

Environmental Management System for Biosolids

Document 03.2 – John E. Egan WRP CCP Table

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Biosolids Value Chain	CCP	Operational Controls	Potential Environmental Impacts	Monitoring/Measuring/ Record Keeping	Primary Person Roles/Responsibilities
Wastewater Collection and Pretreatment	Residential Discharges	<ul style="list-style-type: none"> Public Outreach 	<ul style="list-style-type: none"> Poor surface water quality Metals accumulation in biosolids 	<ul style="list-style-type: none"> # Educational outreach events 	Section 072 Public and Intergovernmental Affairs Officer (X16626);
	Industrial Discharges	<ul style="list-style-type: none"> Permits – DA Pretreatment Inspections SPCC Plans (Spill) TOMP Plans (Toxics) Sewage & Waste Control Ordinance Field Surveillance and Enforcement Action Regulated community outreach 	<ul style="list-style-type: none"> Pipe Corrosion Process upsets – poor quality surface water & biosolids Metals accumulation in biosolids Violation of NPDES Permit Fish Kills Explosions 	<ul style="list-style-type: none"> Random Sampling Inspections Continuous Sampling Interceptor Sampling IEPA Annual Pretreatment Report Notices of Noncompliance Cease and Desist Orders Semi-annual Continued Compliance Reports Discharge Authorizations 	Section 197 Senior Environmental Specialist (X52402) Section 166 Supervising Environmental Chemist (X45670) Section 192 Supervising Environmental Specialist (X13050)
	Spills into Collection System	<ul style="list-style-type: none"> Sewage & Waste Control Ordinance Enforcement Regulated community outreach 		<ul style="list-style-type: none"> Incident Report # of outreach events 	Section 197 Senior Environmental Specialist (X52402)



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Wastewater Treatment & Solids Generation	Screening & Grit Removal	<ul style="list-style-type: none"> Operate timer, differential head or manual 	<ul style="list-style-type: none"> Equipment failure/ process overload Poor quality biosolids 	<ul style="list-style-type: none"> Volume (CY) of debris removed. Operator logs 	Section 793 ACOE (X45478) TPO III (X45407)
	Primary Treatment	<ul style="list-style-type: none"> Primary sludge withdrawal No. of tanks in service Operations SOPs 	<ul style="list-style-type: none"> Odor Excess loading to secondary treatment Poor quality effluent and biosolids 	<ul style="list-style-type: none"> % Solids Operator logs Odor Surveys 	Section 793 TPO III (X45407) Section 166 Supervising Environmental Chemist (X45670)
	Secondary Treatment Aeration Tanks Final Settling Tanks	<ul style="list-style-type: none"> NPDES Permit No. IL0036340 DO, MLSS, SRT, RAS rate, WAS rate, Feed Rate, F:M Ratio Operations SOPs MLVSS 	<ul style="list-style-type: none"> NPDES Permit Violation Poor quality effluent and biosolids Odor 	<ul style="list-style-type: none"> Operator logs Daily reports NPDES permit parameters Microscopic examination DO, SS, SVI, F:M, Blanket level, RAS, WAS, MLSS, BOD, NH3, pH 	Section 793 TPO III (X45407) Section 166 Supervising Environmental Chemist (X45670) Section 124 Senior Environmental Microbiologist (X83767)



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Solids Stabilization & Dewatering	Sludge Thickening	<ul style="list-style-type: none"> • Feed rate • Sludge draw-off • Polymer dose • GBT SOP 	<ul style="list-style-type: none"> • Loss of digester capacity, process upset • Odor • Poor quality biosolids 	<ul style="list-style-type: none"> • “% Solids (feed, draw, centrate, polymer)” • Operator logs • Polymer usage 	Section 793 ACOE (X45478) Section 166 Supervising Environmental Chemist (X45670)
	Anaerobic Digestion	<ul style="list-style-type: none"> • Feed & draw rates • Temperature • Detention time • Digester SOP 	<ul style="list-style-type: none"> • Odor • Poor quality biosolids • Biosolids not suitable for land application 	<ul style="list-style-type: none"> • Feed solids • VS destruction • Methane produced • “Alkalinity, Volatile Acids” • Temperature • Detention time • pH 	Section 793 ACOE (X45478) Section 166 Supervising Environmental Chemist (X45670) Section 122 Senior Environmental Research Scientist (X84070)
	Post-Digestion Centrifuge	<ul style="list-style-type: none"> • Feed rate • Polymer & ferric dose • Torque setting • Centrifuge SOP 	<ul style="list-style-type: none"> • Odor • Poor quality biosolids 	<ul style="list-style-type: none"> • Operator logs • “% Solids (feed, draw centrate, polymer)” • Polymer and Ferric Usage • Cake production (DT) 	Section 793 ACOE (X45478) Section 166 Supervising Environmental Chemist (X45670)



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Solids Stabilization & Dewatering	Conveyance Equipment	<ul style="list-style-type: none"> • Continuous – manual • Torque setting • Centrifuge SOP • Screw conveyor, pumps, piping & slip injection system 	<ul style="list-style-type: none"> • Odor • Equipment Failure/ process overload • Spill 	<ul style="list-style-type: none"> • Operator Logs • Cake Production (DT) 	Section 793 ACOE (X45478)
Solids Transport	Truck Loading/Transport	<ul style="list-style-type: none"> • Loading/Hauling SOPs • Spill plan • Vehicle maintenance • Travel routes • Scale operation • Contract Specifications 	<ul style="list-style-type: none"> • Odor • Spill • Road hazard (accidents) • Dust • Water pollution • Truck noise & air pollution 	<ul style="list-style-type: none"> • Solids (DT) transported • Operator logs 	Section 791 Principal Engineer (Ops) (X45403)

Revision History

Version Number	Version Date	Description of Revision
0	7/28/05	Original Issue
1	9/19/05	Revised Operational Controls, Environmental Impacts, and Monitoring, Measuring and Recordkeeping Removed CCPs that do not play a role in biosolids management (Sewer Maintenance, Influent, Odor Control Management – Treatment Operation)
2	4/12/07	Added “regulatory community outreach” to the Industrial Discharge and Spills into Collection System CCPs under the Operational Control column. Added “# of outreach events” to the Industrial Discharge and Spills into Collection System CCPs under the Monitoring/Measuring/Recordkeeping column. Added the following to the Industrial Discharge CCP under the Monitoring/Measuring/Recordkeeping column: IEPA Annual Pretreatment Report, Notices of Noncompliance, Cease and Desist Orders, Semi-annual Continued Compliance Reports, and Discharge Authorizations. Added 35 IAC 391 (Title 35 of the Illinois Administrative Code Part 391) Requirements to Land Application CCP under Operational Control column. Added “Ferric Usage” to the Post-digestion Centrifuge CCP under the Monitoring/Measuring/Record Keeping column.
3	2/26/08	Replaced Public Information Coordinator with Manager of Public Affairs under the Primary Person Roles/Responsibilities column of the Residential Discharges CCP. Replaced Section 633 with Section 643 under the Primary Person Roles/Responsibilities column of the Residential Discharges CCP. Removed Air Scrubber from the Operational Control column of the Odor Control Management CCP.



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Version Number	Version Date	Description of Revision
4	3/11/09	<p>Added Section 166 – SCIV (45670) to the Industrial Discharges CCPs, Primary Treatment CCPs, Secondary Treatment Aeration Tanks Final Settling Tanks CCPs, Sludge Thickening CCPs, Anaerobic Digestion CCPs and Post-digestion Centrifuge CCPs.</p> <p>Added Section 122 – Soil Scientist III (84063) to Sludge Thickening CCPs, Anaerobic Digestion CCPs, Post-digestion Centrifuge CCPs, Truck Loading/Transport CCPs, Land Application CCPs and Mechanical Operation/Solids Processing CCPs.</p> <p>Added Biosolids not suitable for land application to Anaerobic Digestion CCPs.</p>
5	8/24/09	<p>Revised PCO III to PCO III / SES.</p>
6	3/10/10	<p>Added “Section 192 SES (X13050)” to the Industrial Discharge CCP under the Primary Person Roles/Responsibilities column.</p> <p>Revised the phone number for the CEII from “(X16571)” to “(X15119)” for the Residential Discharges CCP.</p> <p>Replaced “PCOIII/SES (X52402)” with “Senior Environmental Specialist (X52404)” under the Primary Person Roles/Responsibilities column of both the Industrial Discharges CCP and the Spills into Collection System CCP.</p> <p>Replaced “SCIV” with “Supervising Environmental Chemist” under the Primary Person Roles/Responsibilities column of the Industrial Discharges CCP, the Primary Treatment CCP, the Secondary Treatment Aeration Tanks Final Settling Tanks CCP, the Sludge Thickening CCP, the Anaerobic Digestion CCP, and the Post-digestion Centrifuge CCP.</p> <p>Replaced “Section 122” with “Section 123” under the Primary Person Roles/Responsibilities column of the Sludge Thickening CCP, the Anaerobic Digestion CCP, the Post-digestion Centrifuge CCP, the Truck Loading/Transport CCP, the Land Application CCP and the Mechanical Operations/Solids Processing CCP.</p>



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Version Number	Version Date	Description of Revision
7	4/15/11	<p>Removed Household hazardous waste collection (HHW), from Biosolids Value Chain – Wastewater Collection and Pretreatment- Residential Discharges under Operational Controls column, HHW Event Summaries from Measuring Record Keeping column and Section 643 CE II (X15119) under Primary Person Roles/Responsibilities column.</p> <p>Added Air Scrubber to Biosolids Value Chain – Wastewater Treatment & Solids Generation – Primary Treatment – under Operational Controls column and Odor Surveys under Monitoring/Measuring/Record Keeping column.</p> <p>Added F:M Ratio to Biosolids Value Chain – Wastewater Treatment & Solids Generation – Secondary Treatment Aeration Tanks Final Settling Tanks under 2nd bullet of Operational Controls column and Section 124 Senior Environmental Microbiologist (X83767) under Primary Person Roles/Responsibilities column.</p> <p>Under Biosolids Value Chain – Solids Stabilization & Dewatering - Sludge Thickening CCP, revised the first bullet of Monitoring/Measuring/Record Keeping to read “%Solids (feed, draw, centrate, polymer)”.</p> <p>Under Biosolids Value Chain – Solids Stabilization & Dewatering – Anaerobic Digestion CCP – revised the 4th bullet Monitoring/Measuring/Record Keeping to read “Alkalinity, Volatile Acids”.</p> <p>Under Biosolids Value Chain – Solids Stabilization & Dewatering – Post-digestion Centrifuge CCP – revised the 2nd bullet of Monitoring/Measuring/Record Keeping to read “% Solids(feed, draw, centrate, polymer)”.</p> <p>Under Biosolids Value Chain – Odor Control Management – Mechanical Operation/Solids Processing CCP, add Odor Surveys to Monitoring/Measuring/Record Keeping column.</p> <p>Removed Section 123 – Soil Scientist III (X84063) from Biosolids Value Chain – Sludge Thickening CCP under Primary Person Roles/Responsibilities column.</p> <p>Removed Section 123 – Soil Scientist III (X84063) and added Senior Environmental Research Scientist (X84070) to Biosolids Value Chain – Solids Stabilization & Dewatering - Anaerobic Digestion CCP – to Primary Person Roles/Responsibilities column.</p> <p>Removed Section 123 – Soil Scientist III (X84063) from Biosolids Value Chain</p>



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		<p>– Solids Stabilization & Dewatering – Post-digestion Centrifuge CCP under Primary Person Roles/Responsibilities column. Removed Section 123 – Soil Scientist III (X84063) from Biosolids Value Chain – Solids Transport – Truck Loading/Transport CCP under Primary Person Roles/Responsibilities column. Added Supervising Environmental to Soil Scientist III (Removing III) (X84063) to Biosolids Value Chain – Biosolids Utilization – Land Application CCP under Primary Person Roles/Responsibilities column. Removed Section 123 – Soil Scientist III (X84063) from Biosolids Value Chain – Odor Control Management – Mechanical Operation/Solids Processing CCP under Primary Person Roles/Responsibilities column.</p>
8	10/17/11	Edited Footer with Official Document Location
9	3/8/12	<p>Page 1, under Industrial discharges CCP, spelled out primary person responsible for Section 192 to read Supervising Environmental Specialist instead of SES Page 1, Deleted Outreach Events under Monitoring/Measuring/Record Keeping Page 2, under Monitoring/Measuring/Record Keeping changed F/M to F:M. Page 2, Secondary Treatment Aeration Tanks final Settling Tanks/Operational Controls: added MLVSS Page 4 Solids Transport/Operational Controls: Add Contract Specifications Page 4 Biosolids Utilization/Operational Controls: Updated Permit No.'s Page 4 Biosolids Utilization/Monitoring/Measuring/Record Keeping: Added Field Submittals</p>
10	2/27/13	<p>Updated Title for Responsible Person under Residential Discharge Updated phone number under Biosolids Utilization to 84201</p>
11	2/19/14	Updated Title for AETPO1 to Principal Engineer, Added CCP Conveyors under Solids Stabilization and Dewatering. Deleted Biosolids Utilization. All solids shipped to General Division Sites.
12	5/19/14	Updated Responsible Persons under Industrial Discharge Sect.192
13	3/16/15	Changed phone # of section 197 Senior Environmental Specialist to x52402.



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		Revised Biosolids Value Chain: Solids Stabilization and Dewatering by changing conveyors to Conveyance Equipment. Removed CCTV monitoring as it has been removed from service and is no longer applicable. In place of CCTV added the new screw conveyor, pumps, piping & polymer slip injection system.
14	3/18/16	Added Section 122 under Primary Person CCP: Anaerobic Digestion
15	3/24/16	Removed the word polymer from conveyance equipment Operational Controls
16	3/22/17	Under Wastewater Treatment & Solids Generation, Primary Treatment: deleted Air Scrubber (no longer operational) and Deleted Odor Control Management under Mechanical Operations/Solids Processing (Ozone Generator is no longer in service)
17	3/8/18	Updated Public & Intergovernmental Affairs Officer's section # from 071 to section 072. Updated Public & Intergovernmental Affairs Officer's ext. # from X17909 to X16626.