

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

#### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Hilcorp Energy Company	Contact Clara Cardoza
Address 382 Rd 3100 Aztec NM 87410	Telephone No. 505-564-0733
Facility Name Hubbell Federal #1M	Facility Type Well

Surface Owner Federal (SF-078716-A)	Mineral Owner Federal	API No. 30-045-32809
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#### LOCATION OF RELEASE

Unit Letter P	Section 07	Township 29N	Range 10W	Feet from the 1090	North/South Line South	Feet from the 900	East/West Line East	County San Juan
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Latitude 36.7363281 Longitude -107.9198074 NAD83

#### NATURE OF RELEASE

Type of Release Hydrocarbon	Volume of Release 15 bbl	Volume Recovered 9 bbls
Source of Release Tank	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 12/20/2017 04:00 pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour AUG 06 2018	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. DISTRICT III	

If a Watercourse was Impacted, Describe Fully.\*

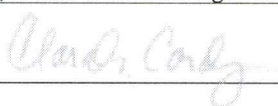

Describe Cause of Problem and Remedial Action Taken.\*

During field operator's routine visit to site found the oil dump leaking and immediately shut in the location. A spec truck was called out to transfer remaining contents of the tank to prevent further loss. Also, was able to recover 9 bbls of product that was at the surface. Leak on the dump line was caused by corrosion.

Describe Area Affected and Cleanup Action Taken.\*

Hydrocarbon was contained in the bermed area and a truck was called to remove free standing liquid and impacted soil. Confirmation sampling will be scheduled early 2018. **Excavation revealed a historic release on this location. A total of 2,050 cubic yards of impacted soil was removed and taken to the Envirotech landfarm. Attached are confirmation lab results and a final excavation figure. Also included is the email in which NMOCD granting Hilcorp approval to spray SC-23 with potassium permanganate and backfill the excavation.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

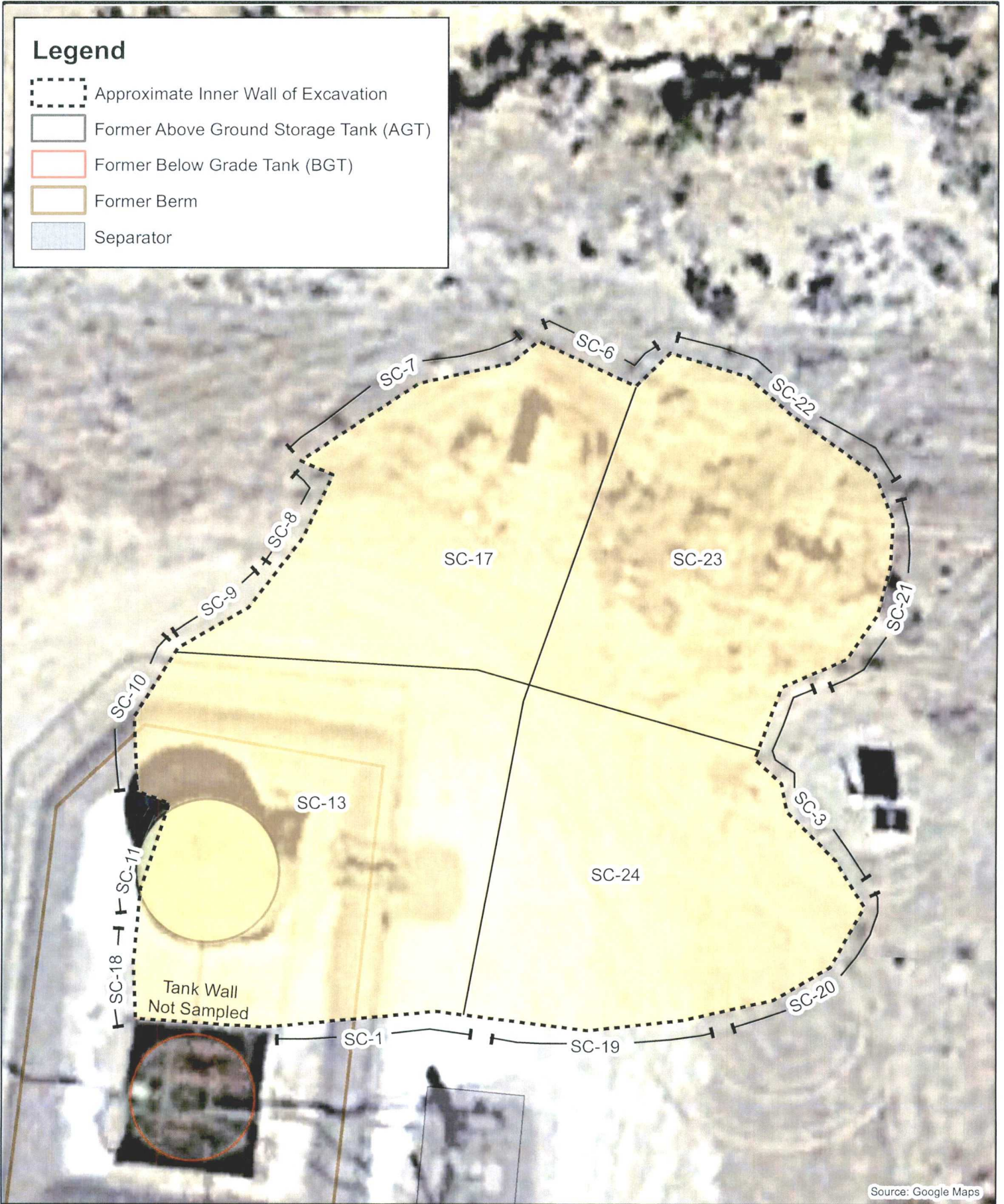
Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Clara Cardoza	Approved by Environmental Specialist: 	
Title: Environmental Specialist	Approval Date: <u>8/6/18</u>	Expiration Date:
E-mail Address: ccardoza@hilcorp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 08/03/2018	Phone: 505-564-0733	

\* Attach Additional Sheets If Necessary

NVF1800248261

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


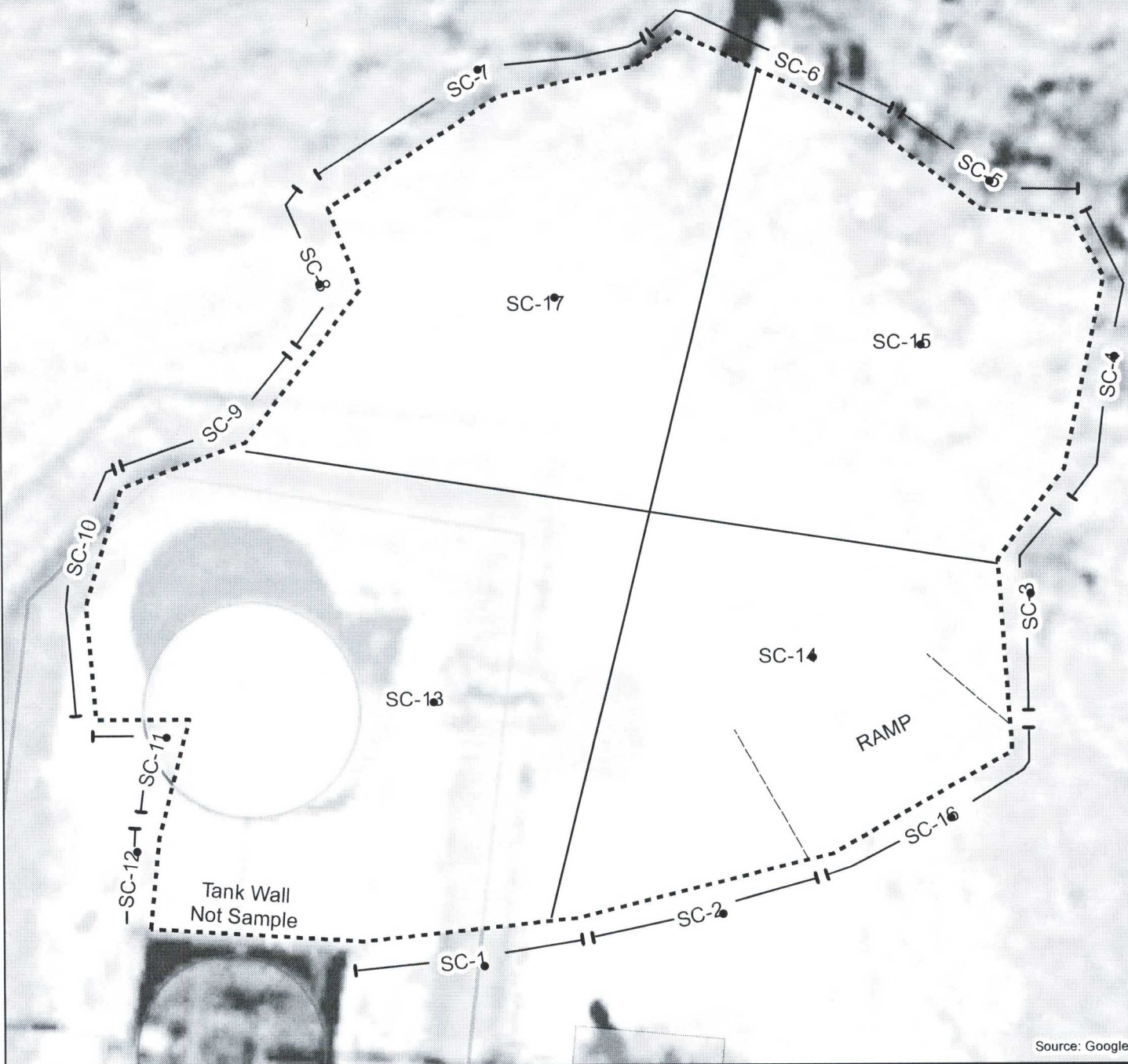
Source: Google Maps

<p><b>Rule Engineering, LLC</b> Solutions to Regulations for Industry</p> <p>0 5 10 20 30 Feet</p> <p>1 inch = 15 feet</p>	<p><b>Hilcorp</b></p>	<p>P-S07-T29N-R10W N36.73633, W107.91981 San Juan County, NM API: 30-045-32809</p>	<p><b>Figure A</b> <b>Site Assessment Map</b> Hubbell Fed #1M</p>
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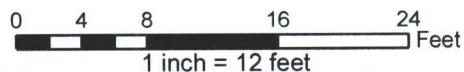
## Legend

-  Approximate Inner Wall of Excavation
-  Former Above Ground Storage Tank (AGT)
-  Former Below Grade Tank (BGT)
-  Former Berm
-  Separator



Source: Google Maps

**Rule** Engineering, LLC  
Solutions to Regulations for Industry



P-S07-T29N-R10W  
N36.73633, W107.91981  
San Juan County, NM  
API: 30-045-32809

**Figure A**  
**Site Assessment Map**  
Hubbell Fed #1M





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

January 30, 2018

Heather Woods

Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: Hubbell Fed 1M

OrderNo.: 1801A87

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 17 sample(s) on 1/24/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 2:40:00 PM

Lab ID: 1801A87-001

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	70	9.5		mg/Kg	1	1/25/2018 10:44:37 AM	36180
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/25/2018 10:44:37 AM	36180
Surr: DNOP	87.1	70-130		%Rec	1	1/25/2018 10:44:37 AM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2018 11:57:41 AM	36169
Surr: BFB	90.4	15-316		%Rec	1	1/25/2018 11:57:41 AM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 11:57:41 AM	36169
Toluene	ND	0.048		mg/Kg	1	1/25/2018 11:57:41 AM	36169
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2018 11:57:41 AM	36169
Xylenes, Total	ND	0.096		mg/Kg	1	1/25/2018 11:57:41 AM	36169
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	1/25/2018 11:57:41 AM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 2:46:00 PM

Lab ID: 1801A87-002

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	140	10		mg/Kg	1	1/25/2018 11:57:57 AM	36180
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/25/2018 11:57:57 AM	36180
Surr: DNOP	95.4	70-130		%Rec	1	1/25/2018 11:57:57 AM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	10	4.9		mg/Kg	1	1/25/2018 1:08:24 PM	36169
Surr: BFB	135	15-316		%Rec	1	1/25/2018 1:08:24 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 1:08:24 PM	36169
Toluene	ND	0.049		mg/Kg	1	1/25/2018 1:08:24 PM	36169
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2018 1:08:24 PM	36169
Xylenes, Total	ND	0.098		mg/Kg	1	1/25/2018 1:08:24 PM	36169
Surr: 4-Bromofluorobenzene	91.1	80-120		%Rec	1	1/25/2018 1:08:24 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 2:53:00 PM

Lab ID: 1801A87-003

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	1/25/2018 12:22:21 PM	36180
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/25/2018 12:22:21 PM	36180
Surr: DNOP	88.8	70-130		%Rec	1	1/25/2018 12:22:21 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2018 2:19:15 PM	36169
Surr: BFB	85.0	15-316		%Rec	1	1/25/2018 2:19:15 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 2:19:15 PM	36169
Toluene	ND	0.049		mg/Kg	1	1/25/2018 2:19:15 PM	36169
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2018 2:19:15 PM	36169
Xylenes, Total	ND	0.098		mg/Kg	1	1/25/2018 2:19:15 PM	36169
Surr: 4-Bromofluorobenzene	89.5	80-120		%Rec	1	1/25/2018 2:19:15 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:00:00 PM

Lab ID: 1801A87-004

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	490	9.2		mg/Kg	1	1/25/2018 12:46:33 PM	36180
Motor Oil Range Organics (MRO)	120	46		mg/Kg	1	1/25/2018 12:46:33 PM	36180
Surr: DNOP	92.9	70-130		%Rec	1	1/25/2018 12:46:33 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	170	24		mg/Kg	5	1/25/2018 2:42:44 PM	36169
Surr: BFB	210	15-316		%Rec	5	1/25/2018 2:42:44 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.12		mg/Kg	5	1/25/2018 2:42:44 PM	36169
Toluene	1.4	0.24		mg/Kg	5	1/25/2018 2:42:44 PM	36169
Ethylbenzene	0.90	0.24		mg/Kg	5	1/25/2018 2:42:44 PM	36169
Xylenes, Total	11	0.48		mg/Kg	5	1/25/2018 2:42:44 PM	36169
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	5	1/25/2018 2:42:44 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:02:00 PM

Lab ID: 1801A87-005

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	3100	97		mg/Kg	10	1/25/2018 1:10:59 PM	36180
Motor Oil Range Organics (MRO)	590	490		mg/Kg	10	1/25/2018 1:10:59 PM	36180
Surr: DNOP	0	70-130	S	%Rec	10	1/25/2018 1:10:59 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	2100	120		mg/Kg	25	1/25/2018 3:29:56 PM	36169
Surr: BFB	300	15-316		%Rec	25	1/25/2018 3:29:56 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	1.0	0.60		mg/Kg	25	1/25/2018 3:29:56 PM	36169
Toluene	45	1.2		mg/Kg	25	1/25/2018 3:29:56 PM	36169
Ethylbenzene	15	1.2		mg/Kg	25	1/25/2018 3:29:56 PM	36169
Xylenes, Total	180	2.4		mg/Kg	25	1/25/2018 3:29:56 PM	36169
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	25	1/25/2018 3:29:56 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-6

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:05:00 PM

Lab ID: 1801A87-006

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/25/2018 1:35:13 PM	36180
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/25/2018 1:35:13 PM	36180
Surr: DNOP	88.9	70-130		%Rec	1	1/25/2018 1:35:13 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	1/25/2018 4:17:07 PM	36169
Surr: BFB	82.4	15-316		%Rec	1	1/25/2018 4:17:07 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	1/25/2018 4:17:07 PM	36169
Toluene	ND	0.046		mg/Kg	1	1/25/2018 4:17:07 PM	36169
Ethylbenzene	ND	0.046		mg/Kg	1	1/25/2018 4:17:07 PM	36169
Xylenes, Total	ND	0.093		mg/Kg	1	1/25/2018 4:17:07 PM	36169
Surr: 4-Bromofluorobenzene	88.5	80-120		%Rec	1	1/25/2018 4:17:07 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-7

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:10:00 PM

Lab ID: 1801A87-007

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/25/2018 1:59:37 PM	36180
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/25/2018 1:59:37 PM	36180
Surr: DNOP	93.9	70-130		%Rec	1	1/25/2018 1:59:37 PM	36180
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/25/2018 4:40:37 PM	36169
Surr: BFB	82.4	15-316		%Rec	1	1/25/2018 4:40:37 PM	36169
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 4:40:37 PM	36169
Toluene	ND	0.047		mg/Kg	1	1/25/2018 4:40:37 PM	36169
Ethylbenzene	ND	0.047		mg/Kg	1	1/25/2018 4:40:37 PM	36169
Xylenes, Total	ND	0.094		mg/Kg	1	1/25/2018 4:40:37 PM	36169
Surr: 4-Bromofluorobenzene	87.7	80-120		%Rec	1	1/25/2018 4:40:37 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-8

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:13:00 PM

Lab ID: 1801A87-008

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/25/2018 2:23:56 PM	36180
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/25/2018 2:23:56 PM	36180
Surr: DNOP	88.0	70-130		%Rec	1	1/25/2018 2:23:56 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2018 6:37:39 PM	36169
Surr: BFB	81.5	15-316		%Rec	1	1/25/2018 6:37:39 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 6:37:39 PM	36169
Toluene	ND	0.049		mg/Kg	1	1/25/2018 6:37:39 PM	36169
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2018 6:37:39 PM	36169
Xylenes, Total	ND	0.097		mg/Kg	1	1/25/2018 6:37:39 PM	36169
Surr: 4-Bromofluorobenzene	86.7	80-120		%Rec	1	1/25/2018 6:37:39 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-9

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:16:00 PM

Lab ID: 1801A87-009

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/25/2018 3:05:50 PM	36180
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/25/2018 3:05:50 PM	36180
Surr: DNOP	87.5	70-130		%Rec	1	1/25/2018 3:05:50 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/25/2018 7:01:05 PM	36169
Surr: BFB	84.7	15-316		%Rec	1	1/25/2018 7:01:05 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	1/25/2018 7:01:05 PM	36169
Toluene	ND	0.047		mg/Kg	1	1/25/2018 7:01:05 PM	36169
Ethylbenzene	ND	0.047		mg/Kg	1	1/25/2018 7:01:05 PM	36169
Xylenes, Total	ND	0.093		mg/Kg	1	1/25/2018 7:01:05 PM	36169
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	1/25/2018 7:01:05 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-10

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:20:00 PM

Lab ID: 1801A87-010

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/25/2018 3:30:05 PM	36180
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/25/2018 3:30:05 PM	36180
Surr: DNOP	84.8	70-130		%Rec	1	1/25/2018 3:30:05 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/25/2018 7:24:28 PM	36169
Surr: BFB	82.8	15-316		%Rec	1	1/25/2018 7:24:28 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	1/25/2018 7:24:28 PM	36169
Toluene	ND	0.050		mg/Kg	1	1/25/2018 7:24:28 PM	36169
Ethylbenzene	ND	0.050		mg/Kg	1	1/25/2018 7:24:28 PM	36169
Xylenes, Total	ND	0.099		mg/Kg	1	1/25/2018 7:24:28 PM	36169
Surr: 4-Bromofluorobenzene	86.0	80-120		%Rec	1	1/25/2018 7:24:28 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-11

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:24:00 PM

Lab ID: 1801A87-011

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	1/25/2018 3:54:25 PM	36180
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	1/25/2018 3:54:25 PM	36180
Surr: DNOP	91.0	70-130		%Rec	1	1/25/2018 3:54:25 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2018 7:47:50 PM	36169
Surr: BFB	84.1	15-316		%Rec	1	1/25/2018 7:47:50 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	1/25/2018 7:47:50 PM	36169
Toluene	ND	0.049		mg/Kg	1	1/25/2018 7:47:50 PM	36169
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2018 7:47:50 PM	36169
Xylenes, Total	ND	0.098		mg/Kg	1	1/25/2018 7:47:50 PM	36169
Surr: 4-Bromofluorobenzene	89.4	80-120		%Rec	1	1/25/2018 7:47:50 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC  
**Project:** Hubbell Fed 1M  
**Lab ID:** 1801A87-012

**Matrix:** SOIL

**Client Sample ID:** SC-12  
**Collection Date:** 1/23/2018 3:28:00 PM  
**Received Date:** 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	160	10		mg/Kg	1	1/25/2018 4:18:47 PM	36180
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/25/2018 4:18:47 PM	36180
Surr: DNOP	93.8	70-130		%Rec	1	1/25/2018 4:18:47 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2018 8:11:12 PM	36169
Surr: BFB	85.6	15-316		%Rec	1	1/25/2018 8:11:12 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	1/25/2018 8:11:12 PM	36169
Toluene	ND	0.048		mg/Kg	1	1/25/2018 8:11:12 PM	36169
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2018 8:11:12 PM	36169
Xylenes, Total	ND	0.097		mg/Kg	1	1/25/2018 8:11:12 PM	36169
Surr: 4-Bromofluorobenzene	88.7	80-120		%Rec	1	1/25/2018 8:11:12 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-13**Project:** Hubbell Fed 1M**Collection Date:** 1/23/2018 3:35:00 PM**Lab ID:** 1801A87-013**Matrix:** SOIL**Received Date:** 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	36	9.2		mg/Kg	1	1/25/2018 4:43:19 PM	36180
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/25/2018 4:43:19 PM	36180
Surr: DNOP	88.4	70-130		%Rec	1	1/25/2018 4:43:19 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2018 8:34:34 PM	36169
Surr: BFB	86.5	15-316		%Rec	1	1/25/2018 8:34:34 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	1/25/2018 8:34:34 PM	36169
Toluene	ND	0.049		mg/Kg	1	1/25/2018 8:34:34 PM	36169
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2018 8:34:34 PM	36169
Xylenes, Total	ND	0.098		mg/Kg	1	1/25/2018 8:34:34 PM	36169
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	1/25/2018 8:34:34 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-14

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:40:00 PM

Lab ID: 1801A87-014

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	210	9.2		mg/Kg	1	1/25/2018 5:07:39 PM	36180
Motor Oil Range Organics (MRO)	56	46		mg/Kg	1	1/25/2018 5:07:39 PM	36180
Surr: DNOP	103	70-130		%Rec	1	1/25/2018 5:07:39 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	11	4.8		mg/Kg	1	1/25/2018 11:10:51 AM	36169
Surr: BFB	142	15-316		%Rec	1	1/25/2018 11:10:51 AM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2018 11:10:51 AM	36169
Toluene	ND	0.048		mg/Kg	1	1/25/2018 11:10:51 AM	36169
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2018 11:10:51 AM	36169
Xylenes, Total	ND	0.096		mg/Kg	1	1/25/2018 11:10:51 AM	36169
Surr: 4-Bromofluorobenzene	91.8	80-120		%Rec	1	1/25/2018 11:10:51 AM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-15

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:45:00 PM

Lab ID: 1801A87-015

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	710	9.7		mg/Kg	1	1/25/2018 5:32:04 PM	36180
Motor Oil Range Organics (MRO)	180	48		mg/Kg	1	1/25/2018 5:32:04 PM	36180
Surr: DNOP	103	70-130		%Rec	1	1/25/2018 5:32:04 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	310	5.0		mg/Kg	1	1/25/2018 8:57:55 PM	36169
Surr: BFB	1210	15-316	S	%Rec	1	1/25/2018 8:57:55 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	1/25/2018 8:57:55 PM	36169
Toluene	1.8	0.050		mg/Kg	1	1/25/2018 8:57:55 PM	36169
Ethylbenzene	2.1	0.050		mg/Kg	1	1/25/2018 8:57:55 PM	36169
Xylenes, Total	28	2.0		mg/Kg	20	1/26/2018 9:42:54 AM	36169
Surr: 4-Bromofluorobenzene	227	80-120	S	%Rec	1	1/25/2018 8:57:55 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-16

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 2:50:00 PM

Lab ID: 1801A87-016

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	360	9.6		mg/Kg	1	1/25/2018 5:56:19 PM	36180
Motor Oil Range Organics (MRO)	97	48		mg/Kg	1	1/25/2018 5:56:19 PM	36180
Surr: DNOP	98.3	70-130		%Rec	1	1/25/2018 5:56:19 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	85	4.6		mg/Kg	1	1/25/2018 9:44:38 PM	36169
Surr: BFB	420	15-316	S	%Rec	1	1/25/2018 9:44:38 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	1/25/2018 9:44:38 PM	36169
Toluene	0.64	0.046		mg/Kg	1	1/25/2018 9:44:38 PM	36169
Ethylbenzene	0.45	0.046		mg/Kg	1	1/25/2018 9:44:38 PM	36169
Xylenes, Total	5.8	0.092		mg/Kg	1	1/25/2018 9:44:38 PM	36169
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	1/25/2018 9:44:38 PM	36169

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1801A87

Date Reported: 1/30/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-17

Project: Hubbell Fed 1M

Collection Date: 1/23/2018 3:50:00 PM

Lab ID: 1801A87-017

Matrix: SOIL

Received Date: 1/24/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	390	9.0		mg/Kg	1	1/25/2018 6:20:41 PM	36180
Motor Oil Range Organics (MRO)	120	45		mg/Kg	1	1/25/2018 6:20:41 PM	36180
Surr: DNOP	97.3	70-130		%Rec	1	1/25/2018 6:20:41 PM	36180
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	20	5.0		mg/Kg	1	1/25/2018 10:31:22 PM	36169
Surr: BFB	169	15-316		%Rec	1	1/25/2018 10:31:22 PM	36169
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	1/25/2018 10:31:22 PM	36169
Toluene	ND	0.050		mg/Kg	1	1/25/2018 10:31:22 PM	36169
Ethylbenzene	0.072	0.050		mg/Kg	1	1/25/2018 10:31:22 PM	36169
Xylenes, Total	0.99	0.10		mg/Kg	1	1/25/2018 10:31:22 PM	36169
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	1/25/2018 10:31:22 PM	36169

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1801A87

30-Jan-18

Client: Rule Engineering LLC

Project: Hubbell Fed IM

Sample ID	1801A87-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	36180	RunNo:	48689					
Prep Date:	1/24/2018	Analysis Date:	1/25/2018	SeqNo:	1566349	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.3	46.69	69.73	67.1	55.8	125			
Surr: DNOP	4.0		4.669		85.8	70	130			

Sample ID	1801A87-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	36180	RunNo:	48689					
Prep Date:	1/24/2018	Analysis Date:	1/25/2018	SeqNo:	1566350	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.3	46.38	69.73	70.2	55.8	125	1.23	20	
Surr: DNOP	3.9		4.638		85.0	70	130	0	0	

Sample ID	LCS-36180	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	36180	RunNo:	48689					
Prep Date:	1/24/2018	Analysis Date:	1/25/2018	SeqNo:	1566352	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.4	70	130			
Surr: DNOP	3.9		5.000		78.6	70	130			

Sample ID	MB-36180	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	36180	RunNo:	48689					
Prep Date:	1/24/2018	Analysis Date:	1/25/2018	SeqNo:	1566353	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		89.6	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1801A87

30-Jan-18

Client: Rule Engineering LLC

Project: Hubbell Fed IM

Sample ID	MB-36169	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	36169		RunNo:	48706				
Prep Date:	1/24/2018	Analysis Date:	1/25/2018		SeqNo:	1566641	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	870		1000		86.6	15	316			

Sample ID	LCS-36169		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 36169		RunNo: 48706					
Prep Date:	1/24/2018		Analysis Date: 1/25/2018		SeqNo: 1566642		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	75.9	131			
Surr: BFB	950		1000		94.8	15	316			

Sample ID	1801A87-002AMS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	SC-2	Batch ID: 36169			RunNo: 48706					
Prep Date:	1/24/2018	Analysis Date: 1/25/2018			SeqNo: 1566645		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	34	4.7	23.54	9.971	103	77.8	128			
Surr: BFB	1300		941.6		133	15	316			

Sample ID	1801A87-002AMSD	SampType:	MSD	TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	SC-2	Batch ID:	36169	RunNo: 48706						
Prep Date:	1/24/2018	Analysis Date:	1/25/2018	SeqNo: 1566646		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	36	4.8	24.25	9.971	106	77.8	128	4.41	20	
Surr: BFB	1400		969.9		141	15	316	0	0	

Sample ID	MB-36205		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 36205		RunNo: 48738					
Prep Date:	1/25/2018		Analysis Date: 1/26/2018		SeqNo: 1567794		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	830		1000		83.1	15	316			

Sample ID	LCS-36205		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 36205		RunNo: 48738					
Prep Date:	1/25/2018		Analysis Date: 1/26/2018		SeqNo: 1567795		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	15	316			

### Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1801A87

30-Jan-18

Client: Rule Engineering LLC

Project: Hubbell Fed 1M

Sample ID	MB-36169		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	36169		RunNo:	48706			
Prep Date:	1/24/2018		Analysis Date:	1/25/2018		SeqNo:	1566667		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	80	120			

Sample ID	LCS-36169		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	36169		RunNo:	48706			
Prep Date:	1/24/2018		Analysis Date:	1/25/2018		SeqNo:	1566668		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.9	77.3	128			
Toluene	0.94	0.050	1.000	0	94.4	79.2	125			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	94.9	81.6	129			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	80	120			

Sample ID	1801A87-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-1		Batch ID:	36169		RunNo:	48706			
Prep Date:	1/24/2018		Analysis Date:	1/25/2018		SeqNo:	1566670		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9443	0	92.0	80.9	132			
Toluene	0.90	0.047	0.9443	0.009885	94.2	79.8	136			
Ethylbenzene	0.87	0.047	0.9443	0.009693	91.1	79.4	140			
Xylenes, Total	2.7	0.094	2.833	0.03580	94.0	78.5	142			
Surr: 4-Bromofluorobenzene	0.88		0.9443		93.6	80	120			

Sample ID	1801A87-001AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-1		Batch ID:	36169		RunNo:	48706			
Prep Date:	1/24/2018		Analysis Date:	1/25/2018		SeqNo:	1566671		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.023	0.9355	0	93.0	80.9	132	0.0439	20	
Toluene	0.88	0.047	0.9355	0.009885	92.9	79.8	136	2.36	20	
Ethylbenzene	0.87	0.047	0.9355	0.009693	92.3	79.4	140	0.376	20	
Xylenes, Total	2.7	0.094	2.806	0.03580	93.9	78.5	142	1.05	20	
Surr: 4-Bromofluorobenzene	0.82		0.9355		87.4	80	120	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
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1801A87

30-Jan-18

Client: Rule Engineering LLC

Project: Hubbell Fed 1M

Sample ID	MB-36205		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 36205		RunNo: 48738					
Prep Date:	1/25/2018		Analysis Date: 1/26/2018		SeqNo: 1567836		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.89		1.000		89.3	80	120			

Sample ID	LCS-36205		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 36205		RunNo: 48738					
Prep Date:	1/25/2018		Analysis Date: 1/26/2018		SeqNo: 1567837		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	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
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified





Hall Environmental Analysis Laboratory  
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: RULE ENGINEERING LL

Work Order Number: 1801A87

RcptNo: 1

Received By: Anne Thorne 1/24/2018 7:00:00 AM  
Completed By: Anne Thorne 1/24/2018 8:10:08 AM  
Reviewed By: JMD 1/24/18

*Anne Thorne*  
*Anne Thorne*

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH: \_\_\_\_\_

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

15. 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: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

# Chain-of-Custody Record

Client: Rue Engineering, LLC

Mailing Address: 501 Airport Drive  
Suite 205 Farmington, NM

Phone #: 505 793 9486

email or Fax#: julidez@rueengineering.com

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

Accreditation  
☐ NELAP ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:  
☐ Standard ☒ Rush 3-Day

Project Name: Hubbell Fed IM

Project #: \_\_\_\_\_

Project Manager: Heather Woods

Sampler: Justin Vadez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0



## 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.	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	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
12/18	1440	Soil	SC-1	01402 Fr	Cool	201	X	X										
	1446		SC-2			202												
	1453		SC-3			203												
	1500		SC-4			204												
	1502		SC-5			205												
	1505		SC-6			206												
	1510		SC-7			207												
	1513		SC-8			208												
	1516		SC-9			209												
	1520		SC-10			210												
	1524		SC-11			211												
	1528		SC-12			212												

Date: 12/18 Time: 1701 Relinquished by: Justin Vadez

Date: 12/18 Time: 1701 Received by: Christina Waelz

Date: 12/18 Time: 1701 Relinquished by: Christina Waelz

Date: 01/24/18 Time: 0700 Received by: Anna

Remarks: Direct Bill to Hallcorp



Client: F Rule Engineering, LLC

Mailing Address: 501 Airport Drive  
Suite 205 Farmington NM

Phone #: 505 793 9486

email or Fax#: jvaldez@ruleengineering.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

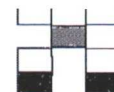
☐ Standard ☒ Rush 3-Day

Hubbell Fed 1M

Project #:

Project Manager:

Heatner Woods	
Sampler:	Justin Valdez
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Temperature:	10°



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

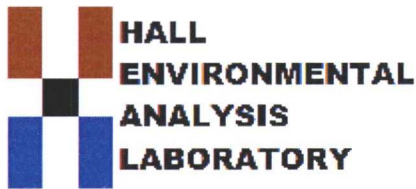
[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/23/18	1701	[Signature]	Christina Wacker	1/23/18	1761
Date:	Time:	Relinquished by:	Received by:	Date	Time
1/23/18	1920	Christina Wacker	[Signature]	01/24/18	0700

Remarks:  
Direct Bill to Hillman?

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.





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

February 05, 2018

Heather Woods

Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: Hubbell Fed 1M

OrderNo.: 1802001

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 7 sample(s) on 2/1/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-18

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 9:42:00 AM

Lab ID: 1802001-001

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	2/1/2018 11:22:36 AM	M48843
Surr: BFB	107	70-130		%Rec	1	2/1/2018 11:22:36 AM	M48843
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/1/2018 10:52:12 AM	36295
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/1/2018 10:52:12 AM	36295
Surr: DNOP	103	70-130		%Rec	1	2/1/2018 10:52:12 AM	36295
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: AG
Benzene	ND	0.021		mg/Kg	1	2/1/2018 11:22:36 AM	S48843
Toluene	ND	0.043		mg/Kg	1	2/1/2018 11:22:36 AM	S48843
Ethylbenzene	ND	0.043		mg/Kg	1	2/1/2018 11:22:36 AM	S48843
Xylenes, Total	ND	0.085		mg/Kg	1	2/1/2018 11:22:36 AM	S48843
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	2/1/2018 11:22:36 AM	S48843
Surr: Toluene-d8	94.0	70-130		%Rec	1	2/1/2018 11:22:36 AM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-19

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 9:53:00 AM

Lab ID: 1802001-002

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	2/1/2018 11:45:32 AM	M48843
Surr: BFB	104	70-130		%Rec	1	2/1/2018 11:45:32 AM	M48843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	13	9.4		mg/Kg	1	2/1/2018 11:14:19 AM	36295
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/1/2018 11:14:19 AM	36295
Surr: DNOP	103	70-130		%Rec	1	2/1/2018 11:14:19 AM	36295
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.020		mg/Kg	1	2/1/2018 11:45:32 AM	S48843
Toluene	ND	0.039		mg/Kg	1	2/1/2018 11:45:32 AM	S48843
Ethylbenzene	ND	0.039		mg/Kg	1	2/1/2018 11:45:32 AM	S48843
Xylenes, Total	ND	0.078		mg/Kg	1	2/1/2018 11:45:32 AM	S48843
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	2/1/2018 11:45:32 AM	S48843
Surr: Toluene-d8	95.7	70-130		%Rec	1	2/1/2018 11:45:32 AM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-20

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 10:00:00 AM

Lab ID: 1802001-003

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	2/1/2018 12:08:32 PM	M48843
Surr: BFB	102	70-130		%Rec	5	2/1/2018 12:08:32 PM	M48843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/1/2018 11:36:12 AM	36295
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/1/2018 11:36:12 AM	36295
Surr: DNOP	104	70-130		%Rec	1	2/1/2018 11:36:12 AM	36295
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.10		mg/Kg	5	2/1/2018 12:08:32 PM	S48843
Toluene	ND	0.20		mg/Kg	5	2/1/2018 12:08:32 PM	S48843
Ethylbenzene	ND	0.20		mg/Kg	5	2/1/2018 12:08:32 PM	S48843
Xylenes, Total	ND	0.41		mg/Kg	5	2/1/2018 12:08:32 PM	S48843
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	5	2/1/2018 12:08:32 PM	S48843
Surr: Toluene-d8	97.4	70-130		%Rec	5	2/1/2018 12:08:32 PM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-21

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 10:07:00 AM

Lab ID: 1802001-004

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	2/1/2018 12:31:31 PM	M48843
Surr: BFB	106	70-130		%Rec	1	2/1/2018 12:31:31 PM	M48843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/1/2018 11:58:22 AM	36295
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/1/2018 11:58:22 AM	36295
Surr: DNOP	105	70-130		%Rec	1	2/1/2018 11:58:22 AM	36295
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.018		mg/Kg	1	2/1/2018 12:31:31 PM	S48843
Toluene	ND	0.036		mg/Kg	1	2/1/2018 12:31:31 PM	S48843
Ethylbenzene	ND	0.036		mg/Kg	1	2/1/2018 12:31:31 PM	S48843
Xylenes, Total	ND	0.072		mg/Kg	1	2/1/2018 12:31:31 PM	S48843
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	2/1/2018 12:31:31 PM	S48843
Surr: Toluene-d8	93.2	70-130		%Rec	1	2/1/2018 12:31:31 PM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-22

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 10:10:00 AM

Lab ID: 1802001-005

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	2/1/2018 12:54:26 PM	M48843
Surr: BFB	108	70-130		%Rec	1	2/1/2018 12:54:26 PM	M48843
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/1/2018 12:20:23 PM	36295
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	2/1/2018 12:20:23 PM	36295
Surr: DNOP	105	70-130		%Rec	1	2/1/2018 12:20:23 PM	36295
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: AG
Benzene	ND	0.021		mg/Kg	1	2/1/2018 12:54:26 PM	S48843
Toluene	ND	0.042		mg/Kg	1	2/1/2018 12:54:26 PM	S48843
Ethylbenzene	ND	0.042		mg/Kg	1	2/1/2018 12:54:26 PM	S48843
Xylenes, Total	ND	0.085		mg/Kg	1	2/1/2018 12:54:26 PM	S48843
Surr: 4-Bromofluorobenzene	113	70-130		%Rec	1	2/1/2018 12:54:26 PM	S48843
Surr: Toluene-d8	94.8	70-130		%Rec	1	2/1/2018 12:54:26 PM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-23

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 10:19:00 AM

Lab ID: 1802001-006

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	230	24		mg/Kg	5	2/1/2018 1:17:22 PM	M48843
Surr: BFB	98.1	70-130		%Rec	5	2/1/2018 1:17:22 PM	M48843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	410	9.3		mg/Kg	1	2/1/2018 12:42:36 PM	36295
Motor Oil Range Organics (MRO)	100	47		mg/Kg	1	2/1/2018 12:42:36 PM	36295
Surr: DNOP	111	70-130		%Rec	1	2/1/2018 12:42:36 PM	36295
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.12		mg/Kg	5	2/1/2018 1:17:22 PM	S48843
Toluene	0.79	0.24		mg/Kg	5	2/1/2018 1:17:22 PM	S48843
Ethylbenzene	0.53	0.24		mg/Kg	5	2/1/2018 1:17:22 PM	S48843
Xylenes, Total	6.8	0.47		mg/Kg	5	2/1/2018 1:17:22 PM	S48843
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	5	2/1/2018 1:17:22 PM	S48843
Surr: Toluene-d8	95.2	70-130		%Rec	5	2/1/2018 1:17:22 PM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802001

Date Reported: 2/5/2018

CLIENT: Rule Engineering LLC

Client Sample ID: SC-24

Project: Hubbell Fed 1M

Collection Date: 1/31/2018 10:32:00 AM

Lab ID: 1802001-007

Matrix: SOIL

Received Date: 2/1/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: AG
Gasoline Range Organics (GRO)	5.2	3.7		mg/Kg	1	2/1/2018 1:40:19 PM	M48843
Surr: BFB	111	70-130		%Rec	1	2/1/2018 1:40:19 PM	M48843
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	41	9.8		mg/Kg	1	2/1/2018 1:04:34 PM	36295
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/1/2018 1:04:34 PM	36295
Surr: DNOP	107	70-130		%Rec	1	2/1/2018 1:04:34 PM	36295
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: AG
Benzene	ND	0.018		mg/Kg	1	2/1/2018 1:40:19 PM	S48843
Toluene	ND	0.037		mg/Kg	1	2/1/2018 1:40:19 PM	S48843
Ethylbenzene	ND	0.037		mg/Kg	1	2/1/2018 1:40:19 PM	S48843
Xylenes, Total	ND	0.074		mg/Kg	1	2/1/2018 1:40:19 PM	S48843
Surr: 4-Bromofluorobenzene	116	70-130		%Rec	1	2/1/2018 1:40:19 PM	S48843
Surr: Toluene-d8	93.7	70-130		%Rec	1	2/1/2018 1:40:19 PM	S48843

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1802001

05-Feb-18

Client: Rule Engineering LLC

Project: Hubbell Fed IM

Sample ID	LCS-36295		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 36295		RunNo: 48827					
Prep Date:	2/1/2018		Analysis Date: 2/1/2018		SeqNo: 1571272		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.7	70	130			
Surr: DNOP	4.6		5.000		91.4	70	130			

Sample ID	MB-36295	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID:	PBS	Batch ID: 36295		RunNo: 48827						
Prep Date:	2/1/2018	Analysis Date: 2/1/2018		SeqNo: 1571273		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	70	130			

Sample ID	1802001-001AMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-18	Batch ID: 36295			RunNo: 48827					
Prep Date:	2/1/2018	Analysis Date: 2/1/2018			SeqNo: 1571811		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.4	46.95	7.554	91.7	55.8	125			
Surr: DNOP	4.8		4.695		103	70	130			

Sample ID	1802001-001AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-18		Batch ID: 36295		RunNo: 48827					
Prep Date:	2/1/2018		Analysis Date: 2/1/2018		SeqNo: 1571812		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	49.90	7.554	86.7	55.8	125	0.428	20	
Surr: DNOP	4.9		4.990		98.1	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
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1802001

05-Feb-18

Client: Rule Engineering LLC

Project: Hubbell Fed 1M

Sample ID	100ng lcs	SampType:	LCS4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	BatchQC	Batch ID:	S48843	RunNo:	48843					
Prep Date:		Analysis Date:	2/1/2018	SeqNo:	1571716	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.0	80	120			
Toluene	0.99	0.050	1.000	0	98.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.3	80	120			
Surr: 4-Bromofluorobenzene	0.43		0.5000		86.8	70	130			
Surr: Toluene-d8	0.47		0.5000		94.2	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	S48843	RunNo:	48843					
Prep Date:		Analysis Date:	2/1/2018	SeqNo:	1571726	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.48		0.5000		95.7	70	130			

Sample ID	1802001-002ams	SampType:	MS4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-19	Batch ID:	S48843	RunNo:	48843					
Prep Date:		Analysis Date:	2/1/2018	SeqNo:	1572330	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.020	0.7849	0	86.5	80	120			
Toluene	0.74	0.039	0.7849	0	94.4	80	120			
Ethylbenzene	0.77	0.039	0.7849	0	97.8	80	120			
Xylenes, Total	2.3	0.078	2.355	0.02933	94.7	80	120			
Surr: 4-Bromofluorobenzene	0.36		0.3924		91.8	70	130			
Surr: Toluene-d8	0.37		0.3924		94.9	70	130			

Sample ID	1802001-002amsd	SampType:	MSD4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-19	Batch ID:	S48843	RunNo:	48843					
Prep Date:		Analysis Date:	2/1/2018	SeqNo:	1572331	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.64	0.020	0.7849	0	81.8	80	120	5.63	0	
Toluene	0.72	0.039	0.7849	0	91.3	80	120	3.27	0	
Ethylbenzene	0.72	0.039	0.7849	0	92.4	80	120	5.72	0	
Xylenes, Total	2.2	0.078	2.355	0.02933	91.8	80	120	3.09	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                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802001

05-Feb-18

Client: Rule Engineering LLC

Project: Hubbell Fed 1M

Sample ID	1802001-002amsd	SampType:	MSD4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-19	Batch ID:	S48843	RunNo:	48843					
Prep Date:		Analysis Date:	2/1/2018	SeqNo:	1572331	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.36		0.3924		92.8	70	130	0	0	
Surr: Toluene-d8	0.37		0.3924		93.8	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
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1802001

05-Feb-18

Client: Rule Engineering LLC

Project: Hubbell Fed 1M

Sample ID	2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID: M48843			RunNo: 48843					
Prep Date:		Analysis Date: 2/1/2018			SeqNo: 1571713		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	70	130			
Surr: BFB	430		500.0		85.8	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID: M48843			RunNo: 48843					
Prep Date:		Analysis Date: 2/1/2018			SeqNo: 1571714		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	510		500.0		102	70	130			

Sample ID	1802001-001ams	SampType: MS			TestCode: EPA Method 8015D Mod: Gasoline Range					
Client ID:	SC-18	Batch ID: M48843			RunNo: 48843					
Prep Date:		Analysis Date: 2/1/2018			SeqNo: 1572140		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.3	21.26	0	95.7	64.7	142			
Surr: BFB	400		425.2		95.3	70	130			

Sample ID	1802001-001amsd	SampType:	MSD		TestCode:	EPA Method 8015D Mod: Gasoline Range				
Client ID:	SC-18	Batch ID:	M48843		RunNo:	48843				
Prep Date:		Analysis Date:	2/1/2018		SeqNo:	1572141	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.3	21.26	0	95.2	64.7	142	0.587	20	
Surr: BFB	400		425.2		93.3	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified





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: RULE ENGINEERING LL

Work Order Number: 1802001

RcptNo: 1

Received By: Anne Thorne

2/1/2018 7:00:00 AM

*Anne Thorne*

Completed By: Anne Thorne

2/1/2018 7:22:04 AM

*Anne Thorne*

Reviewed By: *KT 2/1/2018*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
5. Sample(s) in proper container(s)? Yes ☒ No ☐  
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
10. Were any sample containers received broken? Yes ☐ No ☒  
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
13. Is it clear what analyses were requested? Yes ☒ No ☐  
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

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

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			



## Clara Cardoza

---

**From:** Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>  
**Sent:** Friday, February 2, 2018 3:46 PM  
**To:** Clara Cardoza; Smith, Cory, EMNRD; whitney thomas (l1thomas@blm.gov); 'Adeloye, Abiodun'  
**Subject:** RE: Hubbell Fed #1M Preliminary Sample Results

Good afternoon Clara,

Per our phone conversation today the OCD grants approval to spray potassium permanganate on the base of the excavation and backfill.

Thank you,

Vanessa Fields  
Environmental Specialist  
Oil Conservation Division  
Energy, Minerals, & Natural Resources  
1000 Rio Brazos, Aztec, NM 87410  
(505)334-6178 ext 119  
Cell: (505) 419-0463  
[vanessa.fields@state.nm.us](mailto:vanessa.fields@state.nm.us)

---

**From:** Clara Cardoza [mailto:ccardoza@hilcorp.com]  
**Sent:** Friday, February 2, 2018 7:37 AM  
**To:** Fields, Vanessa, EMNRD ; Smith, Cory, EMNRD ; whitney thomas (l1thomas@blm.gov) ; 'Adeloye, Abiodun'  
**Subject:** FW: Hubbell Fed #1M Preliminary Sample Results

Attached please find the lab results from the confirmation re-sampling done at the Hubbell Fed 1M on Wednesday January 31<sup>st</sup>. Also attached for your convenience are the sample location maps after the first sample event and the updated map depicting the 2<sup>nd</sup> sample even from Wednesday. Although the TPH level remains above the closure standard for SC-23 base, BTEX is low and as demonstrated during sampling the base is terminated at a hard competent sandstone.. Hilcorp requests a variance on SC-23, to spray with potassium permanganate and be allowed to backfill this excavation as we believe the contaminates do not pose a present or foreseeable threat or an environmental risk to water, humans or animals.

Thank you for your consideration.

Respectfully submitted,

Clara M Cardoza  
Environmental Specialist  
505-564-0733 (O)  
505-793-2784 (C)

