# 2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

# TWIN OAKS POWER STATION

# COAL COMBUSTION RESIDUALS (CCR) LANDFILL

# **ROBERTSON COUNTY, TEXAS**

January 27, 2021

**Prepared By:** 



1120 NW Stallings Drive Nacogdoches, Texas 75964 TBPG Firm No. 50027

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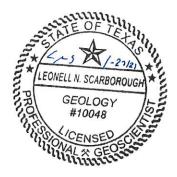


Michelle K. Transier, P.G. Geologist

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Leonell N. Scarborough, P.G. Senior Hydrogeologist

Prepared by: Hydrex Environmental Nacogdoches, Texas TBPG Firm No. 50027





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July 27, 2020 Alternate Source/Error Demonstration
January 27, 2021 Alternate Source/Error Demonstration

#### Introduction

This 2020 Annual Groundwater Monitoring and Corrective Action Report for the Twin Oaks Power Station Coal Combustion Residuals ("CCR") Landfill ("the "facility") is prepared in accordance with the requirements of the facility's Groundwater Sampling and Analysis Plan ("GWSAP"), the state CCR Rules, 30 TAC Chapter 352, and the federal CCR Rule, 40 CFR Part 257, Subpart D. This annual report summarizes the groundwater monitoring activities performed through the 2<sup>nd</sup> 2020 semi-annual detection groundwater sampling event for the facility. The annual reporting requirements under the CCR Rule, the relevant CCR Rule citations, and the corresponding location of those required contents in this report are listed below:

• Status of the groundwater monitoring program (§ 257.90(e)):Appendix B
• Summary of key actions completed (§ 257.90(e)):p. 1
• Any problems encountered and actions taken to resolve such problems (§ 257.90(e)):p. 2-3
• Project key activities for the upcoming year (§ 257.90(e)):p. 4
• Map, aerial image, or diagram of CCR Unit and monitoring wells (§ 257.90(e)(1)): . Appendix C
• Identification of new monitoring wells installed or abandoned during the preceding year and
narrative description (§ 257.90(e)(2)):Not applicable.
No monitoring wells have been installed or abandoned at the facility in 2020.

- Summary of groundwater data, wells sampled, date sampled, and whether sample was required under detection or assessment monitoring (§ 257.90(e)(3)): ...... Appendix D
- Narrative discussion of any transition between monitoring programs (§ 257.90(e)(4)):.....p. 2-3

#### Key Actions Completed and any Problems Encountered

The monitoring network at the Twin Oaks Power Station CCR Landfill includes 8 monitoring wells (upgradient wells MW-7, MW-11, MW-12, and MW-16 and downgradient wells MW-13, MW-14, MW-15, and MW-17). Groundwater monitoring is performed in accordance with the facility's GWSAP, 30 TAC Chapter 352 Subchapter H, and 40 CFR Part 257, Subpart D. Specific sampling events and dates for calendar year 2020 are summarized in the following table:

	0	
Event Date	Monitoring Wells (MW) Sampled	Event Type
April 28, 2020	MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17	Semi-Annual Detection Monitoring
July 9, 2020	MW-14	Verification Resampling
October 27, 2020	MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17	Semi-Annual Detection Monitoring
November 23, 2020	MW-14	Verification Resampling

#### Summary of Sampling Events

No significant problems were encountered during the sampling event in 2020.

#### **Detection Monitoring**

Detection monitoring is conducted at the Twin Oaks Power Station CCR Landfill on a semiannual schedule in accordance with applicable federal and state regulations. Laboratory analysis for detection events include those detection monitoring constituents listed in Table D-1 of the facility's GWSAP. A table of groundwater analytical results for all monitoring wells sampled during 2020 is included in Appendix D of this report.

#### First Semi-Annual Groundwater Monitoring Event (April 2020)

The first semi-annual detection monitoring event was conducted on April 28, 2020. Groundwater samples were obtained from monitoring wells MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17 for analysis of detection monitoring constituents. Additionally, a duplicate sample was collected at monitoring well MW-11 and analyzed for all detection monitoring constituents. The duplicate sample provided comparable results for all constituents. Intrawell statistical evaluation of data from the April 2020 event, performed in accordance with the provisions of the GWSAP, 30 TAC §352.941, and 40 CFR § 257.94, indicated unverified ("initial") intrawell statistical exceedances for sulfate and total dissolved solids (TDS) in monitor well MW-14. Subsequently, verification resampling was conducted on July 9, 2020, as provided for and in accordance with the GWSAP. Statistical reevaluation was performed in accordance with the GWSAP, 40 CFR §257.93(h)(1), and the United States Environmental Protection Agency (EPA) Unified Guidance methodologies. The results of verification resampling did not confirm the initial intrawell statistical exceedance value for TDS in MW-14. However, the results of verification resampling confirmed the intrawell statistical exceedance value for sulfate in MW-14 on July 17, 2020 and a statistically significant increase (SSI) was determined on July 21, 2020. Statistical evaluation results are included in the 1st 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report (Appendix D) dated July 27, 2020.

Review of relevant information for the facility indicated the values are likely the result of natural groundwater variation and not a release from the CCR Landfill. In accordance with the facility's GWSAP, 30 TAC §352.941(c), and 40 CFR 257.94(e)(2), an alternate source demonstration (ASD) was prepared to address the calculated SSI for MW-14. Notice of the intent to perform an ASD was provided to TCEQ on July 23, 2020. Based on observed variability, monitoring well MW-14 was reevaluated using interwell control chart techniques as provided in EPA Unified Guidance. Control chart evaluation utilized sulfate data from upgradient monitoring wells MW-7, MW-11, MW-12, and MW-16. The results of the interwell statistical reevaluation indicate the sulfate concentrations reported for upgradient monitoring wells. Sulfate concentration data from MW-14 were further evaluated for statistically significant increasing trends. No statistically increasing trends were noted for the sulfate data in MW-14. Based on this evaluation, no release from the CCR Landfill is indicated. A copy of the Alternate Source/Error Demonstration report dated July 27, 2020 is included in Appendix D of this report.

A summary of the results of statistical evaluation is presented in the table below.

Summary of Statistical Exceedances for the First Semi-Annual Groundwater Monitoring	
Event (April 2020)	

Well	Constituent	Initial Result (mg/L)	Verification Resampling Result (mg/L)	Intrawell Statistical Limit (mg/L)	Interwell Statistical Limit (mg/L)	Site-wide Sulfate Data Range (mg/L)	Statistical Exceedance Confirmed?	Resolution
MW-14	sulfate	467	448	401.3	1550	24.3 - 1550	No	Maintain Detection Monitoring
MW-14	TDS	1680	1490	1541	N/A	N/A	No	Maintain Detection Monitoring

Monitoring wells MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17 remained in detection monitoring status.

#### Second Semi-Annual Groundwater Monitoring Event (October 2020)

The second semi-annual detection monitoring event was conducted on October 27, 2020. Groundwater samples were obtained from monitoring wells MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17 for analysis of detection monitoring constituents. Additionally, a duplicate sample was collected at monitoring well MW-11 and analyzed for all detection monitoring constituents. The duplicate sample provided comparable results for all constituents. Intrawell statistical evaluation of data from the October 2020 event, performed in accordance with the provisions of the GWSAP, 30 TAC §352.941, and 40 CFR § 257.94, indicated an unverified ("initial") intrawell statistical exceedance for sulfate in monitor well MW-14. Subsequently, verification resampling was conducted on November 23, 2020, as provided for and in accordance with the GWSAP. The results of verification resampling confirmed the intrawell statistical exceedance value for sulfate in MW-14 on December 4, 2020 and an SSI was determined on December 15, 2020. Review of data indicated that the values are likely the result of natural groundwater variation at the facility. In accordance with the facility's GWSAP, notice of intent to perform an ASD was given to TCEQ on January 13, 2021 and an ASD will be submitted 90 days from the date an SSI was determined.

A summary of the results of statistical evaluation is presented in the table below.

Summary of Statistical Exceedances for the Second Semi-Annual Groundwater
Monitoring Event (October 2020)

Well	Constituent	Initial Result (mg/L)	Statistical Limit (mg/L)	Verification Result (mg/L)	Intrawell Statistical Exceedance Confirmed?	Recommendation
MW-14	sulfate	493	401.3	424	Yes	Alternate Source/Error Demonstration

Monitoring wells MW-7, MW-11, MW-12, MW-13, MW-15, MW-16, and MW-17 remain in detection monitoring status. Monitoring well MW14 also remains in detection monitoring status as determined by the ASD included in Appendix E.

#### Groundwater Elevation, Flow Rate, and Direction

Water levels were measured in all monitoring wells prior to purging in accordance with the GWSAP. A table summarizing groundwater elevation data collected during the 2020 detection

monitoring events is included in Appendix C. Hydraulic gradient and flow rate calculations, along with groundwater elevation maps showing groundwater flow direction for the April and October 2020 detection monitoring events, are also included in Appendix C.

#### Project Key Activities for 2021

Based on the data available at the time of this report, the detection monitoring program currently in place for the Twin Oaks Power Station CCR Landfill meets the requirements of applicable regulations. An ASD, performed within 90 days of the December 15, 2020 SSI determination, is included in Appendix E. No change to the groundwater monitoring system, monitoring schedule, or monitoring program is proposed.

Appendix A

# **CERTIFICATION STATEMENT**

## COAL COMBUSTION RESIDUALS (CCR) LANDFILL TWIN OAKS POWER STATION ROBERTSON COUNTY, TEXAS

I certify I am a licensed professional engineer in the State of Texas and a *qualified professional engineer* as defined in 40 CFR §257.53. I certify that the groundwater monitoring data and other information presented in the 2020 Annual Groundwater Monitoring and Corrective Action Report, prepared by Hydrex Environmental on behalf of the Twin Oaks Power Station, are appropriate and meet the requirements of 40 CFR Part 257, Subpart D.



John J. Tayntor, P.E. Auckland Consulting, LLC TBPE Firm Registration No. F-16721

January 27, 2021

Date

Appendix B

# Monitoring Well Network and Program Summary

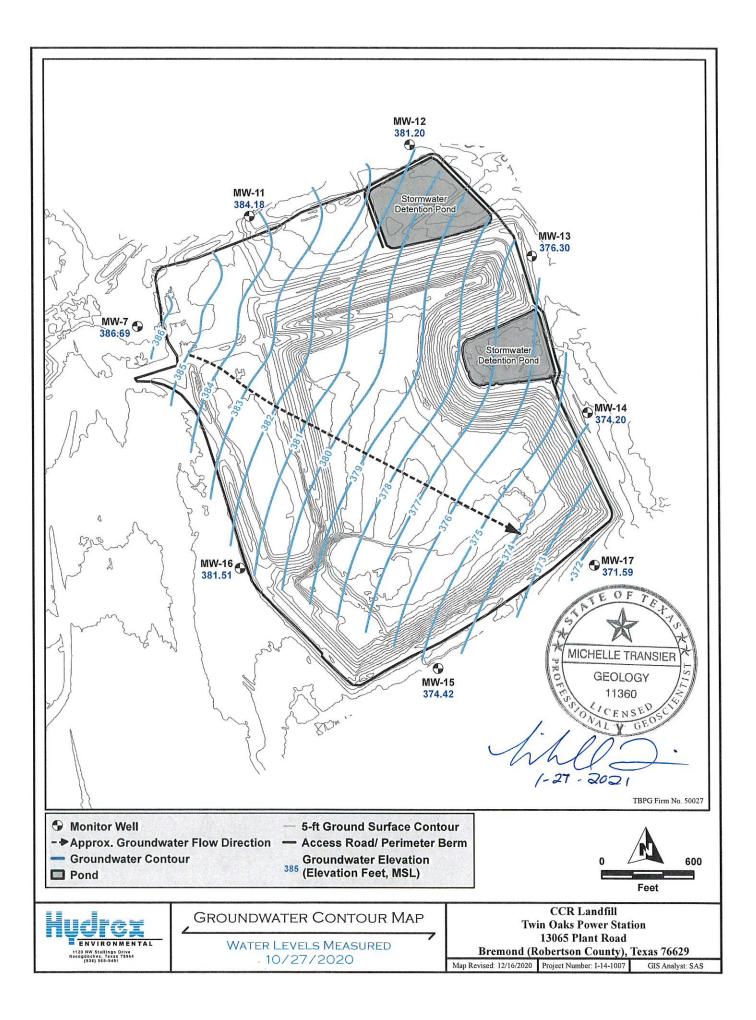
Well ID	Well Designation	Aquifer	2020
weirid	well Designation	Aquiler	Monitoring Status
MW-7	Upgradient	Uppermost	Detection Monitoring
MW-11	Upgradient	Uppermost	Detection Monitoring
MW-12	Upgradient	Uppermost	Detection Monitoring
MW-13	Downgradient	Uppermost	Detection Monitoring
MW-14	Downgradient	Uppermost	Detection Monitoring
MW-15	Downgradient	Uppermost	Detection Monitoring
MW-16	Upgradient	Uppermost	Detection Monitoring
MW-17	Downgradient	Uppermost	Detection Monitoring

Appendix C

### Groundwater Elevation Summary Table

Twin Oaks Power Station Coal Combustion Residuals (CCR) Landfill Robertson County, Texas

Well ID	Date	Top of Casing Elevation (ft-amsl)	Depth to Water (ft)	Groundwater Elevation (ft-amsl)
MW-7	4/28/2020	411.60	24.39	387.21
10100-7	10/27/2020	411.60	24.91	386.69
MW-11	4/28/2020	406.93	21.90	385.03
10100-11	10/27/2020	406.93	22.75	384.18
MW-12	4/28/2020	387.27	5.19	382.08
10100-12	10/27/2020	387.27	6.07	381.20
MW-13	4/28/2020	398.32	21.85	376.47
10100-13	10/27/2020	398.32	22.02	376.30
MW-14	4/28/2020	394.68	19.40	375.28
10100-14	10/27/2020	394.68	20.48	374.20
MW-15	4/28/2020	410.47	35.22	375.25
10100-15	10/27/2020	410.47	36.05	374.42
MW-16	4/28/2020	422.54	40.82	381.72
10100-10	10/27/2020	422.54	41.03	381.51
MW-17	4/28/2020	405.87	33.10	372.77
10100-17	10/27/2020	405.87	34.28	371.59



Twin Oaks Power Station **Coal Combustion Residuals Landfill** 

#### **Groundwater Flow Rate Calculations**

Approximate hydraulic gradients were calculated based on data presented on the individual groundwater gradient map for the October 2020 monitoring event.

Calculation of hydraulic gradient was performed using the following equation:

Where:

 $\Delta h$  = approximate change in hydraulic head between two known points Where:  $\Delta h$ i = $\Delta d$ 

 $\Delta d$  = approximate change in distance between two known points along flow paths

Gradient Measurement Line	$\Delta h$ (feet)	$\Delta d$ (feet)	i (feet/feet)	Monitoring Event
from well MW-7 to MW-17	15.10	3370	0.0045	October 2020

#### **Estimated Flow Rate Calculations**

The estimated groundwater flow rate was calculated for each monitoring event using the following formula:

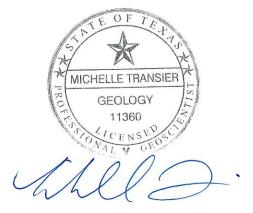
KI v =n.

v = flow ratek = hydraulic conductivity i = hydraulic gradient (above) n<sub>e</sub> = effective porosity

Flow Rate Measurement Line	k (cm/sec)	n <sub>e</sub>	i (feet/feet)	v (feet/year)	Monitoring Event
from well MW-7 to MW-17	4.85E-03	0.3	0.0045	75.32	October 2020

Note: Hydraulic conductivity (k) and effective porosity (ne) values as derived from slug test results conducted March 2016.

Hydrex Environmental TBPG Firm No. 50027



1-27-2021

Appendix D

#### Groundwater Monitoring Analytical Results Summary Table

Twin Oaks Power Station Coal Combustion Residuals (CCR) Landfill Robertson County, Texas

			Detecti	on Monitor	ing Constit	uents (Appe	ndix III)							Assessn	nent Monito	oring Consti	tuents (App	pendix IV)					
Well ID	Sampling Date	Boron (mg/L)	Total Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (SU)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Cobalt (mg/L)	Fluoride (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Selenium (mg/L)	Total Thallium (mg/L)	Radium 226 & 228 (Combined) (PCi/L)
MW-7	04/28/20	0.322	268	274	<0.500	6.42	1550	1780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	10/27/20	0.322	245	262	<0.500	6.06	930	1670	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			· · · · ·																				
MW-11	04/28/20	0.14	137	185	<0.500	6.42	606	1170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11	10/27/20	0.147	142	184	<0.500	6.07	621	1120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	04/28/20	0.0304	16.9	76.9	< 0.500	6.47	43.4	275	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	10/27/20	0.028	18.6	76.5	< 0.500	6.20	40.5	283	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13	04/28/20	0.075	31.1	103	<0.500	6.55	72.2	403	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13	10/27/20	0.0604	28.8	104	<0.500	6.13	71.3	381	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Backgro	und Limits*	0.1382	37.7	119.4	0.584	4.847-7.797	193.1	660.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14	04/28/20	0.322	106	370	< 0.500	6.80	467	1680	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14	07/09/20	NA	NA	NA	NA	NA	448	1490	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14	10/27/20	0.497	112	364	<0.500	6.35	493	1480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14	11/23/20	NA	NA	NA	NA	NA	424	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Backgro	und Limits*	0.5796	115.2	436.5	0.682	4.951-7.714	401.3	1541	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			1	1	T	1				I	1	1	1	T	T	T	1	T	1	1	1	1	1
MW-15	04/28/20	0.0427	21.8	119	<0.500	6.61	38.1	338	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-15	10/27/20	0.0399	23.4	129	< 0.500	6.32	34.3	381	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ваского	und Limits*	0.06917	28.93	175.8	0.5	4.356-7.747	40.2	476.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	04/28/20	0.0257	87.1	371	< 0.500	6.53	129	960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	10/27/20	0.0243	45.7	198	< 0.500	6.33	87.5	598	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
														T	T	T		T				-	
MW-17	04/28/20	0.0227	156	706	<0.500	5.83	55.2	1210	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	10/27/20	0.0237	162	640	< 0.500	5.40	41.1	1340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Backgro	und Limits*	0.362	555.1	1678	0.5	3.887-7.908	160.2	3191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

\*Background limits are intrawell statistcal limits including data collected between June 2016 and June 2019.

Laboratory Reports



# Texas Commission on Environmental Quality

NELAP-Recognized Laboratory Accreditation is hereby awarded to



# Eurofins Xenco, LLC - Houston 4147 Greenbriar Drive Stafford, TX 77477-3907

in accordance with Texas Water Code Chapter 5, Subchapter R, Title 30 Texas Administrative Code Chapter 25, and the National Environmental Laboratory Accreditation Program.

The laboratory's scope of accreditation includes the fields of accreditation that accompany this certificate. Continued accreditation depends upon successful ongoing participation in the program. The Texas Commission on Environmental Quality urges customers to verify the laboratory's current location(s) and accreditation status for particular methods and analyses (www.tceq.texas.gov/goto/lab). Accreditation does not imply that a product, process, system or person is approved by the Texas Commission on Environmental Quality.

Certificate Number: T104704215-20-38 Effective Date: 9/1/2020 Expiration Date: 6/30/2021

Executive Director Texas Commission on Environmental Quality



# **Analytical Report 676321**

for

## **Hydrex Environmental**

**Project Manager: Michelle Transier** 

Twin Oaks PP I-14-1007

#### 11.09.2020

Collected By: Client



4147 Greenbriar Dr. Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8) Xenco-Tampa: Florida (E87429), North Carolina (483)



11.09.2020
Project Manager: Michelle Transier
Hydrex Environmental
1120 NW Stallings Dr
Nacogdoches, TX 75964

Reference: Eurofins Xenco, LLC Report No(s): 676321 Twin Oaks PP Project Address:

#### Michelle Transier:

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 Eurofins Xenco, LLC Report Number(s) 676321. 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 Eurofins Xenco, LLC. 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. 676321 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ched a. Beitite

Chad Bechtold Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



# Sample Cross Reference 676321

## Hydrex Environmental, Nacogdoches, TX

Sample Id	Matrix	Date Collected Sam	nple Depth Lab	Sample Id
MW-7	W	10.27.2020 13:18	676	5321-001
MW-11	W	10.27.2020 13:55	676	5321-002
MW-16	W	10.27.2020 14:47	676	5321-003
MW-12	W	10.27.2020 15:22	676	5321-004
MW-13	W	10.27.2020 15:52	676	321-005
MW-15	W	10.27.2020 16:27	676	321-006
MW-14	W	10.27.2020 16:57	676	5321-007
MW-17	W	10.27.2020 17:27	676	5321-008
DUP	W	10.27.2020 13:55	676	5321-009

## CASE NARRATIVE SUMMARY



### Client Name: Hydrex Environmental Project Name: Twin Oaks PP

Project ID:	I-14-1007	Report Date:	11.09.2020
Work Order Number:	676321	Date Received:	10.29.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

pH analysis should be performed immediately. Per client request the laboratory performed pH analysis. The results were qualified with a "K".

Ched a. Bentitat

Chad Bechtold Project Manager



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-7</b> d: 676321-001		Matrix: Date Colle	Ground Water ected: 10.27.2020 13:18		Date Received:10.2	9.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM							
Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Seq Number:	3141094		1					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	262	0.500	mg/L	10.30.2020 11:24		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 11:24	U	1
Sulfate		14808-79-8	930	5.00	mg/L	10.30.2020 11:49	D	10
Analytical Me	thod: TDS by SM25	540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:	3141288							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	1670	5.00	mg/L	11.03.2020 10:00		1
Analytical Me Tech: Analyst: Seq Number: <b>Parameter</b>	thod: pH by SM450 DTN DTN 3141247	0-H Cas Number	Result	RL	Units	% Moisture: Analysis Date	Flag	Dil
				KL				
pH Temperature		12408-02-5 TEMP	6.06 19.9		SU Deg C	11.03.2020 13:20 11.03.2020 13:20	K K	1 1
Temperature			150		Deg e	11.05.2020 15.20	ĸ	1
-	thod: Boron by Met	hod 6020A				Prep Method: SW3	3010A	
Tech:	MLI					% Moisture:		
Analyst:	DEP		Date Prep	: 11.03.2020 09:00		,		
Seq Number:	3141310							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Boron		7440-42-8	0.298	0.0100	mg/L	11.03.2020 16:37		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: <b>MW-7</b> Lab Sample Id: 676321-001		Matrix: Date Colle	Ground Water acted: 10.27.2020 13:18		Date Received:10.2	9.2020 09	9:30
Analytical Method: Calcium by	Method 6010C				Prep Method: SW3	3010A	
Tech: MLI					0/ 14 1		
Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	245	10.0	mg/L	11.02.2020 21:58	DX	50



## Hydrex Environmental, Nacogdoches, TX

iod: Cl, F, & SO4 by JYM JYM		Date Colle	Ground Water ected: 10.27.2020 13:55		Date Received:10.2	9.2020 09	2:50
JYM	FEPA 300.0				Prep Method: E30	0P	
JYM							
		Date Prep	: 10.30.2020 10:03		% Moisture:		
3141094		1					
	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
	16887-00-6	184	0.500	mg/L	10.30.2020 12:02		1
	16984-48-8	< 0.500	0.500	mg/L	10.30.2020 12:02	U	1
	14808-79-8	621	5.00	mg/L	10.30.2020 21:50	D	10
nod: TDS by SM254	0C						
YAV							
YAV					% Moisture:		
3141288							
	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
olids	1642222	1120	5.00	mg/L	11.03.2020 10:00		1
nod: pH by SM4500- DTN DTN 3141247	H Cas Number	Result	RL	Units	% Moisture: Analysis Date	Flag	Dil
		6.07			11.03.2020 13:20	1 146	
	12408-02-5			SU		K	1
	YAV YAV 3141288 Jids od: pH by SM4500- DTN DTN	16984-48-8         14808-79-8         od: TDS by SM2540C         XAV         XAV         (AV         (AV	16984-48-8       <0.500	16984-48-8       <0.500	16984-48-8       <0.500	16984-48-8       <0.500	16984-48-8       <0.500



## Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-11 Lab Sample Id: 676321-002		Matrix: Date Collec	Ground Water cted: 10.27.2020 13:55		Date Received:10.2	9.2020 09	9:30
Analytical Method: Calcium by M	ethod 6010C				Prep Method: SW3	3010A	
Tech: MLI					0/ 1/ 1		
Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	142	10.0	mg/L	11.02.2020 22:31	D	50



## Hydrex Environmental, Nacogdoches, TX

Date Collected: 10.27.2020 14:47         Prep Method: E300.0         Tech:       Prep Method: E300.0         Tech:       Prep Method: E300.0         Tech:       Prep Method: E300.0         Tech:       Prep Method: E300.0         State Prep:       10.30.2020 10:03       %       Moisture:         Seq Number 314109       Prep       10.30.2020 12:15       U         Method: TDS by SM2540C       Tech:       1888-79-8       87.5       0.500       mgf.       10.30.2020 12:15       U         Analytical Method: TDS by SM2540C       Tech:       YAV       Seq Number 314128         Parameter       Cas Number       Result       Rat       Main Sub	Sample Id:	MW-16		Matrix:	Ground Water		Date Received:10.2	9.2020 09	9:30
Tech: Analysi: Seq NumberJYM YMDate Prep: Date Prep: $1.030.2020 10:03$ $96$ Moisture: $1.030.2020 12:15$ $1.030.2020 10:05$ Analytical Method:: Seq Number:Automethod: PH SM4500-HResultResu	Lab Sample Io	d: 676321-003		Date Colle	ected: 10.27.2020 14:47				
Analysic       JYM       Date Prep: $0.30.2020 10:03$ $^{96}$ Moisture:         Seq Number: $3141094$ Cas Number       Result       RL       Units       Analysis Date       Fag         Chloride       16887-00-6 $1030.2020 10:15$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.2020 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$ $10.30.202 10:20$	Analytical Me	ethod: Cl, F, & SO-	4 by EPA 300.0				Prep Method: E30	0P	
Analysis     J.M.     Date Prep:     10.30.2020 10005       Seq Number:     3141094       Parameter     Cas Number     Result     RL     Units     Analysis Date     Flag       Chloride     16887-00-6     198     0.500     mg/L     10.30.2020 12:15     U       Stuffate     16984-48-8     <0.500	Tech:	JYM							
ParameterCis NumberResultRLUnitsAnalysis DateFlagChloride16887-00-61980.500mg/L10.30.2020 12:15UFluoride16984-48-8<0.5000.500mg/L10.30.2020 12:15USuffate14808-79-887.50.500mg/L10.30.2020 12:15UAnalytical Method:TDS by SM2540CKKKTech:YAVYAVKKKKSeq Number:314128814128816422225985.00mg/L11.03.2020 10:00Analytical Method:pH by SM4500-HTech:DTNSeq Number:11.03.2020 10:00KAnalytical Method:pH by SM4500-HCas NumberResultRLUnitsAnalysis DateFlagOrtal Dissolved Solids16422225985.00mg/L11.03.2020 10:00KAnalytical Method:pH by SM4500-HKKSeq Number:11.03.2020 10:00KSeq Number:3141247YSeq6.33SugSug10.30.2020 13:20KParameterCas Number20.0EogSugSugSugSugKAnalytical Method:Boron by MethodEOZASugSugSugSugSugSugAnalytical Method:BDEPDate Prep:11.03.2020 09:00KSugSugSugSeq Number:3141310SugSugSugSugSugSu	Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Choride         16887-00-6         198         0.500         mg/L         10.30.2020 12:15         U           Fluoride         16984-48-8         <0.500         0.500         mg/L         10.30.2020 12:15         U           Sulfate         14808-79-8         87.5         0.500         mg/L         10.30.2020 12:15         U           Analytical Method:         TDS by SM2540C	Seq Number:	3141094							
Fhoride       16984-48-8       <0.500	Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Shifate14808-79-887.50.500ng/L1.03.02021 12:15Analytical Method:TDS by SM2540/2	Chloride		16887-00-6	198	0.500	mg/L	10.30.2020 12:15		1
Analytical Method: TDS by SM2540CTech:YAV% Moisture:Seq Number:31412888ParameterCas NumberResultRLUnitsAnalysis DateFlagTotal Dissolved Solids16422225985.00mg/L11.03.2020 10:00FlagAnalytical Method:pH by SM4500-H*********************************	Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 12:15	U	1
Tech: seq NumberYAV YAV Seq Number% Moisture: % Moisture:ParameterCas NumberResultRLUnitsAnalysis DateFlagTotal Dissolved Solids16422225985.00mg/L11.03.2020 10:00Analytical Metwet: rech: seq Number:DTN 3141247% Moisture:%ParameterCas NumberResultRLUnitsAnalysis DateFlagParameter:DTN 3141247%Moisture:%Parameter:Cas NumberResultRLUnitsAnalysis DateFlagpH12408-02-56.33SU11.03.2020 13:20KTemperature:TEMP20.0Deg C11.03.2020 13:20KAnalytical Metwet:Boron by Method 6020APrep Method:SW3U10ATech:MLI AnalysiDEP SultDate Prep:11.03.2020 09:00% Moisture:Seq Number:Sit1310SultSultSultSult	Sulfate		14808-79-8	87.5	0.500	mg/L	10.30.2020 12:15		1
Tech: seq NumberYAV YAV Seq Number% Moisture: % Moisture:ParameterCas NumberResultRLUnitsAnalysis DateFlagTotal Dissolved Solids16422225985.00mg/L11.03.2020 10:00Analytical Metwet: rech: seq Number:DTN 3141247% Moisture:%ParameterCas NumberResultRLUnitsAnalysis DateFlagParameter:DTN 3141247%Moisture:%Parameter:Cas NumberResultRLUnitsAnalysis DateFlagpH12408-02-56.33SU11.03.2020 13:20KTemperature:TEMP20.0Deg C11.03.2020 13:20KAnalytical Metwet:Boron by Method 6020APrep Method:SW3U10ATech:MLI AnalysiDEP SultDate Prep:11.03.2020 09:00% Moisture:Seq Number:Sit1310SultSultSultSult	Analytical Me	ethod: TDS by SM2	2540C						
Analyst:YAV% Moisture:Seq Number:3141288ParameterCas NumberResultRLUnitsAnalysis DateFlagTotal Dissolved Solids16422225985.00mg/L11.03.2020 10:00Analytical Method:pH by SM4500-H	-	-							
Seq Number: 3141288 Parameter Cas Number Result RL Units Analysis Date Flag Total Dissolved Solids 1642222 598 5.00 ng/L 11.03.2020 10:00 Analytical Method: pH by SM4500-H Tech: DTN Analyst: DTN Seq Number: 3141247 Parameter Cas Number Result RL Units Analysis Date Flag pH 12408-02-5 6.33 SU 11.03.2020 13:20 K Temperature TEMP 20.0 Deg C 11.03.2020 13:20 K Analytical Method: Boron by Method 6020A Tech: MLI Analyst: DEP Seq Number: 3141310 Analyst: DEP Seq Number: 3141310							% Moisture:		
ParameterCas NumberResultRLUnitsAnalysis DateFlagTotal Dissolved Solids1642225985.00mg/L11.03.2020 10:00II.03.2020 10:00Analytical Method:pH by SM4500-HServer Solidsby Moisture:Server SolidsServer Solids									
Total Dissolved Solids16422225985.00ng/L11.03.2020 10:00Analytical Method: pH by SM4500-H Tech:DTN Moisture: $%$ Moisture:Seq Number: 3141247% Moisture: $%$ Moisture:ParameterCas NumberResultRLUnitsAnalysis DateFlagpH12408-02-56.33SU11.03.2020 13:20KTemperatureTEMP20.0Deg C11.03.2020 13:20KAnalytical Method:Boron by Method 6020APrep Method:SW3010ATech:MLI Analyst:DEPDate Prep:11.03.2020 09:00% Moisture:Seq Number:3141310Sute Prep:11.03.2020 09:00% Moisture:			Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Analytical Method: pH by SM4500-HTech:DTN% Moisture:Analysi:DTN% Moisture:Seq Number:341247YateYateParameterCas NumberResultRLUnitsAnalysis DateFlagpH12408-02-56.33SU11.03.2020 13:20KpH12408-02-56.33SU11.03.2020 13:20KpHTEMP20.0Deg C11.03.2020 13:20KAnalytical Method: Boron by Method 6020APrep Method: SU201 13:20KPrep Method: SU201 13:20KPrep Method: SU201 13:20KPrep Method: SU300 13:20MLIPrep Method: SU300 09:00Analyste:Date Prep:11.03.2020 09:00% Moisture:Seq Numbe:3141310Date Prep:11.03.2020 09:00%	Total Dissolved	Solids	1642222	598	5.00	mg/L	-		1
Parameter         Cas Number         Result         RL         Units         Analysis Date         Flag           pH         12408-02-5         6.33         SU         11.03.2020 13:20         K           Temperature         TEMP         20.0         Deg C         11.03.2020 13:20         K           Analytical Method:         Boron by Method 6020A         Prep Method:         SW	Tech: Analyst:	DTN DTN	500-Н				% Moisture:		
pH       12408-02-5       6.33       SU       11.03.2020 13:20       K         Temperature       TEMP       20.0       Deg C       11.03.2020 13:20       K         Analytical Method:       Boron by Method 6020A       Prep Method:       SW3010A         Tech:       MLI       Date Prep:       11.03.2020 09:00       % Moisture:         Seq Number:       3141310       Date Prep:       11.03.2020 09:00       % Moisture:			Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TemperatureTEMP20.0Deg C11.03.2020 13:20KAnalytical Metrical Serone by Method 6020APrep Method: SW3010ATech:MLIAnalyst:DEPDate Prep:11.03.2020 09:00Seq Number:3141310			12408-02-5	6.33					1
Tech:MLIAnalyst:DEPDate Prep:11.03.2020 09:00% Moisture:Seq Number:3141310	-								1
Analyst:         DEF         Date Prep:         11.03.2020 09:00           Seq Number:         3141310         3141310         3141310	Tech:	MLI	ethod 6020A		11.02.2020.00.00		-	3010A	
	-			Date Prep	: 11.03.2020 09:00				
i a i anicici Cas Number Acsuit KL Units Analysis Date Flag		5141510	Cas Number	Recult	DI	TI	Analysis D-4	Fl	<b>D</b> ?
Boron 7440-42-8 0.0243 0.0100 mg/L 11.03.2020 16:40							-	Flag	<b>Dil</b> 1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-16 Lab Sample Id: 676321-003		Matrix:	Ground Water eted: 10.27.2020 14:47		Date Received:10.2	9.2020 09	:30
Analytical Method: Calcium by Met	hod 6010C	Date Collec	aed. 10.27.2020 14.47		Prep Method: SW	3010A	
Tech: MLI Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213 Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	45.7	0.200	mg/L	11.02.2020 22:14		1



# Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-12</b> 1: 676321-004		Matrix: Date Colle	Ground Water ected: 10.27.2020 15:22		Date Received:10.2	9.2020 09	9:30
		1 h EDA 200.0	Dute Con			Dura Mathada E20	0D	
-	thod: Cl, F, & SO4 JYM	t by EPA 300.0				Prep Method: E30	OP	
Tech:				10 20 2020 10 02		% Moisture:		
Analyst:	JYM		Date Prep	: 10.30.2020 10:03				
Seq Number:	3141094							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	76.5	0.500	mg/L	10.30.2020 12:53		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 12:53	U	1
Sulfate		14808-79-8	40.5	0.500	mg/L	10.30.2020 12:53		1
Analytical Me	thod: TDS by SM2	2540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:	3141288							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	283	5.00	mg/L	11.03.2020 10:00		1
Analytical Me Tech: Analyst: Seq Number: <b>Parameter</b>	thod: pH by SM45 DTN DTN 3141247	00-Н Cas Number	Result	RL	Units	% Moisture: Analysis Date	Flag	Dil
pH		12408-02-5	6.20		SU	11.03.2020 13:20	K	1
Temperature		TEMP	20.0		Deg C	11.03.2020 13:20	K	1
Analytical Me Tech: Analyst: Seq Number:	thod: Boron by Me MLI DEP 3141310	ethod 6020A	Date Prep	: 11.03.2020 09:00		Prep Method: SW3 % Moisture:	3010A	
Parameter	5171510	Cas Number	Result	RL	Unit-	Analysis Dots	Flog	<b>D</b> 9
					Units	Analysis Date	Flag	Dil
Boron		7440-42-8	0.0280	0.0100	mg/L	11.03.2020 16:43		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: <b>MW-12</b> Lab Sample Id: 676321-004		Matrix: Date Colle	Ground Water cted: 10.27.2020 15:22		Date Received:10.2	29.2020 09	:30
Analytical Method: Calcium by Me	ethod 6010C				Prep Method: SW	3010A	
Tech: MLI Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	18.3	0.200	mg/L	11.02.2020 22:19		1



# Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-13</b> l: 676321-005		Matrix: Date Colle	Ground Water ected: 10.27.2020 15:52		Date Received:10.2	9.2020 09	9:30
	thod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	0, 211100010				1100 11000 200		
Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Seq Number:			Date Hep	. 10.50.2020 10.05				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	104	0.500	mg/L	10.30.2020 13:31		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 13:31	U	1
Sulfate		14808-79-8	71.3	0.500	mg/L	10.30.2020 13:31		1
Analytical Me	thod: TDS by SM2	2540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:								
Parameter	0111200	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	381	5.00	mg/L	11.03.2020 10:00	0	1
Analytical Me Tech: Analyst: Seq Number:	thod: pH by SM45 DTN DTN 3141247	00-H				% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.13		SU	11.03.2020 13:20	K	1
Temperature		TEMP	20.1		Deg C	11.03.2020 13:20	K	1
Analytical Me Tech: Analyst: Seq Number:	thod: Boron by Me MLI DEP 3141310	ethod 6020A	Date Prep	: 11.03.2020 09:00		Prep Method: SW3 % Moisture:	3010A	
Parameter	5171510	Cas Number	Result	DI	The \$4.	Analasta Data	F1	ייח
				RL	Units	Analysis Date	Flag	Dil
Boron		7440-42-8	0.0604	0.0100	mg/L	11.03.2020 16:46		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: <b>MW-13</b> Lab Sample Id: 676321-005		Matrix: Date Collec	Ground Water eted: 10.27.2020 15:52		Date Received:10.2	9.2020 09	:30
Analytical Method: Calcium by Met	hod 6010C	2 40 00100			Prep Method: SW	3010A	
Tech: MLI Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213		Bute Hep.					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	28.8	0.200	mg/L	11.02.2020 22:23		1



## Hydrex Environmental, Nacogdoches, TX

Lab Sample Ic	<b>MW-15</b> l: 676321-006		Matrix: Date Colle	Ground Water ected: 10.27.2020 16:27		Date Received:10.2	9.2020 09	9:30
Analytical Me	thod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM					T T		
Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Seq Number:			Duterrep					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	129	0.500	mg/L	10.30.2020 14:09		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 14:09	U	1
Sulfate		14808-79-8	34.3	0.500	mg/L	10.30.2020 14:09		1
Analytical Me	thod: TDS by SM25	540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:								
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	381	5.00	mg/L	11.03.2020 10:00		1
Tech: Analyst: Seq Number:	thod: pH by SM450 DTN DTN 3141247	0-H Cas Number	Result	RL	Units	% Moisture: Analysis Date	Flag	Dil
Tech: Analyst: Seq Number: <b>Parameter</b>	DTN DTN	Cas Number		RL	Units SU	Analysis Date	Flag	
Tech: Analyst:	DTN DTN		Result 6.32 20.2	RL			Flag K K	<b>Dil</b> 1 1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	DTN DTN 3141247 thod: Boron by Met MLI DEP	Cas Number 12408-02-5 TEMP	6.32		SU	<b>Analysis Date</b> 11.03.2020 13:20	K	1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech:	DTN DTN 3141247 thod: Boron by Met MLI DEP	Cas Number 12408-02-5 TEMP	6.32 20.2		SU	Analysis Date 11.03.2020 13:20 11.03.2020 13:20 Prep Method: SW3	K	1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-15 Lab Sample Id: 676321-006		Matrix:	Ground Water cted: 10.27.2020 16:27		Date Received:10.2	9.2020 09	:30
Lao Sample Id. 676321-006		Date Colle	cted: 10.27.2020 16:27				
Analytical Method: Calcium by Me	ethod 6010C				Prep Method: SW	3010A	
Tech: MLI					% Moisture:		
Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	23.4	0.200	mg/L	11.02.2020 22:27		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id:	MW-14		Matrix:	Ground Water		Date Received:10.2	9.2020 09	9:30
Lab Sample Id	l: 676321-007		Date Colle	ected: 10.27.2020 16:57				
Analytical Me	thod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	2						
Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Seq Number:	3141094							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	364	0.500	mg/L	10.30.2020 20:45		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 20:45	U	1
Sulfate		14808-79-8	493	5.00	mg/L	10.30.2020 21:01	D	10
Analytical Me	thod: TDS by SM2	540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:								
Parameter	0111200	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	1480	5.00	mg/L	11.03.2020 10:00		1
Analytical Me Tech: Analyst:	thod: pH by SM45 DTN DTN	00-H				% Moisture:		
Seq Number:	3141247							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.35		SU	11.03.2020 13:20	K	1
Temperature		TEMP	20.1		Deg C	11.03.2020 13:20	K	1
		1 1 60204					20104	
-	thod: Boron by Me MLI	20100 0020A				Prep Method: SW3	DUIUA	
Tech:	DEP			11.02.2020.00.00		% Moisture:		
Analyst:			Date Prep	: 11.03.2020 09:00				
Seq Number: Parameter	3141310	Cas Number	Result	DI	I laste	Analasia Dat	Fla -	<b>D</b> 2
				RL	Units	Analysis Date	Flag	Dil
Boron		7440-42-8	0.497	0.0500	mg/L	11.03.2020 16:57		5



### Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-14 Lab Sample Id: 676321-007		Matrix: Date Colle	Ground Water ected: 10.27.2020 16:57		Date Received:10.2	9.2020 09	9:30
Analytical Method: Calcium by Me	ethod 6010C				Prep Method: SW3	3010A	
Tech: MLI							
Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	112	10.0	mg/L	11.02.2020 23:21	D	50



# Hydrex Environmental, Nacogdoches, TX

Tech:	hod: Cl, F, & SO4 JYM JYM 3141094	by EPA 300.0 Cas Number 16887-00-6	Date Prep. Result			Prep Method: E300 % Moisture:	)P	
Tech: Analyst: Seq Number: Parameter Chloride Fluoride	JYM JYM	Cas Number	-				-	
Analyst: Seq Number: Parameter Chloride Fluoride	JYM		-			% Moisture:		
Seq Number: Parameter Chloride Fluoride			-					
Parameter Chloride Fluoride			Result	DI				
Fluoride		16887-00-6		RL	Units	Analysis Date	Flag	Dil
			640	5.00	mg/L	11.02.2020 11:09	D	10
Sulfate		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 21:17	U	1
		14808-79-8	41.1	0.500	mg/L	10.30.2020 21:17		1
Analytical Metl	hod: TDS by SM25	540C						
	YAV							
	YAV					% Moisture:		
Seq Number:								
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved S	olids	1642222	1340	5.00	mg/L	11.03.2020 10:00	0	1
Tech: Analyst: Seq Number:	hod: pH by SM450 DTN DTN 3141247		<b>.</b>			% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
		12408-02-5	5.40		SU	11.03.2020 13:20	K	1
-								
pH Temperature		TEMP	20.0		Deg C	11.03.2020 13:20	К	1
- Temperature	hod: Boron by Met		20.0		Deg C			1
Temperature Analytical Metl	hod: Boron by Met MLI		20.0		Deg C	Prep Method: SW3		1
Temperature Analytical Meth Tech:	hod: Boron by Met MLI DEP			· 11.03.2020 09·00	Deg C			1
Temperature Analytical Metl Tech: Analyst:	MLI DEP		20.0 Date Prep	: 11.03.2020 09:00	Deg C	Prep Method: SW3		1
Temperature Analytical Meth Tech:	MLI DEP			: 11.03.2020 09:00 RL	Units	Prep Method: SW3		1 Dil



### Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-17 Lab Sample Id: 676321-008		Matrix: Date Collec	Ground Water cted: 10.27.2020 17:27		Date Received:10.2	9.2020 09	:30
Analytical Method: Calcium by Me	ethod 6010C				Prep Method: SW3	3010A	
Tech: MLI							
Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	162	10.0	mg/L	11.02.2020 23:26	D	50



## Hydrex Environmental, Nacogdoches, TX

Sample Id:	DUP		Matrix:	Ground Water		Date Received:10.2	9.2020 09	9:30
Lab Sample Io	l: 676321-009		Date Colle	ected: 10.27.2020 13:55				
Analytical Me	thod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM					1		
Analyst:	JYM		Date Prep	: 10.30.2020 10:03		% Moisture:		
Seq Number:			Duterrep					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	183	0.500	mg/L	10.30.2020 21:34		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	10.30.2020 21:34	U	1
Sulfate		14808-79-8	621	5.00	mg/L	11.02.2020 11:22	D	10
Analytical Me	thod: TDS by SM2	540C						
Tech:	YAV							
Analyst:	YAV					% Moisture:		
Seq Number:								
Parameter	2111200	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	1250	5.00	mg/L	11.03.2020 10:00	0	1
Analytical Me Tech: Analyst:	thod: pH by SM450 DTN DTN	00-H				% Moisture:		
Seq Number:	3141247							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.13		SU	11.03.2020 13:20	K	1
Temperature		TEMP	20.1		Deg C	11.03.2020 13:20	К	1
							20101	
-	thod: Boron by Me	tnod 6020A				Prep Method: SW3	5010A	
Tech:	MLI DEP		<b>D -</b>	11.02.2020.00.00		% Moisture:		
Analyst:			Date Prep	: 11.03.2020 09:00				
Seq Number:	5141510	CN	Decult	DI	<b>.</b>			
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Boron		7440-42-8	0.152	0.0100	mg/L	11.03.2020 16:54		1



### Hydrex Environmental, Nacogdoches, TX

Sample Id: <b>DUP</b> Lab Sample Id: 676321-009		Matrix: Date Collec	Ground Water eted: 10.27.2020 13:55		Date Received:10.2	9.2020 09	:30
Analytical Method: Calcium by Me	thod 6010C				Prep Method: SW3	3010A	
Tech: MLI Analyst: DEP		Date Prep:	11.02.2020 09:05		% Moisture:		
Seq Number: 3141213							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	145	10.0	mg/L	11.02.2020 23:30	D	50



### **Hydrex Environmental**

Twin Oaks PP

Analytical Method:	Cl, F, & SO4 by EP	A 300.0						Pr	ep Metho	d: E30	OP
Seq Number:	3141094			Matrix:	Water				Date Pre	ep: 10.3	30.2020
MB Sample Id:	7714212-1-BLK		LCS San	nple Id:	7714212-1	1-BKS		LCSI	O Sample	Id: 771	4212-1-BSD
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Chloride	< 0.500	10.0	10.1	101	10.2	102	90-110	1	20	mg/L	10.30.2020 10:20
Fluoride	< 0.500	10.0	10.4	104	10.4	104	90-110	0	20	mg/L	10.30.2020 10:20
Sulfate	< 0.500	10.0	10.1	101	10.1	101	90-110	0	20	mg/L	10.30.2020 10:20

Analytical Method:	Cl, F, & SO4 by EP					Pr	ep Metho	od: E30	0P			
Seq Number:	3141094			Matrix:	Ground W	ater			Date Pre	ep: 10.3	80.2020	
Parent Sample Id:	676321-004		MS Sample Id: 676321-004 S					MSD Sample Id: 676321-004 SD				
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	76.5	10.0	85.9	94	85.7	92	90-110	0	20	mg/L	10.30.2020 13:06	
Fluoride	< 0.500	10.0	10.6	106	10.6	106	90-110	0	20	mg/L	10.30.2020 13:06	
Sulfate	40.5	10.0	50.3	98	50.2	97	90-110	0	20	mg/L	10.30.2020 13:06	

<b>Analytical Method:</b> Seq Number: Parent Sample Id:	Cl, F, & SO4 by EPA 300.0         Matr           3141094         Matr           676321-005         MS Sample           Parent         Spike         MS				Ground W 676321-00				ep Metho Date Pro D Sample	ep: 10.3	00P 30.2020 321-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	104	10.0	113	90	114	100	90-110	1	20	mg/L	10.30.2020 13:44	
Fluoride	< 0.500	10.0	10.7	107	10.8	108	90-110	1	20	mg/L	10.30.2020 13:44	
Sulfate	71.3	10.0	81.1	98	81.1	98	90-110	0	20	mg/L	10.30.2020 13:44	

Analytical Method: Seq Number:	<b>TDS by SM2540C</b> 3141288		1	Matrix:	Water							
MB Sample Id:	3141288-1-BLK		LCS San	nple Id:	3141288-1	l-BKS		LCSI	D Sample	d: 314	1288-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	1000	100	1000	100	80-120	0	10	mg/L	11.03.2020 10:00	

Analytical Method: Seq Number:	<b>TDS by SM2540C</b> 3141288	Matrix:	Ground Water					
Parent Sample Id:	676277-001	MD Sample Id:	676277-001 D					
Parameter	Parent Result	MD Result		%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	492	508		3	10	mg/L	11.03.2020 10:00	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference  $LCS = Laboratory \ Control \ Sample \\ A = Parent \ Result \\ C = MS/LCS \ Result \\ E = MSD/LCSD \ Result$ 

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec Flag

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### **Hydrex Environmental**

Twin Oaks PP

Analytical Method: Seq Number: Parent Sample Id: Parameter Total Dissolved Solids	<b>TDS by SM2540C</b> 3141288 676277-011 <b>Parent</b> <b>Result</b> 668				Ground W 676277-0			<b>%RPD</b> 1	<b>RPD</b> Limit 10	<b>Units</b> mg/L	<b>Analysis</b> <b>Date</b> 11.03.2020 10:00	Flag
Analytical Method: Seq Number: Parent Sample Id: Parameter pH Temperature	<b>pH by SM4500-H</b> 3141247 676242-001 <b>Parent</b> <b>Result</b> 0.980 19.8			Matrix: nple Id:	Liquid 676242-00	01 D		% <b>RPD</b> 1 0	RPD Limit 20 20	Units SU Deg C	<b>Analysis</b> <b>Date</b> 11.03.2020 13:20 11.03.2020 13:20	Flag
Analytical Method: Seq Number: Parent Sample Id: Parameter pH Temperature	<b>pH by SM4500-H</b> 3141247 676321-009 <b>Parent</b> <b>Result</b> 6.13 20.1				Ground W 676321-00			% <b>RPD</b> 0 0	RPD Limit 20 20	Units SU Deg C	<b>Analysis</b> <b>Date</b> 11.03.2020 13:20 11.03.2020 13:20	Flag
Analytical Method: Seq Number: MB Sample Id: Parameter	Boron by Method 6 3141310 7714395-1-BLK MB Result	5020A Spike Amount		Matrix: nple Id: LCS %Rec	Water 7714395- LCSD Result	1-BKS LCSD %Rec	Limits		ep Methe Date Pr D Sample RPD Limit	ep: 11.0	3010A )3.2020 4395-1-BSD Analysis Date	Flag
Boron	<0.0100	0.100	0.0889	89	0.0907	91	80-120	2	20	mg/L	11.03.2020 16:11	
Analytical Method: Seq Number: Parent Sample Id:	<b>Boron by Method 6</b> 3141310 676321-002	020A			Ground W 676321-0				ep Methe Date Pr D Sample	ep: 11.0	3010A )3.2020 321-002 SD	
	Parent	Spike	MS	MS	MSD	MSD	Limits	%RPD	RPD	Units	Analysis	Flag
Parameter Boron	<b>Result</b> 0.147	<b>Amount</b> 0.100	<b>Result</b> 0.241	<b>%Rec</b> 94	Result 0.239	<b>%Rec</b> 92	75-125	1	Limit 20	mg/L	Date 11.03.2020 16:20	
Boron		0.100	0.241	94 Matrix:	0.239	92	75-125	Pr	20 rep Methe Date Pr	od: SW ep: 11.0		

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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### **Hydrex Environmental**

Twin Oaks PP

Analytical Method:	Calcium by Metho	d 6010C						Pı	ep Metho	od: SW	3010A	
Seq Number:	3141213			Matrix:	Ground W	ater			Date Pro	ep: 11.0	02.2020	
Parent Sample Id:	676321-001		MS Sar	nple Id:	676321-00	01 S		MS	D Sample	e Id: 676	321-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Calcium	254	25.0	269	60	272	72	75-125	1	20	mg/L	11.02.2020 21:41	х

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



# **Flagging Criteria**

- 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.

<b>BRL</b> Below Reporting Limit. N	ND Not Detected.		
RL Reporting Limit			
MDL Method Detection Limit S	SDL Sample Detection Limit	LOD Limit of Detection	
<b>PQL</b> Practical Quantitation Limit <b>N</b>	MQL Method Quantitation Limi	LOQ Limit of Quantitation	on
DL Method Detection Limit			
NC Non-Calculable			
SMP Client Sample	BLK	Method Blank	
BKS/LCS Blank Spike/Laboratory Co	ontrol Sample BKSD/LCSI	Blank Spike Duplicate/Labo	oratory Control Sample Duplicate
MD/SD Method Duplicate/Sample	Duplicate MS	Matrix Spike	MSD: Matrix Spike Duplicate
+ NELAC certification not offered for	or this compound.		

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

### Attachment A Laboratory Data Package Cover Page

Project Name:

This Data package consists of :

Laboratory Number: 676321

onsists of : Laboratory Batch No(s): 7714326, 3141288, 7714212, 3141247, 7714.

This signature page, the laboratory review checklist, and the following reportable data:

Twin Oaks PP

- X R1 Field chain-of-custody documentation;
- X R2 Sample identification cross-reference;
- X R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- X R4 Surrogate Recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- X R5 Test reports/summary forms for blank samples;
- $\mathbf{X}$  R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- X R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs) and
  - e) The laboratory's MS/MSD QC limits
- X R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.

 $\boxed{\mathbf{X}}$  R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

 $\mathbf{X}$  R10 Other problems or anomalies.

**X** Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

**Check, if applicable:** [] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [] TCEQ or [] \_\_\_\_\_\_ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

**Chad Bechtold** 

hed a. Beitter

Name (Printed)

Signature

Project Manager Official Title (printed) 11092020 Date

Final 1.000

Labo	rator	y Name: EUROFINS XENCO, LLC L	LRC Date : 11092020					
Proje	ect Na	ame: Twin Oaks PP I	Laboratory Job Number : 676321					
Revi	ewer	Name: CBE E	Batch Number(s):         7714326, 3141288, 7714212, 3141247,	7714395	5			
#1	$A^2$	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	4 ER
R1	OI	Chain-of-Custody (COC)						
		Did samples meet the laboratory's standard conditions of sam	nple acceptability upon receipt?	X				
		Were all departures from standard conditions described in an	exception report?			X		1
R2	OI	Sample and Quality Control (QC) Identification						
		Are all field sample ID numbers cross-referenced to the labor	ratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresp	ponding QC data?	X				
R3	OI	Test Reports						
		Were all samples prepared and analyzed within holding time	s?	X				
		Other than those results <mql, all="" bra<="" other="" raw="" td="" values="" were=""><td>acketed by calibration standards?</td><td>X</td><td></td><td></td><td></td><td><math>\top</math></td></mql,>	acketed by calibration standards?	X				$\top$
		Were calculations checked by a peer or supervisor?		X				
		Were all analyte identifications checked by a peer or supervis		X				
		Were sample detection limits reported for all analytes not det		X				
		Were all results for soil and sediment samples reported on a d				X		
		Were % moisture (or solids) reported for all soil and sedimer	*			X		<u> </u>
		Were bulk soil/solid samples for volatile analysis extracted w	with methanol per SW846 Method 5035?			X		_
D 4		If required for the project, were TICs reported?				X		
R4	0	Surrogate Recovery Data						-
		Were surrogates added prior to extraction?				X		
15		Were surrogate percent recoveries in all samples within the la	aboratory QC limits?			X		
35		Test Reports/Summary Forms for Blank Samples						-
		Were appropriate type(s) of blanks analyzed?		X				_
		Were blanks analyzed at the appropriate frequency ?	1 1 1 1 1 1 1 1	X				
		Were method blanks taken through the entire analytical proce procedures ?	edure, including preparation and, if applicable, cleanup	X				
		Were Blank Concentrations <mql?< td=""><td></td><td>X</td><td></td><td></td><td></td><td>1</td></mql?<>		X				1
R6	OI	Laboratory Control Samples (LCS):						
		Were all COCs included in the LCS?		X				
		Was each LCS taken through the entire analytical procedure,	, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the laborat		X				
		Does the detectability check sample data document the labor calculate the SDLs?	atory's capability to detect the COCs at the MDL used to	X				
		Was the LCSD RPD within the QC limits?		X				+
R7	OI	Matrix Spike (MS) and Matrix Spike Duplicate (M	ISD) data					
		Were the project/method specified analytes included in the M				X		
		Were MS/MSD analyzed at the appropriate frequency?				X		+
		Were MS (and MSD, if applicable) %Rs within the laborator	ry QC limits?			X		
		Were MS/MSD RPDs within the laboratory QC limits?				X		
R8	OI	Analytical Duplicate Data						
		Were appropriate analytical duplicates analyzed for each mat	trix?	X				
		Were analytical duplicates analyzed at the appropriate freque		X				
		Were RPDs or relative standard deviations within the laborat	tory QC limits?	X				
R9	OI	Method Quantitation Limits (MQLs)						
		Are the MQLs for each method analyte included in the laborate		X				
		Do the MQLs correspond to the concentration of the lowest n	non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory of	data package?	X				
R10	OI	Other Problems/Anomalies						
		Are all known problems/anomalies/special conditions noted		X				
		Is the laboratory NELAC-accredited under the Texas Labora methods associated with this laboratory data package?	tory Accreditation Program for the analytes, matrices and	X				
		Was applicable and available technology used to lower the S	DL to minimize the matrix interference effects on the	X				1

Labo	rator	ry Name: EUROFINS XENCO, LLC LRC I	Date : 11092020					
Proje	ct N	ame: Twin Oaks PP Labor	atory Job Number: 676321					
Revi	ewer	Name: CBE Batch	Number(s): 7714326, 3141288, 7714212, 3141247,	7714395	5			
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
S1	OI	Initial Calibration (ICAL)						
		Were response factors and/or relative response factors for each an	alyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?		X				<u> </u>
		Was the number of standards recommended in the method used for	or all analytes?	X				<u> </u>
		Were all points generated between the lowest and the highest stan	dard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate	e second source standard?	X				
S2	OI	Initial and Continuing Calibration Verification (ICCV	and CCV) and continuing calibration blank					
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-requ	ired QC limits?	X				
		Was the ICAL curve verified for each analyte?		Х				
		Was the absolute value of the analyte concentration in the inorgan	ic CCB <mdl?< td=""><td></td><td></td><td>X</td><td></td><td></td></mdl?<>			X		
S3	0	Mass Spectral Tuning						
		Was the appropriate compound for the method used for tuning?				X		
		Were ion abundance data within the method-required QC limits?				X		
S4	0	Internal Standard (IS)						
		Were IS area counts and retention times within the method-require	ed QC limits?			X		
S5	OI	Raw Data (NELAC 5.5.10)						
		Were the raw data (for example, chromatograms, spectral data) re	viewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw	data?	X				
S6	0	Dual Column Confirmation						
		Did dual column confirmation results meet the method-required Q	QC?			X		
S7	0	Tentatively Identified Compounds (TICs)						
		If TICs were requested, were the mass spectra and TIC data subje	ct to appropriate checks?			Х		
S8	Ι	Interference Check Sample (ICS) Results						
		Were percent recoveries within method QC limits?				Х		
S9	Ι	Serial Dilutions, Post Digestions Spikes, and Method of	f Standard Additions					
		Were percent differences, recoveries, and the linearity within the				X		
S10	OI	Method Detection Limit (MDL) Studies						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	,	X				<u> </u>
S11	OI	Proficiency Test Reports						
		Was the laboratory's performance acceptable on the applicable pro-	oficiency tests or evaluation studies?	X				
\$12	OI	Standards Documentation	-					
		Are all standards used in the analyses NIST-traceable or obtained	from other appropriate sources?	X				
S13	OI	Compound/Analyte Identification Procedures	** *					
		Are the procedures for compound/analyte identification document	ted?	X				
S14	OI	Demonstration of Analyst Competency (DOC)						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on fi	le?	X				+
\$15	OI	Verification/Validation Documentation for Methods (N						
		Are all methods used to generate the data documented, verified, a		X				
516	OI		no vandato, where applicable:					
510	51	Laboratory Standard Operating Procedures (SOPs) Are laboratory SOPs current and on file for each method performed		X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

2.

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review	Checklist: Exception Reports			
Laboratory Name: EUROFINS XENCO, LLC	LRC Date: 11092020			
Project Name: Twin Oaks PP	Laboratory Job Number: 676321			
viewer Name: CBE Batch Number(s): 7714326, 3141288, 7714212, 3141247, 7714395				
ER# 1 DESCRIPTION				

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

Manager       Michaelie Fransier       Bitto or means       With contract       With contract<	gnature)									
PST/US TRIE PST/US TRIE ADaPT Deservat HNO3: HN H2S04: H2 HCL: HL None: NO NaOH: Na MeOH: Me In Acetate+ Na SiO2 Na Sr TI Sn 1631/245.1/747	gnature)		-				6			00
PST/UG TRE PST/UG TRE ADaPT Other. ADaPT Other. HNO3: HN H2S04: H2 HCL: HL None: NO NaOH: Na MeOH: Na MeOH: Me Zn Acetate+ Na( Zn Acetate+ Na( Sample C Sample C Sample C	jnature)	C.P	-od-5X	1400	10-28.	1	N PX	1-00	en	T. ason
scom       rage         rder Comments         Brownfieldg       TRF         PST/UG       TRF         ADaPT       Other.         HN03:       HN         H2S04:       H2         HCL:       HL         None:       NO         NaOH:       Na         TAT starts the da       Tats the da         Iab, ff receive       Iab, ff receive         SiO2       Na Sr TI Sn         1631 / 245.1 / 747		ture) Received	elinquished by: (Signa	ate/Time R	Da	Signature)	Received by: (\$		/: (Signature)	Relinquished by
o.com       rage         proder Comments         Brownfielde RRC         ADaPT       TRF         ADaPT       Other:         HNO3:       HN         H2S04:       H2         HCL:       HL         None:       NO         NaOH:       Na         MeOH:       Me         TAT starts the da       Isb, if receiv         Isb, if receiv       Sample C         SiO2       Na Sr TI         1631 / 245.1 / 7471	I the control tiated.	ue to elicumstances beyond t rced unless previously negotia	the client if such losses are d zed. These terms will be enfo	or expenses incurred by d to Xenco, but not analy;	for any losses mple submitter	me any responsibility t large of \$5 for each sar	s and shall not assunach project and a ch	ost of samples be applied to ea	a liable only for the c harge of \$75.00 will b	rservice. Xenco will be Xenco. A minimum ch
Manager     Muthelle Transier     Bit to (ranseen)     Work Odder     Temperature       ex.pl     1120 NV/Stalling Dr     Gerngen/Mane     Gerngen/Mane     Bit to (ranseen)     Work Odder Commants       search     1120 NV/Stalling Dr     Gerngen/Mane     Gerngen/Mane     Gerngen/Mane     Gerngen/Mane       998-668-9451     1120 NV/Stalling Dr     Franki     Turn Anund     Gerngen/Mane     Gerngen/Mane       Namber     1120 NV/Stalling Dr     Turn Anund     Gerngen/Mane     Gerngen/Mane     Gerngen/Mane       Namber     Temp Blank     Ves for No     Num Inter     Franki Intransector     Num Krist Recure       state of Projecti     Temp Blank     Ves for No     Temp Blank     Ves for No     HNO: HN       Guided Same     Gernald Num     Temp Blank     Ves for No     Franki Intransector     ANALYSIS RECUEST     Preservative       Guided Same     Gernald Num     Temp Blank     Ves for No     Franki Intransector     Num HNO: HN       Sample Identification     Mark N     One Date     Temp Hole Or Contrast Intransector     Num Or No: HN       Guided Same     Gernald Num     Franki Intransector     Gernald Ge		ussions standard farms and c	lates and subcontractors. It a	ompany to Xenco. Its affili	r from ellent ec	a valid purchase order	samples constitutes	auishment of s	document and relin	otice: Signature of this
Manager:     Mitchelle Transfer     Bit tr. erainent       gr. Name     Hydrex Environmental     Company Name       gr. Zip-     Hiscogdoches, TX 75964     City, State Zip-       lanzer     Trin Oaks PP     Turn Anound       Nume     Trin Oaks PP     Turn Anound       state (CC)     City, State Zip-     Rushing:       dimed:     City, State Zip-     Rushing:       Sumber (CC)     City, State Zip-     Rushing:       Sumpler (Sales)     City, State Zip-     Rushing:       Sumpler (Sales)     No     Terms:       Outpool, Seals:     Vas. (K)     No       Sumple identification     Markin, Sampled     Death       Sumple identification     Markin, Sampled </td <td>Ag SiO2 Na Sr TI Sn U 1631/245.1/7470</td> <td>o Ni K TI U</td> <td>Co Cu Cu Pb</td> <td>As Ba Be B Cd b As Ba Be Cd</td> <td></td> <td>13PPM Texas : &gt;/SPLP 6010: 8</td> <td>8RC</td> <td>6020: to be anal</td> <td>010 200.8 / (s) and Metal(s)</td> <td>Total 200.7 / 6 Circle Method</td>	Ag SiO2 Na Sr TI Sn U 1631/245.1/7470	o Ni K TI U	Co Cu Cu Pb	As Ba Be B Cd b As Ba Be Cd		13PPM Texas : >/SPLP 6010: 8	8RC	6020: to be anal	010 200.8 / (s) and Metal(s)	Total 200.7 / 6 Circle Method
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Page 31 of 33

Final 1.000

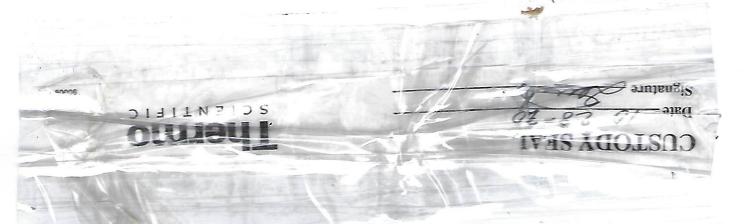


#### After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.

2. Fold the printed page along the horizontal line. 3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

adonuonal priming charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of \$1,000, e.g. jewelry, authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service.Guide. Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.



## **Eurofins Xenco, LLC** Prelogin/Nonconformance Report- Sample Log-In

**Client:** Hydrex Environmental Acceptable Temperature Range: 0 - 6 degC Date/ Time Received: 10.29.2020 09.30.00 AM

Work Order #: 676321

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-203

Sa	mple Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.7	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/	cooler? Yes	
#5 Custody Seals intact on sample bottles?	N/A	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ I	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	s)? Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#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: Gladis

PH Device/Lot#: 10BDH0601

Date: 10.29.2020

 Checklist completed by:
 GRUBIC

 Gladis Rubio-Arias

 Checklist reviewed by:
 Checklist Gladis Rubio-Arias

 Checklist reviewed by:
 Checklist Gladis Rubio-Arias

Date: 10.30.2020



# Analytical Report 678973

for

# **Hydrex Environmental**

**Project Manager: Michelle Transier** 

Twin Oaks PP I-14-1007

### 12.04.2020

Collected By: Client



4147 Greenbriar Dr. Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8) Xenco-Tampa: Florida (E87429), North Carolina (483)



12.04.2020 Project Manager: **Michelle Transier Hydrex Environmental** 1120 NW Stallings Dr Nacogdoches, TX 75964

Reference: Eurofins Xenco, LLC Report No(s): 678973 Twin Oaks PP Project Address:

#### Michelle Transier:

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 Eurofins Xenco, LLC Report Number(s) 678973. 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 Eurofins Xenco, LLC. 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. 678973 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ched a. Beitite

Chad Bechtold Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



# Sample Cross Reference 678973

### Hydrex Environmental, Nacogdoches, TX

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	11.23.2020 11:30		678973-001

### **CASE NARRATIVE SUMMARY**



Client Name: Hydrex Environmental Project Name: Twin Oaks PP

Project ID:I-14-1007Work Order Number:678973

 Report Date:
 12.04.2020

 Date Received:
 11.24.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Ched a. Bentitod

Chad Bechtold Project Manager



### Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-14		Matrix:	Ground Water		Date Received:11.2	4.2020 09	9:30
Lab Sample Id: 678973-001		Date Coll	ected: 11.23.2020 11:30	)			
Analytical Method: Sulfate by EPA	300.0				Prep Method: E30	0P	
Tech: JYM							
Analyst: JYM		Date Prep	: 11.25.2020 08:20	)	% Moisture:		
Seq Number: 3143351							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Sulfate	14808-79-8	424	5.00	mg/L	11.25.2020 14:15	D	10



### **Hydrex Environmental**

Twin Oaks PP

Analytical Method: Seq Number: MB Sample Id:	<b>Sulfate by EPA 30</b> 3143351 7715931-1-BLK	0.0		Matrix: nple Id:	Water 7715931-1	I-BKS			ep Metho Date Pro D Sample	ep: 11.2	00P 25.2020 5931-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Sulfate	<0.500	10.0	10.2	102	10.2	102	90-110	0	20	mg/L	11.25.2020 07:59	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	3143351 678965-001		MS Sar	1	678965-00			MS	1	ep: 11.2 Id: 678	25.2020 965-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Sulfate	106	10.0	114	80	114	80	90-110	0	20	mg/L	11.25.2020 10:51	Х

Analytical Method:	Sulfate by EPA 300	.0						Pr	ep Metho	od: E30	0P	
Seq Number:	3143351		]	Matrix:	Water				Date Pre	ep: 11.2	25.2020	
Parent Sample Id:	678997-001		MS San	nple Id:	678997-00	1 S		MSI	O Sample	Id: 678	997-001 SD	
Parameter	Parent	Spike	MS	MS	MSD	MSD	Limits	%RPD	RPD	Units	Analysis	Flag
	Result	Amount	Result	%Rec	Result	%Rec			Limit		Date	0

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



# **Flagging Criteria**

- 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.	ND Not Detected			
RL Reporting Limit				
MDL Method Detection Limit	SDL Sample De	tection Limit	LOD Limit of Detection	
PQL Practical Quantitation Limit	MQL Method Qu	antitation Limit	LOQ Limit of Quantitatio	n
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/Labo	ratory Control Sample Duplicate
MD/SD Method Duplicate/Samp	ble 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

### Attachment A Laboratory Data Package Cover Page

Project Name:

This Data package consists of :

Twin Oaks PP

Laboratory Number: 678973

Laboratory Batch No(s): 7715931

This signature page, the laboratory review checklist, and the following reportable data:

- X R1 Field chain-of-custody documentation;
- X R2 Sample identification cross-reference;
- $\mathbf{X}$  R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- X R4 Surrogate Recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- X R5 Test reports/summary forms for blank samples;
- X R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- X R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs) and
  - e) The laboratory's MS/MSD QC limits
- X R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.

 $\boxed{\mathbf{X}}$  R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

 $\mathbf{X}$  R10 Other problems or anomalies.

**X** Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

**Check, if applicable:** [] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [] TCEQ or [] \_\_\_\_\_\_ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

**Chad Bechtold** 

had a. Bentator

Name (Printed)

Signature

Project Manager Official Title (printed)

12042020 Date

Labo	orator	y Name: EUROFINS XENCO, LLC	LRC Date : 12042020					
Proje	ect Na	ame: Twin Oaks PP	Laboratory Job Number : 678973					
Revi		Name: CBE	Batch Number(s) : 7715931					
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	<sup>+</sup>  ER#
R1	OI	Chain-of-Custody (COC)						
		Did samples meet the laboratory's standard conditions of s	ample acceptability upon receipt?	X				
		Were all departures from standard conditions described in	an exception report?			X		1
R2	OI	Sample and Quality Control (QC) Identification						
		Are all field sample ID numbers cross-referenced to the la	boratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corr	responding QC data?	X				
R3	OI	Test Reports						
		Were all samples prepared and analyzed within holding tir	mes?	X				
		Other than those results <mql, all="" other="" raw="" td="" values<="" were=""><td>bracketed by calibration standards?</td><td>X</td><td></td><td></td><td></td><td></td></mql,>	bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?		X				
		Were all analyte identifications checked by a peer or super		X				
		Were sample detection limits reported for all analytes not		X				1
		Were all results for soil and sediment samples reported on Were % moisture (or solids) reported for all soil and sedin				X	<u> </u>	_
		Were % moisture (or solids) reported for all soil and sedin Were bulk soil/solid samples for volatile analysis extracted	*			X X		_
		If required for the project, were TICs reported?	d with methanol per S w 846 Method 5055?			A X		-
R4	0					Λ		
		Surrogate Recovery Data Were surrogates added prior to extraction?				v		
		Were surrogate percent recoveries in all samples within the	e Jaboratory OC limits?			X X		-
R5	OI					Λ		
		Test Reports/Summary Forms for Blank Sample Were appropriate type(s) of blanks analyzed?	25	X				
		Were blanks analyzed at the appropriate frequency ?		X				-
		Were method blanks taken through the entire analytical pro-	ocedure including preparation and if applicable cleanup	X				+
		procedures ?	occure, menuting preparation and, it applicable, cleanup					
		Were Blank Concentrations <mql?< td=""><td></td><td>X</td><td></td><td></td><td></td><td></td></mql?<>		X				
R6	OI	Laboratory Control Samples (LCS).						
		Were all COCs included in the LCS?		X				
		Was each LCS taken through the entire analytical procedu	ire, including prep and cleanup steps?	X				_
		Were LCSs analyzed at the required frequency?		X				_
		Were LCS (and LCSD, if applicable) %Rs within the labo	poratory QC limits?	X X				_
		calculate the SDLs?	foratory's capability to detect the COCs at the MDE used to					
		Was the LCSD RPD within the QC limits?		X				
<b>R</b> 7	OI	Matrix Spike (MS) and Matrix Spike Duplicate (	(MSD) data					
		Were the project/method specified analytes included in the	e MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X				
		Were MS (and MSD, if applicable) %Rs within the laboration of the second s	tory QC limits?		X			1
		Were MS/MSD RPDs within the laboratory QC limits?		X				
R8	OI	Analytical Duplicate Data						
		Were appropriate analytical duplicates analyzed for each n				X		
		Were analytical duplicates analyzed at the appropriate free				X		_
DO		Were RPDs or relative standard deviations within the labo	ratory QC limits?			X		_
K9	OI	Method Quantitation Limits (MQLs)						
		Are the MQLs for each method analyte included in the lab		X				-
		Do the MQLs correspond to the concentration of the lowes		X				+
210		Are unadjusted MQLs and DCSs included in the laborator	y data package?	X				
10		Other Problems/Anomalies						
		Are all known problems/anomalies/special conditions note		X				+
		Is the laboratory NELAC-accredited under the Texas Laboratory data package?	pratory Accreditation Program for the analytes, matrices and	X				
	1	Was applicable and available technology used to lower the	e SDL to minimize the matrix interference effects on the	X				1

Labo	Laboratory Name:EUROFINS XENCO, LLCLRC Date :12042020										
Proje	ect N	ame: Twin Oaks PP	Laboratory Job Number: 678973								
Revi	ewer	Name: CBE	Batch Number(s) : 7715931								
#1	A <sup>2</sup>	Description									
<b>S</b> 1	OI	Initial Calibration (ICAL)				NA <sup>3</sup>					
		Were response factors and/or relative response factors for	each analyte within QC limits?	X				-			
		Were percent RSDs or correlation coefficient criteria met?	· · · · · · · · · · · · · · · · · · ·	X							
		Was the number of standards recommended in the method		X							
		Were all points generated between the lowest and the high	X								
		Are ICAL data available for all instruments used?	X								
		Has the initial calibration curve been verified using an app	propriate second source standard?	X							
S2	OI	Initial and Continuing Calibration Verification (									
		Was the CCV analyzed at the method-required frequency?	X								
		Were percent differences for each analyte within the meth-	od-required QC limits?	X							
		Was the ICAL curve verified for each analyte?		X							
		Was the absolute value of the analyte concentration in the	inorganic CCB <mdl?< td=""><td></td><td></td><td>X</td><td></td><td></td></mdl?<>			X					
S3	0	Mass Spectral Tuning									
		Was the appropriate compound for the method used for tur	ning?			X					
		Were ion abundance data within the method-required QC	limits?			X					
S4	0	Internal Standard (IS)									
S5 (		Were IS area counts and retention times within the method	d-required QC limits?			X					
	OI	Raw Data (NELAC 5.5.10)									
		Were the raw data (for example, chromatograms, spectral	data) reviewed by an analyst?	X							
		Were data associated with manual integrations flagged on		X							
<b>S</b> 6	0	Dual Column Confirmation									
	-	Did dual column confirmation results meet the method-rec			x						
<b>S</b> 7	0		Junea QC.			Λ					
57		Tentatively Identified Compounds (TICs) If TICs were requested, were the mass spectra and TIC dat	te subject to appropriate abacks?			X		-			
S8	Ι					Λ					
	1	Interference Check Sample (ICS) Results				V					
50	т	Were percent recoveries within method QC limits?				X					
S9	I	Serial Dilutions, Post Digestions Spikes, and Met									
		Were percent differences, recoveries, and the linearity with	hin the QC limits specified in the method?			X					
\$10	01	Method Detection Limit (MDL) Studies									
		Was a MDL study performed for each reported analyte?		X							
		Is the MDL either adjusted or supported by the analysis of	f DCSs?	X							
\$11	OI	Proficiency Test Reports									
		Was the laboratory's performance acceptable on the applic	X								
512	OI	Standards Documentation									
		Are all standards used in the analyses NIST-traceable or o	btained from other appropriate sources?	X							
513	OI	Compound/Analyte Identification Procedures									
		Are the procedures for compound/analyte identification do	ocumented?	X							
S14	OI	Demonstration of Analyst Competency (DOC)									
		Was DOC conducted consistent with NELAC Chapter 5?		X							
		Is documentation of the analyst's competency up-to-date a	nd on file?	X				+			
\$15	OI	Verification/Validation Documentation for Meth									
		Are all methods used to generate the data documented, ver	-	X							
516	OI	Laboratory Standard Operating Procedures (SO									
		Are laboratory SOPs current and on file for each method p		X							

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

2.

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Name	: EUROFINS XENCO, LLC	LRC Date: 12042020
Project Name:	Twin Oaks PP	Laboratory Job Number: 678973
Reviewer Name:	CBE	Batch Number(s): 7715931
ER# 1 DES	CRIPTION	
Batch Lab Sa Sulfate analyti	e recovered below QC limits in the Matrix Spike cal batch are: 678973-001.	r Matrix Spike/Matrix Spike Duplicate (MS/MSD). e and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the aboratory Control Limits; therefore, the data was accepted.

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

X21622 - 100 000	of service. Xenco will be liable only for the cost of samples ar of Xenco. A minimum charge of \$75.00 will be applied to each Relinquished by: (Signature)	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	,	MW-14	cation Matrix	No NIA TO	Cooler Custody Seals: Yes No	) I emp Blank	_	Sampler's Name:	Project Location	Project Number:	Project Name: Twin Oaks PP	Phone: 936-568-9451	City, State ZIP: Nacogdoches, TX 75964	Address: 1120 NW Stallings Dr	Company Name: Hydrex Envrionmental	Project Manager: Michelle Transier	eurofins
	s and shall not assume any responsibility for any los teh project and a charge of \$5 for each sample subn Received by: (Signature)	BRCRA 13PPM Texas 11 Al ed TCLP / SPLP 6010: 8RCRA		1 20 1	Time Depth Mumb		Corrected Temp: 7 2 IR ID:HOU-188	0		ate:		Ro		Email: mtransier@hydrex-inc.com	City, State ZIP:	Address:	Company Name:	Bill to: (if different)	Houston, TX (281) 240 Midland, TX (432) 7 Hobbs, NM (575) 38: Tampa, FL (813) 620-20
MILLO 2 NAX	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: (Si	Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag			Code 300.0 - :	Sulfate						ANALT SIS REQUES							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) 986-3199, 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
$\sim n'$	ns standard terms and conditions circumstances beyond the control inless previously negotiated. ) Received by: (Signature) Date/Time	Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr TI Sn U V Zn Mn Mo Ni Se Ag TI U			Sample Comments	TAT starts the day received by the lab, if received by 4:30nm	MeOH: Me Zn Acetate+ NaOH: Zn	NaOH: Na	None: NO	H2S04: H2	HNO3: HN	-				State of Project	Work Order Comments	www.xenco.com Page of	Work Order No: 0+5 7

Revised Date101419 Rev. 2019.1

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Final 1.000

Chain of Custody

Work Order No: 678973



# After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.

Custody Seal

ATC

GNATURE

 Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned. additional billing charges, along with the cancellation of your FedEx account number.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your redex account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on redex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx for any loss, including intrinsic value of the package, loss of sales, income interact, profit unless you declare a nigner value, pay an auditional charge, document your actual loss and file a timely claim.Limitations round in the current Fe Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, pr attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the attorney's rees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater or \$100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized declared value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, authorized documented loss.Maximum for items are the final within extent time. autorized occiared value. Recovery cannot exceed actual documented loss.iviaximum for items of extraordinary value is \$1,000, e.g. jeweiry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current

## **Eurofins Xenco, LLC** Prelogin/Nonconformance Report- Sample Log-In

**Client:** Hydrex Environmental Acceptable Temperature Range: 0 - 6 degC Date/ Time Received: 11.24.2020 09.30.00 AM

Work Order #: 678973

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-188

Sample	Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ coole	r? <b>N/A</b>	
#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/ receiv	ved? Yes	
#10 Chain of Custody agrees with sample labels/matri	ix? 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)?	No	
#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: TOL

PH Device/Lot#: 10BDH0601

Date: 11.24.2020

Checklist completed by: Lisandra Torres Checklist reviewed by: Check & Bachteen Chad Bechtold

Date: 11.30.2020

October 2020 Event Results of Statistical Calculations **Control Charts and Prediction Limits** 

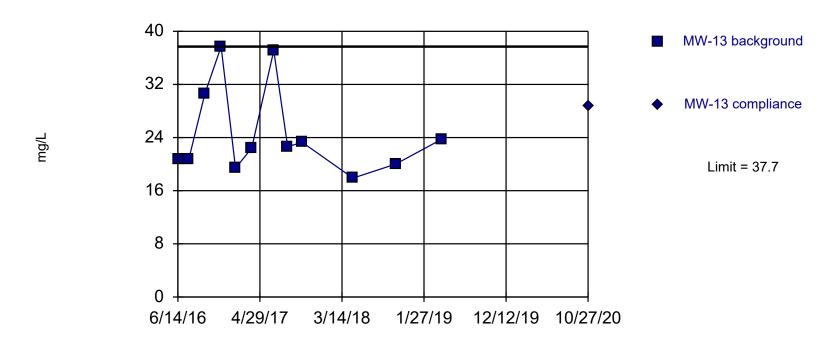
### Shewhart-Cusum Control Chart / Rank Sum

Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks Printed 11/11/2020, 10:16 AM

			-	-				-,
<u>Constituent</u>	Well	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<b>Transform</b>	Method
Calcium (mg/L)	MW-13	No	PL=	n/a	12	0	No	NP Intra PL (normality)
Chloride (mg/L)	MW-13	No	119.4	119.4	12	0	x^3	Param Intra
Fluoride (mg/L)	MW-13	No	PL=	n/a	12	75	No	NP Intra PL (NDs)
pH (SU)	MW-13	No	7.5	7.5	12	0	No	Param Intra
Sulfate (mg/L)	MW-13	No	193.1	193.1	12	8.333	No	Param Intra
Total Dissolved Solids (mg/L)	MW-13	No	660.3	660.3	12	0	No	Param Intra
Calcium (mg/L)	MW-14	No	115.2	115.2	12	0	No	Param Intra
Chloride (mg/L)	MW-14	No	436.5	436.5	12	0	No	Param Intra
Fluoride (mg/L)	MW-14	No	PL=	n/a	12	75	No	NP Intra PL (NDs)
pH (SU)	MW-14	No	7.7	7.7	12	0	x^3	Param Intra
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-14	No	1541	1541	12	0	No	Param Intra
Calcium (mg/L)	MW-15	No	28.93	28.93	12	0	No	Param Intra
Chloride (mg/L)	MW-15	No	175.8	175.8	12	0	No	Param Intra
Fluoride (mg/L)	MW-15	No	PL=0.5	n/a	12	83.33	No	NP Intra PL (NDs)
pH (SU)	MW-15	No	7.7	7.7	12	0	x^3	Param Intra
Sulfate (mg/L)	MW-15	No	40.2	40.2	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-15	No	476.9	476.9	12	0	No	Param Intra
Calcium (mg/L)	MW-17	No	555.1	555.1	12	0	sqrt(x)	Param Intra
Chloride (mg/L)	MW-17	No	1678	1678	12	0	No	Param Intra
Fluoride (mg/L)	MW-17	No	PL=0.5	n/a	12	83.33	No	NP Intra PL (NDs)
pH (SU)	MW-17	No	7.9	7.9	12	0	No	Param Intra
Sulfate (mg/L)	MW-17	No	160.2	160.2	12	8.333	No	Param Intra
Total Dissolved Solids (mg/L)	MW-17	No	3191	3191	12	0	No	Param Intra

### Within Limit

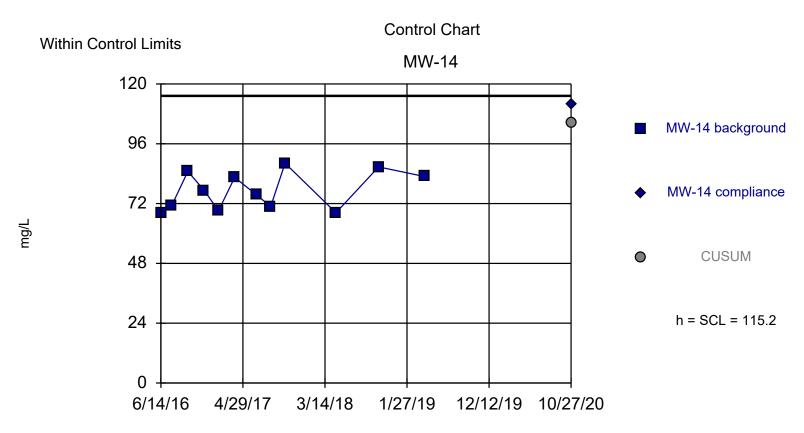
### **Prediction Limit**



Intrawell Non-parametric

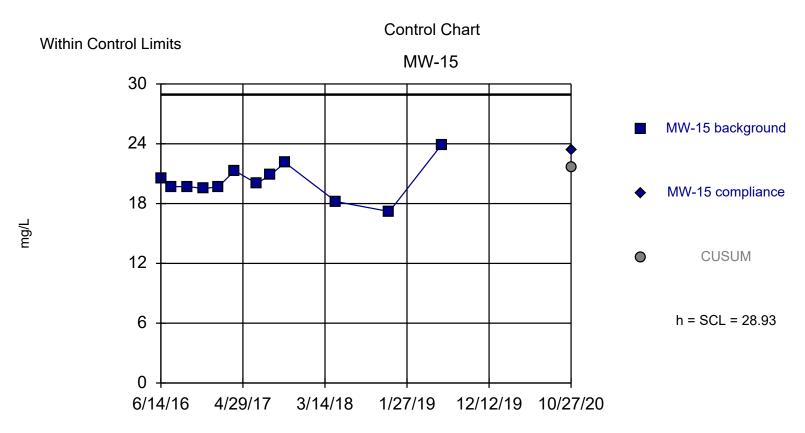
Non-parametric test used in lieu of control chart because the Shapiro Wilk normality test showed the data to be nonnormal at the 0.05 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

> Constituent: Calcium Analysis Run 11/11/2020 10:14 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks



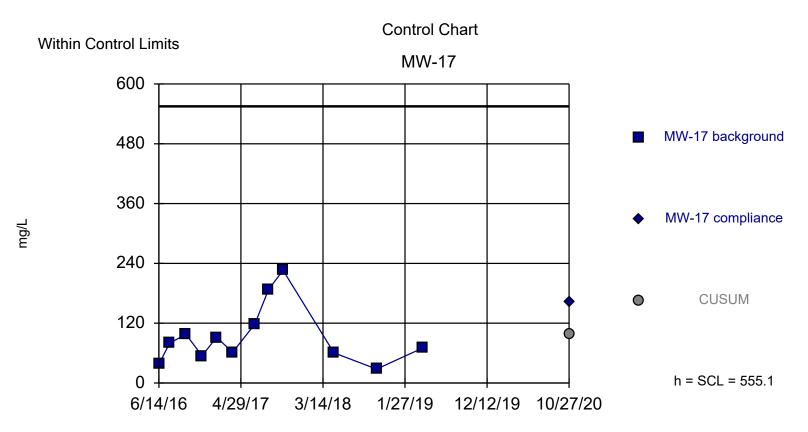
Background Data Summary: Mean=77.12, Std. Dev.=7.621, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8903, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Calcium Analysis Run 11/11/2020 10:14 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

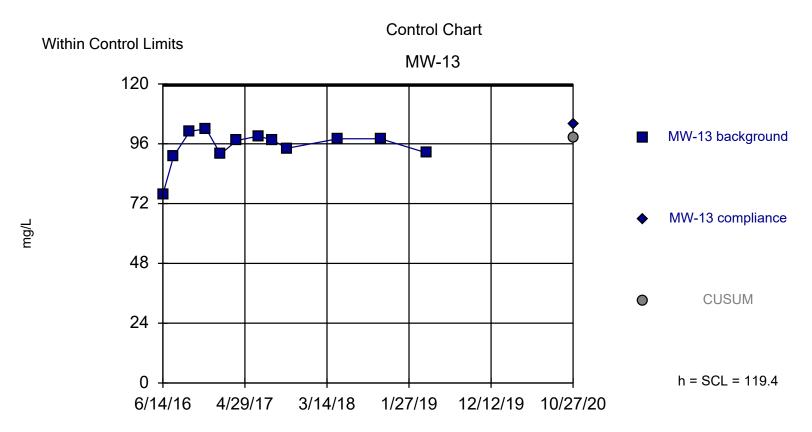


Background Data Summary: Mean=20.23, Std. Dev.=1.742, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9604, critical = 0.859. Report alpha = 0.000296. Dates ending 6/11/2019 used for control stats. Standardized h=5, SCL=5.

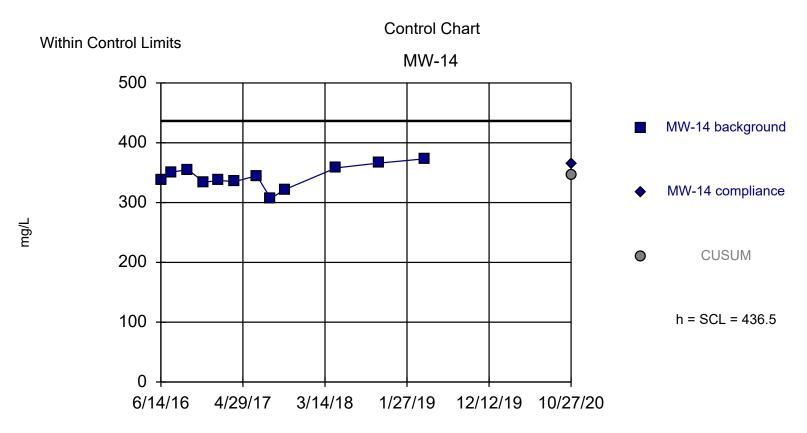
Constituent: Calcium Analysis Run 11/11/2020 10:14 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks



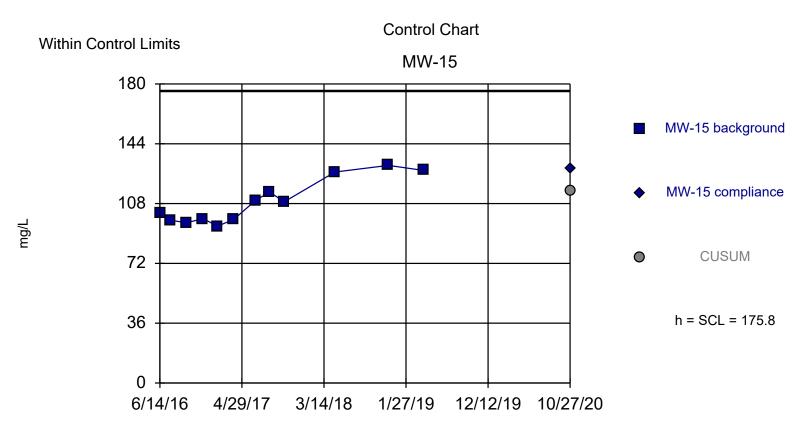
Background Data Summary (based on square root transformation): Mean=9.233, Std. Dev.=2.865, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9332, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



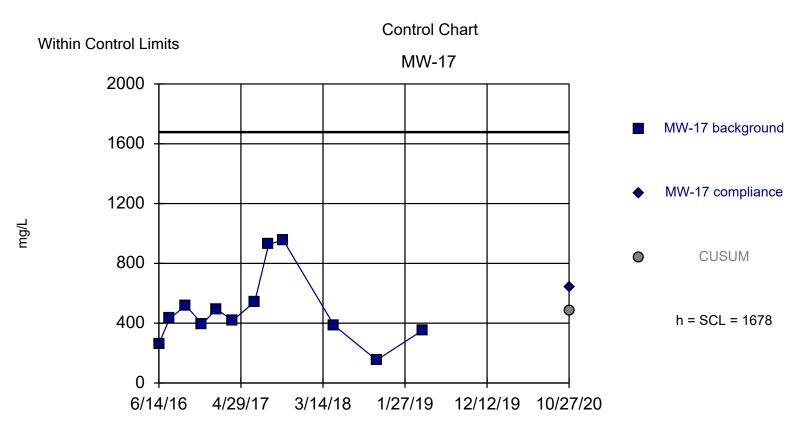
Background Data Summary (based on cube transformation): Mean=865191, Std. Dev.=167087, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8621, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=343.3, Std. Dev.=18.63, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9777, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



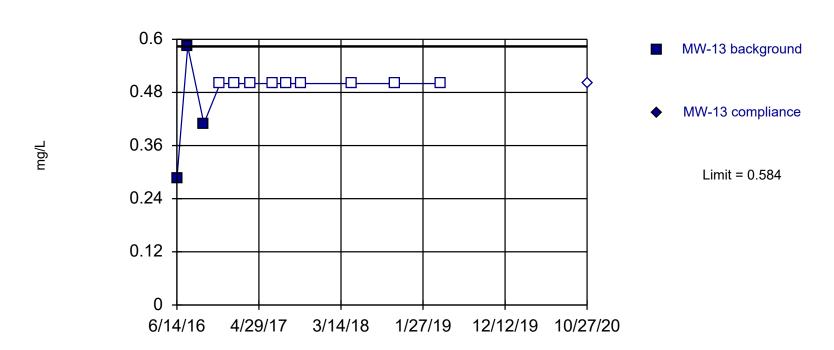
Background Data Summary: Mean=109, Std. Dev.=13.36, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=486.2, Std. Dev.=238.4, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8683, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Within Limit

### **Prediction Limit**

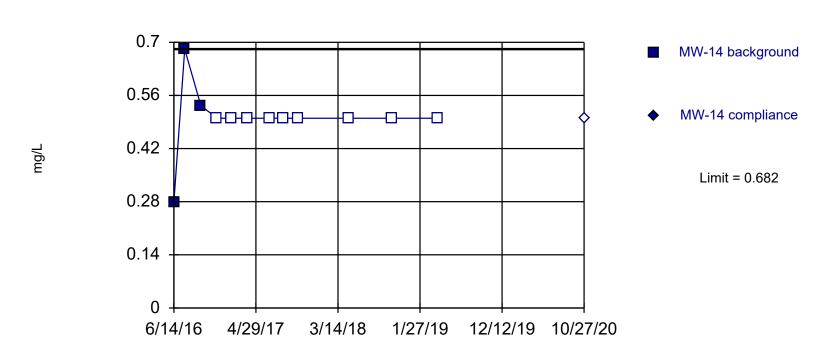


Intrawell Non-parametric

Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

Within Limit

### **Prediction Limit**



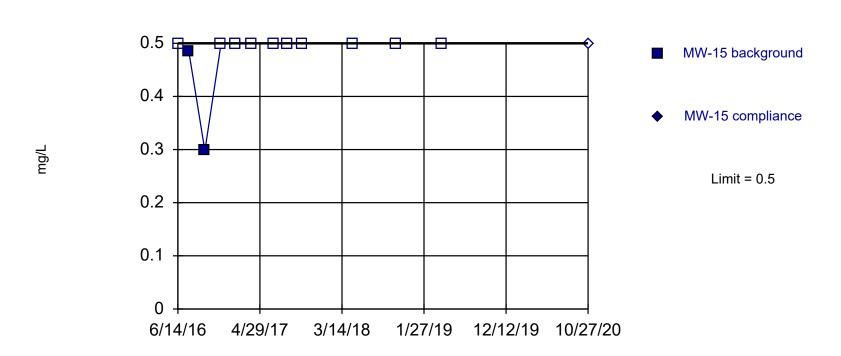
Intrawell Non-parametric

Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

Within Limit

### **Prediction Limit**

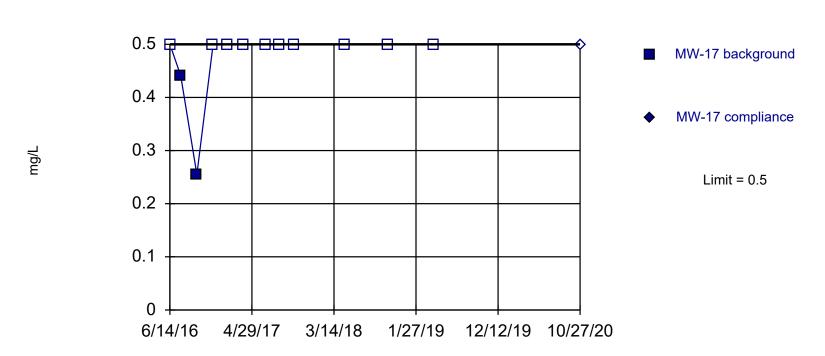
Intrawell Non-parametric



Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

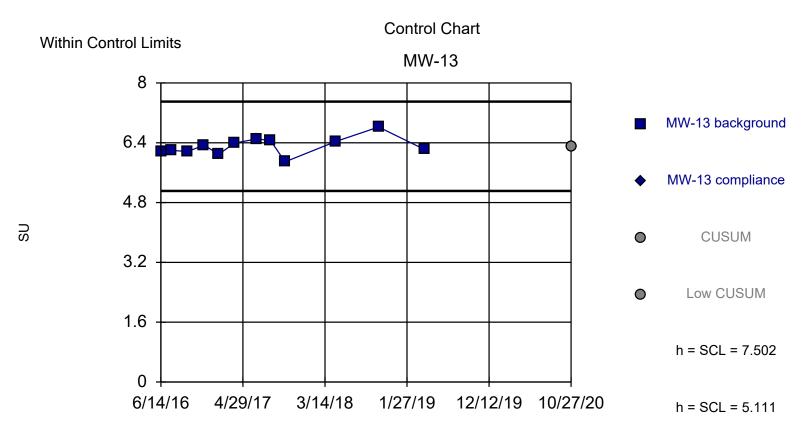
Within Limit

### **Prediction Limit**

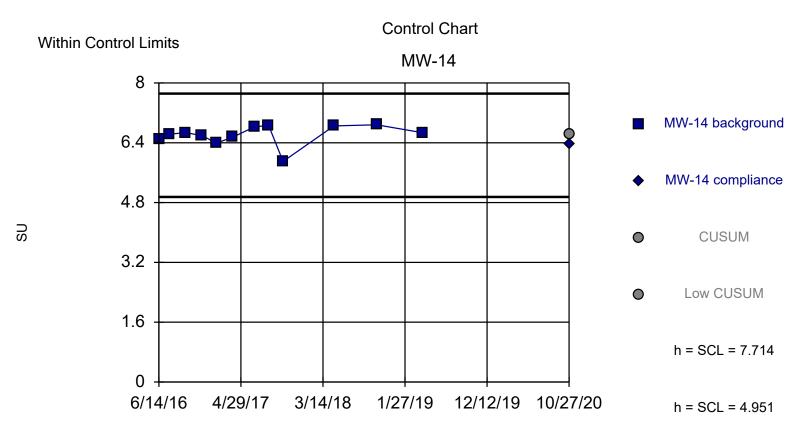


Intrawell Non-parametric

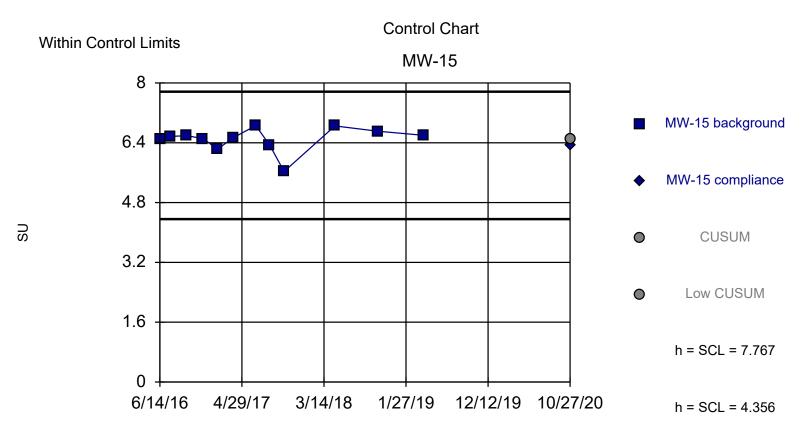
Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.



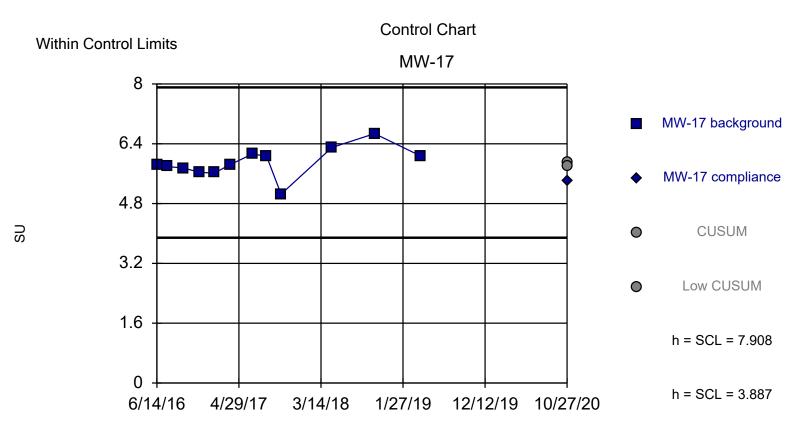
Background Data Summary: Mean=6.307, Std. Dev.=0.2392, n=12. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9658, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



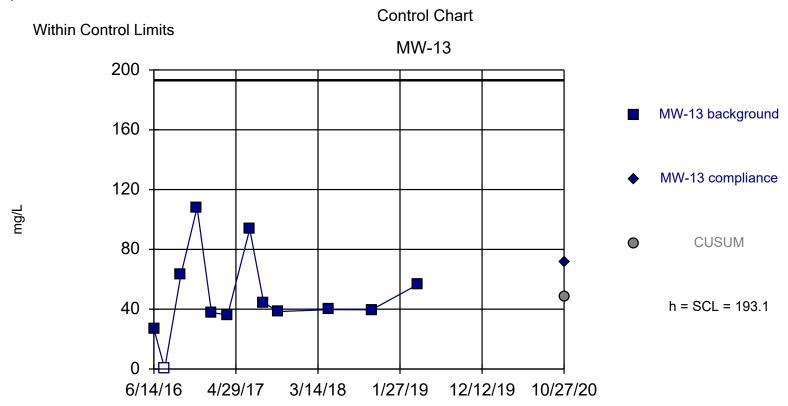
Background Data Summary (based on cube transformation): Mean=290.2, Std. Dev.=33.78, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



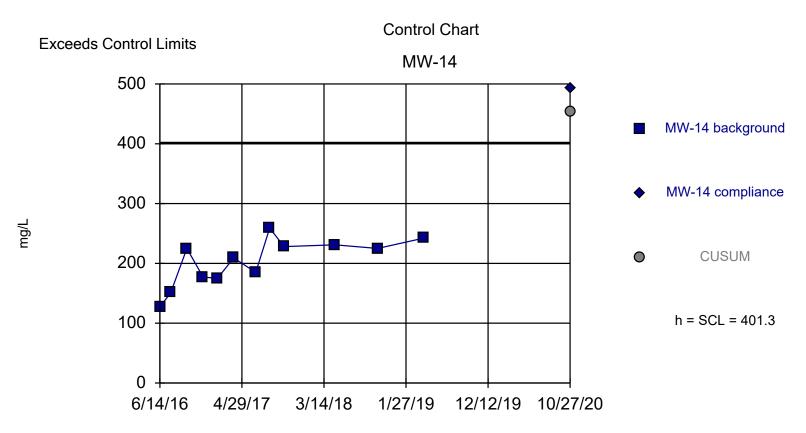
Background Data Summary (based on cube transformation): Mean=275.6, Std. Dev.=38.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8778, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



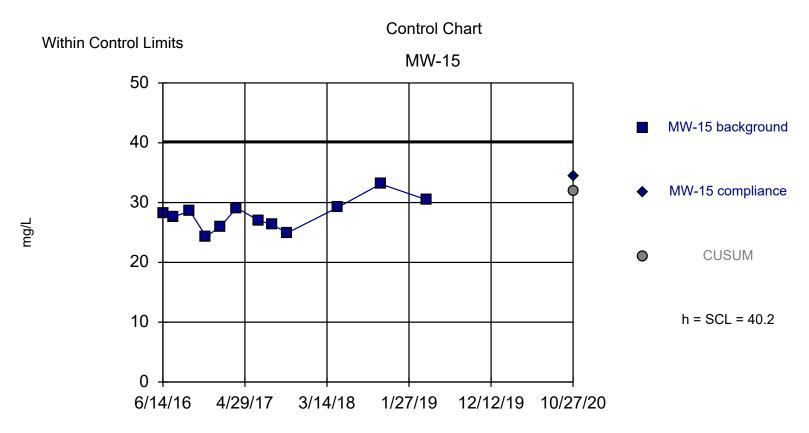
Background Data Summary: Mean=5.898, Std. Dev.=0.4021, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.962, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



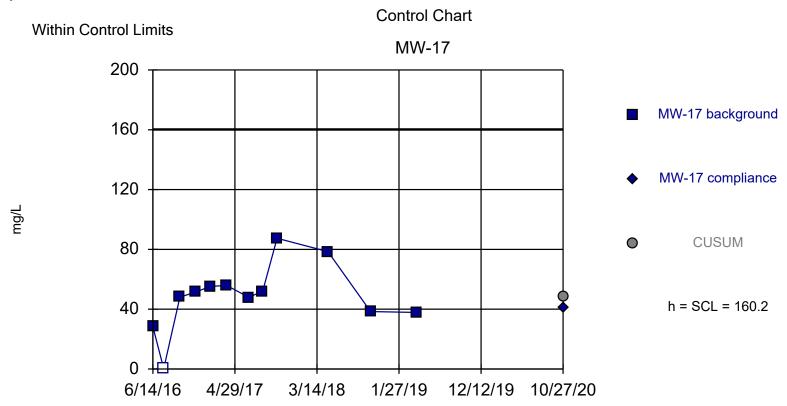
Background Data Summary: Mean=48.63, Std. Dev.=28.89, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9015, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



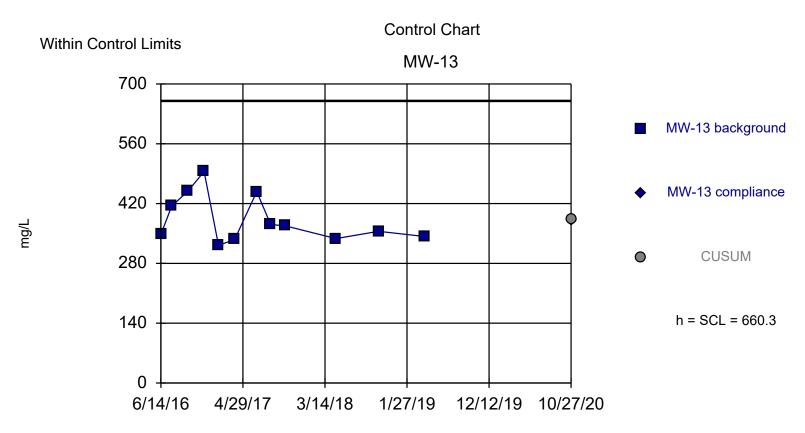
Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



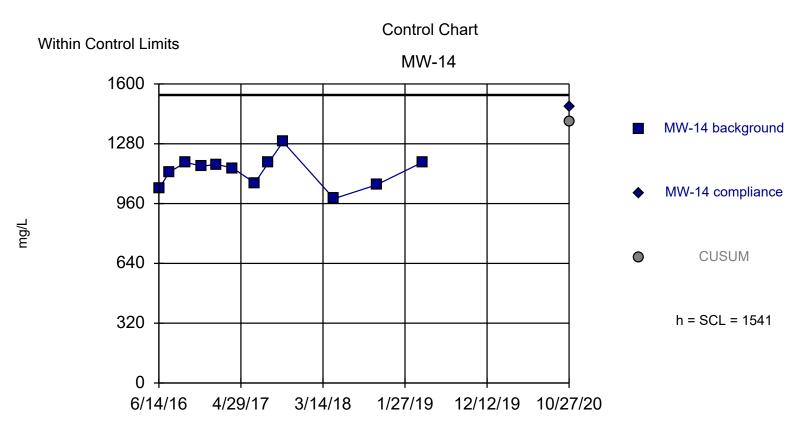
Background Data Summary: Mean=27.9, Std. Dev.=2.459, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9717, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



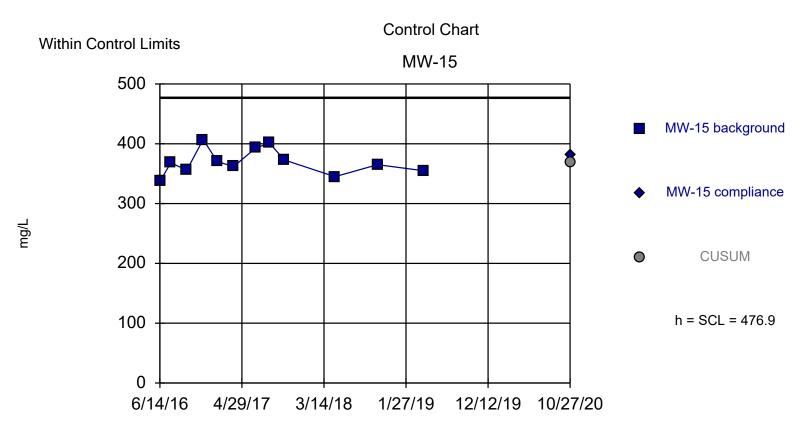
Background Data Summary: Mean=48.43, Std. Dev.=22.35, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9396, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



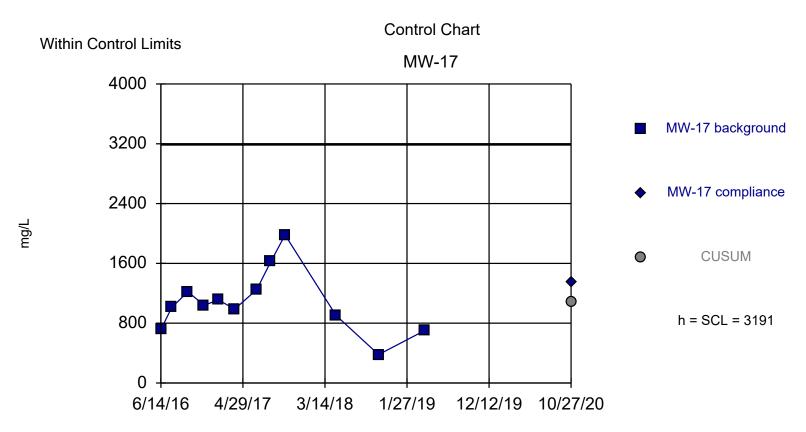
Background Data Summary: Mean=382.3, Std. Dev.=55.61, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8686, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=1133, Std. Dev.=81.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9416, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=369.3, Std. Dev.=21.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9458, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=1076, Std. Dev.=423, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9554, critical = 0.859. Report alpha = 0.000296. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

## **Prediction Limit**

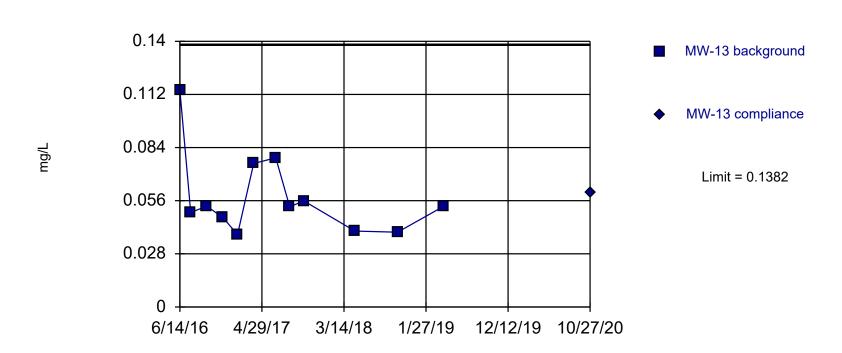
Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks Printed 11/11/2020, 10:19 AM

<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Boron (mg/L)	MW-13	0.1382	n/a	10/27/2020	0.0604	No	12	0	sqrt(x)	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-14	0.5796	n/a	10/27/2020	0.497	No	12	0	No	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-15	0.06917	n/a	10/27/2020	0.0399	No	12	0	No	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-17	0.362	n/a	10/27/2020	0.0237	No	11	0	n/a	0.01276	NP Intra (normality)



### **Prediction Limit**

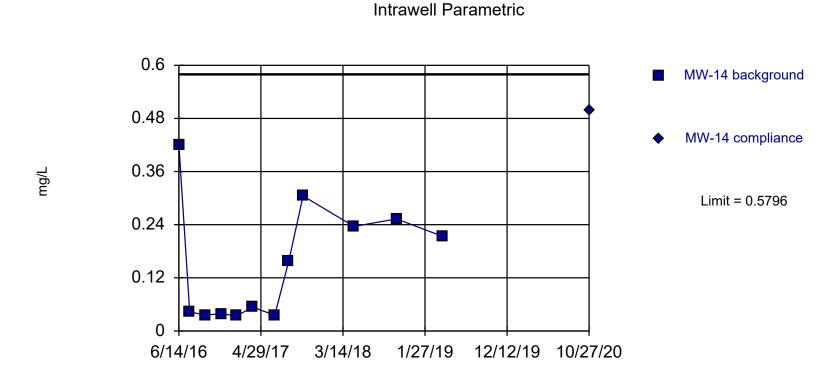
**Intrawell Parametric** 



Background Data Summary (based on square root transformation): Mean=0.2378, Std. Dev.=0.0413, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.



### **Prediction Limit**

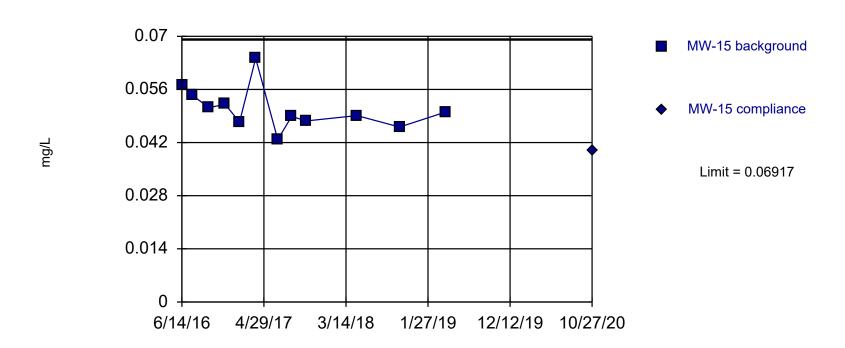


Background Data Summary: Mean=0.152, Std. Dev.=0.1319, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8434, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.

#### Within Limit

### **Prediction Limit**

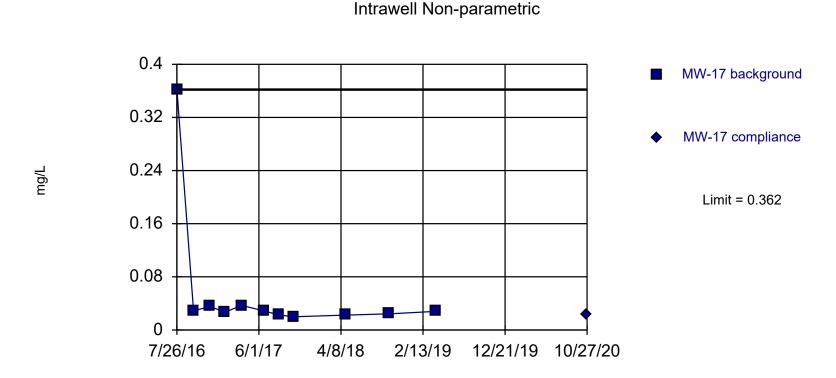
**Intrawell Parametric** 



Background Data Summary: Mean=0.05092, Std. Dev.=0.005627, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9255, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.

#### Within Limit

### **Prediction Limit**

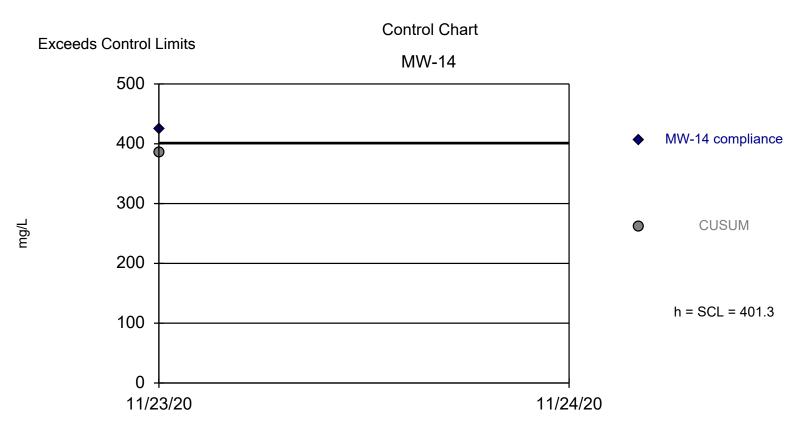


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 11 background values. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2). Seasonality was not detected with 95% confidence.

November 2020 Event Results of Statistical Calculations **Control Charts** 

## Shewhart-Cusum Control Chart / Rank Sum

	Twin Oaks Power Station C	CR LF	Client: Ma	ajor Oak Po	ower	Data: Twin Oaks	Printed 12/15/2020, 4	:32 PM
<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra



Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000272. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Appendix E

# 1<sup>st</sup> 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report

# 1<sup>st</sup> 2020 SEMI-ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

# TWIN OAKS POWER STATION

# COAL COMBUSTION RESIDUALS (CCR) LANDFILL

# **ROBERTSON COUNTY, TEXAS**

July 27, 2020

**Prepared By:** 



1120 NW Stallings Drive Nacogdoches, Texas 75964 TBPG Firm No. 50027

# 1<sup>st</sup> 2020 SEMI-ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

## TWIN OAKS POWER STATION

### **COAL COMBUSTION RESIDUALS (CCR) LANDFILL**

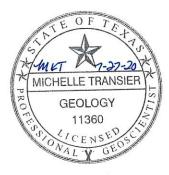
### **ROBERTSON COUNTY, TEXAS**

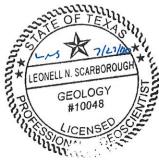
July 27, 2020

Michelle K. Transier, P.G. Geologist

Leonell N. Scarborough, P.G. Senior Hydrogeologist

Prepared by: Hydrex Environmental Nacogdoches, Texas TBPG Firm No. 50027





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Introduction	.1
Key Actions Completed and any Problems Encountered	.1
Summary of Sampling Events	. 1
Detection Monitoring	.1
First Semi-Annual Groundwater Monitoring Event (April 2020)	.2
Summary of Statistical Exceedances for the First Semi-Annual Groundwater	
Monitoring Event (April 2020)	. 2
Groundwater Elevation, Flow Rate, and Direction	. 2
Project Key Activities for 2020	. 3

### Appendices

Appendix A – Signed and Sealed Report Certification by Professional Engineer					
Certification Statement					
Appendix B – Groundwater Monitoring Program Summary Tables and Forms					
Monitoring Well Network and Program Summary Table					
Appendix C – Groundwater Elevation Data, Flow Rate Calculations, and Maps					
Groundwater Elevation Summary Table					
Groundwater Elevation Map					
Groundwater Flow Rate Calculations					
Appendix D – Analytical Results Summary and Statistical Evaluation Data					
Groundwater Monitoring Analytical Results Summary Table					
Laboratory Reports					
April 2020 Event – Results of Statistical Calculation					
July 2020 Event – Results of Statistical Calculation					

### Introduction

This 1<sup>st</sup> 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report for the Twin Oaks Power Station Coal Combustion Residuals ("CCR") Landfill ("the "facility") is prepared in accordance with the requirements of the facility's Groundwater Sampling and Analysis Plan ("GWSAP"), 30 TAC §352 Subchapter H, and the federal CCR Rule, 40 CFR Part 257, Subpart D. This semi-annual report summarizes the groundwater monitoring activities performed through the 1<sup>st</sup> 2020 semi-annual detection groundwater sampling event for the facility. The annual reporting requirements under the CCR Rule, the relevant CCR Rule citations, and the corresponding location of those required contents in this report are listed below:

Status of the groundwater monitoring program (§ 257.90(e)): ......Appendix B
Summary of key actions completed (§ 257.90(e)): .....p. 1
Any problems encountered and actions taken to resolve such problems (§ 257.90(e)): .....p. 2
Project key activities for the upcoming year (§ 257.90(e)): .....p. 2
Map, aerial image, or diagram of CCR Unit and monitoring wells (§ 257.90(e)(1)): ... Appendix C
Identification of new monitoring wells installed or abandoned during the preceding year and narrative description (§ 257.90(e)(2)): .....Not applicable.
No monitoring wells have been installed or abandoned at the facility in 2020.

### Key Actions Completed and any Problems Encountered

The monitoring network at the Twin Oaks Power Station CCR Landfill includes 8 monitoring wells (upgradient wells MW-7, MW-11, MW-12, and MW-16 and downgradient wells MW-13, MW-14, MW-15, and MW-17). Groundwater monitoring is performed in accordance with the facility's GWSAP, 30 TAC §352 Subchapter H, and 40 CFR Part 257, Subpart D. Specific sampling events and dates for calendar year 2020 are summarized in the following table:

#### Summary of Sampling Events

Event Date	Monitoring Wells (MW) Sampled	Event Type
April 28, 2020	MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17	Semi-Annual Detection Monitoring
July 9, 2020	MW-14	Verification Resampling

No significant problems were encountered during the sampling event in 2020.

#### **Detection Monitoring**

Detection monitoring is conducted at the Twin Oaks Power Station CCR Landfill on a semiannual schedule in accordance with applicable federal and state regulations. Laboratory analysis for detection events include those detection monitoring constituents listed in Table D-1 of the facility's GWSAP. A table of groundwater analytical results for all monitoring wells sampled during 2020 is included in Appendix C of this report.

#### First Semi-Annual Groundwater Monitoring Event (April 2020)

The first semi-annual detection monitoring event was conducted on April 28, 2020. Groundwater samples were obtained from monitoring wells MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, and MW-17 for analysis of detection monitoring constituents. Additionally, a duplicate sample was collected at monitoring well MW-11 and analyzed for all detection monitoring constituents. The duplicate sample provided comparable results for all constituents. Intrawell statistical evaluation of data from the April 2020 event, performed in accordance with the provisions of the GWSAP, 30 TAC §352.941, and 40 CFR § 257.94, indicated unverified ("initial") statistical exceedances for sulfate and total dissolved solids (TDS) in monitor well MW-14. Subsequently, verification resampling was conducted on July 9, 2020, as provided for and in accordance with the GWSAP. The results of verification resampling did not confirm the initial intrawell statistical exceedance value for TDS in MW-14. However, the results of verification resampling confirmed the intrawell statistical exceedance value for sulfate in MW-14 on July 17, 2020 and an SSI was determined on July 21, 2020. Review of data indicated that the values are likely the result of natural groundwater variation at the facility. In accordance with the facility's GWSAP, correspondence detailing an alternate source/error demonstration (ASD) will be submitted within the specified timeline.

A summary of the results of statistical evaluation is presented in the table below.

# Summary of Statistical Exceedances for the First Semi-Annual Groundwater Monitoring Event (April 2020)

Well	Constituent	Initial Result (mg/L)	Statistical Limit (mg/L)	Verification Result (mg/L)	Intrawell Statistical Exceedance Confirmed?	Recommendation
	sulfate	467	401.3	448	Yes	Alternate Source/Error Demonstration
MW-14	TDS	1680	1541	1490	No	Maintain Detection Monitoring

Monitoring wells MW-7, MW-11, MW-12, MW-13, MW-15, MW-16, and MW-17 remain in detection monitoring status. Monitoring well MW14 also remains in detection monitoring status pending the outcome of the ASD.

#### Groundwater Elevation, Flow Rate, and Direction

Water levels were measured in all monitoring wells prior to purging in accordance with the GWSAP. A table summarizing groundwater elevation data collected during the April 2020 detection monitoring event is included in Appendix B. Hydraulic gradient and flow rate calculations, along with a groundwater elevation map showing groundwater flow direction for the April 2020 detection monitoring event, are also included in Appendix B.

#### **Project Key Activities for 2020**

Based on the data available at the time of this report, the detection monitoring program currently in place for the Twin Oaks Power Station CCR Landfill meets the requirements of applicable regulations. Therefore, no change to the groundwater monitoring system, monitoring schedule, or monitoring program is proposed.

Appendix A

# **CERTIFICATION STATEMENT**

## COAL COMBUSTION RESIDUALS (CCR) LANDFILL TWIN OAKS POWER STATION ROBERTSON COUNTY, TEXAS

I certify I am a licensed professional engineer in the State of Texas and a *qualified professional engineer* as defined in 40 CFR §257.53. I certify that the groundwater monitoring data presented in the 1<sup>st</sup> 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report, prepared by Hydrex Environmental on behalf of the Twin Oaks Power Station, are appropriate and meet the requirements of 40 CFR Part 257, Subpart D.



John J. Tayntor, P.E. Auckland Consulting, LLC TBPE Firm Registration No. F-16721

July 24, 2020

Date

Appendix B

## Monitoring Well Network and Program Summary

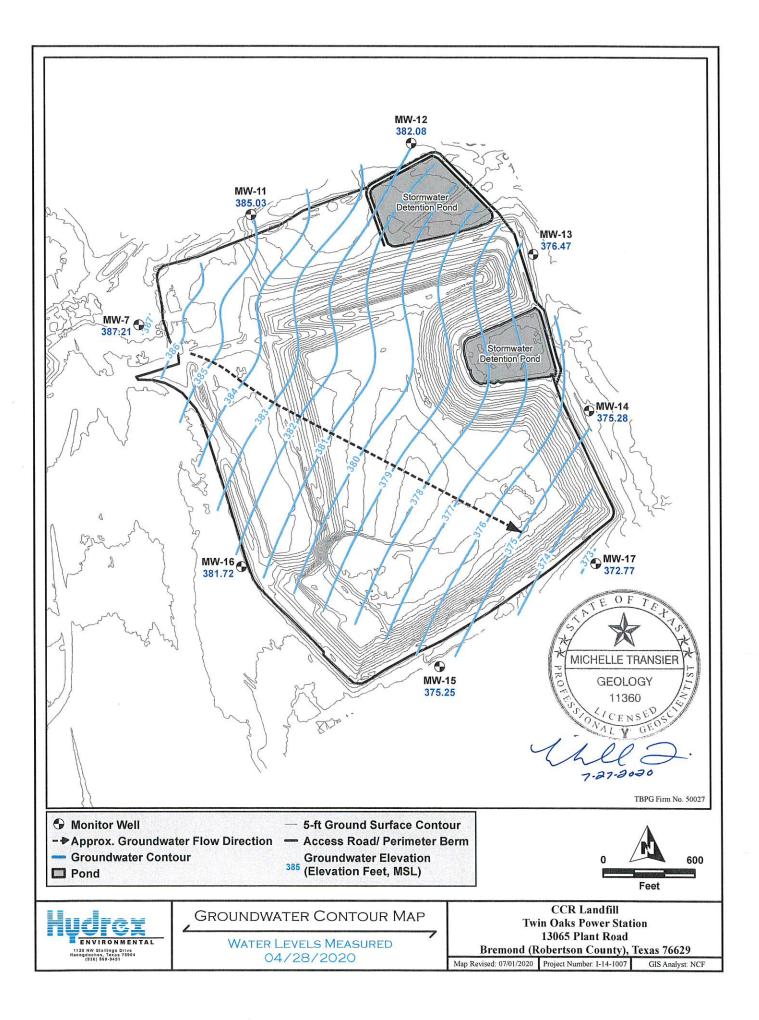
Well ID	Well Designation	Aquifer	2020
weirid	well Designation	Aquiler	Monitoring Status
MW-7	Upgradient	Uppermost	Detection Monitoring
MW-11	Upgradient	Uppermost	Detection Monitoring
MW-12	Upgradient	Uppermost	Detection Monitoring
MW-13	Downgradient	Uppermost	Detection Monitoring
MW-14	Downgradient	Uppermost	Detection Monitoring
MW-15	Downgradient	Uppermost	Detection Monitoring
MW-16	Upgradient	Uppermost	Detection Monitoring
MW-17	Downgradient	Uppermost	Detection Monitoring

Appendix C

#### Groundwater Elevation Summary Table

Twin Oaks Power Station Coal Combustion Residuals (CCR) Landfill Robertson County, Texas

Well ID	Date	Top of Casing Elevation (ft-amsl)	Depth to Water (ft)	Groundwater Elevation (ft-amsl)
MW-7	4/28/2020	411.60	24.39	387.21
MW-11	4/28/2020	406.93	21.90	385.03
MW-12	4/28/2020	387.27	5.19	382.08
MW-13	4/28/2020	398.32	21.85	376.47
MW-14	4/28/2020	394.68	19.40	375.28
MW-15	4/28/2020	410.47	35.22	375.25
MW-16	4/28/2020	422.54	40.82	381.72
MW-17	4/28/2020	405.87	33.10	372.77



Twin Oaks Power Station Coal Combustion Residuals Landfill

#### **Groundwater Flow Rate Calculations**

Approximate hydraulic gradients were calculated based on data presented on the individual groundwater gradient map for the April 2020 monitoring event.

Calculation of hydraulic gradient was performed using the following equation:

 $i = \frac{\Delta h}{\Delta d}$  Where:  $\Delta h$  = approximate change in hydraulic head between two known points  $\Delta d$  = approximate change in distance between two known points along flow paths

Gradient Measurement Line	$\Delta h$ (feet)	$\Delta d$ (feet)	i (feet/feet)	Monitoring Event
from well MW-7 to MW-17	14.44	3370	0.0043	April 2020

#### Estimated Flow Rate Calculations

The estimated groundwater flow rate was calculated for each monitoring event using the following formula:

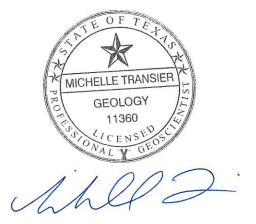
 $v = \frac{ki}{n_e}$ 

Where: v = flow rate k = hydraulic conductivity i = hydraulic gradient (above) n<sub>e</sub> = effective porosity

Flow Rate Measurement Line	k (cm/sec)	n <sub>e</sub>	i (feet/feet)	v (feet/year)	Monitoring Event
from well MW-7 to MW-17	4.85E-03	0.3	0.0043	71.97	April 2020

Note: Hydraulic conductivity (k) and effective porosity (n e) values as derived from slug test results conducted March 2016.

Hydrex Environmental TBPG Firm No. 50027



7-27-2020

Appendix D

#### Groundwater Monitoring Analytical Results Summary Table

Twin Oaks Power Station Coal Combustion Residuals (CCR) Landfill Robertson County, Texas

			Detecti	on Monitori	ing Constit	uents (Appe	ndix III)							Assessn	nent Monito	ring Consti	tuents (App	endix IV)					
Well ID	Sampling Date	Boron (mg/L)	Total Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	(NS) Hd	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Cobalt (mg/L)	Fluoride (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Selenium (mg/L)	Total Thalium (mg/L)	Radium 226 & 228 (Combined) (pCi/L)
MW-7	04/28/20	0.322	268	274	<0.500	6.42	1550	1780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11	04/28/20	0.14	137	185	<0.500	6.42	606	1170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	04/28/20	0.0304	16.9	76.9	<0.500	6.47	43.4	275	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13	04/28/20	0.075	31.1	103	< 0.500	6.55	72.2	403	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Васкдго	ound Limits*	0.1382	37.7	119.4	0.584	4.847-7.797	193.1	660.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14	04/28/20	0.322	106	370	<0.500	6.80	467	1680	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-14 Backgro	07/09/20 ound Limits*	NA 0.5796	NA 115.2	NA 436.5	NA 0.682	NA 4.951-7.714	448 401.3	1490 1541	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	0.4/00/00	0.0407	01.0	110	<0.500	0.01	20.4	220					1										
MW-15 Backgro	04/28/20 ound Limits*	0.0427 0.06917	21.8 28.93	119 175.8	<0.500 0.5	6.61 4.356-7.747	38.1 40.2	338 476.9	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
MW-16	04/28/20	0.0257	87.1	371	<0.500	6.53	129	960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-17 Backgro	04/28/20 ound Limits*	0.0227	156 555.1	706 1678	<0.500 0.5	5.83 3.887-7.908	55.2 160.2	1210 3191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
-		0.302			0.5		2016 and 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

\*Background limits are intrawell statistcal limits including data collected between June 2016 and July 2019.

Laboratory Reports



# Analytical Report 660223

for

## **Hydrex Environmental**

**Project Manager: Michelle Transier** 

Twin Oaks PP I-14-1007

#### 07.24.2020

Collected By: Client



4147 Greenbriar Dr. Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



07.24.2020 Project Manager: **Michelle Transier Hydrex Environmental** 1120 NW Stallings Dr Nacogdoches, TX 75964

Reference: Eurofins Xenco, LLC Report No(s): 660223 Twin Oaks PP Project Address:

#### Michelle Transier:

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 Eurofins Xenco, LLC Report Number(s) 660223. 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 Eurofins Xenco, LLC. 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. 660223 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ched a. Beitite

Chad Bechtold Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



# Sample Cross Reference 660223

## Hydrex Environmental, Nacogdoches, TX

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-7	W	04.28.2020 12:42		660223-001
MW-11	W	04.28.2020 13:12		660223-002
MW-12	W	04.28.2020 13:48		660223-003
MW-13	W	04.28.2020 14:56		660223-004
MW-14	W	04.28.2020 15:22		660223-005
MW-15	W	04.28.2020 16:07		660223-006
MW-16	W	04.28.2020 14:20		660223-007
MW-17	W	04.28.2020 16:35		660223-008
Duplicate	W	04.28.2020 13:12		660223-009

#### CASE NARRATIVE SUMMARY



#### Client Name: Hydrex Environmental Project Name: Twin Oaks PP

 Project ID:
 I-14-1007
 Report Date:
 07.24.2020

 Work Order Number:
 660223
 Date Received:
 04.30.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

pH should be analyzed immediately. Per client request the laboratory performed pH analysis. The results were qualified with a "K".

Report Revision: The report format was revised.

Ched a. Beitites

Chad Bechtold Project Manager



## Hydrex Environmental, Nacogdoches, TX

Analytical Met	: 660223-001		Matrix: Date Coll	Water ected: 04.28.2020 12:42		Date Received:04.3	0.2020 09	:30
-		FPA 300.0				Prep Method: E30	0P	
Tech:	JYM	LI / 1 500.0				% Moisture:	51	
	JYM		Date Prep	o: 05.01.2020 10:30		/o worstare.		
Seq Number:			Date Fief	). 05.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	274	0.500	mg/L	05.01.2020 14:32	Tiag	1
Fluoride		16984-48-8	<0.500	0.500	mg/L mg/L	05.01.2020 14:32	U	1
Sulfate		14808-79-8	1550	5.00	mg/L	05.01.2020 14:44	D	10
	hod: TDS by SM2540	С						
	YAV					% Moisture:		
-	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Total Dissolved S	Solids	1642222	1780	5.00	mg/L	05.05.2020 13:00		1
Analytical Met	hod: pH by SM4500-F KBU	I				% Moisture:		
Tech:	KBU							
Tech: Analyst: Seq Number:	KBU	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Tech: Analyst: Seq Number: <b>Parameter</b>	KBU	<b>Cas Number</b> 12408-02-5	Result 6.42	RL	Units SU	<b>Analysis Date</b> 05.01.2020 11:48	Flag K	
Tech: Analyst:	KBU			RL				<b>Di</b> l
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Met Tech:	KBU 3124764 hod: Boron by Method MLI DEP	12408-02-5 TEMP	6.42		SU	05.01.2020 11:48	K K	1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Met Tech: Analyst:	KBU 3124764 hod: Boron by Method MLI DEP	12408-02-5 TEMP	6.42 25.8		SU	05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	



## Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-7 Lab Sample Id: 660223-001		Matrix: Date Colle	Water ected: 04.28.2020 12:42		Date Received:04.3	0.2020 09	9:30
Analytical Method: Calcium by Meth Tech: MLI Analyst: DEP	nod 6010B	Date Prep	: 05.01.2020 10:00		Prep Method: SW: % Moisture:	3010A	
Seq Number: 3124875 Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	268	10.0	mg/L	05.01.2020 19:41	D	50



## Hydrex Environmental, Nacogdoches, TX

Lab Sample Id	<b>MW-11</b> 1: 660223-002		Matrix: Date Col	Water lected: 04.28.2020 13:12		Date Received:04.3	0.2020 09	9:30
	ethod: Cl, F, & SO4 1	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	<i>by</i> E111500.0				% Moisture:		
Analyst:	JYM		Date Pre	p: 05.01.2020 10:30		, o monstare.		
Seq Number:				p. 05.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	185	0.500	mg/L	05.01.2020 14:56		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 14:56	U	1
Sulfate		14808-79-8	606	5.00	mg/L	05.01.2020 16:56	D	10
Analytical Me	thod: TDS by SM25	540C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	1170	5.00	mg/L	05.05.2020 13:00		1
	thod: pH by SM450 KBU KBU		1170	5.00	mg/L	05.05.2020 13:00 % Moisture:		1
Analytical Me Tech: Analyst: Seq Number:	thod: pH by SM450 KBU KBU		1170 Result	5.00 RL	mg/L Units		Flag	1 Dil
Analytical Me Tech: Analyst: Seq Number: <b>Parameter</b>	thod: pH by SM450 KBU KBU	0-Н			-	% Moisture:	Flag	
Analytical Me Tech: Analyst:	thod: pH by SM450 KBU KBU	0-H Cas Number	Result		Units	% Moisture: Analysis Date		Dil
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	ethod: pH by SM450 KBU 3124764 ethod: Boron by Meth MLI DEP	0-Н <b>Cas Number</b> 12408-02-5 ТЕМР	Result 6.42	RL	Units SU	% Moisture: <b>Analysis Date</b> 05.01.2020 11:48	K K	Dil
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech:	ethod: pH by SM450 KBU 3124764 ethod: Boron by Meth MLI DEP	0-Н <b>Cas Number</b> 12408-02-5 ТЕМР	Result 6.42 25.8	RL	Units SU	% Moisture: Analysis Date 05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	<b>Dil</b>



## Hydrex Environmental, Nacogdoches, TX

Sample Id:MW-11Lab Sample Id:660223-002		Matrix: Date Col	Water lected: 04.28.2020 13:12		Date Received:04.3	0.2020 09	9:30
Analytical Method:Calcium by MethTech:MLIAnalyst:DEPSeq Number:3124875	nod 6010B	Date Prej	o: 05.01.2020 10:00		Prep Method: SW3 % Moisture:	3010A	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	137	10.0	mg/L	05.01.2020 19:45	D	50



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample I	<b>MW-12</b> d: 660223-003		Matrix: Date Coll	Water lected: 04.28.2020 13:48		Date Received:04.3	0.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4 b	ov EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	<i>y</i>				% Moisture:		
Analyst:	JYM		Date Prep	o: 05.01.2020 10:30				
Seq Number:			Duterrep					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Chloride		16887-00-6	76.9	0.500	mg/L	05.01.2020 15:08		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 15:08	U	1
Sulfate		14808-79-8	43.4	0.500	mg/L	05.01.2020 15:08		1
Analytical Mo	ethod: TDS by SM25	40C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Total Dissolved	Solids	1642222	275	5.00	mg/L	05.05.2020 13:00		1
Analytical Mo Tech: Analyst: Seq Number:	ethod: pH by SM4500 KBU KBU 3124764	)-Н				% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
		Cas Number 12408-02-5	Result	RL	Units SU	Analysis Date 05.01.2020 11:48	Flag K	<b>Di</b>
Parameter pH Temperature				RL		-		]
pH Temperature Analytical Mo Tech: Analyst:	ethod: Boron by Meth MLI DEP	12408-02-5 TEMP	6.47		SU	05.01.2020 11:48	K K	
pH Temperature Analytical Mo Tech:	MLI DEP	12408-02-5 TEMP	6.47 25.9		SU	05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	1
pH Temperature Analytical Mo Tech: Analyst:	MLI DEP	12408-02-5 TEMP	6.47 25.9		SU	05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	



## Hydrex Environmental, Nacogdoches, TX

Sample Id:         MW-12           Lab Sample Id:         660223-003		Matrix: Date Coll	Water ected: 04.28.2020 13:48		Date Received:04.3	0.2020 09	:30
Analytical Method: Calcium by Meth Tech: MLI	od 6010B				Prep Method: SW3 % Moisture:	3010A	
Analyst: DEP Seq Number: 3124875		Date Prep	: 05.01.2020 10:00				
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	16.9	0.200	mg/L	05.01.2020 19:28		1



## Hydrex Environmental, Nacogdoches, TX

Lab Sample Io	<b>MW-13</b> d: 660223-004		Matrix: Date Col	Water lected: 04.28.2020 14:56		Date Received:04.3	0.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4 b	w FPA 300.0				Prep Method: E30	ΩP	
Tech:	JYM	y EI II 500.0				% Moisture:	01	
Analyst:	JYM		Date Pre	p: 05.01.2020 10:30		/o Wolsture.		
Seq Number:			Date Fie	p. 05.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Chloride		16887-00-6	103	0.500	mg/L	05.01.2020 15:20	g	1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 15:20	U	1
Sulfate		14808-79-8	72.2	0.500	mg/L	05.01.2020 15:20		1
Analvtical M€	ethod: TDS by SM254	40C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:								
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
						<b>J</b>		
Total Dissolved	Solids	1642222	403	5.00	mg/L	05.05.2020 13:00		1
Analytical Me Tech: Analyst:	ethod: pH by SM450( KBU KBU		403	5.00	mg/L	05.05.2020 13:00 % Moisture:		1
Analytical Me Tech: Analyst: Seq Number:	ethod: pH by SM450( KBU KBU		403 Result	5.00 RL	-	% Moisture:	Flag	
Analytical Me Tech: Analyst: Seq Number: <b>Parameter</b>	ethod: pH by SM450( KBU KBU	)-H Cas Number	Result		Units	% Moisture: Analysis Date	Flag	1 Di
Tech: Analyst:	ethod: pH by SM450( KBU KBU	)-Н			-	% Moisture:	Flag K K	<b>Di</b>
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature	ethod: pH by SM4500 KBU 3124764 ethod: Boron by Meth MLI DEP	D-H <b>Cas Number</b> 12408-02-5 ТЕМР	Result 6.55	RL	Units SU	% Moisture: Analysis Date 05.01.2020 11:48	K K	<b>Di</b>
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	ethod: pH by SM4500 KBU 3124764 ethod: Boron by Meth MLI DEP	D-H <b>Cas Number</b> 12408-02-5 ТЕМР	Result 6.55 25.7	RL	Units SU	% Moisture: Analysis Date 05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	



## Hydrex Environmental, Nacogdoches, TX

Sample Id: <b>MW-13</b> Lab Sample Id: 660223-004		Matrix: Date Coll	Water ected: 04.28.2020 14:56		Date Received:04.3	0.2020 09	:30
Analytical Method: Calcium by Meth Tech: MLI	nod 6010B				Prep Method: SW3 % Moisture:	3010A	
Analyst: DEP Seq Number: 3124875		Date Prep	: 05.01.2020 10:00				
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	31.1	0.200	mg/L	05.01.2020 19:33		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-14</b> d: 660223-005		Matrix: Date Col	Water lected: 04.28.2020 15:22		Date Received:04.3	0.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	09 2111 00010				% Moisture:		
Analyst:	JYM		Date Pre	p: 05.01.2020 10:30				
Seq Number:			Date Tre	p. 00.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	370	0.500	mg/L	05.01.2020 15:32		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 15:32	U	1
Sulfate		14808-79-8	467	5.00	mg/L	05.01.2020 17:44	D	10
Analytical Me	thod: TDS by SM25	540C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Total Dissolved	Solids	1642222	1680	5.00	mg/L	05.05.2020 13:00		1
	ethod: pH by SM450 KBU KBU		1680	5.00	mg/L	05.05.2020 13:00 % Moisture:		1
Analytical Me Tech: Analyst: Seq Number:	ethod: pH by SM450 KBU KBU		1680 Result	5.00 RL	mg/L Units		Flag	1 Dil
Analytical Me Tech: Analyst: Seq Number: <b>Parameter</b>	ethod: pH by SM450 KBU KBU	ю-н			-	% Moisture:	Flag	
Tech: Analyst:	ethod: pH by SM450 KBU KBU	Ю-Н Cas Number	Result		Units	% Moisture: Analysis Date		Di
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature	ethod: pH by SM450 KBU 3124764 ethod: Boron by Met MLI DEP	00-Н Саз Number 12408-02-5 ТЕМР	Result 6.80	RL	Units	% Moisture: Analysis Date 05.01.2020 11:48	K K	Di
Analytical Me Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	ethod: pH by SM450 KBU 3124764 ethod: Boron by Met MLI DEP	00-Н Саз Number 12408-02-5 ТЕМР	Result 6.80 25.2	RL	Units	% Moisture: Analysis Date 05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	Dil



## Hydrex Environmental, Nacogdoches, TX

Sample Id:         MW-14           Lab Sample Id:         660223-005		Matrix: Date Colle	Water ected: 04.28.2020 15:22		Date Received:04.3	0.2020 09	9:30
Analytical Method:Calcium by MethTech:MLIAnalyst:DEPSeq Number:3124875	nod 6010B	Date Prep	: 05.01.2020 10:00		Prep Method: SW % Moisture:	3010A	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	106	10.0	mg/L	05.01.2020 19:58	D	50



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-15</b> d: 660223-006		Matrix: Date Coll	Water ected: 04.28.2020 16:07		Date Received:04.3	0.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4 by	EPA 300.0				Prep Method: E30	)P	
Tech:	JYM	2111 20010				% Moisture:		
Analyst:	JYM		Date Prep	. 05.01.2020 10:30		,		
Seq Number:			Date Trep	. 03.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	119	0.500	mg/L	05.01.2020 15:44		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 15:44	U	1
Sulfate		14808-79-8	38.1	0.500	mg/L	05.01.2020 15:44		1
Analytical Me	ethod: TDS by SM2540	)C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	338	5.00	mg/L	05.05.2020 13:00		1
Analytical Me Tech: Analyst: Seq Number:	ethod: pH by SM4500- KBU KBU 3124764	Н				% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.61		SU	05.01.2020 11:48	K	1
I.			0.01				11	
r Temperature		TEMP	23.8		Deg C	05.01.2020 11:48	K	1
Temperature	ethod: Boron by Metho MLI DEP 3125006	TEMP		o: 05.04.2020 10:05			К	
Temperature Analytical Me Tech: Analyst:	MLI DEP	TEMP	23.8	o: 05.04.2020 10:05 RL		05.01.2020 11:48 Prep Method: SW3	К	



## Hydrex Environmental, Nacogdoches, TX

Sample Id:         MW-15           Lab Sample Id:         660223-006		Matrix: Date Coll	Water ected: 04.28.2020 16:07		Date Received:04.3	0.2020 09	:30
Analytical Method: Calcium by Meth Tech: MLI	od 6010B				Prep Method: SW3 % Moisture:	3010A	
Analyst: DEP Seq Number: 3124875		Date Prep	: 05.01.2020 10:00				
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	21.8	0.200	mg/L	05.03.2020 16:11		1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-16</b> d: 660223-007		Matrix: Date Coll	Water ected: 04.28.2020 14:20		Date Received:04.3	0.2020 09	9:30
Analytical Me	ethod: Cl, F, & SO4 by	EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	2111 20010				% Moisture:		
Analyst:	JYM		Date Prep	. 05.01.2020 10:30		,		
Seq Number:			Date Trep	. 03.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	371	0.500	mg/L	05.01.2020 15:56		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 15:56	U	1
Sulfate		14808-79-8	129	0.500	mg/L	05.01.2020 15:56		1
Analytical Me	ethod: TDS by SM254(	)C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	960	5.00	mg/L	05.05.2020 13:00		1
Analytical Ma Tech: Analyst: Seq Number:	ethod: pH by SM4500- KBU KBU 3124764	Н				% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.53		SU	05.01.2020 11:48	K	1
•		TEMP	24.6		Deg C	05.01.2020 11:48	Κ	1
Temperature		TEMP	24.6		Deg C	05.01.2020 11:48		К
Tech: Analyst:	ethod: Boron by Metho MLI DEP	d 6020A	Date Prep	o: 05.04.2020 10:05		Prep Method: SW3 % Moisture:	3010A	
Tech:	MLI DEP	d 6020A	Date Prep	o: 05.04.2020 10:05			3010A	
Tech: Analyst:	MLI DEP	d 6020A Cas Number	Date Prep Result	e: 05.04.2020 10:05 RL	Units		3010A Flag	Dil



## Hydrex Environmental, Nacogdoches, TX

Sample Id:         MW-16           Lab Sample Id:         660223-007		Matrix: Date Coll	Water ected: 04.28.2020 14:20		Date Received:04.3	0.2020 09	9:30
Analytical Method: Calcium by Me Tech: MLI Analyst: DEP Seq Number: 3124875	thod 6010B	Date Prep	b: 05.01.2020 10:00		Prep Method: SW3 % Moisture:	3010A	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	87.1	10.0	mg/L	05.03.2020 16:32	D	50



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>MW-17</b> d: 660223-008		Matrix: Date Col	Water lected: 04.28.2020 16:35		Date Received:04.3	0.2020 09	0:30
Analytical Me	ethod: Cl, F, & SO4	by EPA 300.0				Prep Method: E30	0P	
Tech:	JYM	<i>y</i>				% Moisture:		
Analyst:	JYM		Date Pre	p: 05.01.2020 10:30				
Seq Number:	3124832		2	P				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	706	5.00	mg/L	05.01.2020 17:56	D	10
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 16:08	U	1
Sulfate		14808-79-8	55.2	0.500	mg/L	05.01.2020 16:08		1
Analytical Me	ethod: TDS by SM2	540C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Di
Total Dissolved	Solids	1642222	1210	5.00	mg/L	05.05.2020 13:00		1
Analytical Mo Tech: Analyst: Seq Number:	ethod: pH by SM45( KBU KBU 3124764	00-Н				% Moisture:		
Tech: Analyst: Seq Number:	KBU KBU	00-H Cas Number	Result	RL	Units	% Moisture: Analysis Date	Flag	Dil
Tech: Analyst: Seq Number: <b>Parameter</b>	KBU KBU		Result 5.83	RL	Units SU		Flag	<b>Di</b> 1
Tech: Analyst:	KBU KBU	Cas Number		RL		Analysis Date	0	1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	KBU KBU 3124764 ethod: Boron by Me MLI DEP	Cas Number 12408-02-5 TEMP	5.83		SU	<b>Analysis Date</b> 05.01.2020 11:48	K K	1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst: Seq Number:	KBU KBU 3124764 ethod: Boron by Me MLI DEP	Cas Number 12408-02-5 TEMP thod 6020A	5.83 25.7 Date Prej	p: 05.04.2020 10:05	SU Deg C	Analysis Date 05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3 % Moisture:	к К 3010А	1
Tech: Analyst: Seq Number: Parameter pH Temperature Analytical Me Tech: Analyst:	KBU KBU 3124764 ethod: Boron by Me MLI DEP	Cas Number 12408-02-5 TEMP	5.83 25.7		SU	<b>Analysis Date</b> 05.01.2020 11:48 05.01.2020 11:48 Prep Method: SW3	K K	1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: MW-17 Lab Sample Id: 660223-008		Matrix: Date Col	Water lected: 04.28.2020 16:35		Date Received:04.3	0.2020 09	:30
Analytical Method: Calcium by M Tech: MLI	Aethod 6010B				Prep Method: SW3 % Moisture:	3010A	
Analyst: DEP		Date Pre	p: 05.01.2020 10:00	)	/ Wolsture.		
Seq Number: 3124875			•				
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Calcium	7440-70-2	156	10.0	mg/L	05.03.2020 16:37	D	50



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Lab Sample Id	<b>Duplicate</b> d: 660223-009		Matrix: Date Coll	Water ected: 04.28.2020 13:12		Date Received:04.3	0.2020 09	9:30
	ethod: Cl, F, & SO4 by	v FPA 300 0				Prep Method: E30	0P	
Tech:	JYM	y EI 11 500.0				% Moisture:	01	
Analyst:	JYM		Date Prep	: 05.01.2020 10:30		,		
Seq Number:			Date Trep	. 05.01.2020 10.50				
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	186	0.500	mg/L	05.01.2020 16:44		1
Fluoride		16984-48-8	< 0.500	0.500	mg/L	05.01.2020 16:44	U	1
Sulfate		14808-79-8	629	5.00	mg/L	05.01.2020 17:20	D	10
Analytical Me	ethod: TDS by SM254	0C						
Tech:	YAV					% Moisture:		
Analyst:	YAV							
Seq Number:	3125125							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved	Solids	1642222	1120	5.00	mg/L	05.05.2020 13:00		1
Analytical Me Tech: Analyst: Seq Number:	ethod: pH by SM4500 KBU KBU 3124764	-H				% Moisture:		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH		12408-02-5	6.39		SU	05.01.2020 11:48	K	1
Temperature		TEMP	25.4		Deg C	05.01.2020 11:48	Κ	1
Analytical Mo Tech: Analyst:	ethod: Boron by Metho MLI DEP	od 6020A	Date Prep	: 05.04.2020 10:05		Prep Method: SW3 % Moisture:	3010A	
-	3125006							
Seq Number:	3125006							
-	3125006	<b>Cas Number</b> 7440-42-8	Result	<b>RL</b> 0.0100	Units mg/L	Analysis Date 05.04.2020 21:41	Flag	Dil 1



## Hydrex Environmental, Nacogdoches, TX

Sample Id: Dup Lab Sample Id: 6602	licate 23-009	Matrix: Date Coll	Water ected: 04.28.2020 13:12		Date Received:04.30.2020 09:30				
Analytical Method:Tech:MLIAnalyst:DEPSeq Number:3124	Calcium by Method 6010B	Date Prep	e: 05.01.2020 10:00		Prep Method: SW % Moisture:	/3010A			
Parameter Calcium	<b>Cas Number</b> 7440-70-2	Result	<b>RL</b>	Units mg/L	<b>Analysis Date</b> 05.03.2020 16:41	Flag	<b>Dil</b>		



#### QC Summary 660223

#### **Hydrex Environmental**

Twin Oaks PP

Prep Method: E300P

Analytical Method:	Cl, F, & SO4 by EPA 300.0	
		-

Seq Number:	3124832 Matrix:				Water	Water Date Prep:				ep: 05.0	05.01.2020		
MB Sample Id:	7702483-1-BLK	LCS Sample Id: 7702483-1-BKS			LCSD Sample Id: 7702483-1-BSD								
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Chloride	< 0.500	10.0	9.96	100	9.99	100	90-110	0	20	mg/L	05.01.2020 08:51		
Fluoride	< 0.500	10.0	10.4	104	10.5	105	90-110	1	20	mg/L	05.01.2020 08:51		
Sulfate	< 0.500	10.0	10.0	100	10.2	102	90-110	2	20	mg/L	05.01.2020 08:51		

<b>Analytical Method:</b>	od: Cl, F, & SO4 by EPA 300.0								Prep Method: E300P			
Seq Number:	3124832	Matrix: Water					Date Prep: 05.01.2020					
Parent Sample Id:	660223-003		MS Sample Id: 660223-003 S					MSD Sample Id: 660223-003 SD				
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	76.9	10.0	86.5	96	86.5	96	90-110	0	20	mg/L	05.01.2020 17:08	
Fluoride	< 0.500	10.0	11.0	110	11.0	110	90-110	0	20	mg/L	05.01.2020 17:08	
Sulfate	43.4	10.0	54.0	106	54.0	106	90-110	0	20	mg/L	05.01.2020 17:08	

<b>Analytical Method:</b> Seq Number: Parent Sample Id:	Cl, F, & SO4 by EPA 300.0           3124832         Matrix: Water           660383-001         MS Sample Id: 660383-001 S					)1 S	Prep Method:         E300P           Date Prep:         05.01.2020           MSD Sample Id:         660383-001 SD						
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Chloride	213	10.0	219	60	219	60	90-110	0	20	mg/L	05.01.2020 11:17	Х	
Fluoride	0.210	10.0	10.8	106	10.8	106	90-110	0	20	mg/L	05.01.2020 11:17		
Sulfate	136	10.0	145	90	145	90	90-110	0	20	mg/L	05.01.2020 11:17		

Analytical Method: Seq Number:	<b>TDS by SM2540C</b> 3125125			Matrix:	Water							
MB Sample Id:	3125125-1-BLK	K LCS Sample Id: 3125125-1-BKS LCSD Sample Id: 3125125-1					5125-1-BSD					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	943	94	966	97	80-120	2	10	mg/L	05.05.2020 13:00	

<b>Analytical Method:</b>	TDS by SM2540C							
Seq Number:	3125125	Matrix:	Waste Water					
Parent Sample Id:	660110-001	MD Sample Id:	660110-001 D					
Parameter	Parent Result	MD Result		%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	5100	5060		1	10	mg/L	05.05.2020 13:00	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

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#### QC Summary 660223

### Hydrex Environmental

Twin Oaks PP

Seq Number: Parent Sample Id:	3125125 660223-009			Matrix: nple Id:	660223-00	09 D						
Parameter	Parent Result		MD Result					%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	1120		1160					4	10	mg/L	05.05.2020 13:00	
Analytical Method:												
Seq Number: Parent Sample Id:	3124764 660119-001				Waste Wa 660119-00							
-	Parent		MD	iipie iu.	000119 0			%RPD	RPD	Units	Analysis	
Parameter	Result		Result					/orci D	Limit	emis	Date	Flag
pH Temperature	7.91 24.3		7.92 24.1					0 1	20 20	SU Deg C	05.01.2020 11:48 05.01.2020 11:48	
Analytical Method: Seq Number:	<b>pH by SM4500-H</b> 3124764			Matrix:	Watar							
Parent Sample Id:	660223-009				660223-0	09 D						
Parameter	Parent Result		MD Result					%RPD	RPD Limit	Units	Analysis Date	Flag
pH	6.39		6.40					0	20	SU	05.01.2020 11:48	
Temperature	25.4		25.8					2	20	Deg C	05.01.2020 11:48	
Analytical Method: Seq Number:	Boron by Method 6 3125006	020A		Matrix:	Water			Pı	rep Metho Date Pr		73010A 04.2020	
MB Sample Id:	7702610-1-BLK				7702610-	1-BKS		LCS		-	04.2020 02610-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Boron	<0.0100	0.100	0.0886	89	0.0897	90	80-120	1	20	mg/L	05.04.2020 20:52	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>Boron by Method 6</b> 3125006 660299-001	020A			Ground W 660299-00				rep Metho Date Pr D Sample	ep: 05.0	73010A 04.2020 0299-001 SD	
Parameter	Parent	Spike	MS	MS	MSD	MSD	Limits	%RPD	RPD	Units	Analysis	Flag
Boron	<b>Result</b> 0.121	<b>Amount</b> 0.100	<b>Result</b> 0.207	<b>%Rec</b> 86	<b>Result</b> 0.205	<b>%Rec</b> 84	75-125	1	Limit 20	mg/L	Date 05.04.2020 21:01	
Analytical Method: Seq Number:	<b>Calcium by Method</b> 3124875	l 6010B		Matrix:					rep Metho Date Pr	ep: 05.0	/3010A 01.2020	
	7702503-1-BLK			-	7702503-		<b>.</b>		-		2503-1-BSD	
MB Sample Id:	1.00	<b>A</b> ••		178	LCSD	LCSD	Limits	%RPD	RPD	Units	Analysis	
MB Sample Id: <b>Parameter</b>	MB Result	Spike Amount	LCS Result	LCS %Rec	Result	%Rec			Limit		Date	Flag

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



#### QC Summary 660223

#### **Hydrex Environmental**

Twin Oaks PP

Analytical Method:	Calcium by Metho	d 6010B						Pr	ep Metho	od: SW	3010A	
Seq Number:	3124875			Matrix:	Water				Date Pro	ep: 05.0	01.2020	
Parent Sample Id:	660264-001		MS San	nple Id:	660264-00	1 S		MS	D Sample	e Id: 660	264-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Calcium	59.6	25.0	82.7	92	82.7	02	75-125	0	20	mg/L	05.01.2020 18:00	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

# eurofins Environment Testing Xenco

# **Flagging Criteria**

- 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.	ND Not Detected			
RL Reporting Limit				
MDL Method Detection Limit	SDL Sample De	tection Limit	LOD Limit of Detection	
PQL Practical Quantitation Limit	MQL Method Qu	antitation Limit	LOQ Limit of Quantitatio	n
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/Labo	ratory Control Sample Duplicate
MD/SD Method Duplicate/Samp	ole Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate
+ NELAC certification not offered	l for this compound.			

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

### Attachment A Laboratory Data Package Cover Page

Project Name:

This Data package consists of :

Laboratory Number: 660223

Laboratory Batch No(s): 7702503, 3125125, 7702483, 3124764, 77024

This signature page, the laboratory review checklist, and the following reportable data:

Twin Oaks PP

- X R1 Field chain-of-custody documentation;
- X R2 Sample identification cross-reference;
- X R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- X R4 Surrogate Recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- X R5 Test reports/summary forms for blank samples;
- X R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- X R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs) and
  - e) The laboratory's MS/MSD QC limits
- X R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.

X R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

X R10 Other problems or anomalies.

X Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [] TCEQ or [] on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Chad Bechtold

had a. Beititos

Name (Printed)

**Project Manager** Official Title (printed)

07242020 Date

Labo	orator	y Name: EUROFINS XENCO, LLC	LRC Date : 07242020					
Proje	ect Na	ame: Twin Oaks PP	Laboratory Job Number : 660223					
Revi		Name: CBE	Batch Number(s) : 7702503, 3125125, 7702483, 3124764,	7702610	)			
$\#^1$	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	<sup>4</sup> ER#
R1	OI	Chain-of-Custody (COC)						
		Did samples meet the laboratory's standard conditions of	of sample acceptability upon receipt?	X				T
		Were all departures from standard conditions described				X		-
R2	OI	Sample and Quality Control (QC) Identification						
		Are all field sample ID numbers cross-referenced to the		X				
		Are all laboratory ID numbers cross-referenced to the c		X				
R3	OI	Test Reports						
		Were all samples prepared and analyzed within holding	times?	X				
		Other than those results <mql, all="" other="" raw="" td="" value<="" were=""><td></td><td>X</td><td></td><td></td><td></td><td></td></mql,>		X				
		Were calculations checked by a peer or supervisor?		X				
		Were all analyte identifications checked by a peer or su	*	Х				
		Were sample detection limits reported for all analytes n		X				
		Were all results for soil and sediment samples reported				X		
		Were % moisture (or solids) reported for all soil and set	*			X		
		Were bulk soil/solid samples for volatile analysis extract If required for the project, were TICs reported?	cted with methanol per SW846 Method 5035?			X		
R4	0					X		
Λ4		Surrogate Recovery Data				V		-
		Were surrogates added prior to extraction? Were surrogate percent recoveries in all samples within	a the Jahomatemy OC limite?			X X		_
R5						Λ		
		Test Reports/Summary Forms for Blank Samj	ples	V				-
		Were appropriate type(s) of blanks analyzed? Were blanks analyzed at the appropriate frequency ?		X X				-
			procedure, including preparation and, if applicable, cleanup	X				+
	procedures ?		procedure, including preparation and, if applicable, cleanup					
		Were Blank Concentrations <mql?< td=""><td></td><td>X</td><td></td><td></td><td></td><td></td></mql?<>		X				
R6	OI	Laboratory Control Samples (LCS):						
		Were all COCs included in the LCS?		Х				
		Was each LCS taken through the entire analytical proce	edure, including prep and cleanup steps?	X				_
		Were LCSs analyzed at the required frequency?		X				_
		Were LCS (and LCSD, if applicable) %Rs within the la	laboratory QC limits? laboratory's capability to detect the COCs at the MDL used to	X				
		calculate the SDLs?	laboratory's capability to detect the COCs at the MDE used to	X				
		Was the LCSD RPD within the QC limits?		Х				
R7	OI	Matrix Spike (MS) and Matrix Spike Duplicat	te (MSD) data					
		Were the project/method specified analytes included in	the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		Х				
		Were MS (and MSD, if applicable) %Rs within the labo			X			
		Were MS/MSD RPDs within the laboratory QC limits?		X				
R8	OI	Analytical Duplicate Data						
		Were appropriate analytical duplicates analyzed for eac				X		
		Were analytical duplicates analyzed at the appropriate f Were RPDs or relative standard deviations within the la				X		
DO	OI		aboratory QC limits?			X		
(9		Method Quantitation Limits (MQLs)	11 . 1. 1 .	N				-
		Are the MQLs for each method analyte included in the Do the MQLs correspond to the concentration of the lo		X X				-
		Do the MQLs correspond to the concentration of the lo Are unadjusted MQLs and DCSs included in the labora		X				+
210	OI	-	nory data package:					
.10		Other Problems/Anomalies	ested in this LDC and ED2	v				-
		Are all known problems/anomalies/special conditions n Is the laboratory NELAC-accredited under the Texas I	aboratory Accreditation Program for the analytes, matrices and	X X			-	+
		methods associated with this laboratory data package?						
		Was applicable and available technology used to lower sample results?	the SDL to minimize the matrix interference effects on the	X				

Labo	rator	ry Name: EUROFINS XENCO, LLC LRC D	Date : 07242020					
Proje	ect N	ame: Twin Oaks PP Labora	tory Job Number : 660223					
Revi	ewer	Name: CBE Batch	Number(s): 7702503, 3125125, 7702483, 3124764,	7702610	)			
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
S1	OI	Initial Calibration (ICAL)						
		Were response factors and/or relative response factors for each ana	lyte within QC limits?	Х				
		Were percent RSDs or correlation coefficient criteria met?		Х				
		Was the number of standards recommended in the method used for	all analytes?	X				
		Were all points generated between the lowest and the highest stand	lard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?		Х				
		Has the initial calibration curve been verified using an appropriate	second source standard?	X				
S2	OI	Initial and Continuing Calibration Verification (ICCV	and CCV) and continuing calibration blank					
		Was the CCV analyzed at the method-required frequency?		X				
		Were percent differences for each analyte within the method-requi	red QC limits?	X				
		Was the ICAL curve verified for each analyte?		X				
<u></u>		Was the absolute value of the analyte concentration in the inorgani	c CCB <mdl?< td=""><td></td><td></td><td>X</td><td></td><td></td></mdl?<>			X		
S3	0	Mass Spectral Tuning						
		Was the appropriate compound for the method used for tuning?				X		
0.4		Were ion abundance data within the method-required QC limits?				X		
S4	0	Internal Standard (IS)						
~ •		Were IS area counts and retention times within the method-require	d QC limits?			X		
S5	OI	Raw Data (NELAC 5.5.10)						
		Were the raw data (for example, chromatograms, spectral data) rev		X				
~ <	_	Were data associated with manual integrations flagged on the raw	data?	X				
S6	0	Dual Column Confirmation						
		Did dual column confirmation results meet the method-required Q	C?			Х		
S7	0	Tentatively Identified Compounds (TICs)						
		If TICs were requested, were the mass spectra and TIC data subject	t to appropriate checks?			Х		
S8	Ι	Interference Check Sample (ICS) Results						
		Were percent recoveries within method QC limits?				Х		
S9	Ι	Serial Dilutions, Post Digestions Spikes, and Method of	Standard Additions					
		Were percent differences, recoveries, and the linearity within the Q	QC limits specified in the method?			X		
510	OI	Method Detection Limit (MDL) Studies						
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		Х				
511	OI	Proficiency Test Reports						
		Was the laboratory's performance acceptable on the applicable pro	ficiency tests or evaluation studies?	X				
512	OI	Standards Documentation						
		Are all standards used in the analyses NIST-traceable or obtained the	from other appropriate sources?	X				
513	OI	Compound/Analyte Identification Procedures						
		Are the procedures for compound/analyte identification documented	ed?	X				
514	OI	Demonstration of Analyst Competency (DOC)						
		Was DOC conducted consistent with NELAC Chapter 5?		X				
		Is documentation of the analyst's competency up-to-date and on fil	e?	X				
515	OI							
		Are all methods used to generate the data documented, verified, an		X				
516	OI	Laboratory Standard Operating Procedures (SOPs)	· 11					
-		Are laboratory SOPs current and on file for each method performe	49	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

2.

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory	y Name: EUROFINS XENCO, LLC	LRC Date: 07242020
Project Na	ame: Twin Oaks PP	Laboratory Job Number: 660223
Reviewer	Name: CBE	Batch Number(s) : 7702503, 3125125, 7702483, 3124764, 7702610
ER# 1	DESCRIPTION	
1		ix Spike Duplicate (MSD) recoveries for Chloride were below control limits. However, the control Sample Duplicate (LCSD) recoveries met acceptance criteria.

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

2	Www.xenco.com raye ur Work Order Comments	T PRP Brownfield RR Superfund	t:	Level DST/US TRF Level	DaPT C Other:	Preservative Codes	HNO3: HN	H2S04: H2	HCL: HL None: NO	NaOH: Na	MeOH: Me	Zn Acetate+ NaOH: Zn	TAT starts the day recevied by the lab, if received by 4:30pm	Sample Comments									K Se Ag SiO2 Na Sr TI Sn U V Zn 1631/245.1/7470 /7471:Hg	and conditions ond the control sgotiated.	Seceived by: (Signature) Date/Time	mus binning 4. D. 200 04:D	)
an Antonio, TX (210) 509-3334 , Lubbock, TX (806) 794-1296 , Phoenix, AZ (480) 355-0900 Delray Beach, FL (561) 689-6701		Program: UST/PST PRP	State of Project:	Reporting:Level	Deliverables: EDD	ANALYSIS REQUEST								0795WS	-	×	×	×	-			× ×	I Ca Cr Co Cu Fe Pb Mg Mn Mo Ni H Cr Co Cu Pb Mn Mo Ni Se Ag TI U	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 ferms 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 \$76.00 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) Receiv	fort when	
t0-4200, Dallas, TX (214) 902-0300, S 704-5440, EL Paso, TX (915) 585-3443 92-7550, Carisbad, NM (575) 988-3199 :2000, Tallahassee, FL (850) 766-0747, Atlanta, GA (770) 449-8800	nt)	ne:			nydrex-inc.com						uo. unio	- Cal - Boi	0106 6020A 10 - CI	Numbe Code Method EPA 300 Sulfate Sulfate	X X	X X X X	X X X X	× × × ×	x x x x	× : × :	× ×	× × × × × × ×	11 AI Sb As Ba Be B Cd 8RCRA Sb As Ba Be Cd	om client company to Xenco, its a any losses or expenses incurred le submitted to Xenco, but not an	Date/Time	4/29/10 1600 2	
	Bill to: (if different)	Company Name	Address:		Email: mtransier@hydrex-inc.com	s PP Turn Around	07 Routine:	Rush:	Due Date:	Yes No Wet Ice: Yes No	Thermometer ID	1101-000 HA	Total Containers:	Date Time Sampled Sampled	2421 62/37/4	2121	1348	1456	14.23	( 602	1420	1 312	8RCRA 13PPM Texas 11 nalyzed TCLP / SPLP 6010: 8R	of samples constitutes a valid purchase order fr les and shall not assume any responsibility for . ) each project and a charge of \$5 for each sampl	Received by: (Signature)	redEp	
XENCO LABORATORIES	Project Manager. Michelle Transier	Company Name: Hydrex Envrionmental		te ZIP:	Phone: 936-568-9451	Project Name: Twin Oaks PP	Project Number: I-14-1007	Project Location	Sampler's Name: DO #-	SAMPLE RECEIPT Temp Blank:	30	Xes X	Cooler Custody Seals: Kres No N/A Sample Custody Seals: Yes No N/A	ication	~ MW-7	, MW-11	MW-12	* MW-13	, MW-14	· MW-15	- MW-16	, MW-17 , Dunlicate	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	<ul> <li>Signature of this document and relinquishment of rice. Xenco will be liable only for the cost of samp co. A minimum charge of \$75.00 will be applied to</li> </ul>	Relinquished by: (Signature)	2 hr low	

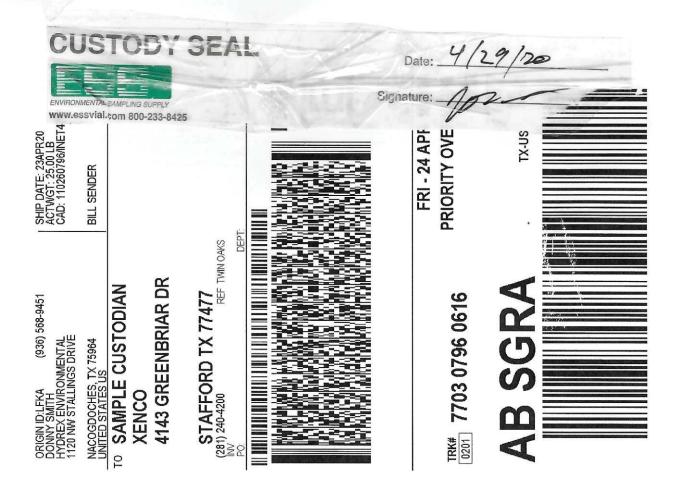
Work Order No: (00223

**Chain of Custody** 

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Page 31 of 34

Final 1.002





FedEx Ship Manager - Print Your Label(s)

4/27/2020

#### **XENCO** Laboratories

#### Prelogin/Nonconformance Report- Sample Log-In

Client: Hydrex Environmental Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04.30.2020 09.30.00 AM

Work Order #: 660223

Temperature Measuring device used : HOU-068

Comments Sample Receipt Checklist 3.8 #1 \*Temperature of cooler(s)? #2 \*Shipping container in good condition? Yes #3 \*Samples received on ice? Yes #4 \*Custody Seals intact on shipping container/ cooler? Yes #5 Custody Seals intact on sample bottles? N/A Yes #6\*Custody Seals Signed and dated? #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)? No #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: LSR

PH Device/Lot#: 10BDH0891

Date: 04.30.2020

Checklist completed by: Checklist reviewed b

Date: 05.04.2020



# Analytical Report 666916

for

## **Hydrex Environmental**

**Project Manager: Michelle Transier** 

Twin Oaks VRS I-14-1007

07.24.2020

Collected By: Client



4147 Greenbriar Dr. Stafford, TX 77477

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



07.24.2020 Project Manager: **Michelle Transier Hydrex Environmental** 1120 NW Stallings Dr Nacogdoches, TX 75964

Reference: Eurofins Xenco, LLC Report No(s): 666916 Twin Oaks VRS Project Address:

#### Michelle Transier:

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 Eurofins Xenco, LLC Report Number(s) 666916. 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 Eurofins Xenco, LLC. 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. 666916 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ched a. Beitite

Chad Bechtold Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



# Sample Cross Reference 666916

#### Hydrex Environmental, Nacogdoches, TX

Twin Oaks VRS

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	07.09.2020 13:37		666916-001

#### CASE NARRATIVE SUMMARY



# Client Name: Hydrex Environmental

Project Name: Twin Oaks VRS

Project ID:	I-14-1007	Report Date:	07.24.2020
Work Order Number:	666916	Date Received:	07.10.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Report Revision: The laboratory supplied Chain of Custody had Ammonia listed instead of Sulfate. Per client request the laboratory performed Sulfate anaylsis by Method 300.0. The Ammonia results were removed from the report since they were not needed or requested for the sample kit.

Report Revision: The report format was changed.

Ched a. Bertites

Chad Bechtold Project Manager



# **Certificate of Analytical Results 666916**

### Hydrex Environmental, Nacogdoches, TX

Twin Oaks VRS

Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3131749							
Analyst:	YAV							
Tech:	YAV					% Moisture:		
Analytical Me	ethod: TDS by SM2	540C						
Sulfate		14808-79-8	448	10.0	mg/L	07.17.2020 09:53	D	20
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3131912							
Analyst:	JYM		Date Prep	p: 07.17.2020 08:19				
Tech:	JYM					% Moisture:		
Analytical Me	ethod: Sulfate by EI	PA 300.0				Prep Method: E30	0P	
Lab Sample I	d: 666916-001		Date Coll	lected: 07.09.2020 13:37				
Sample Id:			Matrix:	Water			0.2020 09	



#### 666916 **QC Summary**

# **Hydrex Environmental**

Twin Oaks VRS

Analytical Method: Seq Number: MB Sample Id: Parameter	Sulfate by EPA 300 3131912 7707517-1-BLK MB Result	.0 Spike Amount		Matrix: nple Id: LCS %Rec	Water 7707517- LCSD Result	l-BKS LCSD %Rec	Limits		rep Metho Date Pro D Sample RPD Limit	ep: 07.1	0P 17.2020 7517-1-BSD Analysis Date	Flag
Sulfate	<0.500	10.0	10.4	104	10.4	104	90-110	0	20	mg/L	07.17.2020 08:15	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>Sulfate by EPA 300</b> 3131912 666916-001	.0		Matrix: nple Id:	Water 666916-00	01 S			rep Metho Date Pro D Sample	ep: 07.1	0P 17.2020 916-001 SD	
*	Parent	Spike	MS	MS	MSD	MSD	Limits	%RPD	RPD	Units	Analysis	Flag
Parameter	Result	Amount	Result	%Rec	Result	%Rec	00.110	0	Limit		Date 07.17.2020 10:03	Tiag
Sulfate Analytical Method:	•	200	661	107	662	107	90-110	0	20	mg/L	071772020 10:03	
Seq Number:	3131749			Matrix:	Water 3131749-			LCSI	D Samuela	. I.J. 212	1740 1 DCD	
MB Sample Id:	3131749-1-BLK MB	Seiles	LCS Sar	LCS			T ::4a	%RPD	RPD	Units	1749-1-BSD	
Parameter	Result	Spike Amount	Result	%Rec	LCSD Result	LCSD %Rec	Limits	%KPD	Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	959	96	964	96	80-120	1	10	mg/L	07.15.2020 13:00	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>TDS by SM2540C</b> 3131749 667049-001			Matrix: nple Id:	Water 667049-00	01 D						
Parameter	Parent Result		MD Result					%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	2680		2630					2	10	mg/L	07.15.2020 13:00	
<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>TDS by SM2540C</b> 3131749 667144-001			Matrix: nple Id:	Water 667144-00	01 D						
Parameter	Parent		MD					%RPD	<b>RPD</b>	Units	Analysis	Flag
Total Dissolved Solids	Result 1520		Result 1550					2	Limit 10	mg/L	Date 07.15.2020 13:00	
										C		

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

# eurofins Environment Testing Xenco

# **Flagging Criteria**

- 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.	ND Not Detected			
RL Reporting Limit				
MDL Method Detection Limit	SDL Sample De	tection Limit	LOD Limit of Detection	
PQL Practical Quantitation Limit	MQL Method Qu	antitation Limit	LOQ Limit of Quantitation	n
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/Labo	ratory Control Sample Duplicate
MD/SD Method Duplicate/Samp	ble 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

### Attachment A Laboratory Data Package Cover Page

Project Name:

This Data package consists of :

Laboratory Number: 666916

ts of : Laboratory Batch No(s): **3131749**, **7707517**, **7707493** 

This signature page, the laboratory review checklist, and the following reportable data:

**Twin Oaks VRS** 

- |X| R1 Field chain-of-custody documentation;
- X R2 Sample identification cross-reference;
- $\boxed{X}$  R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- |X| R4 Surrogate Recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- X R5 Test reports/summary forms for blank samples;
- $\boxed{X}$  R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- $\boxed{X}$  R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs) and
  - e) The laboratory's MS/MSD QC limits
- $\boxed{X}$  R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.

X R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

X R10 Other problems or anomalies.

X Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [] TCEQ or [] \_\_\_\_\_\_ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Chad Bechtold

had a. Bentitos

Name (Printed)

Signature

Project Manager Official Title (printed) 07242020 Date

Labo	rator	y Name: EUROFINS XENCO, LLC	LRC Date : 07242020					
Proje	ect Na	ame: Twin Oaks VRS	Laboratory Job Number: 666916					
Revie		Name: CBE	Batch Number(s) : 3131749, 7707517, 7707493					
$\#^1$	$A^{2}$	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	<sup>4</sup> ER#
R1	OI	Chain-of-Custody (COC)						
		Did samples meet the laboratory's standard conditions of	sample acceptability upon receipt?	X				-
		Were all departures from standard conditions described in				X		+
R2	OI	Sample and Quality Control (QC) Identification						
		Are all field sample ID numbers cross-referenced to the la		X				
		Are all laboratory ID numbers cross-referenced to the cor	responding QC data?	X				1
R3	OI	Test Reports						
		Were all samples prepared and analyzed within holding ti	mes?	X				$\square$
		Other than those results <mql, all="" other="" raw="" td="" values<="" were=""><td>bracketed by calibration standards?</td><td>X</td><td></td><td></td><td></td><td>1</td></mql,>	bracketed by calibration standards?	X				1
		Were calculations checked by a peer or supervisor?		X				1
		Were all analyte identifications checked by a peer or supe		Х				
		Were sample detection limits reported for all analytes not		X				
		Were all results for soil and sediment samples reported or				X		
		Were % moisture (or solids) reported for all soil and sedin				X		-
		Were bulk soil/solid samples for volatile analysis extracte If required for the project, were TICs reported?	ed with methanol per SW846 Method 5035?	<u> </u>		X X		+
R4	0					Λ		
K4	0	Surrogate Recovery Data				V		
		Were surrogates added prior to extraction? Were surrogate percent recoveries in all samples within the	a lakanatany. OC limita?			X X		_
R5	OI					Λ		
~	01	Test Reports/Summary Forms for Blank Sample	es	37				-
		Were appropriate type(s) of blanks analyzed? Were blanks analyzed at the appropriate frequency ?		X X				_
			rocedure, including preparation and, if applicable, cleanup	X				+
		procedures ?	rocedure, including preparation and, if applicable, cleanup					
		Were Blank Concentrations <mql?< td=""><td></td><td>X</td><td></td><td></td><td></td><td></td></mql?<>		X				
R6	OI	Laboratory Control Samples (LCS):						
		Were all COCs included in the LCS?		Х				
		Was each LCS taken through the entire analytical procedu	ure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the labor		X				_
		Does the detectability check sample data document the la calculate the SDLs?	boratory's capability to detect the COCs at the MDL used to	X				
		Was the LCSD RPD within the QC limits?		X				
R7	OI	Matrix Spike (MS) and Matrix Spike Duplicate	(MSD) data					
		Were the project/method specified analytes included in th	e MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X				
		Were MS (and MSD, if applicable) %Rs within the labora	atory QC limits?	X				
		Were MS/MSD RPDs within the laboratory QC limits?		X				
R8	OI	Analytical Duplicate Data						
		Were appropriate analytical duplicates analyzed for each				X		
		Were analytical duplicates analyzed at the appropriate fre				X		
	01	Were RPDs or relative standard deviations within the labor	oratory QC limits?			X		
R9	OI	Method Quantitation Limits (MQLs)						
		Are the MQLs for each method analyte included in the lat		X				
		Do the MQLs correspond to the concentration of the lower		X				+
210	OT	Are unadjusted MQLs and DCSs included in the laborator	гу чана раскаде?	X				
10		Other Problems/Anomalies						F
		Are all known problems/anomalies/special conditions not		X				+
		Is the laboratory NELAC-accredited under the Texas Lab methods associated with this laboratory data package?	oratory Accreditation Program for the analytes, matrices and	X				
		Was applicable and available technology used to lower th	e SDL to minimize the matrix interference effects on the	X				1

Labo	orator	ry Name: EUROFINS XENCO, LLC LRC D	ate : 07242020					
Proje	ect N	fame: Twin Oaks VRS Labora	tory Job Number : 666916					
Revi	ewer	Name: CBE Batch	Number(s): 3131749, 7707517, 7707493					
#1	A <sup>2</sup>	<sup>2</sup> Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
S1	OI	Initial Calibration (ICAL)						
		Were response factors and/or relative response factors for each and	lyte within QC limits?	Х				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used for	all analytes?	Х				
		Were all points generated between the lowest and the highest stand	ard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?		Х				
		Has the initial calibration curve been verified using an appropriate	second source standard?	Х				
S2 O		initial and continuing canoration vermeation (ICC v and CC v) and continuing canoration blank						
		Was the CCV analyzed at the method-required frequency?		Х				
		Were percent differences for each analyte within the method-requi	red QC limits?	X				
		Was the ICAL curve verified for each analyte?		Х				
<u> </u>		Was the absolute value of the analyte concentration in the inorgani	c CCB <mdl?< td=""><td></td><td></td><td>X</td><td></td><td></td></mdl?<>			X		
S3	0	Mass Spectral Tuning						
		Was the appropriate compound for the method used for tuning?				X		
		Were ion abundance data within the method-required QC limits?				X		
S4	0	Internal Standard (IS)						
		Were IS area counts and retention times within the method-require	d QC limits?			X		
S5	OI	Raw Data (NELAC 5.5.10)						
		Were the raw data (for example, chromatograms, spectral data) rev		Х				
		Were data associated with manual integrations flagged on the raw	data?	Х				
S6	0	Dual Column Confirmation						
		Did dual column confirmation results meet the method-required Q	C?			Х		
S7	0	Tentatively Identified Compounds (TICs)						
		If TICs were requested, were the mass spectra and TIC data subject	t to appropriate checks?			Х		
S8	Ι	Interference Check Sample (ICS) Results						
		Were percent recoveries within method QC limits?				X		
S9	Ι	Serial Dilutions, Post Digestions Spikes, and Method of	Standard Additions					
		Were percent differences, recoveries, and the linearity within the Q				Х		
510	OI	Method Detection Limit (MDL) Studies						
		Was a MDL study performed for each reported analyte?		Х				
		Is the MDL either adjusted or supported by the analysis of DCSs?		Х				
511	OI	Proficiency Test Reports						
		Was the laboratory's performance acceptable on the applicable pro	Х					
512	OI							
		Are all standards used in the analyses NIST-traceable or obtained t	X					
513	OI							
		Are the procedures for compound/analyte identification documented	ed?	Х				
514	OI							
	-	Demonstration of Analyst Competency (DOC)           Was DOC conducted consistent with NELAC Chapter 5?						
		Is documentation of the analyst's competency up-to-date and on fil	X X					
\$15	OI							
		Are all methods used to generate the data documented, verified, an		X				
516	OI		a vandated, where appreable:	Λ				
.10		Laboratory Standard Operating Procedures (SOPs) Are laboratory SOPs current and on file for each method performe	10	X				F

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

2.

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports							
Laboratory Name: EUROFINS XENCO, LLC	LRC Date: 07242020						
Project Name: Twin Oaks VRS	Laboratory Job Number: 666916						
Reviewer Name: CBE	Batch Number(s) : 3131749, 7707517, 7707493						
ER# 1 DESCRIPTION							

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

G	eurofins		C Houston, TX (281) 240-4. Midland, TX (432) 704. Hobbs, NM (575) 392-7	Chain of Custody Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334 Midland, TX (422) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 998-3199, Phoenix, AZ (480) 355-0900	10) 509-3334 06) 794-1296 0) 355-0900	• . 1
		Xenco	ampa, FL (813) 620-200	Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701 Atlanta, GA (770) 449-8800	. (561) 689-6701 www xenco com Pade of	
Project Manager:	Michelle Transier		Bill to: (if different)		Comments	1
Company Name:	Hydrex Envrionmental		Company Name:		Program: UST/PST DRP Brownfield RRQ Superfund	
Address:	1120 NW Stallings Dr		Address:		State of Project:	
City, State ZIP:	Nacogdoches, TX 75964	4	City, State ZIP:			
Phone:	936-568-9451	E	Email: mtransier@hydi	hydrex-inc.com	Deliverables: EDD ADaPT Detiverables:	
Project Name:	Twin Oaks VRS	VRS	Turn Around	ANALYSIS REQUEST	EQUEST Preservative Codes	
Project Number:			Routine:		HNO3: HN	
Project Location		RL	Rush:		H2S04: H2	
Sampler's Name:		DL	Due Date:		HCL: HL	
PO#:					None: NO	
SAMPLE RECEIPT	EIPT Temp Blank:	(Yes No Wet Ice:	Yes No	6i	NaOH: Na	
Temperature (°C):	¢	Thermometer ID		uou	MeOH: Me	
Received Intact:	Yes	Temp: J.4 IR ID:HOU-068		area di	Zn Acetate+ NaOH: Zn	
Cooler Custody Seals: Sample Custody Seals:	als: Yes No N/A eals: Yes No N/A	Corrected Temp: 1.C	04 CO	- ۲.0ð	TAT starts the day received by the lab, if received by 4:30pm	
		-	per	s bc		
Sample Identification	entification Matrix	Date Time Sampled Sampled	Depth	Smetho Sm	Sample Comments	
HI-MW	3	67-09-20 133	7	××		
						-T
						[]
						-
						<b>—</b>
Total 200.7 / 6010 Circle Method(s) a	otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	8RC	RA 13PPM Texas 11 AI 5 TCLP / SPLP 6010: 8RCRA	sh As Ba Be B Cd Ca Cr Co Cu Sh As Ba Be Cd Cr Co Cu Ph I	Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr TI Sn U V Zn Mn Mo Ni Se Ag TI U 1631/245.1/7470 /7471:Hg	
Notice: Signature of thi of service. Xenco will t of Xenco. A minimum o	is document and relinquishment o be liable only for the cost of sampl charge of \$75.00 will be applied to	of samples constitutes a va les and shall not assume a each project and a charge	lid purchase order from c ny responsibility for any of \$5 for each sample su	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 \$76.00 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.	rs. It assigns standard terms and conditions are due to circumstances beyond the control e enforced unless previously negotiated.	
Relinquished by: (Signature)	by: (Signature)	Received by: (Signature)	lature)	Date/Time Relinquished by: (Signature)	ignature) / Received by: (Signature) Date/Time	
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2				۵		
					Revised Date101419 Rev. 2019.1	9.1



### **Eurofins Xenco, LLC** Prelogin/Nonconformance Report- Sample Log-In

Client: Hydrex Environmental Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 07.10.2020 09.45.00 AM

Temperature Measuring device used : HOU-068

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	N/A	
#6*Custody Seals Signed and dated?	Yes	
#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)?	No	
#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: LSR

Work Order #: 666916

PH Device/Lot#: 10BDH0891

Date: 07.10.2020

Checklist completed by: Checklist reviewed b

Date: 07.13.2020

April 2020 Event Results of Statistical Calculations **Control Charts and Prediction Limits** 

### Shewhart-Cusum Control Chart / Rank Sum

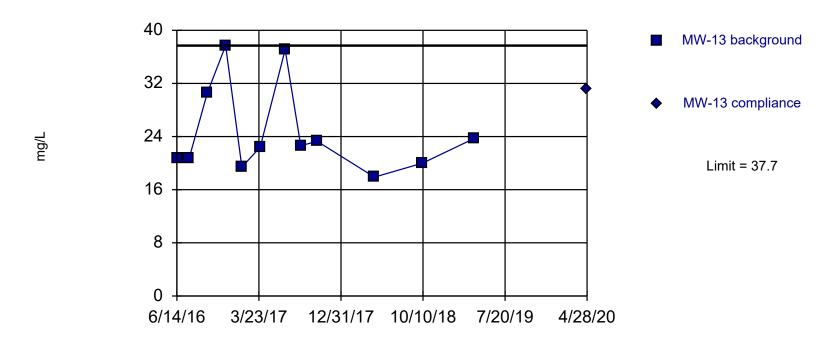
Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks Printed 7/2/2020, 10:02 AM

		<u>.</u>					<b>-</b> <i>i</i>	
Constituent	Well	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	N	<u>%NDs</u>	Transform	Method
Calcium (mg/L)	MW-13	No	PL=	n/a	12	0	No	NP Intra PL (normality)
Chloride (mg/L)	MW-13	No	119.4	119.4	12	0	x^3	Param Intra
Fluoride (mg/L)	MW-13	No	PL=	n/a	12	75	No	NP Intra PL (NDs)
pH (SU)	MW-13	No	7.7	7.7	12	0	No	Param Intra
Sulfate (mg/L)	MW-13	No	193.1	193.1	12	8.333	No	Param Intra
Total Dissolved Solids (mg/L)	MW-13	No	660.3	660.3	12	0	No	Param Intra
Calcium (mg/L)	MW-14	No	115.2	115.2	12	0	No	Param Intra
Chloride (mg/L)	MW-14	No	436.5	436.5	12	0	No	Param Intra
Fluoride (mg/L)	MW-14	No	PL=	n/a	12	75	No	NP Intra PL (NDs)
pH (SU)	MW-14	No	7.7	7.7	12	0	x^3	Param Intra
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-14	Yes	1541	1541	12	0	No	Param Intra
Calcium (mg/L)	MW-15	No	28.93	28.93	12	0	No	Param Intra
Chloride (mg/L)	MW-15	No	175.8	175.8	12	0	No	Param Intra
Fluoride (mg/L)	MW-15	No	PL=0.5	n/a	12	83.33	No	NP Intra PL (NDs)
pH (SU)	MW-15	No	7.7	7.7	12	0	x^3	Param Intra
Sulfate (mg/L)	MW-15	No	40.2	40.2	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-15	No	476.9	476.9	12	0	No	Param Intra
Calcium (mg/L)	MW-17	No	555.1	555.1	12	0	sqrt(x)	Param Intra
Chloride (mg/L)	MW-17	No	1678	1678	12	0	No	Param Intra
Fluoride (mg/L)	MW-17	No	PL=0.5	n/a	12	83.33	No	NP Intra PL (NDs)
pH (SU)	MW-17	No	7.9	7.9	12	0	No	Param Intra
Sulfate (mg/L)	MW-17	No	160.2	160.2	12	8.333	No	Param Intra
Total Dissolved Calida (mg/l)								
Total Dissolved Solids (mg/L)	MW-17	No	3191	3191	12	0	No	Param Intra

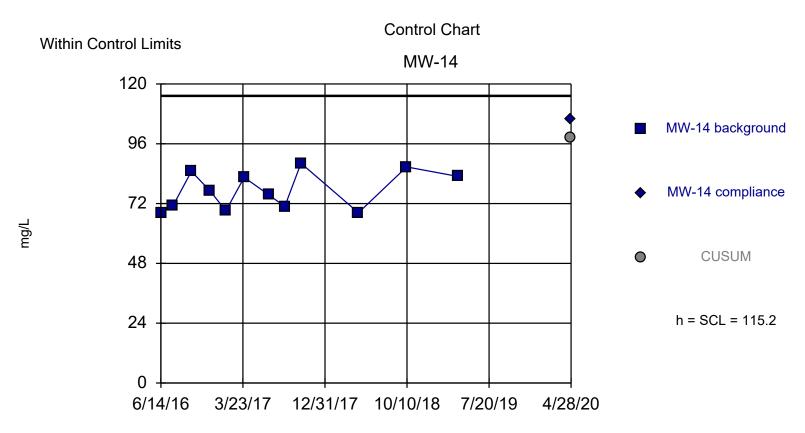
#### Within Limit

#### **Prediction Limit**

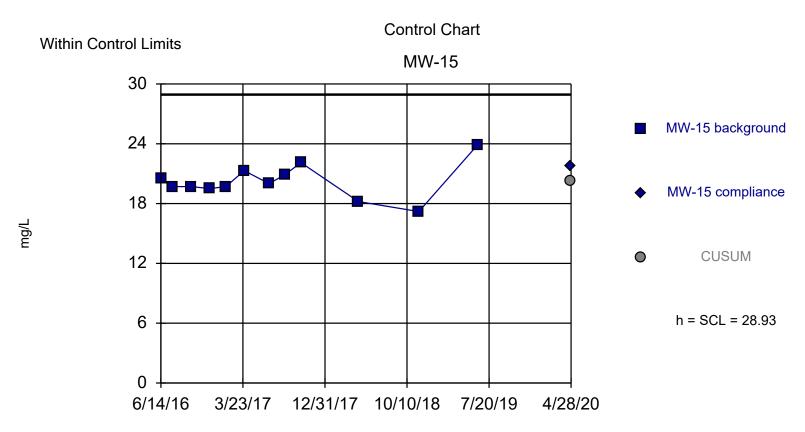
Intrawell Non-parametric



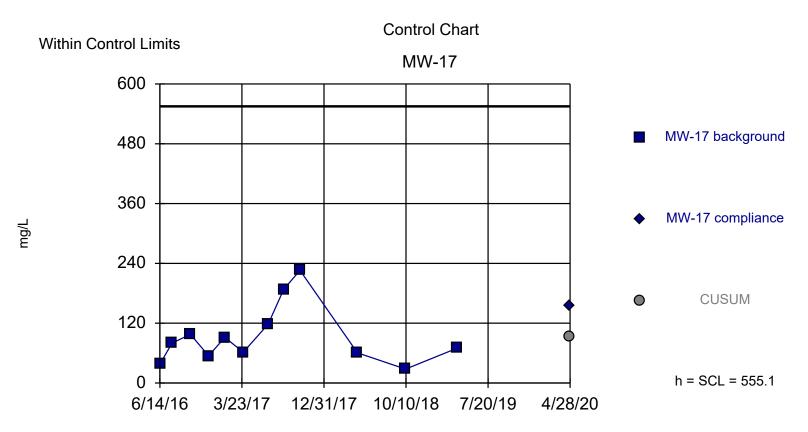
Non-parametric test used in lieu of control chart because the Shapiro Wilk normality test showed the data to be nonnormal at the 0.05 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.



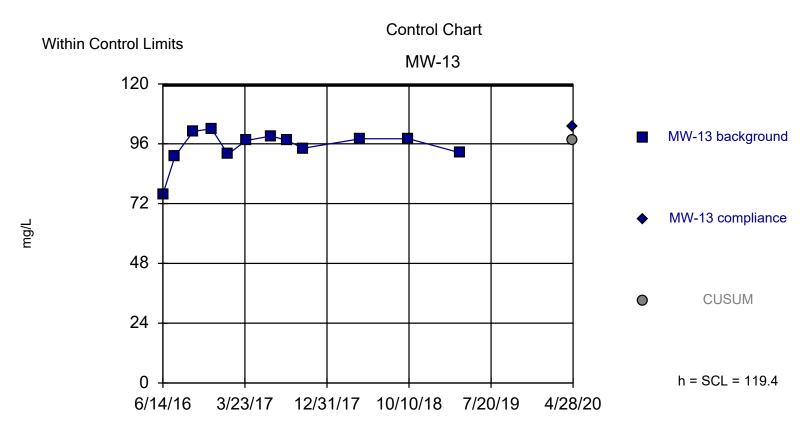
Background Data Summary: Mean=77.12, Std. Dev.=7.621, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8903, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



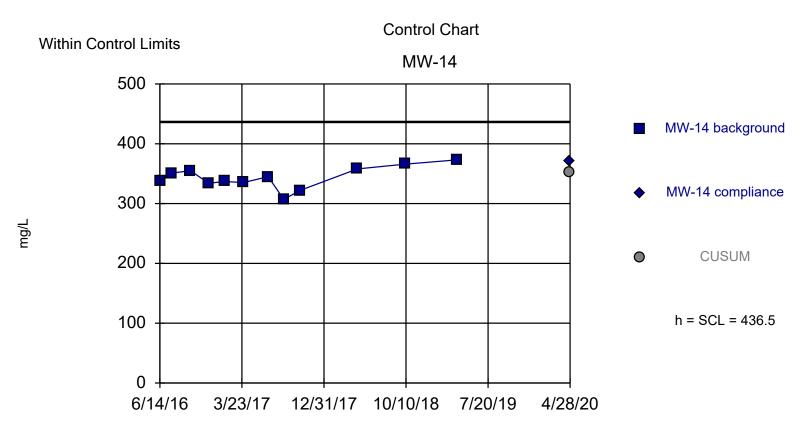
Background Data Summary: Mean=20.23, Std. Dev.=1.742, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9604, critical = 0.859. Report alpha = 0.000262. Dates ending 6/11/2019 used for control stats. Standardized h=5, SCL=5.



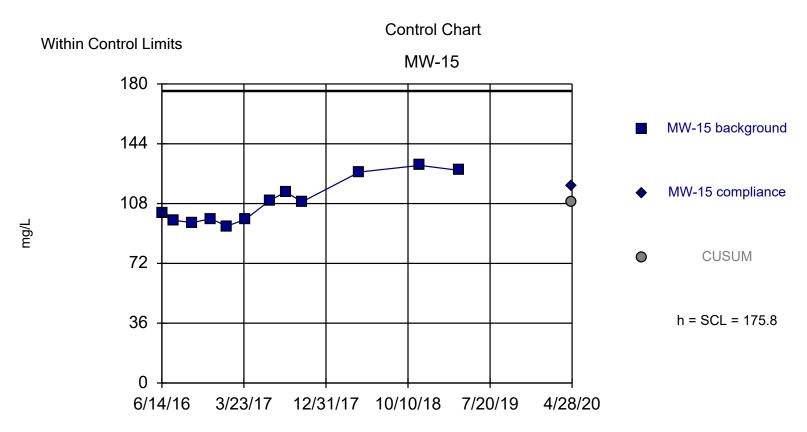
Background Data Summary (based on square root transformation): Mean=9.233, Std. Dev.=2.865, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9332, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



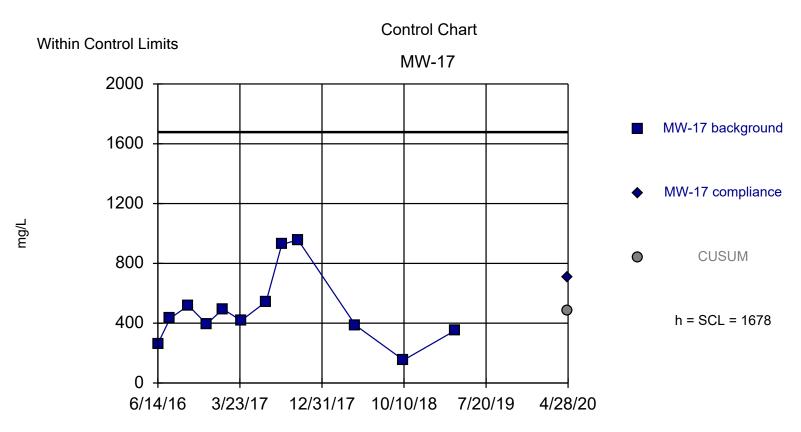
Background Data Summary (based on cube transformation): Mean=865191, Std. Dev.=167087, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8621, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=343.3, Std. Dev.=18.63, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9777, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



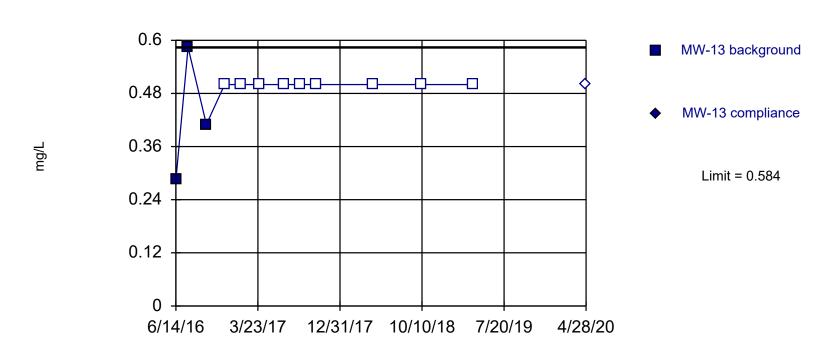
Background Data Summary: Mean=109, Std. Dev.=13.36, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=486.2, Std. Dev.=238.4, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8683, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Within Limit

### **Prediction Limit**

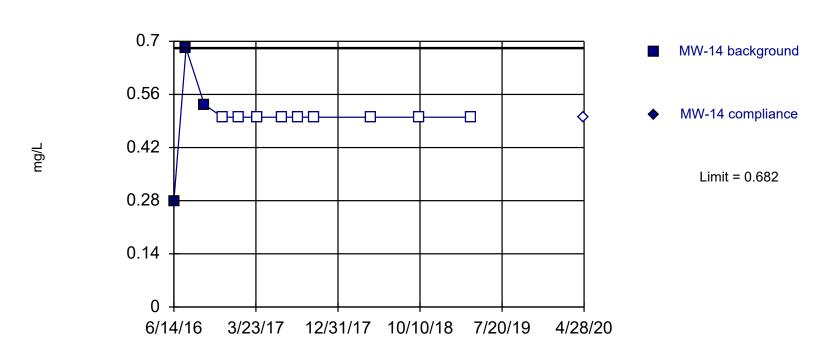


Intrawell Non-parametric

Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

Within Limit

### **Prediction Limit**

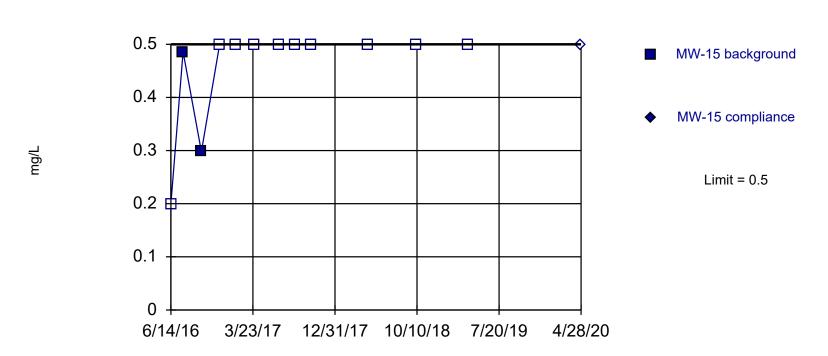


Intrawell Non-parametric

Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

Within Limit

### **Prediction Limit**



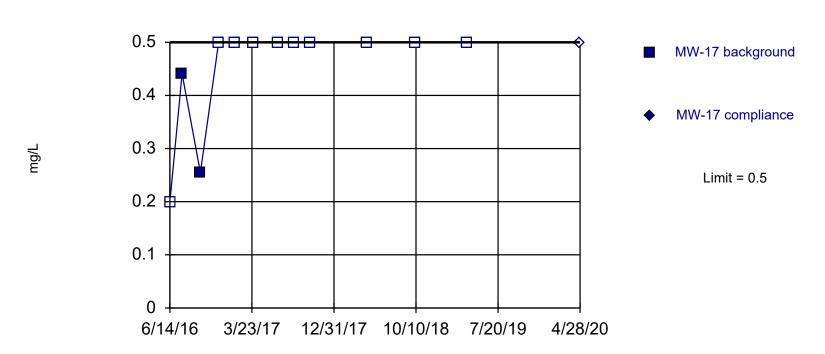
Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Fluoride Analysis Run 7/2/2020 9:59 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

Intrawell Non-parametric

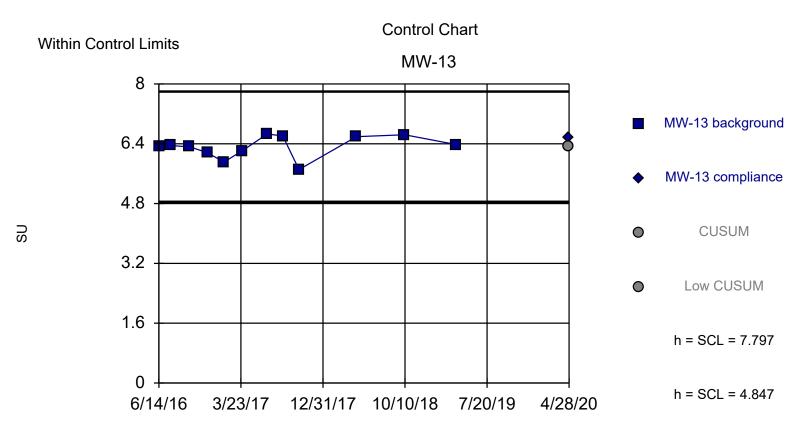
Within Limit

### **Prediction Limit**

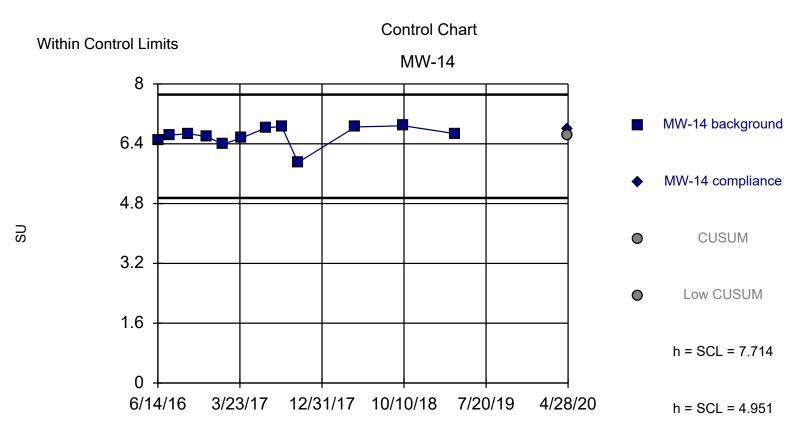


Intrawell Non-parametric

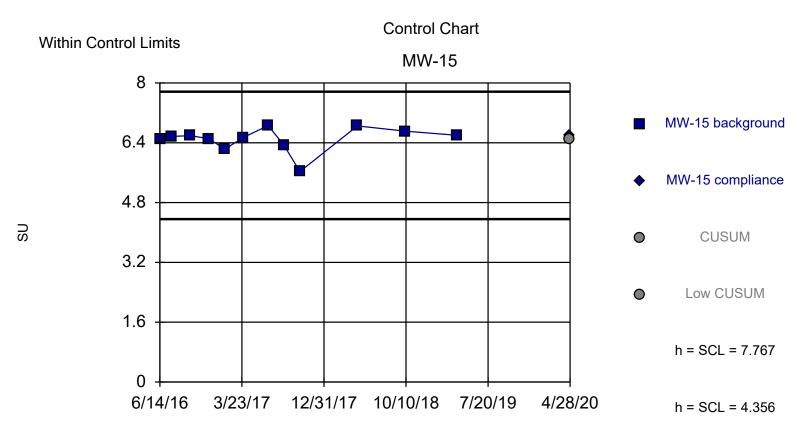
Non-parametric test used in lieu of control chart because non-detects exceed user-adjustable maximum of 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Seasonality was not detected with 95% confidence.



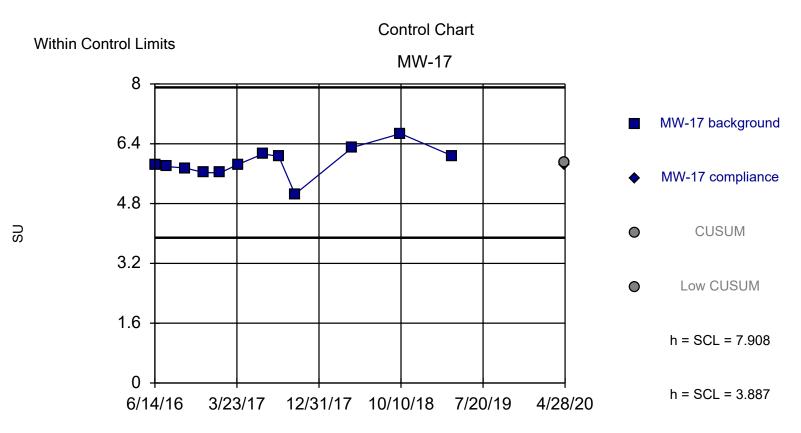
Background Data Summary: Mean=6.322, Std. Dev.=0.295, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9135, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



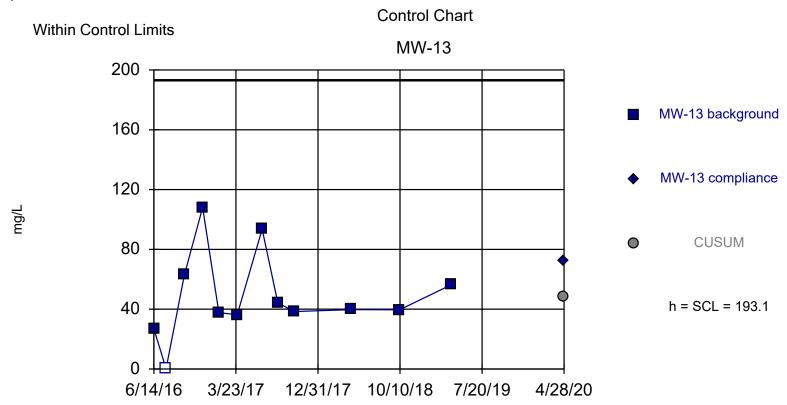
Background Data Summary (based on cube transformation): Mean=290.2, Std. Dev.=33.78, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



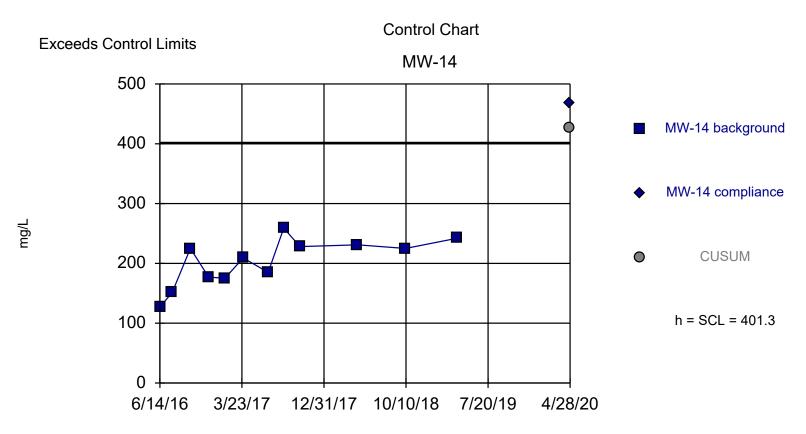
Background Data Summary (based on cube transformation): Mean=275.6, Std. Dev.=38.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8778, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



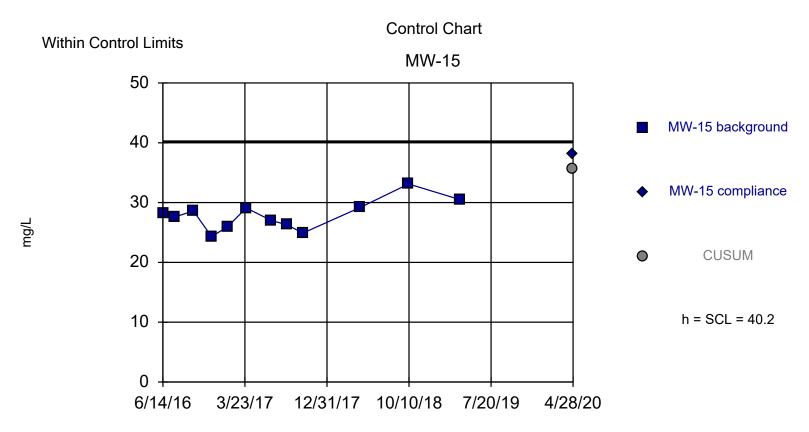
Background Data Summary: Mean=5.898, Std. Dev.=0.4021, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.962, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



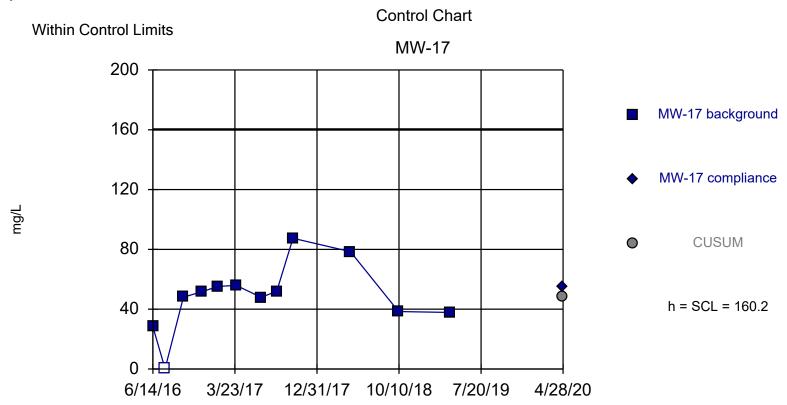
Background Data Summary: Mean=48.63, Std. Dev.=28.89, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9015, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



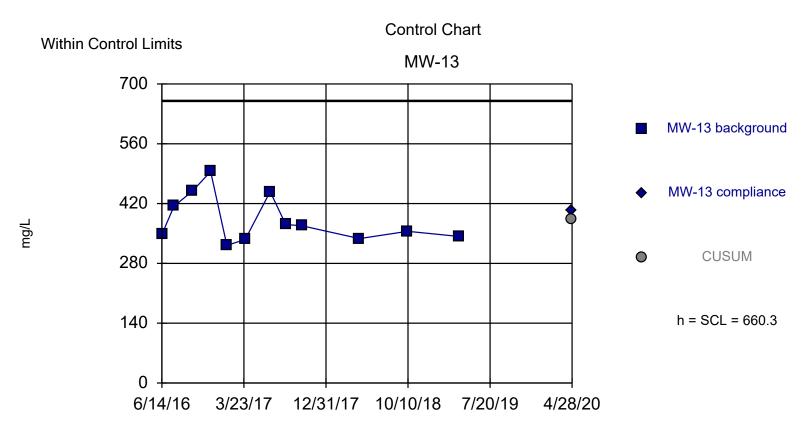
Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



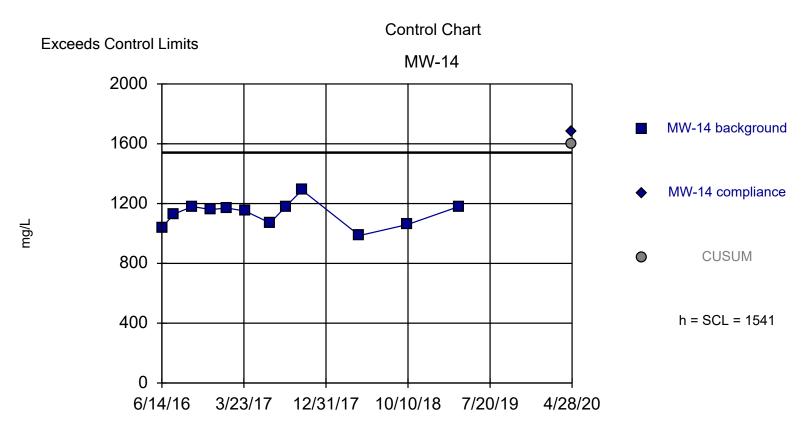
Background Data Summary: Mean=27.9, Std. Dev.=2.459, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9717, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=48.43, Std. Dev.=22.35, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9396, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

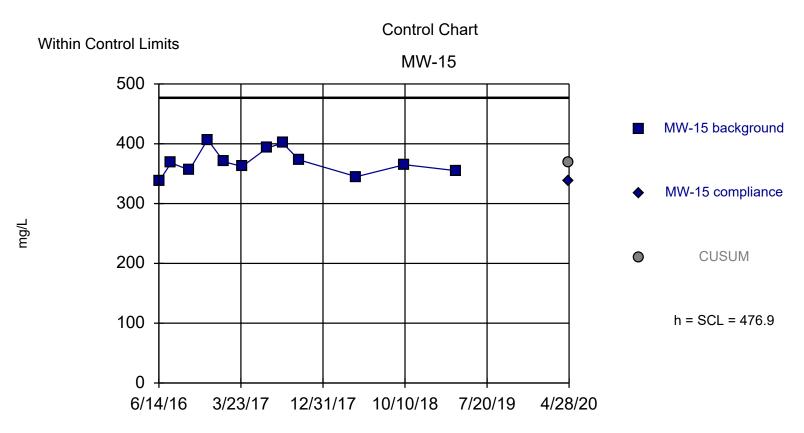


Background Data Summary: Mean=382.3, Std. Dev.=55.61, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8686, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



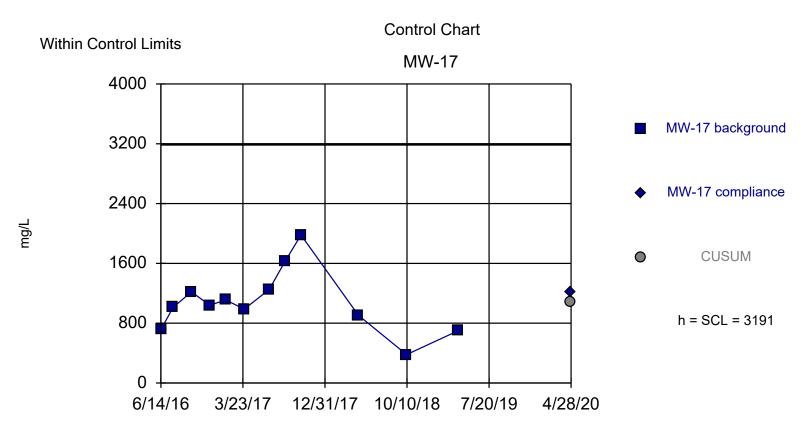
Background Data Summary: Mean=1133, Std. Dev.=81.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9416, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Total Dissolved Solids Analysis Run 7/2/2020 10:00 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks



Background Data Summary: Mean=369.3, Std. Dev.=21.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9458, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Total Dissolved Solids Analysis Run 7/2/2020 10:00 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks



Background Data Summary: Mean=1076, Std. Dev.=423, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9554, critical = 0.859. Report alpha = 0.000262. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Total Dissolved Solids Analysis Run 7/2/2020 10:00 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

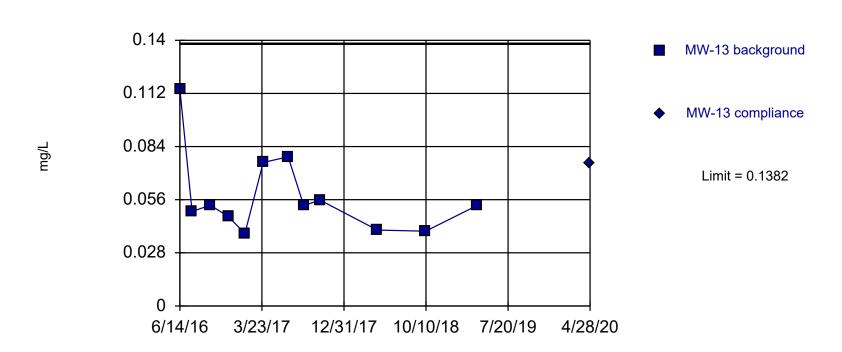
### **Prediction Limit**

	Twin C	aks Power Stati	on CCR LF	Client: Major C	ak Power	Data:	Twin O	aks Pri	nted 7/2/2020, 10	):03 AM	
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Boron (mg/L)	MW-13	0.1382	n/a	4/28/2020	0.075	No	12	0	sqrt(x)	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-14	0.5796	n/a	4/28/2020	0.322	No	12	0	No	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-15	0.06917	n/a	4/28/2020	0.0427	No	12	0	No	0.000	Param Intra 1 of 2
Boron (mg/L)	MW-17	0.362	n/a	4/28/2020	0.0227	No	11	0	n/a	0.01276	NP Intra (normality)



### **Prediction Limit**

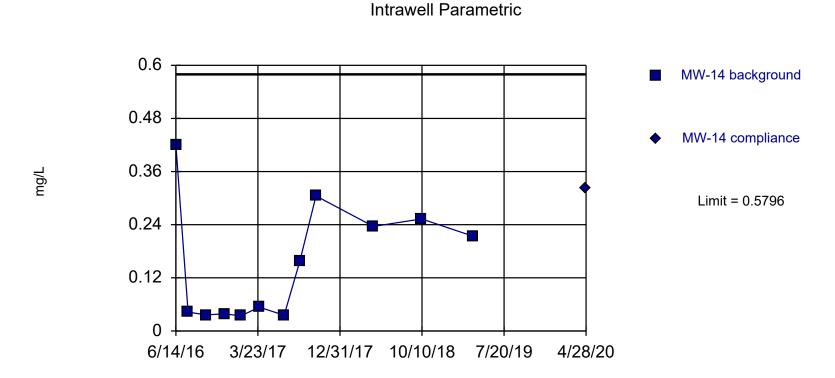
**Intrawell Parametric** 



Background Data Summary (based on square root transformation): Mean=0.2378, Std. Dev.=0.0413, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.

### Within Limit

### **Prediction Limit**

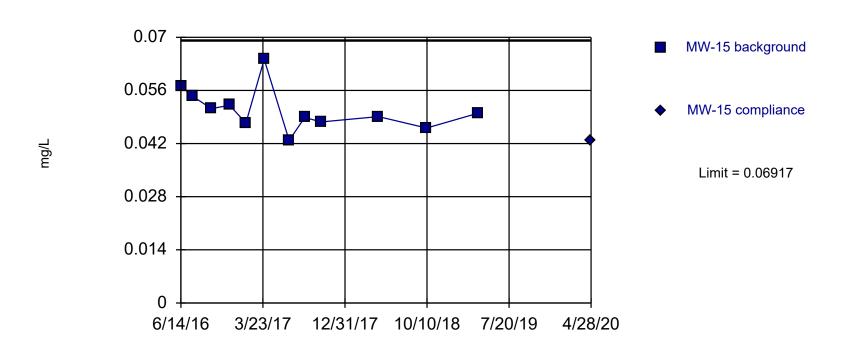


Background Data Summary: Mean=0.152, Std. Dev.=0.1319, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8434, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.

#### Within Limit

### **Prediction Limit**

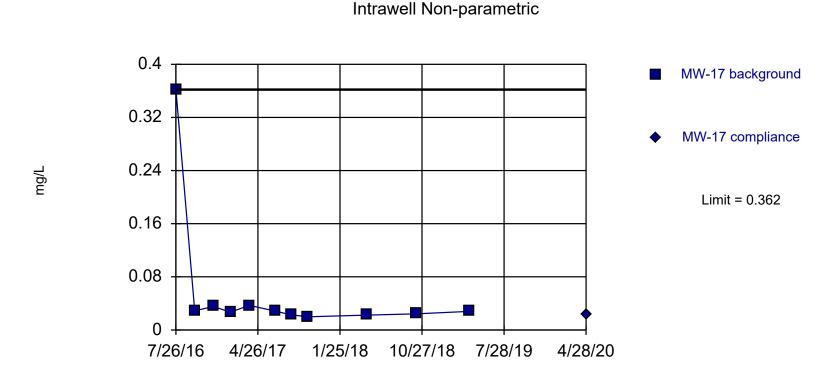
**Intrawell Parametric** 



Background Data Summary: Mean=0.05092, Std. Dev.=0.005627, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9255, critical = 0.805. Kappa = 3.243 (c=15, w=21, 1 of 2, event alpha = 0.05132). Report alpha = 0.0001672.

#### Within Limit

### **Prediction Limit**

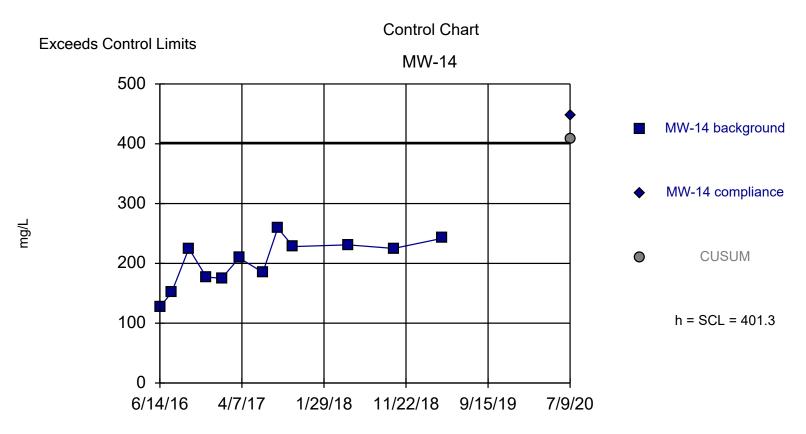


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 11 background values. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2). Seasonality was not detected with 95% confidence.

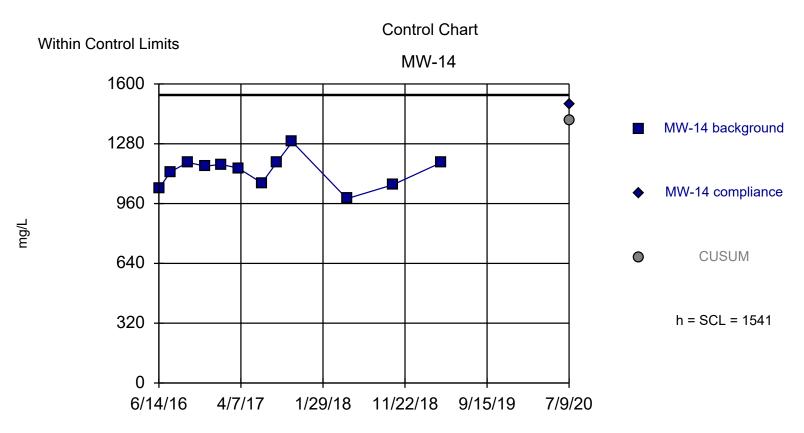
July 2020 Event Results of Statistical Calculations **Control Charts** 

### Shewhart-Cusum Control Chart / Rank Sum

	Twin Oaks Power Station	Client: Major Oak Power			Data: Twin Oaks	Printed 7/20/2020, 8:09 AM		
<u>Constituent</u>	Well	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	Method
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-14	No	1541	1541	12	0	No	Param Intra



Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000278. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.



Background Data Summary: Mean=1133, Std. Dev.=81.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9416, critical = 0.859. Report alpha = 0.000278. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Total Dissolved Solids Analysis Run 7/20/2020 8:08 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks July 27, 2020

**Alternate Source/Error Demonstration** 

# ALTERNATE SOURCE/ERROR DEMONSTRATION

# TWIN OAKS POWER STATION COAL COMBUSTION RESIDUALS (CCR) LANDFILL ROBERTSON COUNTY, TEXAS

July 27, 2020

**Prepared By:** 



1120 NW Stallings Drive Nacogdoches, Texas 75964 TBPG Firm No. 50027

## ALTERNATE SOURCE/ERROR DEMONSTRATION

### **TWIN OAKS POWER STATION**

### **COAL COMBUSTION RESIDUALS (CCR) LANDFILL**

### **ROBERTSON COUNTY, TEXAS**

July 27, 2020





Michelle K. Transier, P.G. Geologist

Prepared by: Hydrex Environmental Nacogdoches, Texas TBPG Firm No. 50027

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### Appendix A – Signed and Sealed Report Certification by Professional Engineer

**Certification Statement** 

### Appendix B – Groundwater Elevation Map

Groundwater Contour Map – April 2020

### Appendix C – Statistical Evaluation Data

Intrawell Shewhart-Cusum Control Chart / Rank Sum

Interwell Prediction Limit

Trend Test

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#### Introduction

This Alternate Source/Error Demonstration ("ASD") report for the Twin Oaks Power Station Coal Combustion Residuals ("CCR") Landfill (the "facility") is prepared in accordance with the requirements of the facility's Groundwater Sampling and Analysis Plan ("GWSAP"), 30 TAC §352 Subchapter H, and the federal CCR Rule, 40 CFR Part 257, Subpart D. This report summarizes the groundwater monitoring activities performed for the verification resampling event for the facility and the evaluations demonstrating that a calculated statistically significant increase ("SSI") in sulfate in monitoring well MW-14 is attributable to natural variation in groundwater quality. This ASD has been certified by a qualified licensed professional geoscientist and qualified licensed professional engineer within 90 days of determining an SSI in sulfate in MW-14 in accordance with 30 TAC §352.941(c)(2), 40 CFR Part 257.93(h)(2), and 40 CFR Part 257.94(e)(2). An SSI for sulfate in MW-14 was determined on July 21, 2020 based on statistical evaluations of the sulfate concentrations observed in the 1<sup>st</sup> 2020 semi-annual sampling event. The calculated SSI and the timeline for completion of an ASD were documented in the 1<sup>st</sup> 2020 Semi-Annual Groundwater Monitoring and Corrective Action Report dated July 27, 2020.

Statistical evaluation of data from the April 2020 event indicated unverified ("initial") intrawell statistical exceedance values for sulfate and total dissolved solids (TDS) concentrations in monitoring well MW-14. Subsequently, verification resampling, utilizing a 1-of-*m* approach, was conducted on July 9, 2020 as provided for and in accordance with the GWSAP. A summary of the verification resampling results is presented below.

Well	Constituent	Initial Result (mg/L)	Statistical Limit (mg/L)	Verification Resampling Result (mg/L)	Intrawell Statistical Exceedance Confirmed?	Recommended Action	
MW-14	sulfate	467	401.3	448	Yes	Alternate Source/Error Demonstration	
10100-14	TDS	1680	1541	1490	No	Maintain Detection Monitoring	

#### Summary of Verification Resampling Results

Statistical reevaluation was performed in accordance with the GWSAP, 30 TAC §352.931, 40 CFR Part 257.93(h)(1), and EPA Unified Guidance methodologies. The results of verification resampling did not confirm the initial intrawell statistical exceedance value for TDS in MW-14. However, the results of the verification resampling confirmed the intrawell statistical exceedance value for sulfate concentrations in monitoring well MW-14 on July 17, 2020 and an SSI was determined on July 21, 2020. A review of relevant information for the facility indicates the values are likely the result of natural groundwater variation and not a release from the CCR Landfill. In accordance with the facility's GWSAP, 30 TAC §352.941(c), and 40 CFR 257.94(e)(2), an ASD has been prepared to address the calculated SSI for MW-14.

#### Alternate Source/Error Demonstration

Statistical evaluations confirmed an intrawell statistical exceedance value for sulfate concentrations in monitoring well MW-14 during the July 2020 verification resampling

event. Review of sulfate data for the facility indicates significant spatial variability in reported sulfate concentrations. Based on this observed variability, monitoring well MW-14 was reevaluated using interwell control chart techniques as provided in EPA Unified Guidance. Control chart evaluation utilized sulfate data from upgradient monitoring wells MW-7, MW-11, MW-12, and MW-16. These wells are located upgradient of the CCR Landfill and considered unaffected by waste disposal activities. The results of the interwell statistical reevaluation indicate the sulfate concentrations reported for monitoring well MW-14 fall within the statistically determined limit of concentrations developed for upgradient monitoring wells. Sulfate concentration data from MW-14 were further evaluated for statistically significant increasing trends. No statistically increasing trends were noted for the sulfate data in MW-14.

Based on this evaluation no release from the CCR Landfill is indicated based on the sulfate concentrations reported for MW-14. Instead, the sulfate concentrations in MW-14 result from variability in groundwater quality not caused by the CCR Landfill as evidenced by data from upgradient wells. Therefore, no change to the detection monitoring status of monitoring well MW-14 is necessary and the site maintains a detection monitoring status. A summary of relevant data is presented below.

Well	Constituent	Initial Result (mg/L)	formoution in the second sec		-	Site-wide Sulfate Data Range (mg/L)	Statistical Exceedance Confirmed?	Recommended Action
MW-14	sulfate	467	448	401.3	1550	24.3 - 1550	No	Maintain Detection Monitoring

#### Summary of Data Relevant to Alternate Source/Error Demonstration

Appendix A

### **CERTIFICATION STATEMENT**

### COAL COMBUSTION RESIDUALS (CCR) LANDFILL TWIN OAKS POWER STATION ROBERTSON COUNTY, TEXAS

I certify I am a licensed professional engineer in the State of Texas and a *qualified professional engineer* as defined in 40 CFR §257.53. I certify that the groundwater monitoring data presented in the Alternate Source/Error Demonstration report, prepared by Hydrex Environmental on behalf of the Twin Oaks Power Station, are appropriate and meet the requirements of 40 CFR Part 257, Subpart D.

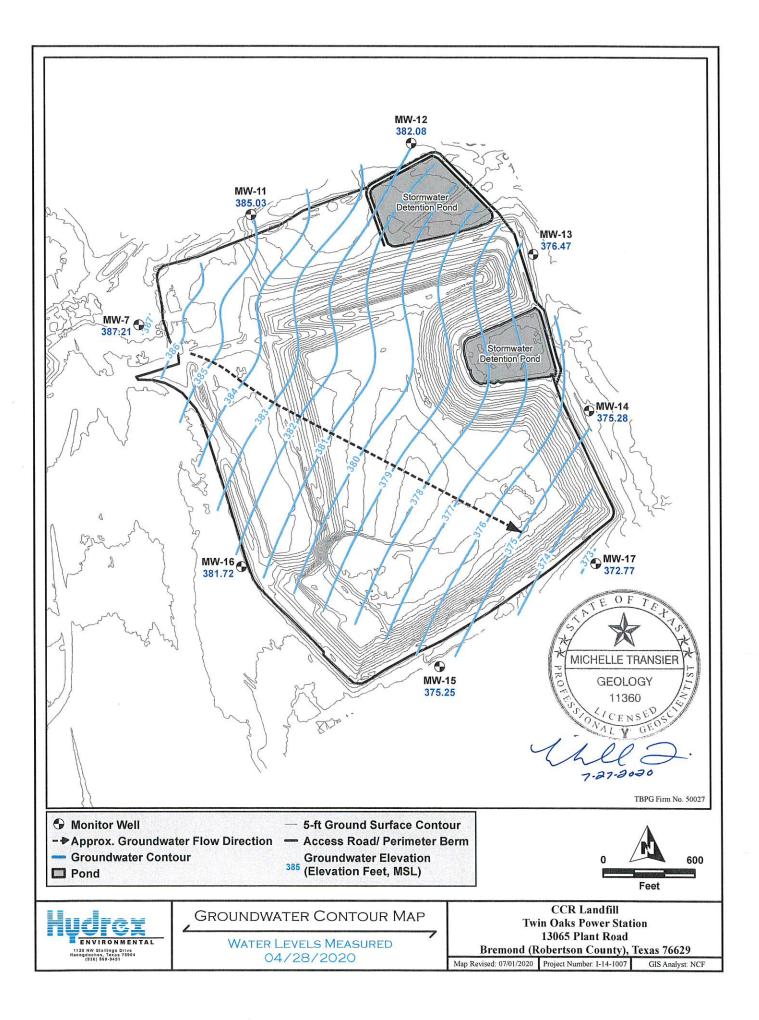


John J. Tayntor, P.E. Auckland Consulting, LLC TBPE Firm Registration No. F-16721

07/27/2020

Date

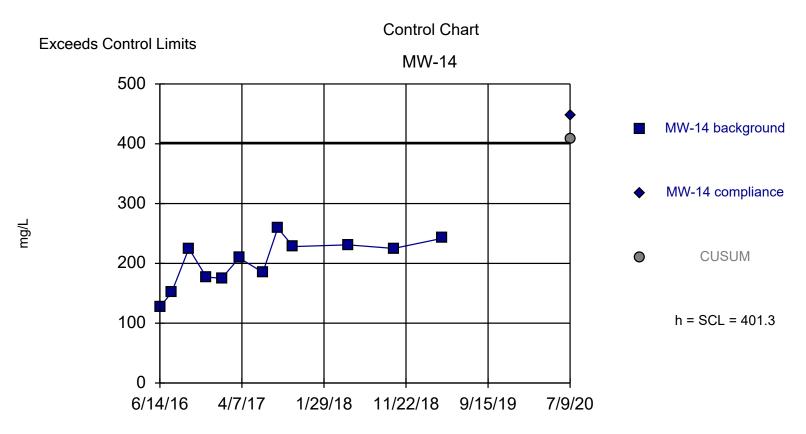
Appendix B



Appendix C

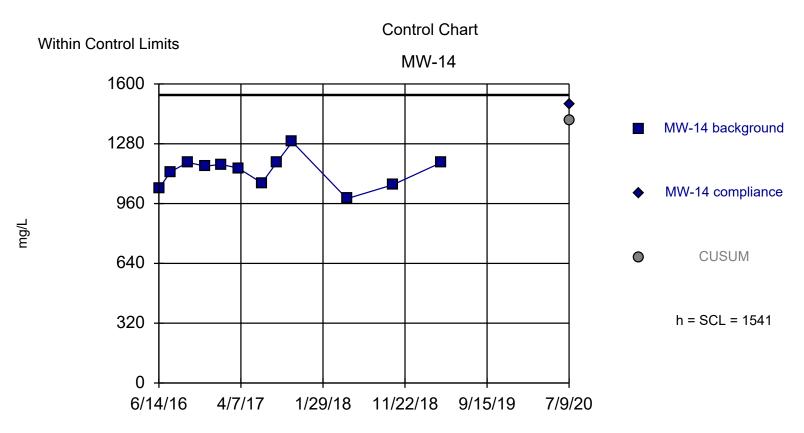
## Shewhart-Cusum Control Chart / Rank Sum

	Twin Oaks Power Station CCR LF			ajor Oak F	ower	Data: Twin Oaks	Printed 7/20/2020, 8	:09 AM
<u>Constituent</u>	Well	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	Method
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra
Total Dissolved Solids (mg/L)	MW-14	No	1541	1541	12	0	No	Param Intra



Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000278. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Sulfate Analysis Run 7/20/2020 8:08 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks



Background Data Summary: Mean=1133, Std. Dev.=81.59, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9416, critical = 0.859. Report alpha = 0.000278. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Total Dissolved Solids Analysis Run 7/20/2020 8:08 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

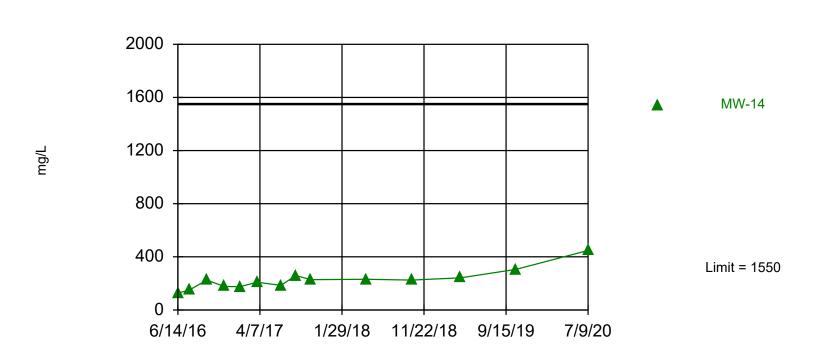
## **Prediction Limit**

	Twin Oa	aks Power Stati	on CCR LF (	Client: Major C	Oak Power	Data:	Twin Oa	aks Prir	nted 7/21/2020, 3:	45 PM	
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	1550	n/a	7/9/2020	448	No	56	0	n/a	0.00058	5 NP Inter (normality)



#### **Prediction Limit**

Interwell Non-parametric

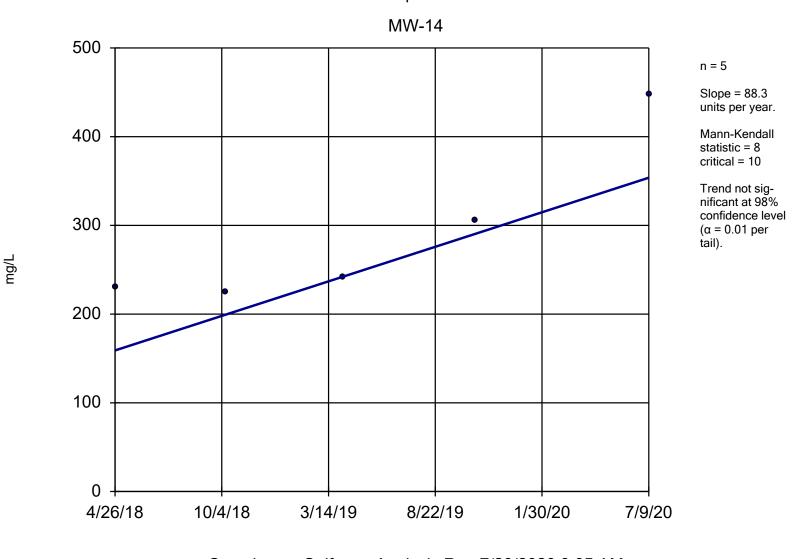


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. Annual per-constituent alpha = 0.02428. Individual comparison alpha = 0.000585 (1 of 2). Assumes 20 future values. Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 7/21/2020 3:44 PM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

## Trend Test

	Twin Oaks Power Sta	ation CCR LF	Client: Ma	jor Oak Power	Data	: Twin Oal	ks Print	ed 7/20/2020,	9:05 AM		
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	88.3	8	10	No	5	0	n/a	n/a	0.02	NP



Sen's Slope Estimator

Constituent: Sulfate Analysis Run 7/20/2020 9:05 AM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

January 27, 2021

**Alternate Source/Error Demonstration** 

# ALTERNATE SOURCE/ERROR DEMONSTRATION

# TWIN OAKS POWER STATION COAL COMBUSTION RESIDUALS (CCR) LANDFILL ROBERTSON COUNTY, TEXAS

January 27, 2021

**Prepared By:** 



1120 NW Stallings Drive Nacogdoches, Texas 75964 TBPG Firm No. 50027

# ALTERNATE SOURCE/ERROR DEMONSTRATION

# TWIN OAKS POWER STATION COAL COMBUSTION RESIDUALS (CCR) LANDFILL ROBERTSON COUNTY, TEXAS

January 27, 2021

Michelle K. Transier, P.G. Geologist



Prepared by: Hydrex Environmental Nacogdoches, Texas TBPG Firm No. 50027

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## Appendix A – Signed and Sealed Report Certification by Professional Engineer

**Certification Statement** 

#### Appendix B – Groundwater Elevation Map

Groundwater Contour Map – October 2020

#### Appendix C – Statistical Evaluation Data

Intrawell Shewhart-Cusum Control Chart / Rank Sum

Interwell Prediction Limit

Trend Test

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#### Introduction

This Alternate Source/Error Demonstration ("ASD") report for the Twin Oaks Power Station Coal Combustion Residuals ("CCR") Landfill (the "facility") is prepared in accordance with the requirements of the facility's Groundwater Sampling and Analysis Plan ("GWSAP"), the state CCR Rules, 30 TAC Chapter 352, and the federal CCR Rule, 40 CFR Part 257, Subpart D. This report summarizes the groundwater monitoring activities performed for the verification resampling event for the facility and the evaluations demonstrating that a calculated statistically significant increase ("SSI") in sulfate in monitoring well MW-14 is attributable to natural variation in groundwater quality. This ASD has been certified by a qualified licensed professional geoscientist and gualified licensed professional engineer within 90 days of determining an SSI in sulfate in MW-14 in accordance with 30 TAC §352.941(c)(2), 40 CFR §257.93(h)(2), and 40 CFR §257.94(e)(2). An SSI for sulfate in MW-14 was determined on December 15, 2020 based on statistical evaluations of the sulfate concentrations observed in the 2<sup>nd</sup> 2020 semi-annual sampling event. Notice of the intent to perform this ASD was provided to TCEQ on January 13, 2021. The calculated SSI and the timeline for completion of an ASD were documented in the 2020 Annual Groundwater Monitoring and Corrective Action Report dated January 27, 2021.

Statistical evaluation of data from the October 2020 event indicated an unverified ("initial") intrawell statistical exceedance value for sulfate concentrations in monitoring well MW-14. Subsequently, verification resampling, utilizing a 1-of-*m* approach, was conducted on November 23, 2020 as provided for and in accordance with the GWSAP. A summary of the verification resampling results is presented below.

Well	Constituent	Initial Result (mg/L)	Statistical Limit (mg/L)	Verification Resampling Result (mg/L)	Intrawell Statistical Exceedance Confirmed?	Recommended Action
MW-14	sulfate	493	401.3	424	Yes	Alternate Source/Error Demonstration

#### Summary of Verification Resampling Results

Statistical reevaluation was performed in accordance with the GWSAP, 30 TAC §352.931, 40 CFR §257.93(h)(1), and EPA Unified Guidance methodologies. The results of the verification resampling confirmed the intrawell statistical exceedance value for sulfate concentrations in monitoring well MW-14 on December 4, 2020 and an SSI was determined on December 15, 2020. A review of relevant information for the facility indicates the values are likely the result of natural groundwater variation and not a release from the CCR Landfill. In accordance with the facility's GWSAP, 30 TAC §352.941(c), and 40 CFR §257.94(e)(2), an ASD has been prepared to address the calculated SSI for MW-14.

#### Alternate Source/Error Demonstration

Statistical evaluations confirmed an intrawell statistical exceedance value for sulfate concentrations in monitoring well MW-14 during the November 2020 verification resampling event. Review of sulfate data for the facility indicates significant spatial variability in reported sulfate concentrations. Based on this observed variability,

monitoring well MW-14 was reevaluated using interwell control chart techniques as provided in EPA Unified Guidance. Control chart evaluation utilized sulfate data from upgradient monitoring wells MW-7, MW-11, MW-12, and MW-16. These wells are located upgradient of the CCR Landfill and considered unaffected by CCR waste disposal activities. The results of the interwell statistical reevaluation indicate the sulfate concentrations reported for monitoring well MW-14 fall within the statistically determined limit of concentrations developed for upgradient monitoring wells. Sulfate concentration data from MW-14 were further evaluated for statistically significant increasing trends. No statistically increasing trends were noted for the sulfate data in MW-14.

Based on this evaluation, no release from the CCR Landfill is indicated. Instead, the sulfate concentrations in MW-14 result from natural variability in groundwater quality not caused by the CCR Landfill as evidenced by data from upgradient wells. Therefore, no change to the detection monitoring status of monitoring well MW-14 is necessary and the site maintains a detection monitoring status. A summary of relevant data is presented below.

Well	Constituent	Initial Result (mg/L)	Verification Resampling Result (mg/L)	Intrawell Statistical Limit (mg/L)	Interwell Statistical Limit (mg/L)	Site-wide Sulfate Data Range (mg/L)	Statistical Exceedance Confirmed?	Recommended Action	
MW-14	sulfate	493	424	401.3	1550	24.3 - 1550	No	Maintain Detection Monitoring	

#### Summary of Data Relevant to Alternate Source/Error Demonstration

Appendix A

# **CERTIFICATION STATEMENT**

### COAL COMBUSTION RESIDUALS (CCR) LANDFILL TWIN OAKS POWER STATION ROBERTSON COUNTY, TEXAS

I certify I am a licensed professional engineer in the State of Texas and a *qualified professional engineer* as defined in 40 CFR §257.53. I certify that the groundwater monitoring data and other information presented in the Alternate Source/Error Demonstration report, prepared by Hydrex Environmental on behalf of the Twin Oaks Power Station, are accurate and meet the requirements of 40 CFR Part 257, Subpart D.

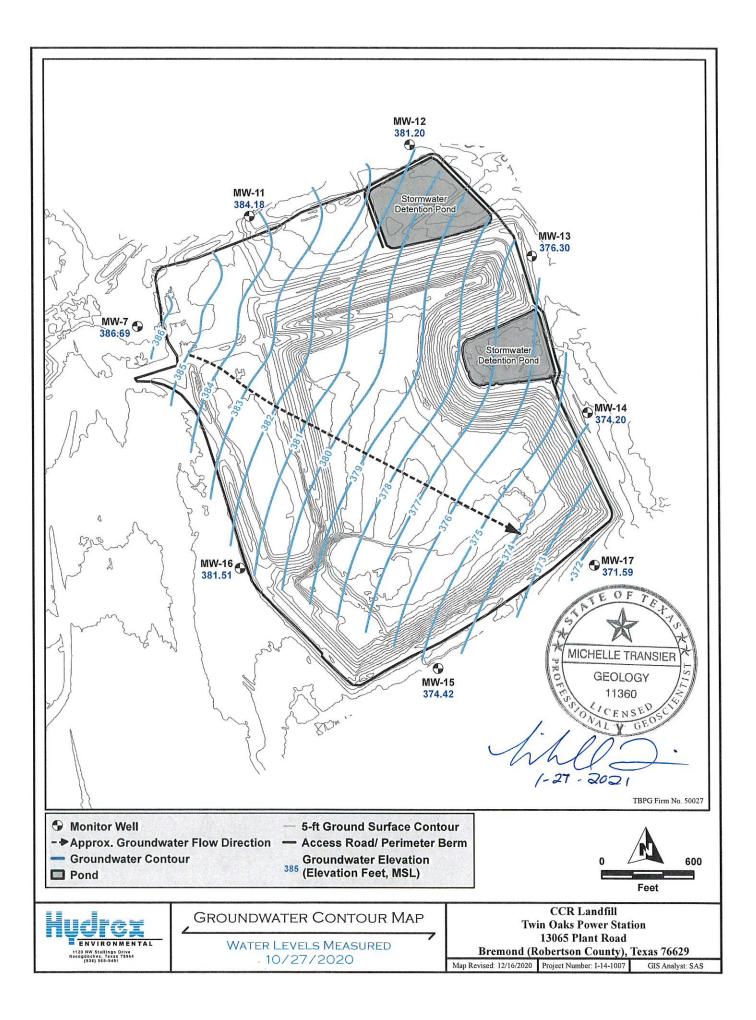


John J. Tayntor, P.E. Auckland Consulting, LLC TBPE Firm Registration No. F-16721

January 27, 2021

Date

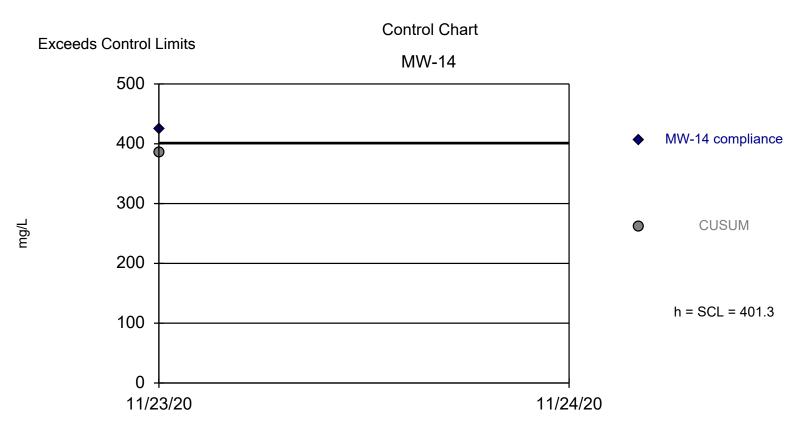
Appendix B



Appendix C

## Shewhart-Cusum Control Chart / Rank Sum

	Twin Oaks Power Station C	Client: Major Oak Power			Data: Twin Oaks	Printed 12/15/2020, 4:32 PM		
<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	Yes	401.3	401.3	12	0	No	Param Intra



Background Data Summary: Mean=202.8, Std. Dev.=39.7, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9442, critical = 0.859. Report alpha = 0.000272. Dates ending 4/4/2019 used for control stats. Standardized h=5, SCL=5.

Constituent: Sulfate Analysis Run 12/15/2020 4:31 PM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

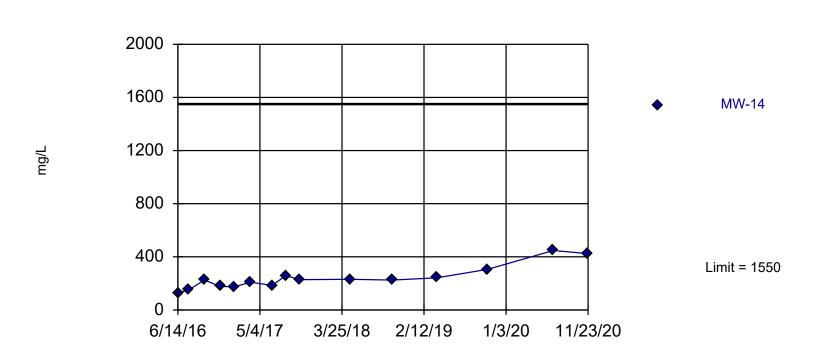
## Shewhart-Cusum Control Chart / Rank Sum

	Twin Oaks Power Station C	Client: Major Oak Power			Data: Twin Oaks	Printed 12/15/2020, 4:41 PM		
<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	No	PL=	n/a	60	0	No	NP Inter PL (normality)



#### Prediction Limit

Interwell Non-parametric



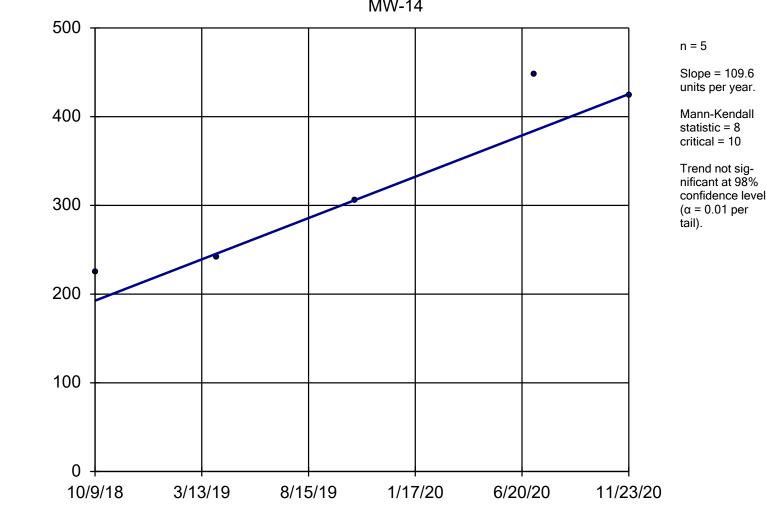
Non-parametric test used in lieu of interwell control chart because the Shapiro Francia normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.02096. Individual comparison alpha = 0.0005043 (1 of 2). Most recent point compared to limit. Assumes 20 future values. Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 12/15/2020 4:35 PM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks

## Trend Test

	Twin Oaks Power Sta	tion CCR LF	Client: Maje	or Oak Power	Data:	Twin Oak	s Printe	ed 12/15/2020	, 4:34 PM		
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	MW-14	109.6	8	10	No	5	0	n/a	n/a	0.02	NP

mg/L



#### Sen's Slope Estimator

MW-14

Constituent: Sulfate Analysis Run 12/15/2020 4:34 PM Twin Oaks Power Station CCR LF Client: Major Oak Power Data: Twin Oaks