

Analytical Report 647634

for
Etech Environmental & Safety Solution, Inc

Project Manager: Joel Lowry

Hamon Federal

03-JAN-20

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03-JAN-20

Project Manager: **Joel Lowry**
Etech Environmental & Safety Solution, Inc
P.O. Box 8469
Midland, TX 79708

Reference: XENCO Report No(s): **647634**
Hamon Federal
Project Address: Rural Lea NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647634. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 647634 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1 @ Surf.	S	12-26-19 14:50	0	647634-001
SP2 @ Surf.	S	12-26-19 14:40	0	647634-002
SP3 @ Surf.	S	12-26-19 14:30	0	647634-003
SP4 @ Surf.	S	12-26-19 14:20	0	647634-004
SP5 @ Surf.	S	12-26-19 14:15	0	647634-005
WH2B @ Surf.	S	12-26-19 14:00	0	647634-006



CASE NARRATIVE

Client Name: *Etech Environmental & Safety Solution, Inc*

Project Name: *Hamon Federal*

Project ID:
Work Order Number(s): 647634

Report Date: 03-JAN-20
Date Received: 12/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112082 Chloride by EPA 300

Lab Sample ID 647634-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647634-002, -003, -004, -005.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3112135 TPH By SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 647634-002 S, 647634-004.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 647634-004, 647634-005, 647634-001.



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **SP1 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-001

Date Collected: 12.26.19 14.50

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112072

Date Prep: 12.30.19 12.45

Prep seq: 7693498

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	5060	24.8	4.25	mg/kg	12.30.19 16:22		5

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<249	249	74.7	mg/kg	12.30.19 19:36	U	5
Diesel Range Organics (DRO)	C10C28DRO	2290	249	74.7	mg/kg	12.30.19 19:36		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	253	249	74.7	mg/kg	12.30.19 19:36		5
Total TPH	PHC635	2540		74.7	mg/kg	12.30.19 19:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	133	70 - 135	%		
o-Terphenyl	177	70 - 135	%		**



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: SP2 @ Surf.

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-002

Date Collected: 12.26.19 14.40

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1510	24.8	4.25	mg/kg	12.30.19 18:12		5

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 18:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.6	50.0	15.0	mg/kg	12.30.19 18:33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 18:33	U	1
Total TPH	PHC635	83.6		15.0	mg/kg	12.30.19 18:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	105	70 - 135	%		
o-Terphenyl	107	70 - 135	%		



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: SP3 @ Surf.

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-003

Date Collected: 12.26.19 14.30

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	834	4.97	0.853	mg/kg	12.30.19 18:18		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 19:57	U	1
Total TPH	PHC635	<50.0		15.0	mg/kg	12.30.19 19:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	116	70 - 135	%		



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: **SP4 @ Surf.**

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-004

Date Collected: 12.26.19 14.20

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	545	5.01	0.860	mg/kg	12.30.19 17:52		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	2230	249	74.8	mg/kg	12.30.19 20:19		5
Diesel Range Organics (DRO)	C10C28DRO	8110	249	74.8	mg/kg	12.30.19 20:19		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	697	249	74.8	mg/kg	12.30.19 20:19		5
Total TPH	PHC635	11000		74.8	mg/kg	12.30.19 20:19		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	215	70 - 135	%		**
o-Terphenyl	257	70 - 135	%		**



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: SP5 @ Surf.

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-005

Date Collected: 12.26.19 14.15

Date Received: 12.30.19 11.07

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1020	4.95	0.850	mg/kg	12.30.19 18:25		1

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<250	250	74.9	mg/kg	12.30.19 20:40	U	5
Diesel Range Organics (DRO)	C10C28DRO	3860	250	74.9	mg/kg	12.30.19 20:40		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	431	250	74.9	mg/kg	12.30.19 20:40		5
Total TPH	PHC635	4290		74.9	mg/kg	12.30.19 20:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	121	70 - 135	%		
o-Terphenyl	178	70 - 135	%		**

Sample Id: WH2B @ Surf.

Matrix: Soil

Sample Depth: 0

Lab Sample Id: 647634-006

Date Collected: 12.26.19 14.00

Date Received: 12.30.19 11.07

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	14.9	mg/kg	12.30.19 21:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	1880	49.8	14.9	mg/kg	12.30.19 21:01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	253	49.8	14.9	mg/kg	12.30.19 21:01		1
Total TPH	PHC635	2130		14.9	mg/kg	12.30.19 21:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	121	70 - 135	%		
o-Terphenyl	126	70 - 135	%		



Certificate of Analytical Results

647634



Etech Environmental & Safety Solution, Inc, Midland, TX

Hamon Federal

Sample Id: 7693498-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7693498-1-BLK

Date Collected:

Date Received:

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112072

Date Prep: 12.30.19 12.45

Prep seq: 7693498

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<5.00	5.00	0.858	mg/kg	12.30.19 12:57	U	1

Sample Id: 7693537-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7693537-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH By SW8015 Mod

Prep Method: 8015

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3112135

Date Prep: 12.30.19 15.00

Prep seq: 7693537

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	15.0	mg/kg	12.30.19 17:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	114	70 - 135	%		
o-Terphenyl	116	70 - 135	%		

Sample Id: 7693541-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7693541-1-BLK

Date Collected:

Date Received:

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3112082

Date Prep: 12.30.19 16.57

Prep seq: 7693541

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<5.00	5.00	0.858	mg/kg	12.30.19 17:32	U	1

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Hamon Federal

Work Orders : 647634,

Project ID:

Lab Batch #: 3112135

Sample: 7693537-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 12/30/19 17:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 3112135

Sample: 7693537-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 12/30/19 17:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 3112135

Sample: 7693537-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 12/30/19 18:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 3112135

Sample: 647634-002 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 12/30/19 18:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	137	99.7	137	70-135	**
o-Terphenyl	61.0	49.9	122	70-135	

Lab Batch #: 3112135

Sample: 647634-002 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 12/30/19 19:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	61.3	49.9	123	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: Hamon Federal

Work Order #: 647634

Analyst: SPC

Date Prepared: 12/30/2019

Project ID:

Date Analyzed: 12/30/2019

Lab Batch ID: 3112072

Sample: 7693498-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	258	103	250	258	103	0	90-110	20	

Analyst: SPC

Date Prepared: 12/30/2019

Date Analyzed: 12/30/2019

Lab Batch ID: 3112082

Sample: 7693541-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	270	108	250	269	108	0	90-110	20	

Analyst: DVM

Date Prepared: 12/30/2019

Date Analyzed: 12/30/2019

Lab Batch ID: 3112135

Sample: 7693537-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	975	98	1000	958	96	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	1000	977	98	3	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: Hamon Federal

Work Order # : 647634

Project ID:

Lab Batch ID: 3112072

QC- Sample ID: 647613-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	168	250	430	105	250	420	101	2	90-110	20	

Lab Batch ID: 3112072

QC- Sample ID: 647628-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	317	249	535	88	249	546	92	2	90-110	20	X

Lab Batch ID: 3112082

QC- Sample ID: 647634-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	545	251	809	105	251	836	116	3	90-110	20	X

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Hamon Federal

Work Order # : 647634

Project ID:

Lab Batch ID: 3112135

QC- Sample ID: 647634-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2019

Date Prepared: 12/30/2019

Analyst: DVM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	928	93	998	941	94	1	70-135	20	
Diesel Range Organics (DRO)	83.6	997	993	91	998	1020	94	3	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

Work Order No:

0471634

www.xenco.com Page of

Project Manager:	Joel Lowry	Bill to: (if different)	Email Invoice to Clyde for Stamp
Company Name:	Etech Environmental	Company Name:	Legacy Reserves
Address:	3100 Plains Hwy	Address:	303 West Wall, Ste 1400
City, State ZIP:	Longton, NM, 88260	City, State ZIP:	Midland, TX, 79701
Phone:	432-466-4450	Email:	joele@etechnv.com, cwillhoj@legacyserves.com

Program: ☐ UST/PT ☐ PRP ☐ Brownfield ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting Level: ☐ Level I ☐ Level II ☐ PST/UST ☐ TRR ☐ Level III ☐	Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:	Hamon Federal		Turn Around	ANALYSIS REQUEST																Preservative Codes			
Project Number:			Route: ☐																	HNO3: HN			
Project Location:	Rural Lea, NM		Rush: ☐																	H2SO4: H2			
Sampler's Name:	Hayden Scott		Due Date:																	HCL: HL			
PO #:																				None: NO			
SAMPLE RECEIPT			Temp Blank: ☒ Yes ☒ No	Wet Ice: ☒ Yes ☒ No																	NaOH: Na		
Temperature (°C):	0.8		Thermometer ID	128																MeOH: Me			
Received Intact:	Yes ☒ No ☐		Correction Factor:																	Zn Acetate+ NaOH: Zn			
Cooler Custody Seals:	Yes ☒ No ☐		Total Containers:																	TAI starts the day received by the lab, if received by 4:30pm			
Sample Custody Seals:	Yes ☒ No ☐																						
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers/Preservative Code																Sample Comments		
SP1 @ Surf.	S	12/26/2019	2:50	0	1	BTEx 8021																	
SP2 @ Surf.	S	12/26/2019	2:40	0	1	TPH 8015 M Ext																	
SP3 @ Surf.	S	12/26/2019	2:30	0	1	Chloride E 300																	
SP4 @ Surf.	S	12/26/2019	2:20	0	1																		
SP5 @ Surf.	S	12/26/2019	2:15	0	1																		
WH2B @ Surf.	S	12/26/2019	2:00	0	1																		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631/245.1/7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2:55 12-27-19	<i>[Signature]</i>	<i>[Signature]</i>	12/31/19
3			4		
5			6		1107



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Etech Environmental & Safety Solution, I

Date/ Time Received: 12/30/2019 11:07:00 AM

Work Order #: 647634

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 12/30/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 12/31/2019