

**Attention: Karen Brady**

Dr. Dobias Healing Solutions Inc.  
PO Box 75546  
RPO Edgemont Village  
North Vancouver, BC  
CANADA V7R 4X1

**Report Date: 2016/11/08**

Report #: R4239927

Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B6L8330**

**Received: 2016/10/11, 12:00**

Sample Matrix: LIQUID

# Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Mercury in Water by CVAA (1)	1	2016/11/08	2016/11/08	CAM SOP-00453	EPA 7470A m
Metals Analysis by ICPMS (as received) (1, 2)	1	2016/10/17	2016/11/07	CAM SOP-00447	EPA 6020B m
Radionuclides in Food	1	N/A	2016/10/18	BQ-RAD-GAMMA	Gamma Spectrometry
NORM Group Analysis	1	N/A	2016/10/18	BQL SOP-00007	Gamma Spectrometry
Strontium-90 by Proportional Counting	1	N/A	2016/10/31	BQL SOP-00008	GFPC

**Remarks:**

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) This test was performed by Maxxam Analytics Mississauga

(2) Metals analysis was performed on the sample 'as received'.

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Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.  
Simona Vatamanescu, Project Manager  
Email: SVatamanescu@maxxam.ca  
Phone# (905)826-3080

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**RESULTS OF ANALYSES OF LIQUID**

Maxxam ID		DFK032		
Sampling Date		2016/10/03		
	UNITS	Sample 1	RDL	QC Batch
<b>RADIONUCLIDE</b>				
Strontium-90	Bq/L	<0.10	0.10	4709891
Cesium-134	Bq/kg	<1.0	1.0	4704840
Cesium-137	Bq/kg	<1.0	1.0	4704840
Iodine-131	Bq/kg	<1.0	1.0	4704840
Lead-210	Bq/L	<100	100	4704839
Lead-212	Bq/L	<100	100	4704839
Radium-226	Bq/L	<100	100	4704839
Radium-228	Bq/L	<100	100	4704839
Thorium-230	Bq/L	<200	200	4704839
Thorium-234	Bq/L	<100	100	4704839
Uranium-235	Bq/L	<100	100	4704839
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

**ELEMENTS BY ATOMIC SPECTROSCOPY (LIQUID)**

<b>Maxxam ID</b>		DFK032		
<b>Sampling Date</b>		2016/10/03		
	<b>UNITS</b>	<b>Sample 1</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Mercury (Hg)	mg/L	<0.002 (1)	0.002	4738021
. Arsenic (As)	ug/L	<1.0	1.0	4736654
. Cadmium (Cd)	ug/L	<0.10	0.10	4736654
. Lead (Pb)	ug/L	<0.50	0.50	4736654
. Uranium (U)	ug/L	<0.10	0.10	4736654
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
(1) Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.				

**GENERAL COMMENTS**

RAD-NORM-W Elevated detection limit due to nature of sample

**RESULTS OF ANALYSES OF LIQUID**

Strontium-90 by Proportional Counting: Reporting soluble Sr-90 only due to nature of sample

**Results relate only to the items tested.**

**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4704839	DS2	QC Standard	Lead-210	2016/10/19		88	%	74 - 126
			Lead-212	2016/10/19		98	%	N/A
			Radium-226	2016/10/19		98	%	74 - 126
			Radium-228	2016/10/19		96	%	74 - 126
			Thorium-230	2016/10/19		92	%	74 - 126
			Thorium-234	2016/10/19		95	%	74 - 126
			Uranium-235	2016/10/19		94	%	74 - 126
4704839	DS2	Method Blank	Lead-210	2016/10/20	<100		Bq/L	
			Lead-212	2016/10/20	<100		Bq/L	
			Radium-226	2016/10/20	<100		Bq/L	
			Radium-228	2016/10/20	<100		Bq/L	
			Thorium-230	2016/10/20	<200		Bq/L	
			Thorium-234	2016/10/20	<100		Bq/L	
			Uranium-235	2016/10/20	<100		Bq/L	
4704840	DS2	QC Standard	Cesium-134	2016/10/19		86	%	N/A
			Cesium-137	2016/10/19		88	%	N/A
			Iodine-131	2016/10/19		87	%	N/A
4704840	DS2	Method Blank	Cesium-134	2016/10/20	<1.0		Bq/kg	
			Cesium-137	2016/10/20	<1.0		Bq/kg	
			Iodine-131	2016/10/20	<1.0		Bq/kg	
4709891	FK1	Spiked Blank	Strontium-90	2016/10/31		92	%	75 - 125
4709891	FK1	Method Blank	Strontium-90	2016/10/31	<0.10		Bq/L	
4736654	PBA	Matrix Spike	. Arsenic (As)	2016/11/07		101	%	80 - 120
			. Cadmium (Cd)	2016/11/07		103	%	80 - 120
			. Lead (Pb)	2016/11/07		97	%	80 - 120
			. Uranium (U)	2016/11/07		99	%	80 - 120
			. Uranium (U)	2016/11/07		103	%	80 - 120
4736654	PBA	Spiked Blank	. Arsenic (As)	2016/11/07		103	%	80 - 120
			. Cadmium (Cd)	2016/11/07		104	%	80 - 120
			. Lead (Pb)	2016/11/07		100	%	80 - 120
			. Uranium (U)	2016/11/07		103	%	80 - 120
			. Uranium (U)	2016/11/07		103	%	80 - 120
4736654	PBA	Method Blank	. Arsenic (As)	2016/11/07	<1.0		ug/L	
			. Cadmium (Cd)	2016/11/07	<0.10		ug/L	
			. Lead (Pb)	2016/11/07	<0.50		ug/L	
			. Uranium (U)	2016/11/07	<0.10		ug/L	
4738021	MC	Matrix Spike	Mercury (Hg)	2016/11/08		108	%	75 - 125
4738021	MC	Spiked Blank	Mercury (Hg)	2016/11/08		105	%	80 - 120
4738021	MC	Method Blank	Mercury (Hg)	2016/11/08	<0.0001		mg/L	
4738021	MC	RPD	Mercury (Hg)	2016/11/08	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

**VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


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Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Steven Simpson, M.Sc., C.Chem, Lab Director

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