



Western Gallup
Waste Water Treatment
System Effluent Sampling
Hall Environmental Analysis Laboratory Results
4901 Hawkins NE
Albuquerque, NM 87109 9/7/18
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 18, 2018

William Bailey

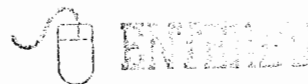
Western Refining Southwest, Gallup

92 Giant Crossing Road

Gallup, NM 87301

TEL: (505) 722-3833

FAX



RE: Carbon Canister WWTP

OrderNo.: 1809588

Dear William Bailey:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/12/2018 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Chain of Custody
does not match
Lab report sample date

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Project: Carbon Canister WWTP
Lab ID: 1809588-001

Client Sample ID: Carbon Canister
Collection Date: 9/7/2018 8:00:00 AM
Received Date: 9/12/2018 8:40:00 AM

Matrix: AQUEOUS

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE								
Analyst: irm								
Diesel Range Organics (DRO)	6.4	0.63	1.0		mg/L	1	9/15/2018 12:56:46 PM	40328
Surr: DNOP	90.9	0	76.7-135		%Rec	1	9/15/2018 12:56:46 PM	40328
EPA METHOD 300.0: ANIONS								
Analyst: MRA								
Fluoride	8.9	0.31	1.0	*	mg/L	10	9/13/2018 7:55:48 PM	R54174
Chloride	500	18	50		mg/L	100	9/13/2018 8:20:37 PM	R54174
Bromide	2.9	0.27	1.0		mg/L	10	9/13/2018 7:55:48 PM	R54174
Phosphorus, Orthophosphate (As P)	1.6	0.93	5.0	JH	mg/L	10	9/13/2018 7:55:48 PM	R54174
Sulfate	820	21	50		mg/L	100	9/13/2018 8:20:37 PM	R54174
Nitrate+Nitrite as N	ND	0.55	2.0		mg/L	10	9/13/2018 8:33:02 PM	R54174
EPA METHOD 200.7: TOTAL METALS								
Analyst: ELS								
Calcium	100	0.45	10		mg/L	10	9/17/2018 1:29:25 PM	40361
Magnesium	23	0.12	1.0		mg/L	1	9/17/2018 1:27:14 PM	40361
Potassium	51	0.071	1.0		mg/L	1	9/17/2018 1:27:14 PM	40361
Sodium	670	1.6	10		mg/L	10	9/17/2018 1:29:25 PM	40361
EPA METHOD 8260: VOLATILES SHORT LIST								
Analyst: RAA								
Benzene	520	3.5	10	*	µg/L	20	9/12/2018 5:21:31 PM	R54120
Toluene	12	3.4	20	J	µg/L	20	9/12/2018 5:21:31 PM	R54120
Ethylbenzene	ND	4.5	20		µg/L	20	9/12/2018 5:21:31 PM	R54120
Methyl tert-butyl ether (MTBE)	ND	6.4	20		µg/L	20	9/12/2018 5:21:31 PM	R54120
Xylenes, Total	ND	13	30		µg/L	20	9/12/2018 5:21:31 PM	R54120
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	20	9/12/2018 5:21:31 PM	R54120
Surr: Toluene-d8	102	0	70-130		%Rec	20	9/12/2018 5:21:31 PM	R54120
SM2510B: SPECIFIC CONDUCTANCE								
Analyst: sat								
Conductivity	3900	5.0	5.0		µmhos/c	1	9/12/2018 3:10:53 PM	R54120
SM4500-H+B / 9040C: PH								
Analyst: sat								
pH	9.67			*H	pH units	1	9/12/2018 3:10:53 PM	R54120

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 Value above quantitation range
	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 Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1809588

Date Reported: 9/18/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Carbon Canister

Project: Carbon Canister WWTP

Collection Date: 9/8/2018 8:00:00 AM

Lab ID: 1809588-002

Matrix: AQUEOUS

Received Date: 9/12/2018 8:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE								
Analyst: irm								
Diesel Range Organics (DRO)	ND	0.63	1.0		mg/L	1	9/15/2018 1:21:25 PM	40328
Surr: DNOP	85.4	0	76.7-135		%Rec	1	9/15/2018 1:21:25 PM	40328
EPA METHOD 300.0: ANIONS								
Analyst: MRA								
Fluoride	11	0.31	1.0	*	mg/L	10	9/13/2018 8:57:51 PM	R54174
Chloride	340	18	50		mg/L	100	9/13/2018 9:22:39 PM	R54174
Bromide	1.9	0.27	1.0		mg/L	10	9/13/2018 8:57:51 PM	R54174
Phosphorus, Orthophosphate (As P)	3.7	0.93	5.0	JH	mg/L	10	9/13/2018 8:57:51 PM	R54174
Sulfate	840	21	50		mg/L	100	9/13/2018 9:22:39 PM	R54174
Nitrate+Nitrite as N	ND	0.55	2.0		mg/L	10	9/13/2018 9:35:04 PM	R54174
EPA METHOD 200.7: TOTAL METALS								
Analyst: ELS								
Calcium	99	0.045	1.0		mg/L	1	9/17/2018 1:38:12 PM	40361
Magnesium	21	0.12	1.0		mg/L	1	9/17/2018 1:38:12 PM	40361
Potassium	64	0.071	1.0		mg/L	1	9/17/2018 1:38:12 PM	40361
Sodium	590	1.6	10		mg/L	10	9/17/2018 1:40:22 PM	40361
EPA METHOD 8260: VOLATILES SHORT LIST								
Analyst: RAA								
Benzene	9.1	3.5	10	J	µg/L	20	9/12/2018 5:44:38 PM	R5412C
Toluene	ND	3.4	20		µg/L	20	9/12/2018 5:44:38 PM	R5412C
Ethylbenzene	ND	4.5	20		µg/L	20	9/12/2018 5:44:38 PM	R5412C
Methyl tert-butyl ether (MTBE)	ND	6.4	20		µg/L	20	9/12/2018 5:44:38 PM	R5412C
Xylenes, Total	ND	13	30		µg/L	20	9/12/2018 5:44:38 PM	R5412C
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	20	9/12/2018 5:44:38 PM	R5412C
Surr: Toluene-d8	102	0	70-130		%Rec	20	9/12/2018 5:44:38 PM	R5412C
SM2510B: SPECIFIC CONDUCTANCE								
Analyst: sat								
Conductivity	3200	5.0	5.0		µmhos/c	1	9/12/2018 3:15:07 PM	R5412C
SM4500-H+B / 9040C: PH								
Analyst: sat								
pH	7.13			H	pH units	1	9/12/2018 3:15:07 PM	R5412C

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 Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 2 of 11
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1809588

Date Reported: 9/18/2018

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Carbon Canister

Project: Carbon Canister WWTP

Collection Date: 9/9/2018 8:00:00 AM

Lab ID: 1809588-003

Matrix: AQUEOUS

Received Date: 9/12/2018 8:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE								Analyst: irm
Diesel Range Organics (DRO)	ND	0.63	1.0		mg/L	1	9/15/2018 1:46:08 PM	40328
Surr: DNOP	88.1	0	76.7-135		%Rec	1	9/15/2018 1:46:08 PM	40328
EPA METHOD 300.0: ANIONS								Analyst: MRA
Fluoride	9.7	0.31	1.0	*	mg/L	10	9/13/2018 10:24:42 PM	R54174
Chloride	240	18	50		mg/L	100	9/13/2018 10:49:31 PM	R54174
Bromide	1.1	0.27	1.0		mg/L	10	9/13/2018 10:24:42 PM	R54174
Phosphorus, Orthophosphate (As P)	4.4	0.93	5.0	JH	mg/L	10	9/13/2018 10:24:42 PM	R54174
Sulfate	910	21	50		mg/L	100	9/13/2018 10:49:31 PM	R54174
Nitrate+Nitrite as N	ND	0.55	2.0		mg/L	10	9/13/2018 11:01:55 PM	R54174
EPA METHOD 200.7: TOTAL METALS								Analyst: ELS
Calcium	90	0.045	1.0		mg/L	1	9/17/2018 1:42:34 PM	40361
Magnesium	20	0.12	1.0		mg/L	1	9/17/2018 1:42:34 PM	40361
Potassium	51	0.071	1.0		mg/L	1	9/17/2018 1:42:34 PM	40361
Sodium	550	1.6	10		mg/L	10	9/17/2018 1:44:43 PM	40361
EPA METHOD 8260: VOLATILES SHORT LIST								Analyst: RAA
Benzene	ND	3.5	10		µg/L	20	9/12/2018 6:07:54 PM	R54120
Toluene	ND	3.4	20		µg/L	20	9/12/2018 6:07:54 PM	R54120
Ethylbenzene	ND	4.5	20		µg/L	20	9/12/2018 6:07:54 PM	R54120
Methyl tert-butyl ether (MTBE)	ND	6.4	20		µg/L	20	9/12/2018 6:07:54 PM	R54120
Xylenes, Total	ND	13	30		µg/L	20	9/12/2018 6:07:54 PM	R54120
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	20	9/12/2018 6:07:54 PM	R54120
Surr: Toluene-d8	101	0	70-130		%Rec	20	9/12/2018 6:07:54 PM	R54120
SM2510B: SPECIFIC CONDUCTANCE								Analyst: sat
Conductivity	3000	5.0	5.0		µmhos/c	1	9/12/2018 3:23:07 PM	R54120
SM4500-H+B / 9040C: PH								Analyst: sat
pH	6.92			H	pH units	1	9/12/2018 3:23:07 PM	R54120

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 Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 3 of 11
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order **1809588**

Date Reported: **9/18/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Carbon Canister

Project: Carbon Canister WWTP

Collection Date: 9/10/2018 8:00:00 AM

Lab ID: 1809588-004

Matrix: AQUEOUS

Received Date: 9/12/2018 8:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE								
Analyst: Irm								
Diesel Range Organics (DRO)	4.2	0.63	1.0		mg/L	1	9/15/2018 2:10:40 PM	40328
Surr: DNOP	88.1	0	76.7-135		%Rec	1	9/15/2018 2:10:40 PM	40328
EPA METHOD 300.0: ANIONS								
Analyst: MRA								
Fluoride	10	0.31	1.0	*	mg/L	10	9/13/2018 11:26:44 PM	R5417z
Chloride	380	18	50		mg/L	100	9/13/2018 11:51:33 PM	R5417z
Bromide	2.1	0.27	1.0		mg/L	10	9/13/2018 11:26:44 PM	R5417z
Phosphorus, Orthophosphate (As P)	2.1	0.93	5.0	JH	mg/L	10	9/13/2018 11:26:44 PM	R5417z
Sulfate	820	21	50		mg/L	100	9/13/2018 11:51:33 PM	R5417z
Nitrate+Nitrite as N	ND	0.55	2.0		mg/L	10	9/14/2018 12:03:58 AM	R5417z
EPA METHOD 200.7: TOTAL METALS								
Analyst: ELS								
Calcium	97	0.045	1.0		mg/L	1	9/17/2018 1:46:59 PM	40361
Magnesium	22	0.12	1.0		mg/L	1	9/17/2018 1:46:59 PM	40361
Potassium	59	0.071	1.0		mg/L	1	9/17/2018 1:46:59 PM	40361
Sodium	590	1.6	10		mg/L	10	9/17/2018 1:49:09 PM	40361
EPA METHOD 8260: VOLATILES SHORT LIST								
Analyst: RAA								
Benzene	ND	3.5	10		µg/L	20	9/12/2018 6:31:09 PM	R5412c
Toluene	ND	3.4	20		µg/L	20	9/12/2018 6:31:09 PM	R5412c
Ethylbenzene	ND	4.5	20		µg/L	20	9/12/2018 6:31:09 PM	R5412c
Methyl tert-butyl ether (MTBE)	ND	6.4	20		µg/L	20	9/12/2018 6:31:09 PM	R5412c
Xylenes, Total	ND	13	30		µg/L	20	9/12/2018 6:31:09 PM	R5412c
Surr: 4-Bromofluorobenzene	113	0	70-130		%Rec	20	9/12/2018 6:31:09 PM	R5412c
Surr: Toluene-d8	104	0	70-130		%Rec	20	9/12/2018 6:31:09 PM	R5412c
SM2510B: SPECIFIC CONDUCTANCE								
Analyst: sat								
Conductivity	3300	5.0	5.0		µmhos/c	1	9/12/2018 3:27:16 PM	R5412e
SM4500-H+B / 9040C: PH								
Analyst: sat								
pH	6.72			H	pH units	1	9/12/2018 3:27:16 PM	R5412e

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 Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 4 of 11
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588
18-Sep-18

Client: Western Refining Southwest, Gallup
Project: Carbon Canister WWTP

Sample ID	MB-40361	SampType:	MBLK	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	PBW	Batch ID:	40361	RunNo:	54193					
Prep Date:	9/14/2018	Analysis Date:	9/17/2018	SeqNo:	1792033	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-40361	SampType:	LCS	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	LCSW	Batch ID:	40361	RunNo:	54193					
Prep Date:	9/14/2018	Analysis Date:	9/17/2018	SeqNo:	1792037	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	51	1.0	50.00	0	101	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	50	1.0	50.00	0	100	85	115			
Sodium	52	1.0	50.00	0	104	85	115			

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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup

Project: Carbon Canister WWTP

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R54174	RunNo:	54174					
Prep Date:		Analysis Date:	9/13/2018	SeqNo:	1791050	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R54174	RunNo:	54174					
Prep Date:		Analysis Date:	9/13/2018	SeqNo:	1791051	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.9	0.50	5.000	0	97.7	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P)	5.0	0.50	5.000	0	100	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	0	103	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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup

Project: Carbon Canister WWTP

Sample ID	LCS-40328	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	40328	RunNo:	54142					
Prep Date:	9/13/2018	Analysis Date:	9/15/2018	SeqNo:	1791952	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	101	70	130			
Surr: DNOP	0.37		0.5000		73.4	76.7	135			S

Sample ID	MB-40328	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	40328	RunNo:	54142					
Prep Date:	9/13/2018	Analysis Date:	9/15/2018	SeqNo:	1791953	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.83		1.000		83.0	76.7	135			

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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup
Project: Carbon Canister WWTP

Sample ID	100ng btex lcs		SampType: LCS4	TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	BatchQC		Batch ID: R54120	RunNo: 54120						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1788855		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.2	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	103	80	120			
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	95.4	80	120			
Xylenes, Total	62	1.5	60.00	0	103	80	120			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.3	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID	1809588-001a ms		SampType: MS4	TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	Carbon Canister		Batch ID: R54120	RunNo: 54120						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1788857		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	880	20	400.0	522.2	88.6	80	120			
Toluene	430	20	400.0	11.76	104	80	120			
Ethylbenzene	410	20	400.0	0	103	80	120			
Methyl tert-butyl ether (MTBE)	380	20	400.0	0	94.9	43.6	145			
Xylenes, Total	1200	30	1200	0	99.4	80	120			
Surr: 4-Bromofluorobenzene	200		200.0		101	70	130			
Surr: Toluene-d8	210		200.0		106	70	130			

Sample ID	1809588-001a msd		SampType: MSD4	TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	Carbon Canister		Batch ID: R54120	RunNo: 54120						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1788858		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	810	20	400.0	522.2	72.8	80	120	7.51	20	S
Toluene	400	20	400.0	11.76	95.9	80	120	7.58	20	
Ethylbenzene	390	20	400.0	0	96.7	80	120	6.57	20	
Methyl tert-butyl ether (MTBE)	360	20	400.0	0	89.8	43.6	145	5.53	20	
Xylenes, Total	1100	30	1200	0	93.4	80	120	6.21	20	
Surr: 4-Bromofluorobenzene	200		200.0		102	70	130	0	0	
Surr: Toluene-d8	200		200.0		101	70	130	0	0	

Sample ID	rb		SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	PBW		Batch ID: R54120	RunNo: 54120						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1788862		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								

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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup

Project: Carbon Canister WWTP

Sample ID	rb	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	PBW	Batch ID: R54120		RunNo: 54120						
Prep Date:		Analysis Date: 9/12/2018		SeqNo: 1788862		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		103	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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
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- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup

Project: Carbon Canister WWTP

Sample ID	ics-1 98.3uS eC		SampType: ics	TestCode: SM2510B: Specific Conductance						
Client ID:	LCSW		Batch ID: R54125	RunNo: 54125						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1789288		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	98.30	0	104	80	120			

Sample ID	1809588-002cdup		SampType: dup	TestCode: SM2510B: Specific Conductance						
Client ID:	Carbon Canister		Batch ID: R54125	RunNo: 54125						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1789294		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	3200	5.0						1.09	20	

Sample ID	ics-2 ~98.3		SampType: ics	TestCode: SM2510B: Specific Conductance						
Client ID:	LCSW		Batch ID: R54125	RunNo: 54125						
Prep Date:			Analysis Date: 9/12/2018	SeqNo: 1789311		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	98.30	0	107	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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809588

18-Sep-18

Client: Western Refining Southwest, Gallup

Project: Carbon Canister WWTP

Sample ID	1809588-002cdup	SampType:	dup	TestCode:	SM4500-H+B / 9040C: pH					
Client ID:	Carbon Canister	Batch ID:	R54125	RunNo:	54125					
Prep Date:		Analysis Date:	9/12/2018	SeqNo:	1789199	Units:	pH units			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.14									H

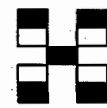
Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| 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 Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Chain-of-Custody Record

Client: Western - Refining
 Gallup Refinery
 Mailing Address: 92 GIANT CROSSING ROAD
 Gallup NM 87301
 Phone #: 505 722 3833
 email or Fax#: 505 863 0930
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Other _____
 EDD (Type) _____

Turn-Around Time:
 Standard Rush
 Project Name: Carbon Canister - WWTP
 Project #: _____
 Sample Day's 9/7/2018 9/8/2018



HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Project Manager: William Bailey
 A. Dorsey
 Sampler: WWTP-OPPs
 @rice: Yes No
 Sample Temperature: 21.0°C (69.8°F)

Analysis Request													
BTEX + MTBE + (8021)B	BTEX + MTBE + TPH (Gas)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄)	8081 Pesticides / 8082 PC	8260B (VOA)	8270 (Semi-VOA)	pH	Specific Conductance	Cations	Anions
							X						
										X	X		
												X	
	X	X											
							X						
										X	X		
												X	
X	X												

Date	Time	Matrix	Sample Request ID	Volume	Preservative Type
					HEA / None
					1809588
					-001
9/7/2018	08:00AM	H2O	Carbon Canister	125ml-1	H2SO4
9/7/2018	08:00AM	H2O	Carbon Canister	500ml-1	None
9/7/2018	08:00AM	H2O	Carbon Canister	500ml-1	HNO3
9/7/2018	08:00AM	H2O	Carbon Canister	40ml-3 / 125ml-1 Amber	HCL / None
					-002
9/8/2018	08:00AM	H2O	Carbon Canister	125ml-1	H2SO4
9/8/2018	08:00AM	H2O	Carbon Canister	500ml-1	None
9/8/2018	08:00AM	H2O	Carbon Canister	500ml-1	HNO3
9/8/2018	08:00AM	H2O	Carbon Canister	40ml-3 / 125ml-1 Amber	HCL / None

Date: 9-11-18	Time: 9:55 A	Relinquished by: Patrick Gedyes	Received by: [Signature]	Date: 9-11-18	Time: 9:55
Date: 9-11-18	Time: 11:00	Relinquished by: [Signature]	Received by: [Signature]	Date: 09/12/18	Time: 08:40

Carbon Canister

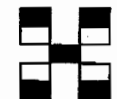
If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Courier

Chain-of-Custody Record

Client: Western - Refining
 Gallup Refinery
 Mailing Address: 92 GIANT CROSSING ROAD
 Gallup NM 87301
 Phone #: 505 722 3833
 email or Fax#: 505 863 0930
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Other _____
 EDD (Type) _____

Turn-Around Time:
 Standard Rush
 Project Name: Carbon Canister - WWTP
 Project #: _____
 Sample Day's: 9/9/2018 9/10/2018
 Project Manager: William Bailly
 A. Dorsey
 Sampler: WWTP-OPPs
 On-site: Yes No
 Sample Temperature: 10°C



HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Preservative Type	BEAL No.	BTEX + MTBE + (8021)B	BTEX + MTBE + TPH (Gas)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄)	8081 Pesticides / 8082 PC	8260B (VOA)	8270 (Semi-VOA)	pH	Specific Conductance	Cations	Anions	
					1810588 -003															
9/9/2018	08:00AM	H2O	Carbon Canister	125ml-1	H2SO4								X							
9/9/2018	08:00AM	H2O	Carbon Canister	500ml-1	None												X	X		
9/9/2018	08:00AM	H2O	Carbon Canister	500ml-1	HNO3														X	
9/9/2018	08:00AM	H2O	Carbon Canister	40ml-3 / 125ml-1 Amber	HCL / None		X													
						-004														
9/10/2018	08:00AM	H2O	Carbon Canister	125ml-1	H2SO4								X							
9/10/2018	08:00AM	H2O	Carbon Canister	500ml-1	None												X	X		
9/10/2018	08:00AM	H2O	Carbon Canister	500ml-1	HNO3														X	
9/10/2018	08:00AM	H2O	Carbon Canister	40ml-3 / 125ml-1 Amber	HCL / None		X													

Date: 9-11-18 Time: 9:55 A Relinquished by: Patrick Gallegos
 Date: 9-11-18 Time: 11:00 Relinquished by: [Signature]
 Received by: [Signature] Date: 9-11-18 Time: 9:55
 Received by: [Signature] Date: 09/12/18 Time: 08:40

Carbon Canister

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.