

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER QUALITY PARAMETER MONITORING FORM 20679																								
Completed by PWS (or Agent)										Completed by Laboratory														
PWS Name: HC MUD 105 - Potable					Laboratory Name: NWDLS					21C1954														
PWS ID#: TX 1011227					TCEQ Lab ID #: TX204					TCEQ T104704238-20-31														
PWS Address: 27316 Spectrum Way Oak Ridge TX 77385					Laboratory Address: 130 South Trade Center Pkwy Conroe Tx 77385																			
PWS Contact: John Montgomery																								
PWS Contact Phone #: (281) 367-5511					Laboratory Contact: Ruth Wills																			
Inhibitor or Stabilizer Used (✓): Phosphate Silica Calcium carbonate																								
TREATMENT		Alkalinity Dosage Rate:		Inhibitor Dosage Rate:		Laboratory Contact Phone #: 936 321 6060																		
Sample Information																								
Sample Type (✓): ☒ Compliance		☐ Non-compliance		Parameters Requested: Analyses are required for the parameters checked. * If inhibitors containing phosphate or silica are used, then these parameters should also be analyzed depending on which is in use.																				
Sample Collector (✓):		☐ Public Water System ☒ Accredited Lab ☐ 3rd Party Contractor --> LAB ID: AL																						
Temperature and pH (Y or N): Y		Are temperature and pH included on the sampling entity's Laboratory Approval Form on file at the TCEQ? Y Were temperature and pH measured in the field within 15 minutes of sample collection? Y																						
Facility ID (e.g. DS01, PBCU001)	Sample Point ID (e.g. DSTWQP, EWQP)	Sample Location	Sample Collection		Field Measurements		Replacement?	Original Sample ID #	Original Sample Date (MMDDYY)	Lab Sample ID	Alkalinity (1927)	Calcium (1919)	Chloride (1017)	Conductivity (1064)	Hardness (1915)	Iron (1028)	Manganese (1032)	Sodium (1062)	Sulfate (1055)	TDS (1030)	O-Phosphate (1044) *	Silica (1049) *		
			Date (MMDDYY)	Time - 24 hr (HHMM)	pH	Temp (°C)																		
DS01	DSTWQP	21118 Southern Colony	3/18/21	0748	7.60	20.5				21C1954-01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
DS01	DSTWQP	20730 Settlers Lake Cir N	3/18/21	0808	7.47	14.9				21C1954-02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
DS01	DSTWQP	5815 Horse Prairie Dr	3/18/21	0818	7.55	15.9				21C1954-03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
PBCU001	EWQP	6540 Liberty Valley Dr	3/18/21	0840	7.70	20.3				21C1954-04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
PBCU002	EWQP	5407 Ranch Canyon Dr	3/18/21	0900	7.54	21.9				21C1954-05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
PBCU003	EWQP	1W Campus Dr Westgreen Blvd	3/18/21	0921	7.60	22.9				21C1954-06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
I acknowledge that information on this form is true and correct and sites selected for sampling follow the instructions in the TCEQ Monitoring and Sample Collection Guidance for Water Quality Parameters. This includes, but not limited to the measurement of pH and temperature immediately upon collection. Falsification of this form or tampering with water samples is a crime punishable under state and/or federal law. (Texas Penal Code, Title 8, Chapter 37.10)																								
Name of Authorized PWS Representative (Print)					Signature					Organization					Date					Rejection Code (If applicable): Date & Time of Sample Preservation (Acidified): 3/18/21 15:05				
CARRINA ARDRE					Carrina Ardre					NWDLS					3/18/21					Actual / Corrected sample temperature: 3.0 Thermometer ID #: 200725275				
Chain of Custody Relinquished By (Signature): Carrina Ardre Date/Time: 3/18/21 1445 Received By Courier (Signature): Date/Time: Relinquished By Courier (Signature): Date/Time: Received By Lab (Signature): Date/Time:																								
										Laboratory Comments: GATE CODE 2006 HND3 ID# 2010127														



130 S. Trade Center Parkway, Conroe TX 77385
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TCEQ T104704238-21-33
TCEQ-TOX T104704202-20-14

April 22, 2021

PWS_1011227_AC_20210318_WQP Analysis Report

LABORATORY REPORT

John Montgomery
Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

RE: HC MUD 105 - WQP

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted. These analytical results related to the sample(s) tested. This report may not be reproduced or duplicated except in full without written approval of NWDLS.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Ruth Wills
Water Quality Project Manager



PWS_1011227_AC_20210318_WQP Analysis Report

Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results

Lab Sample ID	21C1954-01	Sample Matrix	Drinking Water
Facility ID	DS01	Sampled	03/18/2021 7:48
Sample Point ID	DSTWQP	Collected by	Carrina Ardie
Sample Location	21118 Southern Colony	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	158 mg/L	1	10.0	BEC3481	03/25/2021 13:57	KJH	
EPA 200.7	Calcium	N	48.3 mg/L	1	1.02	BED2205	04/16/2021 13:36	SEE	
EPA 300.0	Chloride	A	38.9 mg/L	1	1.00	BEC2762	03/19/2021 08:20	SAT	
SM 2510 B	Conductivity	A	473 umhos/cm @ 25 °C	1	2.00	BEC3481	03/25/2021 13:57	KJH	
EPA 200.7	Iron	A	<0.0305 mg/L	1	0.0305	BED2205	04/16/2021 13:36	SEE	
EPA 200.7	Magnesium	A	5.79 mg/L	1	1.02	BED2205	04/16/2021 13:36	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 13:36	SEE	
SM 4500-H+ B	pH	N	7.60 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 07:48	CBA	
SM 2540 C	Residue-filterable (TDS)	A	247 mg/L	1	10.0	BEC2955	03/26/2021 17:28	BP	
EPA 200.7	Sodium	A	38.6 mg/L	1	4.06	BED2205	04/16/2021 13:36	SEE	
EPA 300.0	Sulfate	A	5.54 mg/L	1	1.00	BEC2762	03/19/2021 08:20	SAT	
SM 2550 B	Temperature °C Field	N	20.5 °C	1	1.00	BEC2747	03/18/2021 07:48	CBA	
SM 2340 B	Total Hardness		145 mg/L	1	6.75	[CALC]	04/16/2021 13:36	SEE	



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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-02	Sample Matrix	Drinking Water
Facility ID	DS01	Sampled	03/18/2021 8:08
Sample Point ID	DSTWQP	Collected by	Carrina Ardie
Sample Location	20730 Settlers Lake Cir N	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	156 mg/L	1	10.0	BEC3360	03/24/2021 22:14	KJH	
EPA 200.7	Calcium	N	48.6 mg/L	1	1.02	BED2205	04/16/2021 13:46	SEE	
EPA 300.0	Chloride	A	38.9 mg/L	1	1.00	BEC2762	03/19/2021 08:40	SAT	
EPA 200.7	Iron	A	<0.0305 mg/L	1	0.0305	BED2205	04/16/2021 13:46	SEE	
EPA 200.7	Magnesium	A	5.79 mg/L	1	1.02	BED2205	04/16/2021 13:46	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 13:46	SEE	
SM 4500-H+ B	pH	N	7.47 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 08:08	CBA	
SM 2540 C	Residue-filterable (TDS)	A	262 mg/L	1	10.0	BEC2955	03/26/2021 17:28	BP	
EPA 200.7	Sodium	A	37.4 mg/L	1	4.06	BED2205	04/16/2021 13:46	SEE	
EPA 300.0	Sulfate	A	5.50 mg/L	1	1.00	BEC2762	03/19/2021 08:40	SAT	
SM 2550 B	Temperature °C Field	N	14.9 °C	1	1.00	BEC2747	03/18/2021 08:08	CBA	
SM 2340 B	Total Hardness		145 mg/L	1	6.75	[CALC]	04/16/2021 13:46	SEE	



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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-02RE1	Sample Matrix	Drinking Water
Facility ID	DS01	Sampled	03/18/2021 8:08
Sample Point ID	DSTWQP	Collected by	Carrina Ardie
Sample Location	20730 Settlers Lake Cir N	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2510 B	Conductivity (Rerun)	A	421 umhos/cm @ 25 °C	1	2.00	BEC3659	03/26/2021 13:10	KJH	



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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-03	Sample Matrix	Drinking Water
Facility ID	DS01	Sampled	03/18/2021 8:18
Sample Point ID	DSTWQP	Collected by	Carrina Ardie
Sample Location	5815 Horse Prairie Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	154 mg/L	1	10.0	BEC3360	03/24/2021 22:06	KJH	
EPA 200.7	Calcium	N	48.0 mg/L	1	1.02	BED2205	04/16/2021 13:49	SEE	
EPA 300.0	Chloride	A	47.8 mg/L	1	1.00	BEC2762	03/19/2021 09:00	SAT	
EPA 200.7	Iron	A	<0.0305 mg/L	1	0.0305	BED2205	04/16/2021 13:49	SEE	
EPA 200.7	Magnesium	A	5.71 mg/L	1	1.02	BED2205	04/16/2021 13:49	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 13:49	SEE	
SM 4500-H+ B	pH	N	7.55 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 08:18	CBA	
SM 2540 C	Residue-filterable (TDS)	A	254 mg/L	1	10.0	BEC2955	03/26/2021 17:28	BP	
EPA 200.7	Sodium	A	38.1 mg/L	1	4.06	BED2205	04/16/2021 13:49	SEE	
EPA 300.0	Sulfate	A	5.44 mg/L	1	1.00	BEC2762	03/19/2021 09:00	SAT	
SM 2550 B	Temperature °C Field	N	15.9 °C	1	1.00	BEC2747	03/18/2021 08:18	CBA	
SM 2340 B	Total Hardness		144 mg/L	1	6.75	[CALC]	04/16/2021 13:49	SEE	



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Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-03RE1	Sample Matrix	Drinking Water
Facility ID	DS01	Sampled	03/18/2021 8:18
Sample Point ID	DSTWQP	Collected by	Carrina Ardie
Sample Location	5815 Horse Prairie Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2510 B	Conductivity (Rerun)	A	453 umhos/cm @ 25 °C	1	2.00	BEC3659	03/26/2021 13:41	KJH	



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Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-04	Sample Matrix	Drinking Water
Facility ID	PBCU001	Sampled	03/18/2021 8:40
Sample Point ID	EWQP	Collected by	Carrina Ardie
Sample Location	6540 Liberty Valley Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	159 mg/L	1	10.0	BEC3360	03/24/2021 23:54	KJH	
EPA 200.7	Calcium	N	54.2 mg/L	1	1.02	BED2205	04/16/2021 13:52	SEE	
EPA 300.0	Chloride	A	41.6 mg/L	1	1.00	BEC3116	03/22/2021 19:18	SAT	
EPA 200.7	Iron	A	0.132 mg/L	1	0.0305	BED2205	04/16/2021 13:52	SEE	
EPA 200.7	Magnesium	A	4.64 mg/L	1	1.02	BED2205	04/16/2021 13:52	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 13:52	SEE	
SM 4500-H+ B	pH	N	7.70 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 08:40	CBA	
SM 2540 C	Residue-filterable (TDS)	A	345 mg/L	1	10.0	BEC2978	03/26/2021 16:04	BP	
EPA 200.7	Sodium	A	36.2 mg/L	1	4.06	BED2205	04/16/2021 13:52	SEE	
EPA 300.0	Sulfate	A	6.55 mg/L	1	1.00	BEC3116	03/22/2021 19:18	SAT	
SM 2550 B	Temperature °C Field	N	20.3 °C	1	1.00	BEC2747	03/18/2021 08:40	CBA	
SM 2340 B	Total Hardness		155 mg/L	1	6.75	[CALC]	04/16/2021 13:52	SEE	



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Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-04RE1	Sample Matrix	Drinking Water
Facility ID	PBCU001	Sampled	03/18/2021 8:40
Sample Point ID	EWQP	Collected by	Carrina Ardie
Sample Location	6540 Liberty Valley Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2510 B	Conductivity (Rerun)	A	437 umhos/cm @ 25 °C	1	2.00	BEC3659	03/26/2021 13:19	KJH	



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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-05	Sample Matrix	Drinking Water
Facility ID	PBCU002	Sampled	03/18/2021 9:00
Sample Point ID	EWQP	Collected by	Carrina Ardie
Sample Location	5407 Ranch Canyon Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	150 mg/L	1	10.0	BEC3360	03/24/2021 21:49	KJH	
EPA 200.7	Calcium	N	50.5 mg/L	1	1.02	BED2205	04/16/2021 14:25	SEE	
EPA 300.0	Chloride	A	47.3 mg/L	1	1.00	BEC3116	03/22/2021 19:38	SAT	
EPA 200.7	Iron	A	<0.0305 mg/L	1	0.0305	BED2205	04/16/2021 14:25	SEE	
EPA 200.7	Magnesium	A	5.21 mg/L	1	1.02	BED2205	04/16/2021 14:25	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 14:25	SEE	
SM 4500-H+ B	pH	N	7.54 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 09:00	CBA	
SM 2540 C	Residue-filterable (TDS)	A	256 mg/L	1	10.0	BEC2978	03/26/2021 16:04	BP	
EPA 200.7	Sodium	A	37.0 mg/L	1	4.06	BED2205	04/16/2021 14:25	SEE	
EPA 300.0	Sulfate	A	5.43 mg/L	1	1.00	BEC3116	03/22/2021 19:38	SAT	
SM 2550 B	Temperature °C Field	N	21.9 °C	1	1.00	BEC2747	03/18/2021 09:00	CBA	
SM 2340 B	Total Hardness		148 mg/L	1	6.75	[CALC]	04/16/2021 14:25	SEE	



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Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-05RE1	Sample Matrix	Drinking Water
Facility ID	PBCU002	Sampled	03/18/2021 9:00
Sample Point ID	EWQP	Collected by	Carrina Ardie
Sample Location	5407 Ranch Canyon Dr	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2510 B	Conductivity (Rerun)	A	430 umhos/cm @ 25 °C	1	2.00	BEC3659	03/26/2021 13:49	KJH	



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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Laboratory Sample Results (Continued)

Lab Sample ID	21C1954-06	Sample Matrix	Drinking Water
Facility ID	PBCU003	Sampled	03/18/2021 9:21
Sample Point ID	EWQP	Collected by	Carrina Ardie
Sample Location	W Campus Dr Westgreen Blvd	Received	03/18/2021 14:45
Sample Type	Grab		

Method	Analyte	*	Result Units	DF	MRL	Batch	Analyzed	Analyst	DQ
SM 2320 B	Alkalinity as CaCO3	A	160 mg/L	1	10.0	BEC3568	03/25/2021 18:16	KJH	
EPA 200.7	Calcium	N	48.4 mg/L	1	1.02	BED2205	04/16/2021 14:28	SEE	
EPA 300.0	Chloride	A	40.3 mg/L	1	1.00	BEC3117	03/23/2021 07:35	SAT	
SM 2510 B	Conductivity	A	444 umhos/cm @ 25 °C	1	2.00	BEC3568	03/25/2021 18:16	KJH	
EPA 200.7	Iron	A	<0.0305 mg/L	1	0.0305	BED2205	04/16/2021 14:28	SEE	
EPA 200.7	Magnesium	A	5.87 mg/L	1	1.02	BED2205	04/16/2021 14:28	SEE	
EPA 200.7	Manganese	A	<0.0102 mg/L	1	0.0102	BED2205	04/16/2021 14:28	SEE	
SM 4500-H+ B	pH	N	7.60 pH Units @ 25 °C	1	1.00	BEC2747	03/18/2021 09:21	CBA	
SM 2540 C	Residue-filterable (TDS)	A	251 mg/L	1	10.0	BEC2955	03/26/2021 17:28	BP	
EPA 200.7	Sodium	A	38.5 mg/L	1	4.06	BED2205	04/16/2021 14:28	SEE	
EPA 300.0	Sulfate	A	5.61 mg/L	1	1.00	BEC3117	03/23/2021 07:35	SAT	
SM 2550 B	Temperature °C Field	N	22.9 °C	1	1.00	BEC2747	03/18/2021 09:21	CBA	
SM 2340 B	Total Hardness		145 mg/L	1	6.75	[CALC]	04/16/2021 14:28	SEE	



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Project: **HC MUD 105 - WQP**
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Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control

Metals, Total

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BED2205 - Direct Analysis 200.7

Blank (BED2205-BLK1)

Prepared & Analyzed: 04/16/2021

Calcium	<1.02		1.02	mg/L						
Iron	<0.0305		0.0305	mg/L						
Magnesium	<1.02		1.02	mg/L						
Manganese	<0.0102		0.0102	mg/L						
Sodium	<4.06		4.06	mg/L						

LCS (BED2205-BS1)

Prepared & Analyzed: 04/16/2021

Calcium	53.5		1.05	mg/L	51.3		104	85-115		
Iron	1.63		0.0313	mg/L	1.54		106	85-115		
Magnesium	52.8		1.05	mg/L	51.3		103	85-115		
Manganese	0.271		0.0105	mg/L	0.256		106	85-115		
Sodium	108		4.16	mg/L	103		105	85-115		

Duplicate (BED2205-DUP1)

Source: 21C1954-01

Prepared & Analyzed: 04/16/2021

Calcium	48.5		1.02	mg/L	48.3				0.318	20
Iron	0.0139		0.0305	mg/L	0.0180				25.7	20
Magnesium	5.81		1.02	mg/L	5.79				0.308	20
Manganese	<0.0102		0.0102	mg/L	<0.0102					20
Sodium	37.4		4.06	mg/L	38.6				2.94	20

Duplicate (BED2205-DUP2)

Source: 21C3058-02

Prepared & Analyzed: 04/16/2021

Calcium	1.98		1.02	mg/L	2.02				1.99	20
Iron	0.0168		0.0305	mg/L	0.0168				0.241	20
Magnesium	0.486		1.02	mg/L	0.495				1.79	20
Manganese	0.00447		0.0102	mg/L	0.00455				1.80	20

Duplicate (BED2205-DUP4)

Source: 21C3058-02

Prepared: 04/16/2021 Analyzed: 04/20/2021

Sodium	434		20.3	mg/L	436				0.463	20
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PWS_1011227_AC_20210318_WQP Analysis Report

Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

Metals, Total (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BED2205 - Direct Analysis 200.7 (Continued)										
MRL Check (BED2205-MRL1)					Prepared & Analyzed: 04/16/2021					
Calcium	2.44		1.05	mg/L	2.05		119	70-130		
Iron	0.0722		0.0313	mg/L	0.0615		117	70-130		
Magnesium	2.45		1.05	mg/L	2.05		120	70-130		
Manganese	0.0116		0.0105	mg/L	0.0103		113	70-130		
Sodium	4.21		4.16	mg/L	4.10		103	70-130		
Matrix Spike (BED2205-MS1)										
Source: 21C1954-01					Prepared & Analyzed: 04/16/2021					
Calcium	104		1.05	mg/L	51.3	48.3	109	70-130		
Iron	1.75		0.0313	mg/L	1.54	0.0180	112	70-130		
Magnesium	61.3		1.05	mg/L	51.3	5.79	108	70-130		
Manganese	0.289		0.0105	mg/L	0.256	<0.0105	113	70-130		
Sodium	152		4.16	mg/L	103	38.6	110	70-130		
Matrix Spike (BED2205-MS2)										
Source: 21C3058-02					Prepared & Analyzed: 04/16/2021					
Calcium	60.0		1.05	mg/L	51.3	2.02	113	70-130		
Iron	1.69		0.0313	mg/L	1.54	0.0168	109	70-130		
Magnesium	57.5		1.05	mg/L	51.3	0.495	111	70-130		
Manganese	0.283		0.0105	mg/L	0.256	0.00455	109	70-130		
Matrix Spike (BED2205-MS4)										
Source: 21C3058-02					Prepared: 04/16/2021 Analyzed: 04/20/2021					
Sodium	541		20.8	mg/L	103	436	102	70-130		
Dilution Check (BED2205-SRL1)										
Source: 21C1954-01					Prepared & Analyzed: 04/16/2021					
Calcium	49.2		5.10	mg/L		48.3			1.69	10
Iron	0.0125		0.152	mg/L		0.0180			35.7	10
Magnesium	5.92		5.10	mg/L		5.79			2.27	10
Manganese	<0.0510		0.0510	mg/L		<0.0510				10
Sodium	26.4	J1	20.3	mg/L		38.6			37.6	10



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PWS_1011227_AC_20210318_WQP Analysis Report

Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

Metals, Total (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BED2205 - Direct Analysis 200.7 (Continued)

Dilution Check (BED2205-SRL2)

Source: 21C3058-02

Prepared & Analyzed: 04/16/2021

Calcium	2.17		5.10	mg/L		2.02			7.27	10
Iron	0.0145		0.152	mg/L		0.0168			14.8	10
Magnesium	0.507		5.10	mg/L		0.495			2.48	10
Manganese	0.00376		0.0510	mg/L		0.00455			19.1	10
Sodium	448		20.3	mg/L		436			2.62	10



PWS_1011227_AC_20210318_WQP Analysis Report

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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC2762 - EPA 300.0										
Duplicate (BEC2762-DUP1)			Source: 21C3071-02			Prepared & Analyzed: 03/19/2021				
Sulfate	28.7		5.00	mg/L		28.8			0.313	15
Chloride	81.7		5.00	mg/L		82.0			0.360	15
MRL Check (BEC2762-MRL1)										
						Prepared & Analyzed: 03/19/2021				
Sulfate	0.810		1.00	mg/L	1.00		81.0	50-150		
Chloride	0.680		1.00	mg/L	1.00		68.0	50-150		
Matrix Spike (BEC2762-MS1)										
			Source: 21C3071-02			Prepared & Analyzed: 03/19/2021				
Chloride	291		5.00	mg/L	200	82.0	105	80-120		
Sulfate	222		5.00	mg/L	200	28.8	96.7	80-120		
Batch: BEC2955 - TDS										
Blank (BEC2955-BLK1)			Prepared: 03/22/2021 Analyzed: 03/26/2021							
Residue-filterable (TDS)	<10.0		10.0	mg/L						
LCS (BEC2955-BS1)			Prepared: 03/22/2021 Analyzed: 03/26/2021							
Residue-filterable (TDS)	150		10.0	mg/L	150		100	90-110		
Duplicate (BEC2955-DUP1)			Source: 21C0128-02			Prepared: 03/22/2021 Analyzed: 03/26/2021				
Residue-filterable (TDS)	998		10.0	mg/L		1040			4.12	10
Duplicate (BEC2955-DUP2)			Source: 21C2914-02			Prepared: 03/22/2021 Analyzed: 03/26/2021				
Residue-filterable (TDS)	486		10.0	mg/L		520			6.76	10
Batch: BEC2978 - TDS										
Blank (BEC2978-BLK1)			Prepared: 03/22/2021 Analyzed: 03/26/2021							
Residue-filterable (TDS)	<10.0		10.0	mg/L						



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Project: **HC MUD 105 - WQP**
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Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC2978 - TDS (Continued)										
LCS (BEC2978-BS1)										
Residue-filterable (TDS)	148		10.0	mg/L	150		98.7	90-110		
Prepared: 03/22/2021 Analyzed: 03/26/2021										
Duplicate (BEC2978-DUP1)										
Residue-filterable (TDS)	293	J1	10.0	mg/L		345			16.3	10
Prepared: 03/22/2021 Analyzed: 03/26/2021										
Duplicate (BEC2978-DUP2)										
Residue-filterable (TDS)	825		10.0	mg/L		853			3.34	10
Prepared: 03/22/2021 Analyzed: 03/26/2021										
Batch: BEC3116 - EPA 300.0										
Duplicate (BEC3116-DUP1)										
Sulfate	124		5.00	mg/L		129			3.76	15
Chloride	353		5.00	mg/L		367			3.96	15
Prepared & Analyzed: 03/22/2021										
Duplicate (BEC3116-DUP2)										
Chloride	349		5.00	mg/L		354			1.54	15
Sulfate	133		5.00	mg/L		135			1.44	15
Prepared & Analyzed: 03/22/2021										
MRL Check (BEC3116-MRL1)										
Chloride	0.732		1.00	mg/L	1.00		73.2	50-150		
Sulfate	0.837		1.00	mg/L	1.00		83.7	50-150		
Prepared & Analyzed: 03/22/2021										
Matrix Spike (BEC3116-MS1)										
Chloride	589		5.00	mg/L	200	367	111	80-120		
Sulfate	337		5.00	mg/L	200	129	104	80-120		
Prepared & Analyzed: 03/22/2021										
Matrix Spike (BEC3116-MS2)										
Sulfate	346		5.00	mg/L	200	135	106	80-120		
Chloride	585		5.00	mg/L	200	354	116	80-120		
Prepared & Analyzed: 03/22/2021										



PWS_1011227_AC_20210318_WQP Analysis Report

Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC3117 - EPA 300.0										
Duplicate (BEC3117-DUP1)		Source: 21C0132-02			Prepared & Analyzed: 03/23/2021					
Chloride	278		5.00	mg/L		281			0.932	15
Sulfate	133		5.00	mg/L		134			0.819	15
MRL Check (BEC3117-MRL1)										
					Prepared & Analyzed: 03/23/2021					
Sulfate	0.833		1.00	mg/L	1.00		83.3	50-150		
Chloride	0.717		1.00	mg/L	1.00		71.7	50-150		
Matrix Spike (BEC3117-MS1)										
		Source: 21C0132-02			Prepared & Analyzed: 03/23/2021					
Sulfate	347		5.00	mg/L	200	134	107	80-120		
Chloride	514		5.00	mg/L	200	281	117	80-120		
Batch: BEC3360 - Alkalinity										
Blank (BEC3360-BLK1)					Prepared & Analyzed: 03/24/2021					
Conductivity	2.69		2.00	umhos/cm @ 25 °C						
LCS (BEC3360-BS1)										
					Prepared & Analyzed: 03/24/2021					
Conductivity	1390			umhos/cm @ 25 °C	1410		98.9	90-110		
LCS (BEC3360-BS2)										
					Prepared & Analyzed: 03/24/2021					
Conductivity	504			umhos/cm @ 25 °C	500		101	90-110		
LCS (BEC3360-BS3)										
					Prepared & Analyzed: 03/24/2021					
Conductivity	49400		2.00	umhos/cm @ 25 °C				90-110		
LCS (BEC3360-BS4)										
					Prepared & Analyzed: 03/24/2021					
Alkalinity as CaCO3	103			mg/L	100		103	90-110		
Conductivity	225		2.00	umhos/cm @ 25 °C				90-110		



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Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC3360 - Alkalinity (Continued)										
Duplicate (BEC3360-DUP1)		Source: 21C1954-05			Prepared & Analyzed: 03/24/2021					
Conductivity	460		2.00	umhos/cm @ 25 °C		459			0.218	15
Alkalinity as CaCO ₃	155		10.0	mg/L		150			2.68	15
Duplicate (BEC3360-DUP2)		Source: 21C3149-04			Prepared & Analyzed: 03/24/2021					
Alkalinity as CaCO ₃	556		10.0	mg/L		540			2.87	15
Conductivity	1300		2.00	umhos/cm @ 25 °C		1280			1.32	15
Batch: BEC3481 - Alkalinity										
Blank (BEC3481-BLK1)					Prepared & Analyzed: 03/25/2021					
Conductivity	<2.00		2.00	umhos/cm @ 25 °C						
LCS (BEC3481-BS1)					Prepared & Analyzed: 03/25/2021					
Conductivity	1370			umhos/cm @ 25 °C		1410	97.3	90-110		
LCS (BEC3481-BS2)					Prepared & Analyzed: 03/25/2021					
Conductivity	504			umhos/cm @ 25 °C		500	101	90-110		
LCS (BEC3481-BS4)					Prepared & Analyzed: 03/25/2021					
Alkalinity as CaCO ₃	105			mg/L		100	105	90-110		
Duplicate (BEC3481-DUP1)		Source: 21C3057-01			Prepared & Analyzed: 03/25/2021					
Alkalinity as CaCO ₃	150		10.0	mg/L		145			3.62	15
Conductivity	807		2.00	umhos/cm @ 25 °C		797			1.25	15
Duplicate (BEC3481-DUP2)		Source: 21C1114-01			Prepared & Analyzed: 03/25/2021					
Conductivity	1870		2.00	umhos/cm @ 25 °C		1840			1.29	15
Alkalinity as CaCO ₃	79.8		10.0	mg/L		78.3			1.95	15



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Municipal Operations and Consulting
27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC3568 - Alkalinity										
Blank (BEC3568-BLK1)										
Conductivity	<2.00		2.00	umhos/cm @ 25 °C						
Prepared & Analyzed: 03/25/2021										
LCS (BEC3568-BS1)										
Conductivity	1380			umhos/cm @ 25 °C	1410		97.6	90-110		
Prepared & Analyzed: 03/25/2021										
LCS (BEC3568-BS2)										
Conductivity	506			umhos/cm @ 25 °C	500		101	90-110		
Prepared & Analyzed: 03/25/2021										
LCS (BEC3568-BS4)										
Alkalinity as CaCO ₃	106			mg/L	100		106	90-110		
Prepared & Analyzed: 03/25/2021										
Duplicate (BEC3568-DUP1)										
Source: 21C2494-13										
Alkalinity as CaCO ₃	127		10.0	mg/L		132			4.40	15
Conductivity	1540		2.00	umhos/cm @ 25 °C		1510			1.97	15
Prepared & Analyzed: 03/25/2021										
Duplicate (BEC3568-DUP2)										
Source: 21C3054-02										
Conductivity	1450		2.00	umhos/cm @ 25 °C		1420			2.30	15
Alkalinity as CaCO ₃	487		10.0	mg/L		480			1.43	15
Prepared & Analyzed: 03/25/2021										
Batch: BEC3659 - Alkalinity										
Blank (BEC3659-BLK1)										
Conductivity	<2.00		2.00	umhos/cm @ 25 °C						
Prepared & Analyzed: 03/26/2021										
LCS (BEC3659-BS1)										
Conductivity	1380			umhos/cm @ 25 °C	1410		97.6	90-110		
Prepared & Analyzed: 03/26/2021										



PWS_1011227_AC_20210318_WQP Analysis Report

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27316 Spectrum Way
Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
PWS TX ID: 1011227
Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BEC3659 - Alkalinity (Continued)										
LCS (BEC3659-BS2)										
Conductivity	494			umhos/cm @ 25 °C	500		98.8	90-110		
Duplicate (BEC3659-DUP1)										
Conductivity	939		2.00	umhos/cm @ 25 °C		921			1.94	15
Duplicate (BEC3659-DUP2)										
Conductivity	901		2.00	umhos/cm @ 25 °C		879			2.47	15



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Oak Ridge, TX 77385

Project: **HC MUD 105 - WQP**
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Project Manager: John Montgomery

Reported:
04/22/2021 11:26

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.