REVIEWED
By Mike Buchanan at 1:22 pm, Aug 08, 2023

ENSOLUM

January 18, 2023

Review of the Fourth Quarter 2022--Solar SVE System Update for James Ranch Unit #10 Battery:
Content Satisfactory
1. Continue to monitor and conduct O&M visits on a monthly visit.
2. Continue to collect data and send quarterly progress reports to NMOCD.

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Fourth Quarter 2022 – Solar SVE System Update
James Ranch Unit #10 Battery
Eddy County, New Mexico
XTO Energy, Inc.
NMOCD Incident Numbers NAB1535754357, NAB1521257588, and NAB1904653072

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), presents this *Solar SVE System Update* report summarizing the solar soil vapor extraction (SVE) system performance at the James Ranch Unit #10 Battery (Site), located in Unit H, Section 1, Township 23 South, Range 30 East in Eddy County, New Mexico (Figure 1). The SVE system has operated since May 27, 2022 to remediate residual subsurface soil impacts at the Site. This report summarizes Site activities performed between August and December 2022 for the New Mexico Oil Conservation Division (NMOCD).

SVE SYSTEM SPECIFICATIONS

Currently, a VariSun Direct Solar SVE system is installed at the Site. This system consists of a 6.2 horsepower (HP) Pentair SST65 high efficiency regenerative blower capable of producing 250 cubic feet per minute (cfm) flow at a vacuum of 110 inches of water column (IWC). The system is powered by 12, 415-watt solar modules capable of producing 5 kilowatts (KW) of electricity. A motor controller automatically starts the system as soon as sunlight is available and increases the electrical output to the blower as sun power increases throughout the day.

Ten SVE wells are currently operational at the Site as depicted on Figure 2. In order to target soil impacts at different depth intervals, the screened intervals of the SVE wells were constructed in shallow, medium, and deep zones. Specifically, SVE wells SVE01, SVE02, SVE03, and SVE04 target shallow zone impacts and are screened at depths between 5 feet and 20 feet below ground surface (bgs). SVE wells SVE-PT-02, SVE-PT-03, and SVE-PT-04 target medium zone impacts and are screened between 15 feet and 30 feet bgs. SVE wells SVE05, SVE06, and SVE-PT-01 target deep zone impacts and are screened at depths between 25 feet and 65 feet bgs.

SUMMARY OF SVE OPERATIONS

Between August and December 2022, Ensolum personnel performed routine operation and maintenance (O&M) visits to verify that the system was operating as designed and to perform any required maintenance. In accordance with the approved *Revised Remediation Work Plan – SVE System* prepared by LT Environmental, Inc. (LTE, dated October 30, 2019), O&M inspections

were performed at least monthly during this time period. Field notes taken during O&M visits are included in Appendix A.

During the fourth quarter of 2022, all SVE wells were open and operational to induce air flow in the impacted zones at the Site. Between August 15 and December 19, 2022, approximately 1,393 total hours of nominal daylight were available for the solar SVE system to operate. Available nominal daylight hours are based on estimates by the National Oceanic and Atmospheric Administration's (NOAA's) National Weather Service (NWS) for the Site location. Between these dates, the actual runtime for the system was 1,118.0 hours, equating to a runtime efficiency of 80.3 percent (%). Table 1 presents the SVE system runtime compared to nominal available daylight hours per month. Runtime efficiency less than 100% is generally due to weather conditions at the Site (i.e., cloud cover) that reduces the systems overall performance.

During the fourth quarter of 2022, significant condensation began accumulating in the SVE piping and knock out tank, likely due to the onset of cold weather conditions. Additional Site visits were performed by Ensolum personnel in order to remove water accumulating in the knockout tank and return the system to operation.

AIR SAMPLING RESULTS

A fourth quarter 2022 air emissions sample was on December 19, 2022 from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. Prior to collection, the emission sample was field screened with a photoionization detector (PID) for organic vapor monitoring (OVM). The emission sample was collected directly into two 1-Liter Tedlar® bags and submitted to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico for analysis of total volatile petroleum hydrocarbons (TVPH – also known as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) and benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260C.

In general, TVPH concentrations account for the majority contaminant mass and system emissions, with a result of 3,030 micrograms per liter (µg/L). In comparison, BTEX concentrations range from below the laboratory reporting limits up to 47.1 µg/L. Table 2 presents a summary of TVPH and BTEX analytical data collected during the sampling events, with the full laboratory analytical reports included in Appendix B.

Air sample data and measured stack flow rates are used to estimate total mass recovered and total emissions generated by the SVE system (Table 2). Based on these estimates, approximately 9,941 pounds (4.97 tons) of TVPH and 10,221 pounds (5.11 tons) of total volatile contaminants (BTEX and TVPH) have been removed by the system to date.

RECOMMENDATIONS

Monthly O&M visits will continue to be performed by Ensolum personnel to verify that the SVE system is operating within normal working ranges (i.e., temperature, pressure, and vacuum). Deviations from regular operations will be noted on field logs and included in the following update report. XTO will continue operating the SVE system until TVPH concentrations decrease to below 1 milligram per liter (mg/L) and/or asymptotic conditions are observed. At that time, an evaluation of residual petroluem hydrocarbons will be assessed and further recommendations for remedial actions, if any, will be provided to the NMOCD.

We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this report, please contact the undersigned.

Sincerely,
Ensolum, LLC

Stuart Hyde, LG
Senior Geologist
(970) 903-1607
shyde@ensolum.com

Daniel R. Moir, PG
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

Figure 1	Site Location Map
Figure 2	SVE System Configuration
Table 1	Soil Vapor Extraction System Runtime Calculations
Table 2	Soil Vapor Extraction System Mass Removal and Emissions
Appendix A	Field Notes
Appendix B	Laboratory Analytical Reports & Chain-of-Custody Documentation

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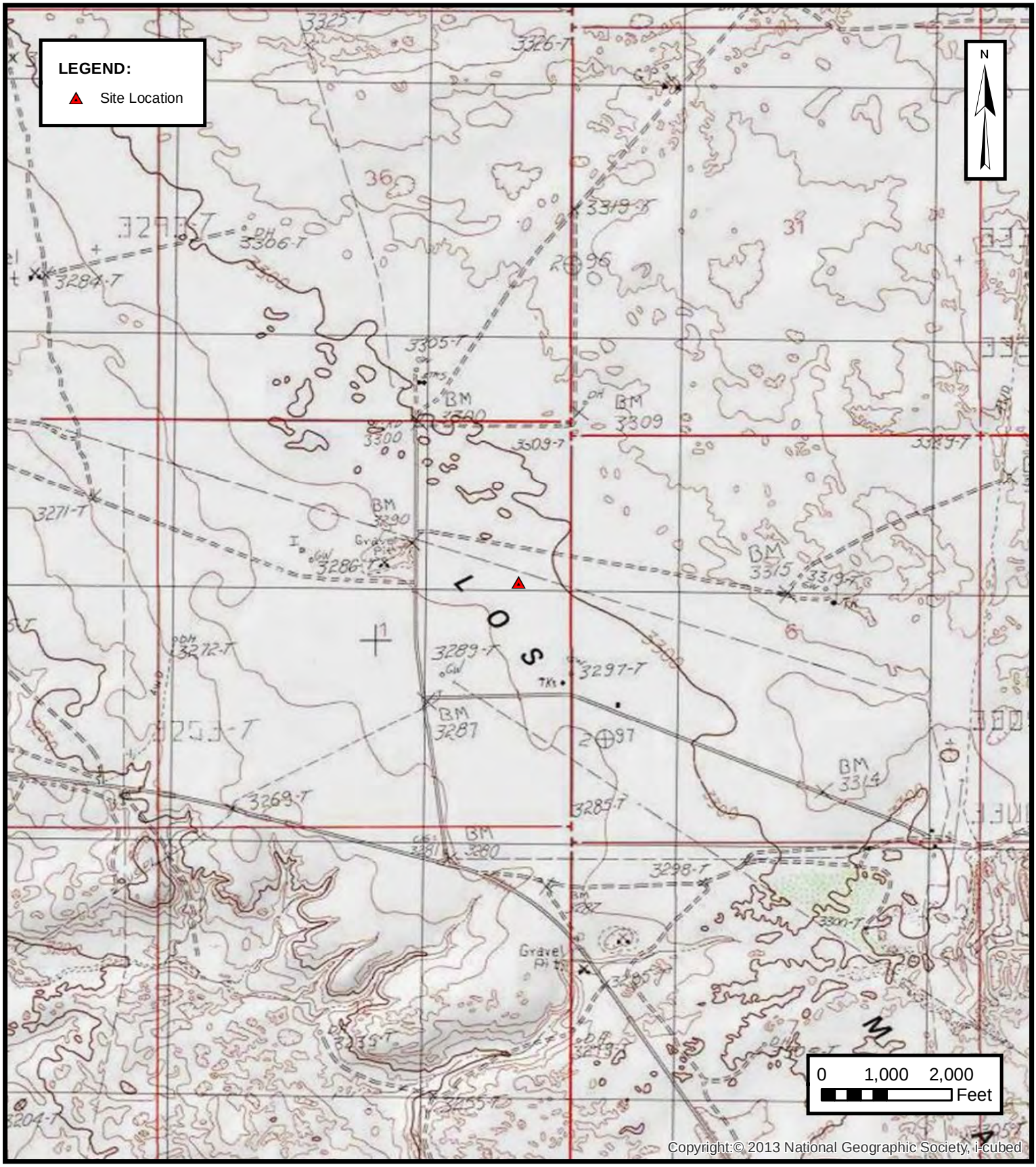
FIGURES



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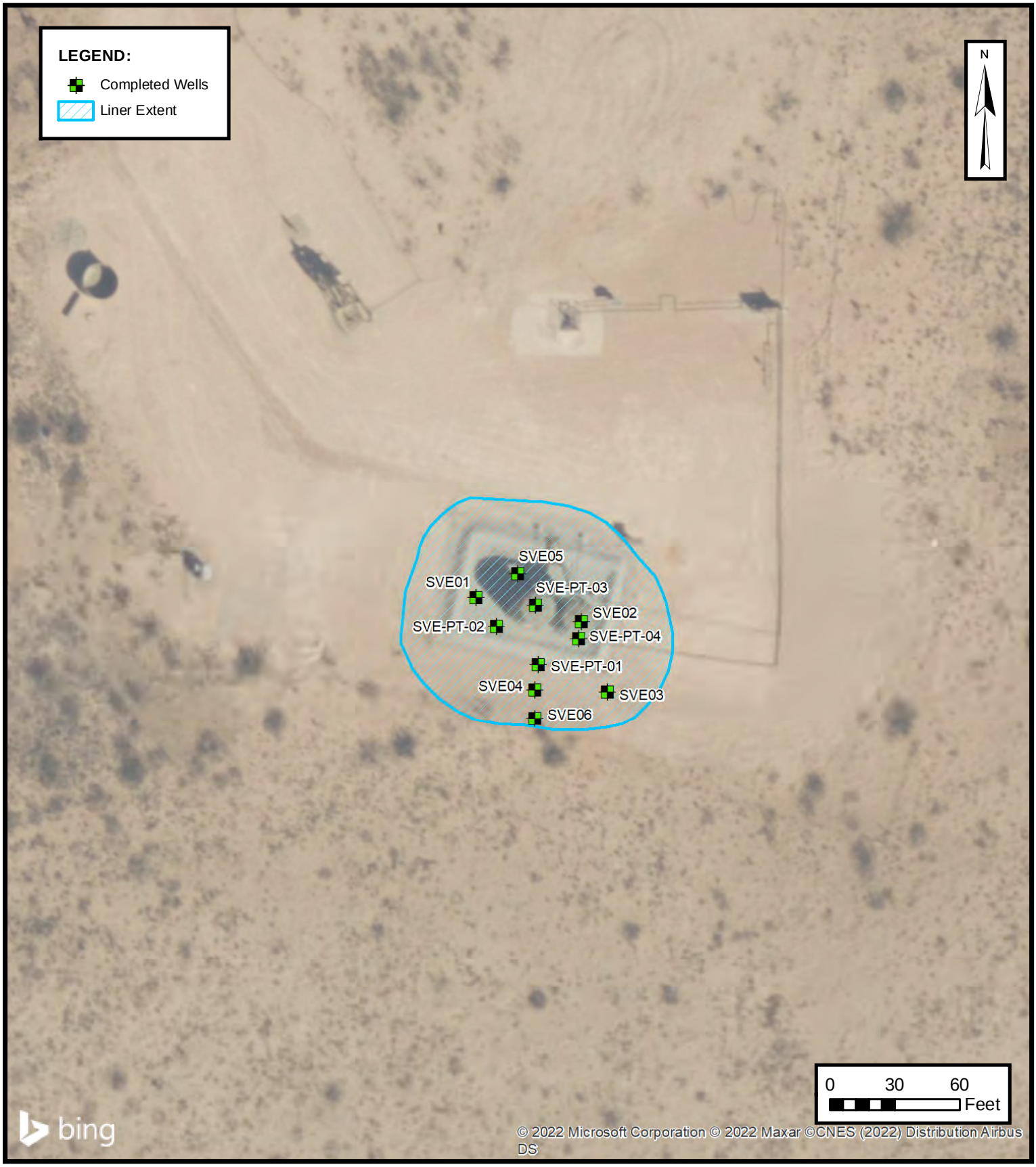
Environmental & Hydrogeologic Consultants

SITE LOCATION MAP

XTO ENERGY, INC
JAMES RANCH UNIT #10 BATTERY
Unit H, Sec 1, T23S, R30E
Eddy County, New Mexico

FIGURE
1



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Environmental & Hydrogeologic Consultants

SVE SYSTEM CONFIGURATION

XTO ENERGY, INC
JAMES RANCH UNIT #10 BATTERY
Unit H, Sec 1, T23S, R30E
Eddy County, New Mexico

FIGURE
2

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TABLES

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TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
James Ranch Unit #10 Battery
XTO Energy
Eddy County, New Mexico
Ensolum Project No. 03E1558041

Date	Runtime Meter Hours	Delta Hours
8/15/2022	1,030.3	--
12/19/2022	2,148.3	1,118.0

Time Period	August 15 to August 31, 2022	September 1 to September 30, 2022	October 1 to October 31, 2022	November 1 to November 30, 2022	December 1 to December 19, 2022
Days	17	30	31	30	19
Avg. Nominal Daylight Hours	13	12	11	10	9
Available Runtime Hours	221	360	341	300	171

Quarterly Available Daylight Runtime Hours	**1,393**
Quarterly Runtime Hours	**1,118.0**
Quarterly % Runtime	**80.3%**

Month	Days	Nominal Daylight Hours	Total Month Hours
January	31	9	279
February	28	10	280
March	31	11	341
April	30	12	360
May	31	13	403
June	30	14	420
July	31	14	434
August	31	13	403
September	30	12	360
October	31	11	341
November	30	10	300
December	31	9	279

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
James Ranch Unit #10 Battery
XTO Energy
Eddy County, New Mexico
Ensolum Project No. 03E1558041

Laboratory Analytical Results

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
5/27/2022*	679	12.6	40.5	*10.0*	34.6	12,500
6/8/2022*	901	21.0	210	9.90	434	35,000
6/20/2022*	960	21.2	199	*10*	225	20,200
7/18/2022*	535	17.1	138	11.1	252	14,400
8/15/2022*	987	*50.0*	135	*50.0*	227	12,300
9/19/2022	380	*10.0*	54.9	*10.0*	110	4,830
12/19/2022	337	*10.0*	27.7	*10.0*	47.1	3,030
Average	683	20.3	115	15.9	190	14,609

Flow and Vapor Extraction Summary

Date	Flow Rate (cfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
5/27/2022	140	0	--	--	--	--	--	--
6/8/2022	113	1,046,154	1,046,154	0.00710	0.0529	0.00421	0.0990	10.0
6/20/2022	105	2,047,854	1,001,700	0.00829	0.0803	0.00391	0.129	10.8
7/18/2022	70	3,572,454	1,524,600	0.00501	0.0441	0.00276	0.0624	4.53
8/15/2022	98	5,656,098	2,083,644	0.0123	0.0501	0.0112	0.0879	4.90
9/19/2022	138	8,742,054	3,085,956	0.0155	0.0490	0.0155	0.0870	4.42
12/19/2022	150	15,449,754	6,707,700	0.00561	0.0232	0.00561	0.0441	2.20
			Average	0.00897	0.0499	0.00720	0.0850	6.15

Mass Removal and Emissions Summary

Date	Total SVE System Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
5/27/2022	0	0	--	--	--	--	--	--
6/8/2022	154	154	1.10	8.17	0.649	15.3	1,549	0.774
6/20/2022	313	159	1.32	12.8	0.621	20.6	1,723	0.862
7/18/2022	676	363	1.82	16.0	1.00	22.7	1,644	0.822
8/15/2022	1,030	354	4.36	17.7	3.97	31.1	1,734	0.867
9/19/2022	1,403	373	5.77	18.3	5.77	32.4	1,648	0.824
12/19/2022	2,148	745	4.18	17.3	4.18	32.8	1,643	0.822
		Total Mass Recovery to Date	18.5	90.2	16.2	155	9,941	4.97

Notes:

cf: cubic feet
cfm: cubic feet per minute
µg/L: micrograms per liter
lb/hr: pounds per hour
--: not sampled
PID: photoionization detector
ppm: parts per million
SVE: soil vapor extraction
TVPH: total volatile petroleum hydrocarbons
gray: laboratory reporting limit used for calculating emissions
**: analytical results differ from those reported in the August 23, 2022 "Solar SVE System Update" due to unit conversion errors*

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APPENDIX A

Field Notes

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Location JPU 10 Date 09.19.22

Project / Client XTO ENERGY

HR METER: 1403 [HRS]

EFFLUENT PID: 380 [ppm]

FLOW: 138 [cfm]

VAC: 32 [in H_2O]

INFLUENT PID 850 [ppm]

All wells ON	VAC	PID
SVE02(S)	22	240
SVE PT04(M)	26	1200
SVE PT01(D)	26	1885
SVE 03 (S)	24	635
SVE 05 (D)	24	215
SVE PT 03 (M)	24	440
SVE 01 (S)	24	357
SVE04 (S)	24	324
SVE 06 (D)	24	287
SVE PT 02(M)	26	287

NO WATER IN KNOCKOUT TANK

Solar panels good

all wells running

Left @ 1403.8 (HRS) or 1300

Location JRU 10 Date 10.27.22

Project / Client XTO / SVE SAMPLING

ONSITE @ 1430

HR METER: 1779.9 [HRS]		
EFFLUENT PID:	250	[ppm]
FLOW:	153	[cfm]
VAC	34	[in H_2O]
INFLUENT PID	414	[ppm]

All wells ON	vac	PID
SVE 02 (S)	24	17.7
SVE PT 04 (M)	26	831
SVE PT 01 (D)	24	1709
SVE ~~PT~~ CS 03 (S)	24	350
SVE 05 (D)	26	269
SVE PT 03 (M)	24	666
SVE 01 (S)	24	370
SVE 04 (S)	24	189
SVE 06 (D)	26	226
SVE PT 02 (M)	24	203.8

condensation in spy glass of knockout tank
solar panels good
all wells running SVE 02 (S) was closed on arrival
Left @ 1550, 1780.7 [HRS]

22

Location JRU 10 Date 12.19.22

Project / Client XTO ENERGY

CS

1000 ON SITE

SVE-01

20.06 23.2 WATER COLUMN

SVE-02

— 18.17 WATER COLUMN

SVE-03

22.6 23.1 WATER COLUMN

SVE-04

23.24 23.71 WATER COLUMN

1345 EVERYTHING HOOKED UP + Bailed out.

HR METER: 2148.3 [HRS]

EFFLUENT PID: 150 [ppm] 280 (NEW PID)

FLOW: 150 [cfm]

VAC: 36 [in H_2O]

INFLUENT PID: 337 [ppm]

Location JRU 10 CONT... Date 12.19.22

Project / Client XTO ENERGY

SAMPLE	PID	VACUUM
SVE02-(S)	28.3	26
SVEPT04(M)	755.3	28
SVEPT01(D)	667.8	28
SVE 03(S)	134.9	26 (BAD ~~VAC GAUGE~~)
SVE 05(D)	259.1	26 (BAD VAC GAUGE)
SVEPT03(M)	605.2	26
SVE 01(S)	297.8	26
SVE 04(S)	137.7	26
SVE 06(D)	139.7	27.
SVEPT02(M)	170.7	28

1600 Back @ OFFICE

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APPENDIX B

Laboratory Analytical Reports & Chain-of-Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/22/2022 8:47:55 AM

JOB DESCRIPTION

James Ranch Unit #10
SDG NUMBER Rural Eddy NM

JOB NUMBER

890-3681-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Generated
12/22/2022 8:47:55 AM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: James Ranch Unit #10

Laboratory Job ID: 890-3681-1
SDG: Rural Eddy NM

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-3681-1
Project/Site: James Ranch Unit #10 SDG: Rural Eddy NM

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Job ID: 890-3681-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3681-1

Receipt

The sample was received on 12/19/2022 3:40 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 22.3°C

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Client Sample ID: Influent all wells

Lab Sample ID: 890-3681-1
Matrix: Air
Date Collected: 12/19/22 14:30
Date Received: 12/19/22 15:40
Sample Container: Tedlar Bag 1L

Method: SW846 8260C GRO - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	3030		50.0		ug/L			12/21/22 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*12/21/22 16:40*	*1*

Method: SW846 8260C - Volatile Organic Compounds (GCMS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<10.0	U	10.0		ug/L			12/21/22 16:40	1
Toluene	27.7		10.0		ug/L			12/21/22 16:40	1
Ethylbenzene	<10.0	U	10.0		ug/L			12/21/22 16:40	1
m,p-Xylenes	47.1		20.0		ug/L			12/21/22 16:40	1
o-Xylene	<10.0	U	10.0		ug/L			12/21/22 16:40	1
Xylenes, Total	47.1		20.0		ug/L			12/21/22 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 135*		*12/21/22 16:40*	*1*

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Method: 8260C - Volatile Organic Compounds (GCMS)

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
		BFB							
Lab Sample ID	Client Sample ID	(70-135)							
890-3681-1	Influent all wells	102							
LCS 860-82953/3	Lab Control Sample	89							
LCSD 860-82953/4	Lab Control Sample Dup	98							
MB 860-82953/6	Method Blank	101							

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C GRO - Volatile Organic Compounds (GC/MS)

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
		BFB							
Lab Sample ID	Client Sample ID	(60-140)							
890-3681-1	Influent all wells	96							
LCS 860-82954/4	Lab Control Sample	100							
LCSD 860-82954/5	Lab Control Sample Dup	101							
MB 860-82954/7	Method Blank	97							

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Method: 8260C - Volatile Organic Compounds (GCMS)

Lab Sample ID: MB 860-82953/6
Matrix: Air
Analysis Batch: 82953

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<10.0	U	10.0		ug/L			12/21/22 15:08	1
Toluene	<10.0	U	10.0		ug/L			12/21/22 15:08	1
Ethylbenzene	<10.0	U	10.0		ug/L			12/21/22 15:08	1
m,p-Xylenes	<20.0	U	20.0		ug/L			12/21/22 15:08	1
o-Xylene	<10.0	U	10.0		ug/L			12/21/22 15:08	1
Xylenes, Total	<20.0	U	20.0		ug/L			12/21/22 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 135*		*12/21/22 15:08*	*1*

Lab Sample ID: LCS 860-82953/3
Matrix: Air
Analysis Batch: 82953

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			50.0	51.59		ug/L		103	70 - 125		
Toluene			50.0	49.64		ug/L		99	70 - 125		
Ethylbenzene			50.0	51.54		ug/L		103	70 - 125		
m,p-Xylenes			50.0	50.71		ug/L		101	70 - 125		
o-Xylene			50.0	46.74		ug/L		93	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 135*

Lab Sample ID: LCSD 860-82953/4
Matrix: Air
Analysis Batch: 82953

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			50.0	42.32		ug/L		85	70 - 125	20	35
Toluene			50.0	45.28		ug/L		91	70 - 125	9	35
Ethylbenzene			50.0	41.84		ug/L		84	70 - 125	21	35
m,p-Xylenes			50.0	42.46		ug/L		85	70 - 125	18	35
o-Xylene			50.0	42.59		ug/L		85	70 - 125	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 135*

Method: 8260C GRO - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 860-82954/7
Matrix: Air
Analysis Batch: 82954

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0		ug/L			12/21/22 15:08	1

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Method: 8260C GRO - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 860-82954/7
Matrix: Air
Analysis Batch: 82954

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		60 - 140		12/21/22 15:08	1

Lab Sample ID: LCS 860-82954/4
Matrix: Air
Analysis Batch: 82954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics			500	481.6		ug/L		96	60 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		60 - 140

Lab Sample ID: LCSD 860-82954/5
Matrix: Air
Analysis Batch: 82954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics			500	458.0		ug/L		92	60 - 140	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		60 - 140

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

GC/MS VOA

Analysis Batch: 82953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3681-1	Influent all wells	Total/NA	Air	8260C	
MB 860-82953/6	Method Blank	Total/NA	Air	8260C	
LCS 860-82953/3	Lab Control Sample	Total/NA	Air	8260C	
LCSD 860-82953/4	Lab Control Sample Dup	Total/NA	Air	8260C	

Analysis Batch: 82954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3681-1	Influent all wells	Total/NA	Air	8260C GRO	
MB 860-82954/7	Method Blank	Total/NA	Air	8260C GRO	
LCS 860-82954/4	Lab Control Sample	Total/NA	Air	8260C GRO	
LCSD 860-82954/5	Lab Control Sample Dup	Total/NA	Air	8260C GRO	

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Client Sample ID: Influent all wells
Date Collected: 12/19/22 14:30
Date Received: 12/19/22 15:40

Lab Sample ID: 890-3681-1
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	82953	12/21/22 16:40	JBS	EET HOU
Total/NA	Analysis	8260C GRO		1	5 mL	5 mL	82954	12/21/22 16:40	JBS	EET HOU

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-22-47	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Air	Benzene
8260C		Air	Ethylbenzene
8260C		Air	m,p-Xylenes
8260C		Air	o-Xylene
8260C		Air	Toluene
8260C		Air	Xylenes, Total
8260C GRO		Air	Gasoline Range Organics

Method Summary

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GCMS)	SW846	EET HOU
8260C GRO	Volatile Organic Compounds (GC/MS)	SW846	EET HOU
5030C	Collection/Prep Tedlar Bag (P&T)	SW846	EET HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Ensolum
Project/Site: James Ranch Unit #10

Job ID: 890-3681-1
SDG: Rural Eddy NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-3681-1	Influent all wells	Air	12/19/22 14:30	12/19/22 15:40

XENCO LABORATORIES

Setting the Standard since 1990

AIR SAMPLING CHAIN OF CUSTODY

Xenco Job #:

12/22/2022

Stafford,Texas (281-240-4200) San Antonio, Texas (210-509-3334) Phoenix, Arizona (480-355-0900)
Dallas, Texas (214-902-0300) Lubbock, TX (806-794-1296) Midland, TX (432-704-5251) El Paso, TX (915-585-3443)

Page 1 of 1

Client/Project Information

Company Name: Ensolum
Project Contact: Tacoma Morrissey
Email: tmorrissey@ensolum.com Ph.No.: 337-257-8307
Project Name & No.: James Ranch Unit #10, 03E1558041
Site Location: Rural Eddy, NM
Cost Center: 1135831001 AFE: EW.2019.03368.EXP.01
Sampler(s): Connor Whitmer, Cooper Shore

AIR TYPE: I = Indoor SV = Soil Vapor A = Ambient

Sampling Equipment Information

Analysis Requested

Lab #	Field ID/Point of Collection	Start Date	Start Time	Stop Date	Stop Time	AIR TYPE	Canister ID	Flow Regulator ID	Canister Pressure in field ("Hg) Start	Canister Pressure in field ("Hg) Stop	Incoming Canister Pressure ("Hg) Lab	TVPH(8015)	BTEX(8021)/8260C				Remarks
	Influent All Wells	12/19/22	2:30			SV						X	X				report results in ug/L. UG/L

890-3681 Chain of Custody

	Date/Time		Date/Time
(1) Relinquished By: Connor Whitmer	12/19/22	(1) Received By: Mal Clay	15:40 12.19.22
(2) Relinquished By:	Date/Time	(2) Received By:	
(3) Relinquished By:	Date/Time	(3) Received By:	
(4) Relinquished By:	Date/Time	(4) Received By:	

Requested TAT

☐ Contract TAT ☐ 3 Day ☑ Same Day
☐ 7 Day ☐ 2 Day Need By:
☐ 5 Day ☐ 1 Day

Shipping Information

☐ FedEx ☐ Other:
☐ UPS Tracking No.:
☐ LSO

Special Requests/Instructions: Collected 2-1 Liter Tedlar bags.
Bill to: Garret Green, XTO Energy, Inc., Address: 3104 E. Green St. Carlsbad, NM

22-5/22-3
T-NM007-0.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kramer Jessica	Carrier Tracking No(s):	COC No: 890-1071 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jessica.Kramer@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 890-3681-1
Address: 4145 Greenbriar Dr	Due Date Requested: 12/21/2022			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: XTO Project	Project #: 89000093			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C_GRO/Tedlar_A_5030C GRO	8260C_MOD/Tedlar_A_5030C BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Influent all wells (890-3681 1)	12/19/22	14:30 Mountain		Air			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: FedEx	Date/Time:	Company
Relinquished by: FedEx	Date/Time:	Company	Received by: Pedro Palmon	Date/Time: 12/21/2022 11 39	Company EX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Temp: 16.8 IR ID:HOU-343
C/F: +0.3
Corrected Temp: 17.1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3681-1
SDG Number: Rural Eddy NM

Login Number: 3681
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3681-1
SDG Number: Rural Eddy NM

Login Number: 3681
List Number: 2
Creator: Palmar, Pedro

List Source: Eurofins Houston
List Creation: 12/21/22 02:44 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 185450

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 185450
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the Fourth Quarter 2022--Solar SVE System Update for James Ranch Unit #10 Battery: Content Satisfactory 1. Continue to monitor and conduct O&M visits on a monthly visit. 2. Continue to collect data and send quarterly progress reports to NMOCD.	8/8/2023