

## Analytical Report

### Report Summary

Client: XTO Energy Inc.

Chain Of Custody Number:

Samples Received: 12/13/2017 9:20:00AM

Job Number: 98031-0528

Work Order: P712030

Project Name/Location: Hein Transfer

Report Reviewed By:



Date: 12/21/17

Walter Hinchman, Laboratory Director



Date: 12/21/17

Tim Cain, Quality Assurance Officer

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

XTO Energy Inc.  
 382 CR 3100  
 Aztec NM, 87410

 Project Name: Hein Transfer  
 Project Number: 98031-0528  
 Project Manager: James McDaniel

**Reported:**  
 21-Dec-17 15:59

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Inside Berm	P712030-01A	Water	12/12/17	12/13/17	Poly 250mL
Inside Valve Can	P712030-02A	Water	12/12/17	12/13/17	Poly 250mL
Around MR	P712030-03A	Water	12/05/17	12/13/17	Poly 500mL
Ditch	P712030-04A	Water	12/05/17	12/13/17	Poly 500mL

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 Project Manager: James McDaniel

 Reported:  
 21-Dec-17 15:59

**Inside Berm**  
**P712030-01 (Water)**

## Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Wet Chem/Gravimetric</b>									
Total Dissolved Solids	89.6	10.0	mg/L	1	1751005	12/20/17	12/21/17	SM2540C	
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Toluene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Ethylbenzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
p,m-Xylene	ND	0.002	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
o-Xylene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total Xylenes	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total BTEX	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		93.5 %		50-150	1750014	12/14/17	12/14/17	EPA 8021B	
<b>Anions by 300.0</b>									
Chloride	4.56	2.00	mg/L	1	1750016	12/15/17	12/15/17	EPA 300.0	
Sulfate	78.5	2.00	mg/L	1	1750016	12/15/17	12/15/17	EPA 300.0	

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**Reported:**  
 21-Dec-17 15:59

**Inside Valve Can  
 P712030-02 (Water)**
**Reporting**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Wet Chem/Gravimetric**

Total Dissolved Solids	707	10.0	mg/L	1	1751005	12/20/17	12/21/17	SM2540C	
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**Volatile Organics by EPA 8021**

Benzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Toluene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Ethylbenzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
p,m-Xylene	ND	0.002	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
o-Xylene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total Xylenes	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total BTEX	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	

Surrogate: 4-Bromochlorobenzene-PID	93.5 %	50-150	1750014	12/14/17	12/14/17	EPA 8021B
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**Anions by 300.0**

Chloride	4.82	2.00	mg/L	1	1750016	12/15/17	12/15/17	EPA 300.0	
Sulfate	120	2.00	mg/L	1	1750016	12/15/17	12/15/17	EPA 300.0	

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**Around MR**  
**P712030-03 (Water)**

## Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Wet Chem/Gravimetric</b>									
Total Dissolved Solids	446	10.0	mg/L	1	1751005	12/20/17	12/21/17	SM2540C	H1
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Toluene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Ethylbenzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
p,m-Xylene	ND	0.002	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
o-Xylene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total Xylenes	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total BTEX	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		94.4 %		50-150	1750014	12/14/17	12/14/17	EPA 8021B	
<b>Anions by 300.0</b>									
Chloride	11.7	10.0	mg/L	5	1750016	12/15/17	12/15/17	EPA 300.0	
Sulfate	335	10.0	mg/L	5	1750016	12/15/17	12/15/17	EPA 300.0	

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 Project Manager: James McDaniel

**Reported:**  
 21-Dec-17 15:59

**Ditch**  
**P712030-04 (Water)**

## Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Wet Chem/Gravimetric</b>									
Total Dissolved Solids	<b>1030</b>	10.0	mg/L	1	1751005	12/20/17	12/21/17	SM2540C	H1
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Toluene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Ethylbenzene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
p,m-Xylene	ND	0.002	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
o-Xylene	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total Xylenes	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Total BTEX	ND	0.001	mg/L	1	1750014	12/14/17	12/14/17	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		94.8 %		50-150	1750014	12/14/17	12/14/17	EPA 8021B	
<b>Anions by 300.0</b>									
Chloride	<b>22.2</b>	10.0	mg/L	5	1750016	12/15/17	12/15/17	EPA 300.0	
Sulfate	<b>1180</b>	10.0	mg/L	5	1750016	12/15/17	12/15/17	EPA 300.0	

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 Project Manager: James McDaniel

 Reported:  
 21-Dec-17 15:59

**Wet Chem/Gravimetric - Quality Control**
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1751005 - Wet Chemistry Preparation**
**Blank (1751005-BLK1)**

Prepared: 18-Dec-17 Analyzed: 21-Dec-17

Total Dissolved Solids ND 10.0 mg/L

**LCS (1751005-BS1)**

Prepared: 18-Dec-17 Analyzed: 21-Dec-17

Total Dissolved Solids 120 10.0 mg/L 100 120 50-150

**Duplicate (1751005-DUP1)**

Source: P712029-01

Prepared: 18-Dec-17 Analyzed: 21-Dec-17

Total Dissolved Solids 443 10.0 mg/L 440 0.680 5

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Reported:  
21-Dec-17 15:59

### Volatile Organics by EPA 8021 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1750014 - Purge and Trap EPA 5030A

##### Blank (1750014-BLK1)

Prepared & Analyzed: 14-Dec-17

Benzene	ND	0.001	mg/L
Toluene	ND	0.001	"
Ethylbenzene	ND	0.001	"
p,m-Xylene	ND	0.002	"
o-Xylene	ND	0.001	"
Total Xylenes	ND	0.001	"
Total BTEX	ND	0.001	"

Surrogate: 4-Bromochlorobenzene-PID 0.150 " 0.160 94.0 50-150

##### LCS (1750014-BS1)

Prepared & Analyzed: 14-Dec-17

Benzene	0.09	0.001	mg/L	0.100		89.6	70-130
Toluene	0.09	0.001	"	0.100		89.8	70-130
Ethylbenzene	0.09	0.001	"	0.100		91.0	70-130
p,m-Xylene	0.18	0.002	"	0.200		90.5	70-130
o-Xylene	0.09	0.001	"	0.100		89.6	70-130
Total Xylenes	0.27	0.001	"	0.300		90.2	70-130

Surrogate: 4-Bromochlorobenzene-PID 0.166 " 0.160 104 50-150

##### Matrix Spike (1750014-MS1)

Source: P712030-01

Prepared & Analyzed: 14-Dec-17

Benzene	0.47	0.005	mg/L	0.500	ND	94.5	54.3-133
Toluene	0.47	0.005	"	0.500	ND	94.8	61.4-130
Ethylbenzene	0.48	0.005	"	0.500	ND	95.8	61.4-133
p,m-Xylene	0.95	0.01	"	1.00	ND	95.4	63.3-131
o-Xylene	0.47	0.005	"	0.500	ND	94.4	63.3-131
Total Xylenes	1.43	0.005	"	1.50	ND	95.1	63.3-131

Surrogate: 4-Bromochlorobenzene-PID 0.751 " 0.800 93.8 50-150

##### Matrix Spike Dup (1750014-MSD1)

Source: P712030-01

Prepared & Analyzed: 14-Dec-17

Benzene	0.47	0.005	mg/L	0.500	ND	93.7	54.3-133	0.796	20
Toluene	0.47	0.005	"	0.500	ND	93.7	61.4-130	1.22	20
Ethylbenzene	0.47	0.005	"	0.500	ND	94.8	61.4-133	1.11	20
p,m-Xylene	0.94	0.01	"	1.00	ND	94.3	63.3-131	1.24	20
o-Xylene	0.47	0.005	"	0.500	ND	93.2	63.3-131	1.35	20
Total Xylenes	1.41	0.005	"	1.50	ND	93.9	63.3-131	1.27	20

Surrogate: 4-Bromochlorobenzene-PID 0.754 " 0.800 94.2 50-150

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**Anions by 300.0 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1750016 - Anion Extraction EPA 300.0/9056A**
**Blank (1750016-BLK1)**

Prepared &amp; Analyzed: 15-Dec-17

Chloride	ND	2.00	mg/L							
Sulfate	ND	2.00	"							

**LCS (1750016-BS1)**

Prepared &amp; Analyzed: 15-Dec-17

Chloride	25.3	2.00	mg/L	25.0		101	90-110			
Sulfate	25.0	2.00	"	25.0		99.8	90-110			

**Matrix Spike (1750016-MS1)**

Source: P712032-01

Prepared &amp; Analyzed: 15-Dec-17

Chloride	145	10.0	mg/L	125	15.8	103	80-120			
Sulfate	2020	10.0	"	125	1830	157	80-120			SPK1

**Matrix Spike Dup (1750016-MSD1)**

Source: P712032-01

Prepared &amp; Analyzed: 15-Dec-17

Chloride	145	10.0	mg/L	125	15.8	103	80-120	0.0173	20	
Sulfate	2020	10.0	"	125	1830	152	80-120	0.328	20	SPK1

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#### Notes and Definitions

SPK1 The spike recovery is outside of quality control limits.

H1 Sample was received after regulatory hold-time exceeded for target analyte.

CON03 Improper container.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

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		Quote Number		Page <u>1</u> of <u>2</u>		Analysis/Container  <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <span>SW</span> <span>Air</span> <span>A</span> <span>Drill Mud</span> <span>= DM</span> <span>Other</span> <span>= OT</span> </div>		Lab Information  98031-0528  Office Abbreviations Farmington = FAR Durango = DUR Bakken = BAK Raton = RAT Piceance = PC Roosevelt = RSV La Barge = LB Orangeville = OV							
		XTO Contact <u>Jones</u>		XTO Contact Phone # <u>333 3100</u>											
Well Site/Location <u>Hsin Transfer</u> Collected By <u>Robert Trobary</u> Company <u>XTO</u> Signature <u>[Signature]</u>		Email Results to: <u>Jones, Kurt</u>		Saturday Delivery (Y/N) <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Next Day <input type="checkbox"/> Two Day <input type="checkbox"/> Three Day <input type="checkbox"/> Same Day Date Needed _____		Samples on Ice (Y/N) <input checked="" type="checkbox"/>		Test Reason  Gray Areas for Lab Use Only!							
		API Number													
Sample ID  <u>Inside Perm</u> <u>Inside water can</u> <u>Around MR</u> <u>Ditch</u>		Sample Name		Media		Date		Time		Preservative		No. of Conts.			
		<u>W</u> <u>W</u> <u>W</u> <u>W</u>		<u>12-12-1500</u> <u>12-15-1516</u> <u>12-15-1520</u> <u>12-15-1530</u>		<u>Goal</u> <u>I</u> <u>I</u> <u>I</u>		<u>1-500</u> <u>I</u> <u>I</u> <u>I</u>							
Media: Filter = F Soil = S Wastewater = WW Groundwater = GW Drinking Water = DW Sludge = SG Surface Water = SW Air = A Drill Mud = DM Other = OT		Relinquished By: (Signature)		Date: <u>12-13</u>		Time:		Received By: (Signature)		Time:		Number of Bottles: <u>4</u>		Sample Condition	
		Relinquished By: (Signature)		Date:		Time:		Received By: (Signature)		Time:		Temperature: <u>7.9</u>		Other Information	
Relinquished By: (Signature)		Date:		Time:		Received for Lab by: (Signature)		Date: <u>12-13-17</u>		Time: <u>9:20</u>		Comments <u>Samples Not intact for BTEX, client OK to qualify - 19</u>		* Sample ID will be the office and sampler-date-military time FARIM-MMDDYY-1200	
		Date:		Time:		Date:		Time:							

