Sump
Bridgeton LF
#118912, St. Louis
GC/FP

LEACHATE MANAGEMENT PLAN (FULL OPEARTION)
FOR

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK RD.
BRIDGETON, MO 63044

Prepared For:

BRIDGETON LANDFILL, LLC

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
ST. LOUS, MISSOURI

CEC Project 130-484

January 2015

APPROVED
DATE Feb. 19, 2015

February 2, 2015

Mr. JP Boesen
Missouri Department of Natural Resources
Solid Waste Management Program
P.O. Box 176
Jefferson City, MO 65102-0176

Dear Mr. Boesen:

Subject: Bridgeton Landfill – Leachate Management Plan
CEC Project 130-484

In response to comments that have been received to date and per your instructions, we have assembled the final version of the Leachate Management Plan for the Bridgeton Landfill for your review and use.

The attached narrative and plans describe and depict the leachate flow from the leachate collection system in the landfill to the treatment plant and finally to the discharge point. Also included in the report is a copy of the MSD Permit. Please let us know if you have any questions regarding this submission.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Kevin T. Kamp, P.E.
Missouri PE#2006019670
Senior Project Manager

Enclosures: Leachate Management Plan

cc: File

TABLE OF CONTENTS

1.0 INTRODUCTION

Bridgeton Landfill is currently generating 150,000 to 250,000 gallons of liquids per day (leachate and landfill gas condensate). Hereinafter, the term leachate is used to describe the comingled mixture of landfill leachate and gas condensate. Chemical composition of the produced liquid typically includes a BOD concentration of approximately 20,000 mg/L (PPM) and 1,000-1,500 µg/L (PPB) total benzene. Due to previous BOD loadings to its system, the Metropolitan St. Louis Sewer District (MSD) initially suspended disposal of the liquids from the site via a direct discharge sewer connection. The MSD suspension resulted in the need for the Bridgeton Landfill to initially establish alternative disposal methods, under the auspices of an emergency Interim Leachate Management Plan which has been previously submitted. Bridgeton Landfill then began the construction of a pretreatment facility designed to lower concentrations to acceptable levels.

The early use of several series of frac tanks for leachate storage and processing was replaced by a 316,000-gallon tank that provides significantly increased batch aeration capacity. The 316,000-gallon tank has been joined by four 1 million gallon tanks and a pretreatment building housing leachate pretreatment and sludge processing equipment. Leachate has been and will continue to be treated to reduce total benzene concentrations using aeration and agitation (mixing and/or recirculation) in the equalization and aeration tanks. Within the pretreatment building, leachate will be go through screening, chemical addition, clarification, and chemical sludge handling. It also passes through an ultrafilter for further clarification of the effluent before being sent to a 96,000 gallon tank. From the 96,000 gallon tank the effluent flows into an MSD system where MSD can direct the flow to one of their treatment facilities at their discretion. The processes have been conceptually illustrated in the Leachate Management Plan set provided in Appendix A. There are a number of challenges with this complex processing system. Timing available storage, allowing for adequate processing, following appropriate sampling protocols, complying with varied analytical requirements, and coordinating with multiple transportation companies and disposal sites continues to require diligent management of a complicated, evolving leachate handling system. The system is monitored and operated continuously to ensure that all processes are functioning properly.

Bridgeton Landfill developed and implemented protocols to pre-treat (as necessary), transport, and dispose of leachate collected at the facility. The leachate management necessitated the following liquids handling programs:

- Leachate Collection – collection and transfer of leachate from the landfill and gas condensate from the site's LFG system as shown in the Leachate Forcemain Plan View drawing by Feezor provided in Appendix A,

- Leachate Storage – temporary storage of raw and processed leachate is provided in the equalization and aeration tanks,

- Leachate Processing – aeration along with additional biological processing technologies described herein to treat raw leachate to reduce concentrations of dissolved volatile organic compounds and other constituents; and

- Leachate Disposal – the discharge of leachate from the site directly to MSD infrastructure or the logistical planning for transporting processed leachate to off-site facilities for disposal, using appropriate waste characterization, manifesting, and reporting procedures. Accommodations have been made throughout the system to allow for hauling disposal in emergency conditions such as long duration power outages or changes in the effluent characteristics.

The Leachate Management Plan herein replaces all previous leachate management plans.

2.0 LEACHATE COLLECTION

Leachate at Bridgeton Landfill is collected from numerous sources and transmitted from the collection points via fusion-welded high-density polyethylene (HDPE) piping. Gas condensate from the landfill gas control & collection system is co-mingled with leachate into a HDPE forcemain. As of March 2014, a series of leachate collection sumps, gas interceptor wells (GIW), header condensate traps (CT), horizontal collectors (HZ), lateral sumps, trench sumps, perimeter sumps, and perimeter extraction wells contribute to the leachate flow at the Bridgeton Landfill.

Liquids are collected from the landfill under Permit 118912. No leachate is collected from the OU-1 Area. Daily production of liquids varies within a typical range of 150,000 to 250,000 gallons, but rates as high as 361,000 gallons per day have been calculated. Refer to drawing 000 Leachate Forcemain Plan View in Appendix A for a layout of the collection system.

3.0 LEACHATE STORAGE AND PROCESSING

Historically, leachate storage for interim leachate management was provided by several series of tanks (portable and fixed) interconnected by either rigid or flexible piping/hoses. For the purposes of this Plan, the portable tanks are referred to herein as "frac tanks", a generic term for mobile steel tanks used to hold liquids such as stormwater, fuel, and leachate. They are typically constructed of single-wall carbon steel, have nominal capacities of 21,000 gallons, and are equipped with a single rear axle. The frac tanks can be moved (when empty) using construction equipment or trucks equipped with cables and winches. The frac tanks utilized for leachate storage and processing at Bridgeton Landfill meet the definition of "containers" under 40 CFR 262 and 265 and are compliant with applicable Missouri and federal hazardous waste management regulations.

Previously, leachate was conveyed to frac tanks from the co-mingled forcemain via combinations of HDPE piping and flexible hoses with cam-lock fittings. As many as 236 frac tanks were utilized at one point as part of the facility's leachate management system. The frac tanks were provided by Rain-for-Rent, Adler, and BakerCorp.

The number and layout of frac tanks at Bridgeton Landfill changed over time as the needs for storage capacity changed. Initially, liquid comprised only of gas condensate was stored in several series of frac tanks interconnected using flexible hoses. Each of these tanks was eventually emptied, cleaned in accordance with the vendors' requirements, and removed from the facility. All frac tanks for leachate storage have been removed from the site.

The 316,000-gallon Aquastore tank was erected in early 2013. Concrete secondary containment has been constructed around the tank. The 316,000-gallon tank currently receives untreated Bridgeton Landfill liquids and is the starting point of the pretreatment process. Four 1 million gallon tanks including a secondary concrete containment have also been constructed as part of the pretreatment plant. The pretreatment plant building has been completed as well.

A 96,000-gallon aboveground storage tank represents the original leachate holding tank at Bridgeton Landfill. This tank is still being utilized as a holding vessel for leachate that has been processed by the pretreatment plant facility and transferred via dual-contained piping. Concrete secondary containment encompasses the tank. Leachate approved for disposal is discharged from the 96,000-gallon tank one of the following MSD treatment plants at MSD's discretion: Missouri River Wastewater Treatment Plant, Cold Water Creek Treatment Plant, or Bissell Treatment Plant. Discharge is metered from the tank to a nearby lift station.

The processing of the landfill leachate is accomplished by a pretreatment facility permitted through MSD to meet their standards for discharge. The MSD permit #1003803000-1 for the Bridgeton Landfill is provided in Appendix B for reference. This plant is continuously operated and Bridgeton Landfill communicates with MSD to maintain the required standards for the discharged liquid. The leachate pretreatment plan incorporates an equalization tank, physical/chemical precipitation to remove zinc, iron, and other metals that may inhibit biological pretreatment, aerobic biological treatment, leachate cooling, membrane separation for solids removal, return and waste sludge pumping, solids storage and dewatering, solids disposal, and effluent monitoring and discharge. Standby power will also be provided. Details of the process are described further herein.

Leachate is removed from the landfill in a collection system which pumps the liquid into the 316,000 gallon aerated equalization tank (TK-200) by way of a grit removal unit and lift station. The raw leachate is aerated and the pH is adjusted before it is sent to the treatment plant building. Alternately, using the load out area located alongside the 316,000 gallon tank containment area, the leachate can be hauled off if necessary for disposal at an approved facility. The 316,000-gallon tank relies on two Kaeser 433 cfm blowers to aerate material. The 316,000-gallon tank is also equipped with an MTS Jet Mix System used to recirculate the leachate in the tank. Tank headspace is under vacuum; off-gas is routed through a regenerative thermal oxidizer (TO).

The leachate is then pumped from the 316,000 gallon tank into the treatment building where it is first routed through dual rotary drum screen strainers (RDS-201A and RDS-201B) to remove particles larger than 0.6 microns. The removed solids will deposit in tippable dumpsters below the screens. At the pH adjustment tank (TK-201), magnesium hydroxide and caustic will be added to raise the pH from the incoming pH of approximately 5.5-6 to between 7.5 and 8 S.U. to help precipitate zinc and other metals. The leachate will then flow to rapid mix (TK-202) and flocculation (TK-203) tanks where coagulants, polymers and other chemicals will be added to encourage a preliminary liquids/solids separation. The leachate will flow by gravity to an inclined plat clarifier (CLR-204) for solids separation. The liquid will then enter a pH adjustment tank (TK-205) where sulfuric acid may be added to trim the pH if higher than this level, before being pumped to the transfer tank (TK-206) and then on to the four aeration tanks sized at one million gallons each.

Clarifier effluent and return activated sludge from the ultrafilters will flow to transfer tank TK-206 and be pumped to the four aeration tanks (tanks TK-307A, TK-307B, TK-307C, and TK-307D). Flow can be split equally to the four tanks, or flow in sequence from the first two tanks (TK-307A and TK-307B) to the second set of aeration tanks (TK-307C and TK-307D). The leachate is aerated and treated by biological processes. The aerated liquid from the aeration tanks will be pumped (P-307 series pumps) to the three ultrafilter systems (MBR-308A, MBR-

307B, and MBR-307C) to separate the mixed liquor solids from a relatively clear effluent called the permeate. The permeate from the ultrafilters will flow to a permeate storage tank (TK-420). The permeate will be discharged to the 96,000 gallon effluent tank through pumps P-420A and P-420B and will then flow to the MSD pump station via the new forcemain. The permeate can also be fed to a number of other in-plant uses such as the supply, with a defoaming agent added, to the spray ring system in the aeration tanks to knock down foam. A portion of the solids separated in the ultrafilter will then be returned to the aeration tanks as return activated sludge (RAS) to transfer tank TK-206. The excess sludge to be wasted (WAS) will be pumped from the ultrafilter return sludge line to an aerated waste activated sludge tank (TK-409) in the treatment building before blending with the primary clarifier sludge.

The solids from the inclined plate clarifier settle to the bottom section of the clarifier that serves as a sludge holding area for pump P-204B to pump settled sludge to primary clarifier holding tank TK-410. Pump P-204A will also pump settled clarifier sludge to tank TK-201 for sludge recycle to the clarifier. Sludge pumps P-204A and P-204B will pump clarifier sludge to a sludge thickener that will raise the solids content from approximately 2% to approximately 5% solids. Waste activated sludge from tank TK-409 will be blended with the primary clarifier sludge at sludge thickeners MST-411A and MST-411B. Thickened sludge will be pumped to a primary sludge storage tank (TK-412) in advance of being pumped to screw dewatering presses D-413A and D-413B for dewatering. The dewatered solids from the screw presses will flow to a screw conveyor system and be deposited in sludge trailers for transport to the Roxana Landfill. The liquid from this dewatering process is then returned to tank TK-201.

Throughout the entire pretreatment system process there are accommodations that will allow haul-out for disposal of the leachate during any emergency conditions as previously noted.

4.0 LEACHATE DISCHARGE

4.1 ON SITE DISCHARGE

On site discharge will be monitored to ensure that it complies with the requirements of the MSD permit #1003803000-1 which is attached in Appendix B. The Bridgeton Landfill operations team will maintain communications with MSD to satisfy the permit. Disposal facilities include MSD's Bissell Point facility, Cold Water Creek facility, and Missouri River facility. Effluent will be discharged to one of the approved facilities at MSD's discretion.

4.1.1 Waste Disposal Facilities

Alternate contingent waste disposal options are currently being provided by Metropolitan St. Louis Sewer District and the American Bottoms Regional Wastewater Treatment Facility. The leachate pretreatment process has multiple redundancies built into the system that allow for numerous haul-out options if they are required for any emergency or other situation as mentioned previously.

MSD Bissell Point Wastewater Treatment Plant
10 East Grand Avenue
St. Louis, MO 63147

American Bottoms
1 American Bottoms Road Sauget, IL 62201

4.2 MANIFESTING PROCEDURES

Each load of hauled processed leachate that leaves the facility is accompanied by a manifest completed by the generator (Bridgeton Landfill) and the transporting company. Manifests document information about the generator of the waste, the transporter of the waste, and the designated disposal facility for the waste. A generator's representative and a representative of the transportation company signs each manifest upon departure from the facility. A copy is kept on site. Once the transportation company delivers the load to the disposal facility, the disposal facility signs to accept the waste and keeps a copy of the manifest.

Data associated with the Leachate Management System must be recorded and stored to facilitate daily decisions in the operations of the plant. Information is stored in a database that includes, but is not limited to, the following information:

- Dates of loading, transport, and disposal,
- Volumes of leachate processed,
- Batch identifiers,
- Filling and processing start / stop times,
- Analytical testing results for each batch,
- Driver, vehicle, and load information,
- Manifest information.

A leachate manager coordinates and schedules tasks associated with the collection, storage, processing, sampling/analysis, transporting, and disposal of the leachate. These tasks include, but are not limited to:

- Communicating with hauling companies and disposal facilities each day with information regarding number of loads, volume expected, and leachate quality,
- Review of completed manifests and loading tickets for completeness and accuracy,
- Collecting operational and/or confirmation samples and coordinating delivery to the laboratories,
- Review and distribution of analytical results,
- Optimizing component processes,
- Summarizing the day's issues/results and the planned efforts for the following day.

APPENDIX A

LEACHATE MANAGEMENT PLAN

BRIDGETON LANDFILL
LEACHATE MANAGEMENT PLAN

LEACHATE TREATMENT NARRATIVE:

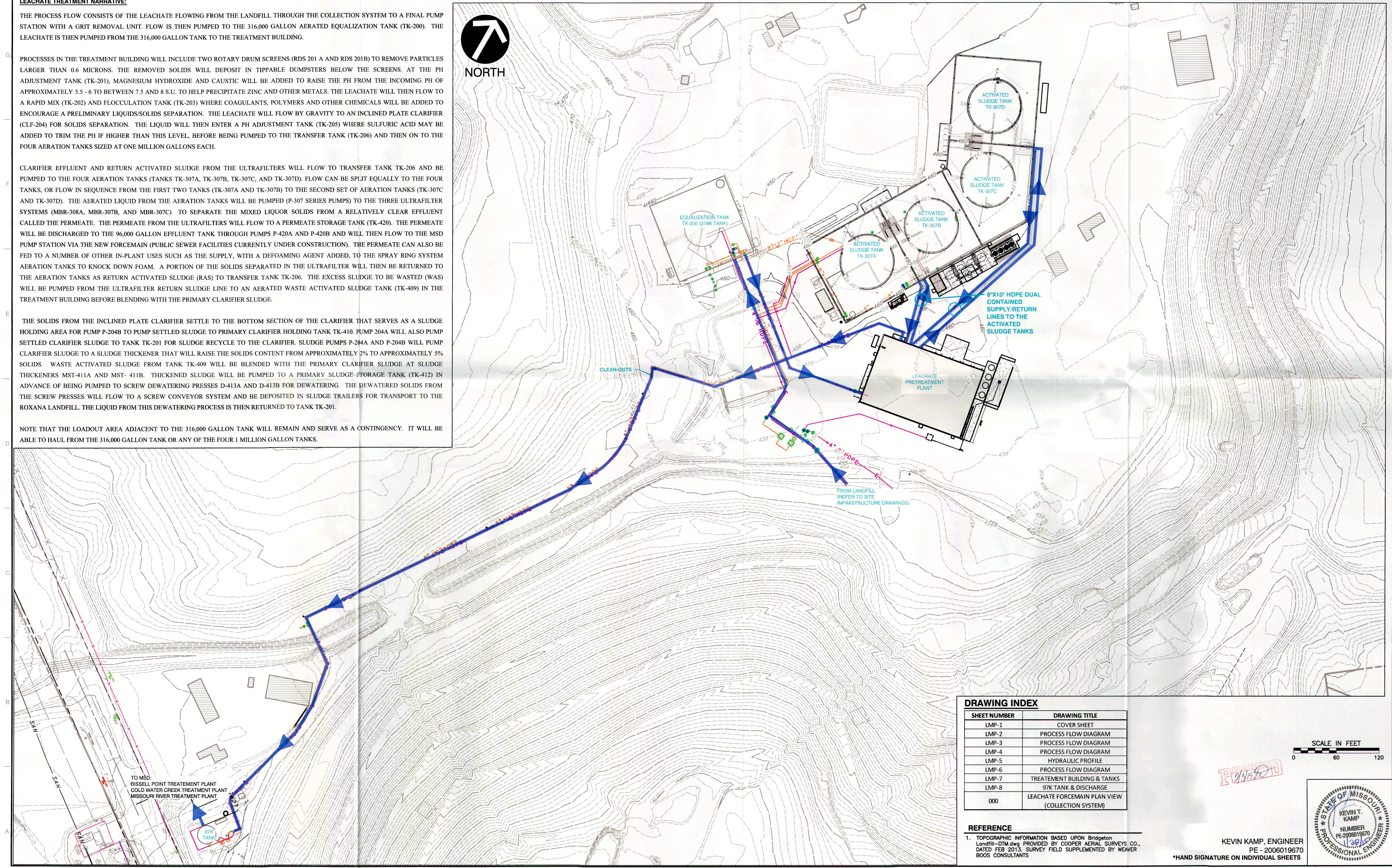
THE PROCESS FLOW CONSISTS OF THE LEACHATE FLOWING FROM THE LANDFILL THROUGH THE COLLECTION SYSTEM TO A FINAL PUMP STATION WITH A GRIT REMOVAL UNIT. FLOW IS THEN PUMPED TO THE 316,000 GALLON AERATED EQUALIZATION TANK (TK-200). THE LEACHATE IS THEN PUMPED FROM THE 316,000 GALLON TANK TO THE TREATMENT BUILDING.

PROCESSES IN THE TREATMENT BUILDING WILL INCLUDE TWO ROTARY DRUM SCREENS (RDS 201 A AND RDS 201B) TO REMOVE PARTICLES LARGER THAN 0.6 MICRONS. THE REMOVED SOLIDS WILL DEPOSIT IN TIPPABLE DUMPSTERS BELOW THE SCREENS. AT THE PH ADJUSTMENT TANK (TK-201), MAGNESIUM HYDROXIDE AND CAUSTIC WILL BE ADDED TO RAISE THE PH FROM THE INCOMING PH OF APPROXIMATELY 5.5 - 6 TO BETWEEN 7.5 AND 8 S.U. TO HELP PRECIPITATE ZINC AND OTHER METALS. THE LEACHATE WILL THEN FLOW TO A RAPID MIX (TK-202) AND FLOCCULATION TANK (TK-203) WHERE COAGULANTS, POLYMERS AND OTHER CHEMICALS WILL BE ADDED TO ENCOURAGE A PRELIMINARY LIQUIDS/SOLIDS SEPARATION. THE LEACHATE WILL FLOW BY GRAVITY TO AN INCLINED PLATE CLARIFIER (CLF-204) FOR SOLIDS SEPARATION. THE LIQUID WILL THEN ENTER A PH ADJUSTMENT TANK (TK-205) WHERE SULFURIC ACID MAY BE ADDED TO TRIM THE PH IF HIGHER THAN THIS LEVEL, BEFORE BEING PUMPED TO THE TRANSFER TANK (TK-206) AND THEN ON TO THE FOUR AERATION TANKS SIZED AT ONE MILLION GALLONS EACH.

CLARIFIER EFFLUENT AND RETURN ACTIVATED SLUDGE FROM THE ULTRAFILTERS WILL FLOW TO TRANSFER TANK TK-206 AND BE PUMPED TO THE FOUR AERATION TANKS (TANKS TK-307A, TK-307B, TK-307C, AND TK-307D). FLOW CAN BE SPLIT EQUALLY TO THE FOUR TANKS, OR FLOW IN SEQUENCE FROM THE FIRST TWO TANKS (TK-307A AND TK-307B) TO THE SECOND SET OF AERATION TANKS (TK-307C AND TK-307D). THE AERATED LIQUID FROM THE AERATION TANKS WILL BE PUMPED (P-307 SERIES PUMPS) TO THE THREE ULTRAFILTER SYSTEMS (MBR-308A, MBR-307B, AND MBR-307C) TO SEPARATE THE MIXED LIQUOR SOLIDS FROM A RELATIVELY CLEAR EFFLUENT CALLED THE PERMEATE. THE PERMEATE FROM THE ULTRAFILTERS WILL FLOW TO A PERMEATE STORAGE TANK (TK-420). THE PERMEATE WILL BE DISCHARGED TO THE 96,000 GALLON EFFLUENT TANK THROUGH PUMPS P-420A AND P-420B AND WILL THEN FLOW TO THE MSD PUMP STATION VIA THE NEW FORCEMAIN (PUBLIC SEWER FACILITIES CURRENTLY UNDER CONSTRUCTION). THE PERMEATE CAN ALSO BE FED TO A NUMBER OF OTHER IN-PLANT USES SUCH AS THE SUPPLY, WITH A DEFOAMING AGENT ADDED, TO THE SPRAY RING SYSTEM AERATION TANKS TO KNOCK DOWN FOAM. A PORTION OF THE SOLIDS SEPARATED IN THE ULTRAFILTER WILL THEN BE RETURNED TO THE AERATION TANKS AS RETURN ACTIVATED SLUDGE (RAS) TO TRANSFER TANK TK-206. THE EXCESS SLUDGE TO BE WASTED (WAS) WILL BE PUMPED FROM THE ULTRAFILTER RETURN SLUDGE LINE TO AN AERATED WASTE ACTIVATED SLUDGE TANK (TK-409) IN THE TREATMENT BUILDING BEFORE BLENDING WITH THE PRIMARY CLARIFIER SLUDGE.

THE SOLIDS FROM THE INCLINED PLATE CLARIFIER SETTLE TO THE BOTTOM SECTION OF THE CLARIFIER THAT SERVES AS A SLUDGE HOLDING AREA FOR PUMP P-204B TO PUMP SETTLED SLUDGE TO PRIMARY CLARIFIER HOLDING TANK TK-410. PUMP 204A WILL ALSO PUMP SETTLED CLARIFIER SLUDGE TO TANK TK-201 FOR SLUDGE RECYCLE TO THE CLARIFIER. SLUDGE PUMPS P-204A AND P-204B WILL PUMP CLARIFIER SLUDGE TO A SLUDGE THICKENER THAT WILL RAISE THE SOLIDS CONTENT FROM APPROXIMATELY 2% TO APPROXIMATELY 5% SOLIDS. WASTE ACTIVATED SLUDGE FROM TANK TK-409 WILL BE BLENDED WITH THE PRIMARY CLARIFIER SLUDGE AT SLUDGE THICKENERS MST-411A AND MST- 411B. THICKENED SLUDGE WILL BE PUMPED TO A PRIMARY SLUDGE STORAGE TANK (TK-412) IN ADVANCE OF BEING PUMPED TO SCREW DEWATERING PRESSES D-413A AND D-413B FOR DEWATERING. THE DEWATERED SOLIDS FROM THE SCREW PRESSES WILL FLOW TO A SCREW CONVEYOR SYSTEM AND BE DEPOSITED IN SLUDGE TRAILERS FOR TRANSPORT TO THE ROXANA LANDFILL. THE LIQUID FROM THIS DEWATERING PROCESS IS THEN RETURNED TO TANK TK-201.

NOTE THAT THE LOADOUT AREA ADJACENT TO THE 316,000 GALLON TANK WILL REMAIN AND SERVE AS A CONTINGENCY. IT WILL BE ABLE TO HAUL FROM THE 316,000 GALLON TANK OR ANY OF THE FOUR 1 MILLION GALLON TANKS.



DRAWING INDEX

SHEET NUMBER	DRAWING TITLE
LMP-1	COVER SHEET
LMP-2	PROCESS FLOW DIAGRAM
LMP-3	PROCESS FLOW DIAGRAM
LMP-4	PROCESS FLOW DIAGRAM
LMP-5	HYDRAULIC PROFILE
LMP-6	PROCESS FLOW DIAGRAM
LMP-7	TREATEMENT BUILDING & TANKS
LMP-8	97K TANK & DISCHARGE
000	LEACHATE FORCEMAIN PLAN VIEW (COLLECTION SYSTEM)

REFERENCE

1. TOPOGRAPHIC INFORMATION BASED UPON Bridgeton Landfill–DTM.dwg PROVIDED BY COOPER AERIAL SURVEYS CO., DATED FEB 2013. SURVEY FIELD SUPPLEMENTED BY WEAVER BOOS CONSULTANTS

SCALE IN FEET 0 60 120

POSTED 2/3/15

KEVIN KAMP, ENGINEER
PE - 2006019670
*HAND SIGNATURE ON INDIVIDUAL SHEETS

STATE OF MISSOURI ★ KEVIN T. KAMP NUMBER PE-2006019670 1/28/15 PROFESSIONAL ENGINEER

REVISION RECORD

NO	DATE	DESCRIPTION
1	01/28/15	FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

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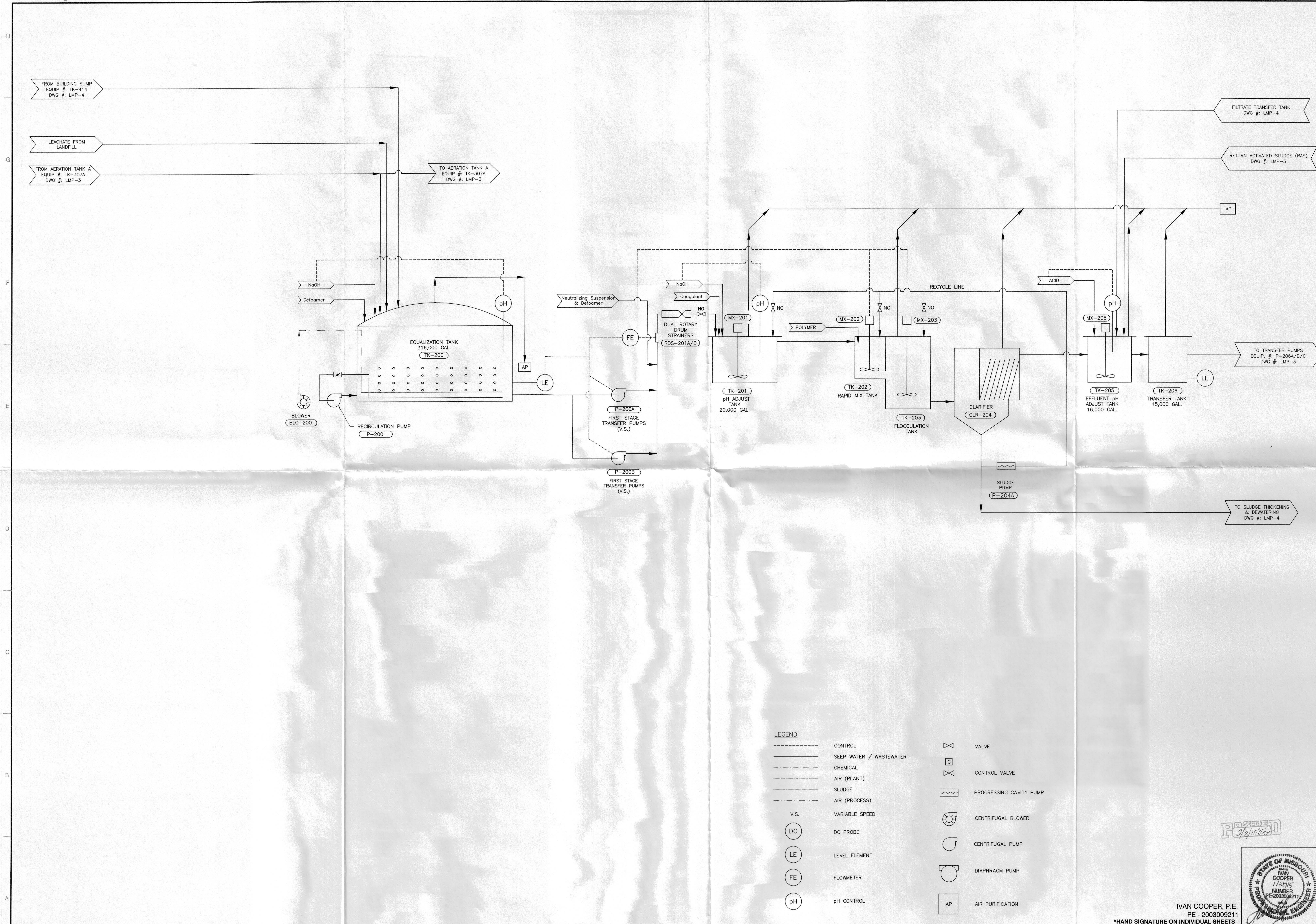
Received FEB 3 2015 SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
COVER SHEET

DATE:	JULY 2014	DRAWN BY:	SGB
DWG SCALE:	1" = 60'	CHECKED BY:	KTK
PROJECT NO:	130-484	APPROVED BY:	KTK

DRAWING NO.: **LMP-1**



FROM BUILDING SUMP
EQUIP #: TK-414
DWG #: LMP-4
LEACHATE FROM LANDFILL
FROM AERATION TANK A
EQUIP #: TK-307A
DWG #: LMP-3
TO AERATION TANK A
EQUIP #: TK-307A
DWG #: LMP-3
NaOH
Defoamer
pH
AP
LE
EQUALIZATION TANK
316,000 GAL.
TK-200
BLOWER
BLO-200
RECIRCULATION PUMP
P-200
Neutralizing Suspension & Defoamer
FE
P-200A
FIRST STAGE TRANSFER PUMPS (V.S.)
P-200B
FIRST STAGE TRANSFER PUMPS (V.S.)
NaOH
Coagulant
NO
DUAL ROTARY DRUM STRAINERS
RDS-201A/B
MX-201
TK-201
pH ADJUST TANK
20,000 GAL.
POLYMER
MX-202
MX-203
RECYCLE LINE
TK-202
RAPID MIX TANK
TK-203
FLOCCULATION TANK
CLARIFIER
CLR-204
SLUDGE PUMP
P-204A
ACID
MX-205
TK-205
EFFLUENT pH ADJUST TANK
16,000 GAL.
TK-206
TRANSFER TANK
15,000 GAL.
FILTRATE TRANSFER TANK
DWG #: LMP-4
RETURN ACTIVATED SLUDGE (RAS)
DWG #: LMP-3
TO TRANSFER PUMPS
EQUIP. #: P-206A/B/C
DWG #: LMP-3
TO SLUDGE THICKENING & DEWATERING
DWG #: LMP-4
LEGEND
CONTROL
SEEP WATER / WASTEWATER
CHEMICAL
AIR (PLANT)
SLUDGE
AIR (PROCESS)
V.S. VARIABLE SPEED
DO DO PROBE
LE LEVEL ELEMENT
FE FLOWMETER
pH pH CONTROL
VALVE
CONTROL VALVE
PROGRESSING CAVITY PUMP
CENTRIFUGAL BLOWER
CENTRIFUGAL PUMP
DIAPHRAGM PUMP
AP AIR PURIFICATION

IVAN COOPER, P.E.
PE - 2003009211
*HAND SIGNATURE ON INDIVIDUAL SHEETS

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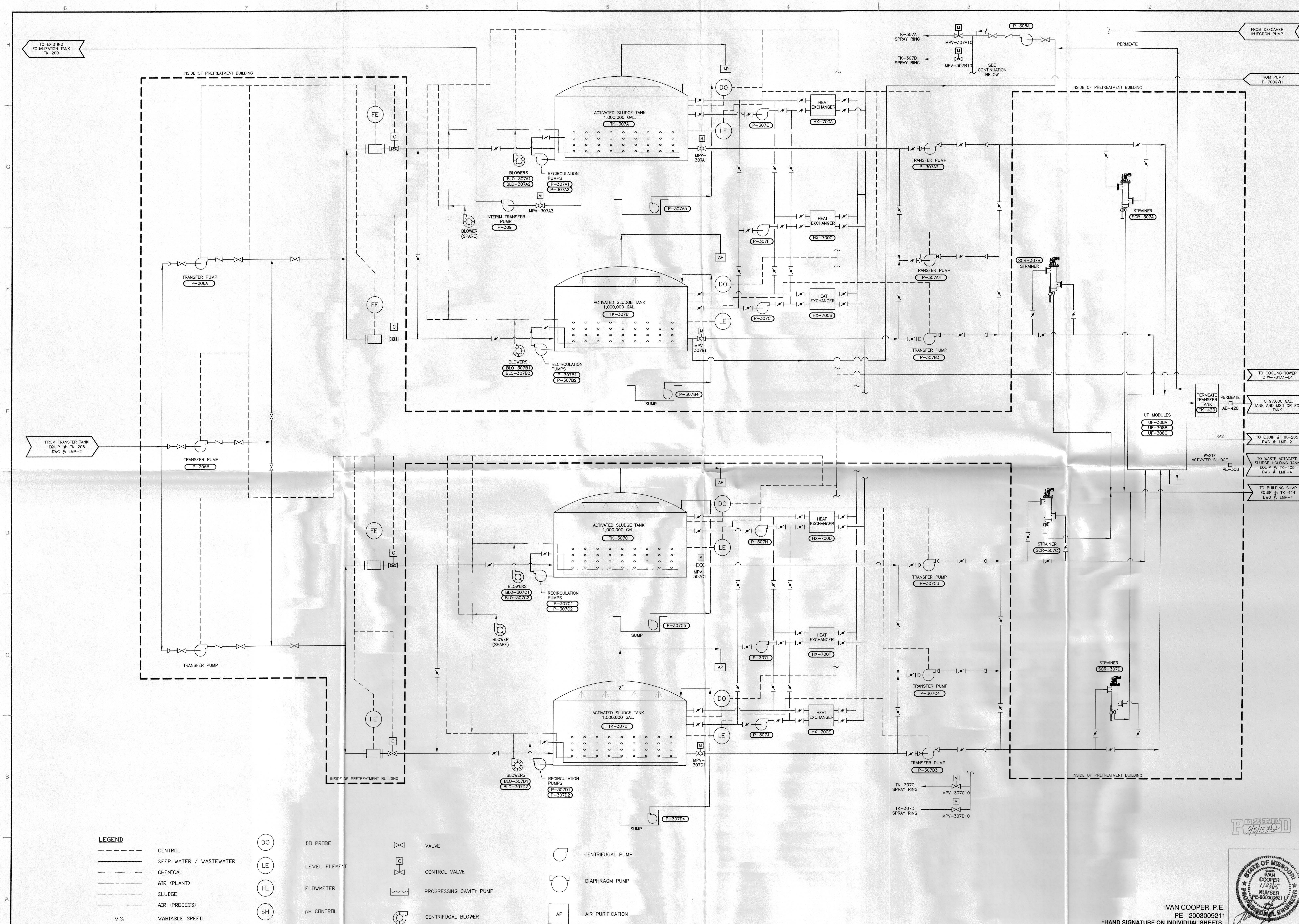
Received FEB 3 2015 SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
PROCESS FLOW DIAGRAM

DATE:	JULY 2014	DRAWN BY:	JKS
DWG SCALE:	NOT TO SCALE	CHECKED BY:	IAC
PROJECT NO:	130-484	APPROVED BY:	IAC

DRAWING NO.:
LMP-2



TO EXISTING EQUALIZATION TANK TK-200
INSIDE OF PRETREATMENT BUILDING
ACTIVATED SLUDGE TANK 1,000,000 GAL. TK-307A
ACTIVATED SLUDGE TANK 1,000,000 GAL. TK-307B
ACTIVATED SLUDGE TANK 1,000,000 GAL. TK-307C
ACTIVATED SLUDGE TANK 1,000,000 GAL. TK-307D
BLOWERS BLO-307A1 BLO-307A2
RECIRCULATION PUMPS P-307A1 P-307A2
INTERIM TRANSFER PUMP P-309
BLOWER (SPARE)
TRANSFER PUMP P-206A
TRANSFER PUMP P-206B
TRANSFER PUMP
FROM TRANSFER TANK EQUIP. #: TK-206 DWG #: LMP-2
HEAT EXCHANGER HX-700A
HEAT EXCHANGER HX-700B
HEAT EXCHANGER HX-700C
HEAT EXCHANGER HX-700D
HEAT EXCHANGER HX-700E
HEAT EXCHANGER HX-700F
TRANSFER PUMP P-307A3
TRANSFER PUMP P-307A4
TRANSFER PUMP P-307B3
TRANSFER PUMP P-307C3
TRANSFER PUMP P-307C4
TRANSFER PUMP P-307D3
STRAINER SCR-307A
STRAINER SCR-307B
STRAINER SCR-307C
STRAINER SCR-307D
UF MODULES UF-308A UF-308B UF-308C
PERMEATE TRANSFER TANK TK-420
FROM DEFOAMER INJECTION PUMP
FROM PUMP P-700G/H
PERMEATE
TO COOLING TOWER CTW-701A1-01
TO 97,000 GAL. TANK AND MSD OR EQ. TANK
TO EQUIP #: TK-205 DWG #: LMP-2
TO WASTE ACTIVATED SLUDGE HOLDING TANK EQUIP #: TK-409 DWG #: LMP-4
TO BUILDING SUMP EQUIP #: TK-414 DWG #: LMP-4
TK-307A SPRAY RING
TK-307B SPRAY RING
TK-307C SPRAY RING
TK-307D SPRAY RING
SEE CONTINUATION BELOW
SUMP
LEGEND
CONTROL
SEEP WATER / WASTEWATER
CHEMICAL
AIR (PLANT)
SLUDGE
AIR (PROCESS)
V.S. VARIABLE SPEED
DO PROBE
LEVEL ELEMENT
FLOWMETER
pH CONTROL
VALVE
CONTROL VALVE
PROGRESSING CAVITY PUMP
CENTRIFUGAL BLOWER
CENTRIFUGAL PUMP
DIAPHRAGM PUMP
AIR PURIFICATION

IVAN COOPER, P.E.
PE - 2003009211
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1	1/28/15	FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

Civil & Environmental Consultants, Inc.
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 · 866-250-3679
www.cecinc.com

SWMP
BRIDGETON LANDFILL
#118912, ST. LOUIS
GC/FP

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MO 63044
PHONE: (314) 744-8195
FAX: (314) 656-2107

Received FEB 3 2015 SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
PROCESS FLOW DIAGRAM

DATE:	JULY 2014	DRAWN BY:	JKS
DWG SCALE:	NOT TO SCALE	CHECKED BY:	IAC
PROJECT NO:	130-484	APPROVED BY:	IAC

DRAWING NO.: LMP-3


FROM CLARIFIER EQUIP. #: CLF-204 DWG #: LMP-2
PUMP (P-204B)
MX-410
AP
LE
DUAL PUMP (P-410A) (P-410B)
(TK-410) PHYSICAL CHEMICAL SLUDGE HOLDING TANK 10,000 GAL.
POLYMER
FE
(MST-411A) (MST-411B) ROTARY DRUM SLUDGE THICKENER
FROM ULTRAFILTER EQUIP. #: UF-308A/B/C DWG #: LMP-3
Defoamer
BLOWER (BLO-409)
(TK-409) WASTE ACTIVATED SLUDGE HOLDING TANK 10,000 GAL.
DUAL PUMP (P-409A) (P-409B)
BLOWER (BLO-412)
(TK-412) SLUDGE THICKNER HOLDING TANK 10,000 GAL.
DUAL PUMP (P-412A) (P-412B)
POLYMER
TYPE D
MX-413
M
DUAL MIX TANKS (TK-413A) (TK-413B)
(D-413A) (D-413B) DEWATERING UNIT
SCREW CONVEYOR
DUAL TRAILERS
TO LANDFILL
TO TRANSFER TANK EQUIP. #: TK-200 DWG #: LMP-2
(P-414A/B) (TK-415) BUILDING SUMP
(TK-415) FILTRATE TANK
(P-415A/B) DUAL TRANSFER PUMPS
TO 2ND pH TANK EQUIP#: TK-205 DWG#: LMP-2
LEGEND
CONTROL
SEEP WATER / WASTEWATER
CHEMICAL
AIR (PLANT)
SLUDGE
AIR (PROCESS)
V.S. VARIABLE SPEED
DO DO PROBE
LE LEVEL ELEMENT
FE FLOWMETER
pH pH CONTROL
VALVE
CONTROL VALVE
PROGRESSING CAVITY PUMP
CENTRIFUGAL BLOWER
CENTRIFUGAL PUMP
DIAPHRAGM PUMP
AP AIR PURIFICATION
M MOTOR
IVAN COOPER, P.E.
PE - 2003009211
*HAND SIGNATURE ON INDIVIDUAL SHEETS
STATE OF MISSOURI IVAN COOPER 1/28/15 NUMBER PE-2003009211 PROFESSIONAL ENGINEER
POSTED
REVISION RECORD
NO DATE DESCRIPTION
1 01/28/15 FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY
Civil & Environmental Consultants, Inc.
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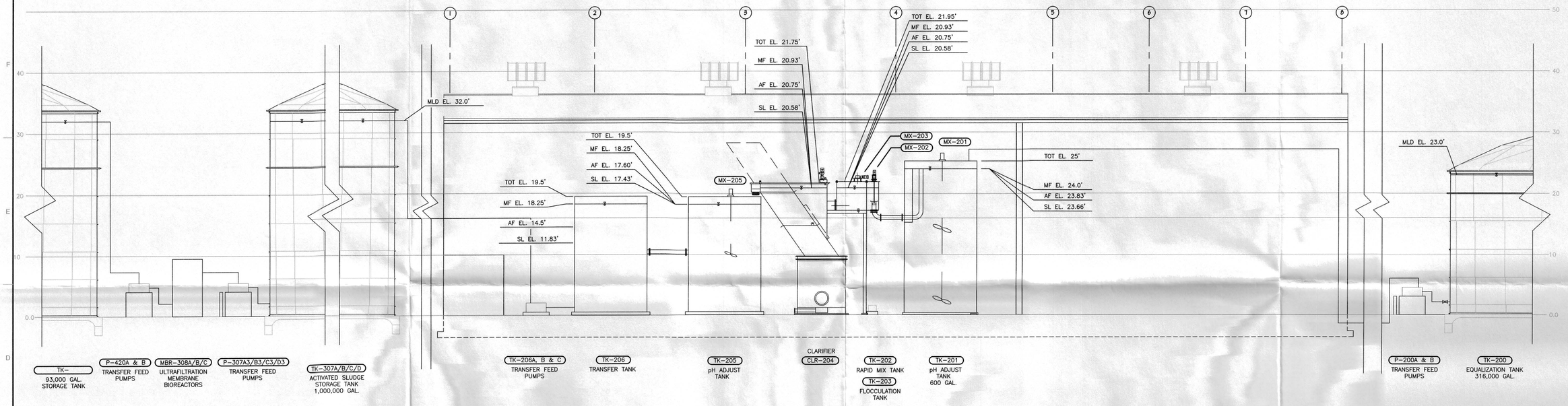
Received
FEB 3 2015
BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGMENT PLAN
PROCESS FLOW DIAGRAM
DATE: JULY 2014 DRAWN BY: JKS
DWG SCALE: NOT TO SCALE CHECKED BY: IAC
PROJECT NO.: 130-484
APPROVED BY: IAC
DRAWING NO.:
LMP-4



LEGEND

TOT	– TOP OF TANK ELEVATION
MF	– MAXIMUM FLOW ELEVATION 150gpm
AF	– AVERAGE FLOW ELEVATION 42gpm
HAL	– HIGH ALARM LEVEL ELEVATION
HOL	– HIGH OPERATING LEVEL ELEVATION
LOL	– LOW OPERATING LEVEL ELEVATION
MLD	– MAXIMUM LIQUID DEPTH
SL	– STATIC WATER LEVEL ELEVATION

NOTE:
1. ELEVATIONS BASED ON 2" GROUT PADS UNDER STEEL BASE PLATES (CLARIFIER). 4" AND 6" CONCRETE PADS UNDER FLAT BOTTOM FRP TANKS. FLOOR ELEVATION = 0.0

POSTED 2/3/15 SWMP

STATE OF MISSOURI
IVAN COOPER
11/28/15
NUMBER PE-2003009211
PROFESSIONAL ENGINEER

IVAN COOPER, P.E.
PE - 2003009211
*HAND SIGNATURE ON INDIVIDUAL SHEETS

REVISION RECORD

NO	DATE	DESCRIPTION
1	01/26/15	FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

Civil & Environmental Consultants, Inc.
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SWMP
BRIDGETON LANDFILL
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13570 ST. CHARLES ROCK RC
BRIDGETON, MO 63044
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FAX: (314) 656-2107

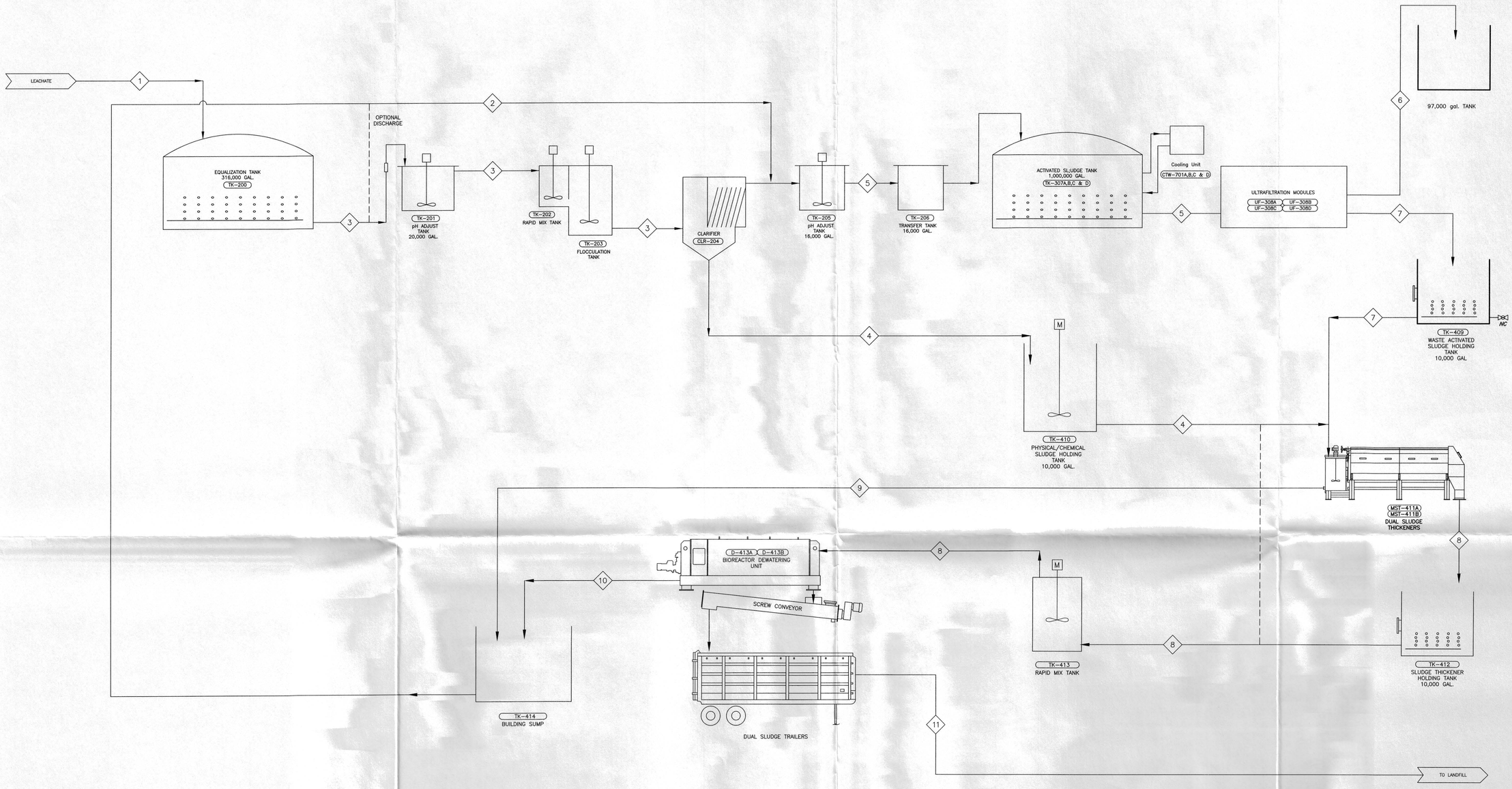
Received
FEB 3 2015
SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
HYDRAULIC PROFILE

DATE:	JULY 2014	DRAWN BY: JKS
DWG SCALE:	NOT TO SCALE	CHECKED BY: IAC
PROJECT NO:		130-484
APPROVED BY:		IAC

DRAWING NO.:
LMP-5

P:\2013\130-484\-CADD\DWG\PHASE01\LMP\130484-PSX4.DWG LAST SAVED BY:(GBROSS) - 2/17/2014 3:47:19 PM, LAST PRINTED BY:(GBROSS, SARAH) - 1/29/2015 1:54:10 PM



Stream No.	Stream Description	Max Flow (gpm)	Max Flow (gpd)	Max Flow (MGD)	Average Flow (gpm)	Average Flow (gpd)	Average Flow (MGD)	Tank	Detention Time (days)	Detention Time (hours)
1	From Leachate field to Equalization Tank	312.5	450,000	0.450	208.3	300,000	0.300	Equalization Tank	1.05	25.3
2	From Recycle Tank to pH Adjust Tank #2	539.1	776,249	0.776	359.4	517,487	0.517			
3	From Equalization Tank to pH Adjust Tank #1 to Clarifier	312.5	450,000	0.450	208.3	300,000	0.300	Clarifier*	0.03	0.70
4	From Clarifier to Phys/Chem Sludge Tank to Sludge Thickener (P/C Sludge)	75.3	108,450	0.108	50.2	72,287	0.072	P/C Sludge Tank	0.14	3.32
5	From pH Adjust Tank to Transfer Tank to Aerobic Tanks	776.2	1,117,799	1.118	517.5	745,200	0.745	Aeration Tanks	5.04	120.97
6	From MBR to 97,000 gallon Tank to MSD	255.4	367,799	0.368	170.3	245,200	0.245	97K Tank	0.40	9.49
7	From MBR to WAS tank to Sludge Thickener (A Sludge)	520.8	750,000	0.750	347.2	500,000	0.500			
8	Sludge Thickener to Sludge Dewatering (P/C & A Sludge)	142.7	205,503	0.206	95.1	137,000	0.137			
9	From Sludge Thickener to Recycle Tank	453.4	652,947	0.653	302.3	435,287	0.435	Recycle Tank	0.01	0.14
10	From Sludge Dewatering to Recycle Tank	85.6	123,302	0.123	57.1	82,200	0.082			
11	From Sludge Dewatering to Landfill (P/C + A Sludge)	57.1	82,201	0.082	38.1	54,800	0.055			

GENERAL NOTES:

1. LEACHATE INCLUDES MULTIPLE LEACHATE COLLECTION WELLS (LCS) SOURCES, MULTIPLE GAS WELL CONDENSATE (LS) SOURCES, AND GRIT TRAP OVERFLOWS.
2. Solids Assumptions: Clarifier (1%), MBR (1.5%), Sludge Thickener (6%), and Sludge Screw Press (15%)

IVAN COOPER, P.E.
PE - 2003009211
*HAND SIGNATURE ON INDIVIDUAL SHEETS

STATE OF MISSOURI
IVAN COOPER
NUMBER PE-2003009211
PROFESSIONAL ENGINEER
1/28/15

POSTED 2/3/15 SDD

REVISION RECORD

NO.	DATE	DESCRIPTION
1	01/08/15	FINAL LEACHTE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

Civil & Environmental Consultants, Inc.
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
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BRIDGETON LANDFILL
#118912, ST. LOUIS
GC/FP

BRIDGETON LANDFILL, LL
13570 ST. CHARLES ROCK R
BRIDGETON, MO 63044
PHONE: (314) 744-8195
FAX: (314) 656-2107

Received FEB 3 20 SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
PROCESS FLOW DIAGRAM

DATE:	JULY 2014
DRAWN BY:	JKS
DWG SCALE:	NOT TO SCALE
CHECKED BY:	IAC
PROJECT NO:	130-484
APPROVED BY:	IAC

DRAWING NO.:
LMP-6

P:\2013\130-484\-CAD\LMP\PHASE#1\LMP\130484-P300 HIGH FLOW.DWG LAST SAVED BY:(SBRIGGS) - 1/29/2015 3:47:27 PM, LAST PRINTED BY:(SBRIGGS, SHAW) - 1/29/2015 1:56:53 PM

NORTH

ACTIVATED SLUDGE TANK TK-307D

ACTIVATED SLUDGE TANK TK-307C

ACTIVATED SLUDGE TANK TK-307B

ACTIVATED SLUDGE TANK TK-307A

EQUALIZATION TANK TK-200 (316K TANK)

8"X10" HDPE DUAL CONTAINED SUPPLY/RETURN LINES TO THE ACTIVATED SLUDGE TANKS

LEACHATE PRETREATMENT PLANT

CLEAN-OUTS

FROM LANDFILL (REFER TO SITE INFRASTRUCTURE DRAWINGS)

REFERENCE

1. TOPOGRAPHIC INFORMATION BASED UPON Bridgeton Landfill–DTM.dwg PROVIDED BY COOPER AERIAL SURVEYS CO., DATED FEB 2013. SURVEY FIELD SUPPLEMENTED BY WEAVER BOOS CONSULTANTS

SCALE IN FEET
0 30 60

POSTED 2/3/15 KTK

KEVIN KAMP, ENGINEER
PE - 2006019670
*HAND SIGNATURE ON INDIVIDUAL SHEETS

REVISION RECORD

NO	DATE	DESCRIPTION
1	01/28/15	FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

Civil & Environmental Consultants, Inc.
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www.cecinc.com

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GC/FP

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BRIDGETON, MO 63044
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Received FEB 3 2015

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
TREATMENT BUILDING & TANKS

DATE:	JULY 2014
DRAWN BY:	SGB
CHECKED BY:	KTK
DWG SCALE:	1" = 30'
PROJECT NO:	130-484
APPROVED BY:	KTK

DRAWING NO.:
LMP-7

P:\2013\130-484\-CADD\DWG\PHASE01\130484-FIGURE 1 LEACHATE MANAGEMENT PLAN.DWG LAST SAVED BY:(SBROSS) - 1/29/2015 4:12:15 PM, LAST PRINTED BY:(BROSS, SWMV) - 1/29/2015 2:12:30 PM

NORTH

CONNECTION VAULT FOR 6"X10" LINE

CLEAN-OUTS

6"X3" TEE

CLEAN-OUTS

CLEAN-OUTS

8" HDPE

6"X10" HDPE

TO MSD:
BISSELL POINT TREATEMENT PLANT
COLD WATER CREEK TREATMENT PLANT
MISSOURI RIVER TREATMENT PLANT

TO MSD VIA FORCEMAIN (UNDER CONSTRUCTION)

DISCHARGE LINE

97K TANK

REVISION RECORD

NO	DATE	DESCRIPTION
1	01/28/15	FINAL LEACHATE MANAGEMENT PLAN TO MO DNR & ST. LOUIS COUNTY

CEC

Civil & Environmental Consultants, Inc.
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 - 866-250-3679
www.cecinc.com

SWMP
BRIDGETON LANDFILL
#118912, ST. LOUIS
GC/FP

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MO 63044
PHONE: (314) 744-8195
FAX: (314) 656-2107

Received
FEB 3 2015
SWMP

BRIDGETON LANDFILL
13570 ST. CHARLES ROCK ROAD
LEACHATE MANAGEMENT PLAN
97K TANK & DISCHARGE

DATE:	JULY 2014	SGB
DRAWN BY:		KTK
DWG SCALE:	1" = 30'	
CHECKED BY:		KTK
PROJECT NO.:		130-484
APPROVED BY:		

DRAWING NO.:

LMP-8

REFERENCE

1. TOPOGRAPHIC INFORMATION BASED UPON Bridgeton Landfill–DTM.dwg PROVIDED BY COOPER AERIAL SURVEYS CO., DATED FEB 2013. SURVEY FIELD SUPPLEMENTED BY WEAVER BOOS CONSULTANTS

SCALE IN FEET
0 30 60

PE 2006019670
2/3/2015

STATE OF MISSOURI
KEVIN T. KAMP
NUMBER PE-2006019670
PROFESSIONAL ENGINEER

KEVIN KAMP, ENGINEER
PE - 2006019670
*HAND SIGNATURE ON INDIVIDUAL SHEETS

P:\2013\130-484\CADD\DWG\PHASE1\LOCHA-FIGURE 1 LEACHATE MANAGEMENT PLAN.DWG LAST SAVED BY(SBROSS) - 1/9/2015 4:10:15 PM, LAST PRINTED BY(SBROSS, SAHU) - 1/20/2015 2:11:52 PM

LEGEND

- GMP-4 — GAS MONITORING PROBE
- PZ-20I-AS — PIEZOMETER MONITORING WELL
- GEW-38 — GAS EXTRACTION WELL
- GEW-85 — DUAL GAS EXTRACTION WELL
- SEW-63 — SURFACE EXTRACTION WELL
- PEW-20 — PERIMETER GAS EXTRACTION WELL
- CT-1 — CONDENSATE SUMP
- LS-1 / LS-6 — LEACHATE COLLECTION SUMP
- HS-1 — HORIZONTAL COLLECTION SUMP
- PS-15 — PERIMETER SUMP
- LCS-2D — LEACHATE COLLECTION SUMP
- SC-B1 — SURFACE COLLECTOR
- TMP-9 — TEMPERATURE MONITORING PROBE
- GC-3 — SUBSURFACE RCP WELLS
- ET-2 — TRENCH SUMP
- IT-7 — INTERCEPTION TRENCH RISER
- PL-7 — PERIMETER LEACHATE SUMP
- WB-1 — WELL BORE BOOT
- TS-1 — TRENCH SUMP
- OL-12 — OVER LINER TIE IN POINT
- GIW-4 — GAS INTERCEPTOR WELL
- PNEUMATIC FORCEMAIN LATERAL (SIZE VARIES)
- LCS FORCEMAIN (SIZE VARIES)
- ARTESIAN WELL DISCHARGE PIPING (SIZE VARIES)
- CHECK VALVE (SIZE VARIES)
- ELECTRIC ACTUATED VALVE (SIZE VARIES)
- MANUAL ISOLATION VALVE (SIZE VARIES)
- CLEAN-OUT (SIZE VARIES)
- GC — GRIT CHAMBER
- LS — LIFT STATION
- FLOW METER (SIZE VARIES)

SWMP
BRIDGETON LANDFILL
#118912, ST. LOUIS
GC/FP

0 100 200 Feet

Boenker Lane

Old St. Charles Rock Road

STATE OF MISSOURI
DANIEL RICHARD FEEZOR
NUMBER E-30292
REGISTERED PROFESSIONAL ENGINEER
7/1/14

Received
FEB 3 2015
SWMP

REVISED
2/3/15 DRF

NOTES:
1. - THIS DRAWING REPRESENTS A CURRENT VIEW OF THE ACTIVE LEACHATE FORCEMAIN AT THE BRIDGETON LANDFILL. TO ADDRESS ONGOING OPERATIONAL NEEDS, THIS SYSTEM IS MODIFIED PERIODICALLY BY BRIDGETON LANDFILL PERSONNEL AND THIRD PARTY CONTRACTORS. ANY MODIFICATIONS MADE TO EXISTING SYSTEM ARE PRESENTED IN QUARTERLY SITE INFRASTRUCTURE UPDATES SUBMITTED TO MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR).

2. - PORTIONS OF THE OBSOLETE LEACHATE FORCEMAIN PIPING SYSTEM ARE STILL IN PLACE ON THE SOUTH AND NORTH QUARRY OF THE BRIDGETON LANDFILL.THIS DRAWING REPRESENTS A VIEW OF ONLY THE ACTIVE LEACHATE FORCEMAIN SYSTEM AND DOES NOT INCLUDE ANY INACTIVE PIPING.

3. - THIS DRAWING REPRESENTS A MORE UPDATED VIEW OF THE LEACHATE FORCEMAIN SYSTEM THAN THE PREVIOUS FIRST QUARTER 2014 SITE INFRASTRUCTURE SUBMITTAL TO MDNR. ANY AND ALL UPDATES INCLUDED ON THIS DRAWING WILL BE INCORPORATED IN THE UPCOMING SECOND QUARTER SITE INFRASTRUCTURE SUBMITTAL TO MDNR.

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL SITE INFRASTRUCTURE	Engineering for a Better World FEEZOR ENGINEERING, INC.	JULY 2014 DESIGNED BY: AMR APPROVED BY: DRF
LEACHATE FORCEMAIN PLAN VIEW			DRAWING NO.: **000**
PROJECT NUMBER: BT-023	FILE PATH: C:\Users\Andrew\Desktop\4 - Report\Appendices\E - Construction Certification Drawings\CAD\BT-023-A8-000 Leachate Forcemain Infrastructure1.dwg		REVISION / DATE

APPENDIX B

MSD PERMIT #1003803000-1

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
HAULED & INDUSTRIAL WASTEWATER DISCHARGE PERMIT

PERMIT NO: 1003803000 - 1

EFFECTIVE DATE: September 01, 2014
EXPIRATION DATE: August 31, 2019

ISSUED TO: BRIDGETON LANDFILL LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

SIC NUMBER(S): 4953

TOTAL NUMBER OF PERMITTED DISCHARGE POINTS: 2
SAMPLING PT. REF NUMBER(S): 013, 014

In accordance with the provisions of the Federal Pretreatment Regulations (40 CFR 403) and Metropolitan St. Louis Sewer District Ordinances No. 12559 and No. 13701, the permittee is hereby authorized to discharge wastewater into the Metropolitan St. Louis Sewer District's sanitary or combined sewer system, and at the Metropolitan St. Louis Sewer District's hauled waste receiving station. All discharges so authorized shall be limited and controlled pursuant to the terms and conditions of this permit.

Noncompliance with any term or condition of this permit shall constitute an ordinance violation. If formal enforcement action is required to gain compliance, the permittee who is found guilty of a violation shall be subject to fine or imprisonment, or both such fine and imprisonment, for each violation. Each day in which any such violation shall continue shall be deemed a separate offense.

Compliance with the terms and conditions of this permit does not relieve the permittee of the obligation to comply with all other applicable pretreatment regulations, standards, or requirements under local, State and Federal laws, including any such regulation, standard, legal requirement, or law that may become effective during the life of this permit.

This permit only authorizes wastewater discharges identified herein. It does not apply to any other discharge.

METROPOLITAN ST. LOUIS SEWER DISTRICT

John R. Lodderhose, P.E.
Assistant Director of Engineering

Douglas M. Mendoza, P.E.
Mgr. of Industrial Pretreatment

DISCHARGE LIMITATIONS FOR ON SITE DISCHARGE

SAMPLING POINT REFERENCE NUMBER: 013

SAMPLING POINT LOCATION: Manhole immediately upstream of junction manhole to pump stations for Missouri River plant, or for sewer extension line to other MSD treatment plants

AVERAGE WASTEWATER FLOW (GPD): 314,769

WASTEWATER SOURCE AND CATEGORY: Landfill Leachate(Including byproducts from underground thermal event & gas condensate) + Plant & Equipment Washdown(Transfer station & jetter trucks) + Storm Water(Contaminated from leachate spills) + Cooling Tower Blowdown

DISCHARGE LIMITATIONS AND SELF-MONITORING REQUIREMENTS

Parameter	Limit *	Limit Type **	Sampling Frequency
Ammonia (as N)	*****	Daily Avg	Once/3 mo
Arsenic (Total) [mg/L]	.4	Daily Avg	Once/3 mo
Benzene [mg/L]	.14	Instant	Once/3 mo
Biochemical Oxygen Demand (5 Day)	****	Daily Avg	Once/mo
Cadmium (Total) [mg/L]	.7	Daily Avg	Once/3 mo
Chemical Oxygen Demand	****	Daily Avg	Once/mo
Chromium (Total) [mg/L]	5	Daily Avg	Once/3 mo
Copper (Total) [mg/L]	2.7	Daily Avg	Once/3 mo
Flow [GPD]	***	Daily Avg	***
Gross Alpha	*****	Daily Avg	Once/3 mo
Gross Beta	*****	Daily Avg	Once/3 mo
Gross Gamma	*****	Daily Avg	Once/3 mo
Iron (Total) [mg/L]	150	Daily Avg	Once/3 mo
Lead (Total) [mg/L]	.4	Daily Avg	Once/3 mo
Magnesium (Total)	*****	Daily Avg	Once/3 mo
Mercury (Total) [mg/L]	.01	Daily Avg	Once/3 mo
Nickel (Total) [mg/L]	2.3	Daily Avg	Once/3 mo
Oil and Grease (Total) [mg/L]	200	Instant	Once/3 mo
Radium-226 [pci/L]	600	Monthly Avg	Once/3 mo
Radium-228 [pci/L]	600	Monthly Avg	Once/3 mo
Silver (Total) [mg/L]	.5	Daily Avg	Once/3 mo
Temperature [Deg C]	60	Instant	Once/mo
Total Phenols [mg/L]	21	Instant	Once/3 mo
Total Suspended Solids	****	Daily Avg	Once/mo
Total Toxic Organics [mg/L]	5.844	Instant	Once/3 mo
Transmittance Unfiltered	*****	Daily Avg	Once/mo
Uranium (Total) [pci/L]	3000	Monthly Avg	Once/3 mo
Zinc (Total) [mg/L]	3	Daily Avg	Once/3 mo
pH [SU]	11.5	Instant	Once/mo
pH [SU]	5.5	Instant	Once/mo

* Limits are based on MSD Ordinance 12559 and applicable federal categorical and radiological standards. See Section II of the permit conditions for explanation of any adjustments to the published limits made pursuant to Article V, Section 2.B of the Ordinance.

** See Section I.A.2 of the permit conditions.

*** Report a measured or estimated average daily flow for at least one representative operating day per quarter. If additional flow measurements or estimates are made, all must be reported.

**** See Section I.A.11 of the permit conditions.

***** Monitoring requirement only

DISCHARGE LIMITATIONS FOR HAULED WASTE DISCHARGE

SAMPLING POINT REFERENCE NUMBER: 014

SAMPLING POINT LOCATION: Truck loading stations at 316K gallon equalization tank or 1 M gallon biological treatment tanks

AVERAGE WASTEWATER FLOW (GPD): 314,769

WASTEWATER SOURCE AND CATEGORY: Landfill Leachate(Including byproducts from underground thermal event & gas condensate) + Plant & Equipment Washdown(Transfer station & jetter trucks)

DISCHARGE LIMITATIONS AND SELF-MONITORING REQUIREMENTS

Parameter	Limit *	Limit Type **	Sampling Frequency
Ammonia (as N)	****	Daily Avg	Once/3 mo
Arsenic (Total)	****	Daily Avg	Once/3 mo
Benzene [mg/L]	.14	Instant	Once/3 mo
Biochemical Oxygen Demand (5 Day)	****	Daily Avg	Once/mo
Cadmium (Total)	****	Daily Avg	Once/3 mo
Chemical Oxygen Demand	****	Daily Avg	Once/mo
Chromium (Total)	****	Daily Avg	Once/3 mo
Copper (Total)	****	Daily Avg	Once/3 mo
Flow [GPD]	***	Daily Avg	***
Gross Alpha	****	Daily Avg	Once/3 mo
Gross Beta	****	Daily Avg	Once/3 mo
Gross Gamma	****	Daily Avg	Once/3 mo
Iron (Total)	****	Daily Avg	Once/3 mo
Lead (Total)	****	Daily Avg	Once/3 mo
Magnesium (Total)	****	Daily Avg	Once/3 mo
Mercury (Total)	****	Daily Avg	Once/3 mo
Nickel (Total)	****	Daily Avg	Once/3 mo
Oil and Grease (Total)	****	Daily Avg	Once/3 mo
Radium-226 [pci/L]	600	Monthly Avg	Once/3 mo
Radium-228 [pci/L]	600	Monthly Avg	Once/3 mo
Silver (Total)	****	Daily Avg	Once/3 mo
Temperature	****	Daily Avg	Once/mo
Total Phenols	****	Daily Avg	Once/3 mo
Total Suspended Solids	****	Daily Avg	Once/mo
Total Toxic Organics	****	Daily Avg	Once/3 mo
Uranium (Total) [pci/L]	3000	Monthly Avg	Once/3 mo
Zinc (Total)	****	Daily Avg	Once/3 mo
pH	****	Daily Avg	Once/mo

* Limits are based on MSD Ordinance 12559 and applicable federal categorical and radiological standards. See Section II of the permit conditions for explanation of any adjustments to the published limits made pursuant to Article V, Section 2.B of the Ordinance.

** See Section I.A.2 of the permit conditions.

*** Report a measured or estimated average daily flow for at least one representative operating day per quarter. If additional flow measurements or estimates are made, all must be reported.

**** Monitoring requirement only

PERMIT CONDITIONS

SECTION I - GENERAL CONDITIONS:

A. MONITORING AND REPORTING REQUIREMENTS:

1. From the effective date of this permit, the permittee shall sample and analyze the discharge, at each of the identified sampling points. The pollutants to be monitored, the limitations, limitation types and minimum sampling frequencies are specified individually for each sampling point. The results of sample analyses and the results of all other self-monitoring activities specified in this permit shall be reported to the District as per paragraph A.9 below.

2. The limitation types, which may be specified in this permit, are defined as follows:

An **INSTANT** limitation is the maximum allowable concentration or mass of the pollutant in a grab sample for all pollutants except pH and temperature. For pH, the INSTANT limitations are the minimum and maximum allowable instantaneous pH values in standard units. For temperature, the INSTANT limitation is the maximum allowable instantaneous temperature in degrees Celsius (centigrade).

A **DAILY AVG** limitation is the maximum allowable concentration or mass of the pollutant in a composite sample collected within a 24-hour period.

A **DAILY MAX** limitation is the maximum allowable concentration or mass of the pollutant in any sample collected within a 24-hour period.

A **MONTHLY AVG** limitation is the maximum allowable average concentration or mass of the pollutant determined by calculating the arithmetic average of the concentrations or masses found in all daily samples collected within a calendar month.

A **4-DAY AVG** limitation is the maximum allowable average concentration or mass of the pollutant determined by calculating the arithmetic average of the concentrations or masses found in the daily samples collected on four consecutive sampling days. Sampling days are not necessarily consecutive calendar days.

Note: A daily sample is any sample collected within a 24-hour period.

3. Unless specified otherwise in Section II of these conditions all samples, collected to satisfy the monitoring and reporting requirements of this permit, shall be of the following types:

a. Temperature, pH and chlorine residual measurements, when required, **shall be made on-site at the points of discharge** and those measurements reported as grab sample results except, if continuous monitoring is employed for pH and/or temperature, reporting shall be as per paragraph A.7 below.

b. For oil and grease, total phenols, cyanide, sulfide and volatile organics, when required, samples shall be **Grab Samples**.

c. For all other pollutants, samples shall be **COMPOSITE SAMPLES** made up by combining a minimum of four individual grab samples within a 24-hour period. The individual grabs must be adequately flow or time proportioned to ensure a composite sample that is representative of that day's discharge.

4. When monitoring is required for Total Toxic Organics (TTO), the TTO result shall be determined by summing all quantifiable values greater than 0.01 mg/l for the applicable toxic organics.

a. For a discharge subject to a categorical pretreatment standard, the applicable toxic organics are listed in the standard. The standards are contained in 40 CFR 405 through 40 CFR 471.

b. For all other discharges the applicable toxic organics are all of those, from the list in 40 CFR 401.15, which are or may be present in the discharge.

In addition to reporting the summed TTO result, the permittee shall include, with the self-monitoring report, the analytical value obtained for each toxic organic analyzed.

5. Sampling of all discharges shall be conducted in such a manner as to ensure that the results of individual samples (whether grab or composite) are representative of normal operations and that the results of all samples during the reporting period are representative of the conditions during the reporting period.

6. All sampling and analyses performed to satisfy the monitoring and reporting requirements of this permit shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto unless other techniques are prescribed, within this permit, for specific parameters.

7. If the permittee employs continuous monitoring techniques for pH, temperature, and/or lower explosive limit at any sampling point identified in this permit, unintentional and temporary excursions outside the limitations are allowed subject to the provisions of Article X, Subsection Two-D of District Ordinance 12559. The permittee shall include, with each self-monitoring report, a summary of the continuous monitoring data. For each month, the summary shall show all excursions outside the permitted limitations, the elapsed time for each excursion, and the total time for all excursions for temperature, pH, and/or lower explosive limit.

8. If the permittee monitors any of the listed pollutants, using the methods specified in this permit, more often than required by this permit, the results of all such additional monitoring and any additional flow measurements shall be included in the self-monitoring reports.

9. A self-monitoring report (on forms supplied or approved by the District) shall be submitted to the District's Division of Environmental Compliance for each calendar quarter. Each report shall include:

a. All facility and sample description information required on the District's reporting form.
b. Analytical results, with dates and times, for all analyzed samples collected within the quarter.
c. Daily flows, with dates, for all measurements or estimates made within the quarter.
d. Any certification statements required pursuant to the Special Conditions in Section II.
e. Any other data or attachments required pursuant to the Special Conditions in Section II.

Each self-monitoring report shall be certified and signed by an individual authorized in accordance with the provisions of Article X, Section Three of District Ordinance 12559. The reports shall be submitted to the District as soon as possible after all required data are available, but no later than 28 days after the end of each quarter.

For the calendar quarter of:	The report must be postmarked no later than:
January 1 through March 31	April 28
April 1 through June 30	July 28
July 1 through September 30	October 28
October 1 through December 31	January 28

A report must be submitted for each calendar quarter even if, for any reason, sampling was not required or was not performed during the quarter. **The first report under this permit is due by October 28, 2014.**

10. If any sampling performed by the permittee, using the methods specified in this permit, indicates a violation of any permit limitation, the permittee shall notify the District's Division of Environmental Compliance within one business day of becoming aware of the violation. The permittee shall resample the discharge and shall submit the results of the resampling within thirty (30) days of becoming aware of the violation.

11. Unless specified elsewhere in this permit, discharges of Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS) are not limited under the terms of this permit. However, the monitoring values reported will be used by the District to assess the applicability of extra-strength surcharges under the provisions of the District's Wastewater User Charge Ordinances. Extra-strength surcharges may be applicable when measured values exceed 300 mg/l for BOD, 600 mg/l for COD and/or 300 mg/l for TSS. If the permittee is currently subject to extra-strength surcharge, the BOD, COD and TSS values used for billing, as of the permit effective date, are listed in Section II of the permit conditions. These values are updated periodically and may change during the life of this permit.

B. CHANGE IN DISCHARGE:

1. The permittee shall not significantly increase the average daily volume, or flow rate of discharge or add any significant new pollutants or significantly increase the discharge of existing pollutants set forth in this permit without first having secured an amendment to the permit unless the permit conditions authorize such increase or additions without an amendment.

2. The permittee shall notify the District's Division of Environmental Compliance of any proposed significant new or increased discharge. The permittee shall make the notification at least ten (10) business days prior to the date of the planned increase or addition.

3. As defined in Article II of District Ordinance 12559, significant new or increased discharge means:
   a. Any discharge from a new process or facility or a new source.
   b. Any increase in volume or rate of discharge from an existing process or facility when the new long term average daily volume or rate of discharge will exceed the previous long term average by 20% or more.
   c. Any addition of a priority pollutant or toxic pollutant not previously present or suspected present in the permittee's discharge.
   d. Any addition of a hazardous waste subject to, but not previously reported under the reporting requirements in Article VIII, Section Nine of District Ordinance 12559.
   e. Any increase in mass of an existing regulated pollutant when the new long term average daily mass discharge of that pollutant will exceed the previous long term average by 20% or more.
   f. Any addition of a new pollutant or any increase in mass of an existing pollutant when the discharge of such pollutant may cause or contribute to interference or pass-through as these terms are defined in Article II of District Ordinance 12559.
   g. Any new batch discharges when previous discharges from an existing source at the permitted facility occurred on a continuous basis.

C. PROBLEM DISCHARGE:

1. Problem discharge means any upset, slug discharge, bypass, spill or accident which does or may result in a discharge into the District's system of a prohibited substance; or of a regulated substance in excess of limitations established in this permit and which may: (a) cause interference or pass through; or (b) contribute to a violation of any requirement of the District's NPDES permit; or (c) cause violation of any State or Federal water quality standard.

2. In the event of any problem discharge into the District's system, the permittee shall immediately notify the District, by telephone, of the incident and shall provide such information as may be required at that time in order to assess the impact of the incident on the District's system or on water quality. Within five (5) business days following any such incident, the permittee shall submit to the District's Division of Environmental Compliance a detailed written report which contains a description of the incident and its cause, location within the permittee's facility, exact dates and times of the period of problem discharge and, if not yet corrected, the anticipated time the incident is expected to

continue, and steps taken or planned to correct the current incident and to reduce, eliminate and prevent occurrences of future such incidents.

3. Slug discharge control: The permittee shall develop and implement procedures to control slug discharges, as required by the District, and shall notify the District immediately of any changes at the permittee's facilities, not already addressed in the permittee's slug control requirements, which may affect the potential for a slug discharge.

D. BYPASSING PROHIBITED:

The permittee may not bypass any portion of its pretreatment facilities except when necessary to perform essential maintenance and then only if the bypass will not result in a violation of applicable pretreatment standards or requirements. Any other pretreatment facility bypass is prohibited unless:

a. The bypass is unavoidable to prevent loss of life, personal injury or severe property damage;
b. There are no feasible alternatives to the bypass; and
c. In the event of an anticipated bypass, advance notice is provided to the District's Division of Environmental Compliance.

E. PERMIT REVOCATION:

This permit may be revoked after thirty (30) days notice to the permittee for cause including, but not limited to, the following causes:

a. A violation of any term or condition of this permit.
b. A misrepresentation or failure to fully disclose all relevant facts in obtaining this permit.

F. PERMIT TERMINATION OR MODIFICATION:

1. This permit may be modified, after thirty (30) days notice to the permittee following promulgation of new State, Federal or local regulations to ensure compliance with the effective dates contained in any such new regulations.

2. Whenever any discharge covered by this permit is permanently eliminated, or when the circumstances upon which the permit was based pursuant to MSD Ordinance 12559, Article VI, Subsection 3.A, change, this permit will be terminated or modified upon verification of the changes by the District's Division of Environmental Compliance.

G. PERMIT RENEWAL:

The permittee shall apply for renewal of this permit at least one hundred eighty (180) days prior to the expiration date contained herein.

H. PERMIT TRANSFER:

This permit may not be transferred or reassigned. If the premise covered by this permit is sold or otherwise transferred to a new owner, the new owner shall apply for a new permit at least ten (10) days prior to the transfer and shall abide by all of the provisions of District Ordinances 12559 and 13701 until the District issues a new permit or denies the application.

I. RIGHT OF ENTRY:

In order to ensure compliance with the provisions of this permit, District Ordinances and applicable State and Federal regulations, District representatives may inspect a permittee's treatment, pretreatment or discharge control facilities, or any process or any area of the permittee's premise which may be a source of any discharge or a source of any pollutants contained in any discharge into the District's wastewater system; conduct sampling of such facilities, processes or areas; and examine or copy any permittee's records related to such discharges. Any duly authorized representative of the District, upon presentation of proper credentials and after execution of appropriate confidentiality agreements, shall be permitted access to appropriate areas of the permittee's premises without prior notice for these purposes. A representative of the permittee shall, if appropriate, accompany the District representative while the work is being performed and shall assure that all applicable safety rules are being observed by the District's representative.

J. RECORDS RETENTION:

The permittee shall retain and preserve, for not less than five (5) years, all records, books, documents, memoranda, reports, sample analysis results, correspondence and any and all summaries thereof relating to the monitoring, sampling and chemical analyses of the permittee's discharge made by or on the permittee's behalf.

K. DEFINITIONS:

Unless the context specifically indicates otherwise, the meaning of terms used in this permit shall be as defined in Article II of District Ordinance 12559.

L. SEWER USE & HAULED WASTE ORDINANCES:

Unless the context specifically indicates otherwise, the permittee is subject to all provisions of District Sewer Use Ordinance 12559 and District Hauled Waste Ordinance 13701.

M. NOTIFICATION AND REPORTING:

1. All notifications and reports required by this permit shall be directed to:

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, Missouri 63147-2913

2. Emergency notifications may be made 24-hours a day, 7 days a week by calling the District's dispatcher at (314) 768-6260.

3. During normal business hours, notifications may be made by calling the District's Division of Environmental Compliance at (314) 436-8710.

SECTION II- SPECIAL CONDITIONS:

These Special Conditions may supplement and/or amend the standard terms of this permit or the General Conditions in Section I. Where there is any perceived conflict between a Special Condition and either the standard permit terms or the General Conditions of Section I, the Special Condition shall govern.

A. PROHIBITED DISCHARGES

A.1. On Site Discharge Prohibited Prior to District Approval of Pretreatment Plant

Discharge of wastewater through the on site sewer (sampling point 013) shall be prohibited prior to the District's declaration of acceptance of the permittee's pretreatment plant operational conditions.

A.2. Untreated or Partially-treated Hauled Discharge

Prior to the District's declaration of the permittee's pretreatment plant operational acceptance, only wastewater that has received normal pretreatment to prevent discharge prohibitions and has been discharged through sampling point 014 (that is, hauled directly to District treatment plants and discharged there), is approved by this permit for hauling to District treatment plants and discharge. All other wastewater from the permitted facility that the permittee wishes to discharge through sampling point 014 (or otherwise haul to the District) must be approved for discharge separately by the District prior to hauling to District treatment plants and discharging.

Subsequent to the District's declaration of the permittee's pretreatment plant operational acceptance, for all wastewater that has not received full treatment through the permittee's pretreatment plant and that the permittee wishes to discharge through sampling point 014 (or otherwise haul to the District), the permittee shall give prior notification to the District and shall follow the applicable requirements for the District's April 24, 2013 approval and subsequent modifications.

A.3. Special Biochemical Oxygen Demand Limitation

In addition to complying with all permit and applicable District ordinance prohibitions against the discharge of any pollutant released at a concentration which will cause interference with the operation of the wastewater system, the permittee shall not discharge through sampling point 013, at any time, wastewater with a daily mass of greater than 4,300 lb/day biochemical oxygen demand. This limitation in no way gives separate approval to or reservation for permittee of wastewater discharges with a biochemical oxygen demand above its long term average discharge levels.

A.4. Discharge Prohibited or Restricted to Protect District

Discharge of wastewater to particular District treatment plants shall be prohibited when the District so declares those plants as prohibited from receiving the permittee's wastewater. Alternately, discharge of wastewater to particular District treatment plants may be restricted by the District to certain volume or loading restrictions. Such declarations shall not be made by the District without cause, such as to prevent violations by the permittee of District Ordinance 12559 or other applicable ordinances.

Of particular note:

1. Discharge of wastewater to the District's Missouri River treatment plant shall be prohibited or limited when the permittee's wastewater has an ultraviolet transmittance percentage at a level that would interfere with proper ultraviolet disinfection at the treatment plant. At a minimum, from the first day of March through the last day of October in a calendar year, discharge to the treatment plant will be prohibited or limited.
2. Discharge of wastewater to any of the District's treatment plants shall be prohibited or limited when the

permittee's wastewater has a biochemical oxygen demand concentration at a level that would interfere with proper biological treatment at the treatment plants.

A.5. Hazardous Hauled Wastes

Pursuant to District Ordinance 13701, Section 2.B, under no circumstance may hauled waste which is hazardous waste, as defined in 40 CFR 261 or 10 CSR 25-4.261, be discharged to District facilities. The permittee shall certify on each quarterly self-monitoring report that the permittee has not discharged any hazardous hauled waste.

B. SPECIAL SAMPLING AND ANALYTICAL PROCEDURES

B.1. Sampling/Reporting Requirement for Ordinance Total Phenols

Analysis for Total Phenols is to be performed using EPA Method 625. The result to be reported is the arithmetic sum of the concentrations found for the following individual phenolic compounds:

4-chloro-3-methylphenol	4,6-dinitro-2-methylphenol	pentachlorophenol
2-chlorophenol	2,4-dinitrophenol	phenol
2,4-dichlorophenol	2-nitrophenol	2,4,6-trichlorophenol
2,4-dimethylphenol	4-nitrophenol	

As an option, prior to performing the Method 625 analysis, an initial screening may be performed using EPA Method 420.1. If this option is chosen, two separate samples must be collected, one preserved for the method 420.1 analysis and one unpreserved for a method 625 analysis, if necessary. If the screening produces a result which is less than the permit limitation for Total Phenols, the result should be reported as "less than (numerical result)", and the Method 625 analysis need not be performed. If Method 420.1 produces a result which is greater than the permit limitation, the unpreserved sample must be analyzed using Method 625 and the Method 625 result must be reported. Note: The screening analysis must be completed and a result obtained within sufficient time to ensure the Method 625 analysis, if required, can begin within the 7 day holding time of the unpreserved sample.

B.2. Sampling/Reporting Requirement for Total Toxic Organics

The permittee shall sample and report Total Toxic Organics using at a minimum EPA Methods 624 and 625, or equivalent. Other EPA Methods may be necessary to analyze for toxic organics which are or may be present in the discharge. As part of the Total Toxic Organics report, the permittee shall report all volatile and semi-volatile organics which EPA methods 624 and 625, or equivalent, scan for, as well as all organics which other methods used scan for, and the sum of all quantifiable values greater than 0.01 mg/l.

B.3. Sampling and Reporting Frequencies

Prior to the District's declaration of the permittee's pretreatment plant operational acceptance, the sampling frequency and acceptance procedure for the treated leachate discharge will follow the sampling parameters, frequency, and reporting requirements contained in the District's April 24, 2013 approval and subsequent modifications.

Following the District's declaration of plant acceptance, the permittee's discharge will be sampled for the parameters listed under sampling point 013 as follows:

1. Once/day for the first 30 calendar days. This sample of fully treated leachate may be collected from an internal sampling point prior to entry into the approved storage tank; however at least the final three samples must be collected from an approved tank.
2. At the end of the 30 day period, if analytical results are obtained for at least the final 7 consecutive days at or below the limits contained in the permit for on site discharge, or in District Ordinance 12559 if not contained in the

permit, sampling will continue on a once/week schedule for the next three months.

3. Should analytical results from once/week sampling meet the discharge limits for three consecutive months, sampling will continue at a once/month frequency for the following six months.

4. Should analytical results from once/month sampling meet the discharge limits for six consecutive months, sampling will continue at the frequencies defined in the permit.

Should a sample fail to meet the discharge limit for any parameter, the sampling frequency will revert to the next more frequent sampling interval listed above. Reversion to next more frequent sampling interval shall only apply to the parameter failing to meet its discharge limit. Reversion shall continue for the period specified for the initial sampling frequency reductions.

At least one of the initial once/day samples shall be analyzed for Gross Alpha, Gross Beta, Gross Gamma, Radium-226, Radium-228, and Uranium.

The sampling intervals listed above shall apply to the permittee's discharge regardless of discharge location to the District, whether on site or hauled.

Sample type and reporting frequency shall be as follows:

Sampling Frequency	Sample Type	Reporting Frequency
Once/day (12:00 am to 12:00 am)	Grab or 24-hr composite	Once/week. Reports shall be submitted by noon on each Wednesday and include all operational and laboratory reports received for activity through the previous Saturday.
Once/week (Sunday to Saturday)	24-hr composite	Once/week. Reports shall be submitted within 2 weeks (14 calendar days) of sampling.
Once/calendar month	24-hr composite	Once/month. Reports shall be submitted within 3 weeks (21 calendar days) of sampling.

All grab samples shall be collected in such a manner as to be as representative as possible of the full daily discharge.

This special condition does not relieve the permittee from any violations of the industrial wastewater discharge permit, nor District Ordinance 12559, nor any other applicable District ordinances. Neither does this special condition relieve the permittee from any other obligations of the industrial wastewater discharge permit, District Ordinance 12559, or any other applicable District ordinances.

B.4. Discharge of Contaminated Storm Water

Permittee is authorized to discharge contaminated storm water to the District's sanitary sewer system, subject to the requirements contained in the District-approved April 14, 2014 version of the Protocol for Discharge of Contaminated Stormwater, and subsequent modifications.

B.5. Operation of Westlake Pump Station Air Handling Equipment

Permittee shall continue to maintain and operate the air ventilation, scrubber and 4-gas meter system installed at the District's Westlake Pump Station during discharge of leachate to the pump station. The permittee may suspend operation during cessation of discharge to the pump station. Upon resumption of discharge to the pump station, operation of the air equipment must resume immediately.

B.6. Additional Hauled Waste Requirements

The District retains the authority to add other analytical and discharge control requirements for hauled waste loads, as deemed necessary, without making a formal modification to the discharge permit.

C. SPECIAL CERTIFICATION AND REPORTING REQUIREMENTS

C.1. Notification of Change Between On Site and Hauled Discharge

Whenever the permittee becomes aware of its need or desire to change discharge method between sampling point 013 (on site) or sampling point 014 (hauled), or to change distribution between the two methods if both methods are being utilized simultaneously, permittee must immediately notify the District of such need or desire.

C.2. NPDES Discharge Points

This permit does not regulate discharges at MSD sampling points 004 (NPDES 003), 009 (NPDES 004), 010 (NPDES 005), 011 (NPDES 006), or 012 (NPDES 007). These discharges are subject to State regulation under NPDES permit number MO-0112771. Should the permittee plan to reroute any portion of the flow currently discharged under the NPDES permit to District sewers, the permittee shall notify the District's Division of Environmental Compliance at least ten (10) days prior to the date of the planned change.

C.3. Radioactive Discharge Reporting Requirements

Permittee is authorized to discharge not more than the following amount of radioactive material per year to the District's sanitary sewers:

(1) For materials subject to licensing by the Nuclear Regulatory Commission:
5 curies Hydrogen-3
1 curie Carbon-14
1 curie for all other radioactive materials combined
(2) For all other materials:
1 curie for all radioactive materials combined

Excreta from individuals undergoing medical diagnosis or treatment with radiological materials shall be exempt from this prohibition. Any radioactive material discharged to the wastewater system must be readily soluble (or readily dispersible biological material) in water. This authorized level may be modified at any time should the District determine that permittee's discharge of radioactive materials, either alone or in conjunction with other user's discharges of radioactive materials, causes interference as defined in MSD Ordinance 12559.
The permittee shall include with each quarterly self-monitoring report, on forms supplied by the District, a radioactive materials discharge report. The report shall specify the activity discharged to the sewer system by radionuclide during the reporting period. The permittee shall also certify compliance with state and federal regulations for disposal of radioactive material by release into sanitary sewage.

C.4. Repeated Submittal of Already-Submitted Analytical Results

For any sampling analytical results submitted prior to the required quarterly self-monitoring report, permittee need not repeat those results on the quarterly self-monitoring report.

D. SPECIAL BILLING REPORTING REQUIREMENTS

D.1. Hauled Waste Discharge Fees

Following the District's declaration of the permittee's pretreatment plant operational acceptance, for wastewater that has received approved pretreatment and is discharged through sampling point 014 (that is, hauled directly to District treatment plants and discharged there), the permittee will be billed at a rate of $0.02/gallon.

For wastewater that has received partial treatment pursuant to Alternative 3 of the Revised Leachate SOP approved August 22, 2014, and any subsequent modifications, MSD will calculate volume and surcharge rates under Ordinance 13758, Appendix 1 using monthly average levels for BOD and TSS. The permittee will be billed this rate except that in no case will the permittee be charged more than provided for in Ordinance 13701 or its successors, presently $0.08/gallon, or less than $0.02/gallon.

In addition, the permittee also will be billed all additional fees and charges incurred by the District (including, wages. salaries, benefits, and operational costs) in receiving wastewater from the permittee discharged through sampling 014 (or otherwise hauled to the District) at times other than during normal business hours as defined in District Ordinance 13701.

D.2. Reporting Wastewater Discharged On Site

For billing purposes, the permittee shall submit monthly reports of the volume of wastewater discharged through sampling point 013. These reports shall be sent to:

Attn: Accounts Receivable - Commercial
MSD Finance Department
2350 Market St.
St. Louis, MO 63103

Alternately, the reports may be submitted electronically via mutually-agreed method. The reports shall be sent within 15 days of the end of each month. For each month in which no discharge occurs, the permittee shall submit a report stating that no discharge occurred. Permittee may also be required to submit additional information or reports, to ensure compliance with MSD ordinances or with applicable State and Federal regulations. Copies of the monthly volume reports shall also be included with the routine quarterly self-monitoring reports required pursuant to General Condition I.A.

D.3. Reporting Hauled Wastewater Discharge

For billing purposes, the permittee shall submit monthly reports of the volume of wastewater discharged through sampling point 014 (that is, hauled directly to District treatment plants and discharged there). These reports shall be sent to:

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Ave.
St. Louis, MO 63147

Alternately, the reports may be submitted electronically via mutually-agreed method. The reports shall be sent within 15 days of the end of each month. For each month in which no discharge occurs, the permittee shall submit a report stating that no discharge occurred. Permittee may also be required to submit additional information or reports, to ensure compliance with MSD ordinances or with applicable State and Federal regulations. Copies of the monthly volume reports shall also be included with the routine quarterly self-monitoring reports required pursuant to General Condition I.A.

D.4. BOD in Lieu of COD for Extra-Strength Surcharges

Upon submittal by the permittee, and acceptance by the District, of data indicating that although the BOD/COD (biochemical oxygen demand / chemical oxygen demand) ratio of the permittee's wastewater is less than 0.35, BOD is more representative of the user's actual wastewater strength and the COD in the wastewater discharge does not receive further treatment and reduction by the District beyond that commensurate with the associated BOD in the wastewater discharge, the District will calculate applicable extra-strength surcharges using BOD values in lieu of COD values.

E. DISCHARGE DAMAGES

E.1. Revocation of Hauled Waste Permit

This permit has been issued based upon the information and sample analysis provided by the permittee. The permit may be revoked by the District at any time if any submitted information is found to be incorrect, the discharges cause any operational or maintenance problems with the District's treatment system, or if the conditions and requirements of the permit are violated.

E.2. Responsibility of Damages from Hauled Waste

If any discharge by the permittee causes any operational or maintenance problems within the District's collection or treatment systems or results in violations of any conditions of the District's NPDES permit, the permittee will be responsible for damages, in accordance with applicable District ordinances or other applicable laws.

THIS IS THE LAST PAGE OF THIS PERMIT

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PART I: IDENTIFYING INFORMATION

Company Name: BRIDGETON LANDFILL LLC

Permit No: 1003803000 - 1 Effective Date: September 01, 2014 Expiration Date: August 31, 2019

Premise Address: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Monitoring Period: ☐(JAN-MAR) ☐(APR-JUNE) ☐(JULY-SEPT) ☐(OCT-DEC)

Samples Collected By: _____

Analyses Performed By: _____

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD SAMPLE POINT REFERENCE NUMBERS ⇨								
DATES ON WHICH SAMPLES WERE COLLECTED ⇨								
TIMES AT WHICH SAMPLES WERE COLLECTED ⇨								
PARAMETER	LIMIT	RECORD SAMPLE TYPES (G, C, M OR E) AND RESULTS BELOW (G=grab, C=composite, M=measured flow, E=estimated flow)						UNITS
FLOW								

You must complete and sign the certification statements on the second page.

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

O	NO DISCHARGE OF HAZARDOUS HAULED WASTE
	For permit special conditions that prohibit discharge of hazardous waste to the District, you are required to make the following certification: _____ I certify, since the last discharge monitoring report, there has been no discharge of hazardous waste to the District.

PART IV: GENERAL CERTIFICATION STATEMENTS

B	DISCHARGE MONITORING REPORT CERTIFICATION
	All permittees must sign and complete the information below: I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Print or type name of signing official: _____ Title: _____ Telephone: _____ Signature: _____ Date: _____