

DOCKETED

Docket Number:	21-AFC-02
Project Title:	Willow Rock Energy Storage Center
TN #:	248856
Document Title:	DR68-5 Monthly Geotechnical Update 5 - January 2023
Description:	Monthly Geotechnical Update 5 for Willow Rock 21-AFC-02
Filer:	Kari Miller
Organization:	Golder Associates USA Inc.
Submitter Role:	Applicant Consultant
Submission Date:	2/17/2023 2:47:18 PM
Docketed Date:	2/17/2023

Willow Rock Monthly Geotechnical Update – January 2023

Status

The table below overviews the status of the various activities that have been initiated during the geotechnical program at the Willow Rock project site as of 2023/01/31. No drilling activities were completed in January 2023.

Activity	Status	Notes
Shallow Borehole Program	Complete	Shallow borehole program was completed June - August 2022 with 8 shallow borehole and CPT testing.
Seismic Testing Round 1	Complete	Seismic testing was completed in Q1 to provide early insight on bedrock depth and stratigraphy before selecting borehole locations.
Deep Borehole #1	Complete	Drilling, downhole testing, and lab analysis has been completed on borehole #1.
Deep Borehole #2	Complete	Deep borehole #2 has completed drilling, geophysical logging, and pump & packer testing. In-situ stress testing (sigma) was attempted but no successful tests were completed. Lab testing on core samples is complete and summarizing reports are being prepared.
Deep Borehole #3	Complete	Deep borehole #3 has finished drilling to a total depth of 2313' BGL and has completing downhole testing. In-situ stress testing was completed, and 2 successful tests were gathered. Geophysical logging and downhole water samples were gathered. Pump & packer testing was completed in December before the hole was closed. Lab testing on core samples is complete and summarizing reports are being prepared.

Monthly Update

Deep Borehole #2

All lab testing for borehole #2 reached completion in January. Summarizing reports presenting the lab testing data are being prepared.

Deep Borehole #3

All lab testing for borehole #2 reached completion in January. Summarizing reports presenting the lab testing data are being prepared. The testing results from the downhole water samples that were gathered from borehole #3 were received this month.

Attachment DR68-5



New Data Transmittals

The geotechnical exploration program has received the following data during January 2023.

- Downhole water testing results from borehole #3



Date of Report: 12/08/2022

Lucas Thexton

Hydrostor

365 Bay Street

Toronto, CANADA M5H 2V1

Client Project: [none]

BCL Project: GW Testing

BCL Work Order: 2227998

Invoice ID: B464517

Enclosed are the results of analyses for samples received by the laboratory on 11/22/2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Ragen Schallock
Client Service Rep

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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ANALYTICAL SERVICES 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.pacelabs.com

Chain of Custody Form

Page 1 of 1

Report To: Client: <u>Hydrostor Inc.</u>	Project #:
Attn: <u>Lucas Thexton</u>	Project Name: <u>GW Testing</u>
Street Address: <u>365 Bay Street, Suite 300</u>	BID# <u>00126767</u>
City, State, Zip: <u>Toronto, ON M5H 2V1 CA</u>	Sampler(s) Name Printed:
Phone: <u>+1-437-997-2020</u>	<u>Enrique Ch.</u>
Email: <u>lucas.thexton@hydrostor.ca</u>	<u>Efrain G.</u>
Work Order #: <u>22-27998</u>	<u>Kaylah C.</u>

Analysis Requested

Number of Containers
TDS (EPA 160.1)
pH (EPA 150.1)
Viscosity (ASTM D745)
Density (ASTM D153)

Comments:

Sample #	Description	Date Sampled	Time Sampled	TDS (EPA 160.1)	pH (EPA 150.1)	Viscosity (ASTM D745)	Density (ASTM D153)	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
1	982 Ft Fluid Sample	11/19/22	5:10 pm	X	X	X	X				X			Viscosity & Density to be
	982 Ft Fluid Sample	11/19/22	5:10 pm	X	X	X	X				X			Sub-contracted to Balco
2	1219 Ft Fluid Sample	11/19/22	6:10 pm	X	X	X	X				X			
	1219 Ft Fluid Sample	11/19/22	6:10 pm	X	X	X	X				X			
3	1383 Ft Fluid Sample	11/19/22	7:30 pm	X	X	X	X				X			
	1383 Ft Fluid Sample	11/19/22	7:30 pm	X	X	X	X				X			
4	1527 Ft Fluid Sample	11/19/22	9:30 pm	X	X	X	X				X			
	1527 Ft Fluid Sample	11/19/22	9:30 pm	X	X	X	X				X			
5	1875 Ft Fluid Sample	11/19/22	11:30 pm	X	X	X	X				X			
	1875 Ft Fluid Sample	11/19/22	11:30 pm	X	X	X	X				X			

CHK BY: DISTRIBUTION
MSB
SUB-OUT

Billing Same as above

Client: _____
Address: _____
City: _____ State: _____ Zip: _____
Attn: _____
P.O. #: _____

EDF Required Geotracker Yes No Global ID _____

1. Relinquished By <u>Enrique Ch.</u>	Date <u>11/21/22</u>	Time <u>9:45</u>	1. Received By <u>[Signature]</u>	Date <u>11-21-22</u>	Time <u>9:45</u>
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

System # (Needed for DUP) _____
GISKey Well Star

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

PACE ANALYTICAL		COOLER RECEIPT FORM		Page _____ Of _____							
Submission #: <u>22-27998</u>											
SHIPPING INFORMATION Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> GSO / GLS <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> Pace Lab Field Service <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		FREE LIQUID YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> W S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Comments: _____											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>PE</u> Thermometer ID: <u>337</u> Temperature: (A) <u>4.5</u> °C (C) <u>4.4</u> °C		Date/Time <u>11-21-22</u> Analyst Init <u>SMH945</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES		A-B	A-B	A-B	A-B	A-B					
4oz / 8oz / 16oz PE UNPRES											
2oz Cr*											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
Pa PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664B											
PT ODDR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608, 3/8/081A											
QT EPA 515, 1/8/151A											
QT EPA 525.2											
QT EPA 525.2 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548.1											
QT EPA 549.2											
QT EPA 8015M											
QT EPA 8270C											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments: _____
 Sample Numbering Completed By: JLR Date/Time: 11/21/22 @ 0729
 A = Actual / C = Corrected



Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2227998-01	COC Number:	---	Receive Date:	11/22/2022 09:45
	Project Number:	---	Sampling Date:	11/19/2022 17:10
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	982 ft Fluid Sample	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
<hr/>				
2227998-02	COC Number:	---	Receive Date:	11/22/2022 09:45
	Project Number:	---	Sampling Date:	11/19/2022 18:10
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1219ft Fluid Sample	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
<hr/>				
2227998-03	COC Number:	---	Receive Date:	11/22/2022 09:45
	Project Number:	---	Sampling Date:	11/19/2022 19:30
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1383ft Fluid Sample	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
<hr/>				
2227998-04	COC Number:	---	Receive Date:	11/22/2022 09:45
	Project Number:	---	Sampling Date:	11/19/2022 21:30
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1527ft Fluid Sample	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
<hr/>				
2227998-05	COC Number:	---	Receive Date:	11/22/2022 09:45
	Project Number:	---	Sampling Date:	11/19/2022 23:30
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1875ft Fluid Sample	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

BCL Sample ID: 2227998-01	Client Sample Name: 982 ft Fluid Sample, 11/19/2022 5:10:00PM							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
pH	8.14	pH Units	0.05	0.05	EPA-150.1		S05	1
Total Dissolved Solids @ 180 C	260	mg/L	20	10	EPA-160.1	ND	A10	2

DCN	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC	
			Date/Time					Batch ID	Prep Method
1	EPA-150.1	12/01/22 06:00	12/01/22	17:07	RML	MET-1	1	B152939	No Prep
2	EPA-160.1	11/23/22 15:00	11/23/22	15:00	CAD	MANUAL	2	B154513	No Prep

DCN = Data Continuation Number

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

BCL Sample ID: 2227998-02	Client Sample Name: 1219ft Fluid Sample, 11/19/2022 6:10:00PM							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
pH	8.13	pH Units	0.05	0.05	EPA-150.1		S05	1
Total Dissolved Solids @ 180 C	260	mg/L	20	10	EPA-160.1	ND	A10	2

DCN	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC	
			Date/Time					Batch ID	Prep Method
1	EPA-150.1	12/01/22 06:00	12/01/22	17:14	RML	MET-1	1	B152939	No Prep
2	EPA-160.1	11/23/22 15:00	11/23/22	15:00	CAD	MANUAL	2	B154513	No Prep

DCN = Data Continuation Number

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

BCL Sample ID: 2227998-03	Client Sample Name: 1383ft Fluid Sample, 11/19/2022 7:30:00PM							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
pH	7.98	pH Units	0.05	0.05	EPA-150.1		S05	1
Total Dissolved Solids @ 180 C	280	mg/L	20	10	EPA-160.1	ND	A10	2

DCN	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC	
			Date/Time					Batch ID	Prep Method
1	EPA-150.1	12/01/22 06:00	12/01/22	17:21	RML	MET-1	1	B152939	No Prep
2	EPA-160.1	11/23/22 15:00	11/23/22	15:00	CAD	MANUAL	2	B154513	No Prep

DCN = Data Continuation Number

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

BCL Sample ID: 2227998-04	Client Sample Name: 1527ft Fluid Sample, 11/19/2022 9:30:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
pH	8.35	pH Units	0.05	0.05	EPA-150.1		S05	1
Total Dissolved Solids @ 180 C	280	mg/L	20	10	EPA-160.1	ND	A10	2

DCN	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC	
			Date/Time					Batch ID	Prep Method
1	EPA-150.1	12/01/22 06:00	12/01/22	17:28	RML	MET-1	1	B152939	No Prep
2	EPA-160.1	11/23/22 15:00	11/23/22	15:00	CAD	MANUAL	2	B154513	No Prep

DCN = Data Continuation Number

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

BCL Sample ID: 2227998-05	Client Sample Name: 1875ft Fluid Sample, 11/19/2022 11:30:00PM							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
pH	8.21	pH Units	0.05	0.05	EPA-150.1		S05	1
Total Dissolved Solids @ 180 C	280	mg/L	20	10	EPA-160.1	ND	A10	2

DCN	Method	Prep Date	Run		Analyst	Instrument	Dilution	QC	
			Date/Time					Batch ID	Prep Method
1	EPA-150.1	12/01/22 06:00	12/01/22	17:35	RML	MET-1	1	B152939	No Prep
2	EPA-160.1	11/23/22 15:00	11/23/22	15:00	CAD	MANUAL	2	B154513	No Prep

DCN = Data Continuation Number

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
 Project: GW Testing
 Project Number: [none]
 Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
-------------	--------------	-----------	-------	-----	-----	-----------	-------

QC Batch ID: B154513

Total Dissolved Solids @ 180 C	B154513-BLK1	ND	mg/L	6.7	3.3		1
--------------------------------	--------------	----	------	-----	-----	--	---

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154513-BLK1	PB	EPA-160.1	11/23/22	11/23/22 15:00	CAD	MANUAL	0.667

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
 Project: GW Testing
 Project Number: [none]
 Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Run #
								Percent Recovery	RPD		
QC Batch ID: B152939											
pH	B152939-BS2	LCS	7.0200	7.0000	pH Units	100		95 - 105			1
QC Batch ID: B154513											
Total Dissolved Solids @ 180 C	B154513-BS1	LCS	590.00	586.00	mg/L	101		90 - 110			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B152939-BS2	LCS	EPA-150.1	12/01/22	12/01/22 16:17	RML	MET-1	1
2	B154513-BS1	LCS	EPA-160.1	11/23/22	11/23/22 15:00	CAD	MANUAL	5

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Hydrostor
 365 Bay Street
 Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
 Project: GW Testing
 Project Number: [none]
 Project Manager: Lucas Thexton

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals	R#
									RPD	Percent Recovery		
QC Batch ID: B152939		Used client sample: N										
pH	DUP	2227992-01	5.9200	5.9300		pH Units	0.2		20			1
QC Batch ID: B154513		Used client sample: N										
Total Dissolved Solids @ 180 C	DUP	2227944-01	1210.0	1220.0		mg/L	0.8		10			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B152939-DUP1	DUP	EPA-150.1	12/01/22	12/01/22 16:37	RML	MET-1	1
2	B154513-DUP1	DUP	EPA-160.1	11/23/22	11/23/22 15:00	CAD	MANUAL	10

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ZALCO LABORATORIES, INC.

Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

December 7, 2022

Ragen Schallock
Pace Analytical
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918

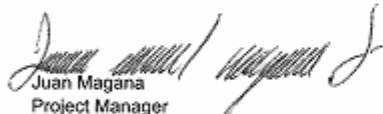
Project ID: 2227998
RE: 2211392

Dear Ragen Schallock:

Zalco Laboratories, Inc. received 5 samples on 11/23/2022 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,



Juan Magana
Project Manager
CC:

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level * See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.



ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Pace Analytical
4100 Atlas Court
Bakersfield, CA 93308

Project: Master
Project #: 2227998
Attention: Ragen Schallock

Work Order No.: 2211392
Reported: 12/07/2022
Received: 11/23/22 12:10

Lab Sample ID: 2211392-01

Collected By: Cleint

Client Sample ID: 2227998-01

Date Collected: 11/19/2022 5:10:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry								
		<i>MCL Limits</i>						
Density @ 15 C (60 F)	1.0012		g/mL		ASTM D 4052	11/28/22	11/28/22	JAM
Viscosity								
1-Viscosity @ 60°F	0.860		cSt		ASTM D 445	11/28/22	11/28/22	JAM
2-Viscosity @ 70°F	0.760		cSt		ASTM D 445	11/28/22	11/28/22	JAM
3-Viscosity @ 80°F	0.680		cSt		ASTM D 445	11/28/22	11/28/22	JAM
4-Viscosity @ 100°F	0.550		cSt		ASTM D 445	11/28/22	11/28/22	JAM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTL: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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(661) 395-0539
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Pace Analytical
4100 Atlas Court
Bakersfield, CA 93308

Project: Master
Project #: 2227998
Attention: Ragen Schallock

Work Order No.: 2211392
Reported: 12/07/2022
Received: 11/23/22 12:10

Lab Sample ID: 2211392-02

Collected By: Cleint

Client Sample ID: 2227998-02

Date Collected: 11/19/2022 6:10:00PM

Analyte	Results	PQL	Units	Flag	Method	Date		Init.
						Prepared	Analyzed	
General Chemistry			<i>MCL Limits</i>					
Density @ 15 C (60 F)	1.0010		g/mL		ASTM D 4052	11/28/22	11/28/22	JAM
Viscosity								
1-Viscosity @ 60°F	0.860		cSt		ASTM D 445	11/28/22	11/28/22	JAM
2-Viscosity @ 70°F	0.760		cSt		ASTM D 445	11/28/22	11/28/22	JAM
3-Viscosity @ 80°F	0.680		cSt		ASTM D 445	11/28/22	11/28/22	JAM
4-Viscosity @ 100°F	0.550		cSt		ASTM D 445	11/28/22	11/28/22	JAM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTL: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level * See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.



ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

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Project: Master
Project #: 2227998
Attention: Ragen Schallock

Work Order No.: 2211392
Reported: 12/07/2022
Received: 11/23/22 12:10

Lab Sample ID: 2211392-03

Collected By: Client

Client Sample ID: 2227998-03

Date Collected: 11/19/2022 7:30:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry								
		MCL Limits						
Density @ 15 C (60 F)	1.0011		g/mL		ASTM D 4052	11/28/22	11/28/22	JAM
Viscosity								
1-Viscosity @ 60°F	0.860		cSt		ASTM D 445	11/28/22	11/28/22	JAM
2-Viscosity @ 70°F	0.760		cSt		ASTM D 445	11/28/22	11/28/22	JAM
3-Viscosity @ 80°F	0.680		cSt		ASTM D 445	11/28/22	11/28/22	JAM
4-Viscosity @ 100°F	0.550		cSt		ASTM D 445	11/28/22	11/28/22	JAM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
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Project: Master
Project #: 2227998
Attention: Ragen Schallock

Work Order No.: 2211392
Reported: 12/07/2022
Received: 11/23/22 12:10

Lab Sample ID: 2211392-04

Collected By: Cleint

Client Sample ID: 2227998-04

Date Collected: 11/19/2022 9:30:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry								
		<i>MCL Limits</i>						
Density @ 15 C (60 F)	1.0013		g/mL		ASTM D 4052	11/28/22	11/28/22	JAM
Viscosity								
1-Viscosity @ 60°F	0.860		cSt		ASTM D 445	11/28/22	11/28/22	JAM
2-Viscosity @ 70°F	0.780		cSt		ASTM D 445	11/28/22	11/28/22	JAM
3-Viscosity @ 80°F	0.680		cSt		ASTM D 445	11/28/22	11/28/22	JAM
4-Viscosity @ 100°F	0.550		cSt		ASTM D 445	11/28/22	11/28/22	JAM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level * See Case Narrative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bakersfield, CA 93308

Project: Master
Project #: 2227998
Attention: Ragen Schallock

Work Order No.: 2211392
Reported: 12/07/2022
Received: 11/23/22 12:10

Lab Sample ID: 2211392-05

Collected By: Cleint

Client Sample ID: 2227998-05

Date Collected: 11/19/2022 11:30:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry								
		<i>MCL Limits</i>						
Density @ 15 C (60 F)	1.0011		g/mL		ASTM D 4052	11/28/22	11/28/22	JAM
Viscosity								
1-Viscosity @ 60°F	0.860		cSt		ASTM D 445	11/28/22	11/28/22	JAM
2-Viscosity @ 70°F	0.760		cSt		ASTM D 445	11/28/22	11/28/22	JAM
3-Viscosity @ 80°F	0.680		cSt		ASTM D 445	11/28/22	11/28/22	JAM
4-Viscosity @ 100°F	0.590		cSt		ASTM D 445	11/28/22	11/28/22	JAM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTL: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level * See Case Narrative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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SUBCONTRACT ORDER
Pace Analytical (Bakersfield, CA)
2227998

2211392

SENDING LABORATORY:

Pace Analytical
4100 Atlas Court
Bakersfield, CA 93308
Phone: 661-327-4911
FAX: 661-327-1918
Project Manager: Ragen Schallock

RECEIVING LABORATORY:

Zalco Laboratories
4309 Armour
Bakersfield, CA 93308
Megan Stillman
Phone: 395-0539
FAX: 395-3069

ZLCLB

Analysis	Level 4: No Due	EDDs Needed: Expires	Comments
ASTM D4052 - Density	12/13/22 23:59	11/18/23 17:10	5-7C
ASTM D445 - Viscosity	12/13/22 23:59	11/18/23 17:10	

CA Drinking Water PSCode

GeoTracker -	Global ID:	Field Point:	Log Code: ---
Sample ID: 2227998-01	Water	Sampled: 11/19/22 17:10	Sample Name: 982 ft Fluid Sample

Containers supplied:

X32: Glass Amber 1000 ml (quart)

ASTM D4052 - Density	12/13/22 23:59	11/18/23 18:10
ASTM D445 - Viscosity	12/13/22 23:59	11/18/23 18:10

CA Drinking Water PSCode

GeoTracker -	Global ID:	Field Point:	Log Code: ---
Sample ID: 2227998-02	Water	Sampled: 11/19/22 18:10	Sample Name: 1219ft Fluid Sample

Containers supplied:

X32: Glass Amber 1000 ml (quart)

ASTM D4052 - Density	12/13/22 23:59	11/18/23 19:30
ASTM D445 - Viscosity	12/13/22 23:59	11/18/23 19:30

CA Drinking Water PSCode

GeoTracker -	Global ID:	Field Point:	Log Code: ---
Sample ID: 2227998-03	Water	Sampled: 11/19/22 19:30	Sample Name: 1383ft Fluid Sample

Containers supplied:

X32: Glass Amber 1000 ml (quart)



ASTM D4052 - Density	12/13/22 23:59	11/18/23 21:30
ASTM D445 - Viscosity	12/13/22 23:59	11/18/23 21:30

CA Drinking Water PSCode

GeoTracker -	Global ID:	Field Point:	Log Code: ---
Sample ID: 2227998-04	Water	Sampled: 11/19/22 21:30	Sample Name: 1527ft Fluid Sample

Containers supplied:

X32: Glass Amber 1000 ml (quart)

	11-23-22		11/23/22	12:10
Released By	Date	Received By	Date	

Released By	Date	Received By	Date
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ZLCLB

Printed 11/23/2022 9:19:55AM

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SUBCONTRACT ORDER
Pace Analytical (Bakersfield, CA)
2227998


2211392

Analysis	Due	Expires	Comments
ASTM D4052 - Density	12/13/22 23:59	11/18/23 23:30	
ASTM D445 - Viscosity	12/13/22 23:59	11/18/23 23:30	

CA Drinking Water PSCode

GeoTracker -	Global ID:	Field Point:	Log Code: ---
Sample ID: 2227998-05	Water	Sampled: 11/19/22 23:30	Sample Name: 1875ft Fluid Sample

Containers supplied:
X32: Glass Amber 1000 ml (quart)

Released By  Date 11/23-22 Received By _____ Date _____

Released By _____ Date _____ Received By _____ Date _____

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Printed 11/23/2022 9:19:55AM

Page 2 of 2



Hydrostor
365 Bay Street
Toronto, CANADA M5H 2V1

Reported: 12/08/2022 10:59
Project: GW Testing
Project Number: [none]
Project Manager: Lucas Thexton

Notes And Definitions

MDL Method Detection Limit
ND Analyte Not Detected
PQL Practical Quantitation Limit
A10 Detection and quantitation limits were raised due to matrix interference.
S05 The sample holding time was exceeded.