Lipid Analytical Laboratories
16 Falconer Drive, Unit 14
Mississauga, ON
Canada L5N 3M1

Lipid Labs Omega-3 Quality Testing Package

Comprehensive analytical testing compliant with the GOED Monograph.

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Reference template — example data for system development. Not a certified result.

All regulated parameters are within their respective GOED Monograph limits.

EPA & DHA Content is reported per the Monograph's identification requirement; no maximum is set on EPA/DHA percentages.
See Appendix A (page 11) for the full scope of analyses, methods, accreditation status, and applied specifications.

COMPLIANCE SUMMARY

Oxidation — Monograph A	TOTOX 12.6 (GOED ≤ 26)	**PASS**	pp. 3–4
EPA & DHA Content — Monograph C	Σ EPA + DHA = 29.8 %(w/w) · 298 mg/g	**REPORTED**	p. 2
Environmental Contaminants — Monograph B	All seven analyte groups within limits	**PASS**	pp. 5–10

PREPARED BY

Andrew Jenkins, MSc.
(signature on file) · Director, Analytical Services

DATE OF ISSUE

August 1, 2024
Prepared For: Example

In-house determinations by Lipid Analytical Laboratories Inc., Mississauga, ON — SCC ISO/IEC 17025 Laboratory No. 838 (Heavy Metals method LAL-METH-17 currently outside accredited scope; see page 5). Trace organic determinations subcontracted to Pacific Rim Laboratories Inc., Surrey, BC (CALA-accredited; ISO/IEC 17025:2017; PRL File PR241875). Combined disclosure per ISO/IEC 17025:2017 7.8.2.1(j) — see Appendix A, page 11.

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EPA & DHA Content Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-01 — Fatty acid composition by gas chromatography with flame ionisation detection (GC-FID) following acid-catalysed methylation per AOCS Ce 1b-89 / Ph.Eur. 2.4.29. Results reported as %(w/w) of the oil and as mg/g of oil (free fatty acid equivalents).

PASS
REPORTED · vs GOED IDENTIFICATION
GOED Monograph requires identification of the product by EPA & DHA content; no maximum is set on EPA/DHA percentages. Trans fatty acids: 0.34 %(w/w) — informational (no GOED limit).

EPA 18.6% · DHA 11.2% (w/w)
MEASURED — by GC-FID

Σ EPA + DHA = 29.8 %(w/w) (298 mg/g)
GOED MONOGRAPH SPEC (EPA + DHA identification)

FATTY ACID COMPOSITION — RESULTS

Common Name	Identifier	%(w/w) of oil	mg/g of oil
Myristic	C14:0	7.2	72
Pentadecanoic	C15:0	0.5	5
Palmitic	C16:0	17.8	178
Palmitoleic	C16:1 n-7	9.5	95
Margaric	C17:0	0.4	4
Stearic	C18:0	4.1	41
Oleic	C18:1 n-9	11.6	116
Vaccenic	C18:1 n-7	3.0	30
Linoleic	C18:2 n-6	1.4	14
α-Linolenic	C18:3 n-3	0.9	9
Stearidonic	C18:4 n-3	3.5	35
Eicosenoic	C20:1 n-9	1.2	12
Arachidonic	C20:4 n-6	1.0	10
EPA (Eicosapentaenoic)	C20:5 n-3	18.6	186
Heneicosapentaenoic	C21:5 n-3	0.7	7
Erucic	C22:1 n-9	1.0	10
Docosapentaenoic	C22:5 n-3	1.8	18
DHA (Docosahexaenoic)	C22:6 n-3	11.2	112
Other identified	—	5.6	56

EPA + DHA expressed as free fatty acid equivalents per GOED Monograph Fatty Acids. Reported values represent a single batch; CRM-spiked QC and reference oil controls passed within ±2.27% method uncertainty (LAL ISO 17025 scope).

In-house analysis. *This determination was performed by* **Lipid Analytical Laboratories Inc.**, *Mississauga, ON, Canada, under SCC ISO/IEC 17025 Laboratory No. 838 using method LAL-METH-01. Reported per ISO/IEC 17025:2017 7.8.2.1(j).*

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Prepared By: Andrew Jenkins, MSc.
(signature on file) Director, Analytical Services
Prepared For: Example

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Peroxide Value (PV) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-04 — Peroxide value by iodometric titration per AOCS Cd 8b-90 / Ph.Eur. 2.5.5. Determined as milliequivalents of active oxygen per kg of oil (meq O_2/kg). Method uncertainty: ±1.89% on marine oil reference.

PASS **vs GOED MONOGRAPH A (OXIDATION)** *Peroxide value indicates primary oxidation. GOED best-practice guidance recommends bulk oils achieve PV < 3 to allow margin for increases over shelf-life.*	**2.1 meq O_2/kg** MEASURED — primary oxidation	**≤ 5 meq O_2/kg** GOED MONOGRAPH SPEC (Peroxide Value)

DETERMINATION DETAILS

Sample mass	**5.0021 g**
Titrant (0.01 N $Na_2S_2O_3$)	**1.05 mL**
Blank correction	**0.01 mL**
Replicate 1	**2.08 meq/kg**
Replicate 2	**2.12 meq/kg**
Mean (reported)	**2.1 meq O_2/kg**
RSD (n=2)	**1.4%**
Detection limit	**0.77 meq/kg**

In-house analysis. *This determination was performed by* **Lipid Analytical Laboratories Inc.**, *Mississauga, ON, Canada, under SCC ISO/IEC 17025 Laboratory No. 838 using method LAL-METH-04. Reported per ISO/IEC 17025:2017 7.8.2.1(j).*

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(signature on file) Director, Analytical Services
Prepared For: Example

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Anisidine Value (AnV) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-03 — Anisidine value by spectrophotometric reaction with para-anisidine reagent per AOCS Cd 18-90 / Ph.Eur. 2.5.36. Absorbance measured at 350 nm. Method uncertainty: ±0.71% on marine oil reference.

PASS **vs GOED MONOGRAPH A (OXIDATION)** *The anisidine value measures secondary oxidation aldehydes (primarily 2-alkenals and 2,4-dienals). Together with PV it forms the TOTOX value: 2 × 2.1 + 8.4 = 12.6 (GOED ≤ 26).*	**8.4** MEASURED — secondary oxidation marker	**≤ 20** GOED MONOGRAPH SPEC (Anisidine Value)

DETERMINATION DETAILS

Sample mass	**1.0014 g**
Solvent / volume	**iso-octane / 25 mL**
Absorbance As (before reagent)	**0.082 ABS**
Absorbance Ab (after reagent)	**0.421 ABS**
Replicate 1	**8.32**
Replicate 2	**8.48**
Mean (reported)	**8.4**
RSD (n=2)	**1.3%**
Detection limit (ABS)	**0.05**
TOTOX (calculated)	**12.6 (GOED ≤ 26 — PASS)**

In-house analysis. *This determination was performed by* **Lipid Analytical Laboratories Inc.**, *Mississauga, ON, Canada, under SCC ISO/IEC 17025 Laboratory No. 838 using method LAL-METH-03. Reported per ISO/IEC 17025:2017 7.8.2.1(j).*

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Heavy & Trace Metals Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-17 — Determination of heavy and trace metals in edible oils, omega-3 oils, marine lipid and lipid-based matrices by inductively coupled plasma mass spectrometry (ICP-MS), following closed-vessel microwave digestion in HNO_3/H_2O_2. Inorganic arsenic determined by HPLC-ICP-MS speciation. Reported as mg/kg (w/w) on the oil basis.

*Method LAL-METH-17 is currently **outside the ISO/IEC 17025 Laboratory No. 838 scope of accreditation**. Results are reported on a non-accredited basis pending scope extension (target: Q4 2026). All other quality parameters (calibration, internal standard recovery, CRM bracketing, replicate precision) are operated to ISO/IEC 17025 7 expectations.*

PASS
vs GOED MONOGRAPH B (HEAVY METALS)
All four regulated heavy metals are below the GOED Monograph maximum limits. Inorganic arsenic is reported separately from total arsenic per GOED Heavy Metals.

All within limits
MEASURED — Pb, Cd, Hg, inorganic As

Pb < 0.05 · Cd < 0.10 · Hg < 0.10 · inorg-As < 0.10 mg/kg
GOED MONOGRAPH SPEC (Heavy Metals)

HEAVY & TRACE METAL DETERMINATIONS

Analyte	Method	GOED Specification	Result	Status
Lead (Pb)	ICP-MS	< 0.05 mg/kg	**0.012 mg/kg**	**PASS**
Cadmium (Cd)	ICP-MS	< 0.10 mg/kg	**< 0.005 mg/kg (ND)**	**PASS**
Mercury (Hg)	ICP-MS	< 0.10 mg/kg	**0.018 mg/kg**	**PASS**
Inorganic Arsenic (As)	HPLC-ICP-MS speciation	< 0.10 mg/kg	**0.024 mg/kg**	**PASS**

QC AND METHOD CONTROL

Sample mass (microwave digestion)	**0.5012 g**
Digestion reagents	**HNO_3 (5 mL, trace-metal grade) + H_2O_2 (1 mL)**
Internal standards	**Sc, Ge, Rh, In, Re (10 µg/L)**
Calibration	**External, 5-point + blank, $R^2 \geq 0.9995$**
CRM bracketing	**NIST SRM 1946 (Lake Superior fish tissue) — recoveries 92–106%**
Method blanks	**All analytes < LOD**
Replicate analysis (n=3)	**RSD ≤ 8% across all analytes**
Reportable detection limits	**Pb 0.005 · Cd 0.005 · Hg 0.005 · inorg-As 0.010 mg/kg**

In-house analysis (non-accredited method). *This determination was performed by* **Lipid Analytical Laboratories Inc.**, *Mississauga, ON, Canada, using method LAL-METH-17. The method is currently outside the SCC ISO/IEC 17025 Laboratory No. 838 accreditation scope; scope extension is targeted for Q4 2026. Reported per ISO/IEC 17025:2017 7.8.2.1(j).*

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Prepared By: Andrew Jenkins, MSc.
(signature on file) Director, Analytical Services
Prepared For: Example

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Dioxins & Furans (PCDDs / PCDFs) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-22 — Determination of polychlorinated dibenzo(p)dioxins and dibenzofurans by isotope-dilution HRGC/HRMS, per **US EPA Method 1613B**. Performed by Pacific Rim Laboratories Inc. (PRL File PR241875). Results expressed as upper-bound and lower-bound WHO-2005 TEQs.

PASS **vs GOED MONOGRAPH B** *Lower bound (ND = 0): 0.00 ng TEQ/kg*	**≤ 0.22 pg TEQ/kg** MEASURED — UPPER BOUND (ND = DL)	**≤ 1.75 pg WHO-TEQ/g (= 1.75 ng/kg)** GOED MONOGRAPH SPEC

DIOXINS (PCDDs)

Congener	Result (ng/kg)	DL (ng/kg)	Surr. Recov. (%)	WHO-TEQ (ND=0)	WHO-TEQ (ND=DL)
2,3,7,8-TCDD	ND	0.05	76	ND	0.05
1,2,3,7,8-PeCDD	ND	0.07	93	ND	0.07
1,2,3,4,7,8-HxCDD	ND	0.10	86	ND	0.01
1,2,3,6,7,8-HxCDD	ND	0.10	81	ND	0.01
1,2,3,7,8,9-HxCDD	ND	0.10	—	ND	0.01
1,2,3,4,6,7,8-HpCDD	ND	0.20	77	ND	0.002
OCDD	ND	0.30	75	ND	0.00009

FURANS (PCDFs)

Congener	Result (ng/kg)	DL (ng/kg)	Surr. Recov. (%)	WHO-TEQ (ND=0)	WHO-TEQ (ND=DL)
2,3,7,8-TCDF	ND	0.05	53	ND	0.005
1,2,3,7,8-PeCDF	ND	0.07	93	ND	0.0021
2,3,4,7,8-PeCDF	ND	0.07	95	ND	0.021
1,2,3,4,7,8-HxCDF	ND	0.10	75	ND	0.01
1,2,3,6,7,8-HxCDF	ND	0.10	73	ND	0.01
1,2,3,7,8,9-HxCDF	ND	0.10	75	ND	0.01
2,3,4,6,7,8-HxCDF	ND	0.10	87	ND	0.01
1,2,3,4,6,7,8-HpCDF	ND	0.20	67	ND	0.002
1,2,3,4,7,8,9-HpCDF	ND	0.20	64	ND	0.002
OCDF	ND	0.30	—	ND	0.00009
Total PCDD/PCDF TEQ (ng TEQ/kg)	**Lower bound (ND=0): 0.00**		**Upper bound (ND=DL): 0.22**		

Surrogate recovery acceptance windows per PRL SOP — confirm with PRL for criteria documentation. Values outside method acceptance criteria would be flagged here.

Subcontracted analysis. *This determination was performed by* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875, using US EPA Method 1613B. Lipid Analytical Laboratories has reviewed the raw data, QC, and surrogate recovery records and accepts responsibility for the reported results. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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Canada L5N 3M1

Polychlorinated Biphenyls (PCBs) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-21 (dl-PCB) & LAL-METH-19 (marker PCB) — isotope-dilution HRGC/HRMS, per **US EPA Method 1668C**. Performed by Pacific Rim Laboratories Inc. (PRL File PR241875). WHO-2005 TEQs reported lower- and upper-bound; the six ICES-6 marker congeners are listed for information only. Total PCBs reported as the sum of all 209 congeners.

PASS
vs GOED MONOGRAPH B
dl-PCB TEQ, combined PCDD/F + dl-PCB TEQ, and Total PCBs (Σ209) all within GOED limits.

≤ 0.36 ng TEQ/kg
combined PCDD/F + dl-PCB TEQ — measured (UB)

6 µg/kg (0.006 mg/kg)
Total PCBs (Σ209) — measured

≤ 3 pg WHO-TEQ/g
GOED spec — combined PCDD/F + dl-PCB

≤ 0.09 mg/kg (90 ng/g)
GOED spec — Total PCBs (Σ209)

DIOXIN-LIKE PCBs

Congener	IUPAC #	Result (ng/kg)	DL (ng/kg)	Surr. Recov. (%)	WHO-TEQ (ND=0)	WHO-TEQ (ND=DL)
3,4,4',5-TeCB	PCB 81	ND	1	37	ND	3.00E-04
3,3',4,4'-TeCB	PCB 77	ND	1	51	ND	1.00E-04
2,3',4,4',5-PeCB	PCB 123	ND	1	65	ND	3.00E-05
2,3',4,4',5-PeCB	PCB 118	100	1	53	3.00E-03	3.00E-03
2,3,4,4',5-PeCB	PCB 114	ND	1	62	ND	3.00E-05
2,3,3',4,4'-PeCB	PCB 105	23	1	53	6.90E-04	6.90E-04
3,3',4,4',5-PeCB	PCB 126	ND	1	52	ND	1.00E-01
2,3',4,4',5,5'-HxCB	PCB 167	18	1	27	5.40E-04	5.40E-04
2,3,3',4,4',5-HxCB	PCB 156	19	1	35	5.70E-04	5.70E-04
2,3,3',4,4',5'-HxCB	PCB 157	4.7	1	34	1.41E-04	1.41E-04
3,3',4,4',5,5'-HxCB	PCB 169	ND	1	39	ND	3.00E-02
2,3,3',4,4',5,5'-HpCB	PCB 189	4.5	1	74	1.35E-04	1.35E-04
Total PCB TEQ (ng TEQ/kg)					**LB 0.01**	**UB 0.14**

MARKER PCBs (ICES-6) — INFORMATIONAL · NOT A GOED PARAMETER

Congener	IUPAC #	Result (µg/kg)	DL (µg/kg)
2,4,4'-TrCB	PCB-28	ND	0.01
2,2',5,5'-TeCB	PCB-52	ND	0.01
2,2',4,5,5'-PeCB	PCB-101	ND	0.01
2,2',4,4',5,5'-HxCB	PCB-153	ND	0.01
2,2',3,4,4',5'-HxCB	PCB-138	ND	0.01
2,2',3,4,4',5,5'-HpCB	PCB-180	ND	0.01
Total PCBs (Σ209 congeners)		**6 µg/kg (0.006 mg/kg) · GOED ≤ 0.09 mg/kg (90 ng/g)**	

Total PCBs (Σ209 congeners) are reported as the sum of all 209 congeners per EPA 1668C and assessed against the GOED limit of 0.09 mg/kg (90 ng/g); the six ICES-6 marker congeners are shown for information only and are not a substitute for the Σ209 total. Some dl-PCB surrogate recoveries (27–39%) are below the typical EPA 1668C 40–140% window; QC review on file.

Subcontracted analysis. *This determination was performed by* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875, using US EPA Method 1668C. Lipid Analytical Laboratories has reviewed the raw data, QC, and surrogate recovery records and accepts responsibility for the reported results. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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Organochlorine Pesticides (OCPs) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-18 — Determination of organochlorine pesticides by isotope-dilution HRGC/HRMS, per **US EPA Method 1699**. Performed by Pacific Rim Laboratories Inc. (PRL File PR241875). Reported as ng/g (parts per billion, w/w).

PASS
vs CODEX CXS 329-2017
The GOED Monograph does not specify OCP limits; results benchmarked against Codex CXS 329-2017. Hexachlorobenzene 2.2 ng/g (Codex MRL for fish oils 50 ng/g — well below).

3.4 ng/g
MEASURED Σ p,p'-DDE + p,p'-DDD + DDT

≤ 100 ng/g (0.1 mg/kg)
Codex CXS 329-2017 (Σ DDT, DDD, DDE in fish oils)

ORGANOCHLORINE PESTICIDES — RESULTS

Compound	Result (ng/g)	RL (ng/g)	Surr. Recov. (%)
α-BHC	ND	0.3	68
β-BHC	ND	0.3	29
Lindane (γ-BHC)	0.3	0.3	57
δ-BHC	ND	0.3	INT
Hexachlorobenzene	2.2	0.3	48
o,p'-DDD	ND	0.3	89
p,p'-DDD	0.4	0.3	91
o,p'-DDE	ND	0.3	49
p,p'-DDE	3.0	0.3	72
o,p'-DDT	ND	0.3	129
p,p'-DDT	ND	0.3	133
Oxychlordane	ND	0.3	107
γ-Chlordane (trans)	ND	0.3	77
α-Chlordane (cis)	ND	0.3	68
trans-Nonachlor	ND	0.3	74
cis-Nonachlor	ND	0.3	101

β-BHC surrogate recovery (29%) and DDT surrogate recoveries (129%, 133%) sit outside typical EPA 1699 acceptance windows. Confirmation of PRL acceptance criteria pending — see flagged item in companion spec document.

Subcontracted analysis. *This determination was performed by* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875, using US EPA Method 1699. Lipid Analytical Laboratories has reviewed the raw data, QC, and surrogate recovery records and accepts responsibility for the reported results. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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Polycyclic Aromatic Hydrocarbons (PAHs) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-26 — Determination of 16 EPA-priority polycyclic aromatic hydrocarbons by isotope-dilution HRGC/HRMS, per **US EPA Method 8270E** (modified for low-level PAHs in lipid matrices). Performed by Pacific Rim Laboratories Inc. (PRL File PR241875). Reported as µg/kg (parts per billion, w/w). EU 4 PAHs flagged.

PASS
vs EU 2023/915
The GOED Monograph does not specify PAH limits; results benchmarked against EU 2023/915. EU 4 PAHs = Benz[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[a]pyrene. Light-PAH detections (naphthalene, fluorene, phenanthrene, etc.) are not regulated under EU 2023/915.

Σ EU 4 = 0.78 µg/kg · B[a]P = ND
MEASURED — B[a]A only; B[a]P, chrysene, B[b]F all ND

Σ EU 4 ≤ 10 µg/kg · B[a]P ≤ 2 µg/kg
EU 2023/915 (oils & fats; supersedes EU 1881/2006)

POLYCYCLIC AROMATIC HYDROCARBONS — RESULTS

Compound	Result (µg/kg)	DL (µg/kg)	Surr. Recov. (%)
Naphthalene	13.4	1.00	49
Acenaphthylene	1.88	0.24	52
Acenaphthene	ND	0.15	51
Fluorene	1.65	0.16	50
Phenanthrene	3.53	0.20	56
Anthracene	ND	0.24	59
Fluoranthene	1.18	0.20	68
Pyrene	4.05	0.16	68
Benz(a)anthracene ★ EU 4	**0.78**	0.36	79
Chrysene ★ EU 4	ND	0.20	73
Benzo(b)fluoranthene ★ EU 4	ND	0.30	78
Benzo(k)fluoranthene	ND	0.20	76
Benzo(a)pyrene ★ EU 4	ND	0.30	88
Indeno(1,2,3-cd)pyrene	ND	0.50	58
Dibenz(a,h)anthracene	ND	0.40	69
Benzo(ghi)perylene	INT	0.40	INT

★ EU 4 PAHs — Benz[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[a]pyrene — sum regulated under EU 2023/915 in oils & fats (supersedes EU 1881/2006). INT = chromatographic interference (re-analysis on file). ND = below detection limit.

Subcontracted analysis. *This determination was performed by* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875, using US EPA Method 8270E (modified for low-level PAHs in lipid matrices). Lipid Analytical Laboratories has reviewed the raw data, QC, and surrogate recovery records and accepts responsibility for the reported results. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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Prepared By: Andrew Jenkins, MSc.
(signature on file) Director, Analytical Services
Prepared For: Example

· Test results reported relate only to the samples as received by the laboratory. · Unless otherwise stated, all samples were received in acceptable condition.
· Measurement of uncertainty can be obtained upon request. · This report shall not be reproduced except in full without the written authority of the Laboratory.

LIPID LABS
LIPID ANALYTICAL LABORATORIES INC.

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Polybrominated Diphenyl Ethers (PBDEs) Report

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Analytical Method: LAL-METH-20 — Determination of polybrominated diphenyl ether congeners by isotope-dilution HRGC/HRMS, per **US EPA Method 1614**. Performed by Pacific Rim Laboratories Inc. (PRL File PR241875). Reported as ng/g (parts per billion, w/w).

REPORTED
INFORMATIONAL
GOED Monograph (V9.1) does not specify limits for polybrominated diphenyl ethers in fish oils; results provided for buyer reference. DeBDE (BDE-209) reported at DL 1.0 ng/g; all other congeners DL 0.2–0.3 ng/g.

< 0.3 ng/g (all 14 congeners ND)
MEASURED — all 14 congeners below detection limit

No regulatory limit applied
GOED Monograph does not specify a PBDE limit

BROMINATED DIPHENYL ETHERS — RESULTS

Congener	BDE #	Result (ng/g)	DL (ng/g)
2,2',4-TrBDE	17	ND	0.2
2,4,4'-TrBDE	28	ND	0.2
2,2',4,5'-TeBDE	49	ND	0.2
2,2',4,4'-TeBDE	47	ND	0.2
2,3',4,4'-TeBDE	66	ND	0.2
3,3',4,4'-TeBDE	77	ND	0.2
2,2',4,4',6-PeBDE	100	ND	0.2
2,2',4,4',5-PeBDE	99	ND	0.3
2,2',3,4,4'-PeBDE	85	ND	0.3
2,2',4,4',5,6'-HxBDE	154	ND	0.2
2,2',4,4',5,5'-HxBDE	153	ND	0.2
2,2',3,4,4',5'-HxBDE	138	ND	0.2
2,2',3,4,4',5',6-HpBDE	183	ND	0.2
DeBDE	209	ND	1.0

Subcontracted analysis. *This determination was performed by* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875, using US EPA Method 1614. Lipid Analytical Laboratories has reviewed the raw data, QC, and surrogate recovery records and accepts responsibility for the reported results. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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Appendix A · Scope of Analyses

Client	Example	**Sample Received**	1 Jul, 2024	**LAL ID**	LAL-EXAMPLE-0000
Client Sample ID	Example	**Sample Matrix**	Refined Fish Oil — Triglyceride Form	**Issued**	August 1, 2024

Reference document. Every analysis performed in this CoA package: provider, method reference, limit of quantitation, and regulatory specification applied. Specifications are drawn from the **GOED Monograph (V9.1)**. Where the Monograph is silent, the most widely-cited public reference (Codex CXS 329-2017 for OCPs; EU 2023/915 for PAHs) is shown and clearly attributed.

Test	Provider · Method	LOQ	Specification	Accreditation
Oxidation — GOED Monograph A				
Peroxide Value	Lipid Labs LAL-METH-04 · AOCS Cd 8b-90	0.77 meq/kg	**GOED ≤ 5 meq/kg** Monograph Oxidation	**ISO/IEC 17025**
Anisidine Value	Lipid Labs LAL-METH-03 · AOCS Cd 18-90	0.05 ABS	**GOED ≤ 20** Monograph Oxidation	**ISO/IEC 17025**
TOTOX (calculated)	(2 × PV) + AnV	n/a	**GOED ≤ 26**	Calculated
EPA & DHA Content — GOED Monograph C				
EPA & DHA Content (GC-FID assay)	Lipid Labs LAL-METH-01 · GC-FID	40 ng	**GOED — identification** EPA + DHA expressed as FFA equivalent	**ISO/IEC 17025**
Environmental Contaminants — GOED Monograph B				
Marker PCBs (ICES-6 sum) — informational	Pacific Rim Labs LAL-METH-19 · EPA Method 1668C	0.01 µg/kg per congener	**No GOED spec applied** GOED limit = Total PCBs (Σ 209 congeners); ICES-6 sum is not a permitted proxy	**PRL · ISO 17025**
PCDDs + PCDFs	Pacific Rim Labs LAL-METH-22 · EPA Method 1613B	0.05 – 0.30 pg/g	**GOED ≤ 1.75 pg WHO-TEQ/g** WHO-2005 toxic equivalent factors	**PRL · ISO 17025**
Dioxin-like PCBs (non-ortho + mono-ortho)	Pacific Rim Labs LAL-METH-21 · EPA Method 1668C	1 pg/g	**GOED ≤ 3 pg WHO-TEQ/g** PCB 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 189	**PRL · ISO 17025**
Total Dioxins, Furans & dl-PCBs	Calculated · WHO-2005 TEFs	n/a	**GOED ≤ 3 pg WHO-TEQ/g** Combined PCDD/F + dl-PCB	Calculated
Organochlorine Pesticides	Pacific Rim Labs LAL-METH-18 · EPA Method 1699	0.3 ng/g	**Codex CXS 329-2017** ≤ 100 ng/g Σ DDT GOED Monograph silent on OCPs	**PRL · ISO 17025**
Polycyclic Aromatic Hydrocarbons	Pacific Rim Labs LAL-METH-26 · EPA Method 8270E (modified)	0.15 – 1.0 µg/kg	**EU 2023/915** B[a]P ≤ 2 µg/kg · Σ EU 4 ≤ 10 µg/kg GOED Monograph silent on PAHs	**PRL · ISO 17025**
Polybrominated Diphenyl Ethers	Pacific Rim Labs LAL-METH-20 · EPA Method 1614	0.2 – 1.0 ng/g	**No regulatory limit applied** GOED Monograph silent on PBDEs; results provided for buyer reference	**PRL · ISO 17025**
Heavy & Trace Metals (Pb, Cd, Hg, inorg-As)	Lipid Labs LAL-METH-17 · ICP-MS	0.005 – 0.010 mg/kg	**GOED ≤ Pb 0.05 · Cd 0.10 · Hg 0.10 · inorg-As 0.10 mg/kg**	**Non-accredited scope extension Q4 2026**

Combined disclosure. *In-house determinations were performed by* **Lipid Analytical Laboratories Inc.**, *Mississauga, ON, Canada under SCC ISO/IEC 17025 Laboratory No. 838 (Heavy Metals method LAL-METH-17 currently outside accredited scope). Trace organic contaminant determinations were subcontracted to* **Pacific Rim Laboratories Inc.**, *Surrey, BC, Canada (CALA-accredited; ISO/IEC 17025:2017) under PRL File PR241875. Disclosure per ISO/IEC 17025:2017 7.8.2.1(j).*

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