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EA Engineering, Science,
and Technology, Inc., PBC

320 Gold Avenue SW, Suite 1300
Albuquerque, NM 87102
Telephone: 505-224-9013
www.eaest.com

May 17, 2022

Mr. Corey Jarrett
Geoscientist/Project Manager
Remedial Action Program
New Mexico Environment Department
Petroleum Storage Tank Bureau
121 Tijeras Ave NE, Suite 1000
Albuquerque, NM 87102

Pre-Injection Groundwater Monitoring Report
Barelas Bridge, 800 Bridge Blvd., SW, Albuquerque, NM
Release ID #: 54 Facility #: 29854 Deliverable ID 4266-1
Contract #: 22 667 3200 0012

Dear Mr. Jarrett:

EA Engineering, Science, and Technology, Inc. PBC (EA) prepared this report to document pre-injection groundwater monitoring activities conducted on April 6, 2022 at the Barelas Bridge site located at 800 Bridge Boulevard, SW in Albuquerque, New Mexico (Figure 1).

BACKGROUND

A summary of the site background is provided below:

- Contaminated soil in the former UST pit area was excavated and removed in 1989 after the release was reported. Contaminated soil along the southern site boundary was excavated and removed. The current USTs were installed in 2012.
- In 1989 – 1990, initial and additional hydrogeologic investigations were performed.
- In 1992, an air sparge/soil vapor extraction system was installed.
- June 2021 groundwater monitoring results indicated total naphthalene concentrations exceeding the 30 micrograms per liter (µg/L) standard in VP-5 (84 µg/L), MW-8 (68 µg/L), and MW-9 (39.8 µg/L). BTEX concentrations were below the standards.
- In June 2021, groundwater was encountered approximately 10 feet below ground surface (ft bgs); the hydraulic gradient is 0.002 and flow is to the south-southeast.
- Dissolved oxygen in the wells of interest ranged between 1 and 5 milligrams per liter, oxidation-reduction potential ranged between 50 and 200 millivolts, and pH was near neutral around 7.5 pH units.
- Saturated soil consists of sand with gravel. Vadose zone soil consists of sands and some clay.

SCOPE OF WORK AND EXECUTION

The following is the completed scope of work and execution:

- Water levels in the monitoring wells VW-2, VP-5, MW-4, MW-7, MW-8, and MW-9 were gauged before purging and sampling.

- Groundwater was purged using dedicated, clean, disposable bailers and twine. Approximately three casing volumes were purged and dissolved oxygen (DO), oxygen-reduction potential (ORP), pH, temperature, and specific conductance were measured using a calibrated water quality meter.
- Groundwater samples were collected from VW-2, VP-5, MW-4, MW-7, MW-8, and MW-9. Samples were collected into clean sealed containers supplied by Hall Environmental Analysis Laboratory (HEAL), labeled, placed in protective pockets and into coolers packed with ice, entered onto a chain of custody, and delivered to HEAL under direct custody. HEAL analyzed samples for volatile organic compounds (VOCs), including total naphthalenes, by the United States Environmental Protection Agency (EPA) Method 8260B and nitrate by EPA Method 300. A sample from VP-2 was also analyzed for Total Dissolved Solids (TDS) by SM 2540C. The laboratory analyzed samples for chloride instead of sulfate by error.
- EA prepared and submitted this comprehensive groundwater monitoring report. The required scope specified a one-page analytical summary with the attached laboratory report.

RESULTS

Provided below is a summary of field data:

Table 1. A Summary of Field Data

Well ID	Depth to Water	Well Casing Elevation	Ground Water Elevation	Temperature	Specific Conductance	pH	Oxidation-Reduction Potential	Dissolved Oxygen
	feet bTOC	*feet AMSL*	*feet AMSL*	*degrees Celsius*	*micro Siemens per centimeter*	*units*	*millivolts*	*micrograms per liter*
MW-4	7.72	4,943.23	4,935.51	14.37	666	7.39	-3.8	1.87
MW-7	7.81	4942.94	4,935.13	15.20	774	7.51	-74.7	2.43
MW-8	9.06	4944.59	4,935.53	14.48	957	7.5	-180.8	1.65
MW-9	8.50	4943.98	4,935.48	14.79	727	7.14	-101.6	1.44
VP-2	8.15	4943.73	4,935.58	14.97	989	7.04	-98.7	1.36
VP-5	7.85	4943.52	4,935.67	13.47	803	7.2	-135.5	1.74
Average	8.18	4943.67	4935.48	14.55	819	7.30	-99.2	1.75

bTOC below the top of casing
AMSL above mean sea level

- The average depth to water was 8.18 feet below the top of well casing. The corresponding average groundwater elevation was 4,935.48 feet above the mean sea level. Groundwater flow direction was to the east at a gradient of 0.0003 (Figure 2).
- The average groundwater temperature was 14.55 degrees Celsius.
- The average specific conductance was 819 micro Siemens per centimeter.
- The average pH was 7.30 pH units.
- The average ORP was -99 millivolts.
- The average DO was 1.75 milligrams per liter.

Provided below is a summary of the recent laboratory analytical results:

Table 2. A Summary of Recent Laboratory Analytical Results

Well Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Total Naphthalenes	Nitrate	TDS
Standard		***5***	***1000***	***700***	***620***	***100***	***30***	***10***	***1,000***
MW-4	**4/6/2022**	<1.0	<1.0	<1.0	<1.5	<1.0	<10	<0.50	
MW-4	6/22/2021	<1.0	<1.0	<1.0	<1.5	<1.0	<10		
MW-4	3/26/2019	<1.0	<1.0	<1.0	<1.5	<1.0	<10		
MW-4	5/19/2015	<1.0	<1.0	<1.0	<1.5	<1.0	**8.1**		
MW-7	**4/6/2022**	<1.0	<1.0	<1.0	<1.5	<1.0	<10	<0.10	
MW-7	6/22/2021	<1.0	<1.0	<1.0	<1.5	<1.0	**2.3**		
MW-7	3/26/2019	<1.0	<1.0	<1.0	<1.5	<1.0	<10		
MW-7	5/19/2015	<1.0	<1.0	<1.0	<1.5	<1.0	<10		
MW-8	**4/6/2022**	<1.0	<1.0	**10**	**2.7**	<1.0	**65**	<0.10	
MW-8	6/22/2021	<1.0	<1.0	**10**	**12.7**	<1.0	**68**		
MW-8	3/26/2019	<1.0	<1.0	**9.7**	**2.4**	<1.0	**45**		
MW-8	5/19/2015	<1.0	<1.0	**22**	**4.4**	<1.0	**124**		
MW-9	**4/6/2022**	<1.0	<1.0	**1.5**	**1.9**	<1.0	<10	<0.50	
MW-9	6/22/2021	<1.0	<1.0	**7.2**	**11**	<1.0	**39.8**		
MW-9	3/26/2019	**4.7**	<1.0	**9.0**	**32**	<1.0	**25.9**		
MW-9	5/19/2015	**21**	**3.0**	**18**	**18**	<1.0	**2.7**		
VP-2	**4/6/2022**	<1.0	<1.0	<1.0	<1.5	<1.0	<10	<1.0	**356**
VP-2	6/22/2021	<1.0	<1.0	<1.0	<1.5	<1.0	**2.0**		
VP-2	3/26/2019	<1.0	<1.0	<1.0	<1.5	<1.0	**8.7**		
VP-2	5/19/2015	<1.0	<1.0	<1.0	<1.5	<1.0	<10		
VP-5	**4/6/2022**	<1.0	<1.0	<1.0	<1.5	<1.0	**154**	<0.10	
VP-5	6/22/2021	<1.0	<1.0	<1.0	<1.5	<1.0	**84**		
VP-5	3/26/2019	<1.0	<1.0	<1.0	<1.5	<1.0	**166.5**		
VP-5	5/19/2015	<1.0	<1.0	<1.0	<1.5	<1.0	**203**		

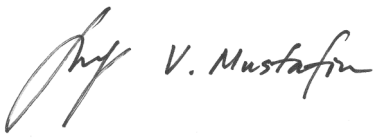
Empty cells indicate that analysis was not conducted
Bold values indicate concentrations above the laboratory limits
Red Bold values indicated concentrations above the standards
Standards are New Mexico Administrative Code 20.6.2.3103
"Standards for Ground Water of 10,000 mg/L TDS Concentration or less"
Concentrations of VOCs are in micrograms per liter. Concentrations of nitrate and TDS are in milligrams per liter.
Volatile Organic Compounds were analyzed using EPA Method 8260B. Sulfate and Nitrate were analyzed by EPA Method 300

- Concentrations of benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether were below the standards.
- Concentrations of total naphthalenes in MW-8 of 65 micrograms per liter (µg/L) and VP-5 of 154 µg/L were above the standard of 30 µg/L.
- Nitrate concentrations were below the detection limits and the standard of 10 milligrams per liter (mg/L).
- The total dissolved solids concentration in VP-2 was 356 milligrams per liter.

Please feel free to contact me at (505) 296-1070 or vmustafin@eaest.com if you have questions or comments.

Sincerely,

EA Engineering, Science, and Technology, Inc., PBC



Vener Mustafin, P.E.
Project Manager/Engineer

Attachments:

Figure 1	Site Layout
Figure 2	Groundwater Contour Map – April 6, 2022
Figure 3	BTEX and Total Naphthalenes – April 2022 and June 2021
Attachment A	Field Records
Attachment B	Laboratory Report

FIGURES

LEGEND:

MONITORING WELL

NOTE: LOCATIONS OF FEATURES ARE APPROXIMATE AND BASED ON WESTERN TECHNOLOGIES AND LEGETTE, BRAHEARS, & GRAHAM INC. FIGURES.

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20 10 0 20

SCALE IN FEET

BARELAS BRIDGE, 800 BRIDGE BLVD SW,
ALBUQUERQE, NEW MEXICO

FIGURE 1
SITE LAYOUT

PROJECT #:	PROPOSAL	PROJECT PHASE:	01	PROJECT MANAGER:	VM

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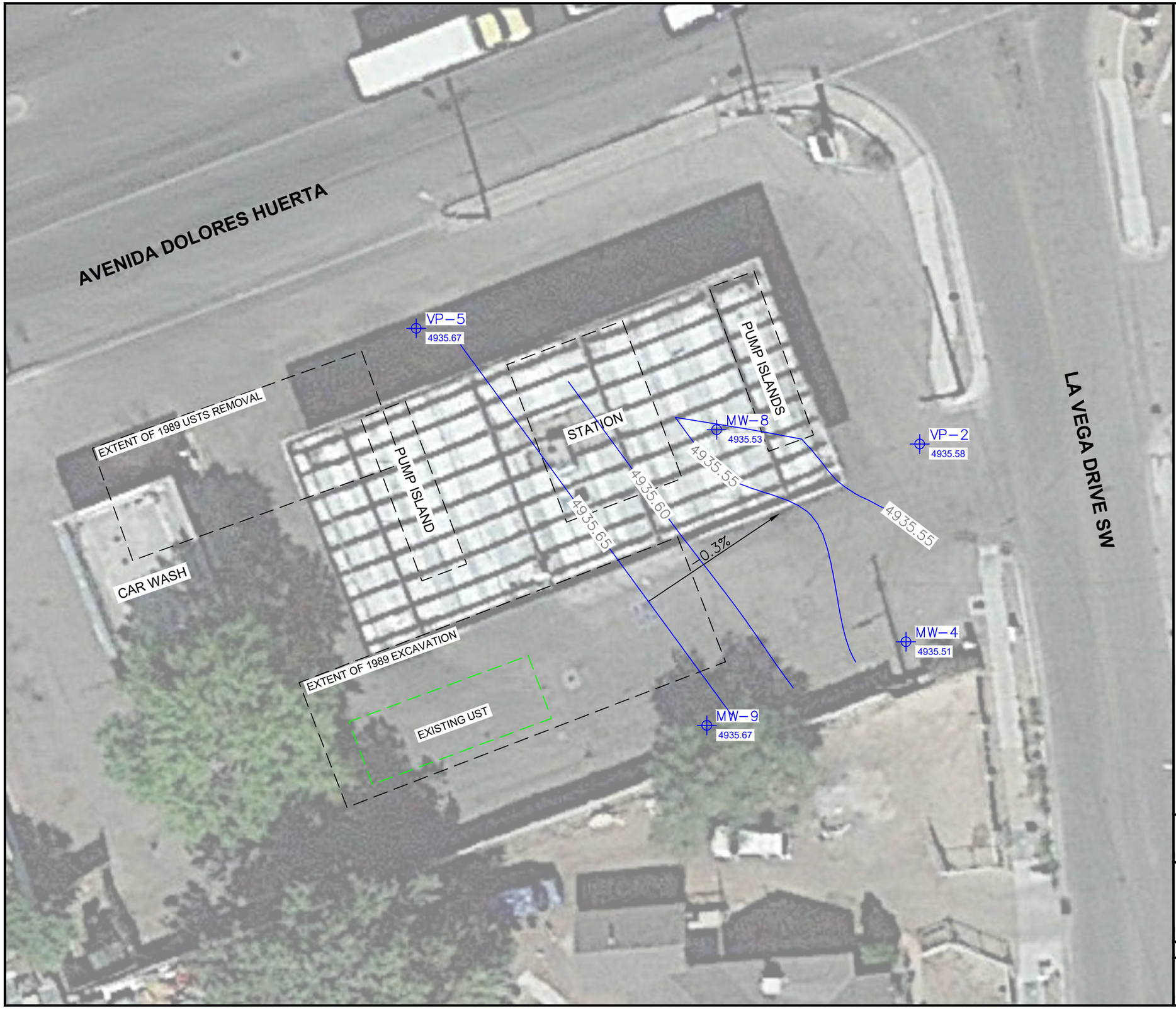

LEGEND:

MONITORING WELL

GROUNDWATER FLOW DIRECTION AND GRADIENT

NOTES:

1. LOCATIONS OF FEATURES ARE APPROXIMATE AND BASED ON WESTERN TECHNOLOGIES AND LEGETTE, BRAHEARS, & GRAHAM INC. FIGURES.
2. GROUNDWATER ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL.

N

20 10 0 20

SCALE IN FEET

BARELAS BRIDGE, 800 BRIDGE BLVD SW,
ALBUQUERQE, NEW MEXICO

FIGURE 2
GROUNDWATER CONTOUR MAP
APRIL 6, 2022

PROJECT #:	PROPOSAL	PROJECT PHASE:	01	PROJECT MANAGER:	VM

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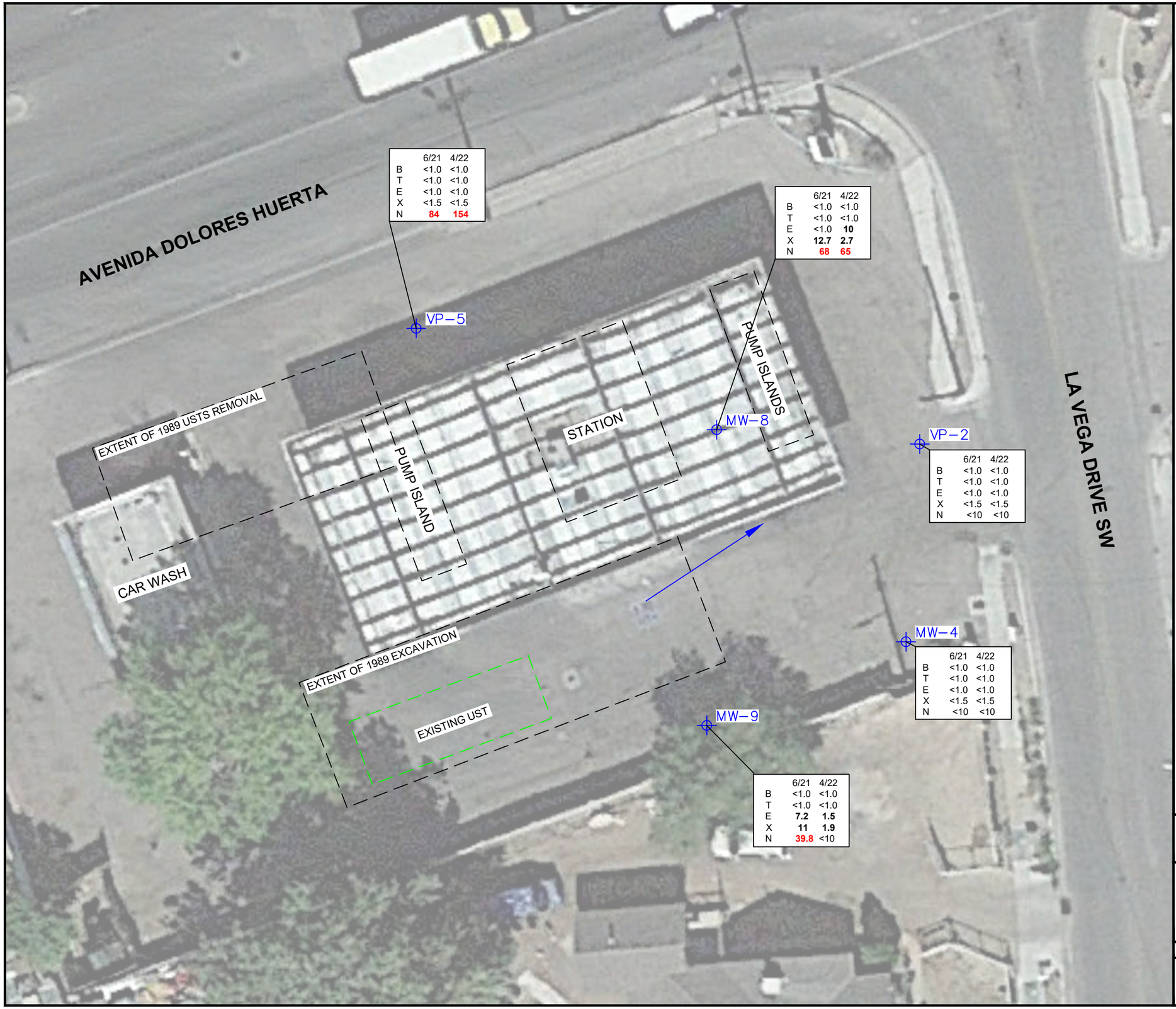

LEGEND:

MONITORING WELL

GROUNDWATER FLOW DIRECTION

B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
N	NAPHTHALENES

NOTE: LOCATIONS OF FEATURES ARE APPROXIMATE AND BASED ON WESTERN TECHNOLOGIES AND LEGETTE, BRAHEARS, & GRAHAM INC. FIGURES.

N

20 10 0 20

SCALE IN FEET

BARELAS BRIDGE, 800 BRIDGE BLVD SW, ALBUQUERQE, NEW MEXICO

FIGURE 3
BTEX AND NAPTHALENE
APRIL 2022 AND JUNE 2021

PROJECT #:	PROPOSAL	PROJECT PHASE:	01	PROJECT MANAGER:	VM

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ATTACHMENT A

FIELD RECORDS

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: MW-4
Site: Barolas Bridge
Date gauged: 4-6-22
Time gauged: 1229

Depth to PSH: / Feet
Well diameter: 2 Inches
Depth to water: 7.72 Feet
Height of fluid column: 1.34 Feet
Total depth: 9.06 Feet
Volume in well: 0.23 Gallons
NAPL thickness: / Feet

(3 well volumes = 0.68 gallons)

After Bailing NAPL
Depth to PSH: / Feet
Depth to water: / Feet
NAPL thickness: 4-6-22 Feet
NAPL Recovered: _____ Gallons

GROUNDWATER SAMPLING DATA

Time/date purged: 1234 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1230	0.25	15.99	643	6.92	20.1	1.87
1231	0.5	14.85	673	7.30	-0.8	2.07
1232	0.75	14.37	666	7.39	-3.8	2.47

4-6-22

Actual purge volume: 1.00 gal.
Field measurements stabilized within ± 10%? No, 3 well volumes

Time/date sampled: 1235 / 4-6-22
Purged/sampled by: AKupper

Sample method: New bailer + twine
Requested analyses: 8260, Nitrate / Sulfate
Comments/observations:

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: MW-7
Site: Bartolas Bridge
Date gauged: 4-6-22
Time gauged: 1255

Depth to PSH: / Feet
Depth to water: 7.81 Feet
Total depth: 21.58 Feet
NAPL thickness: / Feet

Well diameter: 2 Inches
Height of fluid column: 13.77 Feet
Volume in well: 2.34 Gallons

(3 well volumes = 7.02 gallons)

After Bailing NAPL
Depth to PSH: Feet
Depth to water: NA Feet
NAPL thickness: 4-6-22 Feet
NAPL Recovered: Gallons

GROUNDWATER SAMPLING DATA

Time/date purged: 1258 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1258	0.25	15.24	717	7.50	-45.9	1.06
~~1304~~ 1304	3.5	14.97	804	7.41	-73.2	1.84
1309	7.25	15.20	774	7.51	-74.7	2.43
			NA	4-6-22		

Actual purge volume: 7.5 gal.
Field measurements stabilized within ± 10%? NO, 3 well volumes

Time/date sampled: 1310 / 4-6-22
Purged/sampled by: Bumpus

Sample method: New bailer + twine
Requested analyses: 8260, Nitrate / sulfate

Comments/observations:

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: MW-8
Site: Barolas Bldg
Date gauged: 4-6-22
Time gauged: 1030
Depth to PSH: 1 Feet
Well diameter: 2 Inches
Depth to water: 9.06 Feet
Height of fluid column: 4.2 Feet
Total depth: 13.26 Feet
Volume in well: 0.71 Gallons
NAPL thickness: 1 Feet
(3 well volumes = 2.14 gallons)

After Bailing NAPL
Depth to PSH: ~~1~~ Feet
Depth to water: ~~9.06~~ Feet
NAPL thickness: 4-6-22 Feet
NAPL Recovered: _____ Gallons

GROUNDWATER SAMPLING DATA

Time/date purged: 1034 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1034	0.25	15.70	1097	7.06	-142	1.65
1036	1	14.69	1002	7.41	-177.1	1.26
1038	2.25	14.48	957	7.50	-180.8	1.92
			4-6-22			

Actual purge volume: 2.5 gal.
Field measurements stabilized within ± 10%? No 3 well volumes
Time/date sampled: 1040 / 4-6-22
Purged/sampled by: A Kupper
Sample method: 8260 / Sulfate, Nitrate
Requested analyses: New Bailer + Twine
Comments/observations: Strong Hydrocarbon odor

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: MW-9
Date gauged: 4-6-22
Site: Barcelas Bridge
Time gauged: 1200

Depth to PSH: / Feet
Well diameter: ____ Inches
Depth to water: 8.5 Feet
Height of fluid column: 10.91 Feet
Total depth: 19.41 Feet
Volume in well: 1.85 Gallons
NAPL thickness: / Feet

(3 well volumes = 5.56 gallons)

After Bailing NAPL

Depth to PSH: ____ Feet
Depth to water: ____ Feet
NAPL thickness: ____ Feet
NAPL Recovered: ____ Gallons

AW 4-6-22

GROUNDWATER SAMPLING DATA

Time/date purged: 1203 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1203	0.25	16.17	680	6.71	-74.0	1.44
1206	2.25	15.4	703	6.95	-84.9	1.61
1209	5.75	14.79	727	7.14	101.6	1.61

AW 4-6-22

Actual purge volume: 6.0 gal.
Field measurements stabilized within ± 10%? NO, 3 well Volume

Time/date sampled: 1210 / ~~4-22~~ 4-6-22
Purged/sampled by: AVeppw

Sample method: New bailer & twine

Requested analyses: 8260, Sulfate / Nitrate

Comments/observations: Strong hydrocarbon odor

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: VP-2
Site: Barolas Bridge
Date gauged: 4-6-22
Time gauged: 1129

Depth to PSH: — Feet
Depth to water: 8.15 Feet
Total depth: 12.82 Feet
NAPL thickness: — Feet

Well diameter: 2 Inches
Height of fluid column: 4.67 Feet
Volume in well: 0.79 Gallons

(3 well volumes = 2.38 gallons)

After Bailing NAPL
Depth to PSH: ____ Feet
Depth to water: ____ Feet
NAPL thickness: 4-6-22 Feet
NAPL Recovered: ____ Gallons

GROUNDWATER SAMPLING DATA

Time/date purged: 1131 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1131	0.25	12.13	930	2.02	-42.8	1.32
1133	1.25	13.09	984	2.06	-68.7	1.62
1135	2.5	14.97	989	2.04	-98.7	1.92

Actual purge volume: 2.75 gal.
Field measurements stabilized within ± 10%? No 3 well volumes

Time/date sampled: 1137 / 4-6-22
Purged/sampled by: AKapp

Sample method: New bailer & twine
Requested analyses: 8260, Nitrate/Sulphate, TDS

Comments/observations:

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL SAMPLING FIELD FORM

FLUID LEVEL DATA

Well ID: VP-5
Site: Barelas Bridge
Date gauged: 4-6-22
Time gauged: 1105

Depth to PSH: — Feet
Depth to water: 2.85 Feet
Total depth: 12.35 Feet
NAPL thickness: — Feet

Well diameter: 2 Inches
Height of fluid column: 4.5 Feet
Volume in well: 0.70 Gallons

(3 well volumes = 2.29 gallons)

After Bailing NAPL
Depth to PSH: — Feet
Depth to water: — Feet 4-6-22
NAPL thickness: — Feet
NAPL Recovered: — Gallons

GROUNDWATER SAMPLING DATA

Time/date purged: 1109 / 4-6-22
Purge Method: Hand Bail

Time	Purge Volume (gal)	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
1109	0.25	14.07	863	6.92	-93.2	1.74
1111	~~1.0~~ ~~1.5~~ 1.25	13.62	845	7.02	-122.2	1.24
1113	~~2.5~~ 2.5	13.47	803	7.20	-135.5	1.55

4-6-22

Actual purge volume: 2.75 gal.
Field measurements stabilized within ± 10%? NO 3well Volume

Time/date sampled: 1115 / 4-6-22
Purged/sampled by: AKuppel

Sample method: New bailer + twine
Requested analyses: 8260 / Nitrate, Sulfate
Comments/observations: Water covered well cap. Removed water. No Sign of Intrusion

Well Casing Volumes
2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

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MONITORING WELL ~~SAMPLING~~ Gauging FIELD FORM

FLUID LEVEL DATA

Well ID MW

Site

Depth to PSH _____ Feet

Depth to water _____ Feet

Total depth _____ Feet

NAPL thickness _____ Feet

Date gauged 4-6-22

Time gauged

Well diameter _____ Inches

Height of fluid column _____ Feet

Volume in well _____ Gallons

(3 well volumes = _____ gallons)

After Bailing NAPL

Depth to PSH _____ Feet

Depth to water _____ Feet

NAPL thickness _____ Feet

NAPL Recovered _____ Gallons

GROUNDWATER SAMPLING DATA

~~Time~~/date ~~purged~~ Gauged 4-6-22

Purge Method

well ~~Time~~	~~Purge Volume (gal)~~ DTW	Temp (°C)	SpC (µs/cm)	pH	ORP (mV)	DO (mg/L)
MW-8	9.06					
MW-7	7.81					
MW-4	7.72					
MW-9	8.50					
VP-2	8.15					
VP-5	7.85					

Actual purge volume _____ gal.

Field measurements stabilized within ± 10%? _____

Time/date sampled _____

Purged/sampled by _____

Sample method _____

Requested analyses _____

Comments/observations _____

Well Casing Volumes

2" diameter = 0.17 gal/ft 4" diameter = 0.66 gal/ft 6" diameter = 1.50 gal/ft

ATTACHMENT B

LABORATORY REPORT

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2022

Vener Mustafin
EA Engineering
320 Gold Ave SW Suite 1210
Albuquerque, NM 87102
TEL: (505) 224-9013
FAX:

RE: Barelas Bridge OrderNo.: 2204368

Dear Vener Mustafin:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/7/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-8
Project: Barelas Bridge
Collection Date: 4/6/2022 10:40:00 AM
Lab ID: 2204368-001
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	17	0.50		mg/L	1	4/8/2022 12:26:38 AM	A87109
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/8/2022 12:26:38 AM	A87109
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Ethylbenzene	10	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Naphthalene	27	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1-Methylnaphthalene	16	4.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
2-Methylnaphthalene	22	4.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 7:01:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 7:01:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 7:01:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-8
Project: Barelas Bridge
Collection Date: 4/6/2022 10:40:00 AM
Lab ID: 2204368-001
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 7:01:00 PM	R87276
Isopropylbenzene	12	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 7:01:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
n-Propylbenzene	17	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
sec-Butylbenzene	2.5	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 7:01:00 PM	R87276
Xylenes, Total	2.7	1.5		µg/L	1	4/15/2022 7:01:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	89.0	70-130		%Rec	1	4/15/2022 7:01:00 PM	R87276
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	4/15/2022 7:01:00 PM	R87276
Surr: Dibromofluoromethane	94.6	70-130		%Rec	1	4/15/2022 7:01:00 PM	R87276
Surr: Toluene-d8	99.1	70-130		%Rec	1	4/15/2022 7:01:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-7
Project: Barelas Bridge
Collection Date: 4/6/2022 1:10:00 PM
Lab ID: 2204368-002
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	11	0.50		mg/L	1	4/8/2022 3:01:04 AM	A87109
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/8/2022 3:01:04 AM	A87109
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Ethylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
2-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 7:47:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 7:47:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 7:47:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-7
Project: Barelas Bridge
Collection Date: 4/6/2022 1:10:00 PM
Lab ID: 2204368-002
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 7:47:00 PM	R87276
Isopropylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 7:47:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
n-Propylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
sec-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 7:47:00 PM	R87276
Xylenes, Total	ND	1.5		µg/L	1	4/15/2022 7:47:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%Rec	1	4/15/2022 7:47:00 PM	R87276
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	4/15/2022 7:47:00 PM	R87276
Surr: Dibromofluoromethane	101	70-130		%Rec	1	4/15/2022 7:47:00 PM	R87276
Surr: Toluene-d8	96.0	70-130		%Rec	1	4/15/2022 7:47:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-4
Project: Barelas Bridge
Collection Date: 4/6/2022 12:35:00 PM
Lab ID: 2204368-003
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	9.3	2.5		mg/L	5	4/8/2022 1:43:52 AM	A87109
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	4/8/2022 1:43:52 AM	A87109
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Ethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
2-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 8:10:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 8:10:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 8:10:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-4
Project: Barelas Bridge
Collection Date: 4/6/2022 12:35:00 PM
Lab ID: 2204368-003
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 8:10:00 PM	R87276
Isopropylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 8:10:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
n-Propylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
sec-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 8:10:00 PM	R87276
Xylenes, Total	ND	1.5		µg/L	1	4/15/2022 8:10:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%Rec	1	4/15/2022 8:10:00 PM	R87276
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	4/15/2022 8:10:00 PM	R87276
Surr: Dibromofluoromethane	101	70-130		%Rec	1	4/15/2022 8:10:00 PM	R87276
Surr: Toluene-d8	94.8	70-130		%Rec	1	4/15/2022 8:10:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-9
Project: Barelas Bridge
Collection Date: 4/6/2022 12:10:00 PM
Lab ID: 2204368-004
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	10	2.5		mg/L	5	4/8/2022 2:09:36 AM	A87109
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	4/8/2022 2:09:36 AM	A87109
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Ethylbenzene	1.5	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
2-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 8:33:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 8:33:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 8:33:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: MW-9
Project: Barelas Bridge
Collection Date: 4/6/2022 12:10:00 PM
Lab ID: 2204368-004
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 8:33:00 PM	R87276
Isopropylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 8:33:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
n-Propylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
sec-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 8:33:00 PM	R87276
Xylenes, Total	1.9	1.5		µg/L	1	4/15/2022 8:33:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	4/15/2022 8:33:00 PM	R87276
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	4/15/2022 8:33:00 PM	R87276
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	4/15/2022 8:33:00 PM	R87276
Surr: Toluene-d8	96.7	70-130		%Rec	1	4/15/2022 8:33:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: VP-2
Project: Barelas Bridge
Collection Date: 4/6/2022 11:37:00 AM
Lab ID: 2204368-005 **Matrix:** AQUEOUS **Received Date:** 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	20	0.50		mg/L	1	4/8/2022 2:36:33 PM	R87111
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/14/2022 10:41:01 PM	R87274
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	356	20.0		mg/L	1	4/14/2022 6:49:00 PM	66790
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Ethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
2-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 8:56:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 8:56:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 8:56:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: VP-2
Project: Barelas Bridge
Collection Date: 4/6/2022 11:37:00 AM
Lab ID: 2204368-005
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 8:56:00 PM	R87276
Isopropylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 8:56:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
n-Propylbenzene	1.4	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
sec-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 8:56:00 PM	R87276
Xylenes, Total	ND	1.5		µg/L	1	4/15/2022 8:56:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%Rec	1	4/15/2022 8:56:00 PM	R87276
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/15/2022 8:56:00 PM	R87276
Surr: Dibromofluoromethane	95.5	70-130		%Rec	1	4/15/2022 8:56:00 PM	R87276
Surr: Toluene-d8	98.0	70-130		%Rec	1	4/15/2022 8:56:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: VP-5
Project: Barelas Bridge
Collection Date: 4/6/2022 11:15:00 AM
Lab ID: 2204368-006
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	13	0.50		mg/L	1	4/8/2022 3:26:49 AM	A87109
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/8/2022 3:26:49 AM	A87109
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Ethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1-Methylnaphthalene	57	4.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
2-Methylnaphthalene	97	4.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 9:19:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 9:19:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 9:19:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: VP-5
Project: Barelas Bridge
Collection Date: 4/6/2022 11:15:00 AM
Lab ID: 2204368-006
Matrix: AQUEOUS
Received Date: 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 9:19:00 PM	R87276
Isopropylbenzene	19	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
4-Isopropyltoluene	1.5	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 9:19:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
n-Butylbenzene	10	3.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
n-Propylbenzene	60	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
sec-Butylbenzene	4.8	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 9:19:00 PM	R87276
Xylenes, Total	ND	1.5		µg/L	1	4/15/2022 9:19:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	85.0	70-130		%Rec	1	4/15/2022 9:19:00 PM	R87276
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	4/15/2022 9:19:00 PM	R87276
Surr: Dibromofluoromethane	92.8	70-130		%Rec	1	4/15/2022 9:19:00 PM	R87276
Surr: Toluene-d8	90.5	70-130		%Rec	1	4/15/2022 9:19:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: Trip Blank
Project: Barelas Bridge
Collection Date: 4/6/2022 10:40:00 AM
Lab ID: 2204368-007 **Matrix:** AQUEOUS **Received Date:** 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
Benzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Toluene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Ethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Naphthalene	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
2-Methylnaphthalene	ND	4.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Acetone	ND	10		µg/L	1	4/15/2022 9:42:00 PM	R87276
Bromobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Bromodichloromethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Bromoform	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Bromomethane	ND	3.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
2-Butanone	ND	10		µg/L	1	4/15/2022 9:42:00 PM	R87276
Carbon disulfide	ND	10		µg/L	1	4/15/2022 9:42:00 PM	R87276
Carbon Tetrachloride	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Chlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Chloroethane	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Chloroform	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Chloromethane	ND	3.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
2-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
4-Chlorotoluene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
cis-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Dibromochloromethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Dibromomethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1-Dichloroethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1-Dichloroethene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,3-Dichloropropane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
2,2-Dichloropropane	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering
Client Sample ID: Trip Blank
Project: Barelas Bridge
Collection Date: 4/6/2022 10:40:00 AM
Lab ID: 2204368-007 **Matrix:** AQUEOUS **Received Date:** 4/7/2022 3:40:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**	
1,1-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Hexachlorobutadiene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
2-Hexanone	ND	10		µg/L	1	4/15/2022 9:42:00 PM	R87276
Isopropylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
4-Isopropyltoluene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
4-Methyl-2-pentanone	ND	10		µg/L	1	4/15/2022 9:42:00 PM	R87276
Methylene Chloride	ND	3.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
n-Butylbenzene	ND	3.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
n-Propylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
sec-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Styrene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
tert-Butylbenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
trans-1,2-DCE	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Trichlorofluoromethane	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Vinyl chloride	ND	1.0		µg/L	1	4/15/2022 9:42:00 PM	R87276
Xylenes, Total	ND	1.5		µg/L	1	4/15/2022 9:42:00 PM	R87276
Surr: 1,2-Dichloroethane-d4	96.2	70-130		%Rec	1	4/15/2022 9:42:00 PM	R87276
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	4/15/2022 9:42:00 PM	R87276
Surr: Dibromofluoromethane	99.8	70-130		%Rec	1	4/15/2022 9:42:00 PM	R87276
Surr: Toluene-d8	95.8	70-130		%Rec	1	4/15/2022 9:42:00 PM	R87276

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A87109**	RunNo: **87109**
Prep Date:	Analysis Date: **4/7/2022**	SeqNo: **3079554** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A87109**	RunNo: **87109**
Prep Date:	Analysis Date: **4/7/2022**	SeqNo: **3079555** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID: **2204368-001BMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MW-8**	Batch ID: **A87109**	RunNo: **87109**
Prep Date:	Analysis Date: **4/8/2022**	SeqNo: **3079571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04960	97.2	93.5	110			

Sample ID: **2204368-001BMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MW-8**	Batch ID: **A87109**	RunNo: **87109**
Prep Date:	Analysis Date: **4/8/2022**	SeqNo: **3079572** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04960	97.9	93.5	110	0.703	20	

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R87111**	RunNo: **87111**
Prep Date:	Analysis Date: **4/8/2022**	SeqNo: **3080887** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R87111**	RunNo: **87111**
Prep Date:	Analysis Date: **4/8/2022**	SeqNo: **3080888** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R87274**	RunNo: **87274**
Prep Date:	Analysis Date: **4/14/2022**	SeqNo: **3086299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R87274**	RunNo: **87274**
Prep Date:	Analysis Date: **4/14/2022**	SeqNo: **3086300** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110			

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **100ng lcs 2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R87276**	RunNo: **87276**
Prep Date:	Analysis Date: **4/15/2022**	SeqNo: **3086670** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	20	1.0	20.00	0	98.4	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.0	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	97.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.4	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R87276**	RunNo: **87276**
Prep Date:	Analysis Date: **4/15/2022**	SeqNo: **3086672** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R87276**	RunNo: **87276**
Prep Date:	Analysis Date: **4/15/2022**	SeqNo: **3086672** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **mb 2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R87276**	RunNo: **87276**
Prep Date:	Analysis Date: **4/15/2022**	SeqNo: **3086672** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.9	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.8	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
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RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204368**

22-Apr-22

Client: EA Engineering

Project: Barelas Bridge

Sample ID: **MB-66790**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **66790**	RunNo: **87253**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085300** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-66790**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **66790**	RunNo: **87253**
Prep Date: **4/13/2022**	Analysis Date: **4/14/2022**	SeqNo: **3085301** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EA Engineering | Work Order Number: 2204368 | RcptNo: 1

Received By: Joseph Alderette 4/7/2022 3:40:00 PM

Completed By: Tracy Casarrubias 4/7/2022 4:18:52 PM

Reviewed By: CMC 4/8/22

Nitrates - JR 4/7/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
5. Sample(s) in proper container(s)?	Samples not Frozen Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 6 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: JR 4/8/22

Unpres Labeled: KPG 4/7/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-3.0	Good	Not Present			

Chain-of-Custody Record

Client: EA Engineering Science & Technology INC PBC

Mailing Address: 320 Gold Avenue SW Suite 1300 Albuquerque NM 87102

Phone #: 505 246-1070

email or Fax#: VMustafin@eaest.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ **Rush**

Project Name: Barolas Bridge

Project #: 23556

Project Manager: Venor Mustafin

Sampler: Aaron Luppar

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): -3.3 +0.3 = 3.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2204368	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Nitrate 300.1	Total Dissolved Solids				
4-6-22	1040		MW-8	3x 40mL VOA 2 Poly	HgCl2, NONO, H2SO4	001								✓			✓					
4-6-22	1310		MW-7	3x 40mL VOA 2 Poly	HgCl2 NONO, H2SO4	002								✓			✓					
4-6-22	1235		MW-4	3x 40mL VOA 2 Poly	HgCl2, NONO, H2SO4	003								✓			✓					
4-6-22	1210		MW-9	3x 40mL VOA 2 Poly	HgCl2, NONO H2SO4	004								✓			✓					
4-6-22	1137		VP-2	3x 40mL VOA 3 Poly	HgCl2, NONO H2SO4, NONO	005								✓			✓	✓				
4-6-22	1115		VP-5	3x 40mL VOA 2 Poly	HgCl2, NONO H2SO4	006								✓			✓					
4-6-22	1040		Trip Blank	2x 40mL VOA		007								✓								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4-7-22				CDO	4-7-22	15:40
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: Not frozen 4-7-22

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.