



Telephone: 867-587-7205
Fax: 867-587-2928

October 9, 2019

EnCana Corporation
PO Box 2850
500 Centre Street SE
Calgary, AB T2P 2S5

Attention: Stephen Skarstol

File Number	S99A-015
Type of Operation	OIL AND GAS DRILLING - WELLSITE
Location	Remote Sump for wellsite G-18

Dear Stephen Skarstol,

An inspection of the above-noted operation was conducted on July 09, 2019, by Resource Management Officer II Jonathan Gillingham, Resource Management Officer I Bonnie Deschene, and Manager of Resource Management Trevor Bremner. During this inspection, nine soil samples were taken in various locations around the G-18 Remote Sump. Sampling results have indicated one sample exceeds CCME guidelines for SAR (Reference Number: 1363877-8). The exceeding sample was taken directly in the wallowing pit. The high salt content is attracting ungulates and causing them to wallow.

The Department of Lands, Sahtu Region, expects EnCana to comment on this matter immediately to discuss a reasonable course of action with a practical timeline. If you have any questions, please contact me at 867-587-7205.

Sincerely,

Jonathan Gillingham
Resource Management Officer II
Department of Lands – Sahtu Region

CC: Sahtu Land and Water Board
Trevor Bremner – Manager of Resource Management – Sahtu Region

Report Transmission Cover Page

Bill To: TAIGA Environmental Laboratory	Project ID:	Lot ID: 1363877
Box 1500	Project Name:	Control Number: A229974
4601 - 52 Avenue	Project Location:	Date Received: Jul 16, 2019
Yellowknife, NT, Canada	LSD:	Date Reported: Jul 22, 2019
X1A 1L4	P.O.: 74091	Report Number: 2423915
Attn: Judy Mah	Proj. Acct. code:	
Sampled By: J. Mah		
Company: Taiga		

Contact	Company	Address
Judy Mah	TAIGA Environmental Laboratory	Box 1500, 4601 - 52 Avenue Yellowknife, NT X1A 1L4 Phone: (867) 767-9235 Fax: Email: judy_mah@gov.nt.ca

<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge Reports	PDF	COC / Test Report / Invoice
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Email - Multiple Reports By Lot	Standard List	Test Report
Email - Single Report	PDF	COA
Email - Single Report	PDF	COR

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Analytical Report

Bill To: TAIGA Environmental Laboratory	Project ID:	Lot ID: 1363877
Box 1500	Project Name:	Control Number: A229974
4601 - 52 Avenue	Project Location:	Date Received: Jul 16, 2019
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Attn: Judy Mah	Proj. Acct. code:	
Sampled By: J. Mah		
Company: Taiga		

		Reference Number	1363877-1	1363877-2	1363877-3	
		Sample Date	Jul 09, 2019	Jul 09, 2019	Jul 09, 2019	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	190506001	190506002	190506003	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Salinity						
pH	Saturated Paste	pH	6.7	7.1	6.3	
Electrical Conductivity	Saturated Paste	dS/m	0.40	0.42	0.31	0.01
SAR	Saturated Paste		0.5	0.3	1.1	
% Saturation		%	443	292	288	
Calcium	Saturated Paste	meq/L	2.03	2.81	1.33	0.01
Calcium	Saturated Paste	mg/kg	180	164	76.4	
Magnesium	Saturated Paste	meq/L	0.99	1.37	0.72	0.02
Magnesium	Saturated Paste	mg/kg	53.2	48.5	25	
Sodium	Saturated Paste	meq/L	0.57	0.42	1.08	0.04
Sodium	Saturated Paste	mg/kg	58	28	71	
Potassium	Saturated Paste	meq/L	0.46	0.09	0.13	0.03
Potassium	Saturated Paste	mg/kg	80	10	15	
Chloride	Saturated Paste	meq/L	0.98	0.70	1.23	0.06
Chloride	Saturated Paste	mg/kg	154	73	125	
Sulfate (SO ₄)	Saturated Paste	meq/L	0.44	0.59	0.46	0.06
Sulfate (SO ₄)	Saturated Paste	mg/kg	94	83	63	
Sulfate-S	Saturated Paste	meq/L	0.44	0.59	0.46	0.06
Sulfate-S	Saturated Paste	mg/kg	31	28	21	
TGR	Saturated Paste	T/ac	<0.1	<0.1	<0.1	

Analytical Report

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4601 - 52 Avenue	Project Location:	Date Received: Jul 16, 2019
Yellowknife, NT, Canada	LSD:	Date Reported: Jul 22, 2019
X1A 1L4	P.O.: 74091	Report Number: 2423915
Attn: Judy Mah	Proj. Acct. code:	
Sampled By: J. Mah		
Company: Taiga		

		Reference Number	1363877-4	1363877-5	1363877-6	Nominal Detection Limit
		Sample Date	Jul 09, 2019	Jul 09, 2019	Jul 09, 2019	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	190506004	190506005	190506006	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	
Salinity						
pH	Saturated Paste	pH	5.3	5.6	7.0	
Electrical Conductivity	Saturated Paste	dS/m	0.11	0.21	0.70	0.01
SAR	Saturated Paste		<0.1	1.1	0.5	
% Saturation		%	243	350	68	
Calcium	Saturated Paste	meq/L	1.39	1.49	4.46	0.01
Calcium	Saturated Paste	mg/kg	67.5	104	60.3	
Magnesium	Saturated Paste	meq/L	0.51	0.44	2.21	0.02
Magnesium	Saturated Paste	mg/kg	15	19	18.0	
Sodium	Saturated Paste	meq/L	0.06	1.10	1.00	0.04
Sodium	Saturated Paste	mg/kg	3	89	16	
Potassium	Saturated Paste	meq/L	0.06	0.05	0.07	0.03
Potassium	Saturated Paste	mg/kg	6	7	2	
Chloride	Saturated Paste	meq/L	0.30	0.42	1.44	0.06
Chloride	Saturated Paste	mg/kg	26	52	35	
Sulfate (SO4)	Saturated Paste	meq/L	0.26	1.01	0.60	0.06
Sulfate (SO4)	Saturated Paste	mg/kg	30	170	20	
Sulfate-S	Saturated Paste	meq/L	0.26	1.01	0.60	0.06
Sulfate-S	Saturated Paste	mg/kg	10	56.8	6.5	
TGR	Saturated Paste	T/ac	<0.1	<0.1	<0.1	

Analytical Report

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4601 - 52 Avenue	Project Location:	Date Received: Jul 16, 2019
Yellowknife, NT, Canada	LSD:	Date Reported: Jul 22, 2019
X1A 1L4	P.O.: 74091	Report Number: 2423915
Attn: Judy Mah	Proj. Acct. code:	
Sampled By: J. Mah		
Company: Taiga		

		Reference Number	1363877-7	1363877-8	1363877-9	
		Sample Date	Jul 09, 2019	Jul 09, 2019	Jul 09, 2019	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	190506007	190506008	190506009	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Salinity						
pH	Saturated Paste	pH	6.8	6.2	6.4	
Electrical Conductivity	Saturated Paste	dS/m	0.98	1.45	2.39	0.01
SAR	Saturated Paste		1.2	16.0	12	
% Saturation		%	176	302	259	
Calcium	Saturated Paste	meq/L	5.24	1.07	3.4	0.01
Calcium	Saturated Paste	mg/kg	184	64.7	170	
Magnesium	Saturated Paste	meq/L	2.35	0.23	1.5	0.02
Magnesium	Saturated Paste	mg/kg	50.0	8.3	46	
Sodium	Saturated Paste	meq/L	2.28	12.9	19.2	0.04
Sodium	Saturated Paste	mg/kg	92	895	1140	
Potassium	Saturated Paste	meq/L	0.09	0.06	0.33	0.03
Potassium	Saturated Paste	mg/kg	6	7	34	
Chloride	Saturated Paste	meq/L	5.90	10.6	21.1	0.06
Chloride	Saturated Paste	mg/kg	368	1130	1940	
Sulfate (SO4)	Saturated Paste	meq/L	1.08	1.03	0.98	0.06
Sulfate (SO4)	Saturated Paste	mg/kg	91.4	149	120	
Sulfate-S	Saturated Paste	meq/L	1.08	1.03	0.98	0.06
Sulfate-S	Saturated Paste	mg/kg	30.5	49.8	41	
TGR	Saturated Paste	T/ac	<0.1	0.3	0.5	

Approved by:



Murray Klutz
Senior Agronomist

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

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Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Saturated Paste in General Soil	Carter	* Electrical Conductivity and Soluble Ions, Chapter 15	Jul 18, 2019	Element Edmonton - Roper Road
* Reference Method Modified				

References

Carter Soil Sampling and Methods of Analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Taiga Batch 190506
J.Gillingham

Element Report ID	Client ID	Collect Date	Collect Time
190509001	#0 (Control)	09-Jul-19	14:20
190509002	#1	09-Jul-19	14:20
190509003	#2	09-Jul-19	14:05
190509004	#3	09-Jul-19	14:01
190509005	#4	09-Jul-19	14:30
190509006	#5	09-Jul-19	13:45
190509007	#6	09-Jul-19	13:53
190509008	#7	09-Jul-19	14:40
190509009		09-Jul-19	14:45

Subject: Sample Coordinates with Map
Date: Thursday, October 17, 2019 at 2:23:11 PM Mountain Daylight Time
From: Jonathan Gillingham
To: stephen.skarstol@encana.com
CC: Trevor Bremner, Ash Varghese, Bonnie Bergsma
Attachments: G-18 Sample Sites.pdf

Good Morning Stephen,

As discussed yesterday on the phone, I have created a map to show you where the samples were taken; it is attached to this email as a PDF. You can also find below a table with the reference number and coordinates in decimal degrees. Please note the Data Disclaimer below as well.

Sample site	Reference Number	Latitude	Longitude
0 (Control)	1363877-1	64.45375	-125.29583
1	1363877-2	64.45371	-125.29657
2	1363877-3	64.45383	-125.29696
3	1363877-4	64.45403	-125.29707
4	1363877-5	64.45408	-125.29642
5	1363877-6	64.45416	-125.29731
6	1363877-7	64.45415	-125.29693
7	1363877-8	64.45386	-125.29719
8	1363877-9	64.45388	-125.29724

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This User Agreement shall be interpreted in accordance with the laws in force in the Northwest Territories, Canada.

Cheers,

Jon

Thank you | Mársı | Kinanāskomitin | Merci | Hąǵ' | Quana | Qujannamiik | Quyanainni | Máhsı | Mahsi

Jonathan Gillingham (B Sc ENR)
Resource Management Officer II
Sahtu Region
Department of Lands
Government of the Northwest Territories

2nd floor, Cartrols Building
PO Box 126
31 Mackenzie Drive
Norman Wells, NT X0E 0V0

Phone: 867-587-7205

Cell: 867-587-6690

Fax: 867-587-2928

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G-18 Sump Sample Sites

Government of
Northwest Territories



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND



Sample Sites



G-18 Remote Sump

SAMPLE SITES

Reference Number	Lat	Long
1363877-1	64.45375	-125.29583
1363877-2	64.45371	-125.29657
1363877-3	64.45383	-125.29696
1363877-4	64.45403	-125.29707
1363877-5	64.45408	-125.29642
1363877-6	64.45416	-125.29731
1363877-7	64.45415	-125.29693
1363877-8	64.45386	-125.29719
1363877-9	64.45388	-125.29724

DISCLAIMER

THIS MAP IS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL FEATURE BOUNDARIES DEPICTED MAY NOT BE EXACTLY AS SHOWN. THE GOVERNMENT OF THE NORTHWEST TERRITORIES AND THE NWT CENTRE FOR GEOMATICS ARE NOT RESPONSIBLE FOR ERRORS OR DISCREPANCIES.

0		10	20
Scale: 1:600		Meters	
GIS	—	2019-10-17	Doc ID: MXD-000
QA/QC	—	—/—/—	NWT Centre for Geomatics