Wright Water Engineers, Inc.
1666 N. Main Avenue, Suite C
Durango, Colorado 81301
(970) 259-7411 TEL
(970) 259-8758 FAX
www.wrightwater.com
e-mail: pfoster@wrightwater.com

November 24, 2015

Via email: rogers@lpcattorney.org

Sheryl Rogers
La Plata County Attorney
La Plata County
1099 Main Ave, Suite 311
Durango, CO 81301

Re: Gold King Mine Adit Sampling Analysis

Dear Sheryl:

Wright Water Engineers, Inc. (WWE) is pleased to provide you with this analysis of the sampling results for water quality and sediment samples collected at the Gold King Mine adit on September 21, 2015 by EPA, and collected by WWE on September 29, 2015. The September 21, 2015 sample collected by EPA is a split sample that was provided to WWE for analysis. Additionally, WWE analyzed the validated sample result forms for the EPA water quality and sediment samples collected on September 21, 2015. However, the validated sample result forms provided by EPA for review were not the complete set of reports, and some of the test result data, such as radionuclide analysis, was not available to review.

The purpose of this analysis is to provide a screening for additional non-metal and radionuclide (uranium and radium) parameters that have not been part of the typical EPA sampling to date. Therefore, this memo focuses on the non-metal and radionuclide sampling results. Additional in-depth investigation regarding metals contamination at the mine site can be conducted if you like.

The EPA water quality and sediment samples were analyzed by the Test-America Denver laboratory. The water quality and sediment EPA split samples and WWE samples were analyzed by Hall Environmental Analysis Laboratory (HEAL) and its subcontract laboratories. WWE submitted two water quality samples (one as a duplicate), and two sediment samples (one as a

duplicate). A table summarizing a comparison of WWE and EPA results is provided as Attachment A.

The EPA and WWE both collected surface water and sediment samples at a location approximately 50 feet inside the Gold King Mine adit. WWE also collected field parameters at the time of sampling (see Attachment B). At the time of the WWE sampling event, the water flowing through the adit measured a temperature of 7.7 ºC and a pH of 3.42. The low pH is typical of acid mine drainage.

Water Quality Data Sets

The EPA split and WWE surface water samples were analyzed for nitrates, nitrites, ammonia, Total Kjeldahl Nitrogen (TKN), cyanide, chromium, dioxins and furans, polychlorinated biphenyls (PCBs), uranium, and radium (see Attachment C and Attachment D).

None of the water quality analytes listed above were detected, with the exception of radium-226, radium-228, uranium, TKN, nitrites, and nitrates. Sample results for these specific analytes are reported below, followed by a comparison of the concentrations observed versus the respective drinking water standards for each of these analytes, for reference purposes.

- Radium-226 is reported between 0.229 picoCuries per liter (pCi/L) (EPA sample) and 0.668 pCi/L (WWE sample) (see Attachment A).
- Radium-228 is reported between 0.607 pCi/L (EPA sample) and 0.890 pCi/L (WWE sample).
- Uranium is reported at 0.0083 mg/L (EPA split sample), 0.008 mg/L (WWE sample) and 0.0077 mg/L (WWE duplicate sample).
- Nitrite and nitrate both have detections in the EPA water quality set, but both results are “U” and “J” qualified indicating detection at the method detection limit (MDL). The MDL is a statistical limit corresponding to the minimum concentration at which a

substance can be measured with a 99 percent confidence that the analyte concentration is greater than zero.

- TKN was detected in the EPA water quality sample at 0.29 mg/L. The EPA split and WWE water quality samples reported non-detects for TKN.

Radium and uranium are EPA-regulated radioactive drinking water contaminants. The combined Radium-226/228 maximum contaminant level (MCL) for drinking water is 5 pCi/L. There are no exceedances of the Radium-226/228 MCL in the EPA or WWE data sets. The uranium MCL under the radionuclide rule is 0.03 milligrams per liter (mg/L). There are no exceedances of the uranium MCL in the EPA or WWE data sets.

The EPA water quality sample was also analyzed for the metals panel typical of EPA's ongoing sampling efforts. Arsenic was detected at 0.044 mg/L in the EPA water quality sample and 0.033 mg/L in the EPA split sample. Both reported arsenic concentrations exceed the national primary drinking water MCL of 0.01 mg/L. Lead was detected at 0.039 mg/L in the EPA water quality sample and 0.037 mg/L in the EPA split water quality sample. Both of these lead concentrations exceed the national drinking water lead and copper rule treatment technique action level of 0.015 mg/L.

It is important to note that EPA is treating the water produced at the mine adit, and the samples in this analysis reflect conditions upstream of the treatment point. The level of reduction in metals at the treatment facility has not been evaluated by WWE. However, it does appear that there is sufficient treatment and dilution of metals for water quality in the Animas River to have returned to "pre-spill" conditions.

Sediment Data Sets

Both the EPA and WWE sediment samples were analyzed for nitrates, nitrites, ammonia, Total Kjeldahl Nitrogen (TKN), cyanide, chromium, dioxins and furans, PCBs, and radium (see Attachment C and Attachment E).

There were no detections of the above-listed analytes in the sediment samples, with the exception of radium, TKN, and one detection of chloride in the WWE sediment sample with no other chloride detections in the WWE duplicate or EPA sediment samples.

Radium-226/-228 sediment concentrations in the EPA and WWE data sets range from 0.130 picoCuries per gram (pCi/g) to 0.746 pCi/g for Radium-226 and from 0.432 pCi/g to 0.638 pCi/g for Radium-228. There is no specific national standard to evaluate radium levels in soil for human exposure. An average concentration of Radium-226/228 in soils based on sampling of 356 soil samples across 33 states in the United States is 1.1pCi/g as determined by Myrick, et al.[1] Elevated levels of radium may be encountered near coal-bearing geologic units and coal mining operations. Radium concentrations reported for this sediment sampling set do not exceed the 1.1 pCi/g national average radium concentration in soil reported in the Myrick study.

The WWE sediment samples were also analyzed for uranium isotopes; the EPA sediment sample was not analyzed for uranium. Uranium-238 was detected at 0.149 pCi/g and 0.133 pCi/g in the WWE sediment sample and WWE sediment duplicate sample, respectively. For general comparison purposes, the EPA regional screening level for residential exposure for uranium (uranium soluble salts) in soil is 230 mg/kg (or 155 pCi/g)[2]. Uranium concentrations reported for the WWE sediment samples do not exceed this soil screening threshold, recognizing that the screening level is for soil and not sediment.

Total Kjeldahl Nitrogen (TKN) is the sum of organic nitrogen, ammonia, and ammonium, and is typically used as a reporting parameter for wastewater treatment plant effluent. The EPA sediment sample result is 140 mg/kg TKN, and the EPA split sediment sample result is 450 mg/kg TKN. The WWE sediment sample result is 470 mg/kg TKN. There was no TKN detected in the WWE

[1] Myrick TE, Berven BA, Haywood FF. 1981. State Background Radiation Levels: Results of Measurements Taken During 1975-1979. Oak Ridge, TN: Oak Ridge National Laboratory.
[2] EPA Regional Screening Level Summary Table, revised June 2015.

duplicate sediment sample. For comparison, a typical TKN concentration in soil that may be found in a fertilized lawn could be expected to be between 800 mg/kg and 3,000 mg/kg[3].

The EPA sediment sample was also analyzed for the metals panel typical of EPA's ongoing sampling efforts. Arsenic was detected in the EPA sediment sample at 340 mg/kg, and in the EPA split sample at 230 milligram per kilogram (mg/kg). Both arsenic concentrations exceed the EPA regional soil screening level for residential exposure of 0.68 mg/kg but does not exceed the CDPHE-provided screening level of 4,200 mg/kg for recreational exposure developed in response to the Gold King Mine release. Lead was detected in the EPA sediment sample at 80 mg/kg and in the EPA split sample at 52 mg/kg. Neither of these lead concentrations exceed the EPA regional screening level for residential exposure of 400 mg/kg.

Summary and Conclusion

Water quality and sediment sampling results are relatively consistent between the EPA and WWE data sets. The results of the EPA and WWE sampling have no detections of cyanide, dioxins, furans, PCBs, volatiles, semivolatiles, thallium, or chromium. Radionuclides were detected in relatively low levels in both the surface water and sediment samples, at concentrations that do not exceed their respective EPA drinking water MCLs or soil screening levels for residential exposure.

The EPA water quality sample results, which include metals not analyzed by WWE, have concentrations of lead and arsenic above national drinking water standards. These sample results reflect conditions upstream of the EPA water treatment facility near the adit. Effectiveness of the water treatment facility has not been analyzed in detail by WWE, but appears to be effectively treating the adit discharge water, as water quality in the Animas River has generally returned to "pre-spill" conditions.

[3] Turner, Martha. 2005. Impacts of Lawn Fertilizers on the Environment in Austin, Texas. Austin, TX: Watershed Protection Development Review.

The EPA sediment sample result has an arsenic concentration exceeding the EPA regional soil screening level for residential exposure, but below the CDPHE-provided soil screening level for recreational exposure. The EPA sediment sample results have a lead concentration below the EPA regional screening level for residential exposure.

As expected, there are elevated concentrations of metals in the adit water and sediment samples, many of which exceed regulatory screening levels. However, the non-metal and radionuclide parameters analyzed in this report do not occur in concentrations exceeding regulatory limits.

Please feel free to contact us with any questions or comments regarding this analysis.

Very truly yours,

WRIGHT WATER ENGINEERS, INC.

By _____
Peter R. Foster, P.E.
Vice-President

Attachments:

Attachment A. Gold King Mine Adit Sampling Results Summary Table
Attachment B. WWE Field Parameter Sheet
Attachment C. WWE Sampling Laboratory Report
Attachment D. EPA Surface Water Adit Sampling Laboratory Results
Attachment E. EPA Sediment Adit Sampling Laboratory Results

ATTACHMENT A

GOLD KING MINE ADIT SAMPLING RESULTS SUMMARY TABLE

Attachment A

Gold King Mine Adit Sampling

DRAFT - Subject to Change

Analyte	Water Quality Result				Sediment Quality Result			
	EPA Sample (Test-America Denver Laboratory)	EPA Split Sample Hall Environmental Analysis Laboratory (HEAL)	WWE Sample (HEAL)	WWE - Duplicate Sample (HEAL)	EPA Sample (Test-America Denver Laboratory)	EPA Split Sample (HEAL)	WWE Sample (HEAL)	WWE - Duplicate Sample (HEAL)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ammonia	ND	ND	ND	ND	ND	ND	ND	ND
Anions - Nitrate+Nitrite as N	ND	ND	ND	ND	ND	-	-	-
Arsenic	0.044 mg/L	0.033 mg/L	-	-	340 mg/kg	230 mg/kg	-	-
Chloride	-	-	-	-	-	ND	12.9 mg/kg J	ND
Chromium	ND	ND	ND	ND	-	ND	-	-
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND
Dioxins	ND	ND	ND	ND	ND - see note 5	ND	ND	ND
Furans	ND	ND	ND	ND	ND - see note 5	ND	ND	ND
Gross Alpha Particles	-	-	-	-	-	7.91 pCi/g	-	-
Gross Beta Particles	-	-	-	-	-	3.51 pCi/g	-	-
Hexavalent Chromium	0.014 mg/L J- H see note 6	-	ND	ND	2.3 mg/kg see note 4	ND	ND	0.640 mg/kg J
Lead	0.039 mg/L	0.037 mg/L	-	-	80 mg/kg	52 mg/kg	-	-
Nitrate (as N)	0.023 mg/L UJ - see note 7	-	-	-	-	ND	ND	ND
Nitrite (as N)	0.023 mg/L UJ - see note 7	-	-	-	-	ND	ND	ND
Oxidation Reduction Potential	-	-	-	-	-	404 mV	420 mV	425 mV
PCBs	ND	ND	ND	ND	ND	ND	ND	ND
pH	-	-	-	-	-	2.71	2.76	2.84
Radium-226	-	0.229 pCi/L	0.668 pCi/L	0.599 pCi/L	-	0.130 pCi/g	0.746 pCi/g	0.592 pCi/g
Radium-228	-	0.607 pCi/L	0.890 pCi/L	0.636 pCi/L	-	0.579 pCi/g	0.432 pCi/g	0.638 pCi/g
Semivolatiles	ND	ND	ND	ND	ND	ND-see note 3	ND	ND
Sulfate	-	-	-	-	-	12,000 mg/kg	10,300 mg/kg	9,700 mg/kg
Thallium	ND	-	-	-	-	ND	ND	ND
Total Kjeldahl Nitrogen	0.29 mg/L	ND	ND	ND	140 mg/kg	450 mg/kg	470 mg/kg	ND
Uranium	-	0.0083 mg/L	.0080 mg/L	.0077 mg/L	ND	ND	ND	ND
Uranium-234	-	-	3.04 pCi/L	2.76 pCi/L	-	-	-	-
Uranium-235	-	-	0.186 pCi/L	0.232 pCi/L	-	-	-	-
Uranium-238	-	-	3.25 pCi/L	3.01 pCi/L	-	-	0.149 pCi/g	0.133 pCi/g
Volatiles	ND	ND	ND	ND	ND	ND	ND	ND

Column Notes:

(1) EPA sample collected on September 21, 2015 and analyzed by Test-America Denver laboratory on September 23 through October 6, 2015.
(2) EPA Split sample collected on September 21, 2015, provided to WWE and analyzed by Hall Environmental Analysis Laboratory (HEAL) on September 30 through October 14, 2015.
(3) WWE sample collected on September 29, 2015 and analyzed by HEAL on October 2-27, 2015.
(4) WWE Duplicate sample collected on September 29, 2015 and analyzed by HEAL on October 2-27, 2015.
(5) EPA sample collected on September 21, 2015 and analyzed by Test-America Denver laboratory on September 23 through October 6, 2015.
(6) EPA Split sample collected on September 21, 2015, provided to WWE and analyzed by HEAL on September 30 through October 14, 2015.
(7) WWE sample collected on September 29, 2015 and analyzed by HEAL on October 2-27, 2015.
(8) WWE Duplicate sample collected on September 29, 2015 and analyzed by HEAL on October 2-27, 2015.

Abbreviations:

ND = Non-detect / result value below reporting limits.
U = Analyte was analyzed for but not detected above the reported sample quantitation limit.
J = Laboratory qualifier indicating that the identification of the analyte is acceptable and the reported value is an estimate.
J- = False negative. Compound was present but not reported.
H = Hold time exceeded.
III = Unusual problems found in the data.

Additional Notes:

(1) All semivolatile compounds were ND, with exception of Benzyl Alcohol detected at 1.2 mg/kg.
(2) Hexavalent chromium minimum reporting limit for sediment is 2.3 mg/kg. Hold time was exceeded on this sample. Also qualified in the validated sample report as a false negative.
(3) No detections above reporting limits. Possible blank contamination issues. Other method analysis issues may have occurred (III qualifier).
(4) Reporting limit for hexavalent chromium in water is 0.01 mg/L. Result qualified as a false negative, and the hold time was exceeded.
(5) No detections above reporting limits. Reporting limit is 0.05 mg/L for Nitrate/Nitrite as N. Hold times exceeded.

ATTACHMENT B

WWE FIELD PARAMETER SHEET

ATTACHMENT B

WRIGHT WATER ENGINEERS, INC.
2490 West 26th Ave., Suite 100-A
Denver, Colorado 80211
Tel. (303) 480-1700

Date 9/29/2015 Sheet ____ of ____
Proj. No. GOLD KING MINE
Proj. Name 121-023-050
Des. By MD Ckd. By ____
Subject ADIT SAMPLING

SAMPLE NAME CONVENTION.

GKM_ADIT_09292015 _ W _ TIME WATER 1800
_ SED _ TIME SEDIMENT 1823
_ WD _ TIME WATER DUPLICATE 1800
_ SEDD _ TIME SEDIMENT DUPLICATE 1823

FIELD PARAMETERS 1800 9/29/2015

T 7.7°C
pH 3.42
C 1.23 mS/cm
ORP 383.4 mV
DO 7.39 mg/L

WWE YSI PROBE CALIBRATED 0900 9/29/2015

Turb 122 NTU - WESTON/EPA TURBIDITY METER

ATTACHMENT C

WWE SAMPLING LABORATORY REPORT

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

November 13, 2015

Pete Foster
La Plata County
1060 Main Ave., #104
Durango, CO 81301
TEL: (970) 382-6376
FAX

RE: Gold King Mine OrderNo.: 1510013

Dear Pete Foster:

Hall Environmental Analysis Laboratory received 5 sample(s) on 10/1/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_W_180
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-001
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS						Analyst:	**DBD**
Uranium	0.0080	0.00050		mg/L	1	10/21/2015 12:15:51 PM	A29718
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/21/2015 12:47:20 PM	R29719
SM 4500 NH3: AMMONIA						Analyst:	**MAW**
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/7/2015 12:35:00 PM	R29376
SM 4500 NORG C: TKN						Analyst:	**SRM**
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/27/2015 10:38:00 AM	21900
EPA METHOD 200.7: METALS						Analyst:	**ELS**
Chromium	ND	0.0060		mg/L	1	10/5/2015 2:28:52 PM	B29309
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1221	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1232	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1242	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1248	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1254	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Aroclor 1260	ND	1.0		µg/L	1	10/6/2015 8:36:56 AM	21605
Surr: Decachlorobiphenyl	59.2	17.7-151		%REC	1	10/6/2015 8:36:56 AM	21605
Surr: Tetrachloro-m-xylene	64.4	20.6-151		%REC	1	10/6/2015 8:36:56 AM	21605
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**DAM**
Acenaphthene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Acenaphthylene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Aniline	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Anthracene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Azobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benz(a)anthracene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzo(a)pyrene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzo(b)fluoranthene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzo(k)fluoranthene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzoic acid	ND	20		µg/L	1	10/7/2015 1:05:35 PM	21682
Benzyl alcohol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_W_180
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-001
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Butyl benzyl phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Carbazole	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4-Chloro-3-methylphenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4-Chloroaniline	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Chloronaphthalene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Chlorophenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Chrysene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Di-n-butyl phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Di-n-octyl phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Dibenzofuran	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
1,2-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
1,3-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
1,4-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Diethyl phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Dimethyl phthalate	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4-Dichlorophenol	ND	20		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4-Dimethylphenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4-Dinitrophenol	ND	20		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2,6-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Fluoranthene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Fluorene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Hexachlorobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Hexachlorobutadiene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Hexachloroethane	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Isophorone	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
1-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Methylphenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
3+4-Methylphenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
N-Nitrosodimethylamine	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_W_180
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
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Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Naphthalene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Nitroaniline	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
3-Nitroaniline	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4-Nitroaniline	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Nitrobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2-Nitrophenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
4-Nitrophenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Pentachlorophenol	ND	20		µg/L	1	10/7/2015 1:05:35 PM	21682
Phenanthrene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Phenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Pyrene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Pyridine	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/7/2015 1:05:35 PM	21682
Surr: 2-Fluorophenol	33.3	14.9-111		%REC	1	10/7/2015 1:05:35 PM	21682
Surr: Phenol-d5	66.2	11.3-108		%REC	1	10/7/2015 1:05:35 PM	21682
Surr: 2,4,6-Tribromophenol	39.4	15.7-154		%REC	1	10/7/2015 1:05:35 PM	21682
Surr: Nitrobenzene-d5	105	47.8-106		%REC	1	10/7/2015 1:05:35 PM	21682
Surr: 2-Fluorobiphenyl	97.9	21.3-123		%REC	1	10/7/2015 1:05:35 PM	21682
Surr: 4-Terphenyl-d14	51.9	14.3-135		%REC	1	10/7/2015 1:05:35 PM	21682
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Toluene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Ethylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Naphthalene	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
2-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Acetone	ND	10		µg/L	1	10/2/2015 7:42:24 PM	B29294
Bromobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Bromodichloromethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Bromoform	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Bromomethane	ND	3.0		µg/L	1	10/2/2015 7:42:24 PM	B29294

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_W_180
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-001
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
2-Butanone	ND	10		µg/L	1	10/2/2015 7:42:24 PM	B29294
Carbon disulfide	ND	10		µg/L	1	10/2/2015 7:42:24 PM	B29294
Carbon Tetrachloride	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Chlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Chloroethane	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Chloroform	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Chloromethane	ND	3.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
2-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
4-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
cis-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Dibromochloromethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Dibromomethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1-Dichloroethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1-Dichloroethene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,3-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
2,2-Dichloropropane	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Hexachlorobutadiene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
2-Hexanone	ND	10		µg/L	1	10/2/2015 7:42:24 PM	B29294
Isopropylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
4-Isopropyltoluene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
4-Methyl-2-pentanone	ND	10		µg/L	1	10/2/2015 7:42:24 PM	B29294
Methylene Chloride	ND	3.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
n-Butylbenzene	ND	3.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
n-Propylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
sec-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Styrene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
tert-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
trans-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_W_180
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-001
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Trichlorofluoromethane	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Vinyl chloride	ND	1.0		µg/L	1	10/2/2015 7:42:24 PM	B29294
Xylenes, Total	ND	1.5		µg/L	1	10/2/2015 7:42:24 PM	B29294
Surr: 1,2-Dichloroethane-d4	88.5	70-130		%REC	1	10/2/2015 7:42:24 PM	B29294
Surr: 4-Bromofluorobenzene	98.6	70-130		%REC	1	10/2/2015 7:42:24 PM	B29294
Surr: Dibromofluoromethane	88.9	70-130		%REC	1	10/2/2015 7:42:24 PM	B29294
Surr: Toluene-d8	99.1	70-130		%REC	1	10/2/2015 7:42:24 PM	B29294

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1510013-002 **Matrix:** AQUEOUS

Client Sample ID: GKM_ADIT_09292015_WD_1
Collection Date: 9/29/2015 6:00:00 PM
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS						Analyst:	**JLF**
Uranium	0.0077	0.00050		mg/L	1	10/19/2015 2:10:34 PM	21700
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/21/2015 12:59:46 PM	R29719
SM 4500 NH3: AMMONIA						Analyst:	**MAW**
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/7/2015 12:35:00 PM	R29376
SM 4500 NORG C: TKN						Analyst:	**SRM**
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/27/2015 10:38:00 AM	21900
EPA METHOD 200.7: METALS						Analyst:	**MED**
Chromium	ND	0.060		mg/L	10	10/30/2015 2:17:19 PM	21638
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1221	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1232	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1242	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1248	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1254	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Aroclor 1260	ND	1.0		µg/L	1	10/6/2015 9:22:36 AM	21605
Surr: Decachlorobiphenyl	78.0	17.7-151		%REC	1	10/6/2015 9:22:36 AM	21605
Surr: Tetrachloro-m-xylene	73.2	20.6-151		%REC	1	10/6/2015 9:22:36 AM	21605
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**DAM**
Acenaphthene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Acenaphthylene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Aniline	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Anthracene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Azobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benz(a)anthracene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzo(a)pyrene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzo(b)fluoranthene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzo(k)fluoranthene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzoic acid	ND	20		µg/L	1	10/7/2015 2:34:42 PM	21682
Benzyl alcohol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_WD_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-002
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Butyl benzyl phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Carbazole	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4-Chloro-3-methylphenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4-Chloroaniline	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Chloronaphthalene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Chlorophenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Chrysene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Di-n-butyl phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Di-n-octyl phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Dibenzofuran	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
1,2-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
1,3-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
1,4-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Diethyl phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Dimethyl phthalate	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4-Dichlorophenol	ND	20		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4-Dimethylphenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4-Dinitrophenol	ND	20		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2,6-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Fluoranthene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Fluorene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Hexachlorobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Hexachlorobutadiene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Hexachloroethane	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Isophorone	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
1-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Methylphenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
3+4-Methylphenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
N-Nitrosodimethylamine	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_WD_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-002
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Naphthalene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Nitroaniline	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
3-Nitroaniline	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4-Nitroaniline	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Nitrobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2-Nitrophenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
4-Nitrophenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Pentachlorophenol	ND	20		µg/L	1	10/7/2015 2:34:42 PM	21682
Phenanthrene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Phenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Pyrene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Pyridine	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/7/2015 2:34:42 PM	21682
Surr: 2-Fluorophenol	59.2	14.9-111		%REC	1	10/7/2015 2:34:42 PM	21682
Surr: Phenol-d5	62.8	11.3-108		%REC	1	10/7/2015 2:34:42 PM	21682
Surr: 2,4,6-Tribromophenol	65.8	15.7-154		%REC	1	10/7/2015 2:34:42 PM	21682
Surr: Nitrobenzene-d5	87.1	47.8-106		%REC	1	10/7/2015 2:34:42 PM	21682
Surr: 2-Fluorobiphenyl	81.8	21.3-123		%REC	1	10/7/2015 2:34:42 PM	21682
Surr: 4-Terphenyl-d14	44.4	14.3-135		%REC	1	10/7/2015 2:34:42 PM	21682
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Toluene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Ethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Naphthalene	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
2-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Acetone	ND	10		µg/L	1	10/2/2015 8:11:04 PM	B29294
Bromobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Bromodichloromethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Bromoform	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Bromomethane	ND	3.0		µg/L	1	10/2/2015 8:11:04 PM	B29294

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_WD_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-002
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
2-Butanone	ND	10		µg/L	1	10/2/2015 8:11:04 PM	B29294
Carbon disulfide	ND	10		µg/L	1	10/2/2015 8:11:04 PM	B29294
Carbon Tetrachloride	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Chlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Chloroethane	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Chloroform	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Chloromethane	ND	3.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
2-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
4-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
cis-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Dibromochloromethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Dibromomethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1-Dichloroethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1-Dichloroethene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,3-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
2,2-Dichloropropane	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Hexachlorobutadiene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
2-Hexanone	ND	10		µg/L	1	10/2/2015 8:11:04 PM	B29294
Isopropylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
4-Isopropyltoluene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
4-Methyl-2-pentanone	ND	10		µg/L	1	10/2/2015 8:11:04 PM	B29294
Methylene Chloride	ND	3.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
n-Butylbenzene	ND	3.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
n-Propylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
sec-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Styrene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
tert-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
trans-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_WD_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:00:00 PM
Lab ID: 1510013-002
Matrix: AQUEOUS
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Trichlorofluoromethane	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Vinyl chloride	ND	1.0		µg/L	1	10/2/2015 8:11:04 PM	B29294
Xylenes, Total	ND	1.5		µg/L	1	10/2/2015 8:11:04 PM	B29294
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	1	10/2/2015 8:11:04 PM	B29294
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	10/2/2015 8:11:04 PM	B29294
Surr: Dibromofluoromethane	97.5	70-130		%REC	1	10/2/2015 8:11:04 PM	B29294
Surr: Toluene-d8	91.6	70-130		%REC	1	10/2/2015 8:11:04 PM	B29294

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SED_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-003
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst:	**DJF**
Percent Moisture	85	1.0		wt%	1	10/5/2015 4:18:00 PM	R29328
AMMONIA AS N						Analyst:	**SRM**
Nitrogen, Ammonia	ND	250		mg/Kg-dry	1.5	10/16/2015 11:15:00 AM	R29640
METHOD 4500-N-ORG C: TKN						Analyst:	**SRM**
Nitrogen, Total Kjeldahl	470	330		mg/Kg-dry	1	10/15/2015 9:24:00 AM	21855
EPA METHOD 6010B: SOIL METALS						Analyst:	**MED**
Thallium	ND	17		mg/Kg-dry	1	10/8/2015 11:04:08 AM	21718
Uranium	ND	33		mg/Kg-dry	1	10/8/2015 11:04:08 AM	21718
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1221	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1232	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1242	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1248	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1254	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Aroclor 1260	ND	0.13		mg/Kg-dry	1	10/6/2015 7:20:56 PM	21655
Surr: Decachlorobiphenyl	76.8	25.2-134		%REC	1	10/6/2015 7:20:56 PM	21655
Surr: Tetrachloro-m-xylene	87.6	17.4-148		%REC	1	10/6/2015 7:20:56 PM	21655
EPA METHOD 8260B: VOLATILES						Analyst:	**DJF**
Benzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Toluene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Ethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Methyl tert-butyl ether (MTBE)	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2,4-Trimethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,3,5-Trimethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2-Dichloroethane (EDC)	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2-Dibromoethane (EDB)	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Naphthalene	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1-Methylnaphthalene	ND	1.3		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
2-Methylnaphthalene	ND	1.3		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Acetone	ND	4.8		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Bromobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Bromodichloromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Bromoform	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Bromomethane	ND	0.96		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
2-Butanone	ND	3.2		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Carbon disulfide	ND	3.2		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665

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Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SED_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-003
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Carbon tetrachloride	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Chlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Chloroethane	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Chloroform	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Chloromethane	ND	0.96		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
2-Chlorotoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
4-Chlorotoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
cis-1,2-DCE	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
cis-1,3-Dichloropropene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2-Dibromo-3-chloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Dibromochloromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Dibromomethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,3-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,4-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Dichlorodifluoromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1-Dichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1-Dichloroethene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2-Dichloropropane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,3-Dichloropropane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
2,2-Dichloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1-Dichloropropene	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Hexachlorobutadiene	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
2-Hexanone	ND	3.2		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Isopropylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
4-Isopropyltoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
4-Methyl-2-pentanone	ND	3.2		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Methylene chloride	ND	0.96		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
n-Butylbenzene	ND	0.96		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
n-Propylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
sec-Butylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Styrene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
tert-Butylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1,1,2-Tetrachloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1,2,2-Tetrachloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Tetrachloroethene (PCE)	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
trans-1,2-DCE	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
trans-1,3-Dichloropropene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2,3-Trichlorobenzene	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SED_1
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-003
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,2,4-Trichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1,1-Trichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,1,2-Trichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Trichloroethene (TCE)	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Trichlorofluoromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
1,2,3-Trichloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Vinyl chloride	ND	0.32		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Xylenes, Total	ND	0.64		mg/Kg-dry	1	10/6/2015 4:58:20 PM	21665
Surr: Dibromofluoromethane	108	70-130		%REC	1	10/6/2015 4:58:20 PM	21665
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%REC	1	10/6/2015 4:58:20 PM	21665
Surr: Toluene-d8	101	70-130		%REC	1	10/6/2015 4:58:20 PM	21665
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	10/6/2015 4:58:20 PM	21665

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SEDD_
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-004
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst:	**DJF**
Percent Moisture	85	1.0		wt%	1	10/5/2015 4:18:00 PM	R29328
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Chloride	ND	9.8		mg/Kg-dry	1	10/19/2015 3:13:44 PM	21908
Nitrogen, Nitrite (As N)	ND	2.0		mg/Kg-dry	1	10/19/2015 3:13:44 PM	21908
Nitrogen, Nitrate (As N)	ND	2.0		mg/Kg-dry	1	10/19/2015 3:13:44 PM	21908
Sulfate	9700	200		mg/Kg-dry	20	10/19/2015 3:26:09 PM	21908
AMMONIA AS N						Analyst:	**SRM**
Nitrogen, Ammonia	ND	160		mg/Kg-dry	1	10/16/2015 11:15:00 AM	R29640
METHOD 4500-N-ORG C: TKN						Analyst:	**SRM**
Nitrogen, Total Kjeldahl	ND	410		mg/Kg-dry	1	10/15/2015 9:24:00 AM	21855
EPA METHOD 6010B: SOIL METALS						Analyst:	**MED**
Thallium	ND	16		mg/Kg-dry	1	10/8/2015 11:05:59 AM	21718
Uranium	ND	33		mg/Kg-dry	1	10/8/2015 11:05:59 AM	21718
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1221	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1232	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1242	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1248	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1254	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Aroclor 1260	ND	0.13		mg/Kg-dry	1	10/6/2015 8:07:03 PM	21655
Surr: Decachlorobiphenyl	82.0	25.2-134		%REC	1	10/6/2015 8:07:03 PM	21655
Surr: Tetrachloro-m-xylene	79.6	17.4-148		%REC	1	10/6/2015 8:07:03 PM	21655
EPA METHOD 8260B: VOLATILES						Analyst:	**DJF**
Benzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Toluene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Ethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Methyl tert-butyl ether (MTBE)	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2,4-Trimethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,3,5-Trimethylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2-Dichloroethane (EDC)	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2-Dibromoethane (EDB)	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Naphthalene	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1-Methylnaphthalene	ND	1.3		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
2-Methylnaphthalene	ND	1.3		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Acetone	ND	4.8		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SEDD_
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-004
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Bromobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Bromodichloromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Bromoform	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Bromomethane	ND	0.96		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
2-Butanone	ND	3.2		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Carbon disulfide	ND	3.2		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Carbon tetrachloride	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Chlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Chloroethane	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Chloroform	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Chloromethane	ND	0.96		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
2-Chlorotoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
4-Chlorotoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
cis-1,2-DCE	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
cis-1,3-Dichloropropene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2-Dibromo-3-chloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Dibromochloromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Dibromomethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,3-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,4-Dichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Dichlorodifluoromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1-Dichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1-Dichloroethene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2-Dichloropropane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,3-Dichloropropane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
2,2-Dichloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1-Dichloropropene	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Hexachlorobutadiene	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
2-Hexanone	ND	3.2		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Isopropylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
4-Isopropyltoluene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
4-Methyl-2-pentanone	ND	3.2		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Methylene chloride	ND	0.96		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
n-Butylbenzene	ND	0.96		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
n-Propylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
sec-Butylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Styrene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
tert-Butylbenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665

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
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: GKM_ADIT_09292015_SEDD_
Project: Gold King Mine
Collection Date: 9/29/2015 6:23:00 PM
Lab ID: 1510013-004
Matrix: SOIL
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1,1,2-Tetrachloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1,2,2-Tetrachloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Tetrachloroethene (PCE)	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
trans-1,2-DCE	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
trans-1,3-Dichloropropene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2,3-Trichlorobenzene	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2,4-Trichlorobenzene	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1,1-Trichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,1,2-Trichloroethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Trichloroethene (TCE)	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Trichlorofluoromethane	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
1,2,3-Trichloropropane	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Vinyl chloride	ND	0.32		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Xylenes, Total	ND	0.64		mg/Kg-dry	1	10/6/2015 6:20:46 PM	21665
Surr: Dibromofluoromethane	114	70-130		%REC	1	10/6/2015 6:20:46 PM	21665
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	10/6/2015 6:20:46 PM	21665
Surr: Toluene-d8	97.4	70-130		%REC	1	10/6/2015 6:20:46 PM	21665
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	10/6/2015 6:20:46 PM	21665

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Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1510013-005
Matrix: TRIP BLANK
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Toluene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Ethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Naphthalene	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
2-Methylnaphthalene	ND	4.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Acetone	ND	10		µg/L	1	10/2/2015 8:39:45 PM	B29294
Bromobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Bromodichloromethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Bromoform	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Bromomethane	ND	3.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
2-Butanone	ND	10		µg/L	1	10/2/2015 8:39:45 PM	B29294
Carbon disulfide	ND	10		µg/L	1	10/2/2015 8:39:45 PM	B29294
Carbon Tetrachloride	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Chlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Chloroethane	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Chloroform	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Chloromethane	ND	3.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
2-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
4-Chlorotoluene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
cis-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Dibromochloromethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Dibromomethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1-Dichloroethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1-Dichloroethene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,3-Dichloropropane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
2,2-Dichloropropane	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294

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Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1510013-005
Matrix: TRIP BLANK
Received Date: 10/1/2015 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Hexachlorobutadiene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
2-Hexanone	ND	10		µg/L	1	10/2/2015 8:39:45 PM	B29294
Isopropylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
4-Isopropyltoluene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
4-Methyl-2-pentanone	ND	10		µg/L	1	10/2/2015 8:39:45 PM	B29294
Methylene Chloride	ND	3.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
n-Butylbenzene	ND	3.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
n-Propylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
sec-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Styrene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
tert-Butylbenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
trans-1,2-DCE	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Trichlorofluoromethane	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Vinyl chloride	ND	1.0		µg/L	1	10/2/2015 8:39:45 PM	B29294
Xylenes, Total	ND	1.5		µg/L	1	10/2/2015 8:39:45 PM	B29294
Surr: 1,2-Dichloroethane-d4	89.2	70-130		%REC	1	10/2/2015 8:39:45 PM	B29294
Surr: 4-Bromofluorobenzene	97.5	70-130		%REC	1	10/2/2015 8:39:45 PM	B29294
Surr: Dibromofluoromethane	93.3	70-130		%REC	1	10/2/2015 8:39:45 PM	B29294
Surr: Toluene-d8	91.0	70-130		%REC	1	10/2/2015 8:39:45 PM	B29294

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ANALYTICAL REPORT

October 14, 2015

Hall Environmental Analysis Laboratory

Sample Delivery Group: L792697

Samples Received: 10/06/2015

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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1510013-001F GKM_ADIT_09292015_W_1800 L792697-01 WW

Collected by	Collected date/time	Received date/time
	09/29/15 18:00	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 4500CN E-2011	WG820698	1	10/09/15 09:42	10/09/15 12:44	ASK

1510013-001G GKM_ADIT_09292015_W_1800 L792697-02 WW

Collected by	Collected date/time	Received date/time
	09/29/15 18:00	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 3500Cr C-2011	WG820025	1	10/08/15 18:59	10/08/15 18:59	MCG

1510013-002F GKM_ADIT_09292015_WD_1800 L792697-03 WW

Collected by	Collected date/time	Received date/time
	09/29/15 18:00	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 4500CN E-2011	WG820698	1	10/09/15 09:42	10/09/15 12:45	ASK

1510013-002G GKM_ADIT_09292015_WD_1800 L792697-04 WW

Collected by	Collected date/time	Received date/time
	09/29/15 18:00	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 3500Cr C-2011	WG821364	1	10/12/15 20:27	10/12/15 20:27	MCG

1510013-003B GKM_ADIT_09292015_SED_1823 L792697-05 Solid

Collected by	Collected date/time	Received date/time
	09/29/15 18:23	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG821054	1	10/12/15 02:16	10/12/15 14:48	KMP
Wet Chemistry by Method 9012B	WG820363	1	10/08/15 13:45	10/08/15 16:07	ASK

1510013-004B GKM_ADIT_09292015_SED_1823 L792697-06 Solid

Collected by	Collected date/time	Received date/time
	09/29/15 18:23	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG821054	1	10/12/15 02:16	10/12/15 15:13	KMP
Wet Chemistry by Method 9012B	WG820363	1	10/08/15 13:45	10/08/15 16:14	ASK

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Sample Handling and Receiving

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

ESC Sample ID	Project Sample ID	Method
L792697-02	1510013-001G GKM_ADIT_09292015_W_1800	3500Cr C-2011

Wet Chemistry by Method 4500CN E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	U		0.00180	0.00500	1	10/09/2015 12:44	WG820698

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.000150	0.000500	1	10/08/2015 18:59	WG820025

Wet Chemistry by Method 4500CN E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	U		0.00180	0.00500	1	10/09/2015 12:45	WG820698

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.000150	0.000500	1	10/12/2015 20:27	WG821364

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	10/08/2015 16:07	WG820363

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00642	0.0330	1	10/12/2015 14:48	WG821054
Acenaphthylene	U		0.00671	0.0330	1	10/12/2015 14:48	WG821054
Anthracene	U		0.00632	0.0330	1	10/12/2015 14:48	WG821054
Benzidine	U		0.0637	0.333	1	10/12/2015 14:48	WG821054
Benzo(a)anthracene	U		0.00428	0.0330	1	10/12/2015 14:48	WG821054
Benzo(b)fluoranthene	U		0.00695	0.0330	1	10/12/2015 14:48	WG821054
Benzo(k)fluoranthene	U		0.00582	0.0330	1	10/12/2015 14:48	WG821054
Benzo(g,h,i)perylene	U		0.00721	0.0330	1	10/12/2015 14:48	WG821054
Benzo(a)pyrene	U		0.00548	0.0330	1	10/12/2015 14:48	WG821054
Bis(2-chlorethoxy)methane	U		0.00770	0.333	1	10/12/2015 14:48	WG821054
Bis(2-chloroethyl)ether	U		0.00896	0.333	1	10/12/2015 14:48	WG821054
Bis(2-chloroisopropyl)ether	U		0.00760	0.333	1	10/12/2015 14:48	WG821054
4-Bromophenyl-phenylether	U		0.0114	0.333	1	10/12/2015 14:48	WG821054
2-Chloronaphthalene	U		0.00639	0.0330	1	10/12/2015 14:48	WG821054
4-Chlorophenyl-phenylether	U		0.00627	0.333	1	10/12/2015 14:48	WG821054
Chrysene	U		0.00555	0.0330	1	10/12/2015 14:48	WG821054
Dibenz(a,h)anthracene	U		0.00821	0.0330	1	10/12/2015 14:48	WG821054
3,3-Dichlorobenzidine	U		0.0794	0.333	1	10/12/2015 14:48	WG821054
2,4-Dinitrotoluene	U		0.00607	0.333	1	10/12/2015 14:48	WG821054
2,6-Dinitrotoluene	U		0.00737	0.333	1	10/12/2015 14:48	WG821054
Fluoranthene	U		0.00496	0.0330	1	10/12/2015 14:48	WG821054
Fluorene	U		0.00682	0.0330	1	10/12/2015 14:48	WG821054
Hexachlorobenzene	U		0.00856	0.333	1	10/12/2015 14:48	WG821054
Hexachloro-1,3-butadiene	U	J3	0.0100	0.333	1	10/12/2015 14:48	WG821054
Hexachlorocyclopentadiene	U		0.0587	0.333	1	10/12/2015 14:48	WG821054
Hexachloroethane	U	J3	0.0134	0.333	1	10/12/2015 14:48	WG821054
Indeno(1,2,3-cd)pyrene	U		0.00772	0.0330	1	10/12/2015 14:48	WG821054
Isophorone	U		0.00522	0.333	1	10/12/2015 14:48	WG821054
Naphthalene	U		0.00889	0.0330	1	10/12/2015 14:48	WG821054
Nitrobenzene	U		0.00695	0.333	1	10/12/2015 14:48	WG821054
n-Nitrosodimethylamine	U	J3	0.0647	0.333	1	10/12/2015 14:48	WG821054
n-Nitrosodiphenylamine	U		0.00594	0.333	1	10/12/2015 14:48	WG821054
n-Nitrosodi-n-propylamine	U		0.00906	0.333	1	10/12/2015 14:48	WG821054
Phenanthrene	U		0.00528	0.0330	1	10/12/2015 14:48	WG821054
Benzylbutyl phthalate	U		0.0103	0.333	1	10/12/2015 14:48	WG821054
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333	1	10/12/2015 14:48	WG821054
Di-n-butyl phthalate	U		0.0109	0.333	1	10/12/2015 14:48	WG821054
Diethyl phthalate	U		0.00691	0.333	1	10/12/2015 14:48	WG821054
Dimethyl phthalate	U		0.00540	0.333	1	10/12/2015 14:48	WG821054
Di-n-octyl phthalate	U		0.00907	0.333	1	10/12/2015 14:48	WG821054
Pyrene	U		0.0123	0.0330	1	10/12/2015 14:48	WG821054
1,2,4-Trichlorobenzene	U		0.00876	0.333	1	10/12/2015 14:48	WG821054
4-Chloro-3-methylphenol	U		0.00477	0.333	1	10/12/2015 14:48	WG821054
2-Chlorophenol	U		0.00831	0.333	1	10/12/2015 14:48	WG821054
2,4-Dichlorophenol	U		0.00746	0.333	1	10/12/2015 14:48	WG821054
2,4-Dimethylphenol	U		0.0471	0.333	1	10/12/2015 14:48	WG821054
4,6-Dinitro-2-methylphenol	U		0.124	0.333	1	10/12/2015 14:48	WG821054
2,4-Dinitrophenol	U		0.0980	0.333	1	10/12/2015 14:48	WG821054
2-Nitrophenol	U		0.0130	0.333	1	10/12/2015 14:48	WG821054
4-Nitrophenol	U		0.0525	0.333	1	10/12/2015 14:48	WG821054

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Pentachlorophenol	U		0.0480	0.333	1	10/12/2015 14:48	WG821054
Phenol	U		0.00695	0.333	1	10/12/2015 14:48	WG821054
2,4,6-Trichlorophenol	U		0.00779	0.333	1	10/12/2015 14:48	WG821054
(S) 2-Fluorophenol	*86.3*			*21.1-116*		*10/12/2015 14:48*	WG821054
(S) Phenol-d5	*78.4*			*26.3-121*		*10/12/2015 14:48*	WG821054
(S) Nitrobenzene-d5	*87.2*			*21.9-129*		*10/12/2015 14:48*	WG821054
(S) 2-Fluorobiphenyl	*88.8*			*34.9-129*		*10/12/2015 14:48*	WG821054
(S) 2,4,6-Tribromophenol	*88.0*			*21.6-142*		*10/12/2015 14:48*	WG821054
(S) p-Terphenyl-d14	*77.4*			*21.5-128*		*10/12/2015 14:48*	WG821054

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	10/08/2015 16:14	WG820363

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00642	0.0330	1	10/12/2015 15:13	WG821054
Acenaphthylene	U		0.00671	0.0330	1	10/12/2015 15:13	WG821054
Anthracene	U		0.00632	0.0330	1	10/12/2015 15:13	WG821054
Benzidine	U		0.0637	0.333	1	10/12/2015 15:13	WG821054
Benzo(a)anthracene	U		0.00428	0.0330	1	10/12/2015 15:13	WG821054
Benzo(b)fluoranthene	U		0.00695	0.0330	1	10/12/2015 15:13	WG821054
Benzo(k)fluoranthene	U		0.00582	0.0330	1	10/12/2015 15:13	WG821054
Benzo(g,h,i)perylene	U		0.00721	0.0330	1	10/12/2015 15:13	WG821054
Benzo(a)pyrene	U		0.00548	0.0330	1	10/12/2015 15:13	WG821054
Bis(2-chlorethoxy)methane	U		0.00770	0.333	1	10/12/2015 15:13	WG821054
Bis(2-chloroethyl)ether	U		0.00896	0.333	1	10/12/2015 15:13	WG821054
Bis(2-chloroisopropyl)ether	U		0.00760	0.333	1	10/12/2015 15:13	WG821054
4-Bromophenyl-phenylether	U		0.0114	0.333	1	10/12/2015 15:13	WG821054
2-Chloronaphthalene	U		0.00639	0.0330	1	10/12/2015 15:13	WG821054
4-Chlorophenyl-phenylether	U		0.00627	0.333	1	10/12/2015 15:13	WG821054
Chrysene	U		0.00555	0.0330	1	10/12/2015 15:13	WG821054
Dibenz(a,h)anthracene	U		0.00821	0.0330	1	10/12/2015 15:13	WG821054
3,3-Dichlorobenzidine	U		0.0794	0.333	1	10/12/2015 15:13	WG821054
2,4-Dinitrotoluene	U		0.00607	0.333	1	10/12/2015 15:13	WG821054
2,6-Dinitrotoluene	U		0.00737	0.333	1	10/12/2015 15:13	WG821054
Fluoranthene	U		0.00496	0.0330	1	10/12/2015 15:13	WG821054
Fluorene	U		0.00682	0.0330	1	10/12/2015 15:13	WG821054
Hexachlorobenzene	U		0.00856	0.333	1	10/12/2015 15:13	WG821054
Hexachloro-1,3-butadiene	U	J3	0.0100	0.333	1	10/12/2015 15:13	WG821054
Hexachlorocyclopentadiene	U		0.0587	0.333	1	10/12/2015 15:13	WG821054
Hexachloroethane	U	J3	0.0134	0.333	1	10/12/2015 15:13	WG821054
Indeno(1,2,3-cd)pyrene	U		0.00772	0.0330	1	10/12/2015 15:13	WG821054
Isophorone	U		0.00522	0.333	1	10/12/2015 15:13	WG821054
Naphthalene	U		0.00889	0.0330	1	10/12/2015 15:13	WG821054
Nitrobenzene	U		0.00695	0.333	1	10/12/2015 15:13	WG821054
n-Nitrosodimethylamine	U	J3	0.0647	0.333	1	10/12/2015 15:13	WG821054
n-Nitrosodiphenylamine	U		0.00594	0.333	1	10/12/2015 15:13	WG821054
n-Nitrosodi-n-propylamine	U		0.00906	0.333	1	10/12/2015 15:13	WG821054
Phenanthrene	U		0.00528	0.0330	1	10/12/2015 15:13	WG821054
Benzylbutyl phthalate	U		0.0103	0.333	1	10/12/2015 15:13	WG821054
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333	1	10/12/2015 15:13	WG821054
Di-n-butyl phthalate	U		0.0109	0.333	1	10/12/2015 15:13	WG821054
Diethyl phthalate	U		0.00691	0.333	1	10/12/2015 15:13	WG821054
Dimethyl phthalate	U		0.00540	0.333	1	10/12/2015 15:13	WG821054
Di-n-octyl phthalate	U		0.00907	0.333	1	10/12/2015 15:13	WG821054
Pyrene	U		0.0123	0.0330	1	10/12/2015 15:13	WG821054
1,2,4-Trichlorobenzene	U		0.00876	0.333	1	10/12/2015 15:13	WG821054
4-Chloro-3-methylphenol	U		0.00477	0.333	1	10/12/2015 15:13	WG821054
2-Chlorophenol	U		0.00831	0.333	1	10/12/2015 15:13	WG821054
2,4-Dichlorophenol	U		0.00746	0.333	1	10/12/2015 15:13	WG821054
2,4-Dimethylphenol	U		0.0471	0.333	1	10/12/2015 15:13	WG821054
4,6-Dinitro-2-methylphenol	U		0.124	0.333	1	10/12/2015 15:13	WG821054
2,4-Dinitrophenol	U		0.0980	0.333	1	10/12/2015 15:13	WG821054
2-Nitrophenol	U		0.0130	0.333	1	10/12/2015 15:13	WG821054
4-Nitrophenol	U		0.0525	0.333	1	10/12/2015 15:13	WG821054

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Pentachlorophenol	U		0.0480	0.333	1	10/12/2015 15:13	WG821054
Phenol	U		0.00695	0.333	1	10/12/2015 15:13	WG821054
2,4,6-Trichlorophenol	U		0.00779	0.333	1	10/12/2015 15:13	WG821054
(S) 2-Fluorophenol	*87.0*			*21.1-116*		*10/12/2015 15:13*	WG821054
(S) Phenol-d5	*80.5*			*26.3-121*		*10/12/2015 15:13*	WG821054
(S) Nitrobenzene-d5	*88.3*			*21.9-129*		*10/12/2015 15:13*	WG821054
(S) 2-Fluorobiphenyl	*90.5*			*34.9-129*		*10/12/2015 15:13*	WG821054
(S) 2,4,6-Tribromophenol	*87.1*			*21.6-142*		*10/12/2015 15:13*	WG821054
(S) p-Terphenyl-d14	*81.4*			*21.5-128*		*10/12/2015 15:13*	WG821054

Method Blank (MB)

(MB) 10/08/15 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/08/15 17:23 • (LCSD) 10/08/15 17:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.00200	0.00200	0.00200	100	100	90.0-110			0.000	20

L792915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/08/15 19:24 • (MS) 10/08/15 19:32 • (MSD) 10/08/15 19:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	0.00170	0.0556	0.0562	108	109	1	90.0-110			1.00	20

Method Blank (MB)

(MB) 10/12/15 19:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L792697-04 Original Sample (OS) • Duplicate (DUP)

(OS) 10/12/15 20:27 • (DUP) 10/12/15 20:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

L793253-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/12/15 22:51 • (DUP) 10/12/15 22:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 19:26 • (LCSD) 10/12/15 19:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.00200	0.00200	0.00200	100	100	90.0-110			0.000	20

L793258-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 21:08 • (MS) 10/12/15 21:16 • (MSD) 10/12/15 21:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	ND	0.0525	0.0525	105	105	1	90.0-110			0.000	20

Method Blank (MB)

(MB) 10/09/15 12:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L792897-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/09/15 12:53 • (DUP) 10/09/15 12:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L788844-02 Original Sample (OS) • Duplicate (DUP)

(OS) 10/09/15 12:39 • (DUP) 10/09/15 12:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/09/15 12:34 • (LCSD) 10/09/15 12:35

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.102	0.102	102	102	90.0-110			0.000	20

L792697-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/09/15 12:45 • (MS) 10/09/15 12:46 • (MSD) 10/09/15 12:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.200	ND	0.185	0.185	92.5	92.5	1	90.0-110			0.000	20

Method Blank (MB)

(MB) 10/08/15 15:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Cyanide	U		0.0390	0.250

L792697-05 Original Sample (OS) • Duplicate (DUP)

(OS) 10/08/15 16:07 • (DUP) 10/08/15 16:08

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L792697-06 Original Sample (OS) • Duplicate (DUP)

(OS) 10/08/15 16:14 • (DUP) 10/08/15 16:15

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/08/15 15:54 • (LCSD) 10/08/15 15:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	53.9	57.4	49.4	106	91.7	50.0-150			15.0	20

L792009-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/08/15 16:11 • (MS) 10/08/15 16:12 • (MSD) 10/08/15 16:13

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	3.33	0.0762	3.32	3.30	97.4	96.8	1	80.0-120			0.604	20

Method Blank (MB)

(MB) 10/12/15 14:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00642	0.0330
Acenaphthylene	U		0.00671	0.0330
Anthracene	U		0.00632	0.0330
Benzidine	U		0.0637	0.333
Benzo(a)anthracene	U		0.00428	0.0330
Benzo(b)fluoranthene	U		0.00695	0.0330
Benzo(k)fluoranthene	U		0.00582	0.0330
Benzo(g,h,i)perylene	U		0.00721	0.0330
Benzo(a)pyrene	U		0.00548	0.0330
Bis(2-chlorethoxy)methane	U		0.00770	0.333
Bis(2-chloroethyl)ether	U		0.00896	0.333
Bis(2-chloroisopropyl)ether	U		0.00760	0.333
4-Bromophenyl-phenylether	U		0.0114	0.333
2-Chloronaphthalene	U		0.00639	0.0330
4-Chlorophenyl-phenylether	U		0.00627	0.333
Chrysene	U		0.00555	0.0330
Dibenz(a,h)anthracene	U		0.00821	0.0330
3,3-Dichlorobenzidine	U		0.0794	0.333
2,4-Dinitrotoluene	U		0.00607	0.333
2,6-Dinitrotoluene	U		0.00737	0.333
Fluoranthene	U		0.00496	0.0330
Fluorene	U		0.00682	0.0330
Hexachlorobenzene	U		0.00856	0.333
Hexachloro-1,3-butadiene	U		0.0100	0.333
Hexachlorocyclopentadiene	U		0.0587	0.333
Hexachloroethane	U		0.0134	0.333
Indeno(1,2,3-cd)pyrene	U		0.00772	0.0330
Isophorone	U		0.00522	0.333
Naphthalene	U		0.00889	0.0330
Nitrobenzene	U		0.00695	0.333
n-Nitrosodimethylamine	U		0.0647	0.333
n-Nitrosodiphenylamine	U		0.00594	0.333
n-Nitrosodi-n-propylamine	U		0.00906	0.333
Phenanthrene	U		0.00528	0.0330
Benzylbutyl phthalate	U		0.0103	0.333
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333

Method Blank (MB)

(MB) 10/12/15 14:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Di-n-butyl phthalate	U		0.0109	0.333
Diethyl phthalate	U		0.00691	0.333
Dimethyl phthalate	U		0.00540	0.333
Di-n-octyl phthalate	U		0.00907	0.333
Pyrene	U		0.0123	0.0330
1,2,4-Trichlorobenzene	U		0.00876	0.333
4-Chloro-3-methylphenol	U		0.00477	0.333
2-Chlorophenol	U		0.00831	0.333
2,4-Dichlorophenol	U		0.00746	0.333
2,4-Dimethylphenol	U		0.0471	0.333
4,6-Dinitro-2-methylphenol	U		0.124	0.333
2,4-Dinitrophenol	U		0.0980	0.333
2-Nitrophenol	U		0.0130	0.333
4-Nitrophenol	U		0.0525	0.333
Pentachlorophenol	U		0.0480	0.333
Phenol	U		0.00695	0.333
2,4,6-Trichlorophenol	U		0.00779	0.333
(S) Nitrobenzene-d5	*84.6*		*21.9-129*	
(S) 2-Fluorobiphenyl	*88.4*		*34.9-129*	
(S) p-Terphenyl-d14	*75.5*		*21.5-128*	
(S) Phenol-d5	*83.0*		*26.3-121*	
(S) 2-Fluorophenol	*87.0*		*21.1-116*	
(S) 2,4,6-Tribromophenol	*84.3*		*21.6-142*	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 13:33 • (LCSD) 10/12/15 13:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	0.594	0.549	89.1	82.2	48.9-107			7.95	20
Acenaphthylene	0.667	0.614	0.552	92.0	82.7	49.2-111			10.6	20
Anthracene	0.667	0.638	0.558	95.7	83.6	52.0-112			13.4	20
Benzidine	0.667	0.0916	0.0759	13.7	11.4	0.000-48.0			18.7	40
Benzo(a)anthracene	0.667	0.622	0.542	93.3	81.3	52.3-106			13.8	20
Benzo(b)fluoranthene	0.667	0.622	0.546	93.2	81.9	51.3-106			12.9	20
Benzo(k)fluoranthene	0.667	0.575	0.513	86.3	77.0	52.9-107			11.4	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 13:33 • (LCSD) 10/12/15 13:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(g,h,i)perylene	0.667	0.609	0.536	91.3	80.4	45.8-108			12.7	20
Benzo(a)pyrene	0.667	0.612	0.551	91.8	82.5	51.9-106			10.6	20
Bis(2-chlorethoxy)methane	0.667	0.561	0.504	84.1	75.6	44.9-108			10.6	20
Bis(2-chloroethyl)ether	0.667	0.514	0.421	77.0	63.2	32.5-112			19.7	26
Bis(2-chloroisopropyl)ether	0.667	0.555	0.491	83.3	73.6	40.4-99.0			12.3	20.7
4-Bromophenyl-phenylether	0.667	0.608	0.513	91.2	76.9	51.4-110			17.0	20
2-Chloronaphthalene	0.667	0.623	0.557	93.4	83.5	47.1-105			11.3	20
4-Chlorophenyl-phenylether	0.667	0.563	0.512	84.5	76.7	48.1-108			9.66	20
Chrysene	0.667	0.603	0.528	90.4	79.2	54.4-110			13.2	20
Dibenz(a,h)anthracene	0.667	0.606	0.528	90.8	79.2	45.7-111			13.7	20
3,3-Dichlorobenzidine	0.667	0.560	0.500	84.0	75.0	21.0-101			11.4	22
2,4-Dinitrotoluene	0.667	0.650	0.604	97.5	90.6	53.0-112			7.36	20
2,6-Dinitrotoluene	0.667	0.676	0.589	101	88.4	51.6-110			13.7	20
Fluoranthene	0.667	0.619	0.540	92.7	80.9	53.7-110			13.6	20
Fluorene	0.667	0.590	0.541	88.5	81.1	51.1-109			8.79	20
Hexachlorobenzene	0.667	0.570	0.510	85.5	76.5	43.2-104			11.1	20.1
Hexachloro-1,3-butadiene	0.667	0.574	0.468	86.1	70.1	41.5-112		J3	20.4	20
Hexachlorocyclopentadiene	0.667	0.411	0.376	61.7	56.3	13.5-123			9.07	20.7
Hexachloroethane	0.667	0.573	0.443	85.9	66.4	36.2-103		J3	25.6	22.7
Indeno(1,2,3-cd)pyrene	0.667	0.610	0.535	91.4	80.2	47.5-109			13.1	20
Isophorone	0.667	0.655	0.594	98.2	89.0	28.8-104			9.78	20
Naphthalene	0.667	0.557	0.486	83.5	72.8	43.4-103			13.7	20
Nitrobenzene	0.667	0.621	0.538	93.1	80.6	40.7-109			14.4	21
n-Nitrosodimethylamine	0.667	0.472	0.359	70.8	53.8	18.1-122		J3	27.4	23.5
n-Nitrosodiphenylamine	0.667	0.615	0.522	92.3	78.2	48.8-107			16.4	20
n-Nitrosodi-n-propylamine	0.667	0.608	0.548	91.2	82.2	43.3-109			10.4	20
Phenanthrene	0.667	0.624	0.538	93.6	80.7	51.6-107			14.8	20
Benzylbutyl phthalate	0.667	0.714	0.629	107	94.3	47.5-115			12.7	20
Bis(2-ethylhexyl)phthalate	0.667	0.736	0.628	110	94.2	48.1-116			15.8	20.5
Di-n-butyl phthalate	0.667	0.708	0.612	106	91.7	49.7-113			14.6	20
Diethyl phthalate	0.667	0.663	0.599	99.4	89.8	52.0-112			10.1	20
Dimethyl phthalate	0.667	0.661	0.596	99.2	89.4	51.4-108			10.4	20
Di-n-octyl phthalate	0.667	0.744	0.641	111	96.1	49.6-112			14.8	22
Pyrene	0.667	0.596	0.528	89.4	79.2	47.1-108			12.1	20
1,2,4-Trichlorobenzene	0.667	0.545	0.449	81.7	67.4	39.8-100			19.3	20
4-Chloro-3-methylphenol	0.667	0.657	0.602	98.5	90.2	51.1-113			8.78	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 13:33 • (LCSD) 10/12/15 13:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Chlorophenol	0.667	0.572	0.475	85.8	71.2	40.8-103			18.7	20
2,4-Dichlorophenol	0.667	0.619	0.556	92.8	83.4	46.2-109			10.6	20
2,4-Dimethylphenol	0.667	0.657	0.577	98.5	86.4	42.2-110			13.1	20
4,6-Dinitro-2-methylphenol	0.667	0.604	0.563	90.6	84.3	23.1-119			7.15	23.7
2,4-Dinitrophenol	0.667	0.447	0.417	67.0	62.5	10.0-105			6.89	36.5
2-Nitrophenol	0.667	0.656	0.558	98.3	83.7	44.2-113			16.0	20.9
4-Nitrophenol	0.667	0.617	0.580	92.4	87.0	34.8-109			6.08	20
Pentachlorophenol	0.667	0.630	0.557	94.5	83.5	16.2-102			12.4	22.9
Phenol	0.667	0.593	0.508	88.9	76.2	41.5-106			15.3	20
2,4,6-Trichlorophenol	0.667	0.620	0.579	93.0	86.7	44.4-108			6.97	20
(S) Nitrobenzene-d5				*95.8*	*79.0*	*21.9-129*				
(S) 2-Fluorobiphenyl				*92.6*	*84.4*	*34.9-129*				
(S) p-Terphenyl-d14				*83.2*	*73.1*	*21.5-128*				
(S) Phenol-d5				*85.0*	*75.4*	*26.3-121*				
(S) 2-Fluorophenol				*91.6*	*72.6*	*21.1-116*				
(S) 2,4,6-Tribromophenol				*97.9*	*86.6*	*21.6-142*				

L793580-60 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 20:10 • (MS) 10/12/15 20:35 • (MSD) 10/12/15 21:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	ND	0.589	0.526	88.4	78.9	1	32.2-134			11.3	27.3
Acenaphthylene	0.667	ND	0.610	0.547	91.4	81.9	1	38.7-129			10.9	25.9
Anthracene	0.667	ND	0.605	0.564	90.7	84.5	1	32.3-137			7.08	28.4
Benzidine	0.667	ND	0.149	0.129	22.3	19.3	1	0.000-49.9			14.8	40
Benzo(a)anthracene	0.667	ND	0.586	0.545	87.9	81.7	1	33.3-124			7.31	29
Benzo(b)fluoranthene	0.667	ND	0.574	0.543	86.0	81.4	1	23.3-133			5.58	30.3
Benzo(k)fluoranthene	0.667	ND	0.568	0.496	85.2	74.3	1	31.0-129			13.7	26.7
Benzo(g,h,i)perylene	0.667	ND	0.569	0.531	85.3	79.6	1	10.0-127			6.93	31.9
Benzo(a)pyrene	0.667	ND	0.570	0.532	85.5	79.7	1	28.2-128			6.96	28.4
Bis(2-chlorethoxy)methane	0.667	ND	0.532	0.504	79.8	75.5	1	35.0-132			5.57	26.1
Bis(2-chloroethyl)ether	0.667	ND	0.478	0.440	71.6	66.0	1	28.8-128			8.21	33.6
Bis(2-chloroisopropyl)ether	0.667	ND	0.550	0.489	82.4	73.3	1	31.8-118			11.7	31.7
4-Bromophenyl-phenylether	0.667	ND	0.554	0.545	83.0	81.8	1	39.0-130			1.55	26
2-Chloronaphthalene	0.667	ND	0.603	0.550	90.4	82.4	1	37.5-123			9.27	26.5

L793580-60 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 20:10 • (MS) 10/12/15 20:35 • (MSD) 10/12/15 21:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
4-Chlorophenyl-phenylether	0.667	ND	0.568	0.506	85.2	75.9	1	37.9-123			11.5	25.9
Chrysene	0.667	ND	0.565	0.522	84.8	78.2	1	36.3-129			8.06	28
Dibenz(a,h)anthracene	0.667	ND	0.567	0.522	85.0	78.3	1	10.5-128			8.26	29.5
3,3-Dichlorobenzidine	0.667	ND	0.544	0.502	81.6	75.3	1	10.0-129			7.96	40
2,4-Dinitrotoluene	0.667	ND	0.667	0.596	100	89.4	1	27.8-147			11.3	29.7
2,6-Dinitrotoluene	0.667	ND	0.658	0.591	98.7	88.7	1	36.5-137			10.7	29.7
Fluoranthene	0.667	ND	0.592	0.552	88.7	82.8	1	27.9-138			6.95	26.9
Fluorene	0.667	ND	0.591	0.533	88.7	79.9	1	34.0-133			10.4	27.1
Hexachlorobenzene	0.667	ND	0.555	0.516	83.3	77.3	1	34.4-116			7.42	25.4
Hexachloro-1,3-butadiene	0.667	ND	0.517	0.503	77.5	75.4	1	36.5-125			2.81	29.7
Hexachlorocyclopentadiene	0.667	ND	0.263	0.244	39.4	36.6	1	10.0-124			7.27	37.5
Hexachloroethane	0.667	ND	0.513	0.490	77.0	73.5	1	11.3-143			4.61	31.9
Indeno(1,2,3-cd)pyrene	0.667	ND	0.585	0.536	87.7	80.4	1	10.0-128			8.66	31.5
Isophorone	0.667	ND	0.616	0.589	92.3	88.3	1	25.7-116			4.51	27.7
Naphthalene	0.667	ND	0.505	0.485	75.7	72.8	1	36.4-121			3.91	27.2
Nitrobenzene	0.667	ND	0.591	0.549	88.7	82.4	1	30.9-134			7.38	27.8
n-Nitrosodimethylamine	0.667	ND	0.432	0.420	64.7	63.0	1	19.2-127			2.74	32
n-Nitrosodiphenylamine	0.667	ND	0.588	0.549	88.2	82.3	1	26.8-133			6.92	25.9
n-Nitrosodi-n-propylamine	0.667	ND	0.577	0.525	86.4	78.8	1	33.0-134			9.30	28.2
Phenanthrene	0.667	ND	0.588	0.542	88.1	81.2	1	30.8-137			8.13	26.5
Benzylbutyl phthalate	0.667	ND	0.702	0.656	105	98.3	1	33.4-128			6.84	28.5
Bis(2-ethylhexyl)phthalate	0.667	ND	0.697	0.638	105	95.6	1	21.8-141			8.97	35.2
Di-n-butyl phthalate	0.667	ND	0.678	0.640	102	96.0	1	32.2-133			5.68	25.9
Diethyl phthalate	0.667	ND	0.664	0.579	99.5	86.8	1	39.4-136			13.6	25.5
Dimethyl phthalate	0.667	ND	0.653	0.587	97.9	88.0	1	35.8-137			10.6	25.4
Di-n-octyl phthalate	0.667	ND	0.700	0.647	105	97.0	1	28.5-128			7.93	32.5
Pyrene	0.667	ND	0.569	0.528	85.3	79.1	1	24.1-130			7.52	29.9
1,2,4-Trichlorobenzene	0.667	ND	0.486	0.468	72.9	70.1	1	36.5-114			3.96	28.4
4-Chloro-3-methylphenol	0.667	ND	0.622	0.596	93.3	89.3	1	27.0-154			4.37	26.6
2-Chlorophenol	0.667	ND	0.536	0.501	80.4	75.1	1	33.2-121			6.71	29.3
2,4-Dichlorophenol	0.667	ND	0.591	0.543	88.5	81.4	1	34.8-134			8.47	27.3
2,4-Dimethylphenol	0.667	ND	0.634	0.607	95.1	91.0	1	12.3-149			4.35	32.3
4,6-Dinitro-2-methylphenol	0.667	ND	0.597	0.566	89.5	84.9	1	10.0-144			5.21	32.7
2,4-Dinitrophenol	0.667	ND	0.494	0.464	74.0	69.6	1	10.0-121			6.18	39.4
2-Nitrophenol	0.667	ND	0.602	0.581	90.2	87.1	1	29.5-144			3.50	29.9
4-Nitrophenol	0.667	ND	0.649	0.583	97.3	87.5	1	20.0-133			10.7	30.2

L793580-60 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 20:10 • (MS) 10/12/15 20:35 • (MSD) 10/12/15 21:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Pentachlorophenol	0.667	ND	0.677	0.623	102	93.4	1	10.0-139			8.35	28.3
Phenol	0.667	ND	0.563	0.522	84.4	78.2	1	25.1-130			7.57	29.6
2,4,6-Trichlorophenol	0.667	ND	0.617	0.566	92.4	84.9	1	33.8-133			8.52	28.1
(S) Nitrobenzene-d5					*89.9*	*81.9*		*21.9-129*				
(S) 2-Fluorobiphenyl					*91.1*	*81.2*		*34.9-129*				
(S) p-Terphenyl-d14					*81.4*	*72.4*		*21.5-128*				
(S) Phenol-d5					*79.6*	*73.0*		*26.3-121*				
(S) 2-Fluorophenol					*86.1*	*78.2*		*21.1-116*				
(S) 2,4,6-Tribromophenol					*94.4*	*85.5*		*21.6-142*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

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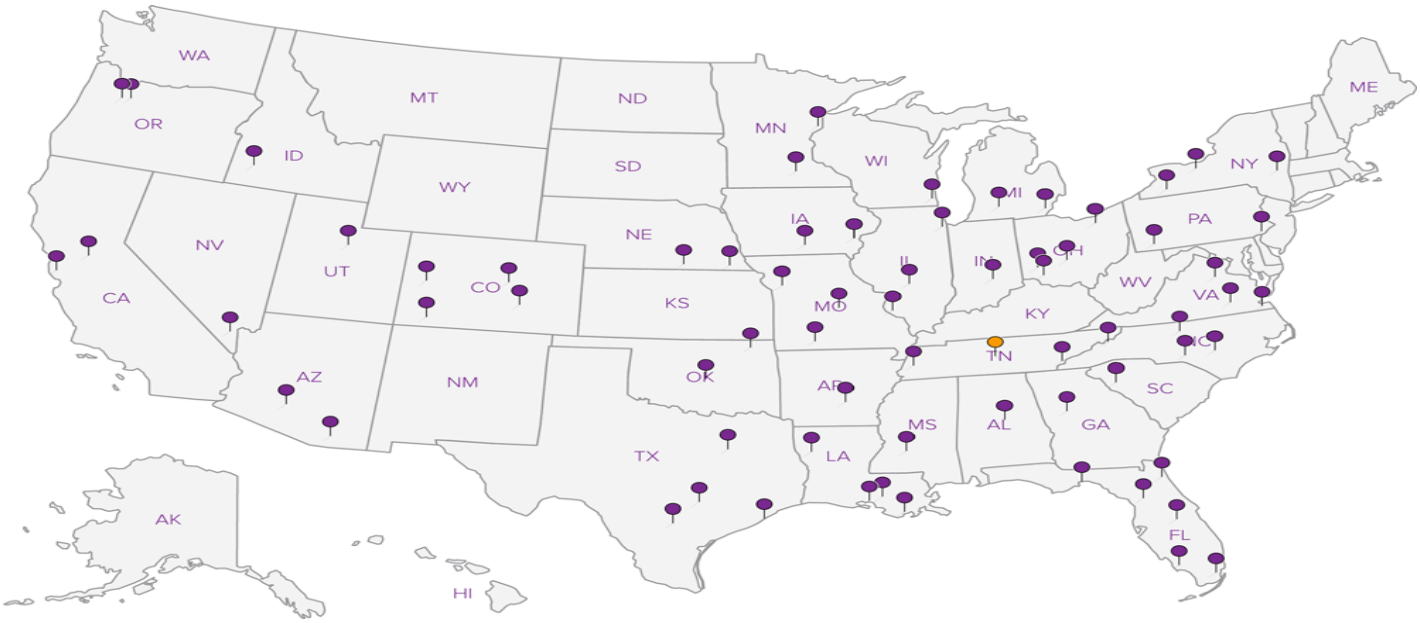

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

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B088

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

SUB CONTRATOR: ESC COMPANY: ESC PHONE: (800) 767-5859 FAX: (615) 758-5859

ADDRESS: 12065 Lebanon Rd ACCOUNT #: EMAIL:

CITY, STATE, ZIP: Mt. Juliet, TN 37122

L792697

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	1510013-001F	GKM_ADIT_09292015_W_1800	500AMBHDPE-NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS	-01
2	1510013-001G	GKM_ADIT_09292015_W_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS	-02
3	1510013-002F	GKM_ADIT_09292015_WD_1800	500AMBHDPE-NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS	-03
4	1510013-002G	GKM_ADIT_09292015_WD_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS	-04
5	1510013-003B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS	-05
6	1510013-004B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS	-06

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By:	Date: 10/1/2015	Time: 12:31 PM	Received By:	Date: 10/6/15	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.2 °C Attempt to Cool ?

Comments:

GDIO Cols I

ANALYTICAL REPORT

October 19, 2015

Hall Environmental Analysis Laboratory

Sample Delivery Group: L795017

Samples Received: 10/06/2015

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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1510013-004B GKM_ADIT_09292015_SED_1823 L795017-02 6

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Wet Chemistry by Method 3060A/7196A 8

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[9]Sc: Chain of Custody 12

1510013-003B GKM_ADIT_09292015_SED_1823 L795017-01 Solid

Collected by	Collected date/time	Received date/time
	09/29/15 18:23	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 2580 B-2011	WG822724	1	10/19/15 09:10	10/19/15 10:40	JER
Wet Chemistry by Method 3060A/7196A	WG822634	1	10/17/15 12:18	10/19/15 13:00	JEH
Wet Chemistry by Method 9045D	WG822728	1	10/17/15 14:45	10/17/15 14:45	CM

1510013-004B GKM_ADIT_09292015_SED_1823 L795017-02 Solid

Collected by	Collected date/time	Received date/time
	09/29/15 18:23	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 2580 B-2011	WG822724	1	10/19/15 09:10	10/19/15 10:40	JER
Wet Chemistry by Method 3060A/7196A	WG822634	1	10/17/15 12:18	10/19/15 13:00	JEH
Wet Chemistry by Method 9045D	WG822728	1	10/17/15 14:45	10/17/15 14:45	CM

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Wet Chemistry by Method 2580 B-2011

Analyte	Result mV	Qualifier	Dilution	Analysis date / time	Batch
ORP	420		1	10/19/2015 10:40	WG822724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	10/19/2015 13:00	WG822634

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	2.76		1	10/17/2015 14:45	WG822728

Sample Narrative:

9045D L795017-01 WG822728: 2.76 at 22.0c

Wet Chemistry by Method 2580 B-2011

Analyte	Result mV	Qualifier	Dilution	Analysis date / time	Batch
ORP	425		1	10/19/2015 10:40	WG822724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	0.640	J	0.640	2.00	1	10/19/2015 13:00	WG822634

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	2.84		1	10/17/2015 14:45	WG822728

Sample Narrative:

9045D L795017-02 WG822728: 2.84 at 22.1c

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/19/15 10:40 • (LCSD) 10/19/15 10:40

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
ORP	100	100	100	100	100	90.0-110			0.000	20

Method Blank (MB)

(MB) 10/19/15 13:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L794868-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/19/15 12:49 • (DUP) 10/19/15 12:49

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/19/15 12:45 • (LCSD) 10/19/15 12:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	59.8	58.2	58.2	97.3	97.3	80.0-120			0.000	20

L794868-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/19/15 12:49 • (MS) 10/19/15 13:03 • (MSD) 10/19/15 13:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	5.20	5.16	26.0	25.8	1	75.0-125	J6	J6	0.772	20

L794915-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/17/15 14:45 • (DUP) 10/17/15 14:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	1.00	1.00	1	0.000		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/17/15 14:45 • (LCSD) 10/17/15 14:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.37	6.45	6.43	101	101	98.2-102			0.311	1

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

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Michigan	9958
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New Mexico	TN00003
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Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

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Canada	1461.01
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AIHA	100789
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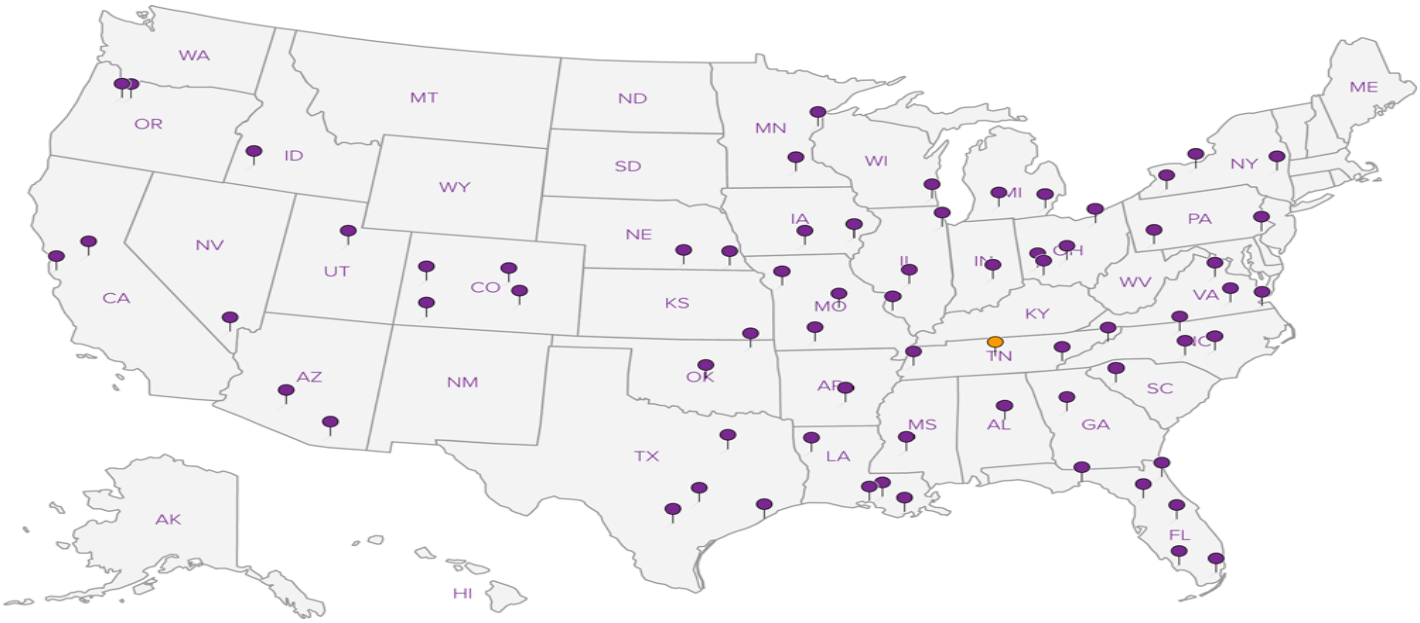

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

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B088

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

SUB CONTRATOR: ESC COMPANY: ESC PHONE: (800) 767-5859 FAX: (615) 758-5859

ADDRESS: 12065 Lebanon Rd ACCOUNT #: EMAIL:

CITY, STATE, ZIP: Mt. Juliet, TN 37122

~~L792697~~

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS L795017
1	1510013-001F	GKM_ADIT_09292015_W_1800	500AMBHDPE NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS ~~-01~~
2	1510013-001G	GKM_ADIT_09292015_W_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS ~~-02~~
3	1510013-002F	GKM_ADIT_09292015_WD_1800	500AMBHDPE NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS ~~-03~~
4	1510013-002G	GKM_ADIT_09292015_WD_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS ~~-04~~
5	1510013-003B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS -01 ~~-05~~
6	1510013-004B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS 02 ~~-06~~

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By:	Date: 10/1/2015	Time: 12:31 PM	Received By:	Date: 10/6/15	Time: 7:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.2 °C Attempt to Cool ? _____

Comments: _____

GOLD COLS I

Jeremy W. Watkins L795017

From: Daphne Richards
Sent: Friday, October 16, 2015 3:22 PM
To: Login; Ken Buckley
Subject: Rush relog L792697-05 and -06 HALLENVANM

Please relog L792697-05 and -06 for CR6
Can we please get rush tat for Monday
thanks

ANALYTICAL REPORT

November 12, 2015

Hall Environmental Analysis Laboratory

Sample Delivery Group: L795317

Samples Received: 10/06/2015

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Total Solids by Method 2540 G-2011 6

Wet Chemistry by Method 9056MOD 7

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[8]Al: Accreditations & Locations 10

[9]Sc: Chain of Custody 11

1510013-003B GKM_ADIT_09292015_SED_1823 L795317-01 Solid

Collected by	Collected date/time	Received date/time
	09/29/15 18:23	10/06/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Total Solids by Method 2540 G-2011	WG828392	1	11/11/15 17:36	11/12/15 08:03	KDW
Wet Chemistry by Method 9056MOD	WG823531	1	10/22/15 08:35	10/22/15 17:11	DJD
Wet Chemistry by Method 9056MOD	WG827521	5	11/11/15 09:28	11/11/15 10:02	DJD

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L795317-01	1510013-003B GKM_ADIT_09292015_SED_1823	2540 G-2011

Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	17.8		1	11/12/2015 08:03	WG828392

Wet Chemistry by Method 9056MOD

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	12.9	J	0.795	56.2	1	10/22/2015 17:11	WG823531
Nitrate	U		0.0116	5.62	1	10/22/2015 17:11	WG823531
Nitrite	U		0.0958	5.62	1	10/22/2015 17:11	WG823531
Sulfate	10300		2.85	1410	5	11/11/2015 10:02	WG827521

Method Blank (MB)

(MB) 11/12/15 08:03

Analyte	MB Result	MB Qualifier	MB RDL
	%		%
Total Solids	0.00100		

L800117-02 Original Sample (OS) • Duplicate (DUP)

(OS) 11/12/15 08:04 • (DUP) 11/12/15 08:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	77.8	78.2	1	0.511		5

Laboratory Control Sample (LCS)

(LCS) 11/12/15 08:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 10/22/15 10:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		0.795	10.0
Nitrate	U		0.0116	1.00
Nitrite	U		0.0958	1.00

L795044-19 Original Sample (OS) • Duplicate (DUP)

(OS) 10/22/15 22:22 • (DUP) 10/22/15 22:46

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	309	309	1	0		20
Nitrate	0.439	0.439	1	0		20
Nitrite	ND	0.000	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/22/15 10:24 • (LCSD) 10/22/15 10:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	200	208	208	104	104	80-120			0	20
Nitrate	20.0	20.5	20.4	102	102	80-120			0	20
Nitrite	20.0	21.5	21.5	107	107	80-120			0	20

L795044-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/22/15 14:48 • (MS) 10/22/15 15:11 • (MSD) 10/22/15 15:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	1060	1570	1570	101	101	10	80-120			0	20
Nitrate	5.00	1.96	46.7	46.8	89	90	10	80-120			0	20
Nitrite	5.00	ND	49.2	49.1	98	98	10	80-120			0	20

Method Blank (MB)

(MB) 11/10/15 15:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Sulfate	U		0.57	50.0

L798954-04 Original Sample (OS) • Duplicate (DUP)

(OS) 11/10/15 22:21 • (DUP) 11/10/15 22:44

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	65.8	66.5	1	1		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/10/15 15:58 • (LCSD) 11/10/15 16:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Sulfate	200	199	199	100	100	80-120			0	20

L798954-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/10/15 21:09 • (MS) 11/10/15 21:33 • (MSD) 11/10/15 21:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	500	116	635	631	104	103	1	80-120			1	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

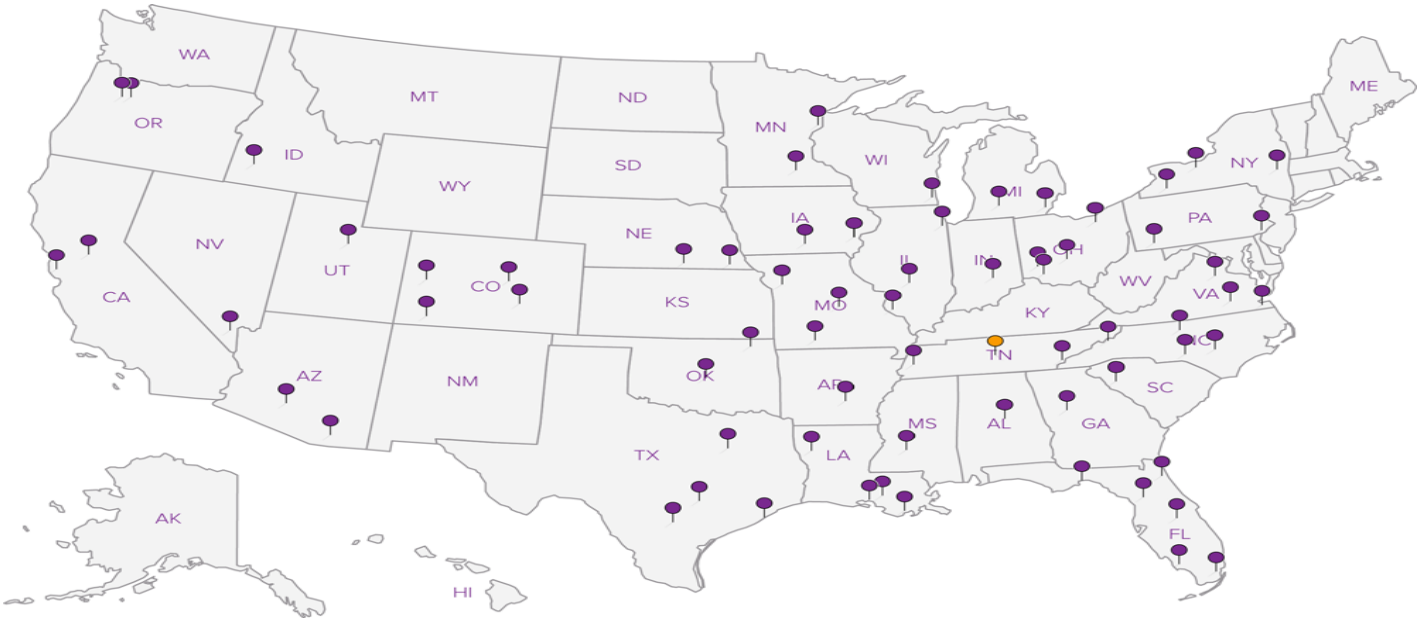
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
A2LA – ISO 17025 [5]	1461.02
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B088

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

SUB CONTRATOR: ESC
COMPANY: ESC
PHONE: (800) 767-5859
FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd
ACCOUNT #:
EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122

~~L792697~~ AV

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1510013-001F	GKM_ADIT_09292015_W_1800	500AMBHDPE NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS ~~-01~~
2	1510013-001G	GKM_ADIT_09292015_W_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS ~~-02~~
3	1510013-002F	GKM_ADIT_09292015_WD_1800	500AMBHDPE NAOH	Aqueous	9/29/2015 6:00:00 PM	1	TOTAL CYANIDE REPORT MDL & J FLAGS ~~-03~~
4	1510013-002G	GKM_ADIT_09292015_WD_1800	120mL	Aqueous	9/29/2015 6:00:00 PM	1	Cr6 HEXAVALENT CHROMIUM REPORT MDL & J FLAGS ~~-04~~
5	1510013-003B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS L795317-01 ~~-05~~
6	1510013-004B	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	TOTAL CYANIDE, Cr6 -REPORT MDL & J FLAGS ~~-06~~

SPECIAL INSTRUCTIONS / COMMENTS:
Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By:	Date: 10/1/2015	Time: 12:31 PM	Received By:	Date: 10/6/15	Time: 7:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 3.2 C Attempt to Cool ?
Comments:

GD10 Cool 2

Andy Vann

From: Daphne Richards
Sent: Monday, October 19, 2015 2:00 PM
To: Login
Subject: Relog L792697-05 HALLENVANM

Please relog L792697-05 for Cl, NO2, NO3 and SO4
thanks

From: Anne Thorne [mailto:anne@hallenvironmental.com]
Sent: Monday, October 19, 2015 12:43 PM
To: Daphne Richards
Subject: 1510013-003

Hey Daphne

Do you have enough volume left over to analyze for Cl, N02, N03, S04? If so, please analyze for the anions.

Thank you

at

Anne Thorne
Hall Environmental Analysis Laboratory
Sample Receiving Mgr.
Phone: 505-338-8803
Fax: 505-345-4107
anne@hallenvironmental.com
www.hallenvironmental.com

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

October 19, 2015

Mr. Andy Freeman
Hall Environmental
4901 Hawkins NE
Suite D
Albuquerque, New Mexico 87109

Re: Routine Analysis
Work Order: 8301
SDG: 1510013

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 06, 2015. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421 Ext. 2.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Purchase Order: IDIQ Pricing
Enclosures

problem solved

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

SUB CONTRATOR: Cape Fear Analytical	COMPANY: Cape Fear Analytical	PHONE: (910) 795-0421	FAX:
ADDRESS: 3306 Kitty Hawk Rd Ste 120		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Wilmington, NC 28405			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1510013-001E	GKM_ADIT_09292015_W_1800	1LAMGU	Aqueous	9/29/2015 6:00:00 PM	2	2,3,7,8-TCDD REPORT MDL & J FLAGS
2	1510013-002E	GKM_ADIT_09292015_WD_1800	1LAMGU	Aqueous	9/29/2015 6:00:00 PM	2	2,3,7,8-TCDD REPORT MDL & J FLAGS
3	1510013-003D	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	Dioxins/Furans REPORT MDL & J FLAGS
4	1510013-004D	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	Dioxins/Furans REPORT MDL & J FLAGS

CFA WO #8301

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/1/2015	Time: 12:33 PM	Received By: Lynde Larkins	Date: 06OCT15	Time: 1040
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 0.7 °C Attempt to Cool ? ✓
Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 8301
Shipping Company: FedEx	Date/Time Received: 06OCT15 1040

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) 2.5° = 1.8° = 0.7°C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: Minimal visible solids (2/8)
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=5 on all waters (4 containers) If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CF Date: 06OCT15

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 1510013
Work Order 8301

Method/Analysis Information

Product:	**TCDD Only by EPA Method 1613B**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3520C, 3540C
Analytical Batch Number:	30252, 30259
Clean Up Batch Number:	30251, 30258
Extraction Batch Number:	30250, 30257

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B :

Sample ID	Client ID
8301001	1510013-001E GKM_ADIT_09292015_W_1800
8301002	1510013-002E GKM_ADIT_09292015_WD_1800
8301003	1510013-003D GKM_ADIT_09292015_SED_1823
8301004	1510013-004D GKM_ADIT_09292015_SED_1823
12014479	8304001(FA27952X-1X) Sample Duplicate (DUP)
12014511	Method Blank (MB)
12014512	Laboratory Control Sample (LCS)
12014513	Laboratory Control Sample Duplicate (LCSD)
12014517	Method Blank (MB)
12014518	Laboratory Control Sample (LCS)
12014519	Laboratory Control Sample Duplicate (LCSD)

Samples 8301 003 and 004 in this SDG were analyzed on a "dry weight" basis. Samples 8301 001 and 002 in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample Preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report
for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1510013 CFA Work Order: 8301

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: ESuhrie **Name: Erin Suhrie**

Date: 19 OCT 2015 **Title: Data Validator**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301001**	**Date Collected:**	**09/29/2015 18:00**	**Matrix:**	**WATER**
Client Sample:	**1613 TCDD Water**	**Date Received:**	**10/06/2015 10:40**		
Client ID:	**1510013-001E GKM_ADIT_09292015**			**Prep Basis:**	**As Received**
Batch ID:	**30252**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 00:28**	**Analyst:**	**JTF**	**Instrument:**	**HRP763**
Data File:	**b14oct15a_3-5**			**Dilution:**	**1**
Prep Batch:	**30250**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**13-OCT-15**	**Prep Aliquot:**	**928.2 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	3.6	pg/L	3.60	10.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2020	2150	pg/L	94.0	(31%-137%)
37Cl-2,3,7,8-TCDD		200	215	pg/L	92.7	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301002**	**Date Collected:**	**09/29/2015 18:00**	**Matrix:**	**WATER**
Client Sample:	**1613 TCDD Water**	**Date Received:**	**10/06/2015 10:40**		
Client ID:	**1510013-002E GKM_ADIT_09292015**			**Prep Basis:**	**As Received**
Batch ID:	**30252**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 01:15**	**Analyst:**	**JTF**	**Instrument:**	**HRP763**
Data File:	**b14oct15a_3-6**			**Dilution:**	**1**
Prep Batch:	**30250**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**13-OCT-15**	**Prep Aliquot:**	**961.6 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	3.47	pg/L	3.47	10.4

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1830	2080	pg/L	88.1	(31%-137%)
37Cl-2,3,7,8-TCDD		194	208	pg/L	93.1	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301003**	**Date Collected:**	**09/29/2015 18:23**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**10/06/2015 10:40**	**%Moisture:**	**87.4**
Client ID:	**1510013-003D GKM_ADIT_09292015**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 23:45**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-7**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.31 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.05	pg/g	1.05	3.14
40321-76-4	1,2,3,7,8-PeCDD	U	5.23	pg/g	5.23	15.7
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.23	pg/g	5.23	15.7
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.23	pg/g	5.23	15.7
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.23	pg/g	5.23	15.7
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5.23	pg/g	5.23	15.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10.5	pg/g	10.5	31.4
51207-31-9	2,3,7,8-TCDF	U	1.05	pg/g	1.05	3.14
57117-41-6	1,2,3,7,8-PeCDF	U	5.23	pg/g	5.23	15.7
57117-31-4	2,3,4,7,8-PeCDF	U	5.23	pg/g	5.23	15.7
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.23	pg/g	5.23	15.7
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.23	pg/g	5.23	15.7
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.23	pg/g	5.23	15.7
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.23	pg/g	5.23	15.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.23	pg/g	5.23	15.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.23	pg/g	5.23	15.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.5	pg/g	10.5	31.4
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.05	pg/g	1.05	3.14
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.23	pg/g	5.23	15.7
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5.23	pg/g	5.23	15.7
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5.23	pg/g	5.23	15.7
30402-14-3	Total Tetrachlorodibenzofuran	U	1.05	pg/g	1.05	3.14
30402-15-4	Total Pentachlorodibenzofuran	U	5.23	pg/g	5.23	15.7
55684-94-1	Total Hexachlorodibenzofuran	U	5.23	pg/g	5.23	15.7
38998-75-3	Total Heptachlorodibenzofuran	U	5.23	pg/g	5.23	15.7
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		5.97	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		471	628	pg/g	74.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		507	628	pg/g	80.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		422	628	pg/g	67.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		513	628	pg/g	81.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		481	628	pg/g	76.5	(23%-140%)
13C-OCDD		1020	1260	pg/g	81.2	(17%-157%)
13C-2,3,7,8-TCDF		466	628	pg/g	74.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		484	628	pg/g	77.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		503	628	pg/g	80.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		414	628	pg/g	65.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		510	628	pg/g	81.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		463	628	pg/g	73.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		432	628	pg/g	68.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301003**	**Date Collected:**	**09/29/2015 18:23**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**10/06/2015 10:40**	**%Moisture:**	**87.4**
Client ID:	**1510013-003D GKM_ADIT_09292015**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 23:45**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-7**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.31 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		466	628	pg/g	74.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		466	628	pg/g	74.1	(26%-138%)
37Cl-2,3,7,8-TCDD		60.0	62.8	pg/g	95.5	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301004**	**Date Collected:**	**09/29/2015 18:23**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**10/06/2015 10:40**	**%Moisture:**	**82.2**
Client ID:	**1510013-004D GKM_ADIT_09292015**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/16/2015 00:32**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-8**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.44 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.739	pg/g	0.739	2.21
40321-76-4	1,2,3,7,8-PeCDD	U	3.68	pg/g	3.68	11.1
39227-28-6	1,2,3,4,7,8-HxCDD	U	3.68	pg/g	3.68	11.1
57653-85-7	1,2,3,6,7,8-HxCDD	U	3.68	pg/g	3.68	11.1
19408-74-3	1,2,3,7,8,9-HxCDD	U	3.68	pg/g	3.68	11.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	3.68	pg/g	3.68	11.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	7.39	pg/g	7.39	22.1
51207-31-9	2,3,7,8-TCDF	U	.739	pg/g	0.739	2.21
57117-41-6	1,2,3,7,8-PeCDF	U	3.68	pg/g	3.68	11.1
57117-31-4	2,3,4,7,8-PeCDF	U	3.68	pg/g	3.68	11.1
70648-26-9	1,2,3,4,7,8-HxCDF	U	3.68	pg/g	3.68	11.1
57117-44-9	1,2,3,6,7,8-HxCDF	U	3.68	pg/g	3.68	11.1
60851-34-5	2,3,4,6,7,8-HxCDF	U	3.68	pg/g	3.68	11.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.68	pg/g	3.68	11.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	3.68	pg/g	3.68	11.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	3.68	pg/g	3.68	11.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	7.39	pg/g	7.39	22.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.739	pg/g	0.739	2.21
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	3.68	pg/g	3.68	11.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	3.68	pg/g	3.68	11.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	3.68	pg/g	3.68	11.1
30402-14-3	Total Tetrachlorodibenzofuran	U	.739	pg/g	0.739	2.21
30402-15-4	Total Pentachlorodibenzofuran	U	3.68	pg/g	3.68	11.1
55684-94-1	Total Hexachlorodibenzofuran	U	3.68	pg/g	3.68	11.1
38998-75-3	Total Heptachlorodibenzofuran	U	3.68	pg/g	3.68	11.1
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		4.20	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		385	442	pg/g	87.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		431	442	pg/g	97.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		313	442	pg/g	70.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		393	442	pg/g	88.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		357	442	pg/g	80.7	(23%-140%)
13C-OCDD		648	884	pg/g	73.2	(17%-157%)
13C-2,3,7,8-TCDF		382	442	pg/g	86.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		406	442	pg/g	91.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		420	442	pg/g	95.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		322	442	pg/g	72.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		375	442	pg/g	84.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		352	442	pg/g	79.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		335	442	pg/g	75.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**8301004**	**Date Collected:**	**09/29/2015 18:23**	**Matrix:**	**SOIL**
Client Sample:	**1613 Soil**	**Date Received:**	**10/06/2015 10:40**	**%Moisture:**	**82.2**
Client ID:	**1510013-004D GKM_ADIT_09292015**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/16/2015 00:32**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-8**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.44 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		357	442	pg/g	80.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		336	442	pg/g	76.0	(26%-138%)
37Cl-2,3,7,8-TCDD		43.2	44.2	pg/g	97.7	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 1510013

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12014512	LCS for batch 30250	13C-2,3,7,8-TCDD		96.8	(20%-175%)
		37Cl-2,3,7,8-TCDD		98.5	(31%-191%)
12014513	LCSD for batch 30250	13C-2,3,7,8-TCDD		96.6	(20%-175%)
		37Cl-2,3,7,8-TCDD		95.4	(31%-191%)
12014511	MB for batch 30250	13C-2,3,7,8-TCDD		92.9	(25%-164%)
		37Cl-2,3,7,8-TCDD		90.4	(35%-197%)
8301001	1510013-001E GKM_ADIT_09292015_W_1800	13C-2,3,7,8-TCDD		94.0	(31%-137%)
		37Cl-2,3,7,8-TCDD		92.7	(42%-164%)
8301002	1510013-002E GKM_ADIT_09292015_WD_1800	13C-2,3,7,8-TCDD		88.1	(31%-137%)
		37Cl-2,3,7,8-TCDD		93.1	(42%-164%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: 1510013

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12014518	LCS for batch 30257	13C-2,3,7,8-TCDD		85.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		94.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		69.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		90.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(22%-166%)
		13C-OCDD		75.4	(13%-199%)
		13C-2,3,7,8-TCDF		83.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		91.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		93.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		73.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		84.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		81.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		77.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		82.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		76.0	(20%-186%)
		37Cl-2,3,7,8-TCDD		98.7	(31%-191%)
12014519	LCSD for batch 30257	13C-2,3,7,8-TCDD		84.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		98.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		67.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		88.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		78.3	(22%-166%)
		13C-OCDD		71.5	(13%-199%)
		13C-2,3,7,8-TCDF		84.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		92.6	(21%-192%)
		13C-2,3,4,7,8-PeCDF		95.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.4	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		83.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		72.3	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		73.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		95.2	(31%-191%)
12014517	MB for batch 30257	13C-2,3,7,8-TCDD		82.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		69.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.1	(23%-140%)
		13C-OCDD		77.1	(17%-157%)
		13C-2,3,7,8-TCDF		80.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.1	(35%-197%)
8301003	1510013-003D GKM_ADIT_09292015_SED_1823	13C-2,3,7,8-TCDD		74.9	(25%-164%)

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: 1510013

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
8301003	1510013-003D GKM_ADIT_09292015_SED_1823	13C-1,2,3,7,8-PeCDD		80.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		67.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.5	(23%-140%)
		13C-OCDD		81.2	(17%-157%)
		13C-2,3,7,8-TCDF		74.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		80.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		65.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		95.5	(35%-197%)
8301004	1510013-004D GKM_ADIT_09292015_SED_1823	13C-2,3,7,8-TCDD		87.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		97.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.7	(23%-140%)
		13C-OCDD		73.2	(17%-157%)
		13C-2,3,7,8-TCDF		86.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		95.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.7	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 1510013
Client ID: LCS for batch 30250
Lab Sample ID: 12014512
Instrument: HRP763
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 10/14/2015 21:25
Dilution: 1
Prep Batch ID: 30250
Batch ID: 30252

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	202	101	67-158

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 1510013
Client ID: LCSD for batch 30250
Lab Sample ID: 12014513
Instrument: HRP763
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 10/14/2015 22:10
Dilution: 1
Prep Batch ID: 30250
Batch ID: 30252

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	189	94.6	67-158	6.59	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 1510013
Client ID: LCS for batch 30257
Lab Sample ID: 12014518
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 10/15/2015 19:01
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.0	105	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	104	104	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	114	114	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	97.7	97.7	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	110	110	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	203	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.0	105	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	101	101	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	105	105	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	103	103	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	106	106	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	101	101	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	107	107	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	101	101	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	211	106	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 1510013
Client ID: LCSD for batch 30257
Lab Sample ID: 12014519
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 10/15/2015 19:47
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	19.6	98.1	67-158	7.01	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	96.8	96.8	70-142	7.06	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	104	104	70-164	8.63	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	98.7	98.7	76-134	1.01	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	108	108	64-162	2.01	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	97.6	97.6	70-140	4.14	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	200	100	78-144	1.29	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	19.7	98.4	75-158	6.52	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	95.9	95.9	80-134	4.76	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	93.3	93.3	68-160	11.7	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	97.8	97.8	72-134	5.26	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	99.8	99.8	84-130	6.27	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	98.3	98.3	70-156	2.28	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	97.9	97.9	78-130	8.73	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	101	101	82-122	0.154	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	101	101	78-138	5.37	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	209	104	63-170	1.16	0-20

Method Blank Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 30250**	**Instrument ID:**	**HRP763**	**Data File:**	**b14oct15a_3-3**
Lab Sample ID:	**12014511**	**Prep Date:**	**13-OCT-15**	**Analyzed:**	**10/14/15 22:56**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 30250	12014512	b14oct15a_3-1	10/14/15	2125
02	LCSD for batch 30250	12014513	b14oct15a_3-2	10/14/15	2210
03	1510013-001E GKM_ADIT_09292015_W_1800	8301001	b14oct15a_3-5	10/15/15	0028
04	1510013-002E GKM_ADIT_09292015_WD_1800	8301002	b14oct15a_3-6	10/15/15	0115

Method Blank Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 30257**	**Instrument ID:**	**HRP750**	**Data File:**	**A13OCT15A_6-3**
Lab Sample ID:	**12014517**	**Prep Date:**	**14-OCT-15**	**Analyzed:**	**10/15/15 20:35**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 30257	12014518	A13OCT15A_6-1	10/15/15	1901
02	LCSD for batch 30257	12014519	A13OCT15A_6-2	10/15/15	1947
03	1510013-003D GKM_ADIT_09292015_SED_1823	8301003	A13OCT15A_6-7	10/15/15	2345
04	1510013-004D GKM_ADIT_09292015_SED_1823	8301004	A13OCT15A_6-8	10/16/15	0032

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014511**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 30250**				
Client ID:	**MB for batch 30250**			**Prep Basis:**	**As Received**
Batch ID:	**30252**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/14/2015 22:56**	**Analyst:**	**JTF**	**Instrument:**	**HRP763**
Data File:	**b14oct15a_3-3**			**Dilution:**	**1**
Prep Batch:	**30250**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**13-OCT-15**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	3.34	pg/L	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1860	2000	pg/L	92.9	(25%-164%)
37Cl-2,3,7,8-TCDD		181	200	pg/L	90.4	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014512**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 30250**				
Client ID:	**LCS for batch 30250**			**Prep Basis:**	**As Received**
Batch ID:	**30252**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/14/2015 21:25**	**Analyst:**	**JTF**	**Instrument:**	**HRP763**
Data File:	**b14oct15a_3-1**			**Dilution:**	**1**
Prep Batch:	**30250**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**13-OCT-15**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		202	pg/L	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1940	2000	pg/L	96.8	(20%-175%)
37Cl-2,3,7,8-TCDD		197	200	pg/L	98.5	(31%-191%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014513**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 30250**				
Client ID:	**LCSD for batch 30250**			**Prep Basis:**	**As Received**
Batch ID:	**30252**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/14/2015 22:10**	**Analyst:**	**JTF**	**Instrument:**	**HRP763**
Data File:	**b14oct15a_3-2**			**Dilution:**	**1**
Prep Batch:	**30250**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**13-OCT-15**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		189	pg/L	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1930	2000	pg/L	96.6	(20%-175%)
37Cl-2,3,7,8-TCDD		191	200	pg/L	95.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014517**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**MB for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 20:35**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-3**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.334	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	1.67	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.67	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.67	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.67	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	1.67	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	3.34	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF	U	.334	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	1.67	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	1.67	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.67	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	1.67	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.67	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	3.34	pg/g	3.34	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.334	pg/g	0.334	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.334	pg/g	0.334	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		1.90	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	82.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		181	200	pg/g	90.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		138	200	pg/g	69.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		167	200	pg/g	83.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		160	200	pg/g	80.1	(23%-140%)
13C-OCDD		308	400	pg/g	77.1	(17%-157%)
13C-2,3,7,8-TCDF		161	200	pg/g	80.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		168	200	pg/g	84.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	87.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		135	200	pg/g	67.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		167	200	pg/g	83.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	80.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	200	pg/g	72.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014517**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**MB for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 20:35**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-3**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		156	200	pg/g	77.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.4	20.0	pg/g	92.1	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014518**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**LCS for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 19:01**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-1**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		21.0	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		114	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		97.7	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		110	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		203	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF		21.0	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		211	pg/g	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		190	200	pg/g	94.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		138	200	pg/g	69.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		181	200	pg/g	90.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		168	200	pg/g	83.9	(22%-166%)
13C-OCDD		302	400	pg/g	75.4	(13%-199%)
13C-2,3,7,8-TCDF		166	200	pg/g	83.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		182	200	pg/g	91.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		187	200	pg/g	93.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		146	200	pg/g	73.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		169	200	pg/g	84.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		162	200	pg/g	81.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		154	200	pg/g	77.1	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		165	200	pg/g	82.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		152	200	pg/g	76.0	(20%-186%)
37Cl-2,3,7,8-TCDD		19.7	20.0	pg/g	98.7	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1510013**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014519**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**LCSD for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 19:47**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-2**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		19.6	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD		96.8	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		98.7	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		97.6	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		200	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF		95.9	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF		93.3	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		97.8	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		99.8	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		98.3	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		97.9	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		101	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		209	pg/g	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	200	pg/g	84.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		196	200	pg/g	98.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		134	200	pg/g	67.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		177	200	pg/g	88.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		157	200	pg/g	78.3	(22%-166%)
13C-OCDD		286	400	pg/g	71.5	(13%-199%)
13C-2,3,7,8-TCDF		168	200	pg/g	84.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		185	200	pg/g	92.6	(21%-192%)
13C-2,3,4,7,8-PeCDF		192	200	pg/g	95.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		143	200	pg/g	71.4	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		168	200	pg/g	83.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		159	200	pg/g	79.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		145	200	pg/g	72.3	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		156	200	pg/g	77.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		146	200	pg/g	73.1	(20%-186%)
37Cl-2,3,7,8-TCDD		19.0	20.0	pg/g	95.2	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

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November 10, 2015

Ms. Anne Thorne
Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

RE: Project: 1510013
Pace Project No.: 30161195

Dear Ms. Thorne:
Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Ms. Jackie Ball, Hall Environmental Analysis Laboratory

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CERTIFICATIONS

Project: 1510013
Pace Project No.: 30161195

Pennsylvania Certification IDs

Georgia Certification #: C040
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 1510013
Pace Project No.: 30161195

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30161195001	**1510013-001HI GKM_ADIT_0929201**	Water	09/29/15 18:00	10/06/15 09:20
30161195002	**1510013-002HI GKM_ADIT_0929201**	Water	09/29/15 18:00	10/06/15 09:20
30161195003	**1510013-003C GKM_ADIT_09292015**	Solid	09/29/15 18:23	10/06/15 09:20
30161195004	**1510013-004C GKM_ADIT_09292015**	Solid	09/29/15 18:23	10/06/15 09:20

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SAMPLE ANALYTE COUNT

Project: 1510013
Pace Project No.: 30161195

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30161195001	**1510013-001HI GKM_ADIT_0929201**	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
		HSL-300	JAL	3
30161195002	**1510013-002HI GKM_ADIT_0929201**	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
		HSL-300	JAL	3
30161195003	**1510013-003C GKM_ADIT_09292015**	EPA 901.1	MAH	2
		HSL-300	JAL	1
30161195004	**1510013-004C GKM_ADIT_09292015**	EPA 901.1	MAH	2
		HSL-300	JAL	1

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PROJECT NARRATIVE

Project: 1510013
Pace Project No.: 30161195

Method: **EPA 901.1**
Description: 901.1 Gamma Spec INGROWTH
Client: Hall Environmental Analysis Laboratory
Date: November 10, 2015

General Information:
2 samples were analyzed for EPA 901.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1510013
Pace Project No.: 30161195

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Hall Environmental Analysis Laboratory
Date: November 10, 2015

General Information:
2 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1510013
Pace Project No.: 30161195

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Hall Environmental Analysis Laboratory
Date: November 10, 2015

General Information:
2 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1510013
Pace Project No.: 30161195

Method: **HSL-300**
Description: HSL300(AS) Actinides
Client: Hall Environmental Analysis Laboratory
Date: November 10, 2015

General Information:
2 samples were analyzed for HSL-300. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/26497

N2: The lab does not hold TNI accreditation for this parameter.

- 1510013-003C GKM_ADIT_09292015 (Lab ID: 30161195003)
  - Uranium-238
- 1510013-004C GKM_ADIT_09292015 (Lab ID: 30161195004)
  - Uranium-238
- BLANK (Lab ID: 970227)
  - Uranium-238

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PROJECT NARRATIVE

Project: 1510013
Pace Project No.: 30161195

Method: **HSL-300**
Description: HSL300(AS) Actinides
Client: Hall Environmental Analysis Laboratory
Date: November 10, 2015

General Information:
2 samples were analyzed for HSL-300. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/26472

N2: The lab does not hold TNI accreditation for this parameter.

- 1510013-001HI GKM_ADIT_0929201 (Lab ID: 30161195001)
  - Uranium-234
  - Uranium-235
  - Uranium-238
- 1510013-002HI GKM_ADIT_0929201 (Lab ID: 30161195002)
  - Uranium-234
  - Uranium-235
  - Uranium-238
- BLANK (Lab ID: 969297)
  - Uranium-234
  - Uranium-235
  - Uranium-238

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

Sample: 1510013-001HI **Lab ID: 30161195001** Collected: 09/29/15 18:00 Received: 10/06/15 09:20 Matrix: Water
GKM_ADIT_0929201
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.668 ± 0.697 (0.983) C:NA T:94%**	pCi/L	11/04/15 13:18	13982-63-3	
Radium-228	EPA 904.0	**0.890 ± 0.495 (0.896) C:78% T:86%**	pCi/L	11/04/15 15:36	15262-20-1	
Uranium-234	HSL-300	**3.04 ± 0.679 (0.238) C:NA T:96%**	pCi/L	11/04/15 11:49	13966-29-5	N2
Uranium-235	HSL-300	**0.186 ± 0.141 (0.072) C:NA T:96%**	pCi/L	11/04/15 11:49	15117-96-1	N2
Uranium-238	HSL-300	**3.25 ± 0.708 (0.121) C:NA T:96%**	pCi/L	11/04/15 11:49		N2

Sample: 1510013-002HI **Lab ID: 30161195002** Collected: 09/29/15 18:00 Received: 10/06/15 09:20 Matrix: Water
GKM_ADIT_0929201
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.599 ± 0.687 (0.406) C:NA T:91%**	pCi/L	11/04/15 13:41	13982-63-3	
Radium-228	EPA 904.0	**0.636 ± 0.835 (1.74) C:70% T:87%**	pCi/L	11/04/15 15:37	15262-20-1	
Uranium-234	HSL-300	**2.76 ± 0.631 (0.139) C:NA T:110%**	pCi/L	11/04/15 11:49	13966-29-5	N2
Uranium-235	HSL-300	**0.232 ± 0.165 (0.162) C:NA T:110%**	pCi/L	11/04/15 11:49	15117-96-1	N2
Uranium-238	HSL-300	**3.01 ± 0.671 (0.143) C:NA T:110%**	pCi/L	11/04/15 11:49		N2

Sample: 1510013-003C **Lab ID: 30161195003** Collected: 09/29/15 18:23 Received: 10/06/15 09:20 Matrix: Solid
GKM_ADIT_09292015
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.746 ± 0.766 (1.043) C:NA T:NA**	pCi/g	11/09/15 15:14	13982-63-3	
Radium-228	EPA 901.1	**0.432 ± 0.673 (1.598) C:NA T:NA**	pCi/g	11/09/15 15:14	15262-20-1	
Uranium-238	HSL-300	**0.149 ± 0.163 (0.270) C:NA T:51%**	pCi/g	10/28/15 06:52		N2

Sample: 1510013-004C **Lab ID: 30161195004** Collected: 09/29/15 18:23 Received: 10/06/15 09:20 Matrix: Solid
GKM_ADIT_09292015
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.592 ± 0.395 (0.964) C:NA T:NA**	pCi/g	11/09/15 15:15	13982-63-3	
Radium-228	EPA 901.1	**0.638 ± 0.874 (2.565) C:NA T:NA**	pCi/g	11/09/15 15:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

Sample: 1510013-004C GKM_ADIT_09292015 **Lab ID: 30161195004** Collected: 09/29/15 18:23 Received: 10/06/15 09:20 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Uranium-238	HSL-300	**0.133 ± 0.132 (0.174)** **C:NA T:46%**	pCi/g	10/28/15 08:07		N2

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

QC Batch: RADC/26472 | Analysis Method: HSL-300
QC Batch Method: HSL-300 | Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 30161195001, 30161195002

METHOD BLANK: 969297 | Matrix: Water
Associated Lab Samples: 30161195001, 30161195002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Uranium-234	0.026 ± 0.078 (0.181) C:NA T:95%	pCi/L	11/03/15 14:50	N2
Uranium-235	0.046 ± 0.088 (0.063) C:NA T:95%	pCi/L	11/03/15 14:50	N2
Uranium-238	0.093 ± 0.101 (0.171) C:NA T:95%	pCi/L	11/03/15 14:50	N2

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

QC Batch: RADC/26589 | Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 | Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30161195001, 30161195002

METHOD BLANK: 973256 | Matrix: Water
Associated Lab Samples: 30161195001, 30161195002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.240 ± 0.276 (0.695) C:84% T:85%	pCi/L	11/04/15 15:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

QC Batch: RADC/26365 | Analysis Method: EPA 901.1
QC Batch Method: EPA 901.1 | Analysis Description: 901.1 Gamma Spec Ingrowth
Associated Lab Samples: 30161195003, 30161195004

METHOD BLANK: 963956 | Matrix: Solid
Associated Lab Samples: 30161195003, 30161195004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.305 ± 0.239 (0.470) C:NA T:NA	pCi/g	10/16/15 09:49	
Radium-228	0.000 ± 0.085 (0.869) C:NA T:NA	pCi/g	10/16/15 09:49	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

QC Batch: RADC/26497 | Analysis Method: HSL-300
QC Batch Method: HSL-300 | Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 30161195003, 30161195004

METHOD BLANK: 970227 | Matrix: Solid
Associated Lab Samples: 30161195003, 30161195004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Uranium-238	0.057 ± 0.060 (0.089) C:NA T:104%	pCi/g	10/28/15 06:52	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1510013
Pace Project No.: 30161195

QC Batch: RADC/26445 | Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 | Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30161195001, 30161195002

METHOD BLANK: 967618 | Matrix: Water
Associated Lab Samples: 30161195001, 30161195002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.361 ± 0.367 (0.556) C:NA T:96%	pCi/L	11/04/15 13:05	

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QUALIFIERS

Project: 1510013
Pace Project No.: 30161195

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

N2 The lab does not hold TNI accreditation for this parameter.

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

SUB CONTRATOR:	Pace Analytical-PA	COMPANY:	Pace Analytical Services, Inc.	PHONE: (724) 850-5600	FAX: (724) 850-5601
ADDRESS:	1638 Roseytown Rd Ste 2,3,4			ACCOUNT #:	EMAIL:
CITY, STATE, ZIP:	Greensburg, PA 15601				

30161195

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1510013-001H	GKM_ADIT_09292015_W_1800	500HDPEHNO3	Aqueous	9/29/2015 6:00:00 PM	2	GW RADIUM 226/228 001
2	1510013-001I	GKM_ADIT_09292015_W_1800	500HDPEHNO3	Aqueous	9/29/2015 6:00:00 PM	1	GW ISOTOPIC U ↓
3	1510013-002H	GKM_ADIT_09292015_WD_1800	500HDPEHNO3	Aqueous	9/29/2015 6:00:00 PM	2	GW RADIUM 226/228 002
4	1510013-002I	GKM_ADIT_09292015_WD_1800	500HDPEHNO3	Aqueous	9/29/2015 6:00:00 PM	1	GW ISOTOPIC U ↓
5	1510013-003C	GKM_ADIT_09292015_SED_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	RADIUM 226/228 & ISOTOPIC U 238 003
6	1510013-004C	GKM_ADIT_09292015_SEDD_1823	4OZGU	Soil	9/29/2015 6:23:00 PM	1	RADIUM 226/228 & ISOTOPIC U 238 004

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	10/2/2015	12:14 PM	[signature] Pace	10/6/15	0020
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples NA °C Attempt to Cool ? N
Comments:

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hall

Project # 30161195

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

PAS

Tracking #: 774665861720

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ____ Bubble Bags ____ None ____ Other Paper

Thermometer Used NA Type of Ice: Wet Blue None ☐ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: NA °C Correction Factor: ____ °C Final Temp: ____ °C

Date and Initials of person examining contents: 10/6/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☐Yes ☑No ☐N/A	8. limited volume
Correct Containers Used:	☑Yes ☐No ☐N/A	9. 001 - 2L
-Pace Containers Used:	☐Yes ☑No ☐N/A	002 - 1L
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WA SU		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13. pH<2
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☑No	Initial when completed: JW / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): ____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 10/7/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30161195

Client Name: Hall

Item No.	Matrix Code	Glass Jar (30 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WA																	for pollen	4					
002	WA																		2					
003	SL	1																						
004	↓	1																						

SCURF Back (C016-4 15May2012).xls

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **1510013-001DMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **GKM_ADIT_0929201** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890824** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.42	0.0060	0.5000	0	83.4	70	130			

Sample ID **1510013-001DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **GKM_ADIT_0929201** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890825** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.42	0.0060	0.5000	0	84.5	70	130	1.37	20	

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890888** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060	0.006000	0	94.8	50	150			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB-21700** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **21700** RunNo: **29517**
Prep Date: **10/6/2015** Analysis Date: **10/13/2015** SeqNo: **898038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050								

Sample ID **MSLCS-21700** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **21700** RunNo: **29517**
Prep Date: **10/6/2015** Analysis Date: **10/13/2015** SeqNo: **898042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID **MSLLLCS-21700** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **21700** RunNo: **29517**
Prep Date: **10/6/2015** Analysis Date: **10/13/2015** SeqNo: **898047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.00052	0.00050	0.0005000	0	105	50	150			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **A29718** RunNo: **29718**
Prep Date: Analysis Date: **10/21/2015** SeqNo: **905075** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.012	0.00050	0.01250	0	97.6	85	115			

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **A29718** RunNo: **29718**
Prep Date: Analysis Date: **10/21/2015** SeqNo: **905080** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050	0.0005000	0	93.5	50	150			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **A29718** RunNo: **29718**
Prep Date: Analysis Date: **10/21/2015** SeqNo: **905084** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB-21908**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**	
Client ID: **PBS**	Batch ID: **21908**	RunNo: **29657**	
Prep Date: **10/19/2015**	Analysis Date: **10/19/2015**	SeqNo: **903207**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID **LCS-21908**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**	
Client ID: **LCSS**	Batch ID: **21908**	RunNo: **29657**	
Prep Date: **10/19/2015**	Analysis Date: **10/19/2015**	SeqNo: **903208**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.2	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	93.7	90	110			
Nitrogen, Nitrate (As N)	7.2	0.30	7.500	0	96.0	90	110			
Sulfate	28	1.5	30.00	0	94.2	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R29719**	RunNo: **29719**							
Prep Date:	Analysis Date: **10/21/2015**	SeqNo: **905113**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R29719**	RunNo: **29719**							
Prep Date:	Analysis Date: **10/21/2015**	SeqNo: **905114**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.4	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21655**	SampType:	**MBLK**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**PBS**	Batch ID:	**21655**	RunNo:	**29279**		
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**891133**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.028		0.06250		45.2	25.2	134			
Surr: Tetrachloro-m-xylene	0.036		0.06250		56.8	17.4	148			

Sample ID	**LCS-21655**	SampType:	**LCS**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**LCSS**	Batch ID:	**21655**	RunNo:	**29279**		
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**891134**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.068	0.020	0.1250	0	54.0	17.3	119			
Aroclor 1260	0.085	0.020	0.1250	0	67.9	10.7	139			
Surr: Decachlorobiphenyl	0.040		0.06250		64.4	25.2	134			
Surr: Tetrachloro-m-xylene	0.048		0.06250		76.8	17.4	148			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB-21605** SampType: **MBLK** TestCode: **EPA Method 8082: PCB's**
Client ID: **PBW** Batch ID: **21605** RunNo: **29279**
Prep Date: **10/1/2015** Analysis Date: **10/5/2015** SeqNo: **889913** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.7		2.500		148	17.7	151			
Surr: Tetrachloro-m-xylene	3.7		2.500		149	20.6	151			

Sample ID **LCS-21605** SampType: **LCS** TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSW** Batch ID: **21605** RunNo: **29279**
Prep Date: **10/1/2015** Analysis Date: **10/5/2015** SeqNo: **889915** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.0	1.0	5.000	0	80.8	9.01	142			
Aroclor 1260	5.4	1.0	5.000	0	108	25.6	164			
Surr: Decachlorobiphenyl	3.2		2.500		127	17.7	151			
Surr: Tetrachloro-m-xylene	3.1		2.500		124	20.6	151			

Sample ID **LCSD-21605** SampType: **LCSD** TestCode: **EPA Method 8082: PCB's**
Client ID: **LCSS02** Batch ID: **21605** RunNo: **29279**
Prep Date: **10/1/2015** Analysis Date: **10/5/2015** SeqNo: **889930** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	1.7	1.0	5.000	0	34.8	9.01	142	79.6	26.9	R
Aroclor 1260	3.0	1.0	5.000	0	60.6	25.6	164	56.4	29.1	R
Surr: Decachlorobiphenyl	1.6		2.500		62.0	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.2		2.500		46.0	20.6	151	0	0	

Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21665**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**			
Client ID: **PBS**	Batch ID: **21665**	RunNo: **29334**			
Prep Date: **10/5/2015**	Analysis Date: **10/6/2015**	SeqNo: **892566**	Units: **mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21665** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **21665** RunNo: **29334**
Prep Date: **10/5/2015** Analysis Date: **10/6/2015** SeqNo: **892566** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.2	70	130			
Surr: Toluene-d8	0.48		0.5000		96.4	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **lcs-21665** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **21665** RunNo: **29334**
Prep Date: **10/5/2015** Analysis Date: **10/6/2015** SeqNo: **892567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	105	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	1.1	0.050	1.000	0	107	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **lcs-21665** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **21665** RunNo: **29334**
Prep Date: **10/5/2015** Analysis Date: **10/6/2015** SeqNo: **892567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	109	70	130			
Trichloroethene (TCE)	0.99	0.050	1.000	0	99.2	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			

Sample ID **1510013-003ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **GKM_ADIT_0929201** Batch ID: **21665** RunNo: **29366**
Prep Date: **10/5/2015** Analysis Date: **10/7/2015** SeqNo: **893478** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.4	0.32	6.422	0	68.7	70	130			S
Toluene	4.6	0.32	6.422	0	71.1	65	138			
Chlorobenzene	4.7	0.32	6.422	0	73.9	70	130			
1,1-Dichloroethene	4.6	0.32	6.422	0	72.0	72.6	149			S
Trichloroethene (TCE)	4.7	0.32	6.422	0	72.6	62.4	139			
Surr: Dibromofluoromethane	3.7		3.211		114	70	130			
Surr: 1,2-Dichloroethane-d4	3.2		3.211		100	70	130			
Surr: Toluene-d8	3.1		3.211		97.6	70	130			
Surr: 4-Bromofluorobenzene	3.2		3.211		101	70	130			

Sample ID **1510013-003amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **GKM_ADIT_0929201** Batch ID: **21665** RunNo: **29366**
Prep Date: **10/5/2015** Analysis Date: **10/7/2015** SeqNo: **893479** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.3	0.32	6.410	0	35.5	70	130	63.8	20	RS
Toluene	2.3	0.32	6.410	0	36.6	65	138	64.2	20	RS
Chlorobenzene	2.5	0.32	6.410	0	38.4	70	130	63.4	20	RS
1,1-Dichloroethene	2.5	0.32	6.410	0	39.2	72.6	149	59.2	20	RS
Trichloroethene (TCE)	2.3	0.32	6.410	0	36.1	62.4	139	67.2	20	RS
Surr: Dibromofluoromethane	3.5		3.205		111	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	3.1		3.205		98.2	70	130	0	0	
Surr: Toluene-d8	3.1		3.205		96.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	3.4		3.205		105	70	130	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **B29294** RunNo: **29294**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **890318** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.9	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	107	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.8	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.1	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.8	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID **rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **B29294** RunNo: **29294**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **890323** Units: **µg/L**

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

Qualifiers:

*	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **B29294**	RunNo: **29294**			
Prep Date:	Analysis Date: **10/2/2015**	SeqNo: **890323**	Units: **µg/L**		

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

Qualifiers:

*	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **B29294**	RunNo: **29294**			
Prep Date:	Analysis Date: **10/2/2015**	SeqNo: **890323**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.9		10.00		89.1	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.5	70	130			
Surr: Dibromofluoromethane	8.8		10.00		88.3	70	130			
Surr: Toluene-d8	9.0		10.00		89.6	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**mb-21682**	SampType:	**MBLK**	TestCode:	**EPA Method 8270C: Semivolatiles**		
Client ID:	**PBW**	Batch ID:	**21682**	RunNo:	**29400**		
Prep Date:	**10/6/2015**	Analysis Date:	**10/7/2015**	SeqNo:	**894252**	Units:	**µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**mb-21682**	SampType:	**MBLK**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**PBW**	Batch ID:	**21682**	RunNo:	**29400**
Prep Date:	**10/6/2015**	Analysis Date:	**10/7/2015**	SeqNo:	**894252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	98		200.0		49.2	14.9	111			
Surr: Phenol-d5	120		200.0		59.8	11.3	108			
Surr: 2,4,6-Tribromophenol	110		200.0		57.2	15.7	154			
Surr: Nitrobenzene-d5	62		100.0		61.9	47.8	106			
Surr: 2-Fluorobiphenyl	63		100.0		62.5	21.3	123			
Surr: 4-Terphenyl-d14	35		100.0		35.3	14.3	135			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **lcs-21682** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **21682** RunNo: **29400**
Prep Date: **10/6/2015** Analysis Date: **10/7/2015** SeqNo: **894253** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	48	10	100.0	0	47.6	40.2	107			
4-Chloro-3-methylphenol	110	10	200.0	0	54.8	48.2	107			
2-Chlorophenol	110	10	200.0	0	52.6	42.5	106			
1,4-Dichlorobenzene	49	10	100.0	0	48.9	31.6	111			
2,4-Dinitrotoluene	48	10	100.0	0	48.3	33.6	86.5			
N-Nitrosodi-n-propylamine	53	10	100.0	0	52.8	44	106			
4-Nitrophenol	110	10	200.0	0	56.0	25.5	109			
Pentachlorophenol	83	20	200.0	0	41.4	38.8	97.8			
Phenol	100	10	200.0	0	52.0	22.7	116			
Pyrene	48	10	100.0	0	48.2	29.3	138			
1,2,4-Trichlorobenzene	56	10	100.0	0	55.7	35.3	123			
Surr: 2-Fluorophenol	93		200.0		46.3	14.9	111			
Surr: Phenol-d5	120		200.0		58.4	11.3	108			
Surr: 2,4,6-Tribromophenol	91		200.0		45.3	15.7	154			
Surr: Nitrobenzene-d5	59		100.0		58.8	47.8	106			
Surr: 2-Fluorobiphenyl	52		100.0		52.3	21.3	123			
Surr: 4-Terphenyl-d14	38		100.0		38.4	14.3	135			

Sample ID **1510013-001bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **GKM_ADIT_0929201** Batch ID: **21682** RunNo: **29400**
Prep Date: **10/6/2015** Analysis Date: **10/7/2015** SeqNo: **894257** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	73	10	100.0	0	73.4	46.4	121			
4-Chloro-3-methylphenol	170	10	200.0	0	82.8	45.3	135			
2-Chlorophenol	160	10	200.0	0	81.7	28.7	129			
1,4-Dichlorobenzene	73	10	100.0	0	73.1	42.6	104			
2,4-Dinitrotoluene	65	10	100.0	0	64.5	28.9	126			
N-Nitrosodi-n-propylamine	84	10	100.0	0	83.6	49.2	117			
4-Nitrophenol	110	10	200.0	0	55.6	18.1	97.2			
Pentachlorophenol	120	20	200.0	3.080	60.6	24.8	127			
Phenol	110	10	200.0	0	57.2	17.9	93.6			
Pyrene	70	10	100.0	0	69.8	29.6	142			
1,2,4-Trichlorobenzene	85	10	100.0	0	85.3	39.5	109			
Surr: 2-Fluorophenol	120		200.0		58.8	14.9	111			
Surr: Phenol-d5	130		200.0		63.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		77.9	15.7	154			
Surr: Nitrobenzene-d5	91		100.0		90.9	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.3	21.3	123			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **1510013-001bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **GKM_ADIT_0929201** Batch ID: **21682** RunNo: **29400**
Prep Date: **10/6/2015** Analysis Date: **10/7/2015** SeqNo: **894257** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	44		100.0		43.6	14.3	135			

Sample ID **1510013-001bmsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **GKM_ADIT_0929201** Batch ID: **21682** RunNo: **29400**
Prep Date: **10/6/2015** Analysis Date: **10/7/2015** SeqNo: **894258** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	81	10	100.0	0	81.2	46.4	121	10.1	31.3	
4-Chloro-3-methylphenol	180	10	200.0	0	88.0	45.3	135	6.13	29	
2-Chlorophenol	74	10	200.0	0	37.2	28.7	129	75.0	28.4	R
1,4-Dichlorobenzene	83	10	100.0	0	83.2	42.6	104	13.0	28.2	
2,4-Dinitrotoluene	71	10	100.0	0	71.0	28.9	126	9.59	22.9	
N-Nitrosodi-n-propylamine	91	10	100.0	0	91.0	49.2	117	8.48	28.8	
4-Nitrophenol	21	10	200.0	0	10.5	18.1	97.2	137	41.5	RS
Pentachlorophenol	23	20	200.0	3.080	10.2	24.8	127	137	45.1	RS
Phenol	84	10	200.0	0	42.2	17.9	93.6	30.3	33.9	
Pyrene	73	10	100.0	0	73.2	29.6	142	4.73	33.6	
1,2,4-Trichlorobenzene	89	10	100.0	0	88.9	39.5	109	4.11	28.2	
Surr: 2-Fluorophenol	39		200.0		19.7	14.9	111	0	0	
Surr: Phenol-d5	97		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	42		200.0		21.1	15.7	154	0	0	
Surr: Nitrobenzene-d5	99		100.0		98.9	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	92		100.0		91.9	21.3	123	0	0	
Surr: 4-Terphenyl-d14	46		100.0		46.3	14.3	135	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21718**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**21718**	RunNo:	**29390**
Prep Date:	**10/7/2015**	Analysis Date:	**10/8/2015**	SeqNo:	**893910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	ND	2.5								
Uranium	ND	5.0								

Sample ID	**LCS-21718**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**21718**	RunNo:	**29390**
Prep Date:	**10/7/2015**	Analysis Date:	**10/8/2015**	SeqNo:	**893911** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	24	2.5	25.00	0	97.6	80	120			
Uranium	26	5.0	25.00	0	105	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**			
Client ID: **PBW**	Batch ID: **R29376**	RunNo: **29376**			
Prep Date:	Analysis Date: **10/7/2015**	SeqNo: **893215**	Units: **mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**			
Client ID: **LCSW**	Batch ID: **R29376**	RunNo: **29376**			
Prep Date:	Analysis Date: **10/7/2015**	SeqNo: **893216**	Units: **mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.2	1.0	10.00	0	92.4	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB**	SampType: **MBLK**	TestCode: **Ammonia as N**		
Client ID: **PBS**	Batch ID: **R29640**	RunNo: **29640**		
Prep Date:	Analysis Date: **10/16/2015**	SeqNo: **902516**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	25								

Sample ID **LCS**	SampType: **LCS**	TestCode: **Ammonia as N**		
Client ID: **LCSS**	Batch ID: **R29640**	RunNo: **29640**		
Prep Date:	Analysis Date: **10/16/2015**	SeqNo: **902517**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	480	25	500.0	0	96.6	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21855**	SampType:	**MBLK**	TestCode:	**Method 4500-N-org C: TKN**		
Client ID:	**PBS**	Batch ID:	**21855**	RunNo:	**29571**		
Prep Date:	**10/14/2015**	Analysis Date:	**10/15/2015**	SeqNo:	**899990**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	ND	50								

Sample ID	**LCS-21855**	SampType:	**LCS**	TestCode:	**Method 4500-N-org C: TKN**		
Client ID:	**LCSS**	Batch ID:	**21855**	RunNo:	**29571**		
Prep Date:	**10/14/2015**	Analysis Date:	**10/15/2015**	SeqNo:	**899991**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	1000	50	1000	0	104	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1510013**
13-Nov-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21900**	SampType:	**MBLK**	TestCode:	**SM 4500 Norg C: TKN**
Client ID:	**PBW**	Batch ID:	**21900**	RunNo:	**29815**
Prep Date:	**10/19/2015**	Analysis Date:	**10/27/2015**	SeqNo:	**908257** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID	**LCS-21900**	SampType:	**LCS**	TestCode:	**SM 4500 Norg C: TKN**
Client ID:	**LCSW**	Batch ID:	**21900**	RunNo:	**29815**
Prep Date:	**10/19/2015**	Analysis Date:	**10/27/2015**	SeqNo:	**908258** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	104	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: La Plata Work Order Number: 1510013 RcptNo: 1

Received by/date: 10/01/15

Logged By: **Lindsay Mangin** 10/1/2015 7:45:00 AM

Completed By: **Lindsay Mangin** 10/1/2015 10:45:28 AM

Reviewed By: AT 10/02/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

Chain-of-Custody Record

Client: ~~WRIGHT WATER ENGINEERS~~ (FOR LA PLATA COUNTY)

Mailing Address: ~~1666 N.~~ 1060 MAIN AVE, 104 ~~SUITE C~~, DURANGO, CO 81301

Phone #: 970-~~259-7411~~ 382-6376

email or Fax#: ~~mdeamico@wrightwater.com~~ leslie.jakoby@co.laplata.

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

Accreditation: ☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time: ☒ Standard ☐ Rush _____

Project Name: GOLD KING MINE

Project #: 121-023-050

Project Manager: PETE FOSTER, P.E.

Sampler: MATT DEAMICO, EIT

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1510012	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals ~~TESL SULFIDE / FUEL HYDRO~~ THALLIUM	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	CYANIDE 8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	NO2/NO3/TKN/NH3	DIOXINS, PCBS	CR, CR6, ~~CYANIDE~~	U / R226/228, α, β, γ 238	Air Bubbles (Y or N)
9/29/15	1800	WATER	GKM_ADIT_09292015_W_1800	Various	Various	-001									X	X	X	X	X	X	X	
9/29/15	1800	WATER	GKM_ADIT_09292015_WD_1800			-002									X	X	X	X	X	X	X	
9/29/15	1823	SEDIMENT	GKM_ADIT_09292015_SED_1823			-003							X		X	X	X	X	X		X	
9/29/15	1823	SEDIMENT	GKM_ADIT_09292015_SEDD_1823			-004							X		X	X	X	X	X		X	
9/29/15	-	WATER	TRIP BLANK	—		-005																
9/29/15	-	WATER	TRIP BLANK	3	—	-005																

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/30/15	830	[signature]	[signature]	9/30/15	830
9/30/15	1730	[signature]	[signature]	10/01/15	0745

Remarks:

SEE ATTACHED SHEET FOR ANALYSIS PARAMETERS.

WL 1800 FOR Cr(6) MAY NOT HAVE ALL ACID PRESERVATIVE DUE TO VIAL LEAK

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.

Lab Analysis	Quantity	Bottle	Preservative	Notes
Nitrogen Compounds (NO2, NO3, TKN, NH3)	✓ 1	500ml Plastic	H2SO4	
Dioxins (2,3,7,8-TCDD)	✓ 2	1L Glass Amber	None	
PCB's	✓ 1	1L Glass Amber	None	
Chromium speciation (Total chromium and Cr6)	1 1	500ml Plastic 50ml Plastic	HNO3 NH3/SO4 filtered bottle	
VOC's (8260)	✓ 3	40ml Glass vials	HCL	no head space/bubbles
Cyanide	✓ 1	500ml Amber Plastic	NaOH	
Uranium and Radio-chemicals: Uranium, and Radium 226/228, Gross Alpha and Gross Beta add Uranium 238	2	1L Plastic	HNO3	
Semi Volatiles SVOCs (8270)	✓ 2	1L Glass Amber	None	
Sediment	✓ 4	4oz glass jars	none	use 4 jars per location

Nitrogen Compounds – NO2, NO3, NH3
Dioxins / Furans
PCBs
Cyanide
VOCs
Uranium and Radio-chemicals, Uranium and Radium 226/228, Gross Alpha, Gross Beta, Uranium 238
Semi Volatiles (SVOCs)
Thallium: — THALLIUM, THALLIUM NITRATE, THALLIUM SOLUBLE SALTS.
Thallium ~~Thallium~~
~~Nitrate~~ – ~~NITRATE~~
Chloride
Sulfate
~~Carbonate~~

NO2
NO3

Rpt J Flags & MDL's
Sub Cr6, Cn – ESC
Pace Rads
Cape Fear Rpt J Flags & MDL's

Qty: 1 WATER SAMPLE
1 WATER DUPLICATE
1 SEDIMENT SAMPLE
1 SEDIMENT DUPLICATE

ATTACHMENT D

EPA SURFACE WATER ADIT SAMPLING LABORATORY RESULTS

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

October 27, 2015

Leslie Jakoby
La Plata County
1060 Main Ave., #104
Durango, CO 81301
TEL: (970) 382-6376
FAX

RE: Gold King Mine OrderNo.: 1509C89

Dear Leslie Jakoby:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/26/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

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

Case Narrative

WO#: **1509C89**
Date: **10/27/2015**

CLIENT: La Plata County
Project: Gold King Mine

Analytical Notes Regarding Hexavalent Chromium:
The Cr6+ data is not included in this report due to possible samplling problems.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509C89-001 **Matrix:** AQUEOUS

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS						Analyst:	**DBD**
Antimony	0.0020	0.0010		mg/L	1	10/14/2015 3:04:30 PM	A29547
Arsenic	0.033	0.0010	*	mg/L	1	10/14/2015 3:04:30 PM	A29547
Copper	6.1	0.20	*	mg/L	200	10/14/2015 4:35:13 PM	A29547
Lead	0.037	0.0025	*	mg/L	5	10/14/2015 4:38:31 PM	A29547
Selenium	ND	0.0050		mg/L	5	10/14/2015 4:38:31 PM	A29547
Uranium	0.0083	0.00050		mg/L	1	10/14/2015 3:04:30 PM	A29547
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/30/2015 1:36:37 AM	R29185
SM 4500 NH3: AMMONIA						Analyst:	**MAW**
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/7/2015 12:35:00 PM	R29376
SM 4500 NORG C: TKN						Analyst:	**MAW**
Nitrogen, Kjeldahl, Total	ND	2.0	D	mg/L	1	10/16/2015 3:15:00 PM	21868
EPA METHOD 200.7: METALS						Analyst:	**ELS**
Aluminum	27	1.0	*	mg/L	50	10/6/2015 1:56:14 PM	A29330
Barium	0.011	0.0020		mg/L	1	10/2/2015 1:12:54 PM	A29254
Beryllium	0.010	0.0020	*	mg/L	1	10/2/2015 1:12:54 PM	A29254
Cadmium	0.063	0.0020	*	mg/L	1	10/2/2015 1:12:54 PM	A29254
Calcium	340	5.0		mg/L	5	10/2/2015 1:14:49 PM	A29254
Chromium	ND	0.0060		mg/L	1	10/5/2015 2:46:36 PM	B29309
Cobalt	0.094	0.0060		mg/L	1	10/2/2015 1:12:54 PM	A29254
Iron	100	4.0	*	mg/L	200	10/5/2015 2:50:12 PM	B29309
Magnesium	23	1.0		mg/L	1	10/2/2015 1:12:54 PM	A29254
Manganese	33	0.10	*	mg/L	50	10/5/2015 2:48:32 PM	B29309
Molybdenum	ND	0.0080		mg/L	1	10/2/2015 1:12:54 PM	A29254
Nickel	0.046	0.010		mg/L	1	10/2/2015 1:12:54 PM	A29254
Potassium	1.8	1.0		mg/L	1	10/2/2015 1:12:54 PM	A29254
Silver	ND	0.0050		mg/L	1	10/5/2015 2:46:36 PM	B29309
Sodium	4.5	1.0		mg/L	1	10/2/2015 1:12:54 PM	A29254
Vanadium	ND	0.050		mg/L	1	10/2/2015 1:12:54 PM	A29254
Zinc	27	0.50	*	mg/L	50	10/6/2015 1:56:14 PM	A29330
EPA METHOD 245.1: MERCURY						Analyst:	**JLF**
Mercury	ND	0.00020		mg/L	1	10/6/2015 4:32:46 PM	21685
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Aroclor 1221	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Aroclor 1232	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509C89-001 **Matrix:** AQUEOUS

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1242	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Aroclor 1248	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Aroclor 1254	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Aroclor 1260	ND	1.0		µg/L	1	10/2/2015 6:44:52 AM	21525
Surr: Decachlorobiphenyl	68.4	17.7-151		%REC	1	10/2/2015 6:44:52 AM	21525
Surr: Tetrachloro-m-xylene	57.2	20.6-151		%REC	1	10/2/2015 6:44:52 AM	21525
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**DAM**
Acenaphthene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Acenaphthylene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Aniline	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Anthracene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Azobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benz(a)anthracene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzo(a)pyrene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzo(b)fluoranthene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzo(g,h,i)perylene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzo(k)fluoranthene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzoic acid	ND	20		µg/L	1	9/30/2015 1:46:48 PM	21524
Benzyl alcohol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Bis(2-chloroethyl)ether	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Bromophenyl phenyl ether	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Butyl benzyl phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Carbazole	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Chloro-3-methylphenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Chloroaniline	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Chloronaphthalene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Chlorophenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Chrysene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Di-n-butyl phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Di-n-octyl phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Dibenz(a,h)anthracene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Dibenzofuran	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
1,2-Dichlorobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
1,3-Dichlorobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
1,4-Dichlorobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509C89-001 **Matrix:** AQUEOUS

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
3,3´-Dichlorobenzidine	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Diethyl phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Dimethyl phthalate	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4-Dichlorophenol	ND	20		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4-Dimethylphenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4-Dinitrophenol	ND	20		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4-Dinitrotoluene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2,6-Dinitrotoluene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Fluoranthene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Fluorene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Hexachlorobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Hexachlorobutadiene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Hexachlorocyclopentadiene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Hexachloroethane	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Isophorone	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
1-Methylnaphthalene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Methylnaphthalene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Methylphenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
3+4-Methylphenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
N-Nitrosodimethylamine	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
N-Nitrosodiphenylamine	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Naphthalene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Nitroaniline	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
3-Nitroaniline	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Nitroaniline	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Nitrobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2-Nitrophenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
4-Nitrophenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Pentachlorophenol	ND	20		µg/L	1	9/30/2015 1:46:48 PM	21524
Phenanthrene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Phenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Pyrene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
Pyridine	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
1,2,4-Trichlorobenzene	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4,5-Trichlorophenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524
2,4,6-Trichlorophenol	ND	10		µg/L	1	9/30/2015 1:46:48 PM	21524

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: CC06-092115-1300-B
Project: Gold King Mine
Collection Date: 9/21/2015 1:00:00 PM
Lab ID: 1509C89-001
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**DAM**
Surr: 2-Fluorophenol	78.0	14.9-111		%REC	1	9/30/2015 1:46:48 PM	21524
Surr: Phenol-d5	77.9	11.3-108		%REC	1	9/30/2015 1:46:48 PM	21524
Surr: 2,4,6-Tribromophenol	69.0	15.7-154		%REC	1	9/30/2015 1:46:48 PM	21524
Surr: Nitrobenzene-d5	99.7	47.8-106		%REC	1	9/30/2015 1:46:48 PM	21524
Surr: 2-Fluorobiphenyl	103	21.3-123		%REC	1	9/30/2015 1:46:48 PM	21524
Surr: 4-Terphenyl-d14	56.4	14.3-135		%REC	1	9/30/2015 1:46:48 PM	21524
EPA METHOD 8260B: VOLATILES						Analyst:	**BCN**
Benzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Toluene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Ethylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Naphthalene	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
2-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Acetone	ND	10		µg/L	1	9/29/2015 8:55:36 PM	R29189
Bromobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Bromodichloromethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Bromoform	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Bromomethane	ND	3.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
2-Butanone	ND	10		µg/L	1	9/29/2015 8:55:36 PM	R29189
Carbon disulfide	ND	10		µg/L	1	9/29/2015 8:55:36 PM	R29189
Carbon Tetrachloride	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Chlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Chloroethane	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Chloroform	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Chloromethane	ND	3.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
2-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
4-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
cis-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Dibromochloromethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Dibromomethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: CC06-092115-1300-B
Project: Gold King Mine
Collection Date: 9/21/2015 1:00:00 PM
Lab ID: 1509C89-001
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1-Dichloroethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1-Dichloroethene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,3-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
2,2-Dichloropropane	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Hexachlorobutadiene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
2-Hexanone	ND	10		µg/L	1	9/29/2015 8:55:36 PM	R29189
Isopropylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
4-Isopropyltoluene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
4-Methyl-2-pentanone	ND	10		µg/L	1	9/29/2015 8:55:36 PM	R29189
Methylene Chloride	ND	3.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
n-Butylbenzene	ND	3.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
n-Propylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
sec-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Styrene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
tert-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
trans-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Trichlorofluoromethane	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Vinyl chloride	ND	1.0		µg/L	1	9/29/2015 8:55:36 PM	R29189
Xylenes, Total	ND	1.5		µg/L	1	9/29/2015 8:55:36 PM	R29189
Surr: 1,2-Dichloroethane-d4	85.7	70-130		%REC	1	9/29/2015 8:55:36 PM	R29189
Surr: 4-Bromofluorobenzene	92.5	70-130		%REC	1	9/29/2015 8:55:36 PM	R29189
Surr: Dibromofluoromethane	89.3	70-130		%REC	1	9/29/2015 8:55:36 PM	R29189
Surr: Toluene-d8	94.6	70-130		%REC	1	9/29/2015 8:55:36 PM	R29189

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Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1509C89-002
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
Benzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Toluene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Ethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Naphthalene	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
2-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Acetone	ND	10		µg/L	1	9/29/2015 9:24:17 PM	R29189
Bromobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Bromodichloromethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Bromoform	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Bromomethane	ND	3.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
2-Butanone	ND	10		µg/L	1	9/29/2015 9:24:17 PM	R29189
Carbon disulfide	ND	10		µg/L	1	9/29/2015 9:24:17 PM	R29189
Carbon Tetrachloride	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Chlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Chloroethane	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Chloroform	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Chloromethane	ND	3.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
2-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
4-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
cis-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Dibromochloromethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Dibromomethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1-Dichloroethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1-Dichloroethene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,3-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
2,2-Dichloropropane	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1509C89-002
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
1,1-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Hexachlorobutadiene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
2-Hexanone	ND	10		µg/L	1	9/29/2015 9:24:17 PM	R29189
Isopropylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
4-Isopropyltoluene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
4-Methyl-2-pentanone	ND	10		µg/L	1	9/29/2015 9:24:17 PM	R29189
Methylene Chloride	ND	3.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
n-Butylbenzene	ND	3.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
n-Propylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
sec-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Styrene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
tert-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
trans-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Trichlorofluoromethane	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Vinyl chloride	ND	1.0		µg/L	1	9/29/2015 9:24:17 PM	R29189
Xylenes, Total	ND	1.5		µg/L	1	9/29/2015 9:24:17 PM	R29189
Surr: 1,2-Dichloroethane-d4	91.9	70-130		%REC	1	9/29/2015 9:24:17 PM	R29189
Surr: 4-Bromofluorobenzene	96.8	70-130		%REC	1	9/29/2015 9:24:17 PM	R29189
Surr: Dibromofluoromethane	94.7	70-130		%REC	1	9/29/2015 9:24:17 PM	R29189
Surr: Toluene-d8	96.3	70-130		%REC	1	9/29/2015 9:24:17 PM	R29189

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ANALYTICAL REPORT

October 26, 2015

Hall Environmental Analysis Laboratory

Sample Delivery Group: L791243

Samples Received: 09/29/2015

Project Number:

Description:

Report To:

4901 Hawkins NE

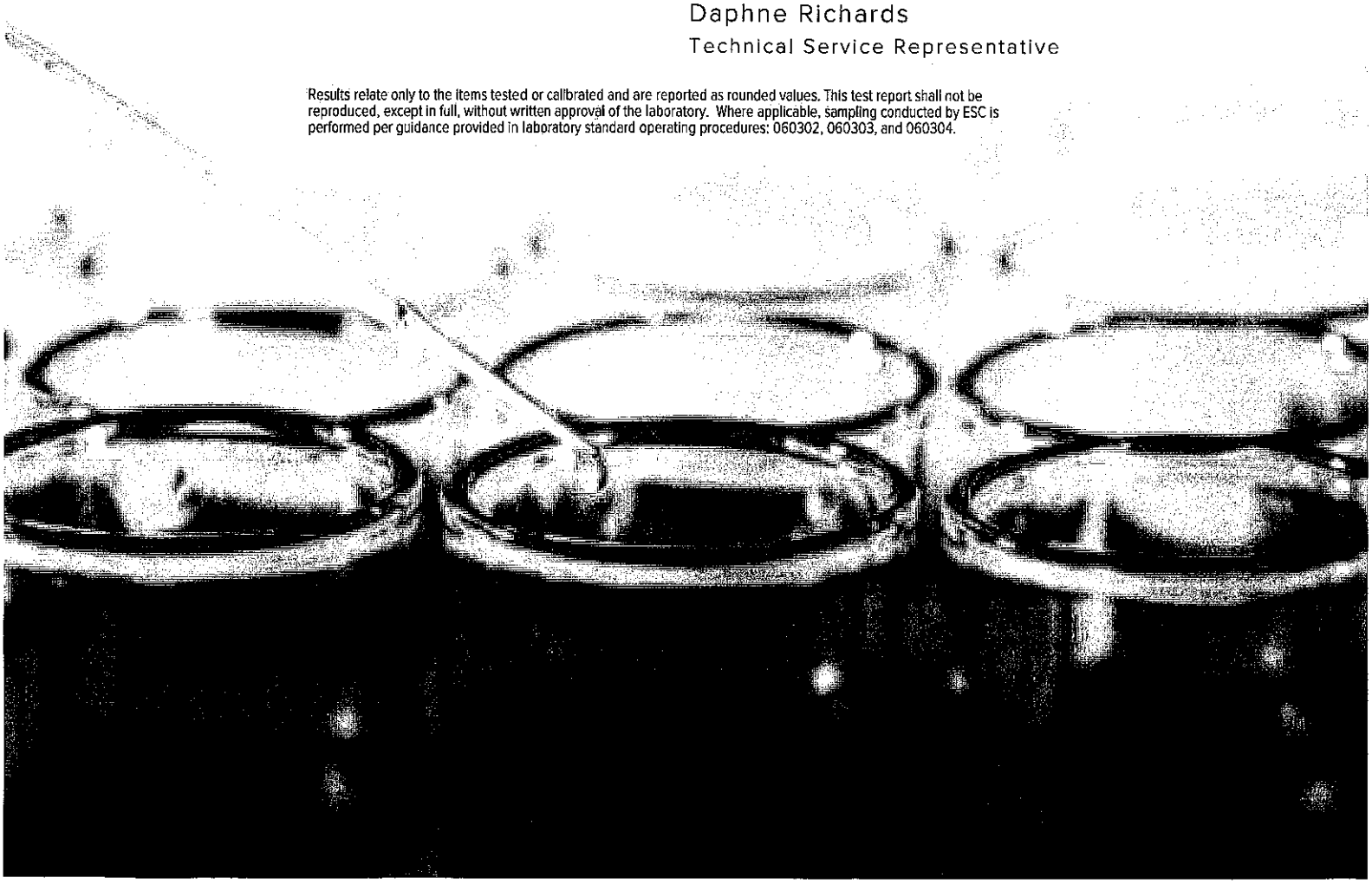
Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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1509C89-001F CC06-092115-1300-B L791243-01 WW			Collected by	Collected date/time 09/21/15 13:00	Received date/time 09/29/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 4500CN E-2011	WG819372	1	10/03/15 10:09	10/03/15 13:22	DR

1509C89-001G CC06-092115-1300-B L791243-02 WW			Collected by	Collected date/time 09/21/15 13:00	Received date/time 09/29/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Wet Chemistry by Method 3500Cr B-2011	WG818409	1	09/29/15 15:50	09/29/15 15:50	SJM

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L791243-02	1509C89-001G CC06-092115-1300-B	3500Cr B-2011

Wet Chemistry by Method 4500CN E-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	10/03/2015 13:22	WG819372

QUALITY CONTROL SUMMARY

L791243-01

Method Blank (MB)

(MB) 10/03/15 13:06

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Cyanide	ND		0.00500

L789898-04 Original Sample (OS) • Duplicate (DUP)

(OS) 10/03/15 13:27 • (DUP) 10/03/15 13:28

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00730	0.00670	1	8.57		20

L789867-02 Original Sample (OS) • Duplicate (DUP)

(OS) 10/03/15 13:14 • (DUP) 10/03/15 13:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/03/15 13:08 • (LCSD) 10/03/15 13:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	0.101	0.103	101	103	90.0-110			1.96	20

L791591-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/03/15 13:30 • (MS) 10/03/15 13:31 • (MSD) 10/03/15 13:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.200	0.000800	0.179	0.194	89.5	97.0	1	90.0-110	J6		8.04	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND;U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1,4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

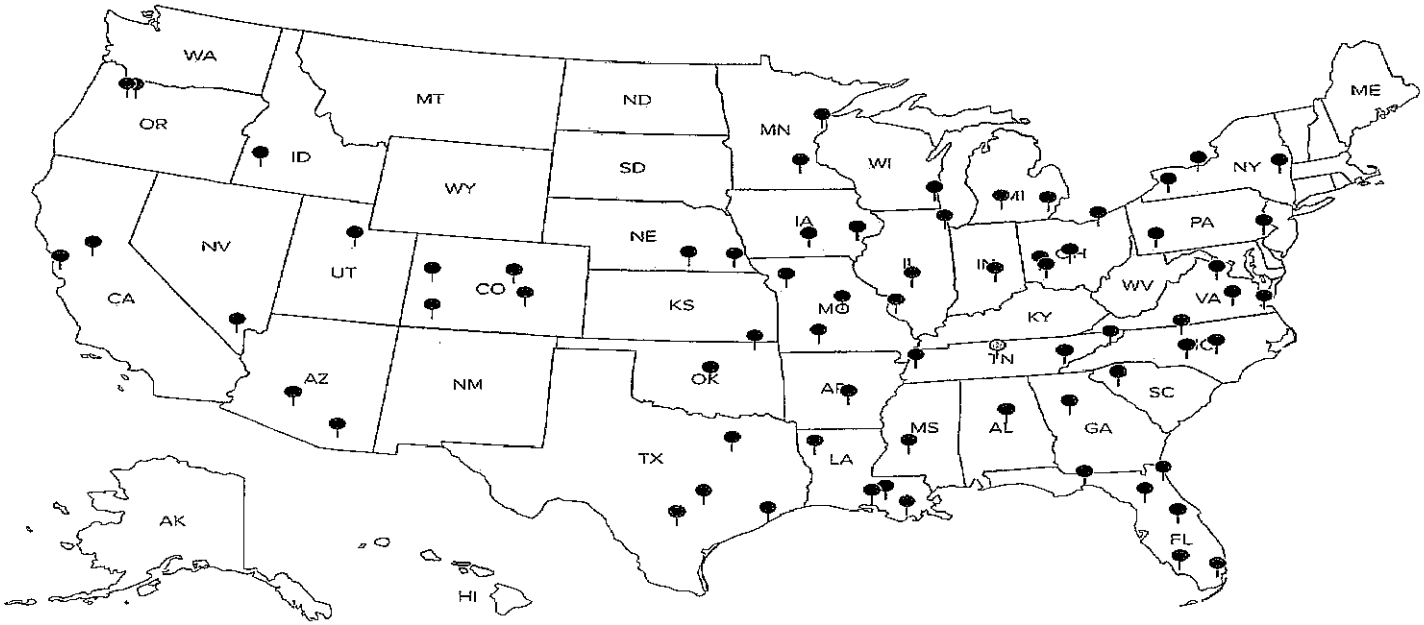
[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold n/a Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

A013

SUB CONTRATOR: ESC
COMPANY: ESC
PHONE: (800) 767-5859
FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd
ACCOUNT #:
EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1509C89-001F	CC06-092115-1300-B	500AMBHDPE-NaOH	Aqueous	9/21/2015 1:00:00 PM	1	TOTAL CYANIDE >12 L791243-01
2	1509C89-001G	CC06-092115-1300-B	120mL	Aqueous	9/21/2015 1:00:00 PM	1	Cr6 ANALYZE OUT OF HOLD -02

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

6200 8045 2265 total = 2 ph = >12 (Ok)

Relinquished By	Date	Time	Received By	Date	Time
[signature]	9/28/2015	1:45 PM			
Relinquished By	Date	Time	Received By	Date	Time
Relinquished By	Date	Time	Received By [signature]	9/29/15	0900

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 3.4°C Attempt to Cool ?
Comments: P

CFA | Cape Fear Analytical LLC
an affiliate of **The GEL Group** INC

3308 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421

www.capefearanalytical.com

October 14, 2015

Mr. Andy Freeman
Hall Environmental
4901 Hawkins NE
Suite D
Albuquerque, New Mexico 87109

Re: Routine Analysis
Work Order: 8270
SDG: 1509C89

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 30, 2015. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421 Ext. 2.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Purchase Order: IDIQ Pricing
Enclosures

problem solved

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

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

SUB CONTRATOR: Cape Fear Analytical	COMPANY: Cape Fear Analytical	PHONE: (910) 795-0421	FAX:
ADDRESS: 3306 Kitty Hawk Rd Ste 120		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Wilmington, NC 28405			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1509C89-001H	CC06-092115-1300-B	1LAMGU	Aqueous	9/21/2015 1:00:00 PM	2	GW 2,3,7,8 TCDD

CFA WO # 8270

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 9/28/2015	Time: 1:49 PM	Received By: Cynde Larkins	Date: 30 Sep 15	Time: 1020
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 4.2 °C Attempt to Cool ? ✓
Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order:
Shipping Company: Fed Ex	Date/Time Received:

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			
Samples < 2x background?			

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 5.9°-1.7° = 4.2°C
4	Aqueous samples found to have visible solids?	✓		CK 30Sep15	Sample IDs, containers affected: Minimal visible solids (<1/2)
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH = 5 on both containers If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected: 2 - 1L Nm Ambers received
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CK Date: 30 Sep 15

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 1509C89
Work Order 8270

Method/Analysis Information

Product:	**TCDD Only by EPA Method 1613B in Liquids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3520C
Analytical Batch Number:	30213
Clean Up Batch Number:	30212
Extraction Batch Number:	30211

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
8270001	1509C89-001H CC06-092115-1300-B
12014480	Method Blank (MB)
12014481	Laboratory Control Sample (LCS)
12014482	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP750_2	Primary Dioxin Analysis	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report
for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1509C89 CFA Work Order: 8270

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: ESuhrie **Name: Erin Suhrie**

Date: 14 OCT 2015 **Title: Data Validator**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509C89	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	8270001	**Date Collected:**	09/21/2015 13:00	**Matrix:**	WATER
Client Sample:	1613B TCDD Water	**Date Received:**	09/30/2015 10:20		
Client ID:	1509C89-001H CC06-092115-1300-			**Prep Basis:**	As Received
Batch ID:	30213	**Method:**	EPA Method 1613B		
Run Date:	10/12/2015 18:25	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A12OCT15A-12			**Dilution:**	1
Prep Batch:	30211	**Prep Method:**	SW846 3520C		
Prep Date:	08-OCT-15	**Prep Aliquot:**	977.9 mL		

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	10.2	pg/L	10.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1750	2050	pg/L	85.7	(31%-137%)
37Cl-2,3,7,8-TCDD		184	205	pg/L	89.9	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: 1509C89

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12014481	LCS for batch 30211	13C-2,3,7,8-TCDD		92.3	(25%-141%)
		37Cl-2,3,7,8-TCDD		94.3	(37%-158%)
12014482	LCSD for batch 30211	13C-2,3,7,8-TCDD		86.4	(25%-141%)
		37Cl-2,3,7,8-TCDD		94.3	(37%-158%)
12014480	MB for batch 30211	13C-2,3,7,8-TCDD		91.7	(31%-137%)
		37Cl-2,3,7,8-TCDD		96.8	(42%-164%)
8270001	1509C89-001H CC06-092115-1300-B	13C-2,3,7,8-TCDD		85.7	(31%-137%)
		37Cl-2,3,7,8-TCDD		89.9	(42%-164%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509C89
Client ID: LCS for batch 30211
Lab Sample ID: 12014481
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 10/12/2015 10:24
Dilution: 1
Prep Batch ID: 30211
Batch ID: 30213

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	193	96.5	73-146

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509C89
Client ID: LCSD for batch 30211
Lab Sample ID: 12014482
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 10/12/2015 11:11
Dilution: 1
Prep Batch ID: 30211
Batch ID: 30213

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	215	107	73-146	10.7	0-20

Method Blank Summary

SDG Number:	**1509C89**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 30211**	**Instrument ID:**	**HRP750**	**Data File:**	**A12OCT15A-4**
Lab Sample ID:	**12014480**	**Prep Date:**	**08-OCT-15**	**Analyzed:**	**10/12/15 11:59**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 30211	12014481	A12OCT15A-2	10/12/15	1024
02	LCSD for batch 30211	12014482	A12OCT15A-3	10/12/15	1111
03	1509C89-001H CC06-092115-1300-B	8270001	A12OCT15A-12	10/12/15	1825

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509C89	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	12014480			**Matrix:**	WATER
Client Sample:	QC for batch 30211				
Client ID:	MB for batch 30211			**Prep Basis:**	As Received
Batch ID:	30213	**Method:**	EPA Method 1613B		
Run Date:	10/12/2015 11:59	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A12OCT15A-4			**Dilution:**	1
Prep Batch:	30211	**Prep Method:**	SW846 3520C		
Prep Date:	08-OCT-15	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	10	pg/L	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1830	2000	pg/L	91.7	(31%-137%)
37Cl-2,3,7,8-TCDD		194	200	pg/L	96.8	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509C89	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	12014481			**Matrix:**	WATER
Client Sample:	QC for batch 30211				
Client ID:	LCS for batch 30211			**Prep Basis:**	As Received
Batch ID:	30213	**Method:**	EPA Method 1613B		
Run Date:	10/12/2015 10:24	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A12OCT15A-2			**Dilution:**	1
Prep Batch:	30211	**Prep Method:**	SW846 3520C		
Prep Date:	08-OCT-15	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		193	pg/L	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1850	2000	pg/L	92.3	(25%-141%)
37Cl-2,3,7,8-TCDD		189	200	pg/L	94.3	(37%-158%)

Comments:

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509C89	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	12014482			**Matrix:**	WATER
Client Sample:	QC for batch 30211				
Client ID:	LCSD for batch 30211			**Prep Basis:**	As Received
Batch ID:	30213	**Method:**	EPA Method 1613B		
Run Date:	10/12/2015 11:11	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A12OCT15A-3			**Dilution:**	1
Prep Batch:	30211	**Prep Method:**	SW846 3520C		
Prep Date:	08-OCT-15	**Prep Aliquot:**	1000 mL		

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		215	pg/L	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1730	2000	pg/L	86.4	(25%-141%)
37Cl-2,3,7,8-TCDD		189	200	pg/L	94.3	(37%-158%)

Comments:

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October 16, 2015

Ms. Anne Thorne
Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

RE: Project: 1509C89
Pace Project No.: 30160539

Dear Ms. Thorne:
Enclosed are the analytical results for sample(s) received by the laboratory on September 29, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Ms. Jackie Ball, Hall Environmental Analysis Laboratory

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CERTIFICATIONS

Project: 1509C89
Pace Project No.: 30160539

Pennsylvania Certification IDs
Georgia Certification #: C040
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 1509C89
Pace Project No.: 30160539

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30160539001	**1509C89-001I CC06-092115-1300-**	Water	09/21/15 13:00	09/29/15 09:30

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SAMPLE ANALYTE COUNT

Project: 1509C89
Pace Project No.: 30160539

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30160539001	1509C89-001I CC06-092115-1300-	EPA 903.1	WRR	1
		EPA 904.0	JLW	1

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PROJECT NARRATIVE

Project: 1509C89
Pace Project No.: 30160539

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Hall Environmental Analysis Laboratory
Date: October 16, 2015

General Information:
1 sample was analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/26255

1c: The Ra-226 LCSD associated with this sample was inadvertently not spiked, therefore duplicate precision cannot be evaluated for batch 26255. Client was notified and has allowed reporting with narration. All other QC criteria were met..

- 1509C89-001I CC06-092115-1300- (Lab ID: 30160539001)
  - Radium-226
- BLANK (Lab ID: 960215)
  - Radium-226

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PROJECT NARRATIVE

Project: 1509C89
Pace Project No.: 30160539

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Hall Environmental Analysis Laboratory
Date: October 16, 2015

General Information:
1 sample was analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1509C89
Pace Project No.: 30160539

Sample: 1509C89-001I CC06-092115-1300- **Lab ID: 30160539001** Collected: 09/21/15 13:00 Received: 09/29/15 09:30 Matrix: Water

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.229 ± 0.449 (0.821)** **C:NA T:100%**	pCi/L	10/16/15 11:45	13982-63-3	1c
Radium-228	EPA 904.0	**0.607 ± 0.418 (0.804)** **C:79% T:80%**	pCi/L	10/15/15 12:24	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1509C89
Pace Project No.: 30160539

QC Batch: RADC/26255 | Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 | Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30160539001

METHOD BLANK: 960215 | Matrix: Water
Associated Lab Samples: 30160539001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0523 ± 0.522 (0.992) C:NA T:100%	pCi/L	10/16/15 11:09	1c

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1509C89
Pace Project No.: 30160539

QC Batch: RADC/26338
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 30160539001

METHOD BLANK: 963786
Matrix: Water
Associated Lab Samples: 30160539001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0904 ± 0.294 (0.662) C:82% T:90%	pCi/L	10/15/15 12:08	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1509C89
Pace Project No.: 30160539

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1c The Ra-226 LCSD associated with this sample was inadvertently not spiked, therefore duplicate precision cannot be evaluated for batch 26255. Client was notified and has allowed reporting with narration. All other QC criteria were met..

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

30160539

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

SUB CONTRATOR: Pace Analytical-PA	COMPANY: Pace Analytical Services, Inc.	PHONE: (724) 850-5600	FAX: (724) 850-5601
ADDRESS: 1638 Roseytown Rd Ste 2,3,4		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Greensburg, PA 15601			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1509C89-001I	CC06-092115-1300-B	1LHDPEHNO3	Aqueous	9/21/2015 1:00:00 PM	5	GW RADIUM 226/228

001

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	9/28/2015	1:51 PM	[illegible]	9/28/15	0930
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples NA °C Attempt to Cool ? N
Comments:

BCM

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hay

Project # 30160539

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 774613761914

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ____ Bubble Bags ____ None ____ Other Paper

Thermometer Used NA **Type of Ice:** Wet Blue None ☐ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: NA °C **Correction Factor:** ____ °C **Final Temp:** ____ °C

Date and initials of person examining contents: VDV 9/30/15

Temp should be above freezing to 6°C

Comments:

				Comments
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	4.
Samples Arrived within Hold Time:	☐Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☐Yes	☑No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: NA				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13. pH <2
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes	☑No		Initial when completed VDV / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased): ____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 9/30/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

30160539

Project Number: _____

Client Name: Hall

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swips/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WA																		1					

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A29254** RunNo: **29254**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **888882** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.54	0.0020	0.5000	0	107	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	99.1	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.4	85	115			
Magnesium	51	1.0	50.00	0	101	85	115			
Molybdenum	0.53	0.0080	0.5000	0	106	85	115			
Nickel	0.50	0.010	0.5000	0	101	85	115			
Potassium	49	1.0	50.00	0	97.9	85	115			
Sodium	50	1.0	50.00	0	99.6	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A29254** RunNo: **29254**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **888894** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Cobalt	ND	0.0060								
Magnesium	ND	1.0								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Sodium	ND	1.0								
Vanadium	ND	0.050								

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A29254** RunNo: **29254**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **888895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	65.5	50	150			
Beryllium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	96.5	50	150			
Calcium	ND	1.0	0.5000	0	93.2	50	150			
Cobalt	0.0065	0.0060	0.006000	0	109	50	150			
Magnesium	ND	1.0	0.5000	0	96.0	50	150			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A29254** RunNo: **29254**
Prep Date: Analysis Date: **10/2/2015** SeqNo: **888895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	ND	0.0080	0.008000	0	94.6	50	150			
Nickel	ND	0.010	0.005000	0	54.6	50	150			
Potassium	ND	1.0	0.5000	0	92.4	50	150			
Sodium	ND	1.0	0.5000	0	95.4	50	150			
Vanadium	ND	0.050	0.01000	0	105	50	150			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890888** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **B29309** RunNo: **29309**
Prep Date: Analysis Date: **10/5/2015** SeqNo: **890890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060	0.006000	0	94.8	50	150			
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Silver	ND	0.0050	0.005000	0	96.2	50	150			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A29330** RunNo: **29330**
Prep Date: Analysis Date: **10/6/2015** SeqNo: **891877** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A29330** RunNo: **29330**
Prep Date: Analysis Date: **10/6/2015** SeqNo: **891878** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	113	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A29330** RunNo: **29330**
Prep Date: Analysis Date: **10/6/2015** SeqNo: **891879** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	108	50	150			
Zinc	ND	0.010	0.005000	0	83.0	50	150			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**		
Client ID:	**LCSW**	Batch ID:	**A29547**	RunNo:	**29547**		
Prep Date:		Analysis Date:	**10/14/2015**	SeqNo:	**899126**	Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	95.5	85	115			
Copper	0.025	0.0010	0.02500	0	99.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.023	0.0010	0.02500	0	93.0	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	**LLLCS**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**		
Client ID:	**BatchQC**	Batch ID:	**A29547**	RunNo:	**29547**		
Prep Date:		Analysis Date:	**10/14/2015**	SeqNo:	**899130**	Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010	0.001000	0	61.0	50	150			
Arsenic	ND	0.0010	0.001000	0	80.3	50	150			
Copper	0.0012	0.0010	0.001000	0	115	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	ND	0.0010	0.001000	0	84.3	50	150			
Uranium	ND	0.00050	0.0005000	0	95.4	50	150			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**		
Client ID:	**PBW**	Batch ID:	**A29547**	RunNo:	**29547**		
Prep Date:		Analysis Date:	**10/14/2015**	SeqNo:	**899133**	Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21685**	SampType:	**MBLK**		TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**21685**		RunNo:	**29353**					
Prep Date:	**10/6/2015**	Analysis Date:	**10/6/2015**		SeqNo:	**892626**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.00020								

Sample ID	**LCS-21685**	SampType:	**LCS**		TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**21685**		RunNo:	**29353**					
Prep Date:	**10/6/2015**	Analysis Date:	**10/6/2015**		SeqNo:	**892629**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0048	0.00020	0.005000	0	96.0	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **PBW**	Batch ID: **R29185**	RunNo: **29185**		
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886496**	Units: **mg/L**	

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

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **LCSW**	Batch ID: **R29185**	RunNo: **29185**		
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886497**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21525**	SampType:	**MBLK**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**PBW**	Batch ID:	**21525**	RunNo:	**29247**		
Prep Date:	**9/28/2015**	Analysis Date:	**10/2/2015**	SeqNo:	**888703**	Units:	**µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.1		2.500		124	17.7	151			
Surr: Tetrachloro-m-xylene	2.8		2.500		112	20.6	151			

Sample ID	**LCS-21525**	SampType:	**LCS**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**LCSW**	Batch ID:	**21525**	RunNo:	**29247**		
Prep Date:	**9/28/2015**	Analysis Date:	**10/2/2015**	SeqNo:	**888704**	Units:	**µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.5	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	83.7	25.6	164			
Surr: Decachlorobiphenyl	2.2		2.500		88.4	17.7	151			
Surr: Tetrachloro-m-xylene	2.0		2.500		78.0	20.6	151			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R29189** RunNo: **29189**
Prep Date: Analysis Date: **9/29/2015** SeqNo: **886788** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	88.6	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	20	1.0	20.00	0	98.1	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.7	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.1	70	130			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.5	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	70	130			
Surr: Dibromofluoromethane	8.9		10.00		89.2	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

Sample ID **rb1** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R29189** RunNo: **29189**
Prep Date: Analysis Date: **9/29/2015** SeqNo: **886789** Units: **µg/L**

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

Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R29189**	RunNo: **29189**			
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886789**	Units: **µg/L**		

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

Qualifiers:

*	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R29189**	RunNo: **29189**			
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886789**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	9.5		10.00		94.6	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**mb-21524**	SampType:	**MBLK**	TestCode:	**EPA Method 8270C: Semivolatiles**		
Client ID:	**PBW**	Batch ID:	**21524**	RunNo:	**29214**		
Prep Date:	**9/28/2015**	Analysis Date:	**9/30/2015**	SeqNo:	**887232**	Units:	**µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21524**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**			
Client ID: **PBW**	Batch ID: **21524**	RunNo: **29214**			
Prep Date: **9/28/2015**	Analysis Date: **9/30/2015**	SeqNo: **887232**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		77.1	14.9	111			
Surr: Phenol-d5	170		200.0		86.7	11.3	108			
Surr: 2,4,6-Tribromophenol	98		200.0		48.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		87.2	47.8	106			
Surr: 2-Fluorobiphenyl	83		100.0		82.5	21.3	123			
Surr: 4-Terphenyl-d14	43		100.0		43.5	14.3	135			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **lcs-21524** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **21524** RunNo: **29214**
Prep Date: **9/28/2015** Analysis Date: **9/30/2015** SeqNo: **887233** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	57	10	100.0	0	56.8	40.2	107			
4-Chloro-3-methylphenol	130	10	200.0	0	64.6	48.2	107			
2-Chlorophenol	120	10	200.0	0	61.1	42.5	106			
1,4-Dichlorobenzene	61	10	100.0	0	60.5	31.6	111			
2,4-Dinitrotoluene	43	10	100.0	0	42.5	33.6	86.5			
N-Nitrosodi-n-propylamine	68	10	100.0	0	67.7	44	106			
4-Nitrophenol	78	10	200.0	0	38.9	25.5	109			
Pentachlorophenol	78	20	200.0	0	39.2	38.8	97.8			
Phenol	120	10	200.0	0	61.6	22.7	116			
Pyrene	51	10	100.0	0	51.0	29.3	138			
1,2,4-Trichlorobenzene	66	10	100.0	0	65.7	35.3	123			
Surr: 2-Fluorophenol	110		200.0		57.2	14.9	111			
Surr: Phenol-d5	140		200.0		68.2	11.3	108			
Surr: 2,4,6-Tribromophenol	110		200.0		54.2	15.7	154			
Surr: Nitrobenzene-d5	66		100.0		66.1	47.8	106			
Surr: 2-Fluorobiphenyl	67		100.0		67.4	21.3	123			
Surr: 4-Terphenyl-d14	43		100.0		43.0	14.3	135			

Sample ID **lcsd-21524** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **21524** RunNo: **29214**
Prep Date: **9/28/2015** Analysis Date: **9/30/2015** SeqNo: **887234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	67	10	100.0	0	67.0	40.2	107	16.5	46.7	
4-Chloro-3-methylphenol	140	10	200.0	0	68.3	48.2	107	5.63	29.4	
2-Chlorophenol	140	10	200.0	0	72.1	42.5	106	16.5	38.7	
1,4-Dichlorobenzene	72	10	100.0	0	72.2	31.6	111	17.5	25.3	
2,4-Dinitrotoluene	47	10	100.0	0	47.0	33.6	86.5	9.92	35.6	
N-Nitrosodi-n-propylamine	71	10	100.0	0	70.6	44	106	4.14	30.2	
4-Nitrophenol	110	10	200.0	0	53.6	25.5	109	31.7	42.2	
Pentachlorophenol	95	20	200.0	0	47.6	38.8	97.8	19.5	35.5	
Phenol	150	10	200.0	0	75.5	22.7	116	20.2	32	
Pyrene	61	10	100.0	0	60.9	29.3	138	17.6	27.1	
1,2,4-Trichlorobenzene	86	10	100.0	0	85.6	35.3	123	26.3	43.3	
Surr: 2-Fluorophenol	140		200.0		69.3	14.9	111	0	0	
Surr: Phenol-d5	160		200.0		80.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		56.6	15.7	154	0	0	
Surr: Nitrobenzene-d5	77		100.0		77.4	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	86		100.0		86.0	21.3	123	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**lcsd-21524**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**LCSS02**	Batch ID:	**21524**	RunNo:	**29214**
Prep Date:	**9/28/2015**	Analysis Date:	**9/30/2015**	SeqNo:	**887234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	41		100.0		40.6	14.3	135	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**							
Client ID: **PBW**	Batch ID: **R29376**	RunNo: **29376**							
Prep Date:	Analysis Date: **10/7/2015**	SeqNo: **893215**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID **LCS**	SampType: **LCS**	TestCode: **SM 4500 NH3: Ammonia**							
Client ID: **LCSW**	Batch ID: **R29376**	RunNo: **29376**							
Prep Date:	Analysis Date: **10/7/2015**	SeqNo: **893216**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.2	1.0	10.00	0	92.4	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509C89**
27-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21868**	SampType:	**MBLK**	TestCode:	**SM 4500 Norg C: TKN**
Client ID:	**PBW**	Batch ID:	**21868**	RunNo:	**29669**
Prep Date:	**10/15/2015**	Analysis Date:	**10/16/2015**	SeqNo:	**903467** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID	**LCS-21868**	SampType:	**LCS**	TestCode:	**SM 4500 Norg C: TKN**
Client ID:	**LCSW**	Batch ID:	**21868**	RunNo:	**29669**
Prep Date:	**10/15/2015**	Analysis Date:	**10/16/2015**	SeqNo:	**903468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.9	1.0	10.00	0	99.4	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: La Plata Work Order Number: 1509C89 RcptNo: 1

Received by/date: LM 09/26/15

Logged By: **Anne Thorne** 9/26/2015 8:30:00 AM Anne Thorne

Completed By: **Anne Thorne** 9/28/2015 Anne Thorne

Reviewed By: LM 09/28/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 4 (<2 or >12 unless noted)

Adjusted? ____

Checked by: AT 09/28/15

Special Handling (if applicable)

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

Person Notified: ____ Date ____

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

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Serial Number 80501

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

La Plata County is the client. per christine 9/23

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location: Hall Environmental

Phone:
Fax:

PROJECT REFERENCE: GOLD KING MINE	PROJECT NO.	PROJECT LOCATION (STATE): CO	PAGE 1 OF 1
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.	
CLIENT (SITE) PM: MOTRA ~~DAN WALL~~ PRYHODA	CLIENT PHONE: 303.729.6100	CLIENT FAX: X6101	
CLIENT NAME: WESTON SOLUTIONS	CLIENT E-MAIL: ~~WALL.DAN@EPA.GOV~~ 9/21/15		
CLIENT ADDRESS: 1435 GARRISON ST, STE 100, LAKEWOOD, CO 80215			
COMPANY CONTRACTING THIS WORK (if applicable)			

REQUIRED ANALYSIS

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	RADIOLOGICAL (HNO_3)	PCB/SVOCs (1)	DIOXINS (1)	TOT METALS (HNO_3)	NH_3/TKN (SULFURIC ACID)	CYANIDE (NaOH)	N/N/Cr+6 (1)	VOCS (HCL)	~~LAB BLANKS~~	REMARKS
9/21/15	1300	CC06-092115-1300-B	G	X				5	4	2	1	1	1	1	3		1509C89-001
9/21/15	1300	TRIP BLANKS	G	X											2		-002
		LEVEL 4 DATA PKG															

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
ELLIOTT PETE for	9/21/15	16:40	[signature]	9/25/15	0745	Trevor Dias	9/25/15	1010
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	9/21/15	1646	Trevor Dias	9-25	9:18am	Grant Walter	9/25/15	1010

Relinquished Grant Walter 9/25/15 1916

LABORATORY USE ONLY RECIEVED. [signature] 09/25/15 0830 1.4-0.1cf=1.3°C

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS

ATTACHMENT E

EPA SEDIMENT ADIT SAMPLING LABORATORY RESULTS

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

October 30, 2015

Leslie Jakoby
La Plata County
1060 Main Ave., #104
Durango, CO 81301
TEL: (970) 382-6376
FAX

RE: Gold King Mine OrderNo.: 1509D66

Dear Leslie Jakoby:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/26/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1509D66**
Date Reported: **10/30/2015**

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509D66-001 **Matrix:** SOIL

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst:	**DJF**
Percent Moisture	82	1.0		wt%	1	10/5/2015 4:18:00 PM	R29328
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Chloride	ND	8.3		mg/Kg-dry	1	10/15/2015 6:27:06 PM	21884
Nitrogen, Nitrite (As N)	ND	1.7		mg/Kg-dry	1	10/15/2015 6:27:06 PM	21884
Nitrogen, Nitrate (As N)	ND	1.7		mg/Kg-dry	1	10/15/2015 6:27:06 PM	21884
Sulfate	12000	170		mg/Kg-dry	20	10/15/2015 6:39:31 PM	21884
AMMONIA AS N						Analyst:	**SRM**
Nitrogen, Ammonia	ND	140		mg/Kg-dry	1	10/16/2015 11:15:00 AM	R29640
METHOD 4500-N-ORG C: TKN						Analyst:	**SRM**
Nitrogen, Total Kjeldahl	450	320		mg/Kg-dry	1	10/15/2015 9:24:00 AM	21855
EPA METHOD 7471: MERCURY						Analyst:	**JLF**
Mercury	ND	0.18		mg/Kg-dry	1	10/7/2015 3:34:31 PM	21720
EPA METHOD 6010B: SOIL METALS						Analyst:	**MED**
Aluminum	3500	160		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Antimony	86	13		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Arsenic	230	13		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Barium	31	5.4		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Beryllium	ND	0.81		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Cadmium	ND	5.4		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Calcium	4400	130		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Chromium	ND	1.6		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Cobalt	6.3	1.6		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Copper	550	1.6		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Iron	500000	13000		mg/Kg-dry	1E	10/15/2015 1:27:55 PM	21718
Lead	52	13		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Magnesium	260	130		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Manganese	300	0.54		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Molybdenum	25	2.2		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Nickel	ND	2.7		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Potassium	630	270		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Selenium	ND	13		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Silver	ND	13		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Sodium	ND	130		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Thallium	ND	130		mg/Kg-dry	10	10/8/2015 12:00:55 PM	21718
Uranium	ND	27		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718
Vanadium	ND	1300		mg/Kg-dry	100	10/8/2015 12:02:52 PM	21718
Zinc	270	13		mg/Kg-dry	1	10/8/2015 10:58:37 AM	21718

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509D66-001 **Matrix:** SOIL

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S						Analyst:	**SCC**
Aroclor 1016	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1221	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1232	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1242	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1248	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1254	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Aroclor 1260	ND	0.11		mg/Kg-dry	1	10/5/2015 10:42:40 PM	21593
Surr: Decachlorobiphenyl	63.2	25.2-134		%REC	1	10/5/2015 10:42:40 PM	21593
Surr: Tetrachloro-m-xylene	58.4	17.4-148		%REC	1	10/5/2015 10:42:40 PM	21593
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**DAM**
Acenaphthene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Acenaphthylene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Aniline	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Anthracene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Azobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benz(a)anthracene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzo(a)pyrene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzo(b)fluoranthene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzo(g,h,i)perylene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzo(k)fluoranthene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzoic acid	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Benzyl alcohol	1.2	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Bis(2-chloroethoxy)methane	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Bis(2-chloroethyl)ether	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Bis(2-chloroisopropyl)ether	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Bis(2-ethylhexyl)phthalate	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Bromophenyl phenyl ether	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Butyl benzyl phthalate	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Carbazole	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Chloro-3-methylphenol	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Chloroaniline	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Chloronaphthalene	ND	1.4		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Chlorophenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Chlorophenyl phenyl ether	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Chrysene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Di-n-butyl phthalate	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Di-n-octyl phthalate	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Dibenz(a,h)anthracene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Dibenzofuran	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: CC06-092115-1300-B
Project: Gold King Mine
Collection Date: 9/21/2015 1:00:00 PM
Lab ID: 1509D66-001
Matrix: SOIL
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,2-Dichlorobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
1,3-Dichlorobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
1,4-Dichlorobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
3,3´-Dichlorobenzidine	ND	1.4		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Diethyl phthalate	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Dimethyl phthalate	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,4-Dichlorophenol	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,4-Dimethylphenol	ND	1.7		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4,6-Dinitro-2-methylphenol	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,4-Dinitrophenol	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,4-Dinitrotoluene	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,6-Dinitrotoluene	ND	2.8		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Fluoranthene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Fluorene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Hexachlorobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Hexachlorobutadiene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Hexachlorocyclopentadiene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Hexachloroethane	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Indeno(1,2,3-cd)pyrene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Isophorone	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
1-Methylnaphthalene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Methylnaphthalene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Methylphenol	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
3+4-Methylphenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
N-Nitrosodi-n-propylamine	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
N-Nitrosodiphenylamine	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Naphthalene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Nitroaniline	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
3-Nitroaniline	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Nitroaniline	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Nitrobenzene	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2-Nitrophenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
4-Nitrophenol	ND	1.4		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Pentachlorophenol	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Phenanthrene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Phenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Pyrene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Pyridine	ND	2.2		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
1,2,4-Trichlorobenzene	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: CC06-092115-1300-B
Project: Gold King Mine
Collection Date: 9/21/2015 1:00:00 PM
Lab ID: 1509D66-001
Matrix: SOIL
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,5-Trichlorophenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
2,4,6-Trichlorophenol	ND	1.1		mg/Kg-dry	1	10/5/2015 2:43:01 PM	21594
Surr: 2-Fluorophenol	75.1	9.93-124		%REC	1	10/5/2015 2:43:01 PM	21594
Surr: Phenol-d5	84.0	28-119		%REC	1	10/5/2015 2:43:01 PM	21594
Surr: 2,4,6-Tribromophenol	54.9	11.7-134		%REC	1	10/5/2015 2:43:01 PM	21594
Surr: Nitrobenzene-d5	76.8	25-123		%REC	1	10/5/2015 2:43:01 PM	21594
Surr: 2-Fluorobiphenyl	71.7	31.2-117		%REC	1	10/5/2015 2:43:01 PM	21594
Surr: 4-Terphenyl-d14	40.6	5.82-129		%REC	1	10/5/2015 2:43:01 PM	21594
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Toluene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Ethylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Methyl tert-butyl ether (MTBE)	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2,4-Trimethylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,3,5-Trimethylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2-Dichloroethane (EDC)	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2-Dibromoethane (EDB)	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Naphthalene	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1-Methylnaphthalene	ND	1.1		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
2-Methylnaphthalene	ND	1.1		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Acetone	ND	4.0		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Bromobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Bromodichloromethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Bromoform	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Bromomethane	ND	0.81		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
2-Butanone	ND	2.7		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Carbon disulfide	ND	2.7		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Carbon tetrachloride	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Chlorobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Chloroethane	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Chloroform	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Chloromethane	ND	0.81		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
2-Chlorotoluene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
4-Chlorotoluene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
cis-1,2-DCE	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
cis-1,3-Dichloropropene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2-Dibromo-3-chloropropane	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Dibromochloromethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Dibromomethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Project: Gold King Mine
Lab ID: 1509D66-001 **Matrix:** SOIL

Client Sample ID: CC06-092115-1300-B
Collection Date: 9/21/2015 1:00:00 PM
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,2-Dichlorobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,3-Dichlorobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,4-Dichlorobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Dichlorodifluoromethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1-Dichloroethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1-Dichloroethene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2-Dichloropropane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,3-Dichloropropane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
2,2-Dichloropropane	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1-Dichloropropene	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Hexachlorobutadiene	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
2-Hexanone	ND	2.7		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Isopropylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
4-Isopropyltoluene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
4-Methyl-2-pentanone	ND	2.7		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Methylene chloride	ND	0.81		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
n-Butylbenzene	ND	0.81		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
n-Propylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
sec-Butylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Styrene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
tert-Butylbenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1,1,2-Tetrachloroethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1,2,2-Tetrachloroethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Tetrachloroethene (PCE)	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
trans-1,2-DCE	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
trans-1,3-Dichloropropene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2,3-Trichlorobenzene	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2,4-Trichlorobenzene	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1,1-Trichloroethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,1,2-Trichloroethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Trichloroethene (TCE)	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Trichlorofluoromethane	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
1,2,3-Trichloropropane	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Vinyl chloride	ND	0.27		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Xylenes, Total	ND	0.54		mg/Kg-dry	1	9/30/2015 3:03:30 PM	21566
Surr: Dibromofluoromethane	115	70-130		%REC	1	9/30/2015 3:03:30 PM	21566
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	9/30/2015 3:03:30 PM	21566
Surr: Toluene-d8	97.7	70-130		%REC	1	9/30/2015 3:03:30 PM	21566
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	9/30/2015 3:03:30 PM	21566

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1509D66-002
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
Benzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Toluene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Ethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Naphthalene	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
2-Methylnaphthalene	ND	4.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Acetone	ND	10		µg/L	1	9/29/2015 9:53:00 PM	R29189
Bromobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Bromodichloromethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Bromoform	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Bromomethane	ND	3.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
2-Butanone	ND	10		µg/L	1	9/29/2015 9:53:00 PM	R29189
Carbon disulfide	ND	10		µg/L	1	9/29/2015 9:53:00 PM	R29189
Carbon Tetrachloride	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Chlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Chloroethane	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Chloroform	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Chloromethane	ND	3.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
2-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
4-Chlorotoluene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
cis-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Dibromochloromethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Dibromomethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1-Dichloroethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1-Dichloroethene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,3-Dichloropropane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
2,2-Dichloropropane	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: La Plata County
Client Sample ID: Trip Blank
Project: Gold King Mine
Collection Date:
Lab ID: 1509D66-002
Matrix: AQUEOUS
Received Date: 9/26/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
1,1-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Hexachlorobutadiene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
2-Hexanone	ND	10		µg/L	1	9/29/2015 9:53:00 PM	R29189
Isopropylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
4-Isopropyltoluene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
4-Methyl-2-pentanone	ND	10		µg/L	1	9/29/2015 9:53:00 PM	R29189
Methylene Chloride	ND	3.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
n-Butylbenzene	ND	3.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
n-Propylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
sec-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Styrene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
tert-Butylbenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
trans-1,2-DCE	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Trichlorofluoromethane	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Vinyl chloride	ND	1.0		µg/L	1	9/29/2015 9:53:00 PM	R29189
Xylenes, Total	ND	1.5		µg/L	1	9/29/2015 9:53:00 PM	R29189
Surr: 1,2-Dichloroethane-d4	86.6	70-130		%REC	1	9/29/2015 9:53:00 PM	R29189
Surr: 4-Bromofluorobenzene	99.9	70-130		%REC	1	9/29/2015 9:53:00 PM	R29189
Surr: Dibromofluoromethane	88.7	70-130		%REC	1	9/29/2015 9:53:00 PM	R29189
Surr: Toluene-d8	90.8	70-130		%REC	1	9/29/2015 9:53:00 PM	R29189

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Wet Chemistry by Method 2580 B-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	mV				
ORP	404		1	10/06/2015 16:45	WG819829

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Chromium,Hexavalent	ND		2.00	1	10/06/2015 19:57	WG819355

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Cyanide	ND		0.250	1	10/05/2015 16:57	WG819597

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	2.71		1	10/07/2015 08:31	WG819560

Sample Narrative:

9045D L791922-01 WG819560: 2.71 at 22.3c

L791662-06 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 16:45 • (DUP) 10/06/15 16:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mV	mV		%		%
ORP	130	132	1	1.53		20

L792190-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 16:45 • (DUP) 10/06/15 16:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mV	mV		%		%
ORP	261	261	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/06/15 16:45 • (LCSD) 10/06/15 16:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mV	mV	mV	%	%	%			%	%
ORP	100	108	106	108	106	90.0-110			1.87	20

QUALITY CONTROL SUMMARY

L791922-01

Method Blank (MB)

(MB) 10/06/15 19:46

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Chromium,Hexavalent	ND		2.00

L791662-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 19:53 • (DUP) 10/06/15 19:53

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

L791628-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 19:48 • (DUP) 10/06/15 19:48

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/06/15 19:46 • (LCSD) 10/06/15 19:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	59.8	68.2	68.2	114	114	80.0-120			0.000	20

L791662-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/06/15 19:53 • (MS) 10/06/15 19:54 • (MSD) 10/06/15 19:54

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	1.32	1.80	1.68	9.00	8.40	1	75.0-125	J6	J6	6.90	20

QUALITY CONTROL SUMMARY

L791922-01

Method Blank (MB)

(MB) 10/05/15 16:32

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Cyanide	ND		0.250

L792281-02 Original Sample (OS) • Duplicate (DUP)

(OS) 10/05/15 16:59 • (DUP) 10/05/15 17:00

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L792281-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/05/15 17:15 • (DUP) 10/05/15 17:16

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	5	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/05/15 16:34 • (LCSD) 10/05/15 16:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	53.9	57.6	47.6	107	88.3	50.0-150			19.0	20

QUALITY CONTROL SUMMARY

L791922-01

L790838-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/07/15 08:31 • (DUP) 10/07/15 08:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.99	8.97	1	0.223		1

L792163-03 Original Sample (OS) • Duplicate (DUP)

(OS) 10/07/15 08:31 • (DUP) 10/07/15 08:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	9.15	9.09	1	0.658		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/07/15 08:31 • (LCSD) 10/07/15 08:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.37	6.41	6.42	101	101	98.2-102			0.156	1

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509D66	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	8273001	**Date Collected:**	09/21/2015 13:00	**Matrix:**	SOIL
Client Sample:	1613B Soil	**Date Received:**	09/30/2015 10:20	**%Moisture:**	88.4
Client ID:	1509D66-001C CC06-092115-1300-B			**Prep Basis:**	Dry Weight
Batch ID:	30259	**Method:**	EPA Method 1613B		
Run Date:	10/15/2015 21:22	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A13OCT15A_6-4			**Dilution:**	1
Prep Batch:	30257	**Prep Method:**	SW846 3540C		
Prep Date:	14-OCT-15	**Prep Aliquot:**	25.27 g		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.14	pg/g	1.14	3.42
40321-76-4	1,2,3,7,8-PeCDD	U	5.69	pg/g	5.69	17.1
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.69	pg/g	5.69	17.1
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.69	pg/g	5.69	17.1
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.69	pg/g	5.69	17.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5.69	pg/g	5.69	17.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	11.4	pg/g	11.4	34.2
51207-31-9	2,3,7,8-TCDF	U	1.14	pg/g	1.14	3.42
57117-41-6	1,2,3,7,8-PeCDF	U	5.69	pg/g	5.69	17.1
57117-31-4	2,3,4,7,8-PeCDF	U	5.69	pg/g	5.69	17.1
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.69	pg/g	5.69	17.1
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.69	pg/g	5.69	17.1
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.69	pg/g	5.69	17.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.69	pg/g	5.69	17.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.69	pg/g	5.69	17.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.69	pg/g	5.69	17.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	11.4	pg/g	11.4	34.2
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.14	pg/g	1.14	3.42
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.69	pg/g	5.69	17.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5.69	pg/g	5.69	17.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5.69	pg/g	5.69	17.1
30402-14-3	Total Tetrachlorodibenzofuran	U	1.14	pg/g	1.14	3.42
30402-15-4	Total Pentachlorodibenzofuran	U	5.69	pg/g	5.69	17.1
55684-94-1	Total Hexachlorodibenzofuran	U	5.69	pg/g	5.69	17.1
38998-75-3	Total Heptachlorodibenzofuran	U	5.69	pg/g	5.69	17.1
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		6.49	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		504	683	pg/g	73.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		541	683	pg/g	79.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		448	683	pg/g	65.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		541	683	pg/g	79.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		526	683	pg/g	77.0	(23%-140%)
13C-OCDD		1030	1370	pg/g	75.3	(17%-157%)
13C-2,3,7,8-TCDF		489	683	pg/g	71.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		523	683	pg/g	76.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		524	683	pg/g	76.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		442	683	pg/g	64.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		556	683	pg/g	81.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		507	683	pg/g	74.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		482	683	pg/g	70.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509D66	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	8273001	**Date Collected:**	09/21/2015 13:00	**Matrix:**	SOIL
Client Sample:	1613B Soil	**Date Received:**	09/30/2015 10:20	**%Moisture:**	88.4
Client ID:	1509D66-001C CC06-092115-1300-B			**Prep Basis:**	Dry Weight
Batch ID:	30259	**Method:**	EPA Method 1613B		
Run Date:	10/15/2015 21:22	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A13OCT15A_6-4			**Dilution:**	1
Prep Batch:	30257	**Prep Method:**	SW846 3540C		
Prep Date:	14-OCT-15	**Prep Aliquot:**	25.27 g		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		509	683	pg/g	74.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		499	683	pg/g	73.0	(26%-138%)
37Cl-2,3,7,8-TCDD		62.9	68.3	pg/g	92.0	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 1509D66

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12014518	LCS for batch 30257	13C-2,3,7,8-TCDD		85.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		94.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		69.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		90.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(22%-166%)
		13C-OCDD		75.4	(13%-199%)
		13C-2,3,7,8-TCDF		83.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		91.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		93.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		73.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		84.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		81.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		77.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		82.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		76.0	(20%-186%)
		37Cl-2,3,7,8-TCDD		98.7	(31%-191%)
12014519	LCSD for batch 30257	13C-2,3,7,8-TCDD		84.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		98.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		67.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		88.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		78.3	(22%-166%)
		13C-OCDD		71.5	(13%-199%)
		13C-2,3,7,8-TCDF		84.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		92.6	(21%-192%)
		13C-2,3,4,7,8-PeCDF		95.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.4	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		83.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		72.3	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		73.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		95.2	(31%-191%)
12014517	MB for batch 30257	13C-2,3,7,8-TCDD		82.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		69.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.1	(23%-140%)
		13C-OCDD		77.1	(17%-157%)
		13C-2,3,7,8-TCDF		80.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.1	(35%-197%)
8273001	1509D66-001C CC06-092115-1300-B	13C-2,3,7,8-TCDD		73.8	(25%-164%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 1509D66

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
8273001	1509D66-001C CC06-092115-1300-B	13C-1,2,3,7,8-PeCDD		79.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		65.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.0	(23%-140%)
		13C-OCDD		75.3	(17%-157%)
		13C-2,3,7,8-TCDF		71.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		64.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		70.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.0	(35%-197%)
12014520	1509D66-001C CC06-092115-1300-B(8273001	13C-2,3,7,8-TCDD		79.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		67.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.1	(23%-140%)
		13C-OCDD		74.8	(17%-157%)
		13C-2,3,7,8-TCDF		78.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		85.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		65.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		72.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.8	(35%-197%)
12014521	1509D66-001C CC06-092115-1300-B(8273001	13C-2,3,7,8-TCDD		80.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.5	(23%-140%)
		13C-OCDD		75.9	(17%-157%)
		13C-2,3,7,8-TCDF		81.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		70.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.8	(35%-197%)

* Recovery outside Acceptance Limits

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 1509D66

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509D66
Client ID: LCS for batch 30257
Lab Sample ID: 12014518
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 10/15/2015 19:01
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.0	105	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	104	104	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	114	114	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	97.7	97.7	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	110	110	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	203	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	21.0	105	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	101	101	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	105	105	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	103	103	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	106	106	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	101	101	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	107	107	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	101	101	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	211	106	63-170

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509D66
Client ID: LCSD for batch 30257
Lab Sample ID: 12014519
Instrument: HRP750
Analyst: JTF

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOIL
Analysis Date: 10/15/2015 19:47
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	19.6	98.1	67-158	7.01	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	96.8	96.8	70-142	7.06	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	104	104	70-164	8.63	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	98.7	98.7	76-134	1.01	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	108	108	64-162	2.01	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	97.6	97.6	70-140	4.14	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	200	100	78-144	1.29	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	19.7	98.4	75-158	6.52	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	95.9	95.9	80-134	4.76	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	93.3	93.3	68-160	11.7	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	97.8	97.8	72-134	5.26	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	99.8	99.8	84-130	6.27	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	98.3	98.3	70-156	2.28	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	97.9	97.9	78-130	8.73	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	101	101	82-122	0.154	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	101	101	78-138	5.37	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	209	104	63-170	1.16	0-20

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509D66
Client ID: 1509D66-001C CC06-092115-1300-B(8273001
Lab Sample ID: 12014520
Instrument: HRP750
Analyst: JTF

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 88.4
Analysis Date: 10/15/2015 22:10
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	67.9	U	65.6	96.7	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	339	U	339	99.8	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	339	U	347	102	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	339	U	359	106	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	339	U	392	115	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	339	U	345	102	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	679	U	653	96.2	70-130
51207-31-9	MS	2,3,7,8-TCDF	67.9	U	69.3	102	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	339	U	340	100	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	339	U	344	101	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	339	U	341	101	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	339	U	364	107	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	339	U	361	106	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	339	U	359	106	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	339	U	353	104	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	339	U	343	101	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	679	U	677	99.7	70-130

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: 1509D66
Client ID: 1509D66-001C CC06-092115-1300-B(8273001
Lab Sample ID: 12014521
Instrument: HRP750
Analyst: JTF

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 88.4
Analysis Date: 10/15/2015 22:57
Dilution: 1
Prep Batch ID: 30257
Batch ID: 30259

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	67.9	U	68.9	102	70-130	4.87	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	340	U	348	103	70-130	2.78	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	340	U	346	102	70-130	0.421	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	340	U	361	106	70-130	0.620	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	340	U	393	116	70-130	0.472	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	340	U	364	107	70-130	5.55	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	679	U	685	101	70-130	4.71	0-20
51207-31-9	MSD	2,3,7,8-TCDF	67.9	U	67.6	99.6	70-130	2.43	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	340	U	343	101	70-130	1.01	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	340	U	355	105	70-130	3.00	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	340	U	348	102	70-130	1.92	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	340	U	356	105	70-130	2.17	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	340	U	354	104	70-130	1.97	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	340	U	350	103	70-130	2.48	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	340	U	351	103	70-130	0.794	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	340	U	356	105	70-130	3.84	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	679	U	715	105	70-130	5.56	0-20

Method Blank Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 30257**	**Instrument ID:**	**HRP750**	**Data File:**	**A13OCT15A_6-3**
Lab Sample ID:	**12014517**	**Prep Date:**	**14-OCT-15**	**Analyzed:**	**10/15/15 20:35**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 30257	12014518	A13OCT15A_6-1	10/15/15	1901
02	LCSD for batch 30257	12014519	A13OCT15A_6-2	10/15/15	1947
03	1509D66-001C CC06-092115-1300-B	8273001	A13OCT15A_6-4	10/15/15	2122
04	1509D66-001C CC06-092115-1300-B(8273001	12014520	A13OCT15A_6-5	10/15/15	2210
05	1509D66-001C CC06-092115-1300-B(8273001	12014521	A13OCT15A_6-6	10/15/15	2257

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014517**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**MB for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 20:35**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-3**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.334	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	1.67	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.67	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.67	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.67	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	1.67	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	3.34	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF	U	.334	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	1.67	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	1.67	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	1.67	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.67	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	1.67	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.67	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	3.34	pg/g	3.34	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.334	pg/g	0.334	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	1.67	pg/g	1.67	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.334	pg/g	0.334	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	1.67	pg/g	1.67	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		1.90	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	82.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		181	200	pg/g	90.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		138	200	pg/g	69.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		167	200	pg/g	83.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		160	200	pg/g	80.1	(23%-140%)
13C-OCDD		308	400	pg/g	77.1	(17%-157%)
13C-2,3,7,8-TCDF		161	200	pg/g	80.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		168	200	pg/g	84.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	87.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		135	200	pg/g	67.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		167	200	pg/g	83.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	80.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	200	pg/g	72.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	1509D66	**Client:**	HALL001	**Project:**	HALL00113
Lab Sample ID:	12014517			**Matrix:**	SOIL
Client Sample:	QC for batch 30257				
Client ID:	MB for batch 30257			**Prep Basis:**	As Received
Batch ID:	30259	**Method:**	EPA Method 1613B		
Run Date:	10/15/2015 20:35	**Analyst:**	JTF	**Instrument:**	HRP750
Data File:	A13OCT15A_6-3			**Dilution:**	1
Prep Batch:	30257	**Prep Method:**	SW846 3540C		
Prep Date:	14-OCT-15	**Prep Aliquot:**	10 g		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		156	200	pg/g	77.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.4	20.0	pg/g	92.1	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014518**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**LCS for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 19:01**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-1**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		21.0	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		114	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		97.7	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		110	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		203	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF		21.0	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		211	pg/g	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		190	200	pg/g	94.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		138	200	pg/g	69.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		181	200	pg/g	90.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		168	200	pg/g	83.9	(22%-166%)
13C-OCDD		302	400	pg/g	75.4	(13%-199%)
13C-2,3,7,8-TCDF		166	200	pg/g	83.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		182	200	pg/g	91.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		187	200	pg/g	93.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		146	200	pg/g	73.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		169	200	pg/g	84.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		162	200	pg/g	81.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		154	200	pg/g	77.1	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		165	200	pg/g	82.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		152	200	pg/g	76.0	(20%-186%)
37Cl-2,3,7,8-TCDD		19.7	20.0	pg/g	98.7	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014519**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**				
Client ID:	**LCSD for batch 30257**			**Prep Basis:**	**As Received**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 19:47**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-2**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		19.6	pg/g	0.334	1.00
40321-76-4	1,2,3,7,8-PeCDD		96.8	pg/g	1.67	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		104	pg/g	1.67	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		98.7	pg/g	1.67	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	1.67	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		97.6	pg/g	1.67	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		200	pg/g	3.34	10.0
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	0.334	1.00
57117-41-6	1,2,3,7,8-PeCDF		95.9	pg/g	1.67	5.00
57117-31-4	2,3,4,7,8-PeCDF		93.3	pg/g	1.67	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		97.8	pg/g	1.67	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		99.8	pg/g	1.67	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		98.3	pg/g	1.67	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		97.9	pg/g	1.67	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	1.67	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		101	pg/g	1.67	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		209	pg/g	3.34	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	200	pg/g	84.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		196	200	pg/g	98.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		134	200	pg/g	67.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		177	200	pg/g	88.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		157	200	pg/g	78.3	(22%-166%)
13C-OCDD		286	400	pg/g	71.5	(13%-199%)
13C-2,3,7,8-TCDF		168	200	pg/g	84.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		185	200	pg/g	92.6	(21%-192%)
13C-2,3,4,7,8-PeCDF		192	200	pg/g	95.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		143	200	pg/g	71.4	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		168	200	pg/g	83.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		159	200	pg/g	79.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		145	200	pg/g	72.3	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		156	200	pg/g	77.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		146	200	pg/g	73.1	(20%-186%)
37Cl-2,3,7,8-TCDD		19.0	20.0	pg/g	95.2	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014520**	**Date Collected:**	**09/21/2015 13:00**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**	**Date Received:**	**09/30/2015 10:20**	**%Moisture:**	**88.4**
Client ID:	**1509D66-001C CC06-092115-1300-B**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 22:10**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-5**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.44 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		65.6	pg/g	1.13	3.39
40321-76-4	1,2,3,7,8-PeCDD		339	pg/g	5.65	17.0
39227-28-6	1,2,3,4,7,8-HxCDD		347	pg/g	5.65	17.0
57653-85-7	1,2,3,6,7,8-HxCDD		359	pg/g	5.65	17.0
19408-74-3	1,2,3,7,8,9-HxCDD		392	pg/g	5.65	17.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		345	pg/g	5.65	17.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		653	pg/g	11.3	33.9
51207-31-9	2,3,7,8-TCDF		69.3	pg/g	1.13	3.39
57117-41-6	1,2,3,7,8-PeCDF		340	pg/g	5.65	17.0
57117-31-4	2,3,4,7,8-PeCDF		344	pg/g	5.65	17.0
70648-26-9	1,2,3,4,7,8-HxCDF		341	pg/g	5.65	17.0
57117-44-9	1,2,3,6,7,8-HxCDF		364	pg/g	5.65	17.0
60851-34-5	2,3,4,6,7,8-HxCDF		361	pg/g	5.65	17.0
72918-21-9	1,2,3,7,8,9-HxCDF		359	pg/g	5.65	17.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		353	pg/g	5.65	17.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		343	pg/g	5.65	17.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		677	pg/g	11.3	33.9

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		538	679	pg/g	79.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		611	679	pg/g	90.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		459	679	pg/g	67.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		545	679	pg/g	80.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		517	679	pg/g	76.1	(23%-140%)
13C-OCDD		1020	1360	pg/g	74.8	(17%-157%)
13C-2,3,7,8-TCDF		534	679	pg/g	78.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		560	679	pg/g	82.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		581	679	pg/g	85.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		443	679	pg/g	65.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		525	679	pg/g	77.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		501	679	pg/g	73.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		467	679	pg/g	68.8	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		506	679	pg/g	74.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		489	679	pg/g	72.0	(26%-138%)
37Cl-2,3,7,8-TCDD		63.7	67.9	pg/g	93.8	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**1509D66**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12014521**	**Date Collected:**	**09/21/2015 13:00**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 30257**	**Date Received:**	**09/30/2015 10:20**	**%Moisture:**	**88.4**
Client ID:	**1509D66-001C CC06-092115-1300-B**			**Prep Basis:**	**Dry Weight**
Batch ID:	**30259**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/15/2015 22:57**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A13OCT15A_6-6**			**Dilution:**	**1**
Prep Batch:	**30257**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**14-OCT-15**	**Prep Aliquot:**	**25.43 g**		

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
1746-01-6	2,3,7,8-TCDD		68.9	pg/g	1.13	3.40
40321-76-4	1,2,3,7,8-PeCDD		348	pg/g	5.66	17.0
39227-28-6	1,2,3,4,7,8-HxCDD		346	pg/g	5.66	17.0
57653-85-7	1,2,3,6,7,8-HxCDD		361	pg/g	5.66	17.0
19408-74-3	1,2,3,7,8,9-HxCDD		393	pg/g	5.66	17.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		364	pg/g	5.66	17.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		685	pg/g	11.3	34.0
51207-31-9	2,3,7,8-TCDF		67.6	pg/g	1.13	3.40
57117-41-6	1,2,3,7,8-PeCDF		343	pg/g	5.66	17.0
57117-31-4	2,3,4,7,8-PeCDF		355	pg/g	5.66	17.0
70648-26-9	1,2,3,4,7,8-HxCDF		348	pg/g	5.66	17.0
57117-44-9	1,2,3,6,7,8-HxCDF		356	pg/g	5.66	17.0
60851-34-5	2,3,4,6,7,8-HxCDF		354	pg/g	5.66	17.0
72918-21-9	1,2,3,7,8,9-HxCDF		350	pg/g	5.66	17.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		351	pg/g	5.66	17.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		356	pg/g	5.66	17.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		715	pg/g	11.3	34.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		545	679	pg/g	80.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		638	679	pg/g	93.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		482	679	pg/g	70.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		563	679	pg/g	82.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		526	679	pg/g	77.5	(23%-140%)
13C-OCDD		1030	1360	pg/g	75.9	(17%-157%)
13C-2,3,7,8-TCDF		556	679	pg/g	81.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		607	679	pg/g	89.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		616	679	pg/g	90.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		471	679	pg/g	69.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		553	679	pg/g	81.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		528	679	pg/g	77.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		494	679	pg/g	72.8	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		523	679	pg/g	77.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		480	679	pg/g	70.6	(26%-138%)
37Cl-2,3,7,8-TCDD		63.7	67.9	pg/g	93.8	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1509D66
Pace Project No.: 30160819

Sample: 1509D66-001D CC06-092115-1300- **Lab ID: 30160819001** Collected: 09/21/15 13:00 Received: 10/01/15 09:30 Matrix: Solid

PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	**7.91 ± 5.08 (8.13)** **C:NA T:NA**	pCi/g	10/12/15 08:04	12587-46-1	N2
Gross Beta	EPA 900.0	**3.51 ± 3.29 (6.48)** **C:NA T:NA**	pCi/g	10/12/15 08:04	12587-47-2	N2
Radium-226	EPA 901.1	**0.130 ± 0.323 (0.383)** **C:NA T:NA**	pCi/g	10/27/15 23:25	13982-63-3	
Radium-228	EPA 901.1	**0.579 ± 0.488 (0.701)** **C:NA T:NA**	pCi/g	10/27/15 23:25	15262-20-1	

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Greensburg, PA 15601
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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1509D66
Pace Project No.: 30160819

QC Batch: RADC/26365 | Analysis Method: EPA 901.1
QC Batch Method: EPA 901.1 | Analysis Description: 901.1 Gamma Spec Ingrowth
Associated Lab Samples: 30160819001

METHOD BLANK: 963956 | Matrix: Solid
Associated Lab Samples: 30160819001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.305 ± 0.239 (0.470) C:NA T:NA	pCi/g	10/16/15 09:49	
Radium-228	0.000 ± 0.085 (0.869) C:NA T:NA	pCi/g	10/16/15 09:49	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1509D66
Pace Project No.: 30160819

QC Batch: RADC/26356
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30160819001

METHOD BLANK: 963851
Matrix: Solid
Associated Lab Samples: 30160819001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.044 ± 0.0692 (0.148) C:NA T:NA	pCi/g	10/12/15 08:04	N2
Gross Beta	0.154 ± 0.122 (0.239) C:NA T:NA	pCi/g	10/12/15 08:04	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21884**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**		
Client ID:	**PBS**	Batch ID:	**21884**	RunNo:	**29590**		
Prep Date:	**10/15/2015**	Analysis Date:	**10/15/2015**	SeqNo:	**900858**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID	**LCS-21884**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**		
Client ID:	**LCSS**	Batch ID:	**21884**	RunNo:	**29590**		
Prep Date:	**10/15/2015**	Analysis Date:	**10/15/2015**	SeqNo:	**900859**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	94.4	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	97.0	90	110			
Sulfate	28	1.5	30.00	0	94.7	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21593**	SampType:	**MBLK**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**PBS**	Batch ID:	**21593**	RunNo:	**29247**		
Prep Date:	**9/30/2015**	Analysis Date:	**10/2/2015**	SeqNo:	**888707**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.047		0.06250		75.2	25.2	134			
Surr: Tetrachloro-m-xylene	0.039		0.06250		62.0	17.4	148			

Sample ID	**LCS-21593**	SampType:	**LCS**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**LCSS**	Batch ID:	**21593**	RunNo:	**29247**		
Prep Date:	**9/30/2015**	Analysis Date:	**10/2/2015**	SeqNo:	**888708**	Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.035	0.020	0.1250	0	28.3	17.3	119			
Aroclor 1260	0.059	0.020	0.1250	0	47.5	10.7	139			
Surr: Decachlorobiphenyl	0.030		0.06250		48.8	25.2	134			
Surr: Tetrachloro-m-xylene	0.022		0.06250		34.8	17.4	148			

Sample ID	**MB-21655**	SampType:	**MBLK**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**PBS**	Batch ID:	**21655**	RunNo:	**29279**		
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**891133**	Units:	**%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.028		0.06250		45.2	25.2	134			
Surr: Tetrachloro-m-xylene	0.036		0.06250		56.8	17.4	148			

Sample ID	**LCS-21655**	SampType:	**LCS**	TestCode:	**EPA Method 8082: PCB's**		
Client ID:	**LCSS**	Batch ID:	**21655**	RunNo:	**29279**		
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**891134**	Units:	**%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.040		0.06250		64.4	25.2	134			
Surr: Tetrachloro-m-xylene	0.048		0.06250		76.8	17.4	148			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21566**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**			
Client ID: **PBS**	Batch ID: **21566**	RunNo: **29221**			
Prep Date: **9/29/2015**	Analysis Date: **9/30/2015**	SeqNo: **887580**	Units: **mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21566** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **21566** RunNo: **29221**
Prep Date: **9/29/2015** Analysis Date: **9/30/2015** SeqNo: **887580** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		109	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.1	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.7	70	130			

Sample ID **lcs-21566** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **21566** RunNo: **29221**
Prep Date: **9/29/2015** Analysis Date: **9/30/2015** SeqNo: **887584** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	98.2	70	130			
Toluene	0.97	0.050	1.000	0	97.2	70	130			
Chlorobenzene	0.97	0.050	1.000	0	96.7	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **lcs-21566** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **21566** RunNo: **29221**
Prep Date: **9/29/2015** Analysis Date: **9/30/2015** SeqNo: **887584** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.98	0.050	1.000	0	98.2	70	130			
Trichloroethene (TCE)	0.92	0.050	1.000	0	91.8	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.5	70	130			
Surr: Toluene-d8	0.48		0.5000		95.7	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			

Sample ID **1509d66-001ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **CC06-092115-1300-** Batch ID: **21566** RunNo: **29221**
Prep Date: **9/29/2015** Analysis Date: **9/30/2015** SeqNo: **887586** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.3	0.27	5.374	0	79.2	70	130			
Toluene	4.4	0.27	5.374	0	81.1	65	138			
Chlorobenzene	4.3	0.27	5.374	0	80.6	70	130			
1,1-Dichloroethene	4.3	0.27	5.374	0	80.0	72.6	149			
Trichloroethene (TCE)	4.3	0.27	5.374	0	79.5	62.4	139			
Surr: Dibromofluoromethane	2.9		2.687		108	70	130			
Surr: 1,2-Dichloroethane-d4	2.7		2.687		98.9	70	130			
Surr: Toluene-d8	2.6		2.687		95.6	70	130			
Surr: 4-Bromofluorobenzene	2.6		2.687		97.1	70	130			

Sample ID **1509d66-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **CC06-092115-1300-** Batch ID: **21566** RunNo: **29221**
Prep Date: **9/29/2015** Analysis Date: **10/1/2015** SeqNo: **887587** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.6	0.27	5.374	0	105	70	130	27.7	20	R
Toluene	5.6	0.27	5.374	0	104	65	138	25.2	20	R
Chlorobenzene	5.8	0.27	5.374	0	108	70	130	29.2	20	R
1,1-Dichloroethene	5.4	0.27	5.374	0	99.5	72.6	149	21.7	20	R
Trichloroethene (TCE)	5.4	0.27	5.374	0	100	62.4	139	23.2	20	R
Surr: Dibromofluoromethane	3.0		2.687		110	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	2.5		2.687		93.6	70	130	0	0	
Surr: Toluene-d8	2.5		2.687		94.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.8		2.687		105	70	130	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R29189** RunNo: **29189**
Prep Date: Analysis Date: **9/29/2015** SeqNo: **886788** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	88.6	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	20	1.0	20.00	0	98.1	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.7	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.1	70	130			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.5	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	70	130			
Surr: Dibromofluoromethane	8.9		10.00		89.2	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

Sample ID **rb1** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R29189** RunNo: **29189**
Prep Date: Analysis Date: **9/29/2015** SeqNo: **886789** Units: **µg/L**

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

Qualifiers:

*	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R29189**	RunNo: **29189**			
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886789**	Units: **µg/L**		

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

Qualifiers:

*	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R29189**	RunNo: **29189**			
Prep Date:	Analysis Date: **9/29/2015**	SeqNo: **886789**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	9.5		10.00		94.6	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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21594**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**			
Client ID: **PBS**	Batch ID: **21594**	RunNo: **29312**			
Prep Date: **9/30/2015**	Analysis Date: **10/5/2015**	SeqNo: **891031**	Units: **mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **mb-21594**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**			
Client ID: **PBS**	Batch ID: **21594**	RunNo: **29312**			
Prep Date: **9/30/2015**	Analysis Date: **10/5/2015**	SeqNo: **891031**	Units: **mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	9.93	124			
Surr: Phenol-d5	2.9		3.330		86.8	28	119			
Surr: 2,4,6-Tribromophenol	1.8		3.330		55.4	11.7	134			
Surr: Nitrobenzene-d5	1.4		1.670		83.8	25	123			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.9	31.2	117			
Surr: 4-Terphenyl-d14	1.2		1.670		72.0	5.82	129			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **lcs-21594** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **21594** RunNo: **29312**
Prep Date: **9/30/2015** Analysis Date: **10/5/2015** SeqNo: **891033** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	65.3	45.8	114			
4-Chloro-3-methylphenol	2.3	0.50	3.330	0	67.8	52.3	122			
2-Chlorophenol	2.5	0.20	3.330	0	74.4	49.9	115			
1,4-Dichlorobenzene	1.2	0.20	1.670	0	73.0	43.7	107			
2,4-Dinitrotoluene	0.77	0.50	1.670	0	46.2	36	106			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	71.8	39.5	110			
4-Nitrophenol	1.9	0.25	3.330	0	55.7	45.1	121			
Pentachlorophenol	1.6	0.40	3.330	0	46.8	23.7	111			
Phenol	2.5	0.20	3.330	0	74.3	52.7	119			
Pyrene	0.95	0.20	1.670	0	56.7	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	79.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.6	9.93	124			
Surr: Phenol-d5	2.8		3.330		82.9	28	119			
Surr: 2,4,6-Tribromophenol	2.1		3.330		62.1	11.7	134			
Surr: Nitrobenzene-d5	1.3		1.670		79.3	25	123			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.5	31.2	117			
Surr: 4-Terphenyl-d14	0.70		1.670		41.8	5.82	129			

Sample ID **lcsd-21594** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **21594** RunNo: **29312**
Prep Date: **9/30/2015** Analysis Date: **10/5/2015** SeqNo: **891035** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.3	0.20	1.670	0	79.9	45.8	114	20.2	25	
4-Chloro-3-methylphenol	2.8	0.50	3.330	0	84.2	52.3	122	21.6	28.7	
2-Chlorophenol	2.9	0.20	3.330	0	88.3	49.9	115	17.1	21.5	
1,4-Dichlorobenzene	1.4	0.20	1.670	0	83.4	43.7	107	13.4	20	
2,4-Dinitrotoluene	1.0	0.50	1.670	0	59.6	36	106	25.5	32.6	
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	84.8	39.5	110	16.5	23.6	
4-Nitrophenol	2.3	0.25	3.330	0	68.3	45.1	121	20.3	24	
Pentachlorophenol	2.0	0.40	3.330	0	61.3	23.7	111	26.9	22.3	R
Phenol	2.8	0.20	3.330	0	83.9	52.7	119	12.1	20	
Pyrene	1.2	0.20	1.670	0	70.9	50.4	116	22.3	25.2	
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	94.9	40.1	114	18.0	20.4	
Surr: 2-Fluorophenol	2.6		3.330		77.8	9.93	124	0	0	
Surr: Phenol-d5	3.1		3.330		94.3	28	119	0	0	
Surr: 2,4,6-Tribromophenol	2.5		3.330		73.9	11.7	134	0	0	
Surr: Nitrobenzene-d5	1.6		1.670		93.6	25	123	0	0	
Surr: 2-Fluorobiphenyl	1.5		1.670		90.4	31.2	117	0	0	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**lcsd-21594**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**LCSS02**	Batch ID:	**21594**	RunNo:	**29312**
Prep Date:	**9/30/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**891035** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.73		1.670		43.9	5.82	129	0	0	

Qualifiers:

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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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID	**MB-21720**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**						
Client ID:	**PBS**	Batch ID:	**21720**	RunNo:	**29385**						
Prep Date:	**10/7/2015**	Analysis Date:	**10/7/2015**	SeqNo:	**893576**	Units:	**mg/Kg**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	**LCS-21720**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**						
Client ID:	**LCSS**	Batch ID:	**21720**	RunNo:	**29385**						
Prep Date:	**10/7/2015**	Analysis Date:	**10/7/2015**	SeqNo:	**893577**	Units:	**mg/Kg**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17	0.033	0.1667	0	101	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB-21718** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **21718** RunNo: **29390**
Prep Date: **10/7/2015** Analysis Date: **10/8/2015** SeqNo: **893910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	3.0								
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Molybdenum	ND	0.40								
Nickel	ND	0.50								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Thallium	ND	2.5								
Uranium	ND	5.0								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-21718** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **21718** RunNo: **29390**
Prep Date: **10/7/2015** Analysis Date: **10/8/2015** SeqNo: **893911** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	27	3.0	25.00	0	108	80	120			
Antimony	24	2.5	25.00	0	97.0	80	120			
Arsenic	25	2.5	25.00	0	100	80	120			
Barium	25	0.10	25.00	0	99.5	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	99.8	80	120			
Calcium	2500	25	2500	0	100	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	98.1	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **LCS-21718** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **21718** RunNo: **29390**
Prep Date: **10/7/2015** Analysis Date: **10/8/2015** SeqNo: **893911** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	27	0.30	25.00	0	108	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	24	0.25	25.00	0	95.8	80	120			
Magnesium	2500	25	2500	0	99.1	80	120			
Manganese	25	0.10	25.00	0	99.3	80	120			
Molybdenum	26	0.40	25.00	0	105	80	120			
Nickel	25	0.50	25.00	0	98.2	80	120			
Potassium	2400	50	2500	0	95.1	80	120			
Selenium	24	2.5	25.00	0	96.0	80	120			
Silver	4.9	0.25	5.000	0	98.5	80	120			
Sodium	2400	25	2500	0	96.8	80	120			
Thallium	24	2.5	25.00	0	97.6	80	120			
Uranium	26	5.0	25.00	0	105	80	120			
Vanadium	26	2.5	25.00	0	106	80	120			
Zinc	25	2.5	25.00	0	98.8	80	120			

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB** SampType: **MBLK** TestCode: **Ammonia as N**
Client ID: **PBS** Batch ID: **R29640** RunNo: **29640**
Prep Date: Analysis Date: **10/16/2015** SeqNo: **902516** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	25								

Sample ID **LCS** SampType: **LCS** TestCode: **Ammonia as N**
Client ID: **LCSS** Batch ID: **R29640** RunNo: **29640**
Prep Date: Analysis Date: **10/16/2015** SeqNo: **902517** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	480	25	500.0	0	96.6	80	120			

Sample ID **1509D66-001AMS** SampType: **MS** TestCode: **Ammonia as N**
Client ID: **CC06-092115-1300-** Batch ID: **R29640** RunNo: **29640**
Prep Date: Analysis Date: **10/16/2015** SeqNo: **902519** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2700	140	2773	0	98.0	75	125			

Sample ID **1509D66-001AMSD** SampType: **MSD** TestCode: **Ammonia as N**
Client ID: **CC06-092115-1300-** Batch ID: **R29640** RunNo: **29640**
Prep Date: Analysis Date: **10/16/2015** SeqNo: **902520** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2700	140	2773	0	98.0	75	125	0	20	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509D66**
30-Oct-15

Client: La Plata County
Project: Gold King Mine

Sample ID **MB-21855** SampType: **MBLK** TestCode: **Method 4500-N-org C: TKN**
Client ID: **PBS** Batch ID: **21855** RunNo: **29571**
Prep Date: **10/14/2015** Analysis Date: **10/15/2015** SeqNo: **899990** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	ND	50								

Sample ID **LCS-21855** SampType: **LCS** TestCode: **Method 4500-N-org C: TKN**
Client ID: **LCSS** Batch ID: **21855** RunNo: **29571**
Prep Date: **10/14/2015** Analysis Date: **10/15/2015** SeqNo: **899991** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	1000	50	1000	0	104	80	120			

Sample ID **1509D66-001AMS** SampType: **MS** TestCode: **Method 4500-N-org C: TKN**
Client ID: **CC06-092115-1300-** Batch ID: **21855** RunNo: **29571**
Prep Date: **10/14/2015** Analysis Date: **10/15/2015** SeqNo: **899993** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	6500	310	6232	446.3	97.8	75	125			

Sample ID **1509D66-001AMSD** SampType: **MSD** TestCode: **Method 4500-N-org C: TKN**
Client ID: **CC06-092115-1300-** Batch ID: **21855** RunNo: **29571**
Prep Date: **10/14/2015** Analysis Date: **10/15/2015** SeqNo: **899994** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	6000	290	5838	446.3	94.6	75	125	9.22	20	

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
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: La Plata Work Order Number: 1509D66 RcptNo: 1

Received by/date: CM 09/26/15

Logged By: Anne Thorne 9/26/2015 8:30:00 AM Anne Thorne

Completed By: Anne Thorne 9/29/2015 Anne Thorne

Reviewed By: 09/29/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

[redacted]

Chain of Custody Record

La Plata County is the client per Christine 9/18

Sampler ID: EP

Temperature on Receipt: _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TEST AMERICA - ARVADA
4955 YARROW ST
ARVADA, CO 80002

TAL-4124-200 (0508)

Client: ~~EPA R8~~ WESTON SOLUTIONS	Project Manager: ~~DAN WALL~~ MOTRA PRYHODA	Date: 9/21/15	Chain of Custody Number: 190499
Address: 1435 GARRISON ST, STE 100	Telephone Number (Area Code)/Fax Number: 303.729.6100 fax x6101	Lab Number: ARVADA	Page 1 of 1
City: LAKEWOOD; State: CO; Zip Code: 80215	Site Contact:	Lab Contact:	
Project Name and Location (State): GOLD KING MINE, CO	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Mech	PCB/SVOC	CN/N/NH3/TKN	Total Cr/Cr6+	226/228 RA	VOCs	Dioxins	Total Metals						Special Instructions/ Conditions of Receipt
CC06_092115_1300_B	9/21/15	1300			X			12						1	2	1	1	3	8	1	1						1509066-01
TRIP BLANK	9/21/15	1300		X							2								2								-002

Analysis (Attach list if more space is needed)

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☒ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: ELLIOTT PETRI	9/21/15	1640	1. Received By:	9/21/15	1640
2. Relinquished By:	9/25/15	0745	2. Received By: Trevor Darling	9-25-15	9:19am
3. Relinquished By: ~~Chet Waeta~~ Trevor Darling	9/25/15	1010	3. Received By: Chet Waeta	9/25/15	1010

Comments: *LEVEL 4 DATA PKG*

Relinquished Chet Waeta 9/25/15 1910

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy