTM Coordinates: X=569148, Y=4344612
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #008– Center Pivot Land Application Field

Legal Description: SW ¼, Sec. 31, T52N, R11W, Audrain County
UTM Coordinates: X=569581, Y=4344372
Receiving Stream: Unnamed tributary to Long Branch (U)
First Classified Stream and ID: Long Branch (C) (139)
USGS Basin & Sub-watershed No.: (07110006-0101)

LAGOON PROFILE

Permitted Feature #001 - Storage basin



Lagoon Dimensions:	Approximate Length x Width	Surface Area	Depth from Bottom	Pump down depth (from top)
Center Line Top Berm:	909 x 328	~298,150 sq. ft.	by 13 feet	
Inside Top Berm:	901 x 320	~288,320 sq. ft.	by 13 feet	
Freeboard & Safety Vol:	889 x 308	~273,810 sq. ft.	by 11 feet	2 feet
Maximum operating level:			11 feet	2 feet
Minimum operating level:			2 feet	11 feet
Aerobic BOD design basis:			3 feet	10 feet
Storage volume (minimum to maximum water levels): ~14,000,000 gallons				
Berm top width: 8 feet Berm runoff area (Centerline to 2 ft freeboard and safety volume): ~34,900 sq. ft.				
1-in-10 year annual storm water flows into storage basin (R-E): ~503,400 cu. ft. (~3,766,000 gallons)				

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 5 of 8		
				PERMIT NUMBER MO-0044563		
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 PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Permitted Feature #001 – Storage Basin Operational Monitoring (Notes 1 and 2)</u>						
Storage Basin Freeboard (Note 3)	feet	*			once/month	measured
Precipitation	inches	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2012</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<u>Permitted Feature #002, #003, #004, #005, #006, #007, #008 - Land Application Operational Monitoring (Notes 1 and 2)</u>						
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2012</u> .						
<u>Permitted Feature #001 - Irrigated Wastewater (Notes 4, 5, and 6)</u>						
Total Kjeldahl Nitrogen as N	mg/L	*		*	once/quarter **	grab
Nitrate Nitrogen as N	mg/L	*		*	once/quarter **	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2012</u> .						

* Monitoring requirement only.

** See table below for quarterly sampling.

Minimum Sampling Requirements			
Quarter	Months	Parameters	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

Note 1 - **No-discharge facility requirements.** Wastewater shall be stored and land applied during suitable conditions so that there is no discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the chronic, 1-in-10-year, 365-day rainfall or the catastrophic, 25-year, 24-hour storm event and the permittee can document that storage basin drawdown to the two-foot (2') level has occurred within the previous 12-month period. In the event of a discharge, the permittee shall provide notice to the Department within 24 hours.

There shall be no-discharge of wastewater during dry weather conditions when soils are suitable for irrigation. If wastewater has been properly land applied on all suitable days during the previous 12 months, emergency discharge is allowed from the storage structure due to storm events exceeding the chronic or catastrophic storm events, but discharge shall cease as soon as land application is feasible. Permittee shall make every reasonable effort to cease discharge as soon as soil conditions are suitable for irrigation.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - Records shall be maintained and summarized into an **annual operating report**, which shall be submitted by **January 28th** of each year for the previous calendar year period using report forms approved by the Department. The summarized annual report is in addition to the reporting requirements listed in Table A. The summarized annual report shall include the following:

- a) Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year (including daily wastewater amounts pumped from the City of Centralia WWTF);
- b) The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
- c) A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the average application rate in inches for the year, the monthly and annual precipitation received at the facility, a summary of testing results for wastewater and soils, and calculations for nitrogen applied and crop removal of nitrogen.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 - Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

Note 5 - Report as no-discharge when irrigation does not occur during the report period.

Note 6 - Wastewater irrigation rates shall not exceed a nitrogen application rate of 150 pounds total nitrogen per acre per year, and the applied wastewater shall not exceed ten (10) mg/l of nitrate nitrogen as N. If the nitrogen application exceeds a rate of 150 pounds total nitrogen per acre per year, and/or the applied wastewater exceeds ten (10) mg/l of nitrate nitrogen as N, see Special Conditions for additional requirements.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I & III standard conditions dated October 1, 1980 and August 15, 1994, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. Emergency Discharge. Outfall #001 may only discharge if rainfall exceeds the chronic (1-in-10-year, 365-day rainfall, data taken from the Missouri Climate Atlas) or the catastrophic (24-hour, 25-year rainfall, data taken from NRCS Urban Hydrology for Small Watersheds) precipitation events. **Discharge for any other reason shall constitute a permit violation and shall be recorded in accordance with Standard Conditions, Part 1, Section B.2.b.** It is a violation of the permit to violate water quality in the stream even during the chronic or catastrophic precipitation events. In the event of a discharge, the permittee shall provide notice to the Department within 24 hours and a written statement within five (5) days. Monitoring shall take place **once per day** while discharging from the lagoon or storage basin. Test results are due on the 28th day of the month after the discharge and must include a statement as to why the discharge occurred. Permittee shall monitor for the following constituents during an emergency discharge:

Constituent	Units
Flow	MGD
Biochemical Oxygen Demand ₅ (BOD ₅)	mg/L
Total Suspended Solids (TSS)	mg/L
pH	S.U.
Oil & Grease (O&G)	mg/L
Ammonia as N (NH ₃)	mg/L

2. This facility is allowed to accept treated wastewater from the City of Centralia. All normal influent wastewater flow **to the storage basin** should be measured at least once per month and recorded in the annual report, however all wastewater accepted from sources other than the Sunnydale Adventist Academy, Sunnydale-Goss Industries, and Alliance Foam Technologies shall be recorded **daily** as a 24-hour-total measured flow to the storage basin. Wastewater from the City of Centralia can only be accepted if the facility has documented a complete pump down to the two-foot (2') level of the storage basin within the previous 12 months.
3. Outfalls must be marked in field and on the topographic site map submitted with the permit application.
4. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B)1. or 2. within 90 days of notice of its availability. The permittee shall obtain department approval for closure or alternate use of the facility.

C. SPECIAL CONDITIONS (continued)

5. 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.

6. 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.

7. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained. If operating records indicate excessive percolation, the department may require corrective action as necessary to eliminate excess leakage.

8. Wastewater Irrigation System.

- (a) Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description, Effluent Limitations Note 1, and Special Conditions 1 of this permit.
- (b) Lagoon Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one (1) foot below the Emergency Spillway except due to exceedances of the 1-in-10 year, 365-day or 25-year, 24-hour storm events according to National Weather Service data. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30.
- (c) Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.
- (d) General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
- (e) Saturated/Frozen Conditions. There shall be no irrigation during ground frost, frozen, snow covered, or saturated soil conditions, or when precipitation is imminent or occurring.
- (f) Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwelling or public use areas; or 50 feet of the property line.

C. SPECIAL CONDITIONS (continued)

- (g) Public Access Restrictions. Public access shall not be allowed to the irrigation sites.
 - (h) Operation and Maintenance Manual. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to Regional Office for review and approval. The O&M Manual shall be reviewed and updated at least every five (5) years.
 - (i) Nitrogen Loading Rates. Wastewater irrigation rates shall not exceed a nitrogen application rate of 150 pounds total nitrogen per acre per year, and the applied wastewater shall not exceed ten (10) mg/l of nitrate nitrogen as N. Hydraulic application rates exceeding 60 inches per acre per year shall calculate nitrogen loading rates and include results in the annual report. The calculation procedures are as follows: $(\text{Total N}) \times (0.226) \times (\text{inches per acre irrigated}) = \text{pounds total N per acre}$. Where $\text{Total N} = [\text{Total Kjeldahl Nitrogen (TKN) as N}] + [\text{Nitrate Nitrogen as N}]$. If the applied wastewater exceeds 150 pounds total nitrogen per acre/year, the permittee must reduce the application rates or submit a revised permit application to request use of the Plant Available Nitrogen (PAN) method based on crop nitrogen requirements for harvested crops, along with calculations to show the amount of plant-available nitrogen provided and the amount of nitrogen that will be utilized by the vegetation to be grown. PAN availability factors for surface application are: $[\text{Ammonia N} \times 0.6] + [\text{Nitrate N} \times 0.9] + [\text{Organic N} \times 0.6] = \text{PAN}$. If the applied wastewater exceeds ten (10) mg/l of nitrate nitrogen as N, then the facility shall submit a revised permit application to request use of the Plant Available Nitrogen (PAN) method based on crop nitrogen requirements for harvested crops, along with calculations to show the amount of plant-available nitrogen provided and the amount of nitrogen that will be utilized by the vegetation to be grown.
 - (j) Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least twice/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.
9. Land Application Sites. To add additional land application sites, the permittee shall document that the new land application site(s) meet the setback requirements referenced in Special Conditions #8 (f). Additionally, the O&M Manual shall be updated to include the additional land application site(s) and a copy of the updated sections of the O&M Manual shall be submitted to the Northeast Regional Office in accordance with Special Condition #8 (h).
10. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Northeast Regional Office.
11. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
12. A least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when opened by the permittee to perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department.
13. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.
14. The berms of the storage basin shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
15. An all-weather access road shall be provided to the treatment facility.
16. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the storage basin and to divert stormwater runoff around the lagoon and protect embankments from erosion.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
 FACT SHEET
 FOR THE PURPOSE OF RENEWAL
 OF
 MO-0044563
 SUNNYDALE ADVENTIST ACADEMY WASTEWATER TREATMENT FACILITY**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

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

This Factsheet is for a Minor

Part I – Facility Information

Facility Type: Non-POTW - School and Plastics Foam Products Industry
 Facility SIC Code(s): 8211/3086

Three-cell domestic lagoon / single-cell storage basin / wastewater irrigation / sludge is retained in lagoon

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?
 - No.

Application Date: 11/04/2011
 Expiration Date: 03/01/2012

PERMITTED FEATURE(S)(PF) TABLE:

PF	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001 - #008	0.0465	Land Application	Domestic/Industrial	~ 5.7

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

A Low Flow Survey was conducted on June 20, 2006. The Survey showed full attainment of designated beneficial uses with no impairment due to this facility. The facility was modified to a no-discharge land application system in 2011. No violations have been reported for the facility since the modification. The facility has not been inspected since the facility was modified in 2011.

Part II – Operator Certification Requirements

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

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4)], the facility is not required to conduct operational monitoring.

Part IV – Receiving Stream Information

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:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Unnamed tributary to Long Branch	U	NA	General	07110006-0101	Central Plains / Cuivre / Salt
Long Branch	C	139	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

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed tributary to Long Branch	0	0	0

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ; The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

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.

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

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.

- No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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. Additional information regarding biosolids and sludge is located at the following web address:

<http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc.

The permittee must submit a sludge management plan for removal and disposal for approval when sludge is to be removed from lagoons.

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.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Not Applicable ; The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ; A RPA was not conducted for this facility.

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 (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ; Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- Not applicable. This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated 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.

Not Applicable ; At this time, the permittee is not required to develop and implement a SWPPP.

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) FOR LIMITS:

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 total amount of pollutant that may be discharged into that stream without endangering its water quality.

Not Applicable ; Wasteload allocations were not calculated.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ; A WLA study was either not submitted or determined not applicable by Department staff.

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.

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 WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(1)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

Not Applicable ; This facility does not anticipate bypassing.

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.

Not Applicable ; This facility does not discharge to a 303(d) listed stream.

Part VI – Effluent Limits Determination

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.

All Other Waters [10 CSR 20-7.015(8)]:

Outfall #001 – Emergency Discharge

There are no effluent limits associated with Outfall #001 for the no-discharge facility. However, the following is required for an emergency discharge.

EMERGENCY DISCHARGE TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	MGD	9	*			NO	*
Biochemical Oxygen Demand ₅	mg/L	9	*			NO	*
Total Suspended Solids	mg/L	9	*			NO	*
Ammonia as N	mg/L	9	*			NO	*
pH	SU	9	*			NO	*
Oil & Grease	mg/L	9	*			NO	*
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

*** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

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

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

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/day while discharging	Test results are due on the 28 th day of the month after the cessation of the discharge
Biochemical Oxygen Demand ₅	once/day while discharging	
Total Suspended Solids	once/day while discharging	
Ammonia as N	once/day while discharging	
pH	once/day while discharging	
Oil & Grease	once/day while discharging	

Sampling Frequency Justification:

Sampling and reporting frequencies were retained from the previous permit.

Outfall #001 – Storage Basin Operational Monitoring

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Storage Basin Freeboard	feet	9	*			NO	*
Precipitation	inches	9	*			NO	*
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

Basis for Limitations Codes:

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

- **Basin Freeboard.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Precipitation.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Storage Basin Freeboard	once/month	measured
Precipitation	daily	total

Sampling Frequency Justification:

Sampling and reporting frequencies were retained from the previous permit.

Outfall #002 - #008 – Land Application Operational Monitoring

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Irrigation Period	hours	9	*			NO	*
Volume Irrigated	gallons	9	*			NO	*
Application Area	acres	9	*			NO	*
Application Rate	inches	9	*			NO	*
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

Basis for Limitations Codes:

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

- **Irrigation Period.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Volume Irrigated.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Application Area.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Application Rate.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Irrigation Period	daily	total
Volume Irrigated	daily	total
Application Area	daily	total
Application Rate	daily	total

Sampling Frequency Justification:

Sampling and reporting frequencies were retained from the previous permit.

Outfall #001 – Irrigated Wastewater

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Total Kjeldahl Nitrogen as N	mg/L	9	*		*	NO	*
Nitrate Nitrogen as N	mg/L	9	*		*	NO	*
Monitoring Frequency	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

Basis for Limitations Codes:

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

- **Total Kjeldahl Nitrogen as N.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Nitrate Nitrogen as N.** Monitoring requirement only. The parameter has been retained from previous state operating permit.
- **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Total Kjeldahl Nitrogen as N	quarterly	grab
Nitrate Nitrogen as N	quarterly	grab

Sampling Frequency Justification:

Sampling and reporting frequencies were retained from the previous permit.

Part VII – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Not Applicable; The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works.**

Part VIII – Administrative Requirements

On the basis of 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(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from May 18, 2012 to June 18, 2012. No responses received or responses to the Public Notice of this operating permit do not warrant the modification of effluent limits and/or the terms and conditions of this permit.

DATE OF FACT SHEET: APRIL 18, 2012

COMPLETED BY:

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