



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

December 06, 2019

Alvin Dorsey  
Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-3833  
FAX:

RE: Carbon Canister WWTP

OrderNo.: 1912061

Dear Alvin Dorsey:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/3/2019 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](http://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", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1912061

Date Reported: 12/6/2019

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Carbon Canister

**Project:** Carbon Canister WWTP

**Collection Date:** 11/27/2019 8:00:00 AM

**Lab ID:** 1912061-001

**Matrix:** AQUEOUS

**Received Date:** 12/3/2019 9:23:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8015M/D: DIESEL RANGE</b>								
Analyst: <b>BRM</b>								
Diesel Range Organics (DRO)	ND	0.71	1.0		mg/L	1	12/5/2019 12:17:31 PM	49156
Surr: DNOP	110	0	70-130		%Rec	1	12/5/2019 12:17:31 PM	49156
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>CJS</b>								
Fluoride	4.5	0.23	1.0	*	mg/L	10	12/3/2019 6:37:31 PM	R64888
Chloride	420	25	50		mg/L	100	12/3/2019 7:02:13 PM	R64888
Bromide	2.1	0.50	1.0		mg/L	10	12/3/2019 6:37:31 PM	R64888
Phosphorus, Orthophosphate (As P)	ND	2.5	5.0	H	mg/L	10	12/3/2019 6:37:31 PM	R64888
Sulfate	1100	25	50		mg/L	100	12/3/2019 7:02:13 PM	R64888
Nitrate+Nitrite as N	6.6	0.24	2.0		mg/L	10	12/3/2019 7:14:34 PM	R64888
<b>EPA METHOD 200.7: TOTAL METALS</b>								
Analyst: <b>bcv</b>								
Calcium	94	0.027	1.0		mg/L	1	12/4/2019 9:44:17 AM	49126
Magnesium	19	0.010	1.0		mg/L	1	12/4/2019 9:44:17 AM	49126
Potassium	22	0.062	1.0		mg/L	1	12/4/2019 9:44:17 AM	49126
Sodium	620	4.7	10		mg/L	10	12/4/2019 9:46:02 AM	49126
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>								
Analyst: <b>CCM</b>								
Benzene	5.2	3.3	10	J	µg/L	20	12/3/2019 3:13:00 PM	S64880
Toluene	ND	7.0	20		µg/L	20	12/3/2019 3:13:00 PM	S64880
Ethylbenzene	ND	2.6	20		µg/L	20	12/3/2019 3:13:00 PM	S64880
Methyl tert-butyl ether (MTBE)	ND	9.1	20		µg/L	20	12/3/2019 3:13:00 PM	S64880
Xylenes, Total	ND	9.1	30		µg/L	20	12/3/2019 3:13:00 PM	S64880
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	20	12/3/2019 3:13:00 PM	S64880
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	20	12/3/2019 3:13:00 PM	S64880
Surr: Dibromofluoromethane	99.2	0	70-130		%Rec	20	12/3/2019 3:13:00 PM	S64880
Surr: Toluene-d8	96.1	0	70-130		%Rec	20	12/3/2019 3:13:00 PM	S64880
<b>SM2510B: SPECIFIC CONDUCTANCE</b>								
Analyst: <b>JRR</b>								
Conductivity	8100	5.0	5.0		µmhos/c	1	12/3/2019 1:18:07 PM	R64887
<b>SM4500-H+B / 9040C: PH</b>								
Analyst: <b>JRR</b>								
pH	6.99			H	pH units	1	12/3/2019 1:18:07 PM	R64887

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 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 Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1912061

Date Reported: 12/6/2019

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Carbon Canister

**Project:** Carbon Canister WWTP

**Collection Date:** 11/28/2019 8:00:00 AM

**Lab ID:** 1912061-002

**Matrix:** AQUEOUS

**Received Date:** 12/3/2019 9:23:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8015M/D: DIESEL RANGE</b>								
Analyst: <b>BRM</b>								
Diesel Range Organics (DRO)	ND	0.71	1.0		mg/L	1	12/5/2019 12:39:52 PM	49156
Surr: DNOP	112	0	70-130		%Rec	1	12/5/2019 12:39:52 PM	49156
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>CJS</b>								
Fluoride	8.8	0.23	1.0	*	mg/L	10	12/3/2019 8:03:58 PM	R64888
Chloride	460	25	50		mg/L	100	12/3/2019 8:28:40 PM	R64888
Bromide	2.0	0.50	1.0		mg/L	10	12/3/2019 8:03:58 PM	R64888
Phosphorus, Orthophosphate (As P)	2.9	2.5	5.0	JH	mg/L	10	12/3/2019 8:03:58 PM	R64888
Sulfate	550	25	50		mg/L	100	12/3/2019 8:28:40 PM	R64888
Nitrate+Nitrite as N	ND	0.24	2.0		mg/L	10	12/3/2019 8:41:01 PM	R64888
<b>EPA METHOD 200.7: TOTAL METALS</b>								
Analyst: <b>bcv</b>								
Calcium	76	0.027	1.0		mg/L	1	12/4/2019 9:47:54 AM	49126
Magnesium	26	0.010	1.0		mg/L	1	12/4/2019 9:47:54 AM	49126
Potassium	33	0.062	1.0		mg/L	1	12/4/2019 9:47:54 AM	49126
Sodium	590	4.7	10		mg/L	10	12/4/2019 9:49:46 AM	49126
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>								
Analyst: <b>CCM</b>								
Benzene	ND	3.3	10		µg/L	20	12/3/2019 3:37:00 PM	S64880
Toluene	ND	7.0	20		µg/L	20	12/3/2019 3:37:00 PM	S64880
Ethylbenzene	ND	2.6	20		µg/L	20	12/3/2019 3:37:00 PM	S64880
Methyl tert-butyl ether (MTBE)	ND	9.1	20		µg/L	20	12/3/2019 3:37:00 PM	S64880
Xylenes, Total	ND	9.1	30		µg/L	20	12/3/2019 3:37:00 PM	S64880
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	20	12/3/2019 3:37:00 PM	S64880
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	20	12/3/2019 3:37:00 PM	S64880
Surr: Dibromofluoromethane	99.0	0	70-130		%Rec	20	12/3/2019 3:37:00 PM	S64880
Surr: Toluene-d8	99.6	0	70-130		%Rec	20	12/3/2019 3:37:00 PM	S64880
<b>SM2510B: SPECIFIC CONDUCTANCE</b>								
Analyst: <b>JRR</b>								
Conductivity	5100	5.0	5.0		µmhos/c	1	12/3/2019 1:22:08 PM	R64887
<b>SM4500-H+B / 9040C: PH</b>								
Analyst: <b>JRR</b>								
pH	8.35			H	pH units	1	12/3/2019 1:22:08 PM	R64887

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

<b>Qualifiers:</b>	*	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 Limit
	S	% Recovery outside of range due to dilution or matrix		

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1912061

Date Reported: 12/6/2019

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Carbon Canister

**Project:** Carbon Canister WWTP

**Collection Date:** 11/29/2019 8:00:00 AM

**Lab ID:** 1912061-003

**Matrix:** AQUEOUS

**Received Date:** 12/3/2019 9:23:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8015M/D: DIESEL RANGE</b>								
Analyst: <b>BRM</b>								
Diesel Range Organics (DRO)	ND	0.71	1.0		mg/L	1	12/5/2019 1:01:55 PM	49156
Surr: DNOP	106	0	70-130		%Rec	1	12/5/2019 1:01:55 PM	49156
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>CJS</b>								
Fluoride	34	0.23	1.0	*	mg/L	10	12/3/2019 9:05:42 PM	R64888
Chloride	450	25	50		mg/L	100	12/3/2019 9:30:24 PM	R64888
Bromide	2.2	0.50	1.0		mg/L	10	12/3/2019 9:05:42 PM	R64888
Phosphorus, Orthophosphate (As P)	ND	2.5	5.0	H	mg/L	10	12/3/2019 9:05:42 PM	R64888
Sulfate	530	25	50		mg/L	100	12/3/2019 9:30:24 PM	R64888
Nitrate+Nitrite as N	ND	0.24	2.0		mg/L	10	12/3/2019 9:42:45 PM	R64888
<b>EPA METHOD 200.7: TOTAL METALS</b>								
Analyst: <b>bcv</b>								
Calcium	70	0.027	1.0		mg/L	1	12/4/2019 9:52:05 AM	49126
Magnesium	18	0.010	1.0		mg/L	1	12/4/2019 9:52:05 AM	49126
Potassium	220	0.62	10		mg/L	10	12/4/2019 9:54:09 AM	49126
Sodium	560	4.7	10		mg/L	10	12/4/2019 9:54:09 AM	49126
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>								
Analyst: <b>CCM</b>								
Benzene	ND	3.3	10		µg/L	20	12/3/2019 4:01:00 PM	S64880
Toluene	ND	7.0	20		µg/L	20	12/3/2019 4:01:00 PM	S64880
Ethylbenzene	ND	2.6	20		µg/L	20	12/3/2019 4:01:00 PM	S64880
Methyl tert-butyl ether (MTBE)	ND	9.1	20		µg/L	20	12/3/2019 4:01:00 PM	S64880
Xylenes, Total	ND	9.1	30		µg/L	20	12/3/2019 4:01:00 PM	S64880
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	20	12/3/2019 4:01:00 PM	S64880
Surr: 4-Bromofluorobenzene	97.2	0	70-130		%Rec	20	12/3/2019 4:01:00 PM	S64880
Surr: Dibromofluoromethane	101	0	70-130		%Rec	20	12/3/2019 4:01:00 PM	S64880
Surr: Toluene-d8	99.9	0	70-130		%Rec	20	12/3/2019 4:01:00 PM	S64880
<b>SM2510B: SPECIFIC CONDUCTANCE</b>								
Analyst: <b>JRR</b>								
Conductivity	5100	5.0	5.0		µmhos/c	1	12/3/2019 1:26:01 PM	R64887
<b>SM4500-H+B / 9040C: PH</b>								
Analyst: <b>JRR</b>								
pH	8.71			*H	pH units	1	12/3/2019 1:26:01 PM	R64887

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 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 Limit

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1912061

Date Reported: 12/6/2019

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Carbon Canister

**Project:** Carbon Canister WWTP

**Collection Date:** 11/30/2019 8:00:00 AM

**Lab ID:** 1912061-004

**Matrix:** AQUEOUS

**Received Date:** 12/3/2019 9:23:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8015M/D: DIESEL RANGE</b>								
Analyst: <b>BRM</b>								
Diesel Range Organics (DRO)	ND	0.71	1.0		mg/L	1	12/5/2019 1:24:08 PM	49156
Surr: DNOP	107	0	70-130		%Rec	1	12/5/2019 1:24:08 PM	49156
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>CJS</b>								
Fluoride	14	0.23	1.0	*	mg/L	10	12/3/2019 10:32:07 PM	R64888
Chloride	380	25	50		mg/L	100	12/3/2019 10:56:49 PM	R64888
Bromide	1.8	0.50	1.0		mg/L	10	12/3/2019 10:32:07 PM	R64888
Phosphorus, Orthophosphate (As P)	ND	2.5	5.0	H	mg/L	10	12/3/2019 10:32:07 PM	R64888
Sulfate	420	2.5	5.0		mg/L	10	12/3/2019 10:32:07 PM	R64888
Nitrate+Nitrite as N	ND	0.24	2.0		mg/L	10	12/3/2019 11:09:11 PM	R64888
<b>EPA METHOD 200.7: TOTAL METALS</b>								
Analyst: <b>bcv</b>								
Calcium	80	0.027	1.0		mg/L	1	12/4/2019 9:56:15 AM	49126
Magnesium	14	0.010	1.0		mg/L	1	12/4/2019 9:56:15 AM	49126
Potassium	88	0.062	1.0		mg/L	1	12/4/2019 9:56:15 AM	49126
Sodium	440	4.7	10		mg/L	10	12/4/2019 10:04:32 AM	49126
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>								
Analyst: <b>CCM</b>								
Benzene	3.9	3.3	10	J	µg/L	20	12/3/2019 4:25:00 PM	S64880
Toluene	ND	7.0	20		µg/L	20	12/3/2019 4:25:00 PM	S64880
Ethylbenzene	ND	2.6	20		µg/L	20	12/3/2019 4:25:00 PM	S64880
Methyl tert-butyl ether (MTBE)	ND	9.1	20		µg/L	20	12/3/2019 4:25:00 PM	S64880
Xylenes, Total	ND	9.1	30		µg/L	20	12/3/2019 4:25:00 PM	S64880
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	20	12/3/2019 4:25:00 PM	S64880
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	20	12/3/2019 4:25:00 PM	S64880
Surr: Dibromofluoromethane	99.6	0	70-130		%Rec	20	12/3/2019 4:25:00 PM	S64880
Surr: Toluene-d8	98.7	0	70-130		%Rec	20	12/3/2019 4:25:00 PM	S64880
<b>SM2510B: SPECIFIC CONDUCTANCE</b>								
Analyst: <b>JRR</b>								
Conductivity	3700	5.0	5.0		µmhos/c	1	12/3/2019 1:29:57 PM	R64887
<b>SM4500-H+B / 9040C: PH</b>								
Analyst: <b>JRR</b>								
pH	8.08			H	pH units	1	12/3/2019 1:29:57 PM	R64887

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 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 Limit

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1912061

Date Reported: 12/6/2019

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Carbon Canister

**Project:** Carbon Canister WWTP

**Collection Date:** 12/1/2019 8:00:00 AM

**Lab ID:** 1912061-005

**Matrix:** AQUEOUS

**Received Date:** 12/3/2019 9:23:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8015M/D: DIESEL RANGE</b>								
Analyst: <b>BRM</b>								
Diesel Range Organics (DRO)	7.0	0.71	1.0		mg/L	1	12/5/2019 1:46:14 PM	49156
Surr: DNOP	108	0	70-130		%Rec	1	12/5/2019 1:46:14 PM	49156
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>CJS</b>								
Fluoride	20	0.23	1.0	*	mg/L	10	12/3/2019 11:33:54 PM	R64888
Chloride	310	25	50		mg/L	100	12/3/2019 11:58:36 PM	R64888
Bromide	1.5	0.50	1.0		mg/L	10	12/3/2019 11:33:54 PM	R64888
Phosphorus, Orthophosphate (As P)	ND	2.5	5.0	H	mg/L	10	12/3/2019 11:33:54 PM	R64888
Sulfate	280	25	50		mg/L	100	12/3/2019 11:58:36 PM	R64888
Nitrate+Nitrite as N	ND	0.24	2.0		mg/L	10	12/4/2019 12:10:57 AM	R64888
<b>EPA METHOD 200.7: TOTAL METALS</b>								
Analyst: <b>bcv</b>								
Calcium	19	0.027	1.0		mg/L	1	12/4/2019 10:06:42 AM	49126
Magnesium	0.64	0.010	1.0	J	mg/L	1	12/4/2019 10:06:42 AM	49126
Potassium	97	0.062	1.0		mg/L	1	12/4/2019 10:06:42 AM	49126
Sodium	620	4.7	10		mg/L	10	12/4/2019 10:08:26 AM	49126
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>								
Analyst: <b>CCM</b>								
Benzene	ND	3.3	10		µg/L	20	12/3/2019 4:49:00 PM	S64880
Toluene	ND	7.0	20		µg/L	20	12/3/2019 4:49:00 PM	S64880
Ethylbenzene	ND	2.6	20		µg/L	20	12/3/2019 4:49:00 PM	S64880
Methyl tert-butyl ether (MTBE)	ND	9.1	20		µg/L	20	12/3/2019 4:49:00 PM	S64880
Xylenes, Total	ND	9.1	30		µg/L	20	12/3/2019 4:49:00 PM	S64880
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	20	12/3/2019 4:49:00 PM	S64880
Surr: 4-Bromofluorobenzene	99.9	0	70-130		%Rec	20	12/3/2019 4:49:00 PM	S64880
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	20	12/3/2019 4:49:00 PM	S64880
Surr: Toluene-d8	99.5	0	70-130		%Rec	20	12/3/2019 4:49:00 PM	S64880
<b>SM2510B: SPECIFIC CONDUCTANCE</b>								
Analyst: <b>JRR</b>								
Conductivity	3400	5.0	5.0		µmhos/c	1	12/3/2019 1:33:51 PM	R64887
<b>SM4500-H+B / 9040C: PH</b>								
Analyst: <b>JRR</b>								
pH	9.80			*H	pH units	1	12/3/2019 1:33:51 PM	R64887

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 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 Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1912061

06-Dec-19

**Client:** Western Refining Southwest, Gallup

**Project:** Carbon Canister WWTP

Sample ID: <b>MB-49126</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 200.7: Total Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>49126</b>	RunNo: <b>64926</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2226648</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	0.011	1.0								J
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: <b>LCS-49126</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 200.7: Total Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>49126</b>	RunNo: <b>64926</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2226651</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	102	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Potassium	51	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

**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 Limit                                |
| S % Recovery outside of range due to dilution or matrix |   |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1912061

06-Dec-19

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

Sample ID: <b>MB</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R64888</b>	RunNo: <b>64888</b>								
Prep Date:	Analysis Date: <b>12/3/2019</b>	SeqNo: <b>2226021</b>	Units: <b>mg/L</b>							
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: <b>LCS</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64888</b>	RunNo: <b>64888</b>								
Prep Date:	Analysis Date: <b>12/3/2019</b>	SeqNo: <b>2226022</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Chloride	4.6	0.50	5.000	0	92.2	90	110			
Bromide	2.4	0.10	2.500	0	94.4	90	110			
Phosphorus, Orthophosphate (As P)	4.6	0.50	5.000	0	91.4	90	110			
Sulfate	9.4	0.50	10.00	0	93.8	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	95.2	90	110			

**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 Limit                                |
| S % Recovery outside of range due to dilution or matrix |   |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1912061

06-Dec-19

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

Sample ID: <b>LCS-49156</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>49156</b>	RunNo: <b>64959</b>								
Prep Date: <b>12/4/2019</b>	Analysis Date: <b>12/5/2019</b>	SeqNo: <b>2227789</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	111	71.8	135			
Surr: DNOP	0.52		0.5000		104	70	130			

Sample ID: <b>MB-49156</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range</b>								
Client ID: <b>PBW</b>	Batch ID: <b>49156</b>	RunNo: <b>64959</b>								
Prep Date: <b>12/4/2019</b>	Analysis Date: <b>12/5/2019</b>	SeqNo: <b>2227790</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.98		1.000		98.2	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

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 Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1912061

06-Dec-19

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

Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>S64880</b>		RunNo: <b>64880</b>							
Prep Date:	Analysis Date: <b>12/3/2019</b>		SeqNo: <b>2225829</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.6	70	130			
Toluene	19	1.0	20.00	0	93.4	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		99.8	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID: <b>rb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>PBW</b>	Batch ID: <b>S64880</b>		RunNo: <b>64880</b>							
Prep Date:	Analysis Date: <b>12/3/2019</b>		SeqNo: <b>2225830</b>		Units: <b>µg/L</b>					
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								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			

**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 Limit                                |
| S % Recovery outside of range due to dilution or matrix |   |

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1912061

06-Dec-19

**Client:** Western Refining Southwest, Gallup

**Project:** Carbon Canister WWTP

Sample ID: <b>Ics-1 99.9uS eC</b>	SampType: <b>Ics</b>	TestCode: <b>SM2510B: Specific Conductance</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R64887</b>	RunNo: <b>64887</b>								
Prep Date:	Analysis Date: <b>12/3/2019</b>	SeqNo: <b>2225422</b> Units: <b>µmhos/cm</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.90	0	102	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 Limit

**Sample Log-In Check List**

Client Name: **Western Refining Gallup** Work Order Number: **1912061** RptNo: **1**

Received By: **Yazmine Garduno** 12/3/2019 9:23:00 AM *Yazmine Garduno*  
 Completed By: **Daniel Marquez** 12/3/2019 10:08:51 AM *Daniel Marquez*  
 Reviewed By: *DM 12-3-19*

**Chain of Custody**

1. Is Chain of Custody sufficiently complete? Yes  No  Not Present   
 2. How was the sample delivered? Courier

**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)? 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? Yes  No   
 (Note discrepancies on chain of custody)  
 12. Are matrices correctly identified on Chain of Custody? Yes  No   
 13. Is it clear what analyses were requested? Yes  No   
 14. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 10  
 (<2 or >12 unless noted)  
 Adjusted? no  
 Checked by: YG 12/3/19

**Special Handling (if applicable)**

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

16. Additional remarks:

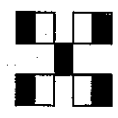
**17. Cooler Information**

Cooler No	Temp.°C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			
2	1.7	Good	Yes			

### 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 #: 11/27/2019 11/28/2019  
 Sample Day's  
 Project Manager:  
 A. Dorsey  
 Sampler: WWTP-OPPs  
 On Ice:  Yes  No  
 Sample Temperature: 17.10 / 17.19 / 19.10 = 17.8  
 Preservative Type: H2SO4  
 HEAL No: 1912091



### 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	BTEX + MTBE + (8021B)	BTEX + MTBE + TPH (Gas)	TPH 8015B (DRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> )	8081 Pesticides / 8082 PC	8260B (VOA)	8270 (Semi-VOA)	PH	Specific Conductance	Cations	Anions	Air Bubbles (Y or N)
11/27/2019	08:00AM	H2O	Carbon Canister								X								
11/27/2019	08:00AM	H2O	Carbon Canister																
11/27/2019	08:00AM	H2O	Carbon Canister																
11/27/2019	08:00AM	H2O	Carbon Canister	X															
11/28/2019	08:00AM	H2O	Carbon Canister																
11/28/2019	08:00AM	H2O	Carbon Canister																
11/28/2019	08:00AM	H2O	Carbon Canister																
11/28/2019	08:00AM	H2O	Carbon Canister																
11/28/2019	08:00AM	H2O	Carbon Canister																
Date: 12-02-19	Time: 11:00	Relinquished by: <i>Alysh Dorsey</i>																	
Date:	Time:	Relinquished by:																	

# Carbon Canister

Received by: *Mv Carner* 12/3/19 0923  
 Date: 12/3/19  
 Time: 0923

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.

# Chain-of-Custody Record

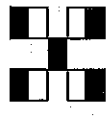
Client: Western - Refining  
 Gallup Refinery  
 Mailing Address: 92 GIANT CROSSING ROAD  
 Gallup NM 87301  
 Phone #: 505 722 3833  
 email or Fax#: 505 863 0930  
 QA/QC Package:  
 Standard  Level 4 (Full Validation)  
 Other  
 EDD (Type)

Turn-Around Time:  
 Standard  Rush  
 Project Name: Carbon Canister - WWTP  
 Project #:   
 Sample Days: 11/29/2019 11/30/2019  
 Project Manager: A. Dorsey  
 Sampler: WWTP-OPPs  
 On/ice:  Yes  No  
 Sample Temperature: 17.0 = 1.7 | 14.0 = 1.8  
 HEAL No.

Date	Time	Matrix	Sample Request ID	Preservative Type	HEAL No.
11/29/2019	08:00AM	H2O	Carbon Canister	H2SO4	003
11/29/2019	08:00AM	H2O	Carbon Canister	None	I
11/29/2019	08:00AM	H2O	Carbon Canister	HNO3	I
11/29/2019	08:00AM	H2O	Carbon Canister	HCL / None	
11/30/2019	08:00AM	H2O	Carbon Canister	H2SO4	004
11/30/2019	08:00AM	H2O	Carbon Canister	None	I
11/30/2019	08:00AM	H2O	Carbon Canister	HNO3	
11/30/2019	08:00AM	H2O	Carbon Canister	HCL / None	

Date: 12-02-19  
 Relinquished by: Alvin Dorsey  
 Date: 12/3/19  
 Time: 11:00  
 Relinquished by: *[Signature]*

Date: 12/3/19  
 Time: 11:00  
 Received by: *[Signature]*  
 Date: 12/2/19  
 Time: 09:28



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Analysis Request									
BTEX + MTBE + TPH (Gas)	BTEX + MTBE + TPH (802)B	X							
TPH 8015B (DRO)		X							
TPH (Method 418.1)									
EDB (Method 504.1)									
PAH (8310 or 8270SIMS)									
RCRA 8 Metals									
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> )			X						
8081 Pesticides / 8082 PC									
8260B (VOA)									
8270 (Semi-VOA)									
PH							X		
Specific Conductance							X		
Cations									X
Anions (Y or N)									

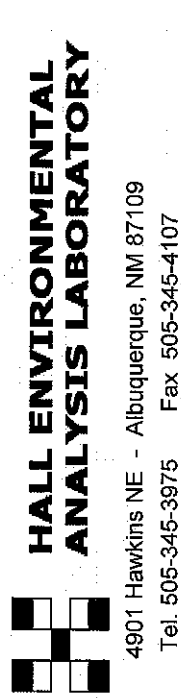
# Carbon Canister

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.

# 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 Days: 12/1/2019  
 Project Manager:  
 A. Dorsey  
 Sampler: WWTP-OPPs  
 On Ice:  Yes  No  
 Sample Temperature: 17.0 = 11 (8.0) = 19  
 HEAL No.



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
 4901 Hawkins NE - Albuquerque, NM 87109  
 Tel. 505-345-3975 Fax 505-345-4107

Chain-of-Custody Record		Analysis Request																				
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH (Gas)	TPH 8015B (DRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> )	8081 Pesticides / 8082 PC	8260B (VOA)	8270 (Semi-VOA)	PH	Specific Conductance	Cations	Anions	Air Bubbles (Y or N)	
12/1/2019	08:00AM	H2O	Carbon Canister	125ml-1	H2SO4	005							X									
12/1/2019	08:00AM	H2O	Carbon Canister	500ml-1	None													X	X			
12/1/2019	08:00AM	H2O	Carbon Canister	500ml-1	HNO3																	
12/1/2019	08:00AM	H2O	Carbon Canister	40ml-3 1/25ml-1 Amber	HCL / None		X															

Date: 12-02-19 Time: 11:00 Relinquished by: Alvin Dorsey  
 Date: Time: Relinquished by: *WV corner* 12/3/19 0923

# 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.