

BRIDGETON LANDFILL, LLC.

CONSTRUCTION QUALITY ASSURANCE ACCEPTANCE REPORT

2021 SVE INSTALLATION

BRIDGETON, ST. LOUIS COUNTY, MISSOURI

Prepared For:

Bridgeton Landfill, LLC. 13570 St. Charles Rock Road Bridgeton, MO 63044

April 2021

Project No:. BT-209-21

Prepared By:

Feezor Engineering, Inc. 3377 Hollenberg Drive Bridgeton, MO 63044



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1.1 Overview of Project

Bridgeton Landfill, LLC is a closed municipal solid waste facility located at 13570 St. Charles Rock Road, Bridgeton, St. Louis County, Missouri. The facility is owned and operated by Bridgeton Landfill, LLC (BL) who operate the facility pursuant to Permit No. 118912 (and subsequent modifications), issued by the Missouri Department of Natural Resources (MDNR).

During the 2021 construction season, BL installed (7) seven Soil Vapor Extraction (SVE) Wells. Bulldog Drilling based in Dupo, Illinois was selected as the driller for the project. Hunt Environmental Services of St. Louis, Missouri and Fusion Solutions Inc. of Carlinville, IL, were chosen to provide support and piping installation during the project. Feezor Engineering Inc. (FEI) of Bridgeton, Missouri, provided the initial and record surveying to document the location of the installed SVE Wells and associated GCCS piping.

FEI was also selected as the Construction Quality Assurance (CQA) consultant to observe and document the construction of the SVE System. Daniel R. Feezor, P.E. of FEI was the Construction Quality Assurance Officer (CQAO). Mr. Feezor selected Andrew Roberts, Dane Hale, and Brad Vits to be the CQA technicians.

2.1 Construction Drawings

Tetra Tech created a detailed set of construction drawings for this project. These drawings provided the detail to properly construct all the necessary project components. Construction drawings were also used for the proper selection of materials and to provide adequate detail for the installation of the SVE system.

3.1 SVE Wells Installation

Seven (7) SVE Wells were installed in the area around existing temporary monitoring probes TMP-1S, TMP-3S and TMP-3M, per the approved Soil Gas Monitoring Corrective Action Plan prepared by Tetra Tech. Bulldog drilled the wells utilizing a CME-750X hollow stem auger drill rig. FEI observed and documented the drilling process. This process included drilling a 10" diameter borehole down to the soil/bedrock interface. Field Reports are presented in **Appendix A.1.**

During drilling, at a few of the locations, after final depth was obtained it was discovered that a sand heave had occurred. To remedy this issue, Bulldog utilized a Quick Dispersing Guar Gum product called Variflo QD manufactured by CETCO to suspend the sand material in the fluid and allow for easier cleanout by flushing with water. After cleanout was complete, final depth measurements were taken to reconfirm total depth.

Well piping consisted of 6-in. SCH 40 PVC solid and 20 slot screen casing. The pipe sections were hand threaded together by Bulldog. A low-pressure threaded flat PVC cap was installed at the bottom of each well casing.

The pipe was raised using a winch on the drill rig and lowered into the borehole to the appropriate depth. Granular backfill consisted of ¼-in. to $\frac{3}{6}$ -in. pea stone. The gravel was placed to a point approximately six (6) inches above the slotted pipe. A 2-ft bentonite seal was then placed above the aggregate. Water was added to the layers of bentonite to adequately hydrate the seal. A 10-in. dia. steel protective casing was then installed around the well a minimum of 2 ft below ground surface to approx. 1.5 ft above ground surface. The remainder of the borehole inside the installed steel casing was then backfilled with a minimum 3.5 ft concrete plug to the top of installed steel casing.

The as-built well depths and well construction details are shown on the as-built well logs in **Appendix B.1**.

A 2-in. diameter well head was installed and connected to the gas header system via lateral piping by Fusion Solutions Inc.

3.2 Condensate Sump Installation

An 18-in. diameter condensate sump was installed as part of the SVE system to handle potential condensate generated during operation.

Install location was hydro excavated by Hunt Environmental Services to a minimum utility clearance depth. After this depth was reached, Fusion used a CAT 320 excavator to excavate the area necessary for the installation of the sump. Once the desired excavation depth was achieved, the sump was installed in accordance with design. A total of approx. 2 cubic yards (CY) of concrete

was backfilled around the installed sump. The remainder of the excavation was then backfilled with clean soil.

Landfill gas headers from the existing system were plumbed to the appropriate inlets of the condensate sump as described in **Section 2.2**.

Pumping systems will be installed as needed by BL at a later date.

3.3 SVE Wells Surface Completions

After all locations were completed, Bulldog installed 8-in. dia. Sch. 40 steel bollards surrounding each location. Each bollard was buried to a minimum 3.5 ft below ground surface and backfilled with concrete. Bollards will be painted yellow by BLF at a later date.

3.4 Construction Quality Assurance

3.4.1 Construction Oversight

The construction technician inspected all materials for the SVE system. This included piping, valves, fittings, and backfill material to ensure that these materials were acceptable and consistent with the construction plans. The construction technician inspected the materials to be constructed of HDPE pipe to determine if the materials meet the following requirements:

- All PVC/HDPE pipe was new, or first quality, and was furnished at lengths as indicated on the approved design plans. All PVC/HDPE piping was straight and generally free from imperfections.
- The PVC/HDPE pipe and fittings had a minimum Standard Dimension Ratio (SDR) as noted on the design plans.

During installation of the SVE system, the construction technician documented that the construction adhered to the plans and specifications. This included:

- Pipe and appurtenances were installed true to line, grade, and location with the pipe supported and restrained against movement with all valve stems plumb.
- The pipe joints were butt fused as recommended by the pipe manufacturer, except where flanged joints or electro-fusion couplers were specified on the approved design plans. Shavings from the preparation of pipe ends for fusion were removed from the pipe prior to installation.

During storage, the technician documented that pipes and fittings were stacked so as to prevent damage by marring, crushing or puncture. Maximum stacking height was limited to 6 ft.

The technician recorded applicable test data, areas of construction, problems and remedies, construction equipment and methodologies, survey data, and equipment calibration on the Daily Summary Reports and the Daily Inspection Reports, which are presented in **Appendix A.1**.

3.5 System Evaluation

3.5.1 Testing Responsibilities

Field-testing of the gas management system consisted of pressure testing the new header, forcemain, and airline piping. The pressure testing was performed by Fusion and documented by FEI.

3.5.2 Testing Procedures

Pressure testing was completed in accordance with the Republic LFG SOP.

3.5.3 Testing Results

All tests resulted in meeting or exceeding minimum pressure testing criteria. Pressure testing data is included in **Appendix B.2**.

4.1 Construction Surveying

Feezor Engineering Inc. of Bridgeton, Missouri, provided surveying services.

4.2 Final As-built Surveying

Feezor Engineering Inc. of Bridgeton, Missouri provided the final certification survey for the asbuilt coordinates of the installed SVE Wells. I, Daniel R. Feezor, P.E., do hereby certify to my best knowledge and belief, that the 2021 SVE Installation at the Bridgeton Landfill was performed in accordance with the construction documents.

Appendix A

FIELD INFORMATION

Sub-Appendices

- A.1 Daily Summary Reports
- A.2 Equipment List

Sub-Appendix A.1

Daily Summary Reports



Page: 1____ of ____

Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	, MO	Date:	1/20/2021		
Contractor(s): Hu	nt Envir	onmental Serv	vices		Report No.:	1
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	22	43			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0745 – Hunt is beginning hydro excavation of planned SVE well locations. Locations will be cleared to a depth below possible utilities to be encountered (8-10').

This work is ongoing.

1200 – Lunch

1230 – Work Resumes with same process as morning.

1600 – Work stops for day. Left Site.

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FEI Representative: Anowle



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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209
Project: SV	Weather: AM P. Cloudy PM -		Task No.:	-		
Location: Bri	Project: SVE Installation Location: Bridgeton, MO pontractor(s): Hunt Environmental Services Weather: AM P. Cloudy PM		Date:	1/21/2021		
Contractor(s): Hu	nt Envir	onmental Serv	vices		Report No.:	2
Weather:	AM	P. Cloudy	PM	-		
Temperature:	AM	35	PM	-		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0745 – Hunt is preparing to continue hydro excavation for utility clearance at proposed SVE locations.

0815 – Hunt begins hydro excavation at SVE-5.

0830 – Evidence of previous hydro excavation discovered from SVE pre-investigation project. Location deemed cleared of utilities.

Hunt begins hydro excavation at estimated header crossing of existing landfill infrastructure.

0930 – Existing 12" header, 2"x4" FM and 2" airline located. I collected as-built location of utilizing Trimble R8S VRS GPS rover for future reference.

1000 – Hunt is now beginning to hydro excavate at SVE-2.

1030 – Large aggregate obstruction encountered at 6.5'. BLF was notified and decided location deemed cleared.

1100 - Utility clearance work is complete. Hunt and I left site.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton	, MO			Date:	2/1/2021
Contractor(s): Hu	nt Envii	ronmental Serv		Report No.:	3	
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	30	PM	35		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0745 – Bulldog is setup and beginning drilling at SVE-02 with CME hollow stem auger.

1230 – Drill at SVE-02 has reached design depth at bedrock.

1330 – Bulldog is working to set casing pipe and annular backfill of the well.

1600 – Bulldog has completed approx. 90% of annular backfill for SVE-02. Work will resume tomorrow. 1630 – Left Site

Note: See Well logs for specific construction details.

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Copies To: Erin Fanning, Dan Feezor

FEI Representative:



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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	MO		Date:	2/2/2021	
Contractor(s): Bu	lldog Dr	illing			Report No.:	4
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	27	PM	37		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0735 – Bulldog is continuing installation of annular backfill and upper steel casing pipe.

1130 – Annular backfill and steel casing pipe installed. Concrete will be installed later. Bulldog is now setting up at SVE-05.

1230 – Bulldog begins drilling SVE-05 with CME hollow stem auger rig.

1600 – Bulldog has reach design depth at bedrock in SVE-05. Will cleanup work area and begin annular backfill tomorrow.

1630 – Left Site

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209	
Project: SV	E Install	ation		Task No.:	-	
Location: Bri	dgeton,	MO			Date:	2/3/2021
Contractor(s): Bu	lldog Dr	illing			Report No.:	5
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	23	PM	42		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Bulldog is beginning annular backfill at SVE-05.

1200 – Lunch

1230 – Work Resumes

1500 – Annular backfill and steel casing pipe installation complete at SVE-05. Upper concrete backfill will be completed at a later date.

1530 – Left Site

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	, MO		Date:	2/4/2021	
Contractor(s): Bu	lldog Dr	illing			Report No.:	6
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	28	PM	43		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Bulldog is setting up rig at SVE-06.

0830 – Bulldog begins drilling SVE-06 with CEM hollow stem auger rig.

1140 - Bulldog has reached design depth at bedrock. Bulldog is preparing to set casing pipe in SVE-06.

1200 – While attempting to set casing pipe, it has been discovered that sand material has heaved in the bottom of the borehole. After discussions with BLF, Bulldog is collecting supplies and preparing to flush borehole of sandy material.

1530 – Work stops for day. Bulldog will begin flushing of sandy material tomorrow morning. Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209	
Project: SVI	E Install	ation			Task No.:	-	
Location: Bri	dgeton,	MO	Date:	2/5/2021			
Contractor(s): Bul	lldog Dr	illing, Baker			Report No.:	7	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	24	PM	42			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Bulldog is working to flush sandy material from the bottom of the SVE-06 borehole.

0800 – Baker is on site to user ground penetrating radar (GPR) to identify and unknown utilities in project area prior to beginning trenching of system piping.

0900 – Baker has completed GPR utility locate. Left Site.

1200 – Lunch

1230 - Work Resumes.

1500 – Purge of sandy material from the SVE-06 borehole complete. Bulldog is setting the casing pipe and beginning annular backfill.

1630 – Work stops for day. Left Site

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-	
Location: Bri	dgeton	, MO			Date:	2/8/2021	
Contractor(s): Bui	lldog Dr	rilling, Baker			Report No.:	8	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	16					

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Bulldog is continuing annular backfill at SVE-06. Upper steel casing pipe will also be installed during this process.

1130 – Bulldog has completed annular backfill at SVE-06. Upper concrete backfill will occur at a later date.

1200 - Lunch

1230 – Work Resumes.

1300 – Bulldog is working to relocate rig to SVE-04. Remainder of day will be spent cleaning up and preparing to begin SVE-04 drilling tomorrow.

1630 – Work stops for day. Left Site

Note: See Well logs for specific construction details.



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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-	
Location: Bri	dgeton,	, MO			Date:	2/9/2021	
Contractor(s): Bui	lldog Dr	rilling, Baker			Report No.:	9	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	13	PM	21			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0900 – Bulldog is beginning to drill SVE-04 with CME hollow stem auger rig.

1130 – Bulldog has reached designed bedrock depth at SVE-04. Casing and backfill will begin after lunch.

1200 - Lunch

1330 – Work Resumes.

1500 – Sand material has been discovered in bottom of SVE-04 borehole. Bulldog will gather required supplies in preparation for flushing of borehole tomorrow.

1600 – Work stops for day. Left Site

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	MO			Date:	2/10/2021
Contractor(s): Bu	lldog Dr	illing, Baker			Report No.:	10
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	16				

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0800 – Bulldog is beginning to flush sand material from SVE-04.

1100 – Bulldog has successfully flushed sand material from SVE-04 borehole.

1130 – Due to current and forecasted cold temps over the next week, project will be paused until cold weather passes.

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	MO		Date:	2/23/2021	
Contractor(s): Bu	lldog Dr	illing			Report No.:	11
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	40	PM	60		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0830 – Bulldog is reconfirming depth at SVE-04 prior to beginning setting casing and annular backfill.

0900 – Bulldog is setting casing pipe for SVE-04 and beginning annular backfill.

1200 – Lunch

1300 – Work resumes

1400 – Bulldog has completed annular backfill and installation of upper steel casing pipe. Concrete backfill will occur at a later date. Work is now being performed to relocate and setup on SVE-01.

1430 – Bulldog begins drilling SVE-01 with CME hollow stem auger rig.

1530 – Work stops for day. Left Site.

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SV	E Install	ation		Task No.:	-	
Location: Bri	dgeton,	MO	Date:	2/24/2021		
Contractor(s): Bui	lldog Dr	illing			Report No.:	12
Weather:	AM	M Sunny	PM	M Sunny		
Temperature:	AM	42	PM	58		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0800 – Bull dog resumes drilling SVE-01. 1 driller and 1 helper are performing the drilling. They are using a CME hollow stem auger with an 8 ¼" OD to perform boring.

0945 – Bed rock was reached at 34.2'

1000 – Bulldog begins installing well casing and subsequent backfill of the well (see as-built well diagram for details).

1500 – I left the site.

FEI Representative: Bradley 1/12



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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-
Location: Bri	dgeton,	, MO	Date:	2/25/2021		
Contractor(s): Bu	lldog Dr	rilling			Report No.:	13
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	31	PM	48		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0830 – Bulldog is beginning to drill at SVE-03 with CME hollow stem auger rig.

1100 – Bulldog has reached designed depth at bedrock for SVE-03

1200 – Lunch

1300 – Work resumes

1400 – Bulldog is setting casing pipe and beginning annular backfill at SVE-03.

1600 – Bulldog has completed annular backfill up to 20'. Will continue backfill tomorrow morning.

1630 – Work stops for day. Left Site.

Note: See Well logs for specific construction details.

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Daily Field Summary Report

Client: Bri	dgeton	Landfill			Job No.:	BT-209	
Project: SV	E Install	ation			Task No.:	-	
Location: Bri	dgeton,	MO	Date:	2/26/2021			
Bu	lldog Dr	illing, Hunt Env	/ironmer	ital Services,			
Contractor(s):Fus	ion Solu	itions			Report No.:	14	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	32	PM	48			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0800 – Hunt is on site hydro excavating encountered abandoned natural gas line. During previous investigation, it was discovered that line had been cut and terminated outside the property boundary. Line will be exposed to fence line, cut/capped and removed.

0830 – Bulldog is continuing annular backfill at SVE-03. Upper steel casing pipe is also being installed.

1100 – Bulldog has completed annular backfill at SVE-03. Bulldog is working to cleanup construction area and will continue drilling on Monday (3/11/2021).

1200 – Lunch

1230 – Hunt resumes hydro excavation work.

1700 – Remainder of line has been exposed and removed. Fusion Solutions is working to backfill trench with clean soils.

1800 – Work stops for day. Left Site.

Note: See Well logs for specific construction details.



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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209		
Project: SV	E Install	ation			Task No.:	-	
Location: Bri	dgeton,	, MO	Date:	3/01/2021			
Contractor(s): Bui	lldog Dr	illing; Hunt En	vironmer	ital	Report No.:	15	
Weather:	AM	M Sunny	PM	M Sunny			
Temperature:	AM	38	PM	50			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0800 – Bulldog is preparing to drilling SVE-07 using CME hollow stem auger drill rig. Hunt begins hydroexcavation to a depth of 6' deep around the perimeter of the proposed condensate sump location to determine if there are any previously unidentified utilities that will need to be evaluated prior to excavation of the sump.

0830 – Bulldog begins drilling SVE-07.

1300 – Bedrock encountered at 36.75' at SVE-07. Drilling activity for this well is complete. Bulldog begins to flush the boring with clean water.

1600 – Hunt has uncovered a $\frac{1}{2}$ " line that was previously unidentified within the proposed condensate sump area. A plan is determined to continue hydroexcavation of this line when work resumes tomorrow to determine the best plan of action.

1645 - Work stopped for the day. I left the site.

FEI Representative: Bradley dits



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Daily Field Summary Report

Client: Bri	dgeton	Landfill		Job No.:	BT-209		
Project: SV	Project: SVE Installation					-	
Location: Bri	dgeton,	, MO	Date:	3/02/2021			
Contractor(s): Bui	lldog Dr	rilling; Hunt En	vironmer	ital	Report No.:	16	
Weather:	AM	M Sunny	PM	M Sunny			
Temperature:	AM	30	PM	58			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – Arrive on site.

0800 – Hunt resumes hydroexcavation around an unknown utility that was located yesterday. Baker is using locate equipment to assist with the hydroexcavation.

0830 – Bulldog begins setting the casing for SVE-07 that was bored yesterday and subsequently performs the backfill of the well (see as-built well diagram for details).

1000 – Hunt resumes hydroexcavation to a depth of 6' around the perimeter of the proposed condensate sump location to ensure that no other utility conflicts exist during the excavation.

1600 – Work stopped for the day. I left the site.

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FEI Representative:



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Daily Field Summary Report

Client: Bri	dgeton L	andfill		Job No.:	BT-209	
Project: SVI	E Installa	ition		Task No.:	-	
Location: Bri	dgeton,	MO			Date:	3/03/2021
Contractor(s): Hu	nt Enviro	onmental			Report No.:	17
Weather:	AM	Sunny	PM	Sunny		
Temperature:	AM	30	PM	70		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site. Hunt resumes hydroexcavation around the perimeter of the proposed condensate sump location to discern if any additional utilities are present.

1200 – Hydroexcavation around the perimeter of the sump has been completed. Hunt is now hydroexcavated at the proposed location of vacuum laterals to SVE-01, SVE-03 and SVE-04 to determine if any utilities are present that were previously unaccounted for.

1530 – Work stopped for the day. Everyone left the site.

FEI Representative: Brobby Vits



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Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SV	E Install	ation		Task No.:	-	
Location: Bri	dgeton,	, MO	Date:	3/4/2021		
Contractor(s): Fus	ion Solu	utions			Report No.:	18
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	39	PM	59		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0800 – Fusion solutions is working to excavate reminder of area for installation of project condensate sump (CS-1).

1100 – CS-1 is being installed by Fusion utilizing a CAT excavator.

1200 – Condensate sump is set, concrete is being poured around base of sump per design plans. Concrete will be allowed to setup for a few hours prior to further backfill.

1500 – Fusion is now working to backfill around remainder of CS-1 up to the bottom of the flanged connections. Backfill is being performed using CAT excavator utilizing previously excavated clean soil materials.

1630 – Backfill complete. Fusion has placed protective barriers and tape around CS-1 excavation to protect area overnight.

FEI Representative: Dane C. Hale



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Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209			
Project: SV	E Install	ation	Task No.:	-			
Location: Bri	dgeton,	MO	Date:	3/5/2021			
Contractor(s): Fus	ion Solı	itions, Hunt En	vironme	ntal Services	Report No.:	19	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	30	PM	49			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is working to pre-fabricate project HDPE LFG, FM and Airline piping utilizing a Mcelroy fusion machine.

0900 – Hunt is working to hydroexcavate trench for 8" header from CS-1 under existing haul road towards the east.

1200 – Lunch

1230 - Work Resumes.

1330 – Pressure testing is being performed on prefabricated 8" HDPE LFG header piping.

1400 – Hunt is now working to hydroexcavate trench from CS-1 to SVE-06.

1630 – Fusion is installing a casing pipe for 8" header and header piping from CS-1 thru existing haul road.

1730 – Header piping has been installed and trench has been backfilled by Fusion utilizing clean soils.

1745 – Work Stops. Left site for day.

FEI Representative: Dane C. Hale



Page: 1 of 1

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209			
Project: SV	E Install	ation		Task No.:	-		
Location: Bri	dgeton,	MO	Date:	3/8/2021			
Contractor(s): Fus	ion Solı	itions, Hunt En	vironme	ntal Services	Report No.:	20	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	45	PM	69			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication of project HDPE piping.

Hunt is working to hydro excavate trench to SVE-07.

1200 – Lunch

1300 – Work Resumes

1330 – Pressure testing is being performed on 8" LFG header/lateral to SVE-07.

1745 – Piping to SVE-07 has been installed. Entirety of FM and Airline system will be tested after installation.

Note: See Pressure Testing forms for testing data.

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Page: 1 of 1

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209			
Project: SV	E Install	ation	Task No.:	-			
Location: Bri	dgeton,	MO	Date:	3/9/2021			
Contractor(s): Fus	ion Solı	itions, Hunt En	vironme	ntal Services	Report No.:	21	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	55	PM	72			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication of project HDPE piping.

Hunt is continuing to hydro excavate trench to SVE-06.

1200 – Lunch

1300 – Work Resumes

1330 – Hydroex complete to SVE-06. Fusion is working to install piping from CS-1 to SVE-06.

1430 – Piping installation complete. Fusion is now working to backfill remainder of excavation around CS-1 to ground level.

1630 – Backfill complete. Work Stops for Day. Left Site.

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Page: <u>1</u> of <u>1</u>

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SV	E Install	ation	Task No.:	-		
Location: Bri	dgeton,	MO	Date:	3/10/2021		
Contractor(s): Fus	ion Solı	utions, Hunt En	vironme	ntal Services	Report No.:	22
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	57	PM	67		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication of project HDPE piping.

Hunt is working to hydro excavate bollard locations around installed SVE wells and CS-1

1200 – Lunch

1300 – Work Resumes

1630 – Work Stops for Day. Left Site

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Page: 1_____ of _____

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SV	E Install	ation	Task No.:	-		
Location: Bri	dgeton,	, MO	Date:	3/11/2021		
Contractor(s): Fus	ion Solı	utions, Hunt En	vironme	ntal Services	Report No.:	23
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	49	PM	60		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication of project HDPE piping.

Hunt is working to hydro excavate bollard locations around installed SVE wells and CS-1

1200 – Lunch

1300 – Work Resumes

1630 – Work Stops for Day. Left Site

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Page: 1 of 1

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SVE Installation					Task No.:	-
Location: Bridgeton, MO					Date:	3/15/2021
Contractor(s): Fus	ion Solı	utions, Hunt En	vironme	ntal Services	Report No.:	24
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	42	PM	51		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication of project HDPE piping.

Hunt is working to hydro excavate bollard locations around installed SVE wells and CS-1.

0800 – Fusion is preparing to pressure test prefabricated 8" Header segment.

0900 – Fusion is beginning to install HDPE piping in pre-hydro excavated trench locations.

1200 – Lunch

1300 – Work Resumes. Fusion is preparing to pressure test entirety of 2" HDPE SDR-9 Airline for the SVE system.

1630 – Work Stops for Day. Left Site

Note: See pressure testing forms for test data.

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Page: 1 of 1

Daily Field Summary Report

Client: Bridgeton Landfill					Job No.:	BT-209
Project: SVE Installation					Task No.:	-
Location: Bridgeton, MO					Date:	3/16/2021
Contractor(s): Fus	ion Solu	itions, Hunt En	ivironmei	ntal Services	Report No.:	25
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	42	PM	50		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is continuing pre-fabrication and installation of project HDPE piping.

Hunt is working to hydro excavate bollard locations around installed SVE wells.

0800 – Fusion is preparing to pressure test entirety of 2" inner carrier piping of 2"SDR-11x4"SDR-17 HDPE forcemain piping for project.

1200 – Lunch

1300 – Work Resumes

1400 - Fusion is preparing to pressure test entirety of 4" outer containment piping of 2" SDR-11x4" SDR-17 HDPE forcemain piping for project.

1630 – Work Stops for Day. All pressure testing for project is complete.

1645 - Left Site

Note: See pressure testing forms for test data.



Page: 1_____ of _____

Daily Field Summary Report

Client: Bri	dgeton	Landfill	Job No.:	BT-209		
Project: SV	E Install	Task No.:	-			
Location: Bri	dgeton,	, MO			Date:	3/17/2021
Contractor(s): Fus	ion Solı	utions, Hunt En	vironme	ntal Services	Report No.:	26
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	45	PM	58		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site.

0730 – Fusion Solutions is working to backfill trenches and cleanup construction area.

Hunt is working to hydro excavate bollard locations around installed SVE wells.

1200 – Lunch

1300 – Work Resumes

1630 – Work Stops for Day. All pressure testing for project is complete.

1645 - Left Site

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Page: 1 of 1

Daily Field Summary Report

Client: Bridgeton Landfill					Job No.:	BT-209
Project: SVE Installation					Task No.:	-
Location: Bridgeton, MO					Date:	3/22/2021
Contractor(s):Bul	ldog Dri	illing			Report No.:	27
Weather:	AM	P. Cloudy	PM	P. Cloudy		
Temperature:	AM	54	PM	67		

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Arrive on site. Hunt has completed hydro excavation for bollards and bollards have been installed by Bulldog.

0730 – Bulldog is on site preparing to pour concrete for remainder of SVE wells and installed bollards.

1200 – Lunch

1300 – Work Resumes

1630 – Work Stops for Day. Bulldog has completed concrete installation for installed bollards and all SVE wells. 1645 - Left Site

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Page: <u>1</u> of <u>1</u>

Daily Field Summary Report

Client: Bri	Client: Bridgeton Landfill					BT-209	
Project: SVE Installation					Task No.:	-	
Location: Bridgeton, MO					Date:	3/26/2021	
Contractor(s):Bull	ldog Dr	illing			Report No.:	28	
Weather:	AM	P. Cloudy	PM	P. Cloudy			
Temperature:	AM	45	PM	69			

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0900 – Arrive on site. Bulldog and Fusion are finalizing site cleanout and preparing to demob. Fusion is also working to cut down SVE well casings to a uniform height and finalize installed QED wellheads.

1200 – Lunch

1300 – Work Resumes

1500 – FEI performs final survey of SVE wells.

1630 – All project items area complete. Left Site.

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Sub-Appendix A.2

Equipment List



Bridgeton Landfill LLC.

2021 SVE Installation

Construction Equipment List

Bulldog Drilling

1 – CME-750X Hollow Stem Auger Drill Rig 1 – Bobcat Skidsteer

Hunt Environmental Services

1 – Vac Truck 1 – Vac container

Fusion Solutions Inc.

1 – McElroy 1218 Butt-Fusion Machine
1 – McElroy 618 Bulldog Fusion Machine
1 – Polaris Ranger UTV
1 – Takeuchi T12 Skid Steer
1 – Takeuchi TL50 Mini-Excavator
1-CAT Excavator

Appendix B

INSTALLATION INFORMATION

Sub-Appendices

- B.1 As-built Well Logs
- **B.2** Pipeline Pressure Testing Results

Sub-Appendix B.1

As-Built Well Logs



Drilling Method: **10" Hollow Stem Auger** Well Casing Material: **6" SCH 40 PVC** Easting: **515,303.0** Northing: **1,066,957.0** GS Elevation: **460.6** Drill Date(s): **2/24/2021** Drilled Depth: **34 feet**

Well Completion Details
Top of Flange (Elev. 463.6)
Elev. Top of Bentonite Seal : (2.5' bes) Elev. Top of Aggregate : (8.0' bgs) Elev. Top of Slotted Pipe : (8.5' bgs) Elev. Top of Slotted Pipe : (8.5' bgs)
Bottom of Hole = 34.2 ft Elev = 426.4'



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,289.9 Northing: 1,066,912.0 GS Elevation: 458.7 Drill Date(s): 2/1/2021 Drilled Depth: 29.5 feet

Well Completion Details
Top of Flange (Elev. 461.7)
Elev. Top of Aggregate : (6' bgs)
Bottom of Hole = 29.5 ft Elev = 428.7'



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,282.0 Northing: 1,066,992.0 GS Elevation: 459.1 Drill Date(s): 2/25/2021 Drilled Depth: 36.2 feet

Well Completion Details	
Top of Flange (Elev. 462.1)	
Ground Surface (Elev. 459.1)	
Elev. Top of Bentonite Seal : (5' bes)	
2 Elev. Bottom of Slotted Pipe Cap : (35' bes)	
Bottom of Hole = 36.2 ft Elev = 422.9'	



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,249.3 Northing: 1,066,964.0 GS Elevation: 457.5 Drill Date(s): 2/23/2021 Drilled Depth: 33 feet

Well Completion Details	
Top of Flange (Elev. 460.5)	
Elev. Top of Aggregate : (5' bgs)	
• Elev. Top of Slotted Pipe : (5.5' bgs) • • •	
Bottom of Slotted Pipe Cap : (32' bes)Bottom of Hole = 33.0 ft Elev = 423.7'	



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,254.5 Northing: 1,066,918 GS Elevation: 457.5 Drill Date(s): 2/3/2021 Drilled Depth: 30.4 feet

Top of Flarge (Bev. 40.5.5)
Elev. Too of Bentonite Seal : (3' bes)
Elev. Top of Aggregate : (4.5' bgs)
Elev. Top of Aggregate : (4.5' bgs)
Elev. Top of Aggregate : (4.5' bgs)
Elev. Bottom of Slotted Pipe Cap : (29.5' bgs)
Bottom of Hole = 30.4 ft Elev = 427.1'



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,181.8 Northing: 1,066,966.0 GS Elevation: 456.6 Drill Date(s): 2/5/2021 Drilled Depth: 40.7 feet

Well Completion Details	
Top of Flange (Elev. 459.6)	
Ground Surface (Elev. 456.6)	
Elev. Top of Bentonite Seal : (3' bes) Elev. Top of Aggregate : (4.5' bgs) Elev. Top of Slotted Pipe : (5' bgs)	
Elev. Bottom of Slotted Pipe Cap : (39.7' bgs) Bottom of Hole = 40.7 ft Elev = 415.9'	



Drilling Method: 10" Hollow Stem Auger Well Casing Material: 6" SCH 40 PVC Easting: 515,180.3 Northing: 1,066,912.0 GS Elevation: 455.3 Drill Date(s): 3/2/2021 Drilled Depth: 37.0 feet

Well Completion Details
Top of Flange (Elev. 457.3)
Eiev. Too of Bentonite Seal : (2.5' bps) Eiev. Top of Aggregate : (4.5' bps) Eiev. Top of Slotted Pipe : (5' bps) Eiev. Top of Slotted Pipe Cap : (36' bps)
Bottom of Hole = 37.0 ft Elev = 418.3'

MISSOURI DEPARTMENT		OURCES	OFFIC	CE USE ONLY		DATE R	ECEIVED		
GEOLOGICAL SURVEY PR	OGRAM		REFER	ENCE NO.		CHECK	CHECK NO.		
MONITORING WELL CERTIFICATION REPO	ORT		STATE	WELL NO.		REVEN	UE NO.		
NOTE: This form is not to be used for I	nested wells		ENTERE	D APPRO	VED	DATE	R	OUTE	
OWNER AND SITE INFORMATION				I		L	I	· · ·	
PROPERTY OWNER NAME WHERE WELL IS LOCATED Bridgeton Landfill, LLC		PRIMARY P (209) 22		R WITH AREA CODE	WELL		well compl 02/24/202		
PROPERTY OWNER MAILING ADDRESS 13570 St. Charles Rock Rd			CITY Bridge	eton		state MO	ZIP CODE 63044		
PHYSICAL ADDRESS OF PROPERTY WHERE WELL IS LC 13570 St. Charles Rock Rd	CATED		CITY Bridge			COUNTY St. Louis C	0		
NAME OF SITE, BUSINESS, OR CLEANUP PROJECT Bridgeton Landfill, LLC	DNR/EPA PRO 118912	JECT NUMBER (DR REGULATO	DRY SITE ID NUMBER	(IF APP	LICABLE)	VARIANCE NU	MBER (IF ISSUED)	
PRIMARY CONTRACTOR NAME (PLEASE PRINT)		*****		NUMBER	Section	n 256.607(3), RS ply with all rules	Mo, requires all	primary contractors	
John Gates			00350	1-M	pursua	int to Sections 25	56.600 to 256.64	10 RSMo.	
SURFACE COMPLETION TYPE LENGTH AND DIAMETER OF	DIAMETER AND DEPTH			MPLETION GROUT	LOCATI	ON OF WELL (D			
	SURFACE COMPLETION		SURFACE CC	MPLETION GROUT	Latitude	38	, 45 		
Length <u>n/a</u> FT.	Diameter 24 IN		Concrete			90 	26	47.33	
Diameter <u>n/a</u> IN.	Length 2.5	Τ.	Other						
Locking Cap Weep Hole		1	CE COMPLE			EST 4 ½ _			
		Steel	Aluminum	Plastic	Section Range	To	wnship		
				(IF OPEN HOLE	D Direc		xtraction	nclinometer	
Elevation FT.		COMPL Riser/Cas	ETION) ing Diameter	6IN.	Gas Obse Piezo		njection 🔲 🗍 Open Hole 🔲 (Standard	Lysimeter Other (specify)	
ANNULAR SEAL Length n/a FT.		Riser/Cas	ing Length	12.2 FT.	MONITO	DRING FOR (CH	ECK ALL THAT	APPLY)	
Slurry Chips		1	Of Drill Hole	12 IN. 40		cides/Herbicides		m	
Pellets Granular		Weight O		40		onuclides S (non-petroleum	1) Geotech	nical Data	
Cement/Slurry		MATER			FRO	DEPTH M TO		ION DESCRIPTION CH BORING LOG*)	
IF CEMENT/BENTONITE MIX:			Thermop						
Bags of Cement Used					0	2.5	Crushe	ed Gravel	
% of Bentonite Used		PENTO	NITE SEAL		2.5	8	CLAY		
Water Used Per Bag GAL. L-		Length 5							
		- 🗹 Chips	Pellets		8	34.2	Silty S	AND	
SECONDARY FILTER PACK LENGTH	<u>111101</u>]			34.2		LIMES	STONE	
n/a FT.									
	XX 27						D 11		
DEPTH TO TOP OF PRIMARY		SCREE	N			33.2	Botton	n of SVE Well	
FILTER PACK		Screen Di	ameter	<u>6</u> IN.					
8.0 FT.		Screen Le		24.7 FT. 12 IN					
		Diameter Depth To	Of Drill Hole Top	8.5 FT.					
LENGTH OF PRIMARY FILTER PACK									
		SCREEI	N MATERIAL						
<u>26.2</u> FT.		Other							
					TOTAL I 34.2		T.	Log Attached	
For cased wells, submit additional as-built diagra all casing, hole diameter and grout used.	ms showing well const	ruction details	including ty	ype and size of		WATER LEVEL	PUMP INS		
I hereby certify that the monitoring well herein	described was constru	ucted in acco	dance with	Missouri Departi	ment o	f Natural Res	sources requ	uirements.	
	PERMIT NUM			MONITORING WEL			RACTOR P	ERMIT NUMBER	
for court	006329-N			nage in designer introduce the					
MO 780-1415 (03-18) SEND COMPLETED FORM ALONG V WELL INSTALLATION SE	VITH \$100 CERTIFICATION CTION, PO BOX 250, ROLL	FEE TO: MISSO	OURI DEPART	MENT OF NATURAL	RESOUR	CES, MISSOUR	RI GEOLOGICA	L SURVEY,	
	RECORD (AND	FEE) MAY BE S	JBMITTED ON	LINE: dnr.mo.gov/mo	owells	in enternine		-	

\square	MISSOURI DEPARTMENT OF NATURAL RESOURCES					FICE USE ONLY		DA	DATE RECEIVED		
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	D SITE INFORMATION ER NAME WHERE WELL IS LOCATED					MBER WITH AREA CODI	= IWELL	NUMBER	WE		LETION DATE
Bridgeton La	Indfill, LLC			(209) 22	7-9531			E-02	02	/01/20	
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	ess of property where well is long to the second seco	OCATED			сіту Bri	dgeton		COUNTY St. LOU	is CO		
NAME OF SITE, BI Bridgeton La	USINESS, OR CLEANUP PROJECT		DNR/EPA PROJEC	T NUMBER C	DR REGUL	ATORY SITE ID NUMBE	R (IF API	PLICABLE)	VAF 67		UMBER (IF ISSUED)
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	ACTOR NAME (PLEASE PRINT)		*****			MIT NUMBER	Section Section	on 256.607(3	3), RSMo,	requires a	all primary contractors is promulgated
John Gates					00:	3501-M	pursu	ant to Sectio	ons 256.60	0 to 256.0	540 RSMo.
SURFACE CON	LENGTH AND DIAMETER OF	DIAMET	ER AND DEPTH OF	THE HOLE	SURFAC	E COMPLETION GROUT		ION OF WE			
Above Ground	SURFACE COMPLETION Length n/a FT.	SURFAC	CE COMPLETION W	AS PLACED	Concre		Latitud				49.58
Flush Mount	Diameter n/a IN.	Length				9te	Longitu	90 	°	26	47.34
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Bags of Cement Us							0	4		Clusi	ned Gravel
% of Bentonite Use Water Used Per Ba				BENTO		AL.	4	6		CLAY	•
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SECONDARY F	ILTER PACK LENGTH			L Satura	lied zone	Hydrated	29.5			LIME	STONE
n/a											
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6.0) FT.			Screen Le	ength	22.0 FT.					
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23	.5FT.					moplastic (PVC)					
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	s, submit additional as-built diagra diameter and grout used.	ms show	ing well construc	tion details	includi	ng type and size of		WATER LE		PUMP II	NSTALLED
I hereby certify	y that the monitoring well herein	describe	d was construct	ed in acco	rdance v	with Missouri Depar	tment	of Natural	-		
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OWNER AND SITE INFORMATION										State of the second
PROPERTY OWNER NAME WHERE WELL IS LOCATED Bridgeton Landfill, LLC		PRIMARY PHO (209) 227-		R WITH AREA	CODE	WELL SVE			ELL СОМ 2/25/20	PLETION DATE
PROPERTY OWNER MAILING ADDRESS			CITY	100			STATE		P CODE	
PHYSICAL ADDRESS OF PROPERTY WHERE WELL IS LOCATED			Bridge	ton					3044	
13570 St. Charles Rock Rd	1		Bridge				St. Lo	ouis CC		
NAME OF SITE, BUSINESS, OR CLEANUP PROJECT Bridgeton Landfill, LLC	DNR/EPA PROJEC	CT NUMBER OR	REGULATO	RY SITE ID N	IUMBER	(IF APPI	LICABLI		ARIANCE 723	NUMBER (IF ISSUED)
PRIMARY CONTRACTOR NAME (PLEASE PRINT) John Gates	ni kana kana ngangangangan kana mangan kana kang kana ngangangan kana kang kana kang kana kana	*****	PERMIT N		*****	to com	ply with	all rules an	d regulatio	all primary contractors
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□ Flush Mount Diameter n/a IN. Length	0.5		Other			_ongitud	e		26	47.45
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Weep Hole	7	Z Steel	Aluminum	Plastic	-					North
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Slurry Chips Chip		Weight Or S	DR#	40	1	Radio	onuclide S (non-p	es petroleum)	Geote	S chnical Data
Cement/Slurry			L Z Thermopla	actic (DVC)	F	FRO	DEPT	тн то		ATION DESCRIPTION TACH BORING LOG*)
IF CEMENT/BENTONITE MIX:					ŀ					had Oracal
Bags of Cement Used						0	4	2.5	Crus	hed Gravel
% of Bentonite Used Water Used Per Bag GAL.		BENTONI	TE SEAL		:	2.5	7	7	CLA	Y
·		Length 4.5				7		36.2	Silty	SAND
			Pellets 🔲			1		50.2	Silty	SAND
SECONDARY FILTER PACK LENGTH				injulucu	:	36.2			LIME	ESTONE
n/a _{FT.}										
DEPTH TO TOP OF PRIMARY		SCREEN					:	35.2	Botto	om of SVE Well
FILTER PACK		Screen Diam	neter	<u>6</u> "	N.					
7.0 FT.		Screen Leng		The second secon	⁼Т.					
	-	Diameter Of I Depth To To		7 5	N. T.					
LENGTH OF PRIMARY FILTER PACK										
20.2		SCREEN N	ALERIAL	astic (PVC)						
<u>29.2</u> FT.		Other			-	TOTAL E				
						36.2	JEPTH:	FT		ing Log Attached
For cased wells, submit additional as-built diagrams show all casing, hole diameter and grout used.	ing well construc	ction details ir	ncluding ty	pe and size		STATIC ~20	WATER	RLEVEL		INSTALLED
I hereby certify that the monitoring well herein describe	d was constructe	ed in accorda	ance with	Missouri [f Natu	FT. Iral Reso		***************************************
MONITORING WELL INSTALLATION CONTRACTOR	PERMIT NUMBER			MONITORI	NG WELL	INSTAL	LATIO			PERMIT NUMBER
and Edit	006329-M	03/29/20	021	APPRENTIC	UE (IF AP	PLICAB	ut)			
MO 780-1415 (03-18) SEND COMPLETED FORM ALONG WITH \$100	CERTIFICATION FE	E TO: MISSOU		MENT OF NA	TURAL R	ESOUR	CES, M	ISSOURI (SEOLOGI	CAL SURVEY,
WELL INSTALLATION SECTION, PO	RECORD (AND FEI	E) MAY BE SUB	MITTED ONI	LINE: dnr.mo	.gov/mov	wells	WAIL: W	vendrillers(wanr.mo.g	104

MISSOURI DEPARTMENT OF NAT	URAL RESOL	JRCES	OFFI	CE USE ONLY			DATE RE	CEIVED	
GEOLOGICAL SURVEY PROGRAM	Λ			ENCE NO.			CHECK NO.		
MONITORING WELL CERTIFICATION REPORT			STATE	WELL NO.			REVENU	E NO.	
	2.0		ENTERE	D APPRO			ATE	100	UTE
NOTE: This form is not to be used for nested y	wells				VLU				/ /
	<u> </u>								
PROPERTY OWNER NAME WHERE WELL IS LOCATED Bridgeton Landfill, LLC		PRIMARY PHO (209) 227-		R WITH AREA CODE	SVE			well comple 02/23/2021	
PROPERTY OWNER MAILING ADDRESS 13570 St. Charles Rock Rd			CITY Bridge	eton		state MO		zip code 63044	
PHYSICAL ADDRESS OF PROPERTY WHERE WELL IS LOCATED 13570 St. Charles Rock Rd			CITY Bridge	eton		COUNT St. LC	y Duis CO	C	
NAME OF SITE, BUSINESS, OR CLEANUP PROJECT Bridgeton Landfill, LLC	DNR/EPA PROJEC	T NUMBER OR	REGULATO	DRY SITE ID NUMBER	(IF APF	PLICABLE		ARIANCE NUN	IBER (IF ISSUED)
PRIMARY CONTRACTOR NAME (PLEASE PRINT) John Gates	1	******	PERMIT 00350	NUMBER	to con	nply with a	all rules a	nd regulations p	
SURFACE COMPLETION			00000		-			3.600 to 256.640	
TYPE LENGTH AND DIAMETER OF DIAMETE	ER AND DEPTH OF	THE HOLE SI	URFACE CC	MPLETION GROUT	LUCAI		,		
Above Ground SURFACE COMPLETION SURFACE	E COMPLETION WA	AS PLACED] Concrete		Latitude			45	. ENANGLESCERICAN MERICAL AND
Diameter n/a IN. Length			Other					26	
Uccking Cap		SURFACE	COMPLE	TION		EST		ARGEST	
L weep Hole	7	Steel [Aluminum	Plastic				nship 74	North
Elevation FT.		RISER OR COMPLET Riser/Casing	ION)	(IF OPEN HOLE 6IN.	Diree Gas	ct Push Migration ervation		traction 🛛 In	clinometer /simeter /her (specify)
ANNULAR SEAL Length N/A FT.		Riser/Casing	Length	9.2 FT.	*********	************		CK ALL THAT A	PPLY)
		Diameter Of I	Drill Hole	12 IN.	Expl Pest	osives icides/He	rbicides	Metals Petroleum	
Slurry Chips Chip		Weight Or S	DR#	40		onuclides		Geotechni	cal Data
Cement/Slurry		MATERIAI	L			DEPT		FORMATIC	ON DESCRIPTION
IF CEMENT/BENTONITE MIX:		Steel	Thermopl	astic (PVC)	FRC	M	то	(OR ATTAC	H BORING LOG*)
Bags of Cement Used		Other			0	3		Crushee	d Gravel
% of Bentonite Used					2	-			
Water Used Per Bag GAL.		BENTONI	TE SEAL		3	5		CLAY	
		Length 2			5	3	3	Silty SA	ND
		Chips			0		0	Only OA	
SECONDARY FILTER PACK LENGTH			Zone 🛃	nyulateu	33			LIMEST	ONE
Ti/a FT.									
	12					3	2	Bottom	of SVE Well
DEPTH TO TOP OF PRIMARY		SCREEN					~	Dottom	
FILTER PACK		Screen Diam	leter	6 IN.)				
5.0 FT.		Screen Leng		26.5 FT.					
		Diameter Of [<u>12</u> IN. 5.5 гт					
LENGTH OF PRIMARY FILTER PACK		Depth To To	р	5.5 FT.					
		SCREEN N	ATERIAL						
28.0 FT.		Steel [Z Thermople	astic (PVC)					
		Other			TOTAL	DEPTH:			.og Attached
					33.0		FT		log / illuonou
For cased wells, submit additional as-built diagrams showin all casing, hole diameter and grout used.	****	****			~20	WATER	FT		No
I hereby certify that the monitoring well herein described	was constructe	ed in accorda	ance with	Missouri Departr	nent o	f Natur	al Reso	ources requi	rements.
MONITORING WELL INSTALLATION CONTRACTOR	PERMIT NUMBER	DATE	*****	MONITORING WEL APPRENTICE (IF A			CONTRA	ACTOR PER	RMIT NUMBER
to Edit	006329-M	03/29/20							
MO 780-1415 (03-18) SEND COMPLETED FORM ALONG WITH \$100 C WELL INSTALLATION SECTION, PO B	CERTIFICATION FEI	TO: MISSOU	RI DEPARTI	MENT OF NATURAL	RESOUR	RCES, MI	SSOURI	GEOLOGICAL	SURVEY,
	RECORD (AND FEE) MAY BE SUB	MITTED ON	LINE: dnr.mo.gov/mc	wells		numers	egani.nio.gov	

	MISSOURI DEPARTME	NT OF NAT	URAL RESO	JRCES	OFEI	CE USE ONLY		DA	TE RECE	IVED	
	GEOLOGICAL SURVEY	PROGRAM	N		REFERENCE NO.				CHECK NO.		
	MONITORING WEL CERTIFICATION RE				STATE	WELL NO.	*****	RE	VENUE	10.	
NOTE: This	form is not to be used f	or nested	wells		ENTERE	D APPRO	VED	DAT	E	ROL	JTE / /
OWNER AND	SITE INFORMATION							I			· · ·
PROPERTY OWNE Bridgeton Lai	R NAME WHERE WELL IS LOCATE ndfill, LLC	D		PRIMARY PHO (209) 227-		R WITH AREA CODE	WELL			LL COMPLET /03/2021	ION DATE
The property of the second sec	R MAILING ADDRESS arles Rock Rd				CITY Bridge	oton		state MO	1	CODE 044	
	ss of property where well arles Rock Rd	S LOCATED			CITY Bridge			COUNTY St. Lou		044	ł
NAME OF SITE, BU Bridgeton Lai	ISINESS, OR CLEANUP PROJECT		DNR/EPA PROJEC	T NUMBER OR	REGULATO	ORY SITE ID NUMBER	(IF APF	LICABLE)	VAF 67		BER (IF ISSUED)
PRIMARY CONTRA John Gates	CTOR NAME (PLEASE PRINT)				PERMIT 00350		to con	ply with all	rules and	requires all pr regulations pr 0 to 256.640	
SURFACE COM	PLETION		*****							FORMAT ON	
TYPE	LENGTH AND DIAMETER OF SURFACE COMPLETION	DIAMET	ER AND DEPTH OF	THE HOLE SU	JRFACE CC	MPLETION GROUT	Latitude	38		5	, 49.57
Flush Mount	Length <u>n/a</u> FT. Diameter <u>n/a</u> IN.	Diamete Length	a factor for the local data and a start of the local data in		Concrete Other		Longitu	90 Je	. 2	:6	47.82
Locking Cap				SURFACE	-	TION			LAR		99000000000000000000000000000000000000
UWeep Hole				Steel	Aluminum	Plastic		/a		¼	North
							10000				
Elevation	FT.			RISER OR COMPLET Riser/Casing	ION)	(IF OPEN HOLE 6 IN.	Dire Gas Obs	ervation	Extra	tion Inc ion Lys Hole Oth	linometer simeter ier (specify)
ANNULAR SEAL				Riser/Casing		8.7 FT.		DRING FOR		ALL THAT AF	PPLY)
	Et.			Diameter Of I		12 IN. 40		icides/Herbi	cides [Metals Petroleum	
	Granular			Weight Or S		<u></u>		onuclides S (non-petr		Geotechnic	
Cement/Slurry				MATERIAI		astic (PVC)	FRO	DEPTH	то		N DESCRIPTION H BORING LOG*)
IF CEMENT/BEN				Other			0	2.5		Crushed	Gravel
Bags of Cement Use							0	1.0		oradited	Oluvei
Water Used Per Bag	amateuroritemateuroritemateuro			BENTONI	E SEAL		2.5	4.5		CLAY	
				Length 2 Chips Saturated			4.5	30.	4	Silty SA	ND
SECONDARY FI	LTER PACK LENGTH						30.4			LIMEST	ONE
n/a	FT.										
		10.15	27								
DEPTH TO TOP	OF PRIMARY	6		SCREEN				29.	.4	Bottom o	of SVE Well
FILTER PACK				Screen Diam	eter	6 IN.					
4.5	FT.	1. A.		Screen Leng		24.4 FT. 12 IN					
		\$ ····	-	Diameter Of [Depth To To		12 IN. 5.0 FT.					
LENGTH OF PRI	MARY FILTER PACK			SCREEN N		References					
25.9		24 LL		SCREEN N							
	9 FT.			Other			TOTAL				
							30.4		FT.	*Boring Lo	og Attached
For cased wells, all casing, hole of	submit additional as-built dia diameter and grout used.	grams showi	ng well construc	tion details in	cluding ty	pe and size of	static ~20	WATER LE	VEL FT.	PUMP INSTA	
I hereby certify	that the monitoring well here	ein described	d was constructe	ed in accorda	ance with	Missouri Departr		f Natural			
President and a second s		11-	PERMIT NUMBER			MONITORING WEL	L INSTA	LLATION C			MIT NUMBER
	for Edit	st	006329-M	03/29/20				,			
MO 780-1415 (03-18	SEND COMPLETED FORM ALO	NG WITH \$100 SECTION, PO	CERTIFICATION FE	E TO: MISSOUR	RI DEPARTA	MENT OF NATURAL P	RESOUR	CES, MISS	OURI GE	OLOGICAL S	URVEY,
	V		RECORD (AND FEE) MAY BE SUB	WITTED ON	LINE: dnr.mo.gov/mc	wells				

$\bigcirc \bigcirc $	MISSOURI DEPARTM	ENT OF NAT	URAL RESOL	JRCES	OFF	ICE USE ONLY		DAT	E RECEN	/ED	
	GEOLOGICAL SURVE	Y PROGRAM	N			RENCE NO.		CHE	CHECK NO.		
	CERTIFICATION F				STAT	E WELL NO.		REV	/ENUE NO	D.	
NOTE: This	form is not to be used	for nested	wells		ENTER	RED APPRO	VED	DATE	-	ROU	JTE / /
OWNER AN	D SITE INFORMATION					I		I			· ·
PROPERTY OWN Bridgeton La	ER NAME WHERE WELL IS LOCA and fill, LLC	TED		PRIMARY PH (209) 227		BER WITH AREA CODE		NUMBER		L COMPLET	ION DATE
	ER MAILING ADDRESS				CITY	geton		state MO	ZIP 0	ODE	
	ESS OF PROPERTY WHERE WEL	L IS LOCATED			CITY Bridg			COUNTY St. Louis			
NAME OF SITE, BI Bridgeton La	USINESS, OR CLEANUP PROJEC	Т	DNR/EPA PROJEC	T NUMBER O		FORY SITE ID NUMBER	R (IF API				BER (IF ISSUED)
PRIMARY CONTR	ACTOR NAME (PLEASE PRINT)	****				T NUMBER	to cor	nply with all ru	, RSMo, re ules and re	equires all pr	
SURFACE CON					0000		T	ant to Section			
TYPE	LENGTH AND DIAMETER OF SURFACE COMPLETION		ER AND DEPTH OF	THE HOLE AS PLACED	SURFACE C	COMPLETION GROUT	Latitude			-ORMAT OF	
Above Ground Flush Mount	Length <u>n/a</u> FT. Diameter <mark>n/a</mark> IN.	Diamete Length			Concrete		Longitu	90 de	ູ 26	6	48.77
Locking Cap					Compl			EST	LARG		
U Weep Hole		Tr				m 🛛 Plastic	1	/4 }			
							1	*****)E 🗆 W	North
Elevation		_		COMPLE Riser/Casi	ETION) ng Diameter	0.7	Dire Gas Obs	Migration ervation	Extract	ion Inc n ILys Iole IOth	linometer simeter ner (specify)
Length n/a	FT.			Riser/Casiı Diameter C Weight Or	of Drill Hole	8.7 FT. 12 IN. 40 /	Expl Pest Rad	icides/Herbici ionuclides	ides	Metals Petroleum SVOCS	
Pellets Cement/Slurry	Granular			MATERIA				CS (non-petrol		FORMATIO	AI Data N DESCRIPTION H BORING LOG*)
IF CEMENT/BEI	NTONITE MIX:				I nermo	plastic (PVC)	FRO		10		
Bags of Cement Us % of Bentonite Use							0	2.5		Crushed	Gravel
Water Used Per Ba			-	BENTON	IITE SEAL		2.5	4.5		CLAY	
				🗹 Chips	Pellets		4.5	40.7	,	Silty SAN	ND
SECONDARY F	ILTER PACK LENGTH						40.7			LIMEST	ONE
<u>n/a</u>	FT.										
DEPTH TO TOP FILTER PACK				SCREEN Screen Dia Screen Ler Diameter O	imeter ngth	6 IN. 34.7 FT. 12 IN.		39.7	7	Bottom o	of SVE Well
LENGTH OF PR	IMARY FILTER PACK			Depth To T	^{op}	5.0 FT.					
36.	2 FT.	1111 1111				plastic (PVC)					
		1.325		Other _			total 40.7	DEPTH:	FT.	3 *Boring Lo	og Attached
	, submit additional as-built d diameter and grout used.	iagrams showi	ng well construct	ion details	including	type and size of		WATER LEV	EL F	UMP INSTA	
	that the monitoring well he	rein described	d was constructe	d in accord	dance wit	h Missouri Depart	100000000	f Natural F			
		Ma	PERMIT NUMBER	DATE		MONITORING WEL APPRENTICE (IF A	L INSTA	LLATION CO			MIT NUMBER
	482-00	~~~		03/29/2							
MO 780-1415 (03-1		ON SECTION, PO	BOX 250, ROLLA, M	O 65402 PHC	DNE: 573-36	TMENT OF NATURAL 8-2165 FAX: 573-368- NLINE: <u>dnr.mo.gov/m</u>	2317 E	RCES, MISSO MAIL: welldr	DURI GEO illers@dn	LOGICAL S r.mo.gov	URVEY,

	MISSOURI DEPARTMEN GEOLOGICAL SURVEY I	PROGRAM	URAL RESOU	JRCES	OFFICE USE ONLY				DATE RECEIVED			
6	MONITORING WELL CERTIFICATION RE				STATE	E WELL NO.				REVENUE		
NOTE: This	form is not to be used fo		wolle		ENTER	ED	APPROV	/ED	C	DATE		ROUTE
	ID SITE INFORMATION											1 1
PROPERTY OWN Bridgeton La	IER NAME WHERE WELL IS LOCATED	1		PRIMARY PH (209) 227		ER WITH ARI	EA CODE	WELL			ELL CON 3/02/2	IPLETION DATE
	IER MAILING ADDRESS harles Rock Rd				сіту Bridg	eton			state MO	1	P CODE	
	ESS OF PROPERTY WHERE WELL IS harles Rock Rd	LOCATED	t.		CITY Bridg				COUNT			-
NAME OF SITE, B Bridgeton La	BUSINESS, OR CLEANUP PROJECT		DNR/EPA PROJEC	T NUMBER OF	REGULAT	ORY SITE ID	NUMBER	(IF APF	LICABLE	· · · · · ·	ARIANCE 723	NUMBER (IF ISSUED)
PRIMARY CONTR John Gates	RACTOR NAME (PLEASE PRINT)				PERMIT	NUMBER	*****	to con	ply with	all rules an	d regulatio	all primary contractors ons promulgated 5.640 RSMo.
SURFACE CON	1				l		l	1		WELL (D/M		
TYPE	LENGTH AND DIAMETER OF SURFACE COMPLETION Length n/a FT.	SURFAC	ER AND DEPTH OF E COMPLETION WA	AS PLACED		OMPLETION		Latitude	38	p	45	, 49.57
Flush Mount	Length <u>n/a</u> FT. Diameter <u>n/a</u> IN.	Diameter Length			Concrete			Longitud	90 de	•	26	48.78
Locking Cap		G			ECOMPLE					LA		
				Steel	Aluminun	n 🛛 Plastic	5	Section		Town	ship	North
				RISER OI	R CASING	(IF OPEN I	1	TYPE C	F WELL	(CHECK C		」W ────────────────────────────────────
Elevation		'	1	COMPLE Riser/Casin		6		🛛 Gas	Migration ervation	n 🛛 Inje	ction In Hole	Lysimeter Other (specify)
ANNULAR SEA	AL FT.			Riser/Casin Diameter Of	-		FT.		ORING F	OR (CHEC	K ALL TH	
	Chips Granular			Weight Or S		40	ľ	Radi	onuclides		Petrol SVOC	
Cement/Slurry						elastic (PVC)	-	FRC	DEPT		FORM	ATION DESCRIPTION
IF CEMENT/BE							-	0		I.5	CLA	Y
Bags of Cement Use												
Water Used Per Ba	ag GAL.			BENTONI			4	4.5	3	7	Silty	SAND
				Chips [] Pellets [d Zone 2		:	37			LIME	STONE
SECONDARY F	ILTER PACK LENGTH				u zone 💌	nyurateu						
n/a	FT.											
		10.00	35		~				2	36	Potte	om of SVE Well
DEPTH TO TOP	P OF PRIMARY	8		SCREEN		6				0	Bollo	
4.5	5 FT.			Screen Diar Screen Lene		31	IN. FT.					
			-	Diameter Of Depth To To		FO	IN. FT.					
LENGTH OF PR	RIMARY FILTER PACK			SCREEN			E1.					
32	.5 _{FT.}	A 2011			I Thermop							
	Lance Lance	1.36		Other					DEPTH:			ing Log Attached
For cased wells	s, submit additional as-built diag	rams showi	ng well construct	ion details i	ncludina t	ype and siz		37.0	WATER	FT.		NSTALLED
all casing, hole	diameter and grout used.						~	~20		FT.	C Yes	🛛 No
	/ that the monitoring well herei	n described	PERMIT NUMBER		ance with							
	A Ede	la	006329-M	03/29/2		APPRENT	ICE (IF API	PLICAE	ILE)	CONTRAC		PERMIT NUMBER
MO 780-1415 (03-1	8) SEND COMPLETED FORM ALON WELL INSTALLATION	SECTION, PO	BOX 250, ROLLA, M	O 65402 PHO	NE: 573-368	-2165 FAX:	573-368-23	317 EI	CES, MI MAIL: we	SSOURI G	EOLOGIC	AL SURVEY,
	v		RECORD (AND FEE) MAY BE SUE	MITTED ON	ILINE: dnr.m	o.gov/mov	vells				

Sub-Appendix B.2

Pipeline Pressure Testing Results



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: 2021 Soil Gas Monitoring Engineers/Owner Rep: Dane Hale

Date: 3/5/2021 Job No.: BT-209-21 Page: 2

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) CS-1 to east flange Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 8" SDR-17 HDPE Header and 6" SDR-17 HDPE lateral Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR Test Pressure Per Spec: 4psi

Pipe Diameter & Length 8" LFG -44'

Start Pressure (PSI)	Temperature (F)	Start Time
11	45	13:25
11	45	13:35
11	45	13:45
11	45	13:55
11	45	14:05
11	45	14:15
Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
11	45	14:25

Comments: @ass / Fail (Circle One)

Date Test Performed.: 3/5/2021

Dane C. Hale



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: 2021 Soil Gas Monitoring Engineers/Owner Rep: Dane Hale Date: 3/5/2021 Job No.: BT-209-21 Page: 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) CS-1 to end of clean out by SVE-6 Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 8" gas hdpe sdr-17 Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR Test Pressure Per Spec: 4psi

Pipe Diameter & Length 8" LFG -35'

Start Pressure (PSI)	Temperature (F)	Start Time
9	44	13:25
9	44	13:35
9	44	13:45
9	44	13:55
9	44	14:05
9	45	14:15
Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
9	45	14:25

<u>Comments:</u> (ass / Fail (Circle One)

Date Test Performed.:

3/5/2021

Dane C. Hale



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: 2021 Soil Gas Monitoring Engineers/Owner Rep: Dane Hale

Date: 3/15/2021 Job No.: BT-209-21 Page: 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) Flange to tie-in NE Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 8" gas hdpe sdr-17 Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR Test Pressure Per Spec: 4psi

Pipe Diameter & Length 8" LFG - 42 LF

Start Pressure (PSI)	Temperature (F)	Start Time
10.5	46	8:20
10.5	46	8:30
10.5	46	8:40
10.5	46	8:50
10.5	46	9:00
10.5	46	9:05
Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
10.5	46	14:25

Comments: (Pass) Fail (Circle One)

Date Test Performed.: 3/15/2021

Dane C. Hale



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: 2021 Soil Gas Monitoring CQA Engineers/Owner Rep: Dane Hale Date: 3/16/2021 Job No.: BT-209-21 Page: 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) Entire SVE network Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 2" SDR-11 HDPE carrier of 2"x4" Forcemain Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR Test Pressure Per Spec: 15psi-100psi

Pipe Diameter & Length 4" FM -290 LF

Start Pressure (PSI)	Temperature (F)	Start Time
30	44	8:00
30	44	8:10
30	44	8:20
30/100	44	8:30
100	44	8:40
100	44	8:50
Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
100	44	9:00

Comments: @ass / Fail (Circle One)

air pressure was raised from 30psi to 100 psi from 08:30 -08:33

Date Test Performed.: 3/16/2021

Dane C. Hale



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: 2021 Soil Gas Monitoring CQA Engineers/Owner Rep: Dane Hale

Date: 3/16/2021 Job No.: BT-209-21 Page: 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) Entire SVE network Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 4" SDR-17 HDPE outer containment of 2"x4" Forcemain Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR

Test Pressure Per Spec: 30psi

Pipe Diameter & Length 4" FM - 290 LF

Start Pressure (PSI)	Temperature (F)	Start Time
31	46	14:00
31	46	14:10
31	46	14:20
31	46	14:30
31	46	14:40
31	46	14:50
Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
31	46	15:00

<u>Comments:</u> Pass /)Fail (Circle One)

Date Test Performed.:

3/16/2021

Engineers/Owners Rep .: Dane C. Hale

Feezor Engineering, Inc. 3377 Hollenberg Drive Bridgeton, MO 63044 (217) 483-3118



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: SVE Installation

Date: 3/15/2021 Job No.: BT-209-21

Engineers/Owner Rep: Andrew Roberts **Contractor:** Fusion Solutions Page: 1 of 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) Entire SVE System Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 2" SDR-9 - HDPE Airline Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR

Test Pressure Per Spec: 100 PSI

Pipe Diameter & Length: 2" SDR-9 - 290 LF

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time	Notes
100	52	13:30	
100	52	13:40	_
100	52	13:50	_
100	52	14:00	_
100	52	14:10	_
100	52	14:20	_
			_

Ending Pressure (PSI) Ending Temperature (F) Ending Time 100 52 14:30

Comments: Pass / Fail (Circle One)

Date Test Performed.:

3/15/2021



Feezor Engineering, Inc. 3377 Hollenberg Drive Bridgeton, MO 63044 (217) 483-3118



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: SVE Installation Date: 3/8/2021 Job No.: BT-209-21

Engineers/Owner Rep: Andrew Roberts Contractor: Fusion Solutions Page: 1 of 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.) LFG Lateral - CS-1 to SVE-7 Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 8" SDR-17 - HDPE LFG Lateral Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)

AIR

Test Pressure Per Spec: 4 PSI

Pipe Diameter & Length: 8" SDR-17 - 42 LF

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time	Notes
12	56	13:00	
12	56	13:10	
12	56	13:20	
12	56	13:30	
12	56	13:40	
12	56	13:50	

Ending Pressure (PSI)	Ending Temperature (F)	Ending Time
12	56	14:00

Comments: Pass / Fail (Circle One)

Date Test Performed.:

3/8/2021



Feezor Engineering, Inc. 3377 Hollenberg Drive Bridgeton, MO 63044 (217) 483-3118



PIPELINE FIELD TESTING REPORT

Client: Republic Services - Bridgeton Landfill Project: SVE Installation Date: 3/15/2021 Job No.: BT-209-21

Engineers/Owner Rep: Andrew Roberts Contractor: Fusion Solutions Page: 1 of 1

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)

LFG Lateral - 8" Header to SVE-1, SVE-3 and SVE-4

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main) 6" SDR-17 - HDPE LFG Lateral <u>Type of Test</u>: (Air, Hydrostatic, Infiltration, Exfiltration, Other) AIR

Test Pressure Per Spec: 4 PSI

Pipe Diameter & Length: 6" SDR-17 - 115 LF

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time	Notes
10	51	12:45	_
10	51	12:55	_
10	51	13:05	_
10	51	13:15	_
10	51	13:25	_
10	51	13:35	
			-
			-

 Ending Pressure (PSI)
 Ending Temperature (F)
 Ending Time

 10
 52
 13:45

<u>Comments:</u> Pass / Fail (Circle One)

Date Test Performed.:

3/15/2021

Engineers/Owners Rep.:



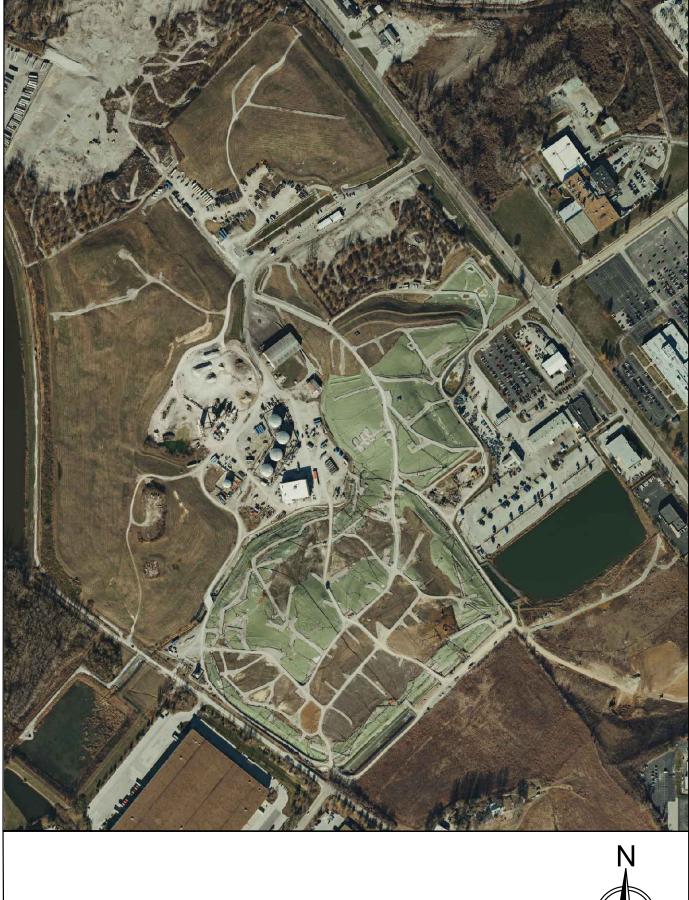
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APPENDIX C

CONSTRUCTION CERTIFICATION DRAWINGS (REDUCED SET)

Title Page
Site Plan
SVE Installation Plan View
Details 1
Details 2

AS-BUILT RECORD DRAWINGS FOR THE BRIDGETON LANDFILL 2021 SVE INSTALLATION



LOCATION MAP



APRIL 2021 PREPARED FOR:

Bridgeton Landfill, LLC

13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044



3377 HOLLENBERG DRIVE BRIDGETON, MO 63044 TEL. (217) 483-3118

	INDEX OF DRAWINGS
	TITLE PAGE
001	SITE PLAN
002	SVE INSTALLATION PLAN VIEW
003	DETAILS 1
004	DETAILS 1







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	€GMP-4
	● TMP-1S,3M,3D ● PZ-204-AS
	GEW-38
	• SEW-63
	⊠ ⊗
	6
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	₽ <i>CT/HC-1</i> ⊚LS-1 ▲ LS-6
	HZ-1
	PS-15
	SC-B1
	OTMP-9 ⊕ GC-3
	• ET-2 • 17-7
	• <i>PL-7</i>
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2 А2 	D L L L L L L GU 6GU 6GU 6GU 6GU 6GU 6GU 6GU 6GU 6GU G 2G 4G 6GU 6G 8G 10G 12G 18G 24G A/FM E E E OHW OHW OHW OHW OHW OHW V FM
2A2 	D L L L L G 6GU 6GU 6GU G 2A 2A 2A 2A 2A 2A 2A 2G 6GU 6G 6G AG 6G A/FM E E E OHW 0HW OHW 0HW OHW 0HW OHW 0HW OHW 0HW
2 А2 	Image: Constraint of the system
2 А2 	
2 А2 	

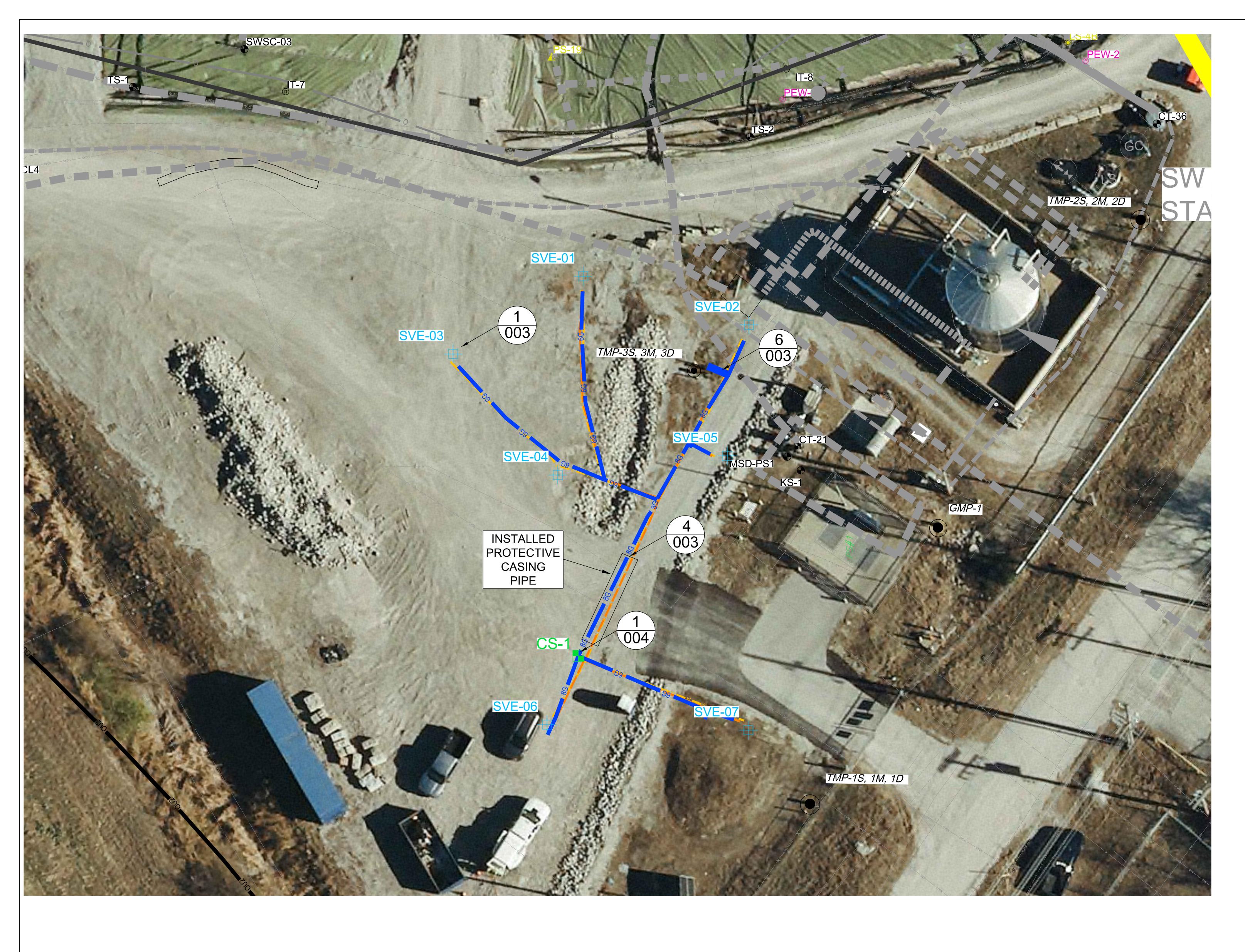
NOTES: • AERIAL TOPOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS CO. AND IS DATED DECEMBER 9, 2020 DANIEL RICHARD FEEZOR PREPARED F PROJEC PREPARED FOR PE-030292 BRDIGETON LANDFILL 2021 SVE INSTALLATION 13570 ST. CHARLES ROCK ROAD AS-BUILT RECORD DRAWINGS BRIDGETON, MISSOURI 63044 **CANIEL RICHARD** BRIDGETON, ST. LOUIS COUNTY, MO FEEZOR ering for a Better World DRAWING TITLE FEEZOR NUMBER FACILITY PLAN ENGINEERING, INC. SONAL F 3377 Hollenberg Dr, Bridgeton, MO 63044, Ph: 217-483-3118 Missouri State Certificate Of Authority #: E-200912211 PROJECT NUMBER: BT-209-21 FILE PATH: C:\Users\arobe\Dropbox (Feezor Engineering)\Bridgeton\BT-209 (Soil Gas CQA and PM)\9 - Report\1 - Appendicies\C - Drawings

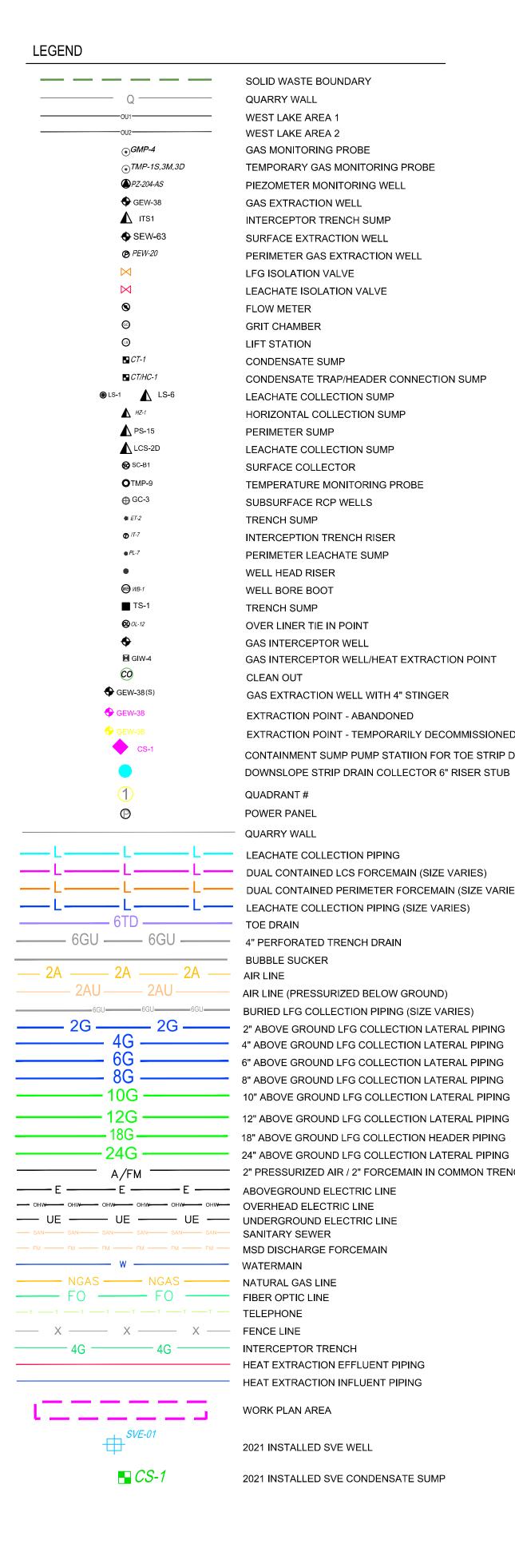
SOLID WASTE BOUNDARY QUARRY WALL WEST LAKE AREA 1 WEST LAKE AREA 2 GAS MONITORING PROBE TEMPORARY GAS MONITORING PROBE PIEZOMETER MONITORING WELL GAS EXTRACTION WELL INTERCEPTOR TRENCH SUMP SURFACE EXTRACTION WELL PERIMETER GAS EXTRACTION WELL LFG ISOLATION VALVE LEACHATE ISOLATION VALVE FLOW METER GRIT CHAMBER LIFT STATION CONDENSATE SUMP CONDENSATE TRAP/HEADER CONNECTION SUMP LEACHATE COLLECTION SUMP HORIZONTAL COLLECTION SUMP PERIMETER SUMP LEACHATE COLLECTION SUMP SURFACE COLLECTOR TEMPERATURE MONITORING PROBE SUBSURFACE RCP WELLS TRENCH SUMP INTERCEPTION TRENCH RISER PERIMETER LEACHATE SUMP WELL HEAD RISER WELL BORE BOOT TRENCH SUMP OVER LINER TIE IN POINT GAS INTERCEPTOR WELL GAS INTERCEPTOR WELL/HEAT EXTRACTION POINT CLEAN OUT GAS EXTRACTION WELL WITH 4" STINGER EXTRACTION POINT - ABANDONED EXTRACTION POINT - TEMPORARILY DECOMMISSIONED CONTAINMENT SUMP PUMP STATIION FOR TOE STRIP DRAIN DOWNSLOPE STRIP DRAIN COLLECTOR 6" RISER STUB QUADRANT # POWER PANEL QUARRY WALL LEACHATE COLLECTION PIPING DUAL CONTAINED LCS FORCEMAIN (SIZE VARIES) DUAL CONTAINED PERIMETER FORCEMAIN (SIZE VARIES) LEACHATE COLLECTION PIPING (SIZE VARIES) TOE DRAIN 4" PERFORATED TRENCH DRAIN BUBBLE SUCKER AIR LINE (PRESSURIZED BELOW GROUND) BURIED LFG COLLECTION PIPING (SIZE VARIES) 2" ABOVE GROUND LFG COLLECTION LATERAL PIPING 4" ABOVE GROUND LFG COLLECTION LATERAL PIPING 6" ABOVE GROUND LFG COLLECTION LATERAL PIPING 8" ABOVE GROUND LFG COLLECTION LATERAL PIPING 10" ABOVE GROUND LFG COLLECTION LATERAL PIPING 12" ABOVE GROUND LFG COLLECTION LATERAL PIPING 18" ABOVE GROUND LFG COLLECTION HEADER PIPING 24" ABOVE GROUND LFG COLLECTION LATERAL PIPING 2" PRESSURIZED AIR / 2" FORCEMAIN IN COMMON TRENCH ABOVEGROUND ELECTRIC LINE OVERHEAD ELECTRIC LINE UNDERGROUND ELECTRIC LINE SANITARY SEWER MSD DISCHARGE FORCEMAIN WATERMAIN NATURAL GAS LINE FIBER OPTIC LINE TELEPHONE FENCE LINE INTERCEPTOR TRENCH HEAT EXTRACTION EFFLUENT PIPING HEAT EXTRACTION INFLUENT PIPING SVE INSTALLATION AREA SCALE - 1" = 200' DRAWING # APRIL 2021 001 BRIDGETON LANDFILL, LLC. DESIGNED BY: AMR APPROVED BY: DRF

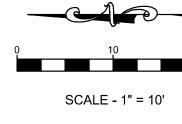
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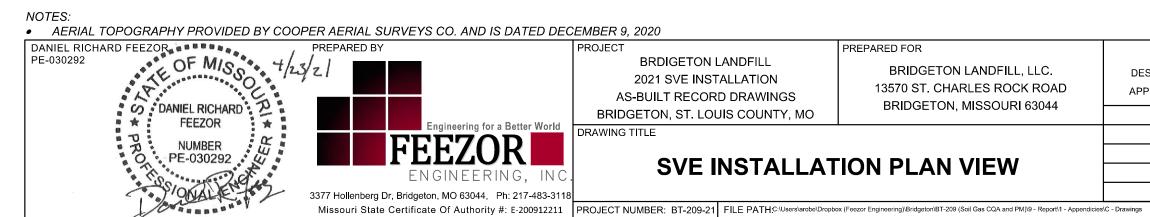
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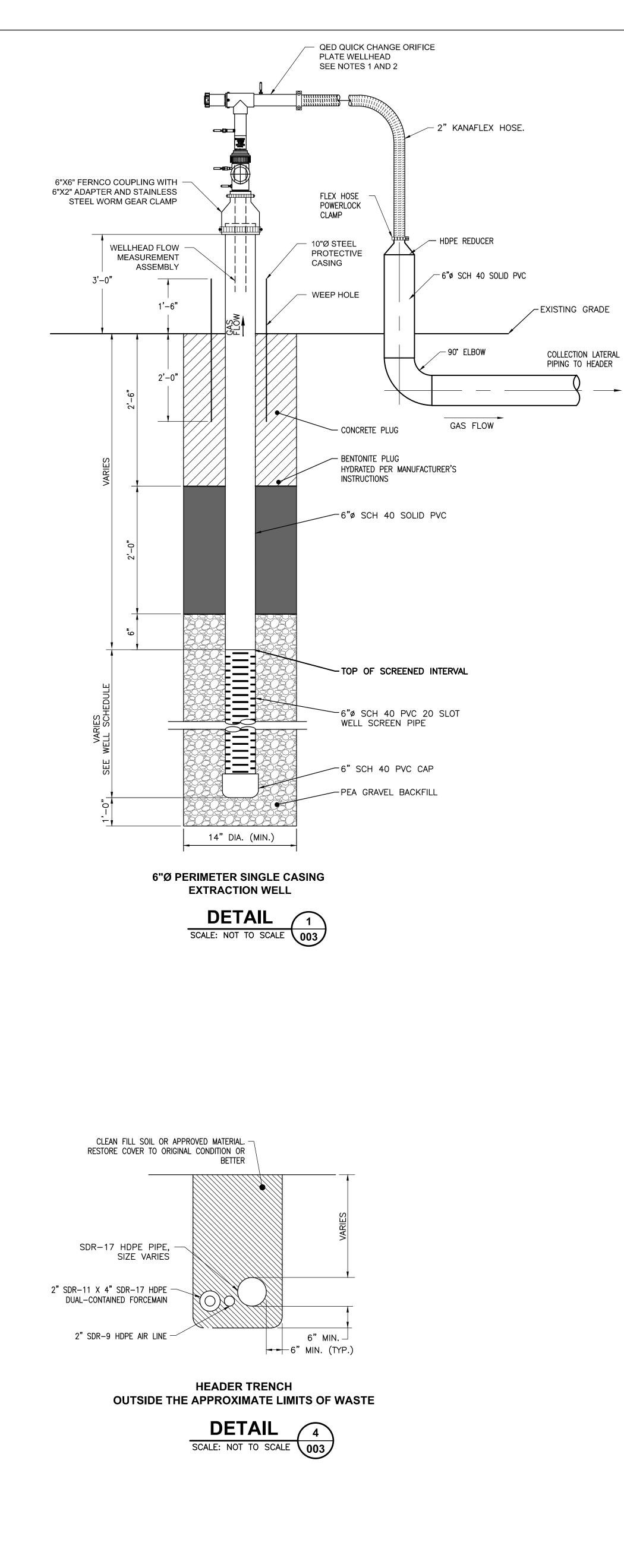


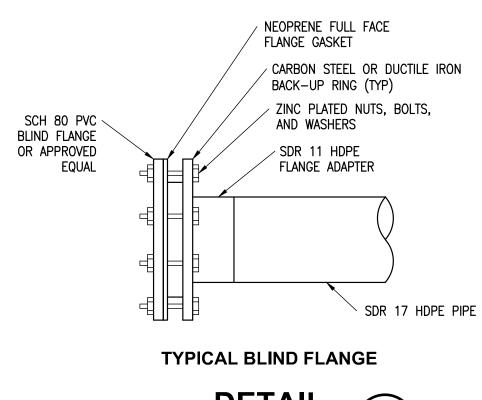






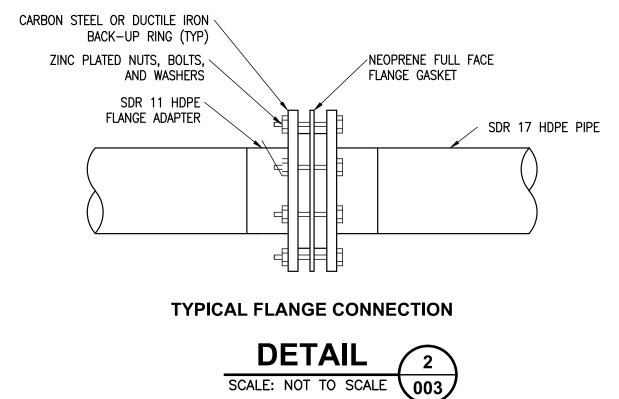
SOLID WASTE BOUNDARY QUARRY WALL WEST LAKE AREA 1 WEST LAKE AREA 2 GAS MONITORING PROBE TEMPORARY GAS MONITORING PROBE PIEZOMETER MONITORING WELL GAS EXTRACTION WELL INTERCEPTOR TRENCH SUMP SURFACE EXTRACTION WELL PERIMETER GAS EXTRACTION WELL LFG ISOLATION VALVE LEACHATE ISOLATION VALVE FLOW METER GRIT CHAMBER LIFT STATION CONDENSATE SUMP CONDENSATE TRAP/HEADER CONNECTION SUMP LEACHATE COLLECTION SUMP HORIZONTAL COLLECTION SUMP PERIMETER SUMP LEACHATE COLLECTION SUMP SURFACE COLLECTOR TEMPERATURE MONITORING PROBE SUBSURFACE RCP WELLS TRENCH SUMP INTERCEPTION TRENCH RISER PERIMETER LEACHATE SUMP WELL HEAD RISER WELL BORE BOOT TRENCH SUMP OVER LINER TIE IN POINT GAS INTERCEPTOR WELL GAS INTERCEPTOR WELL/HEAT EXTRACTION POINT CLEAN OUT GAS EXTRACTION WELL WITH 4" STINGER EXTRACTION POINT - ABANDONED EXTRACTION POINT - TEMPORARILY DECOMMISSIONED CONTAINMENT SUMP PUMP STATIION FOR TOE STRIP DRAIN DOWNSLOPE STRIP DRAIN COLLECTOR 6" RISER STUB QUADRANT # POWER PANEL QUARRY WALL _____ L _____ L _____ DUAL CONTAINED PERIMETER FORCEMAIN (SIZE VARIES) 6" ABOVE GROUND LFG COLLECTION LATERAL PIPING 8" ABOVE GROUND LFG COLLECTION LATERAL PIPING 10" ABOVE GROUND LFG COLLECTION LATERAL PIPING 12" ABOVE GROUND LFG COLLECTION LATERAL PIPING 18" ABOVE GROUND LFG COLLECTION HEADER PIPING 24" ABOVE GROUND LFG COLLECTION LATERAL PIPING A/FM 2" PRESSURIZED AIR / 2" FORCEMAIN IN COMMON TRENCH - HEAT EXTRACTION EFFLUENT PIPING HEAT EXTRACTION INFLUENT PIPING WORK PLAN AREA 2021 INSTALLED SVE WELL 2021 INSTALLED SVE CONDENSATE SUMP DRAWING # APRIL 2021 002 DESIGNED BY: AMR APPROVED BY: DRF DATE DSN. APV. REVISIONS:

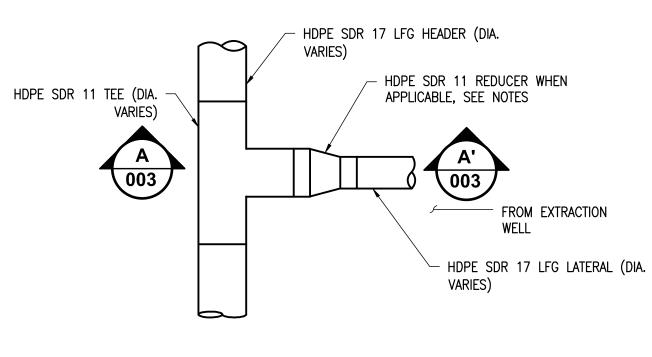






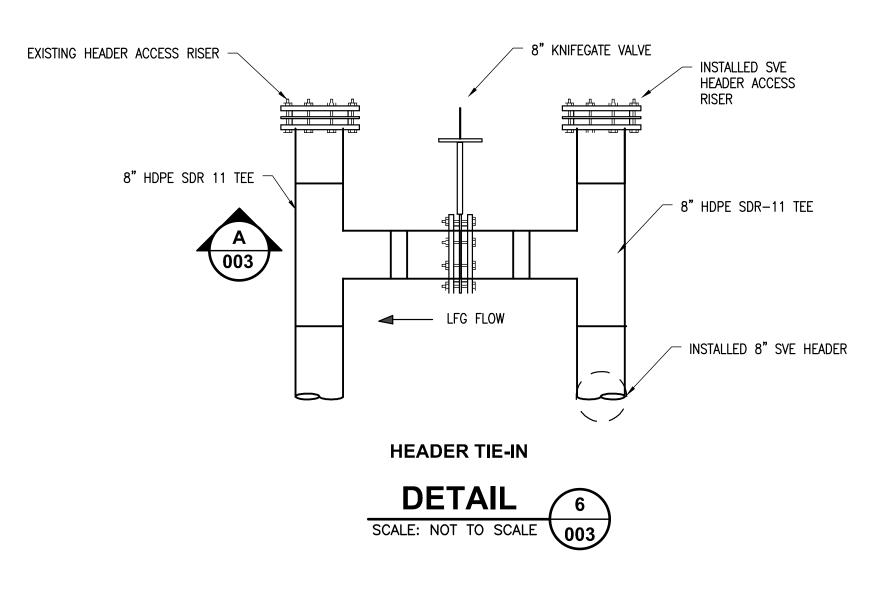
SVE WELL SCHEDULE									
		Ground Elevation (As- Built Survey) Boring		Db	Solid Pipe	Solid Pipe	Dp		
WELL ID	LID Northing Easting		Boring Depth	Above Grade	Below Grade	Slotted Pipe	Thickness of Gravel Pack		
			(Feet MSL)	(Feet MSL)	(Feet)	(Feet)	(Feet)	(Feet)	(Feet)
SVE-01	1,066,957.0	515,303.0	460.6	426.4	34.2	3.0	9.0	24.5	26.2
SVE-02	1,066,912.0	515,289.9	458.7	429.2	29.5	3.0	6.5	22.0	23.5
SVE-03	1,066,992.0	515,282.0	459.1	422.9	36.2	3.0	8.0	27.5	29.2
SVE-04	1,066,964.0	515,249.3	457.5	424.5	33.0	3.0	6.0	26.5	28.0
SVE-05	1,066,918.0	515,254.5	457.5	427.1	30.4	3.0	5.0	24.5	25.9
SVE-06	1,066,966.0	515,181.8	456.6	415.9	40.7	3.0	5.0	34.7	36.2
SVE-07	1,066,912.0	515,180.3	455.3	418.3	37.0	3.0	5.0	31.0	32.5

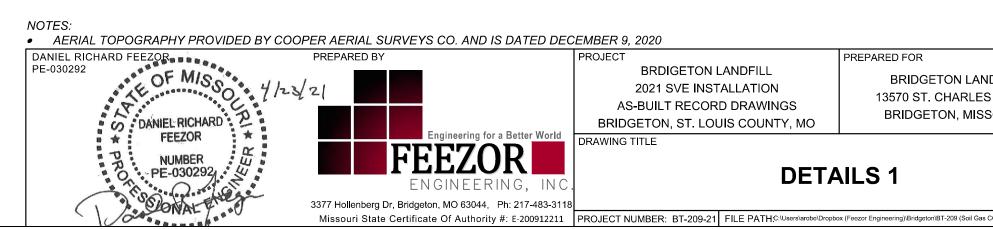




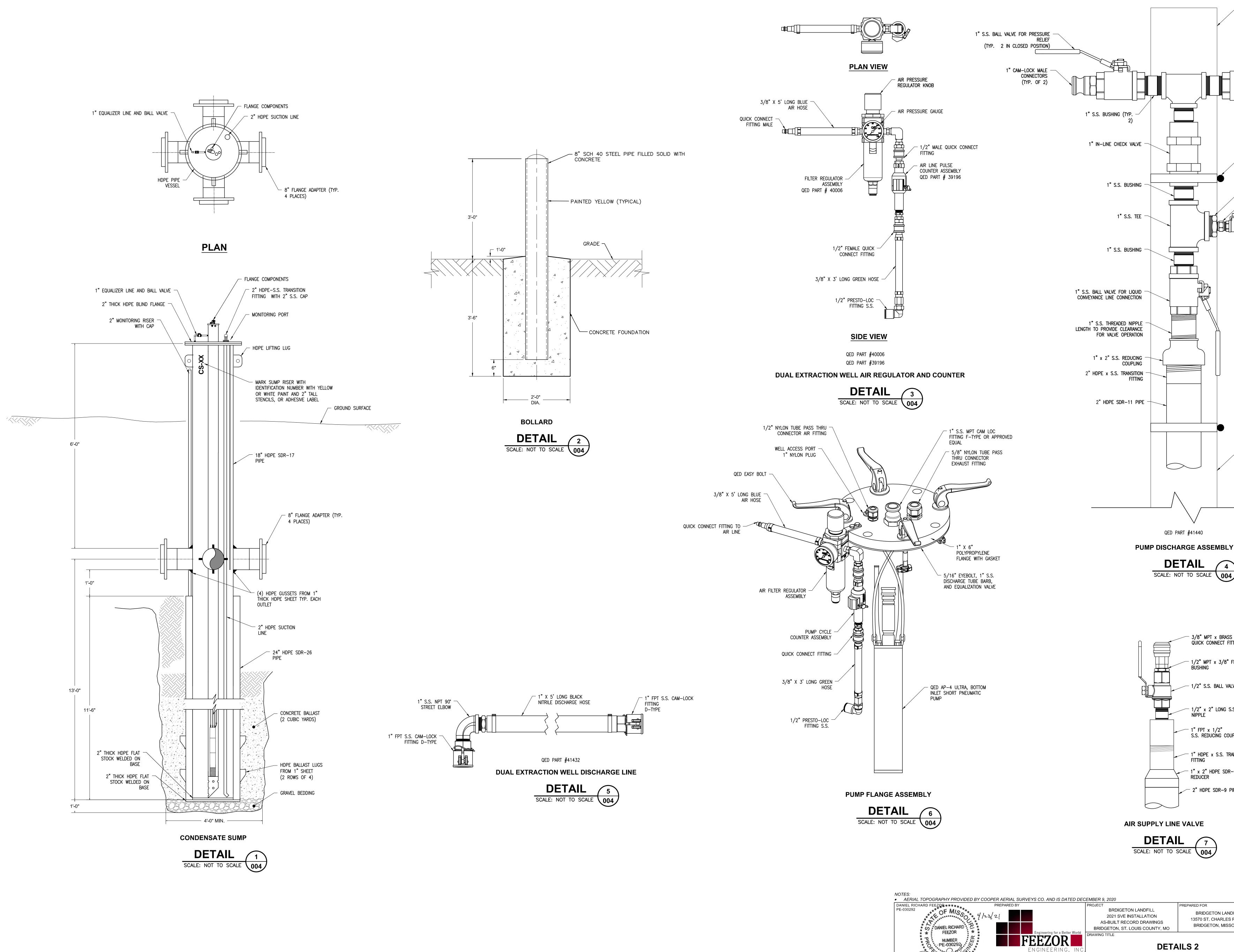
LFG LATERAL TIE-IN WITH TEE

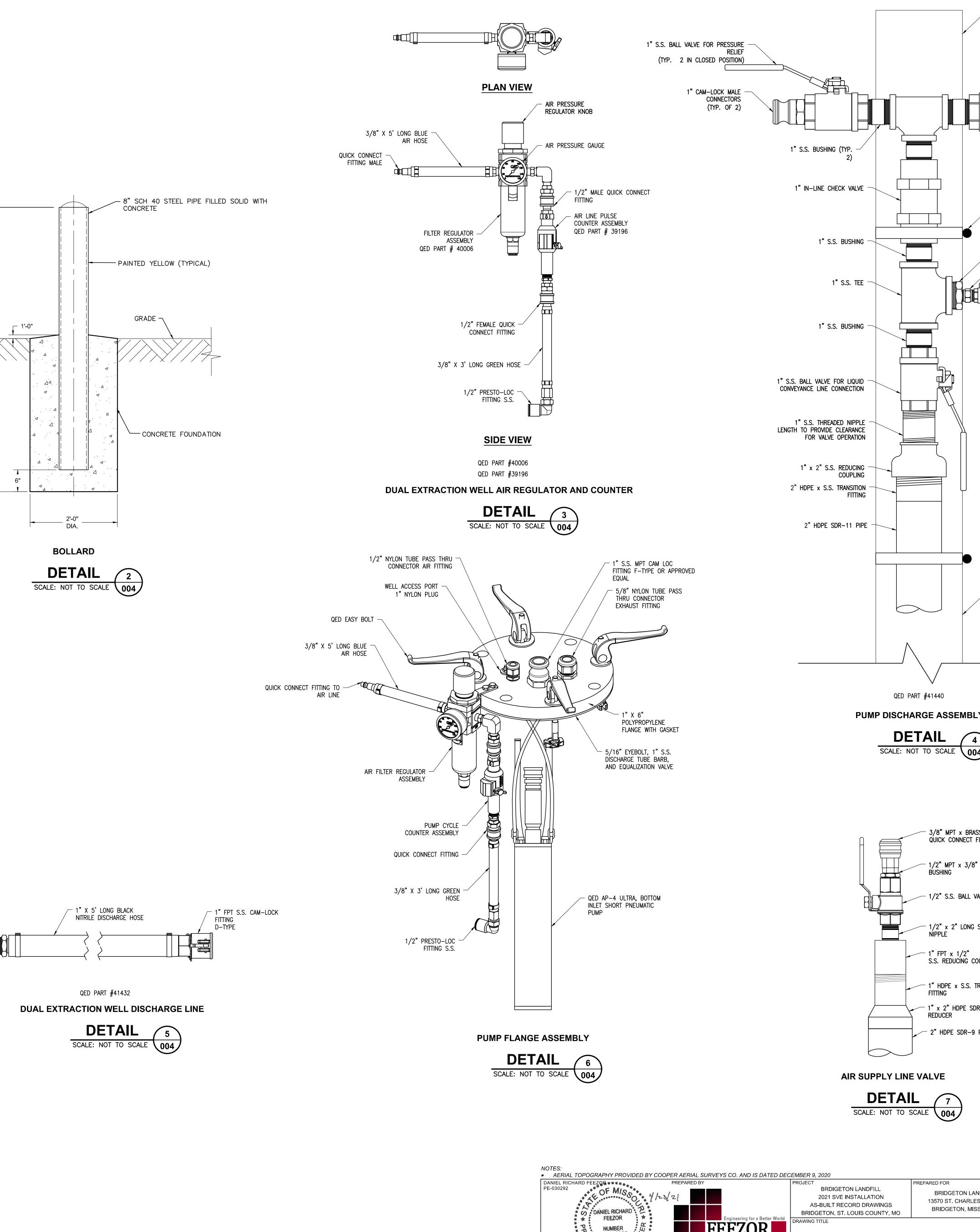






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ENGINEERING, INC 3377 Hollenberg Dr, Bridgeton, MO 63044, Ph: 217-483-311 Missouri State Certificate Of Authority #: E-200912211 PROJECT NUMBER: BT-209-21 FILE PATH::\Users\arobe\Dropbox (Feezor Engineering)\Bridgeton\BT-209 (Soil Gas CQA and PM)\9 - Report\1 - Appendicies\C - Drawings

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