



Nicholson GeoSolutions LLC

3433 East Lake Drive
Centennial, CO 80121

November 23, 2015

Mr. Terry Pape
HRM Resources, LLC
410 17th Street, Suite 1100
Denver, CO 80202

**Subject: Lipplemann "P" Landfarm Sampling Results
COGCC Remediation #9058**

Dear Terry:

Nicholson GeoSolutions LLC was retained by HRM Resources II LLC (HRM) to conduct soil sampling of the landfarm on the Lipplemann "P" lease, Washington County, Colorado. Sampling of the landfarm was conducted at the required rate of approximately one sample per 100 yards of material on October 18th, 2015. These samples provide the baseline concentrations for further progress sampling which will be conducted in May, 2016. The May 2016 progress samples will be collected from the same locations and used to establish the rate of biodegradation.

GPS mapping showed that three landfarm cells cover a total of about 0.32 acres and contain an estimated 780 yards of material. A total of 9 discrete soil samples were collected at depths of approximately 12-16 inches. The extent of the landfarm cells and the locations of the samples are shown on Figure 1.

All samples were analyzed for Total Volatile Petroleum Hydrocarbons (TVPH – gasoline range), Total Extractable Petroleum Hydrocarbons (TEPH – diesel and motor oil range), and BTEX (benzene, toluene, ethylbenzene, and xylenes) to evaluate compliance with the COGCC Table 910-1 standards and further treatment needs.

Table 1 provides a summary of the analytical results for the samples. The laboratory report is contained in Appendix A. The combined TPH exceeded the standard of 500 mg/kg for all 9 samples and ranged from 932 mg/kg to 8,173.1 mg/kg. Based on these results, continued treatment of the landfarm cells is required.

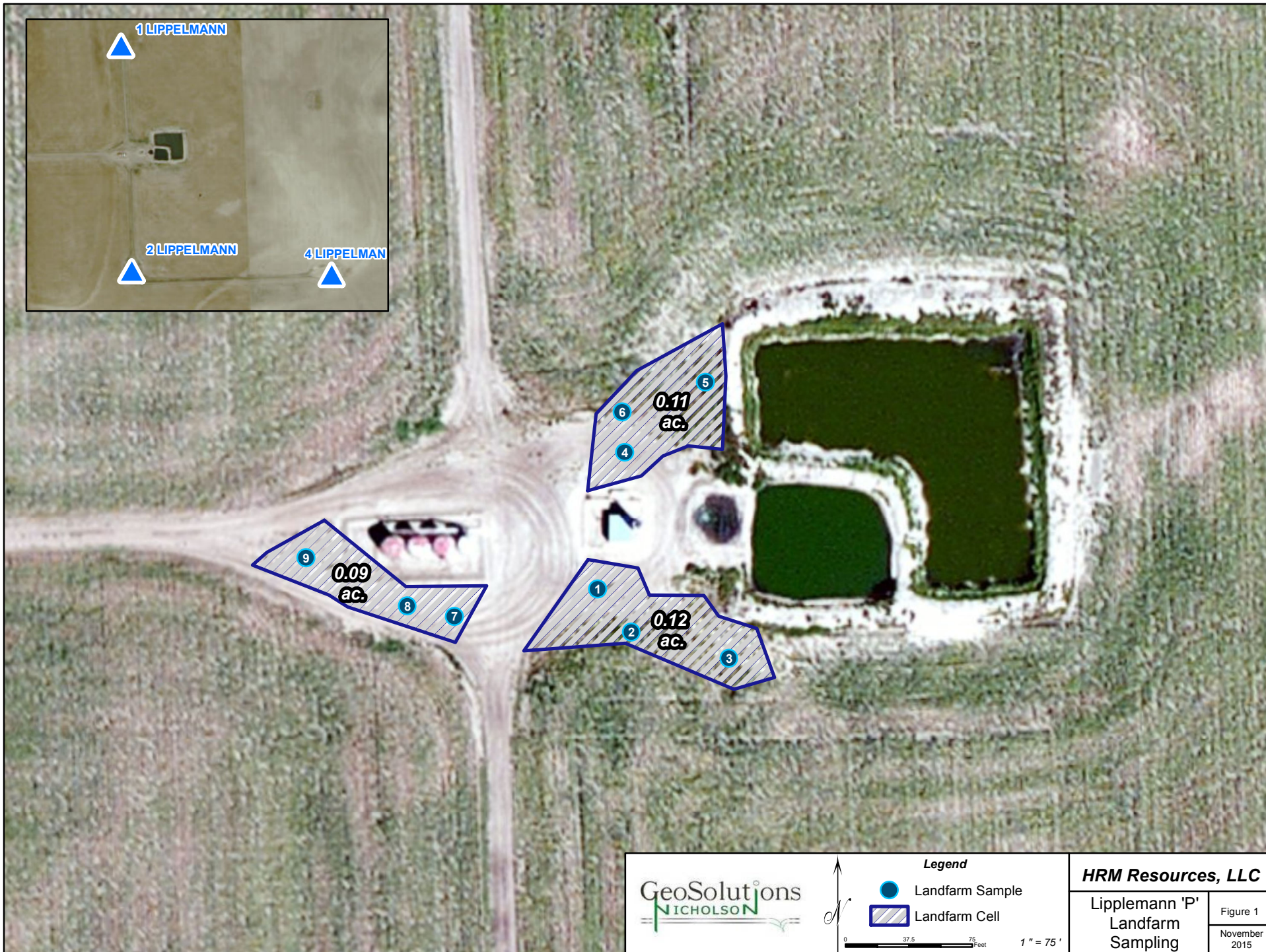


David K. Nicholson, P.G.
Principal Geologist

Table 1 Lippelmann "P" Landfarm Sample Results – October 18, 2015

	Table 910-1 Standards	Lippelmann LF-1	Lippelmann LF-2	Lippelmann LF-3	Lippelmann LF-4	Lippelmann LF-5
TVPH – gasoline range	500 ¹	<0.5	241 J	35.8 J	1.22 J	1.36 J
TEPH – diesel/motor oil range	500 ¹	932	7,110	2,303	3,154	4,950
benzene	0.17	<0.0025 UJ	0.132 J	0.0162 J	<0.0025 UJ	<0.0025 UJ
toluene	85	<0.025 UJ	2.62 J	0.0551 J	<0.025 UJ	<0.025 UJ
ethylbenzene	100	<0.0025 UJ	0.272 J	0.0266 J	<0.0025 UJ	<0.0025 UJ
xylenes	175	<0.0075 UJ	2.32 J	0.248 J	0.00814 J	0.0154 J

	Table 910-1 Standards	Lippelmann LF-6	Lippelmann LF-7	Lippelmann LF-8	Lippelmann LF-9
TVPH – gasoline range	500 ¹	<0.5	116 J	3.75 J	13.1 J
TEPH – diesel/motor oil range	500 ¹	2,874	5,840	1,582	8,160
benzene	0.17	<0.0025 UJ	0.0919 J	<0.0025 UJ	<0.0025 UJ
toluene	85	<0.025 UJ	0.203 J	<0.025 UJ	<0.025 UJ
ethylbenzene	100	<0.0025 UJ	0.233 J	<0.0025 UJ	0.00865 J
xylenes	175	<0.0075 UJ	0.724 J	0.0293 J	0.0983 J



APPENDIX A
Laboratory Report



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Est. 1970

Dave Nicholson
HRM Resources, LLC - Denver, CO
410 17th Street, Suite 1100
Denver, CO 80202

Report Summary

Tuesday October 27, 2015

Report Number: L795515

Samples Received: 10/20/15

Client Project:

Description: HRM Landfarm Sampling

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01,1461-02, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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REPORT OF ANALYSIS

October 27, 2015

Dave Nicholson
HRM Resources, LLC - Denver, CO
410 17th Street, Suite 1100
Denver, CO 80202

Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-1

Collected By : DK Nicholson
Collection Date : 10/18/15 11:25

ESC Sample # : L795515-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/25/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/25/15	5
Ethylbenzene	BDL	0.00250	mg/kg	8021	10/25/15	5
Total Xylene	BDL	0.00750	mg/kg	8021	10/25/15	5
TPH (GC/FID) Low Fraction	BDL	0.500	mg/kg	8015	10/25/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	8015	10/25/15	1
a,a,a-Trifluorotoluene(PID)	99.0		% Rec.	8021	10/25/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	556.	40.0	mg/kg	8015	10/26/15	10
C28-C40 Oil Range	376.	40.0	mg/kg	8015	10/26/15	10
Surrogate Recovery						
o-Terphenyl	82.9		% Rec.	8015	10/26/15	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-2

Collected By : DK Nicholson
Collection Date : 10/18/15 11:28

ESC Sample # : L795515-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.132	0.0125	mg/kg	8021	10/25/15	25
Toluene	2.62	0.125	mg/kg	8021	10/25/15	25
Ethylbenzene	0.272	0.0125	mg/kg	8021	10/25/15	25
Total Xylene	2.32	0.0375	mg/kg	8021	10/25/15	25
TPH (GC/FID) Low Fraction	241.	2.50	mg/kg	8015	10/25/15	25
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	83.8		% Rec.	8015	10/25/15	1
a,a,a-Trifluorotoluene(PID)	95.7		% Rec.	8021	10/25/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	5230	200.	mg/kg	8015	10/26/15	50
C28-C40 Oil Range	1880	200.	mg/kg	8015	10/26/15	50
Surrogate Recovery						
o-Terphenyl	0.00		% Rec.	8015	10/26/15	50

BDL - Below Detection Limit

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Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-3

Collected By : DK Nicholson
Collection Date : 10/18/15 11:30

ESC Sample # : L795515-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0162	0.00250	mg/kg	8021	10/22/15	5
Toluene	0.0551	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	0.0226	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	0.248	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	35.8	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	80.1		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	94.3		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	1560	200.	mg/kg	8015	10/26/15	50
C28-C40 Oil Range	743.	200.	mg/kg	8015	10/26/15	50
Surrogate Recovery						
o-Terphenyl	0.00		% Rec.	8015	10/26/15	50

BDL - Below Detection Limit

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Date Received : October 20, 2015
Description : HRM Landfarm Sampling
Sample ID : LIPPLEMANN-LF-4
Collected By : DK Nicholson
Collection Date : 10/18/15 11:33

ESC Sample # : L795515-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	0.00814	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	1.22	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.7		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	97.5		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	2280	40.0	mg/kg	8015	10/26/15	10
C28-C40 Oil Range	874.	40.0	mg/kg	8015	10/26/15	10
Surrogate Recovery						
o-Terphenyl	122.		% Rec.	8015	10/26/15	10

BDL - Below Detection Limit

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Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-5

Collected By : DK Nicholson
Collection Date : 10/18/15 11:35

ESC Sample # : L795515-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	0.0154	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	1.36	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.7		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	3550	200.	mg/kg	8015	10/26/15	50
C28-C40 Oil Range	1400	200.	mg/kg	8015	10/26/15	50
Surrogate Recovery						
o-Terphenyl	63.5		% Rec.	8015	10/26/15	50

BDL - Below Detection Limit

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October 27, 2015

Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-6

Collected By : DK Nicholson
Collection Date : 10/18/15 11:37

ESC Sample # : L795515-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	BDL	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	BDL	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.4		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	97.8		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	2050	40.0	mg/kg	8015	10/26/15	10
C28-C40 Oil Range	824.	40.0	mg/kg	8015	10/26/15	10
Surrogate Recovery						
o-Terphenyl	129.		% Rec.	8015	10/26/15	10

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October 27, 2015

Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-7

Collected By : DK Nicholson
Collection Date : 10/18/15 11:42

ESC Sample # : L795515-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0919	0.0125	mg/kg	8021	10/22/15	25
Toluene	0.203	0.125	mg/kg	8021	10/22/15	25
Ethylbenzene	0.233	0.0125	mg/kg	8021	10/22/15	25
Total Xylene	0.724	0.0375	mg/kg	8021	10/22/15	25
TPH (GC/FID) Low Fraction	116.	2.50	mg/kg	8015	10/22/15	25
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	85.5		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	98.7		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	4260	200.	mg/kg	8015	10/26/15	50
C28-C40 Oil Range	1580	200.	mg/kg	8015	10/26/15	50
Surrogate Recovery						
o-Terphenyl	40.7		% Rec.	8015	10/26/15	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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October 27, 2015

Date Received : October 20, 2015
Description : HRM Landfarm Sampling

Sample ID : LIPPLEMANN-LF-8

Collected By : DK Nicholson
Collection Date : 10/18/15 11:43

ESC Sample # : L795515-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	0.0293	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	3.75	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.4		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	97.1		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	977.	200.	mg/kg	8015	10/26/15	50
C28-C40 Oil Range	551.	200.	mg/kg	8015	10/26/15	50
Surrogate Recovery						
o-Terphenyl	105.		% Rec.	8015	10/26/15	50

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Denver, CO 80202

October 27, 2015

Date Received : October 20, 2015
Description : HRM Landfarm Sampling
Sample ID : LIPPLEMANN-LF-9
Collected By : DK Nicholson
Collection Date : 10/18/15 11:45

ESC Sample # : L795515-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00250	mg/kg	8021	10/22/15	5
Toluene	BDL	0.0250	mg/kg	8021	10/22/15	5
Ethylbenzene	0.00865	0.00250	mg/kg	8021	10/22/15	5
Total Xylene	0.0983	0.00750	mg/kg	8021	10/22/15	5
TPH (GC/FID) Low Fraction	13.1	0.500	mg/kg	8015	10/22/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	88.9		% Rec.	8015	10/22/15	1
a,a,a-Trifluorotoluene(PID)	94.8		% Rec.	8021	10/22/15	1
Diesel and Oil Ranges						
C10-C28 Diesel Range	6370	200.	mg/kg	8015	10/27/15	50
C28-C40 Oil Range	1790	200.	mg/kg	8015	10/27/15	50
Surrogate Recovery						
o-Terphenyl	89.7		% Rec.	8015	10/27/15	50

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L795515-02	WG824319	SAMP	o-Terphenyl	R3088118	J7
L795515-03	WG824319	SAMP	o-Terphenyl	R3088118	J7
L795515-05	WG824319	SAMP	o-Terphenyl	R3088118	J7
L795515-07	WG824319	SAMP	o-Terphenyl	R3088118	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



YOUR LAB OF CHOICE

HRM Resources, LLC - Denver, CO
 Dave Nicholson
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Quality Assurance Report
 Level II
 L795515

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October 27, 2015

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG823616	10/22/15 01:14
Ethylbenzene	< .0005	mg/kg			WG823616	10/22/15 01:14
Toluene	< .005	mg/kg			WG823616	10/22/15 01:14
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG823616	10/22/15 01:14
Total Xylene	< .0015	mg/kg			WG823616	10/22/15 01:14
a,a,a-Trifluorotoluene(FID)		% Rec.	93.00	59-128	WG823616	10/22/15 01:14
a,a,a-Trifluorotoluene(PID)		% Rec.	98.80	54-144	WG823616	10/22/15 01:14
Benzene	< .0005	mg/kg			WG823613	10/25/15 13:30
Ethylbenzene	< .0005	mg/kg			WG823613	10/25/15 13:30
Toluene	< .005	mg/kg			WG823613	10/25/15 13:30
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG823613	10/25/15 13:30
Total Xylene	< .0015	mg/kg			WG823613	10/25/15 13:30
a,a,a-Trifluorotoluene(FID)		% Rec.	97.80	59-128	WG823613	10/25/15 13:30
a,a,a-Trifluorotoluene(PID)		% Rec.	100.0	54-144	WG823613	10/25/15 13:30
C10-C28 Diesel Range	< 4	mg/kg			WG824319	10/26/15 18:40
C28-C40 Oil Range	< 4	mg/kg			WG824319	10/26/15 18:40
o-Terphenyl		% Rec.	89.40	50-150	WG824319	10/26/15 18:40

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0491	98.2	70-130	WG823616
Ethylbenzene	mg/kg	.05	0.0484	96.8	70-130	WG823616
Toluene	mg/kg	.05	0.0483	96.7	70-130	WG823616
Total Xylene	mg/kg	.15	0.147	97.9	70-130	WG823616
a,a,a-Trifluorotoluene(FID)				92.60	59-128	WG823616
a,a,a-Trifluorotoluene(PID)				97.80	54-144	WG823616
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.36	97.4	63.5-137	WG823616
a,a,a-Trifluorotoluene(FID)				100.0	59-128	WG823616
a,a,a-Trifluorotoluene(PID)				109.0	54-144	WG823616
Benzene	mg/kg	.05	0.0444	88.8	70-130	WG823613
Ethylbenzene	mg/kg	.05	0.0479	95.8	70-130	WG823613
Toluene	mg/kg	.05	0.0473	94.6	70-130	WG823613
Total Xylene	mg/kg	.15	0.150	99.9	70-130	WG823613
a,a,a-Trifluorotoluene(FID)				97.90	59-128	WG823613
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG823613
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.29	114.	63.5-137	WG823613
a,a,a-Trifluorotoluene(FID)				102.0	59-128	WG823613
a,a,a-Trifluorotoluene(PID)				105.0	54-144	WG823613
C10-C28 Diesel Range	mg/kg	60	43.0	71.6	50-100	WG824319
o-Terphenyl				89.70	50-150	WG824319

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0508	0.0491	102.	70-130	3.38	20	WG823616
Ethylbenzene	mg/kg	0.0500	0.0484	100.	70-130	3.29	20	WG823616
Toluene	mg/kg	0.0495	0.0483	99.0	70-130	2.48	20	WG823616
Total Xylene	mg/kg	0.151	0.147	101.	70-130	3.05	20	WG823616
a,a,a-Trifluorotoluene(FID)				91.70	59-128			WG823616
a,a,a-Trifluorotoluene(PID)				97.30	54-144			WG823616

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.55	5.36	101.	63.5-137	3.54	20	WG823616
a,a,a-Trifluorotoluene(FID)				102.0	59-128			WG823616
a,a,a-Trifluorotoluene(PID)				110.0	54-144			WG823616
Benzene	mg/kg	0.0455	0.0444	91.0	70-130	2.53	20	WG823613
Ethylbenzene	mg/kg	0.0489	0.0479	98.0	70-130	2.15	20	WG823613
Toluene	mg/kg	0.0484	0.0473	97.0	70-130	2.24	20	WG823613
Total Xylene	mg/kg	0.153	0.150	102.	70-130	1.74	20	WG823613
a,a,a-Trifluorotoluene(FID)				97.80	59-128			WG823613
a,a,a-Trifluorotoluene(PID)				101.0	54-144			WG823613
TPH (GC/FID) Low Fraction	mg/kg	6.48	6.29	118.	63.5-137	2.95	20	WG823613
a,a,a-Trifluorotoluene(FID)				101.0	59-128			WG823613
a,a,a-Trifluorotoluene(PID)				104.0	54-144			WG823613
C10-C28 Diesel Range	mg/kg	46.9	43.0	78.0	50-100	8.61	20	WG824319
o-Terphenyl				88.00	50-150			WG824319

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.205	0.000310	.05	81.8	49.7-127	L795553-01	WG823616
Ethylbenzene	mg/kg	0.196	0.000669	.05	78.3	40.8-141	L795553-01	WG823616
Toluene	mg/kg	0.199	0.00127	.05	79.0	49.8-132	L795553-01	WG823616
Total Xylene	mg/kg	0.594	0.00280	.15	78.9	41.2-140	L795553-01	WG823616
a,a,a-Trifluorotoluene(FID)					92.10	59-128		WG823616
a,a,a-Trifluorotoluene(PID)					97.70	54-144		WG823616
TPH (GC/FID) Low Fraction	mg/kg	19.4	0.0796	5.5	70.4	28.5-138	L795553-01	WG823616
a,a,a-Trifluorotoluene(FID)					98.30	59-128		WG823616
a,a,a-Trifluorotoluene(PID)					106.0	54-144		WG823616
Benzene	mg/kg	0.121	0.00102	.05	48.1*	49.7-127	L795511-03	WG823613
Ethylbenzene	mg/kg	0.0532	0.00	.05	21.3*	40.8-141	L795511-03	WG823613
Toluene	mg/kg	0.0871	0.000336	.05	34.7*	49.8-132	L795511-03	WG823613
Total Xylene	mg/kg	0.164	0.00224	.15	21.5*	41.2-140	L795511-03	WG823613
a,a,a-Trifluorotoluene(FID)					94.00	59-128		WG823613
a,a,a-Trifluorotoluene(PID)					97.10	54-144		WG823613
TPH (GC/FID) Low Fraction	mg/kg	4.09	0.00	5.5	14.9*	28.5-138	L795511-03	WG823613
a,a,a-Trifluorotoluene(FID)					94.80	59-128		WG823613
a,a,a-Trifluorotoluene(PID)					99.20	54-144		WG823613

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.200	0.205	80.0	49.7-127	2.16	23.5	L795553-01	WG823616
Ethylbenzene	mg/kg	0.194	0.196	77.4	40.8-141	1.12	23.8	L795553-01	WG823616
Toluene	mg/kg	0.195	0.199	77.4	49.8-132	1.99	23.5	L795553-01	WG823616
Total Xylene	mg/kg	0.586	0.594	77.8	41.2-140	1.42	23.7	L795553-01	WG823616
a,a,a-Trifluorotoluene(FID)				92.30	59-128				WG823616
a,a,a-Trifluorotoluene(PID)				97.90	54-144				WG823616
TPH (GC/FID) Low Fraction	mg/kg	18.5	19.4	67.0	28.5-138	4.99	23.6	L795553-01	WG823616
a,a,a-Trifluorotoluene(FID)				98.20	59-128				WG823616
a,a,a-Trifluorotoluene(PID)				105.0	54-144				WG823616
Benzene	mg/kg	0.0880	0.121	34.8*	49.7-127	31.9*	23.5	L795511-03	WG823613
Ethylbenzene	mg/kg	0.0303	0.0532	12.1*	40.8-141	55.0*	23.8	L795511-03	WG823613

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Toluene	mg/kg	0.0527	0.0871	21.0*	49.8-132	49.1*	23.5	L795511-03		WG823613
Total Xylene	mg/kg	0.0798	0.164	10.3*	41.2-140	68.9*	23.7	L795511-03		WG823613
a,a,a-Trifluorotoluene(FID)				94.40	59-128					WG823613
a,a,a-Trifluorotoluene(PID)				98.20	54-144					WG823613
TPH (GC/FID) Low Fraction	mg/kg	5.63	4.09	20.4*	28.5-138	31.7*	23.6	L795511-03		WG823613
a,a,a-Trifluorotoluene(FID)				95.30	59-128					WG823613
a,a,a-Trifluorotoluene(PID)				101.0	54-144					WG823613

Batch number /Run number / Sample number cross reference

WG823616: R3087041: L795515-03 04 05 06 07 08 09
WG824319: R3088118: L795515-01 02 03 04 05 06 07 08 09
WG823613: R3088204: L795515-01 02

* * Calculations are performed prior to rounding of reported values.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.