

LEGEND	
	EELGRASS BEDS
	DREDGE BOUNDARY DREDGE TO -3M C.D.



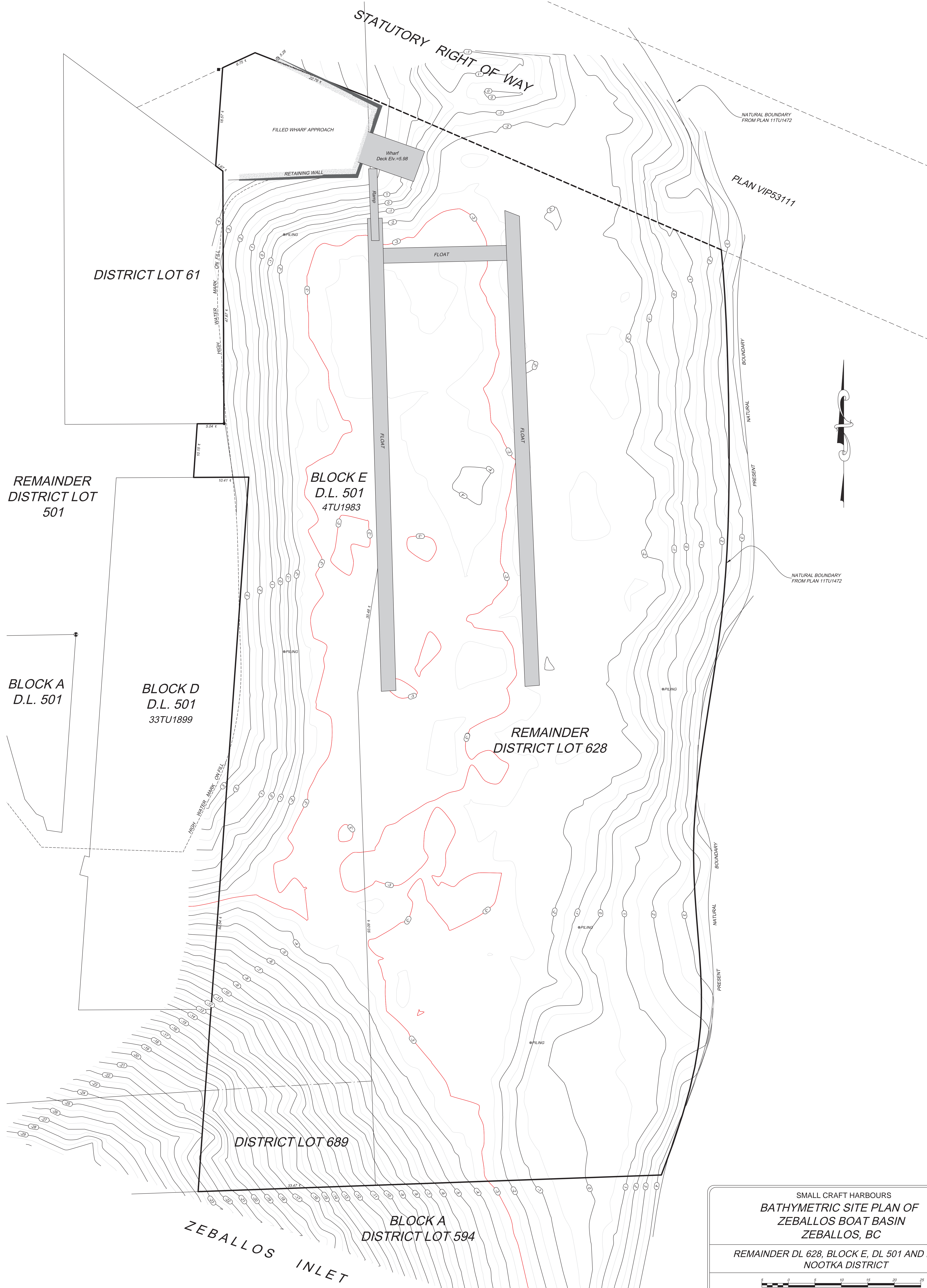
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Revision/Revision	Description/Description	Date/Date
Client/Client		

**FISHERIES AND OCEANS CANADA**  
**SMALL CRAFT HARBOURS BRANCH PACIFIC REGION**

Project title/Titre du projet  
**ZEBALLOS SMALL CRAFT HARBOUR  
 MAQUINNA AVE, ZEBALLOS, BC**  
**ZEBALLOS DREDGING**

Consultant Approval Box Only  
 Designed by/Concept par  
 DJ  
 Drawn by/Designé par  
 DJ  
 PWGSC Project Manager/Administrateur de Projets TPSGC  
 DJ  
 PWGSC, Regional Manager, Architecture and Engineering Services/  
 Opérations Régionales, Services d'architecture et de génie, TPSGC  
 VK  
 Drawing title/Titre du dessin  
**ZEBALLOS DREDGE PLAN**

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
721598-003/004	1 OF XX	0



**SMALL CRAFT HARBOURS  
BATHYMETRIC SITE PLAN OF  
ZEBALLOS BOAT BASIN  
ZEBALLOS, BC**

**REMAINDER DL 628, BLOCK E, DL 501 AND DL 689,  
NOOTKA DISTRICT**

1:250

Legend	
● FGD	denotes finished ground elevation
● EGD	denotes existing ground elevation
Diff	denotes elevation difference
●	denotes standard capped post found
●	denotes standard iron post found

Bearings are NAD 83 grid bearings, derived from differential GPS observations and are referred to the central meridian of Zone 9 (128° West). To obtain local astronomic bearings referred to the meridian through 67°10'15" and 1°29'52".  
 Horizontal distances are ground level. To obtain grid distances multiply by mean project combined scale factor of 0.9999521.  
 Elevations on this plan are referred to Chart Datum derived from Canadian Hydrographic Service published Benchmark ECL2 20101. To transform elevations to Geoidals subtract 2.4 m from elevations shown.  
 Contour Interval = 0.5m  
 All distances are in metres and decimals thereof.

84Bathy.dwg  
 Date of Survey: Feb-2015  
**GRANT LAND SURVEYING**  
 GRANT LAND SURVEYING INC.  
 1181 COMOX AVENUE  
 COMOX, B.C. V9B 3K6  
 WWW.GRANTGEOMATICS.COM

Your Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Your C.O.C. #: G098431

**Report Date: 2015/07/16**  
Report #: R1997970  
Version: 2 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**MAXXAM JOB #: B556713**  
**Received: 2015/07/06, 09:30**

Sample Matrix: Sediment  
# Samples Received: 6

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
BTEX/MTBE Soil LH, VH, F1 SIM/MS	6	2015/07/06	2015/07/08	BBY8SOP-00010/11	EPA 8260c R3 m
Chloride (soluble)	6	2015/07/08	2015/07/08	BBY6SOP-00011	SM 22 4500-Cl- G m
Elements by ICPMS (total)	6	2015/07/07	2015/07/08	BBY7SOP-00001	EPA 6020a R1 m
Moisture	6	N/A	2015/07/07	BBY8SOP-00017	OMOE E3139 3.1 m
Benzo[a]pyrene Equivalency	6	N/A	2015/07/09	BBY WI-00033	Auto Calc
PAH in Soil by GC/MS Lowlevel (Extended)	6	2015/07/06	2015/07/09	BBY8SOP-00022	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	6	N/A	2015/07/09	BBY WI-00033	Auto Calc
Polychlorinated Biphenyls in Soil	6	N/A	2015/07/09	BBY8SOP-00036	EPA 8082a R1 m
pH (2:1 DI Water Extract)	6	2015/07/07	2015/07/07	BBY6SOP-00028	BCMOE BCLM Mar2005 m
Saturated Paste	6	2015/07/08	2015/07/08	BBY6SOP-00030	Carter 2nd 15.2.1 m
EPH less PAH in Soil By GC/FID	6	N/A	2015/07/09	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	6	2015/07/06	2015/07/08	BBY8SOP-00029	BCMOE EPH s 07/99 m
Texture by Hydrometer, incl Gravel (Wet)	6	N/A	2015/07/09	BBY6SOP-00051	Carter 2nd ed 55.3
Volatile HC-BTEX for Soil	6	N/A	2015/07/08	BBY WI-00033	Auto Calc
Ocean Disposal Complete Package SubC (1)	6	N/A	2015/07/16		
TOC Soil Subcontract (2)	6	2015/07/09	2015/07/09		

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

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Maxxam Bedford (From Burnaby)
- (2) This test was performed by Maxxam Ontario (From Burnaby)

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.  
Shanaz Akbar, Project Manager  
Email: SAKbar@maxxam.ca  
Phone# (604)639-2618

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.

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**RESULTS OF CHEMICAL ANALYSES OF SEDIMENT**

Maxxam ID		MP2863	MP2864	MP2865	MP2866	MP2867		
Sampling Date		2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02		
COC Number		G098431	G098431	G098431	G098431	G098431		
	Units	ZEB 1	ZEB 2	ZEB 3	ZEB 4	ZEB 5	RDL	QC Batch
<b>Parameter</b>								
Subcontract Parameter	N/A	ATTACHED	ATTACHED	ATTACHED	ATTACHED	ATTACHED	N/A	7961579
<b>ANIONS</b>								
Soluble Chloride (Cl)	mg/L	15600	15200	18900	14500	12500	50	7960238
<b>Physical Properties</b>								
% sand by hydrometer	%	66	68	58	61	65	2.0	7958884
% silt by hydrometer	%	28	18	31	31	14	2.0	7958884
Clay Content	%	6.0	5.9	11	5.9	4.2	2.0	7958884
Gravel	%	ND	8.8	ND	2.5	17	2.0	7958884
<b>Soluble Parameters</b>								
Saturation %	%	123	111	172	142	118	1.0	7958882
RDL = Reportable Detection Limit N/A = Not Applicable ND = Not detected								

Maxxam ID		MP2868		
Sampling Date		2015/07/02		
COC Number		G098431		
	Units	ZEB 6	RDL	QC Batch
<b>Parameter</b>				
Subcontract Parameter	N/A	ATTACHED	N/A	7961579
<b>ANIONS</b>				
Soluble Chloride (Cl)	mg/L	12200	50	7960238
<b>Physical Properties</b>				
% sand by hydrometer	%	74	2.0	7958884
% silt by hydrometer	%	20	2.0	7958884
Clay Content	%	3.4	2.0	7958884
Gravel	%	2.6	2.0	7958884
<b>Soluble Parameters</b>				
Saturation %	%	99.0	1.0	7958882
RDL = Reportable Detection Limit N/A = Not Applicable				

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)**

Maxxam ID		MP2863	MP2864	MP2865	MP2866	MP2867	MP2868		
Sampling Date		2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02		
COC Number		G098431	G098431	G098431	G098431	G098431	G098431		
	Units	ZEB 1	ZEB 2	ZEB 3	ZEB 4	ZEB 5	ZEB 6	RDL	QC Batch
<b>Polychlorinated Biphenyls</b>									
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	0.020	7959745
Aroclor 1248	mg/kg	ND	ND	ND	ND	ND	ND	0.020	7959745
Aroclor 1254	mg/kg	0.027	ND	ND	ND	ND	ND	0.020	7959745
Aroclor 1260	mg/kg	ND	ND	ND	ND	0.057	ND	0.020	7959745
Total PCB	mg/kg	0.027	ND	ND	ND	0.057	ND	0.020	7959745
<b>Surrogate Recovery (%)</b>									
Hexabromobiphenyl (sur.)	%	77	93	74	76	107	109		7959745
RDL = Reportable Detection Limit ND = Not detected									

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**PHYSICAL TESTING (SEDIMENT)**

Maxxam ID		MP2863	MP2864	MP2865	MP2866	MP2867	MP2868		
Sampling Date		2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02		
COC Number		G098431	G098431	G098431	G098431	G098431	G098431		
	<b>Units</b>	<b>ZEB 1</b>	<b>ZEB 2</b>	<b>ZEB 3</b>	<b>ZEB 4</b>	<b>ZEB 5</b>	<b>ZEB 6</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Physical Properties</b>									
Moisture	%	49	55	70	58	46	37	0.30	7956873
RDL = Reportable Detection Limit									

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**BCCSR BTEX/VPH BY HS IN SOIL (SEDIMENT)**

Maxxam ID		MP2863		MP2864		MP2865		MP2866		
Sampling Date		2015/07/02		2015/07/02		2015/07/02		2015/07/02		
COC Number		G098431		G098431		G098431		G098431		
	Units	ZEB 1	RDL	ZEB 2	RDL	ZEB 3	RDL	ZEB 4	RDL	QC Batch
<b>Volatiles</b>										
VPH (VH6 to 10 - BTEX)	mg/kg	ND	10	ND	23	ND	33	ND	23	7956651
Methyl-tert-butylether (MTBE)	mg/kg	ND	0.10	ND (1)	0.23	ND (1)	0.33	ND (1)	0.23	7958083
Benzene	mg/kg	ND	0.0050	ND (1)	0.012	ND (1)	0.017	ND (1)	0.012	7958083
Toluene	mg/kg	ND	0.020	ND (1)	0.046	ND (1)	0.066	ND (1)	0.046	7958083
Ethylbenzene	mg/kg	ND	0.010	ND (1)	0.023	ND (1)	0.033	ND (1)	0.023	7958083
m & p-Xylene	mg/kg	ND	0.040	ND (1)	0.092	ND (1)	0.13	ND (1)	0.092	7958083
o-Xylene	mg/kg	ND	0.040	ND (1)	0.092	ND (1)	0.13	ND (1)	0.092	7958083
Styrene	mg/kg	ND	0.030	ND (1)	0.069	ND (1)	0.099	ND (1)	0.069	7958083
Xylenes (Total)	mg/kg	ND	0.040	ND	0.092	ND	0.13	ND	0.092	7958083
VH C6-C10	mg/kg	ND	10	ND (1)	23	ND (1)	33	ND (1)	23	7958083
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene (sur.)	%	100		99		98		99		7958083
4-Bromofluorobenzene (sur.)	%	97		98		99		98		7958083
D10-ETHYLBENZENE (sur.)	%	95		102		107		104		7958083
D4-1,2-Dichloroethane (sur.)	%	98		96		98		95		7958083
RDL = Reportable Detection Limit ND = Not detected (1) Detection limit raised due to high moisture content.										

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**BCCSR BTEX/VPH BY HS IN SOIL (SEDIMENT)**

Maxxam ID		MP2867	MP2868		
Sampling Date		2015/07/02	2015/07/02		
COC Number		G098431	G098431		
	Units	ZEB 5	ZEB 6	RDL	QC Batch
<b>Volatiles</b>					
VPH (VH6 to 10 - BTEX)	mg/kg	ND	ND	10	7956651
Methyl-tert-butylether (MTBE)	mg/kg	ND	ND	0.10	7958083
Benzene	mg/kg	ND	ND	0.0050	7958083
Toluene	mg/kg	ND	ND	0.020	7958083
Ethylbenzene	mg/kg	ND	ND	0.010	7958083
m & p-Xylene	mg/kg	ND	ND	0.040	7958083
o-Xylene	mg/kg	ND	ND	0.040	7958083
Styrene	mg/kg	ND	ND	0.030	7958083
Xylenes (Total)	mg/kg	ND	ND	0.040	7958083
VH C6-C10	mg/kg	ND	ND	10	7958083
<b>Surrogate Recovery (%)</b>					
1,4-Difluorobenzene (sur.)	%	100	99		7958083
4-Bromofluorobenzene (sur.)	%	98	97		7958083
D10-ETHYLBENZENE (sur.)	%	100	97		7958083
D4-1,2-Dichloroethane (sur.)	%	98	100		7958083
RDL = Reportable Detection Limit ND = Not detected					



Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MP2863		MP2864		MP2865		MP2866		
Sampling Date		2015/07/02		2015/07/02		2015/07/02		2015/07/02		
COC Number		G098431		G098431		G098431		G098431		
	Units	ZEB 1	RDL	ZEB 2	RDL	ZEB 3	RDL	ZEB 4	RDL	QC Batch
<b>Calculated Parameters</b>										
Index of Additive Cancer Risk(IARC)	N/A	33	0.10	7.5	0.10	10	0.10	14	0.10	7956912
Benzo[a]pyrene equivalency	N/A	2.2	0.10	0.47	0.10	0.64	0.10	0.96	0.10	7956912
<b>Polycyclic Aromatics</b>										
Naphthalene	mg/kg	0.017 (1)	0.0010	0.0068 (2)	0.0020	0.0066 (3)	0.0032	0.11 (3)	0.0023	7959099
2-Methylnaphthalene	mg/kg	ND (1)	0.050	ND (1)	0.040	ND (1)	0.035	ND (1)	0.15	7959099
Acenaphthylene	mg/kg	0.13	0.00050	0.044 (3)	0.0010	0.051 (3)	0.0016	0.062 (3)	0.0012	7959099
Acenaphthene	mg/kg	0.051	0.00050	0.0099 (3)	0.0010	0.013 (3)	0.0016	0.060 (3)	0.0012	7959099
Fluorene	mg/kg	0.31	0.0010	0.028 (3)	0.0020	0.062 (3)	0.0032	0.22 (3)	0.0023	7959099
Phenanthrene	mg/kg	1.4 (1)	0.0010	0.16 (3)	0.0020	0.33 (3)	0.0032	0.98 (3)	0.0023	7959099
Anthracene	mg/kg	2.1	0.0010	0.12 (3)	0.0020	0.21 (3)	0.0032	0.48 (3)	0.0023	7959099
Fluoranthene	mg/kg	2.7	0.0010	0.60 (3)	0.0020	1.0 (3)	0.0032	0.83 (3)	0.0023	7959099
Pyrene	mg/kg	2.5	0.0010	0.50 (3)	0.0020	0.90 (3)	0.0032	0.87 (3)	0.0023	7959099
Benzo(a)anthracene	mg/kg	2.6	0.0010	0.31 (3)	0.0020	0.51 (3)	0.0032	0.97 (3)	0.0023	7959099
Chrysene	mg/kg	2.6	0.0010	0.49 (3)	0.0020	0.74 (3)	0.0032	1.9 (3)	0.0023	7959099
Benzo(b)fluoranthene	mg/kg	1.5	0.0010	0.46 (3)	0.0020	0.58 (3)	0.0032	0.68 (3)	0.0023	7959099
Benzo(k)fluoranthene	mg/kg	0.78	0.0010	0.19 (3)	0.0020	0.26 (3)	0.0032	0.35 (3)	0.0023	7959099
Benzo(a)pyrene	mg/kg	1.4	0.0010	0.29 (3)	0.0020	0.41 (3)	0.0032	0.61 (3)	0.0023	7959099
Indeno(1,2,3-cd)pyrene	mg/kg	0.37	0.0020	0.14 (3)	0.0040	0.17 (3)	0.0064	0.21 (3)	0.0046	7959099
Dibenz(a,h)anthracene	mg/kg	0.14	0.00050	0.039 (3)	0.0010	0.049 (3)	0.0016	0.075 (3)	0.0012	7959099
Benzo(g,h,i)perylene	mg/kg	0.45	0.0020	0.16 (3)	0.0040	0.18 (3)	0.0064	0.21 (3)	0.0046	7959099
Low Molecular Weight PAH's	mg/kg	4.0	0.050	0.37	0.040	0.67	0.035	1.9	0.15	7956646
High Molecular Weight PAH's	mg/kg	12	0.0010	2.2	0.0020	3.6	0.0032	5.2	0.0023	7956646
Total PAH	mg/kg	16	0.050	2.6	0.040	4.3	0.035	7.1	0.15	7956646
<b>Calculated Parameters</b>										
LEPH (C10-C19 less PAH)	mg/kg	ND	100	ND	100	ND	100	ND	100	7956649
HEPH (C19-C32 less PAH)	mg/kg	327	100	249	100	288	100	273	100	7956649
<b>Hydrocarbons</b>										
EPH (C10-C19)	mg/kg	ND	100	ND	100	ND	100	ND	100	7959038
EPH (C19-C32)	mg/kg	338	100	251	100	291	100	277	100	7959038
<b>Surrogate Recovery (%)</b>										
D10-ANTHRACENE (sur.)	%	98		98		95		94		7959099
D8-ACENAPHTHYLENE (sur.)	%	100		94		91		95		7959099
RDL = Reportable Detection Limit										
ND = Not detected										
(1) Detection limits raised due to matrix interference.										
(2) Detection limits raised due to matrix interference. Detection limit raised due to high moisture content.										
(3) Detection limit raised due to high moisture content.										

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MP2863		MP2864		MP2865		MP2866		
Sampling Date		2015/07/02		2015/07/02		2015/07/02		2015/07/02		
COC Number		G098431		G098431		G098431		G098431		
	Units	ZEB 1	RDL	ZEB 2	RDL	ZEB 3	RDL	ZEB 4	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	99		91		90		92		7959099
TERPHENYL-D14 (sur.)	%	92		91		89		90		7959099
O-TERPHENYL (sur.)	%	96		92		92		95		7959038
RDL = Reportable Detection Limit										

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MP2867		MP2868		
Sampling Date		2015/07/02		2015/07/02		
COC Number		G098431		G098431		
	Units	ZEB 5	RDL	ZEB 6	RDL	QC Batch
<b>Calculated Parameters</b>						
Index of Additive Cancer Risk(IARC)	N/A	5.7	0.10	0.67	0.10	7956912
Benzo[a]pyrene equivalency	N/A	0.36	0.10	ND	0.10	7956912
<b>Polycyclic Aromatics</b>						
Naphthalene	mg/kg	0.0070	0.0010	0.0033	0.0010	7959099
2-Methylnaphthalene	mg/kg	ND (1)	0.025	ND (1)	0.020	7959099
Acenaphthylene	mg/kg	0.034	0.00050	0.0056	0.00050	7959099
Acenaphthene	mg/kg	0.021	0.00050	0.0014	0.00050	7959099
Fluorene	mg/kg	0.035	0.0010	ND (1)	0.0046	7959099
Phenanthrene	mg/kg	0.23	0.0010	0.012	0.0010	7959099
Anthracene	mg/kg	0.082	0.0010	0.012	0.0010	7959099
Fluoranthene	mg/kg	0.56	0.0010	ND (1)	0.051	7959099
Pyrene	mg/kg	0.43	0.0010	0.059	0.0010	7959099
Benzo(a)anthracene	mg/kg	0.17	0.0010	0.025	0.0010	7959099
Chrysene	mg/kg	0.40	0.0010	0.034	0.0010	7959099
Benzo(b)fluoranthene	mg/kg	0.37	0.0010	0.041	0.0010	7959099
Benzo(k)fluoranthene	mg/kg	0.14	0.0010	0.017	0.0010	7959099
Benzo(a)pyrene	mg/kg	0.22	0.0010	0.028	0.0010	7959099
Indeno(1,2,3-cd)pyrene	mg/kg	0.14	0.0020	0.014	0.0020	7959099
Dibenz(a,h)anthracene	mg/kg	0.034	0.00050	0.0040	0.00050	7959099
Benzo(g,h,i)perylene	mg/kg	0.16	0.0020	0.016	0.0020	7959099
Low Molecular Weight PAH's	mg/kg	0.41	0.025	0.034	0.020	7956646
High Molecular Weight PAH's	mg/kg	1.8	0.0010	0.15	0.051	7956646
Total PAH	mg/kg	2.2	0.025	0.19	0.051	7956646
<b>Calculated Parameters</b>						
LEPH (C10-C19 less PAH)	mg/kg	ND	100	ND	100	7956649
HEPH (C19-C32 less PAH)	mg/kg	175	100	ND	100	7956649
<b>Hydrocarbons</b>						
EPH (C10-C19)	mg/kg	ND	100	ND	100	7959038
EPH (C19-C32)	mg/kg	177	100	ND	100	7959038
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	%	98		98		7959099
D8-ACENAPHTHYLENE (sur.)	%	99		92		7959099
D8-NAPHTHALENE (sur.)	%	93		88		7959099
RDL = Reportable Detection Limit						
ND = Not detected						
(1) Detection limits raised due to matrix interference.						

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MP2867		MP2868		
Sampling Date		2015/07/02		2015/07/02		
COC Number		G098431		G098431		
	Units	ZEB 5	RDL	ZEB 6	RDL	QC Batch
TERPHENYL-D14 (sur.)	%	95		96		7959099
O-TERPHENYL (sur.)	%	95		88		7959038
RDL = Reportable Detection Limit						

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MP2863	MP2864	MP2865	MP2866	MP2867	MP2868		
Sampling Date		2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02		
COC Number		G098431	G098431	G098431	G098431	G098431	G098431		
	Units	ZEB 1	ZEB 2	ZEB 3	ZEB 4	ZEB 5	ZEB 6	RDL	QC Batch
<b>Physical Properties</b>									
Soluble (2:1) pH	pH	8.02	7.59	7.61	7.88	7.78	7.83	N/A	7957882
<b>Total Metals by ICPMS</b>									
Total Aluminum (Al)	mg/kg	22900	21600	21200	18700	21900	20700	100	7957899
Total Antimony (Sb)	mg/kg	0.65	0.35	0.51	0.49	0.33	0.18	0.10	7957899
Total Arsenic (As)	mg/kg	22.0	13.5	31.4	25.3	11.3	9.21	0.50	7957899
Total Barium (Ba)	mg/kg	20.1	14.8	17.3	18.2	16.5	12.1	0.10	7957899
Total Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	ND	0.40	7957899
Total Bismuth (Bi)	mg/kg	0.15	ND	0.17	0.16	ND	ND	0.10	7957899
Total Cadmium (Cd)	mg/kg	0.910	0.253	0.959	0.796	0.321	0.373	0.050	7957899
Total Calcium (Ca)	mg/kg	16500	9390	14600	13600	10400	9000	100	7957899
Total Chromium (Cr)	mg/kg	51.8	47.9	49.8	44.3	46.6	43.8	1.0	7957899
Total Cobalt (Co)	mg/kg	16.3	14.2	14.3	12.3	14.2	14.2	0.30	7957899
Total Copper (Cu)	mg/kg	174	85.8	146	126	67.0	58.8	0.50	7957899
Total Iron (Fe)	mg/kg	35800	33600	36100	30500	30800	30300	100	7957899
Total Lead (Pb)	mg/kg	74.9	25.7	41.0	41.2	18.8	6.67	0.10	7957899
Total Lithium (Li)	mg/kg	44.6	36.0	39.5	37.4	39.6	38.6	5.0	7957899
Total Magnesium (Mg)	mg/kg	15500	15000	16000	13200	14900	13600	100	7957899
Total Manganese (Mn)	mg/kg	347	345	324	273	344	349	0.20	7957899
Total Mercury (Hg)	mg/kg	0.170	0.075	0.250	0.156	0.067	ND	0.050	7957899
Total Molybdenum (Mo)	mg/kg	5.22	1.98	8.89	4.75	2.01	2.58	0.10	7957899
Total Nickel (Ni)	mg/kg	46.0	43.5	41.6	34.2	41.2	39.4	0.80	7957899
Total Phosphorus (P)	mg/kg	1340	1050	1260	1260	934	614	10	7957899
Total Potassium (K)	mg/kg	1490	1200	2010	1790	1230	881	100	7957899
Total Selenium (Se)	mg/kg	1.09	0.61	1.65	1.17	0.52	ND	0.50	7957899
Total Silver (Ag)	mg/kg	0.160	0.085	0.186	0.164	0.111	0.063	0.050	7957899
Total Sodium (Na)	mg/kg	13300	9650	23000	15600	7960	4070	100	7957899
Total Strontium (Sr)	mg/kg	87.6	52.3	98.8	96.8	56.1	39.7	0.10	7957899
Total Thallium (Tl)	mg/kg	0.120	ND	0.142	0.119	0.106	0.086	0.050	7957899
Total Tin (Sn)	mg/kg	7.98	2.72	6.69	6.33	1.90	0.86	0.10	7957899
Total Titanium (Ti)	mg/kg	1860	1600	1720	1350	1860	1730	1.0	7957899
Total Uranium (U)	mg/kg	3.23	1.47	3.11	2.63	1.61	1.42	0.050	7957899
Total Vanadium (V)	mg/kg	94.2	89.1	85.0	75.6	84.7	75.3	2.0	7957899
Total Zinc (Zn)	mg/kg	227	80.4	123	120	76.2	62.4	1.0	7957899
RDL = Reportable Detection Limit									
N/A = Not Applicable									
ND = Not detected									

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MP2863	MP2864	MP2865	MP2866	MP2867	MP2868		
Sampling Date		2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02	2015/07/02		
COC Number		G098431	G098431	G098431	G098431	G098431	G098431		
	Units	ZEB 1	ZEB 2	ZEB 3	ZEB 4	ZEB 5	ZEB 6	RDL	QC Batch
Total Zirconium (Zr)	mg/kg	6.68	5.12	7.42	4.49	6.21	6.06	0.50	7957899
RDL = Reportable Detection Limit									

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**GENERAL COMMENTS**

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

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7956873	LO1	Method Blank	Moisture	2015/07/07	ND, RDL=0.30		%	
7956873	LO1	RPD [MP2864-01]	Moisture	2015/07/07	12		%	20
7957882	WZ1	Spiked Blank	Soluble (2:1) pH	2015/07/07		99	%	97 - 103
7957882	WZ1	RPD	Soluble (2:1) pH	2015/07/07	0.61		%	N/A
7957899	JC8	Matrix Spike	Total Antimony (Sb)	2015/07/08		90	%	75 - 125
			Total Arsenic (As)	2015/07/08		95	%	75 - 125
			Total Barium (Ba)	2015/07/08		NC	%	75 - 125
			Total Beryllium (Be)	2015/07/08		107	%	75 - 125
			Total Cadmium (Cd)	2015/07/08		98	%	75 - 125
			Total Chromium (Cr)	2015/07/08		NC	%	75 - 125
			Total Cobalt (Co)	2015/07/08		96	%	75 - 125
			Total Copper (Cu)	2015/07/08		94	%	75 - 125
			Total Lead (Pb)	2015/07/08		98	%	75 - 125
			Total Lithium (Li)	2015/07/08		100	%	75 - 125
			Total Manganese (Mn)	2015/07/08		NC	%	75 - 125
			Total Mercury (Hg)	2015/07/08		92	%	75 - 125
			Total Molybdenum (Mo)	2015/07/08		98	%	75 - 125
			Total Nickel (Ni)	2015/07/08		NC	%	75 - 125
			Total Selenium (Se)	2015/07/08		98	%	75 - 125
			Total Silver (Ag)	2015/07/08		98	%	75 - 125
			Total Strontium (Sr)	2015/07/08		NC	%	75 - 125
			Total Thallium (Tl)	2015/07/08		93	%	75 - 125
			Total Tin (Sn)	2015/07/08		90	%	75 - 125
			Total Titanium (Ti)	2015/07/08		NC	%	75 - 125
			Total Uranium (U)	2015/07/08		96	%	75 - 125
			Total Vanadium (V)	2015/07/08		NC	%	75 - 125
			Total Zinc (Zn)	2015/07/08		NC	%	75 - 125
7957899	JC8	QC Standard	Total Aluminum (Al)	2015/07/08		114	%	70 - 130
			Total Antimony (Sb)	2015/07/08		106	%	70 - 130
			Total Arsenic (As)	2015/07/08		97	%	70 - 130
			Total Barium (Ba)	2015/07/08		103	%	70 - 130
			Total Cadmium (Cd)	2015/07/08		106	%	70 - 130
			Total Calcium (Ca)	2015/07/08		93	%	70 - 130
			Total Chromium (Cr)	2015/07/08		102	%	70 - 130
			Total Cobalt (Co)	2015/07/08		94	%	70 - 130
			Total Copper (Cu)	2015/07/08		95	%	70 - 130
			Total Iron (Fe)	2015/07/08		94	%	70 - 130
			Total Lead (Pb)	2015/07/08		98	%	70 - 130
			Total Magnesium (Mg)	2015/07/08		92	%	70 - 130
			Total Manganese (Mn)	2015/07/08		100	%	70 - 130
			Total Mercury (Hg)	2015/07/08		77	%	70 - 130
			Total Molybdenum (Mo)	2015/07/08		108	%	70 - 130
			Total Nickel (Ni)	2015/07/08		97	%	70 - 130
			Total Phosphorus (P)	2015/07/08		88	%	70 - 130
			Total Silver (Ag)	2015/07/08		98	%	60 - 140
			Total Strontium (Sr)	2015/07/08		103	%	70 - 130
			Total Thallium (Tl)	2015/07/08		90	%	70 - 130
			Total Titanium (Ti)	2015/07/08		103	%	70 - 130
			Total Uranium (U)	2015/07/08		97	%	70 - 130
			Total Vanadium (V)	2015/07/08		97	%	70 - 130
			Total Zinc (Zn)	2015/07/08		91	%	70 - 130



Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7957899	JC8	Spiked Blank	Total Antimony (Sb)	2015/07/08		89	%	75 - 125
			Total Arsenic (As)	2015/07/08		97	%	75 - 125
			Total Barium (Ba)	2015/07/08		100	%	75 - 125
			Total Beryllium (Be)	2015/07/08		109	%	75 - 125
			Total Cadmium (Cd)	2015/07/08		100	%	75 - 125
			Total Chromium (Cr)	2015/07/08		99	%	75 - 125
			Total Cobalt (Co)	2015/07/08		101	%	75 - 125
			Total Copper (Cu)	2015/07/08		104	%	75 - 125
			Total Lead (Pb)	2015/07/08		101	%	75 - 125
			Total Lithium (Li)	2015/07/08		101	%	75 - 125
			Total Manganese (Mn)	2015/07/08		100	%	75 - 125
			Total Mercury (Hg)	2015/07/08		98	%	75 - 125
			Total Molybdenum (Mo)	2015/07/08		97	%	75 - 125
			Total Nickel (Ni)	2015/07/08		102	%	75 - 125
			Total Selenium (Se)	2015/07/08		100	%	75 - 125
			Total Silver (Ag)	2015/07/08		98	%	75 - 125
			Total Strontium (Sr)	2015/07/08		98	%	75 - 125
			Total Thallium (Tl)	2015/07/08		98	%	75 - 125
			Total Tin (Sn)	2015/07/08		89	%	75 - 125
			Total Titanium (Ti)	2015/07/08		95	%	75 - 125
Total Uranium (U)	2015/07/08		98	%	75 - 125			
Total Vanadium (V)	2015/07/08		94	%	75 - 125			
Total Zinc (Zn)	2015/07/08		102	%	75 - 125			
7957899	JC8	Method Blank	Total Aluminum (Al)	2015/07/08	ND, RDL=100		mg/kg	
			Total Antimony (Sb)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Arsenic (As)	2015/07/08	ND, RDL=0.50		mg/kg	
			Total Barium (Ba)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Beryllium (Be)	2015/07/08	ND, RDL=0.40		mg/kg	
			Total Bismuth (Bi)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Cadmium (Cd)	2015/07/08	ND, RDL=0.050		mg/kg	
			Total Calcium (Ca)	2015/07/08	ND, RDL=100		mg/kg	
			Total Chromium (Cr)	2015/07/08	ND, RDL=1.0		mg/kg	
			Total Cobalt (Co)	2015/07/08	ND, RDL=0.30		mg/kg	
			Total Copper (Cu)	2015/07/08	ND, RDL=0.50		mg/kg	
			Total Iron (Fe)	2015/07/08	ND, RDL=100		mg/kg	
			Total Lead (Pb)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Lithium (Li)	2015/07/08	ND, RDL=5.0		mg/kg	

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Magnesium (Mg)	2015/07/08	ND, RDL=100		mg/kg	
			Total Manganese (Mn)	2015/07/08	ND, RDL=0.20		mg/kg	
			Total Mercury (Hg)	2015/07/08	ND, RDL=0.050		mg/kg	
			Total Molybdenum (Mo)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Nickel (Ni)	2015/07/08	ND, RDL=0.80		mg/kg	
			Total Phosphorus (P)	2015/07/08	ND, RDL=10		mg/kg	
			Total Potassium (K)	2015/07/08	ND, RDL=100		mg/kg	
			Total Selenium (Se)	2015/07/08	ND, RDL=0.50		mg/kg	
			Total Silver (Ag)	2015/07/08	ND, RDL=0.050		mg/kg	
			Total Sodium (Na)	2015/07/08	ND, RDL=100		mg/kg	
			Total Strontium (Sr)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Thallium (Tl)	2015/07/08	ND, RDL=0.050		mg/kg	
			Total Tin (Sn)	2015/07/08	ND, RDL=0.10		mg/kg	
			Total Titanium (Ti)	2015/07/08	ND, RDL=1.0		mg/kg	
			Total Uranium (U)	2015/07/08	ND, RDL=0.050		mg/kg	
			Total Vanadium (V)	2015/07/08	ND, RDL=2.0		mg/kg	
			Total Zinc (Zn)	2015/07/08	ND, RDL=1.0		mg/kg	
			Total Zirconium (Zr)	2015/07/08	ND, RDL=0.50		mg/kg	
7957899	JC8	RPD	Total Aluminum (Al)	2015/07/08	6.1		%	35
			Total Antimony (Sb)	2015/07/08	8.5		%	30
			Total Arsenic (As)	2015/07/08	NC		%	30
			Total Barium (Ba)	2015/07/08	5.9		%	35
			Total Beryllium (Be)	2015/07/08	NC		%	30
			Total Bismuth (Bi)	2015/07/08	NC		%	30
			Total Cadmium (Cd)	2015/07/08	NC		%	30
			Total Calcium (Ca)	2015/07/08	20		%	30
			Total Chromium (Cr)	2015/07/08	6.0		%	30
			Total Cobalt (Co)	2015/07/08	8.1		%	30
			Total Copper (Cu)	2015/07/08	7.3		%	30
			Total Iron (Fe)	2015/07/08	5.6		%	30
			Total Lead (Pb)	2015/07/08	14		%	35
			Total Lithium (Li)	2015/07/08	NC		%	30

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
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**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Magnesium (Mg)	2015/07/08	5.3		%	30
			Total Manganese (Mn)	2015/07/08	1.1		%	30
			Total Mercury (Hg)	2015/07/08	NC		%	35
			Total Molybdenum (Mo)	2015/07/08	NC		%	35
			Total Nickel (Ni)	2015/07/08	7.2		%	30
			Total Phosphorus (P)	2015/07/08	8.9		%	30
			Total Potassium (K)	2015/07/08	NC		%	35
			Total Selenium (Se)	2015/07/08	NC		%	30
			Total Silver (Ag)	2015/07/08	NC		%	35
			Total Sodium (Na)	2015/07/08	NC		%	35
			Total Strontium (Sr)	2015/07/08	13		%	35
			Total Thallium (Tl)	2015/07/08	NC		%	30
			Total Tin (Sn)	2015/07/08	15		%	35
			Total Titanium (Ti)	2015/07/08	5.5		%	35
			Total Uranium (U)	2015/07/08	13		%	30
			Total Vanadium (V)	2015/07/08	12		%	30
			Total Zinc (Zn)	2015/07/08	9.8		%	30
			Total Zirconium (Zr)	2015/07/08	16		%	30
7958083	AC2	Matrix Spike [MP2865-07]	1,4-Difluorobenzene (sur.)	2015/07/08		97	%	60 - 140
			4-Bromofluorobenzene (sur.)	2015/07/08		98	%	70 - 140
			D10-ETHYLBENZENE (sur.)	2015/07/08		108	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2015/07/08		96	%	60 - 140
			Benzene	2015/07/08		137	%	60 - 140
			Toluene	2015/07/08		128	%	60 - 140
			Ethylbenzene	2015/07/08		140	%	60 - 140
			m & p-Xylene	2015/07/08		135	%	60 - 140
			o-Xylene	2015/07/08		137	%	60 - 140
7958083	AC2	Spiked Blank	1,4-Difluorobenzene (sur.)	2015/07/08		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2015/07/08		101	%	70 - 140
			D10-ETHYLBENZENE (sur.)	2015/07/08		85	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2015/07/08		95	%	60 - 140
			Benzene	2015/07/08		84	%	60 - 140
			Toluene	2015/07/08		79	%	60 - 140
			Ethylbenzene	2015/07/08		91	%	60 - 140
			m & p-Xylene	2015/07/08		84	%	60 - 140
			o-Xylene	2015/07/08		86	%	60 - 140
			VH C6-C10	2015/07/08		108	%	60 - 140
7958083	AC2	Method Blank	1,4-Difluorobenzene (sur.)	2015/07/08		100	%	60 - 140
			4-Bromofluorobenzene (sur.)	2015/07/08		97	%	70 - 140
			D10-ETHYLBENZENE (sur.)	2015/07/08		94	%	60 - 130
			D4-1,2-Dichloroethane (sur.)	2015/07/08		96	%	60 - 140
			Methyl-tert-butylether (MTBE)	2015/07/08	ND, RDL=0.10		mg/kg	
			Benzene	2015/07/08	ND, RDL=0.0050		mg/kg	
			Toluene	2015/07/08	ND, RDL=0.020		mg/kg	
			Ethylbenzene	2015/07/08	ND, RDL=0.010		mg/kg	
			m & p-Xylene	2015/07/08	ND, RDL=0.040		mg/kg	

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
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**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			o-Xylene	2015/07/08	ND, RDL=0.040		mg/kg	
			Styrene	2015/07/08	ND, RDL=0.030		mg/kg	
			Xylenes (Total)	2015/07/08	ND, RDL=0.040		mg/kg	
			VH C6-C10	2015/07/08	ND, RDL=10		mg/kg	
7958083	AC2	RPD [MP2865-07]	Methyl-tert-butylether (MTBE)	2015/07/08	NC (1)		%	40
			Benzene	2015/07/08	NC (1)		%	40
			Toluene	2015/07/08	NC (1)		%	40
			Ethylbenzene	2015/07/08	NC (1)		%	40
			m & p-Xylene	2015/07/08	NC (1)		%	40
			o-Xylene	2015/07/08	NC (1)		%	40
			Styrene	2015/07/08	NC (1)		%	40
			Xylenes (Total)	2015/07/08	NC		%	40
			VH C6-C10	2015/07/08	NC (1)		%	40
7958882	JGD	QC Standard	Saturation %	2015/07/08		107	%	75 - 125
7958882	JGD	Method Blank	Saturation %	2015/07/08	ND, RDL=1.0		%	
7958882	JGD	RPD [MP2867-04]	Saturation %	2015/07/08	0.11		%	30
7958884	AP8	QC Standard	% sand by hydrometer	2015/07/09		100	%	90 - 110
7958884	AP8	RPD	% sand by hydrometer	2015/07/09	0.20		%	35
7958884	AP8	RPD [MP2868-04]	% sand by hydrometer	2015/07/09	0.14		%	35
			% silt by hydrometer	2015/07/09	2.0		%	35
			Clay Content	2015/07/09	NC		%	35
			Gravel	2015/07/09	NC		%	35
7959038	PN2	Matrix Spike	O-TERPHENYL (sur.)	2015/07/08		95	%	50 - 130
			EPH (C10-C19)	2015/07/08		107	%	50 - 130
			EPH (C19-C32)	2015/07/08		104	%	50 - 130
7959038	PN2	Spiked Blank	O-TERPHENYL (sur.)	2015/07/08		95	%	50 - 130
			EPH (C10-C19)	2015/07/08		103	%	50 - 130
			EPH (C19-C32)	2015/07/08		98	%	50 - 130
7959038	PN2	Method Blank	O-TERPHENYL (sur.)	2015/07/08		98	%	50 - 130
			EPH (C10-C19)	2015/07/08	ND, RDL=100		mg/kg	
			EPH (C19-C32)	2015/07/08	ND, RDL=100		mg/kg	
7959038	PN2	RPD	EPH (C10-C19)	2015/07/08	NC		%	40
			EPH (C19-C32)	2015/07/08	NC		%	40
7959099	VB1	Matrix Spike	D10-ANTHRACENE (sur.)	2015/07/09		102	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/09		96	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/09		98	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/09		108	%	60 - 130
			Naphthalene	2015/07/09		110	%	50 - 130
			2-Methylnaphthalene	2015/07/09		111	%	50 - 130
			Acenaphthylene	2015/07/09		NC	%	50 - 130
			Acenaphthene	2015/07/09		116	%	50 - 130
			Fluorene	2015/07/09		117	%	50 - 130
			Phenanthrene	2015/07/09		NC	%	60 - 130
			Anthracene	2015/07/09		NC	%	60 - 130

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Fluoranthene	2015/07/09		NC	%	60 - 130
			Pyrene	2015/07/09		NC	%	60 - 130
			Benzo(a)anthracene	2015/07/09		NC	%	60 - 130
			Chrysene	2015/07/09		NC	%	60 - 130
			Benzo(b)fluoranthene	2015/07/09		NC	%	N/A
			Benzo(k)fluoranthene	2015/07/09		NC	%	60 - 130
			Benzo(a)pyrene	2015/07/09		NC	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/09		NC	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/09		NC	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/09		NC	%	60 - 130
7959099	VB1	Spiked Blank	D10-ANTHRACENE (sur.)	2015/07/08		96	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/08		78	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/08		92	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/08		91	%	60 - 130
			Naphthalene	2015/07/08		89	%	50 - 130
			2-Methylnaphthalene	2015/07/08		90	%	50 - 130
			Acenaphthylene	2015/07/08		73	%	50 - 130
			Acenaphthene	2015/07/08		89	%	50 - 130
			Fluorene	2015/07/08		87	%	50 - 130
			Phenanthrene	2015/07/08		86	%	60 - 130
			Anthracene	2015/07/08		83	%	60 - 130
			Fluoranthene	2015/07/08		81	%	60 - 130
			Pyrene	2015/07/08		80	%	60 - 130
			Benzo(a)anthracene	2015/07/08		83	%	60 - 130
			Chrysene	2015/07/08		87	%	60 - 130
			Benzo(b)fluoranthene	2015/07/08		80	%	N/A
			Benzo(k)fluoranthene	2015/07/08		81	%	60 - 130
			Benzo(a)pyrene	2015/07/08		73	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/08		68	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/08		65	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/08		76	%	60 - 130
7959099	VB1	Method Blank	D10-ANTHRACENE (sur.)	2015/07/08		94	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/08		77	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/08		93	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/08		86	%	60 - 130
			Naphthalene	2015/07/08	ND, RDL=0.0010		mg/kg	
			2-Methylnaphthalene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Acenaphthylene	2015/07/08	ND, RDL=0.00050		mg/kg	
			Acenaphthene	2015/07/08	ND, RDL=0.00050		mg/kg	
			Fluorene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Phenanthrene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Anthracene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Fluoranthene	2015/07/08	ND, RDL=0.0010		mg/kg	

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Pyrene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Benzo(a)anthracene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Chrysene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Benzo(b)fluoranthene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Benzo(k)fluoranthene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Benzo(a)pyrene	2015/07/08	ND, RDL=0.0010		mg/kg	
			Indeno(1,2,3-cd)pyrene	2015/07/08	ND, RDL=0.0020		mg/kg	
			Dibenz(a,h)anthracene	2015/07/08	ND, RDL=0.00050		mg/kg	
			Benzo(g,h,i)perylene	2015/07/08	ND, RDL=0.0020		mg/kg	
7959099	VB1	RPD	Naphthalene	2015/07/09	NC (2)		%	50
			Acenaphthylene	2015/07/09	5.8 (2)		%	50
			Acenaphthene	2015/07/09	NC (2)		%	50
			Fluorene	2015/07/09	NC (2)		%	50
			Phenanthrene	2015/07/09	3.3 (2)		%	50
			Anthracene	2015/07/09	0.86 (2)		%	50
			Fluoranthene	2015/07/09	0 (3)		%	50
			Pyrene	2015/07/09	0.89 (3)		%	50
			Benzo(a)anthracene	2015/07/09	0.70 (3)		%	50
			Chrysene	2015/07/09	0.41 (3)		%	50
			Benzo(k)fluoranthene	2015/07/09	0.60 (3)		%	50
			Benzo(a)pyrene	2015/07/09	0.96 (3)		%	50
			Indeno(1,2,3-cd)pyrene	2015/07/09	1.2 (3)		%	50
			Dibenz(a,h)anthracene	2015/07/09	0.70 (3)		%	50
			Benzo(g,h,i)perylene	2015/07/09	1.6 (3)		%	50
7959745	MY4	Matrix Spike	Hexabromobiphenyl (sur.)	2015/07/09		97	%	60 - 130
			Aroclor 1254	2015/07/09		99	%	70 - 110
7959745	MY4	Spiked Blank	Hexabromobiphenyl (sur.)	2015/07/09		111	%	60 - 130
			Aroclor 1254	2015/07/09		104	%	70 - 110
7959745	MY4	Method Blank	Hexabromobiphenyl (sur.)	2015/07/09		105	%	60 - 130
			Aroclor 1242	2015/07/09	ND, RDL=0.020		mg/kg	
			Aroclor 1248	2015/07/09	ND, RDL=0.020		mg/kg	
			Aroclor 1254	2015/07/09	ND, RDL=0.020		mg/kg	
			Aroclor 1260	2015/07/09	ND, RDL=0.020		mg/kg	
			Total PCB	2015/07/09	ND, RDL=0.020		mg/kg	
7959745	MY4	RPD	Aroclor 1242	2015/07/09	NC		%	50
			Aroclor 1248	2015/07/09	NC		%	50
			Aroclor 1254	2015/07/09	NC		%	50

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Aroclor 1260	2015/07/09	NC		%	50
			Total PCB	2015/07/09	NC		%	50
7960238	DC6	Matrix Spike [MP2867-04]	Soluble Chloride (Cl)	2015/07/08		NC	%	75 - 125
7960238	DC6	QC Standard	Soluble Chloride (Cl)	2015/07/08		89	%	75 - 125
7960238	DC6	Spiked Blank	Soluble Chloride (Cl)	2015/07/08		103	%	80 - 120
7960238	DC6	Method Blank	Soluble Chloride (Cl)	2015/07/08	ND, RDL=5.0		mg/L	
7960238	DC6	RPD [MP2867-04]	Soluble Chloride (Cl)	2015/07/08	0.53		%	30

N/A = Not Applicable

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.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

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).

(1) Detection limit raised due to high moisture content.

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

(3) Detection limits raised due to dilution as a result of sample matrix interference.

Maxxam Job #: B556713  
Report Date: 2015/07/16

Pelagic Technologies Inc.  
Client Project #: 1612 HARBOUR SEDIMENT  
Site Location: ZEBALLOS, BC  
Sampler Initials: KS

### 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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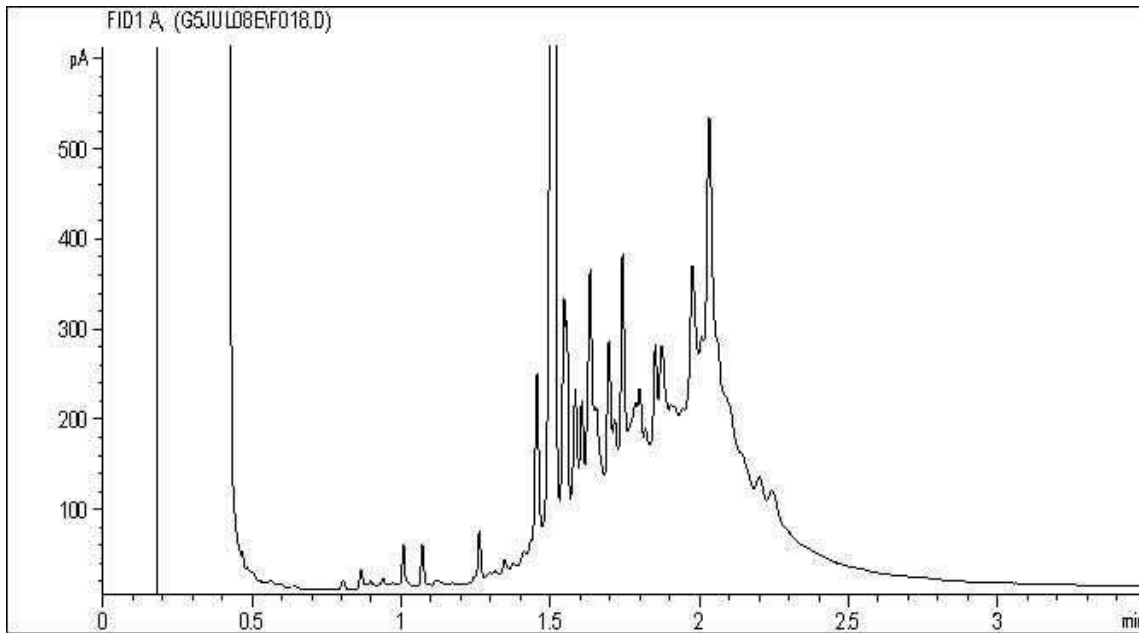
Andy Lu, Data Validation Coordinator

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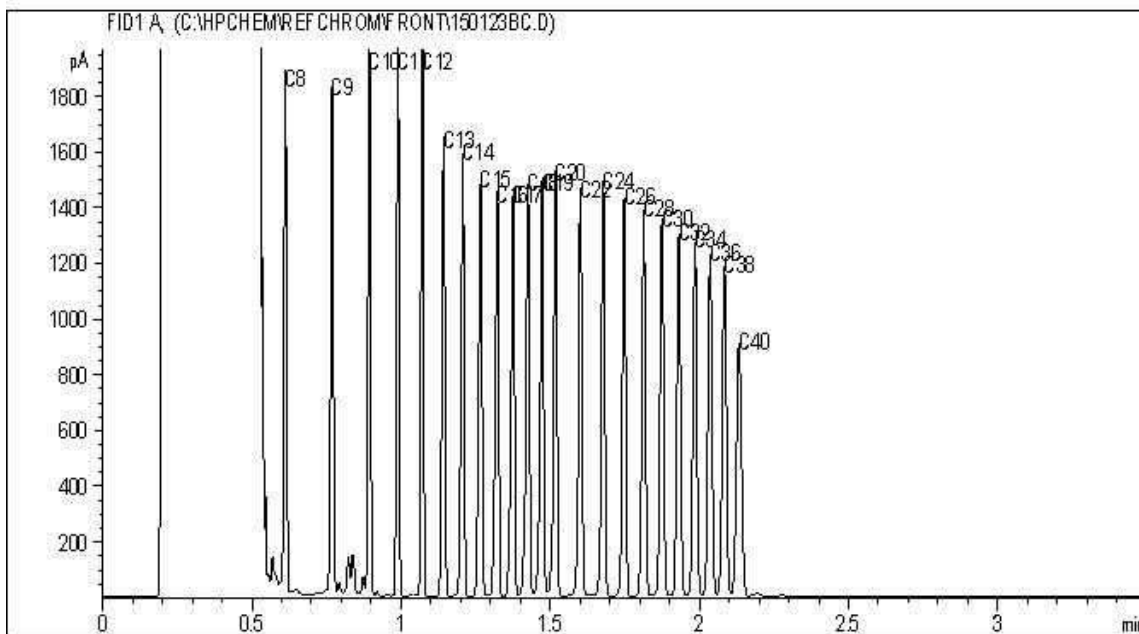
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EPH in Soil by GC/FID Chromatogram



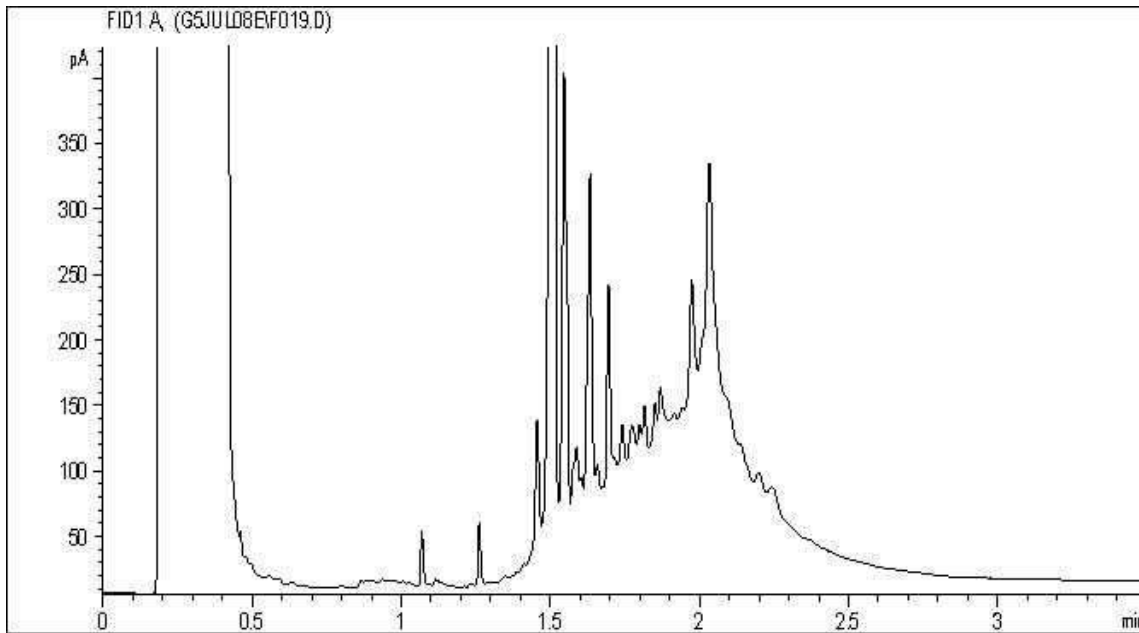
Carbon Range Distribution - Reference Chromatogram



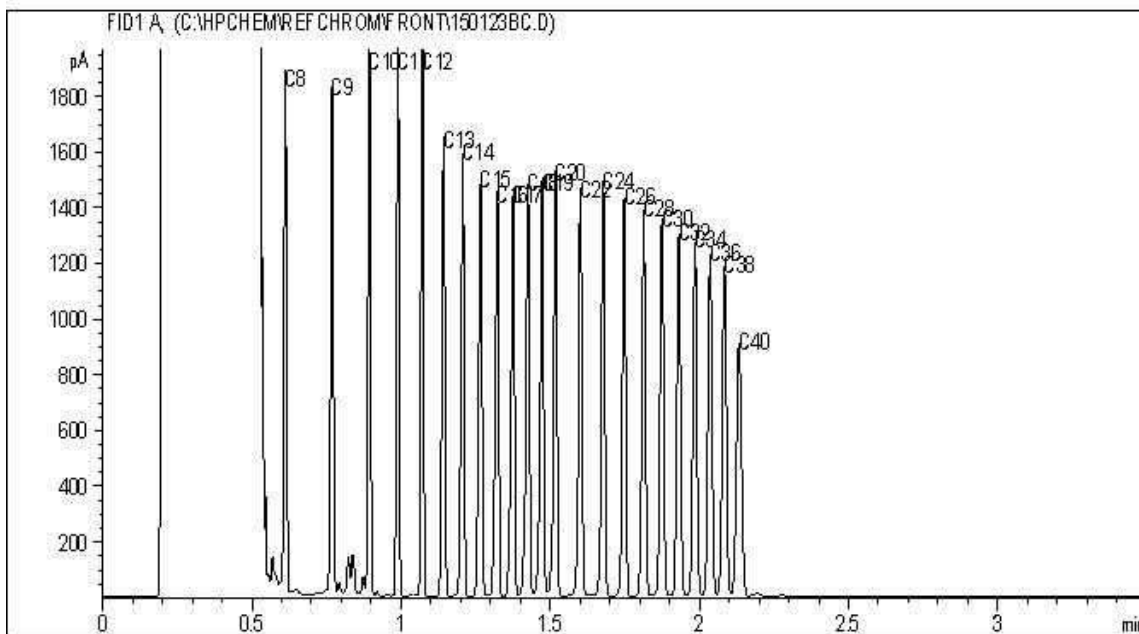
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



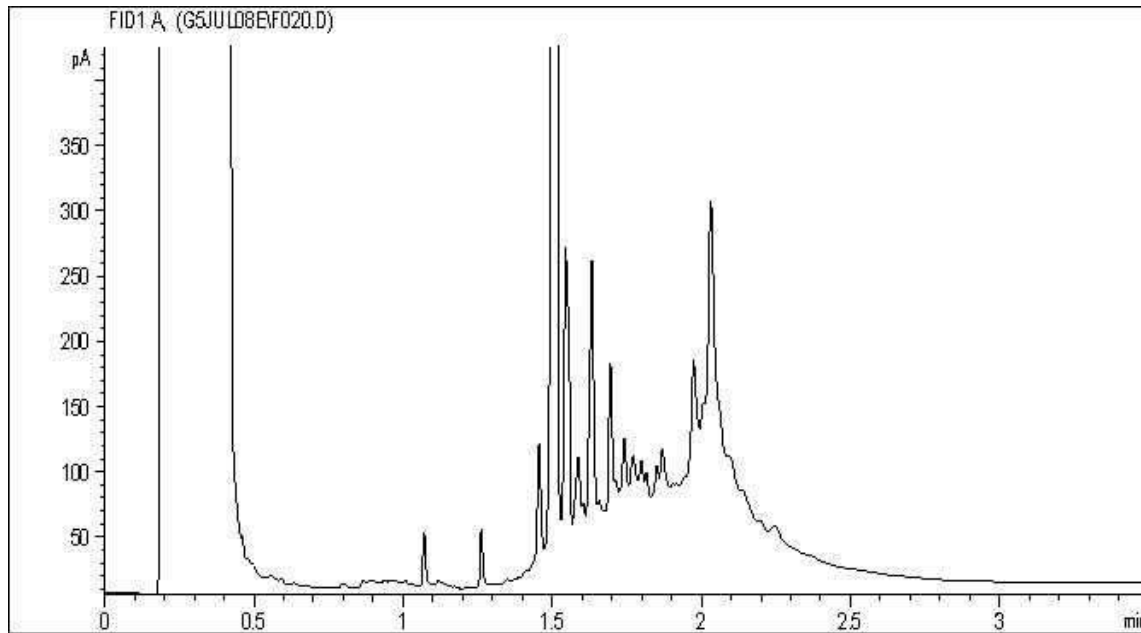
Carbon Range Distribution - Reference Chromatogram



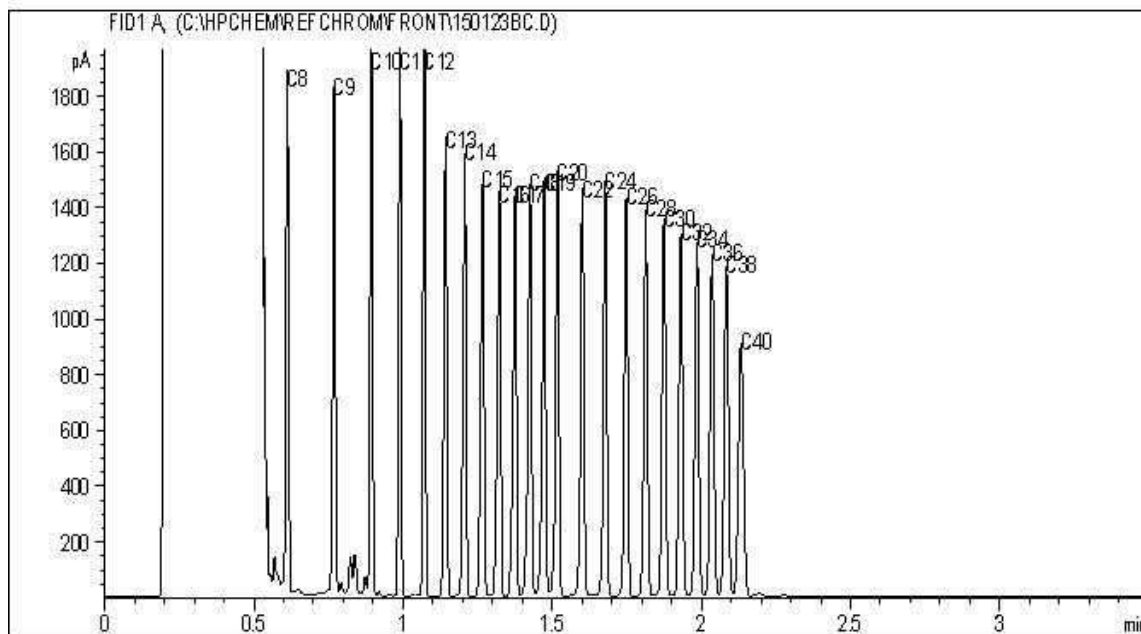
TYPICAL PRODUCT CARBON NUMBER RANGES

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EPH in Soil by GC/FID Chromatogram



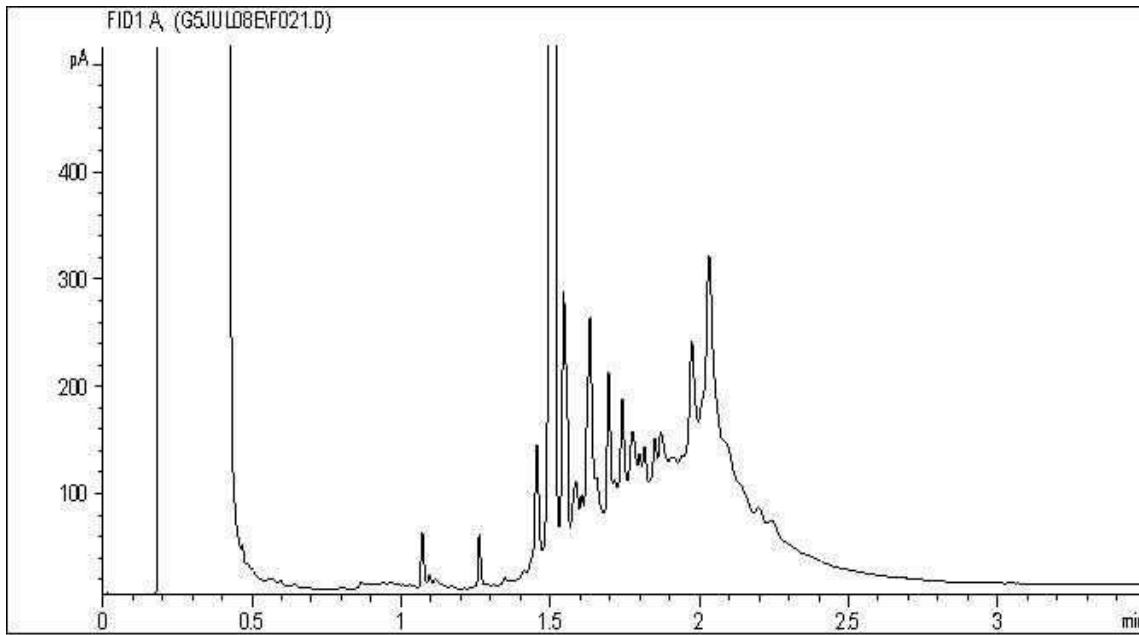
Carbon Range Distribution - Reference Chromatogram



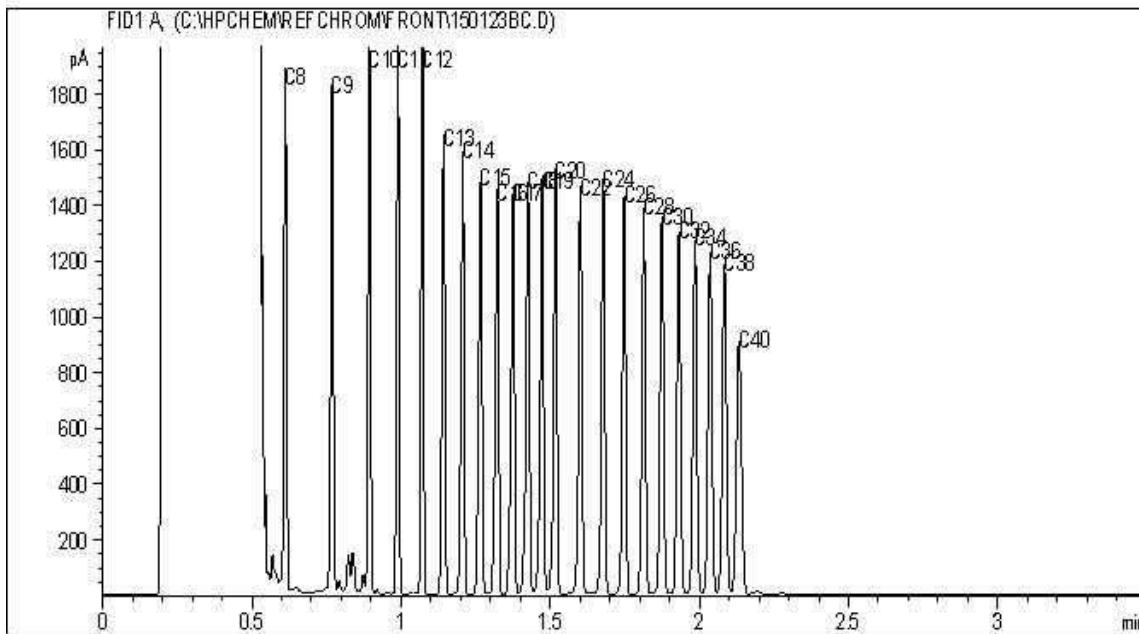
TYPICAL PRODUCT CARBON NUMBER RANGES

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EPH in Soil by GC/FID Chromatogram



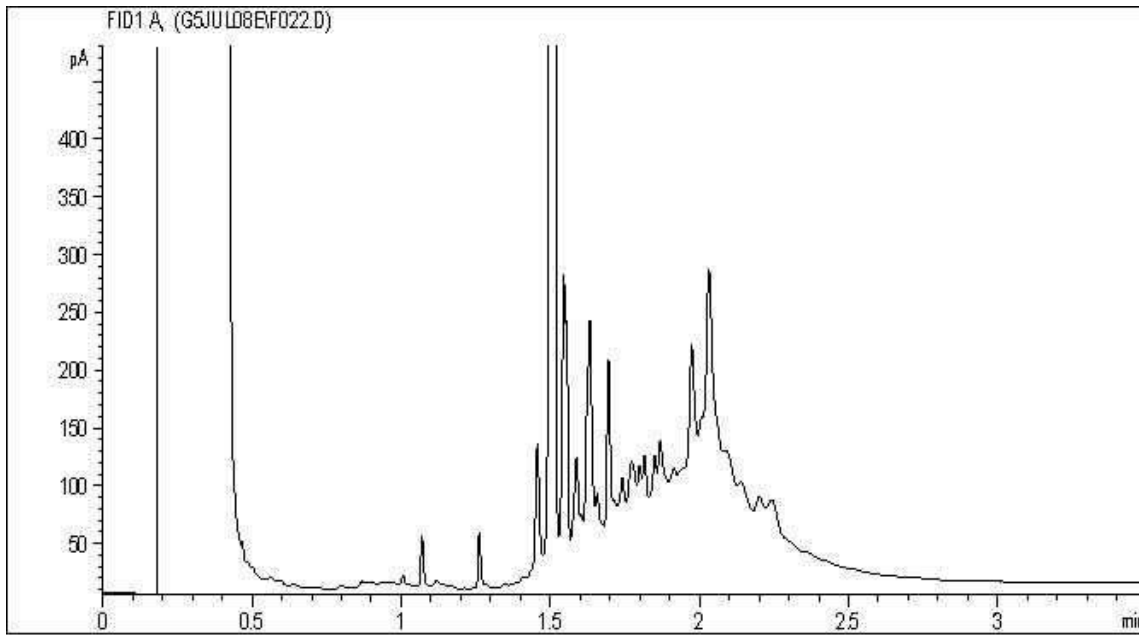
Carbon Range Distribution - Reference Chromatogram



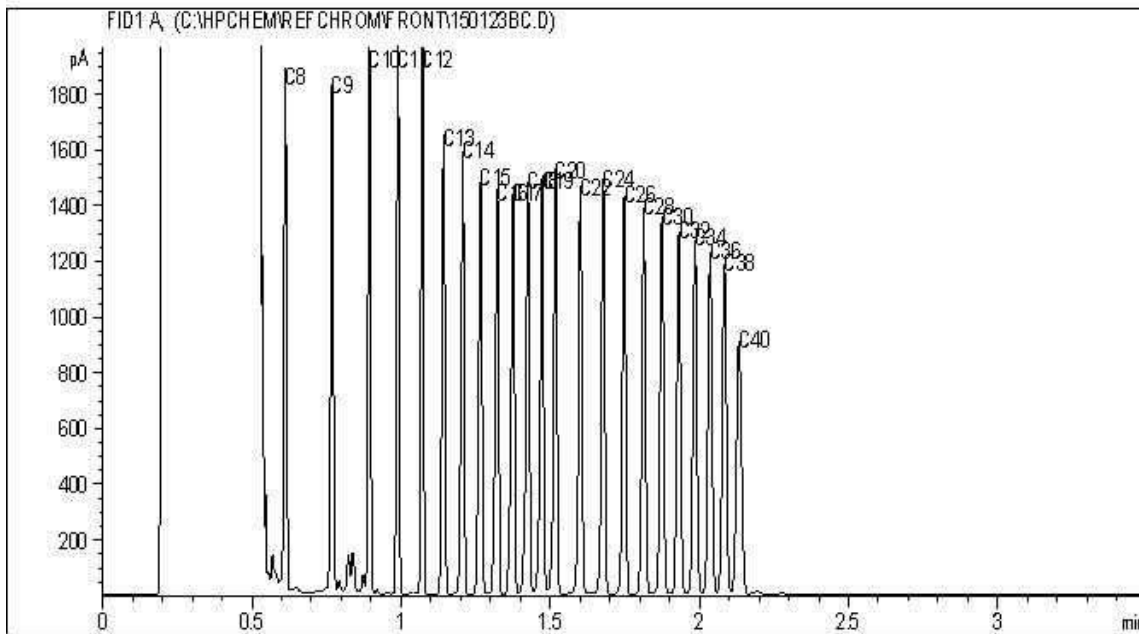
TYPICAL PRODUCT CARBON NUMBER RANGES

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EPH in Soil by GC/FID Chromatogram



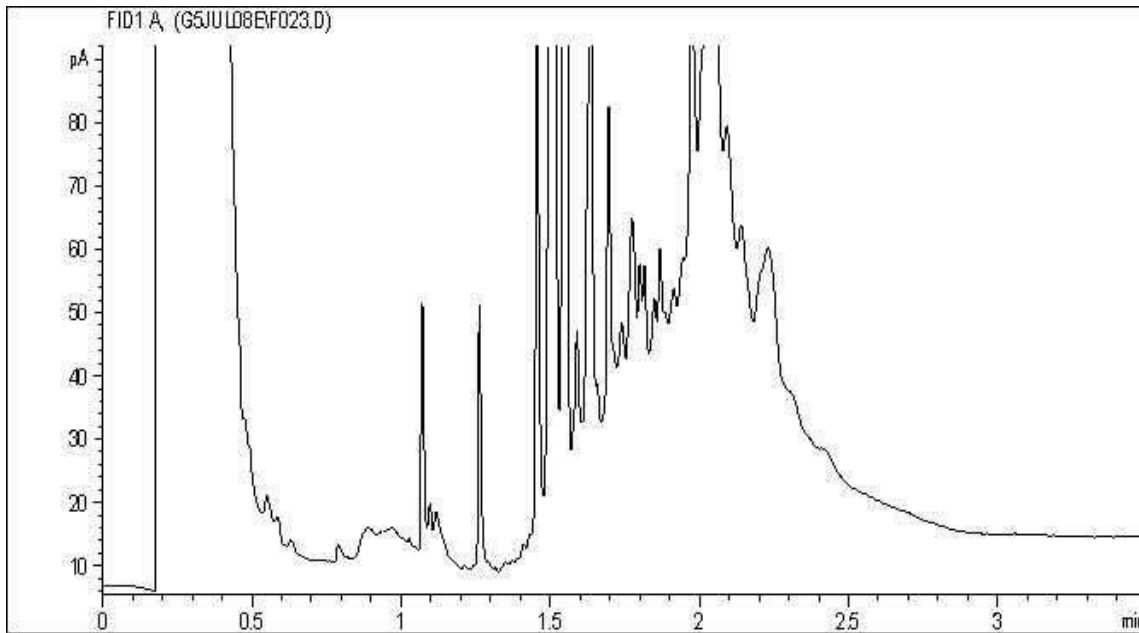
Carbon Range Distribution - Reference Chromatogram



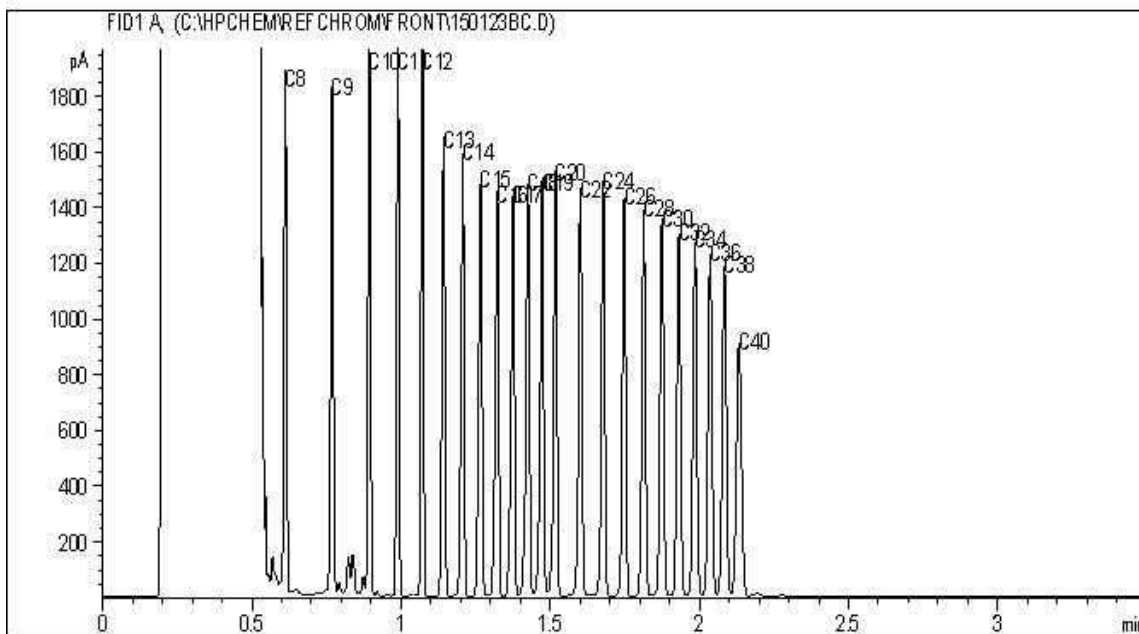
TYPICAL PRODUCT CARBON NUMBER RANGES

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EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your C.O.C. #: G097686

**Report Date: 2015/07/20**  
**Report #: R2000443**  
**Version: 1P**

**CERTIFICATE OF ANALYSIS – PARTIAL RESULTS**

**MAXXAM JOB #: B558652**  
**Received: 2015/07/10, 16:30**

Sample Matrix: Sediment  
# Samples Received: 4

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Elements by ICPMS (total)	3	2015/07/13	2015/07/14	BBY7SOP-00001	EPA 6020a R1 m
Elements by ICPMS (total)	1	2015/07/14	2015/07/15	BBY7SOP-00001	EPA 6020a R1 m
Moisture	4	N/A	2015/07/14	BBY8SOP-00017	OMOE E3139 3.1 m
Benzo[a]pyrene Equivalency	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
PAH in Soil by GC/MS Lowlevel (Extended)	3	2015/07/13	2015/07/18	BBY8SOP-00022	EPA 8270d R4 m
PAH in Soil by GC/MS Lowlevel (Extended)	1	2015/07/13	2015/07/20	BBY8SOP-00022	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
Polychlorinated Biphenyls in Soil	4	N/A	2015/07/16	BBY8SOP-00036	EPA 8082a R1 m
pH (2:1 DI Water Extract)	3	2015/07/13	2015/07/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
pH (2:1 DI Water Extract)	1	2015/07/14	2015/07/15	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	4	2015/07/13	2015/07/17	BBY8SOP-00029	BCMOE EPH s 07/99 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.  
\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Shanaz Akbar, Project Manager  
Email: SAKbar@maxxam.ca  
Phone# (604) 639-2618

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.

Total cover pages: 1

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)**

Maxxam ID		MQ2856	MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03	2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686	G097686	G097686	G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Polychlorinated Biphenyls</b>							
Aroclor 1242	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1248	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1254	mg/kg	0.023	ND	ND	ND	0.020	7967442
Aroclor 1260	mg/kg	ND	ND	ND	ND	0.020	7967442
Total PCB	mg/kg	0.023	ND	ND	ND	0.020	7967442
<b>Surrogate Recovery (%)</b>							
Hexabromobiphenyl (sur.)	%	86	104	105	109		7967442

ND = Not detected  
RDL = Reportable Detection Limit

Maxxam Analytics - Partial/Rush Results



Maxxam Job #: B558652  
Report Date: 2015/07/20

**PHYSICAL TESTING (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686		G097686	G097686	G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>QC Batch</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Physical Properties</b>								
Moisture	%	65	7964186	72	63	62	0.30	7964188

RDL = Reportable Detection Limit

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857		MQ2858		
Sampling Date		2015/07/03		2015/07/03		2015/07/03		
COC Number		G097686		G097686		G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>RDL</b>	<b>1612-2</b>	<b>RDL</b>	<b>1612-3</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>								
Index of Additive Cancer Risk(IARC)	N/A	11	0.10	8.4	0.10	5.7	0.10	7963471
Benzo[a]pyrene equivalency	N/A	0.76	0.10	0.55	0.10	0.38	0.10	7963471
<b>Polycyclic Aromatics</b>								
Naphthalene	mg/kg	0.014 (1)	0.0028	0.018 (1)	0.0031	0.013 (1)	0.0027	7970777
2-Methylnaphthalene	mg/kg	ND (2)	0.022	ND (2)	0.045	ND (2)	0.022	7970777
Acenaphthylene	mg/kg	0.055 (1)	0.0014	0.066 (1)	0.0016	0.039 (1)	0.0014	7970777
Acenaphthene	mg/kg	0.013 (1)	0.0014	0.012 (1)	0.0016	0.0079 (1)	0.0014	7970777
Fluorene	mg/kg	0.062 (1)	0.0028	ND (2)	0.051	ND (2)	0.052	7970777
Phenanthrene	mg/kg	0.38 (1)	0.0028	0.18 (1)	0.0031	0.13 (1)	0.0027	7970777
Anthracene	mg/kg	0.22 (1)	0.0028	0.16 (1)	0.0031	0.12 (1)	0.0027	7970777
Fluoranthene	mg/kg	0.76 (1)	0.0028	0.61 (1)	0.0031	0.35 (1)	0.0027	7970777
Pyrene	mg/kg	1.1 (1)	0.0028	0.62 (1)	0.0031	0.51 (1)	0.0027	7970777
Benzo(a)anthracene	mg/kg	0.56 (1)	0.0028	0.36 (1)	0.0031	0.27 (1)	0.0027	7970777
Chrysene	mg/kg	0.85 (1)	0.0028	0.63 (1)	0.0031	0.42 (1)	0.0027	7970777
Benzo(b)fluoranthene	mg/kg	0.56 (1)	0.0028	0.48 (1)	0.0031	0.31 (1)	0.0027	7970777
Benzo(k)fluoranthene	mg/kg	0.33 (1)	0.0028	0.22 (1)	0.0031	0.16 (1)	0.0027	7970777
Benzo(a)pyrene	mg/kg	0.49 (1)	0.0028	0.33 (1)	0.0031	0.24 (1)	0.0027	7970777
Indeno(1,2,3-cd)pyrene	mg/kg	0.20 (1)	0.0056	0.19 (1)	0.0062	0.12 (1)	0.0054	7970777
Dibenz(a,h)anthracene	mg/kg	0.069 (1)	0.0014	0.061 (1)	0.0016	0.038 (1)	0.0014	7970777
Benzo(g,h,i)perylene	mg/kg	0.21 (1)	0.0056	0.20 (1)	0.0062	0.13 (1)	0.0054	7970777
Low Molecular Weight PAH's	mg/kg	0.74	0.022	0.44	0.051	0.31	0.052	7963472
High Molecular Weight PAH's	mg/kg	3.8	0.0028	2.6	0.0031	1.8	0.0027	7963472
Total PAH	mg/kg	4.5	0.022	3.0	0.051	2.1	0.052	7963472
<b>Calculated Parameters</b>								
LEPH (C10-C19 less PAH)	mg/kg	ND	100	ND	100	ND	100	7963473
HEPH (C19-C32 less PAH)	mg/kg	384	100	522	100	544	100	7963473
<b>Hydrocarbons</b>								
EPH (C10-C19)	mg/kg	ND	100	ND	100	ND	100	7970740
EPH (C19-C32)	mg/kg	387	100	525	100	546	100	7970740
<b>Surrogate Recovery (%)</b>								
D10-ANTHRACENE (sur.)	%	96		89		88		7970777

ND = Not detected  
RDL = Reportable Detection Limit  
( 1 ) Detection limit raised due to high moisture content.  
( 2 ) Detection limits raised due to matrix interference.

Maxxam Job #: B558652  
Report Date: 2015/07/20

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857		MQ2858		
Sampling Date		2015/07/03		2015/07/03		2015/07/03		
COC Number		G097686		G097686		G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>RDL</b>	<b>1612-2</b>	<b>RDL</b>	<b>1612-3</b>	<b>RDL</b>	<b>QC Batch</b>
D8-ACENAPHTHYLENE (sur.)	%	95		84		84		7970777
D8-NAPHTHALENE (sur.)	%	108		87		86		7970777
TERPHENYL-D14 (sur.)	%	93		85		84		7970777
O-TERPHENYL (sur.)	%	105		100		103		7970740
RDL = Reportable Detection Limit								

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2859		
Sampling Date		2015/07/03		
COC Number		G097686		
	<b>UNITS</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>				
Index of Additive Cancer Risk(IARC)	N/A	5.0	0.10	7963471
Benzo[a]pyrene equivalency	N/A	0.34	0.10	7963471
<b>Polycyclic Aromatics</b>				
Naphthalene	mg/kg	0.012 (1)	0.0023	7970777
2-Methylnaphthalene	mg/kg	ND (2)	0.023	7970777
Acenaphthylene	mg/kg	0.031 (1)	0.0012	7970777
Acenaphthene	mg/kg	0.0072 (1)	0.0012	7970777
Fluorene	mg/kg	ND (2)	0.041	7970777
Phenanthrene	mg/kg	0.12 (1)	0.0023	7970777
Anthracene	mg/kg	0.11 (1)	0.0023	7970777
Fluoranthene	mg/kg	0.26 (1)	0.0023	7970777
Pyrene	mg/kg	0.33 (1)	0.0023	7970777
Benzo(a)anthracene	mg/kg	0.27 (1)	0.0023	7970777
Chrysene	mg/kg	0.45 (1)	0.0023	7970777
Benzo(b)fluoranthene	mg/kg	0.25 (1)	0.0023	7970777
Benzo(k)fluoranthene	mg/kg	0.13 (1)	0.0023	7970777
Benzo(a)pyrene	mg/kg	0.21 (1)	0.0023	7970777
Indeno(1,2,3-cd)pyrene	mg/kg	0.098 (1)	0.0046	7970777
Dibenz(a,h)anthracene	mg/kg	0.034 (1)	0.0012	7970777
Benzo(g,h,i)perylene	mg/kg	0.11 (1)	0.0046	7970777
Low Molecular Weight PAH's	mg/kg	0.29	0.041	7963472
High Molecular Weight PAH's	mg/kg	1.5	0.0023	7963472
Total PAH	mg/kg	1.8	0.041	7963472
<b>Calculated Parameters</b>				
LEPH (C10-C19 less PAH)	mg/kg	ND	100	7963473
HEPH (C19-C32 less PAH)	mg/kg	295	100	7963473
<b>Hydrocarbons</b>				
EPH (C10-C19)	mg/kg	ND	100	7970740
EPH (C19-C32)	mg/kg	297	100	7970740
<b>Surrogate Recovery (%)</b>				
D10-ANTHRACENE (sur.)	%	91		7970777

ND = Not detected  
RDL = Reportable Detection Limit  
( 1 ) Detection limit raised due to high moisture content.  
( 2 ) Detection limits raised due to matrix interference.

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2859		
Sampling Date		2015/07/03		
COC Number		G097686		
	<b>UNITS</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>

D8-ACENAPHTHYLENE (sur.)	%	87		7970777
D8-NAPHTHALENE (sur.)	%	84		7970777
TERPHENYL-D14 (sur.)	%	86		7970777
O-TERPHENYL (sur.)	%	100		7970740

RDL = Reportable Detection Limit

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686		G097686	G097686	G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>QC Batch</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Physical Properties</b>								
Soluble (2:1) pH	pH	7.67	7967161	7.75	7.82	7.90	N/A	7964504
<b>Total Metals by ICPMS</b>								
Total Aluminum (Al)	mg/kg	19600	7966903	22900	23900	22400	100	7964499
Total Antimony (Sb)	mg/kg	0.59	7966903	0.47	0.64	0.48	0.10	7964499
Total Arsenic (As)	mg/kg	30.0	7966903	17.7	26.5	23.2	0.50	7964499
Total Barium (Ba)	mg/kg	18.5	7966903	19.9	16.7	19.8	0.10	7964499
Total Beryllium (Be)	mg/kg	ND	7966903	ND	ND	ND	0.40	7964499
Total Bismuth (Bi)	mg/kg	0.21	7966903	0.14	0.15	0.16	0.10	7964499
Total Cadmium (Cd)	mg/kg	0.983	7966903	0.474	0.900	0.757	0.050	7964499
Total Calcium (Ca)	mg/kg	16800	7966903	16300	14800	19500	100	7964499
Total Chromium (Cr)	mg/kg	52.5	7966903	47.2	50.5	55.6	1.0	7964499
Total Cobalt (Co)	mg/kg	15.0	7966903	13.1	16.5	13.2	0.30	7964499
Total Copper (Cu)	mg/kg	158	7966903	112	114	126	0.50	7964499
Total Iron (Fe)	mg/kg	37000	7966903	31800	39800	34900	100	7964499
Total Lead (Pb)	mg/kg	65.6	7966903	35.4	37.2	35.2	0.10	7964499
Total Lithium (Li)	mg/kg	42.1	7966903	34.9	43.7	42.2	5.0	7964499
Total Magnesium (Mg)	mg/kg	15200	7966903	17500	18300	16600	100	7964499
Total Manganese (Mn)	mg/kg	317	7966903	302	348	295	0.20	7964499
Total Mercury (Hg)	mg/kg	0.204	7966903	0.119	0.117	0.144	0.050	7964499
Total Molybdenum (Mo)	mg/kg	9.23	7966903	4.47	14.5	7.05	0.10	7964499
Total Nickel (Ni)	mg/kg	41.6	7966903	37.7	45.0	37.2	0.80	7964499
Total Phosphorus (P)	mg/kg	2040	7966903	1110	981	1130	10	7964499
Total Potassium (K)	mg/kg	1750	7966903	2080	1910	1960	100	7964499
Total Selenium (Se)	mg/kg	1.73	7966903	1.11	0.86	1.12	0.50	7964499
Total Silver (Ag)	mg/kg	0.212	7966903	0.143	0.163	0.171	0.050	7964499
Total Sodium (Na)	mg/kg	16400	7966903	21300	17700	19400	100	7964499
Total Strontium (Sr)	mg/kg	109	7966903	110	76.7	115	0.10	7964499
Total Thallium (Tl)	mg/kg	0.149	7966903	0.112	0.156	0.157	0.050	7964499
Total Tin (Sn)	mg/kg	8.31	7966903	4.72	6.15	5.76	0.10	7964499
Total Titanium (Ti)	mg/kg	1550	7966903	1520	1920	1710	1.0	7964499
Total Uranium (U)	mg/kg	4.67	7966903	2.74	3.99	3.52	0.050	7964499
Total Vanadium (V)	mg/kg	92.7	7966903	84.3	93.0	85.6	2.0	7964499

ND = Not detected  
RDL = Reportable Detection Limit

Maxxam Analytics - Partial/Rush Results

Maxxam Job #: B558652  
Report Date: 2015/07/20

**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686		G097686	G097686	G097686		
	<b>UNITS</b>	<b>1612-1</b>	<b>QC Batch</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>
Total Zinc (Zn)	mg/kg	152	7966903	85.6	103	107	1.0	7964499
Total Zirconium (Zr)	mg/kg	5.00	7966903	5.26	7.29	5.85	0.50	7964499
RDL = Reportable Detection Limit								

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.

Maxxam Job #: B558652  
Report Date: 2015/07/20

**General Comments**

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

Maxxam Analytics - Partial/Rush Results



Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

**Quality Assurance Report**  
Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7964186 LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
	RPD	Moisture	2015/07/14	1.0		%	20
7964188 LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
	RPD	Moisture	2015/07/14	3.1		%	20
7964499 DJ	Matrix Spike	Total Antimony (Sb)	2015/07/14		89	%	75 - 125
		Total Arsenic (As)	2015/07/14		87	%	75 - 125
		Total Barium (Ba)	2015/07/14		NC	%	75 - 125
		Total Beryllium (Be)	2015/07/14		103	%	75 - 125
		Total Cadmium (Cd)	2015/07/14		90	%	75 - 125
		Total Chromium (Cr)	2015/07/14		99	%	75 - 125
		Total Cobalt (Co)	2015/07/14		98	%	75 - 125
		Total Copper (Cu)	2015/07/14		100	%	75 - 125
		Total Lead (Pb)	2015/07/14		102	%	75 - 125
		Total Lithium (Li)	2015/07/14		105	%	75 - 125
		Total Manganese (Mn)	2015/07/14		NC	%	75 - 125
		Total Mercury (Hg)	2015/07/14		85	%	75 - 125
		Total Molybdenum (Mo)	2015/07/14		101	%	75 - 125
		Total Nickel (Ni)	2015/07/14		99	%	75 - 125
		Total Selenium (Se)	2015/07/14		81	%	75 - 125
		Total Silver (Ag)	2015/07/14		99	%	75 - 125
		Total Strontium (Sr)	2015/07/14		103	%	75 - 125
		Total Thallium (Tl)	2015/07/14		100	%	75 - 125
		Total Tin (Sn)	2015/07/14		92	%	75 - 125
		Total Titanium (Ti)	2015/07/14		NC	%	75 - 125
		Total Uranium (U)	2015/07/14		99	%	75 - 125
		Total Vanadium (V)	2015/07/14		NC	%	75 - 125
		Total Zinc (Zn)	2015/07/14		NC	%	75 - 125
	QC Standard	Total Aluminum (Al)	2015/07/14		122	%	70 - 130
		Total Antimony (Sb)	2015/07/14		88	%	70 - 130
		Total Arsenic (As)	2015/07/14		88	%	70 - 130
		Total Barium (Ba)	2015/07/14		105	%	70 - 130
		Total Cadmium (Cd)	2015/07/14		91	%	70 - 130
		Total Calcium (Ca)	2015/07/14		104	%	70 - 130
		Total Chromium (Cr)	2015/07/14		101	%	70 - 130
		Total Cobalt (Co)	2015/07/14		93	%	70 - 130
		Total Copper (Cu)	2015/07/14		90	%	70 - 130
		Total Iron (Fe)	2015/07/14		96	%	70 - 130
		Total Lead (Pb)	2015/07/14		98	%	70 - 130
		Total Magnesium (Mg)	2015/07/14		103	%	70 - 130
		Total Manganese (Mn)	2015/07/14		96	%	70 - 130
		Total Mercury (Hg)	2015/07/14		94	%	70 - 130
		Total Molybdenum (Mo)	2015/07/14		101	%	70 - 130
		Total Nickel (Ni)	2015/07/14		97	%	70 - 130
		Total Phosphorus (P)	2015/07/14		81	%	70 - 130
		Total Silver (Ag)	2015/07/14		99	%	60 - 140
		Total Strontium (Sr)	2015/07/14		110	%	70 - 130
		Total Thallium (Tl)	2015/07/14		91	%	70 - 130
		Total Titanium (Ti)	2015/07/14		102	%	70 - 130
		Total Uranium (U)	2015/07/14		107	%	70 - 130
		Total Vanadium (V)	2015/07/14		99	%	70 - 130
		Total Zinc (Zn)	2015/07/14		81	%	70 - 130
	Spiked Blank	Total Antimony (Sb)	2015/07/14		92	%	75 - 125
		Total Arsenic (As)	2015/07/14		94	%	75 - 125
		Total Barium (Ba)	2015/07/14		99	%	75 - 125
		Total Beryllium (Be)	2015/07/14		106	%	75 - 125

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7964499 DJ	Spiked Blank	Total Cadmium (Cd)	2015/07/14		99	%	75 - 125
		Total Chromium (Cr)	2015/07/14		99	%	75 - 125
		Total Cobalt (Co)	2015/07/14		99	%	75 - 125
		Total Copper (Cu)	2015/07/14		99	%	75 - 125
		Total Lead (Pb)	2015/07/14		100	%	75 - 125
		Total Lithium (Li)	2015/07/14		100	%	75 - 125
		Total Manganese (Mn)	2015/07/14		99	%	75 - 125
		Total Mercury (Hg)	2015/07/14		99	%	75 - 125
		Total Molybdenum (Mo)	2015/07/14		95	%	75 - 125
		Total Nickel (Ni)	2015/07/14		97	%	75 - 125
		Total Selenium (Se)	2015/07/14		98	%	75 - 125
		Total Silver (Ag)	2015/07/14		99	%	75 - 125
		Total Strontium (Sr)	2015/07/14		95	%	75 - 125
		Total Thallium (Tl)	2015/07/14		101	%	75 - 125
		Total Tin (Sn)	2015/07/14		89	%	75 - 125
		Total Titanium (Ti)	2015/07/14		94	%	75 - 125
		Total Uranium (U)	2015/07/14		95	%	75 - 125
		Total Vanadium (V)	2015/07/14		98	%	75 - 125
		Total Zinc (Zn)	2015/07/14		99	%	75 - 125
	Method Blank	Total Aluminum (Al)	2015/07/14	ND, RDL=100		mg/kg	
		Total Antimony (Sb)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Arsenic (As)	2015/07/14	ND, RDL=0.50		mg/kg	
		Total Barium (Ba)	2015/07/14	0.16, RDL=0.10		mg/kg	
		Total Beryllium (Be)	2015/07/14	ND, RDL=0.40		mg/kg	
		Total Bismuth (Bi)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Cadmium (Cd)	2015/07/14	ND, RDL=0.050		mg/kg	
		Total Calcium (Ca)	2015/07/14	ND, RDL=100		mg/kg	
		Total Chromium (Cr)	2015/07/14	ND, RDL=1.0		mg/kg	
		Total Cobalt (Co)	2015/07/14	ND, RDL=0.30		mg/kg	
		Total Copper (Cu)	2015/07/14	ND, RDL=0.50		mg/kg	
		Total Iron (Fe)	2015/07/14	ND, RDL=100		mg/kg	
		Total Lead (Pb)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Lithium (Li)	2015/07/14	ND, RDL=5.0		mg/kg	
		Total Magnesium (Mg)	2015/07/14	ND, RDL=100		mg/kg	
		Total Manganese (Mn)	2015/07/14	ND, RDL=0.20		mg/kg	
		Total Mercury (Hg)	2015/07/14	ND, RDL=0.050		mg/kg	
		Total Molybdenum (Mo)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Nickel (Ni)	2015/07/14	ND, RDL=0.80		mg/kg	
		Total Phosphorus (P)	2015/07/14	ND, RDL=10		mg/kg	
		Total Potassium (K)	2015/07/14	ND, RDL=100		mg/kg	
		Total Selenium (Se)	2015/07/14	ND, RDL=0.50		mg/kg	
		Total Silver (Ag)	2015/07/14	ND, RDL=0.050		mg/kg	
		Total Sodium (Na)	2015/07/14	ND, RDL=100		mg/kg	
		Total Strontium (Sr)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Thallium (Tl)	2015/07/14	ND, RDL=0.050		mg/kg	
		Total Tin (Sn)	2015/07/14	ND, RDL=0.10		mg/kg	
		Total Titanium (Ti)	2015/07/14	ND, RDL=1.0		mg/kg	
		Total Uranium (U)	2015/07/14	ND, RDL=0.050		mg/kg	
		Total Vanadium (V)	2015/07/14	ND, RDL=2.0		mg/kg	
		Total Zinc (Zn)	2015/07/14	ND, RDL=1.0		mg/kg	
		Total Zirconium (Zr)	2015/07/14	ND, RDL=0.50		mg/kg	
	RPD	Total Aluminum (Al)	2015/07/14	1.5		%	35
		Total Antimony (Sb)	2015/07/14	NC		%	30
		Total Arsenic (As)	2015/07/14	7.8		%	30
		Total Barium (Ba)	2015/07/14	0.93		%	35

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7964499 DJ	RPD	Total Beryllium (Be)	2015/07/14	NC		%	30
		Total Bismuth (Bi)	2015/07/14	NC		%	30
		Total Cadmium (Cd)	2015/07/14	NC		%	30
		Total Calcium (Ca)	2015/07/14	2.9		%	30
		Total Chromium (Cr)	2015/07/14	2.0		%	30
		Total Cobalt (Co)	2015/07/14	2.9		%	30
		Total Copper (Cu)	2015/07/14	0.60		%	30
		Total Iron (Fe)	2015/07/14	1.1		%	30
		Total Lead (Pb)	2015/07/14	1.2		%	35
		Total Magnesium (Mg)	2015/07/14	1.2		%	30
		Total Manganese (Mn)	2015/07/14	0.78		%	30
		Total Molybdenum (Mo)	2015/07/14	NC		%	35
		Total Nickel (Ni)	2015/07/14	7.6		%	30
		Total Phosphorus (P)	2015/07/14	0.43		%	30
		Total Potassium (K)	2015/07/14	0.33		%	35
		Total Selenium (Se)	2015/07/14	NC		%	30
		Total Silver (Ag)	2015/07/14	NC		%	35
		Total Sodium (Na)	2015/07/14	NC		%	35
		Total Strontium (Sr)	2015/07/14	1.6		%	35
		Total Thallium (Tl)	2015/07/14	NC		%	30
		Total Tin (Sn)	2015/07/14	NC		%	35
		Total Titanium (Ti)	2015/07/14	0.26		%	35
		Total Vanadium (V)	2015/07/14	1.6		%	30
		Total Zinc (Zn)	2015/07/14	0.26		%	30
		Total Zirconium (Zr)	2015/07/14	NC		%	30
7964504 TMB	Spiked Blank	Soluble (2:1) pH	2015/07/14		100	%	97 - 103
	RPD	Soluble (2:1) pH	2015/07/14	0.73		%	N/A
7966903 DJ	Matrix Spike	Total Antimony (Sb)	2015/07/15		NC	%	75 - 125
		Total Arsenic (As)	2015/07/15		113	%	75 - 125
		Total Barium (Ba)	2015/07/15		NC	%	75 - 125
		Total Beryllium (Be)	2015/07/15		101	%	75 - 125
		Total Cadmium (Cd)	2015/07/15		101	%	75 - 125
		Total Chromium (Cr)	2015/07/15		NC	%	75 - 125
		Total Cobalt (Co)	2015/07/15		100	%	75 - 125
		Total Copper (Cu)	2015/07/15		NC	%	75 - 125
		Total Lead (Pb)	2015/07/15		NC	%	75 - 125
		Total Lithium (Li)	2015/07/15		101	%	75 - 125
		Total Manganese (Mn)	2015/07/15		NC	%	75 - 125
		Total Mercury (Hg)	2015/07/15		103	%	75 - 125
		Total Molybdenum (Mo)	2015/07/15		114	%	75 - 125
		Total Nickel (Ni)	2015/07/15		NC	%	75 - 125
		Total Selenium (Se)	2015/07/15		102	%	75 - 125
		Total Silver (Ag)	2015/07/15		92	%	75 - 125
		Total Strontium (Sr)	2015/07/15		NC	%	75 - 125
		Total Thallium (Tl)	2015/07/15		99	%	75 - 125
		Total Tin (Sn)	2015/07/15		NC	%	75 - 125
		Total Titanium (Ti)	2015/07/15		NC	%	75 - 125
		Total Uranium (U)	2015/07/15		104	%	75 - 125
		Total Vanadium (V)	2015/07/15		NC	%	75 - 125
		Total Zinc (Zn)	2015/07/15		NC	%	75 - 125
	QC Standard	Total Aluminum (Al)	2015/07/15		107	%	70 - 130
		Total Antimony (Sb)	2015/07/15		103	%	70 - 130
		Total Arsenic (As)	2015/07/15		98	%	70 - 130
		Total Barium (Ba)	2015/07/15		106	%	70 - 130
		Total Cadmium (Cd)	2015/07/15		112	%	70 - 130

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7966903 DJ	QC Standard	Total Calcium (Ca)	2015/07/15		92	%	70 - 130
		Total Chromium (Cr)	2015/07/15		110	%	70 - 130
		Total Cobalt (Co)	2015/07/15		99	%	70 - 130
		Total Copper (Cu)	2015/07/15		100	%	70 - 130
		Total Iron (Fe)	2015/07/15		96	%	70 - 130
		Total Lead (Pb)	2015/07/15		103	%	70 - 130
		Total Magnesium (Mg)	2015/07/15		93	%	70 - 130
		Total Manganese (Mn)	2015/07/15		103	%	70 - 130
		Total Mercury (Hg)	2015/07/15		88	%	70 - 130
		Total Molybdenum (Mo)	2015/07/15		110	%	70 - 130
		Total Nickel (Ni)	2015/07/15		104	%	70 - 130
		Total Phosphorus (P)	2015/07/15		94	%	70 - 130
		Total Silver (Ag)	2015/07/15		101	%	60 - 140
		Total Strontium (Sr)	2015/07/15		109	%	70 - 130
		Total Thallium (Tl)	2015/07/15		95	%	70 - 130
		Total Titanium (Ti)	2015/07/15		112	%	70 - 130
		Total Uranium (U)	2015/07/15		115	%	70 - 130
		Total Vanadium (V)	2015/07/15		107	%	70 - 130
		Total Zinc (Zn)	2015/07/15		96	%	70 - 130
	Spiked Blank	Total Antimony (Sb)	2015/07/15		96	%	75 - 125
		Total Arsenic (As)	2015/07/15		98	%	75 - 125
		Total Barium (Ba)	2015/07/15		98	%	75 - 125
		Total Beryllium (Be)	2015/07/15		97	%	75 - 125
		Total Cadmium (Cd)	2015/07/15		104	%	75 - 125
		Total Chromium (Cr)	2015/07/15		101	%	75 - 125
		Total Cobalt (Co)	2015/07/15		102	%	75 - 125
		Total Copper (Cu)	2015/07/15		106	%	75 - 125
		Total Lead (Pb)	2015/07/15		103	%	75 - 125
		Total Lithium (Li)	2015/07/15		99	%	75 - 125
		Total Manganese (Mn)	2015/07/15		102	%	75 - 125
		Total Mercury (Hg)	2015/07/15		103	%	75 - 125
		Total Molybdenum (Mo)	2015/07/15		96	%	75 - 125
		Total Nickel (Ni)	2015/07/15		105	%	75 - 125
		Total Selenium (Se)	2015/07/15		102	%	75 - 125
		Total Silver (Ag)	2015/07/15		86	%	75 - 125
		Total Strontium (Sr)	2015/07/15		97	%	75 - 125
		Total Thallium (Tl)	2015/07/15		101	%	75 - 125
		Total Tin (Sn)	2015/07/15		93	%	75 - 125
		Total Titanium (Ti)	2015/07/15		98	%	75 - 125
		Total Uranium (U)	2015/07/15		102	%	75 - 125
		Total Vanadium (V)	2015/07/15		99	%	75 - 125
		Total Zinc (Zn)	2015/07/15		107	%	75 - 125
	Method Blank	Total Aluminum (Al)	2015/07/15	ND, RDL=100		mg/kg	
		Total Antimony (Sb)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Arsenic (As)	2015/07/15	ND, RDL=0.50		mg/kg	
		Total Barium (Ba)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Beryllium (Be)	2015/07/15	ND, RDL=0.40		mg/kg	
		Total Bismuth (Bi)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Cadmium (Cd)	2015/07/15	ND, RDL=0.050		mg/kg	
		Total Calcium (Ca)	2015/07/15	ND, RDL=100		mg/kg	
		Total Chromium (Cr)	2015/07/15	ND, RDL=1.0		mg/kg	
		Total Cobalt (Co)	2015/07/15	ND, RDL=0.30		mg/kg	
		Total Copper (Cu)	2015/07/15	ND, RDL=0.50		mg/kg	
		Total Iron (Fe)	2015/07/15	ND, RDL=100		mg/kg	
		Total Lead (Pb)	2015/07/15	ND, RDL=0.10		mg/kg	

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7966903 DJ	Method Blank	Total Lithium (Li)	2015/07/15	ND, RDL=5.0		mg/kg	
		Total Magnesium (Mg)	2015/07/15	ND, RDL=100		mg/kg	
		Total Manganese (Mn)	2015/07/15	ND, RDL=0.20		mg/kg	
		Total Mercury (Hg)	2015/07/15	ND, RDL=0.050		mg/kg	
		Total Molybdenum (Mo)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Nickel (Ni)	2015/07/15	ND, RDL=0.80		mg/kg	
		Total Phosphorus (P)	2015/07/15	ND, RDL=10		mg/kg	
		Total Potassium (K)	2015/07/15	ND, RDL=100		mg/kg	
		Total Selenium (Se)	2015/07/15	ND, RDL=0.50		mg/kg	
		Total Silver (Ag)	2015/07/15	ND, RDL=0.050		mg/kg	
		Total Sodium (Na)	2015/07/15	ND, RDL=100		mg/kg	
		Total Strontium (Sr)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Thallium (Tl)	2015/07/15	ND, RDL=0.050		mg/kg	
		Total Tin (Sn)	2015/07/15	ND, RDL=0.10		mg/kg	
		Total Titanium (Ti)	2015/07/15	ND, RDL=1.0		mg/kg	
		Total Uranium (U)	2015/07/15	ND, RDL=0.050		mg/kg	
		Total Vanadium (V)	2015/07/15	ND, RDL=2.0		mg/kg	
		Total Zinc (Zn)	2015/07/15	ND, RDL=1.0		mg/kg	
		Total Zirconium (Zr)	2015/07/15	ND, RDL=0.50		mg/kg	
	RPD	Total Aluminum (Al)	2015/07/15	0.13		%	35
		Total Antimony (Sb)	2015/07/15	21		%	30
		Total Arsenic (As)	2015/07/15	27		%	30
		Total Barium (Ba)	2015/07/15	15		%	35
		Total Beryllium (Be)	2015/07/15	NC		%	30
		Total Bismuth (Bi)	2015/07/15	NC		%	30
		Total Cadmium (Cd)	2015/07/15	14		%	30
		Total Calcium (Ca)	2015/07/15	3.0		%	30
		Total Chromium (Cr)	2015/07/15	0.46		%	30
		Total Cobalt (Co)	2015/07/15	0.53		%	30
		Total Copper (Cu)	2015/07/15	8.9		%	30
		Total Iron (Fe)	2015/07/15	0.60		%	30
		Total Lead (Pb)	2015/07/15	10		%	35
		Total Lithium (Li)	2015/07/15	NC		%	30
		Total Magnesium (Mg)	2015/07/15	0.25		%	30
		Total Manganese (Mn)	2015/07/15	0.77		%	30
		Total Mercury (Hg)	2015/07/15	NC		%	35
		Total Molybdenum (Mo)	2015/07/15	6.5		%	35
		Total Nickel (Ni)	2015/07/15	3.3		%	30
		Total Phosphorus (P)	2015/07/15	2.8		%	30
		Total Potassium (K)	2015/07/15	0.45		%	35
		Total Selenium (Se)	2015/07/15	NC		%	30
		Total Silver (Ag)	2015/07/15	1.5		%	35
		Total Strontium (Sr)	2015/07/15	3.8		%	35
		Total Thallium (Tl)	2015/07/15	NC		%	30
		Total Tin (Sn)	2015/07/15	30		%	35
		Total Titanium (Ti)	2015/07/15	2.0		%	35
		Total Uranium (U)	2015/07/15	1.4		%	30
		Total Vanadium (V)	2015/07/15	0.020		%	30
		Total Zinc (Zn)	2015/07/15	10		%	30
		Total Zirconium (Zr)	2015/07/15	NC		%	30
7967161 TMB	Spiked Blank	Soluble (2:1) pH	2015/07/15		99	%	97 - 103
	RPD	Soluble (2:1) pH	2015/07/15	0.95		%	N/A
7967442 MY4	Matrix Spike	Hexabromobiphenyl (sur.)	2015/07/16		94	%	60 - 130
	[MQ2856-02]	Aroclor 1254	2015/07/16		80	%	70 - 110

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits	
7967442 MY4	Spiked Blank	Hexabromobiphenyl (sur.)	2015/07/16		108	%	60 - 130	
		Aroclor 1254	2015/07/16		104	%	70 - 110	
	Method Blank	Hexabromobiphenyl (sur.)	2015/07/16			105	%	60 - 130
		Aroclor 1242	2015/07/16	ND, RDL=0.020			mg/kg	
		Aroclor 1248	2015/07/16	ND, RDL=0.020			mg/kg	
		Aroclor 1254	2015/07/16	ND, RDL=0.020			mg/kg	
		Aroclor 1260	2015/07/16	ND, RDL=0.020			mg/kg	
		Total PCB	2015/07/16	ND, RDL=0.020			mg/kg	
	RPD [MQ2858-02]	Aroclor 1242	2015/07/16	NC			%	50
		Aroclor 1248	2015/07/16	NC			%	50
		Aroclor 1254	2015/07/16	NC			%	50
		Aroclor 1260	2015/07/16	NC			%	50
		Total PCB	2015/07/16	NC			%	50
7970740 IT1	Matrix Spike	O-TERPHENYL (sur.)	2015/07/17		97	%	50 - 130	
		EPH (C10-C19)	2015/07/17		86	%	50 - 130	
		EPH (C19-C32)	2015/07/17		95	%	50 - 130	
	Spiked Blank	O-TERPHENYL (sur.)	2015/07/17		105	%	50 - 130	
		EPH (C10-C19)	2015/07/17		85	%	50 - 130	
		EPH (C19-C32)	2015/07/17		95	%	50 - 130	
	Method Blank	O-TERPHENYL (sur.)	2015/07/17		90	%	50 - 130	
		EPH (C10-C19)	2015/07/17	ND, RDL=100			mg/kg	
		EPH (C19-C32)	2015/07/17	ND, RDL=100			mg/kg	
RPD	EPH (C10-C19)	2015/07/17	NC			%	40	
	EPH (C19-C32)	2015/07/17	NC			%	40	
7970777 JP1	Matrix Spike [MQ2856-01]	D10-ANTHRACENE (sur.)	2015/07/18		90	%	60 - 130	
		D8-ACENAPHTHYLENE (sur.)	2015/07/18		89	%	50 - 130	
		D8-NAPHTHALENE (sur.)	2015/07/18		92	%	50 - 130	
		TERPHENYL-D14 (sur.)	2015/07/18		88	%	60 - 130	
		Naphthalene	2015/07/18		99	%	50 - 130	
		2-Methylnaphthalene	2015/07/18		103	%	50 - 130	
		Acenaphthylene	2015/07/18		94	%	50 - 130	
		Acenaphthene	2015/07/18		100	%	50 - 130	
		Fluorene	2015/07/18		97	%	50 - 130	
		Phenanthrene	2015/07/18		97	%	60 - 130	
		Anthracene	2015/07/18		100	%	60 - 130	
		Fluoranthene	2015/07/18		NC	%	60 - 130	
		Pyrene	2015/07/18		NC	%	60 - 130	
		Benzo(a)anthracene	2015/07/18		NC	%	60 - 130	
		Chrysene	2015/07/18		NC	%	60 - 130	
		Benzo(b)fluoranthene	2015/07/18		102	%	N/A	
		Benzo(k)fluoranthene	2015/07/18		101	%	60 - 130	
		Benzo(a)pyrene	2015/07/18		97	%	60 - 130	
		Indeno(1,2,3-cd)pyrene	2015/07/18		108	%	60 - 130	
		Dibenz(a,h)anthracene	2015/07/18		113	%	60 - 130	
		Benzo(g,h,i)perylene	2015/07/18		103	%	60 - 130	
	Spiked Blank	D10-ANTHRACENE (sur.)	2015/07/20		103	%	60 - 130	
		D8-ACENAPHTHYLENE (sur.)	2015/07/20		96	%	50 - 130	
		D8-NAPHTHALENE (sur.)	2015/07/20		102	%	50 - 130	
		TERPHENYL-D14 (sur.)	2015/07/20		100	%	60 - 130	
		Naphthalene	2015/07/20		87	%	50 - 130	
		2-Methylnaphthalene	2015/07/20		86	%	50 - 130	
		Acenaphthylene	2015/07/20		82	%	50 - 130	
		Acenaphthene	2015/07/20		85	%	50 - 130	
		Fluorene	2015/07/20		80	%	50 - 130	

Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7970777 JP1	Spiked Blank	Phenanthrene	2015/07/20		83	%	60 - 130
		Anthracene	2015/07/20		88	%	60 - 130
		Fluoranthene	2015/07/20		87	%	60 - 130
		Pyrene	2015/07/20		87	%	60 - 130
		Benzo(a)anthracene	2015/07/20		88	%	60 - 130
		Chrysene	2015/07/20		94	%	60 - 130
		Benzo(k)fluoranthene	2015/07/20		93	%	60 - 130
		Benzo(a)pyrene	2015/07/20		86	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2015/07/20		74	%	60 - 130
		Dibenz(a,h)anthracene	2015/07/20		65	%	60 - 130
		Benzo(g,h,i)perylene	2015/07/20		81	%	60 - 130
	Method Blank	D10-ANTHRACENE (sur.)	2015/07/20		102	%	60 - 130
		D8-ACENAPHTHYLENE (sur.)	2015/07/20		99	%	50 - 130
		D8-NAPHTHALENE (sur.)	2015/07/20		98	%	50 - 130
		TERPHENYL-D14 (sur.)	2015/07/20		103	%	60 - 130
		Naphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
		2-Methylnaphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Acenaphthylene	2015/07/20	ND, RDL=0.00050		mg/kg	
		Acenaphthene	2015/07/20	ND, RDL=0.00050		mg/kg	
		Fluorene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Phenanthrene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Benzo(a)anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Chrysene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Benzo(b)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Benzo(k)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Benzo(a)pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
		Indeno(1,2,3-cd)pyrene	2015/07/20	ND, RDL=0.0020		mg/kg	
		Dibenz(a,h)anthracene	2015/07/20	ND, RDL=0.00050		mg/kg	
		Benzo(g,h,i)perylene	2015/07/20	ND, RDL=0.0020		mg/kg	
	RPD [MQ2856-01]	Naphthalene	2015/07/18	NC (1)		%	50
		2-Methylnaphthalene	2015/07/18	NC (2)		%	50
		Acenaphthylene	2015/07/18	20 (1)		%	50
		Acenaphthene	2015/07/18	4.3 (1)		%	50
		Fluorene	2015/07/18	21 (1)		%	50
		Phenanthrene	2015/07/18	18 (1)		%	50
		Anthracene	2015/07/18	24 (1)		%	50
		Fluoranthene	2015/07/18	23 (1)		%	50
		Pyrene	2015/07/18	5.7 (1)		%	50
		Benzo(a)anthracene	2015/07/18	15 (1)		%	50
		Chrysene	2015/07/18	22 (1)		%	50
		Benzo(b)fluoranthene	2015/07/18	5.2 (1)		%	50
		Benzo(k)fluoranthene	2015/07/18	3.5 (1)		%	50
		Benzo(a)pyrene	2015/07/18	4.8 (1)		%	50
		Indeno(1,2,3-cd)pyrene	2015/07/18	6.0 (1)		%	50
		Dibenz(a,h)anthracene	2015/07/18	4.6 (1)		%	50
		Benzo(g,h,i)perylene	2015/07/18	4.3 (1)		%	50

N/A = Not Applicable

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

Pelagic Technologies Inc.  
Attention: Kevin Swoboda  
Client Project #:  
P.O. #:  
Site Location:

### Quality Assurance Report (Continued)

Maxxam Job Number: VB558652

accuracy.

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

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

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).

( 1 ) Detection limit raised due to high moisture content.

( 2 ) Detection limits raised due to matrix interference.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Analytics - Partial/Rush Results



**Validation Signature Page**

**Maxxam Job #: B558652**

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



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Rob Reinert, Data Validation Coordinator

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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.

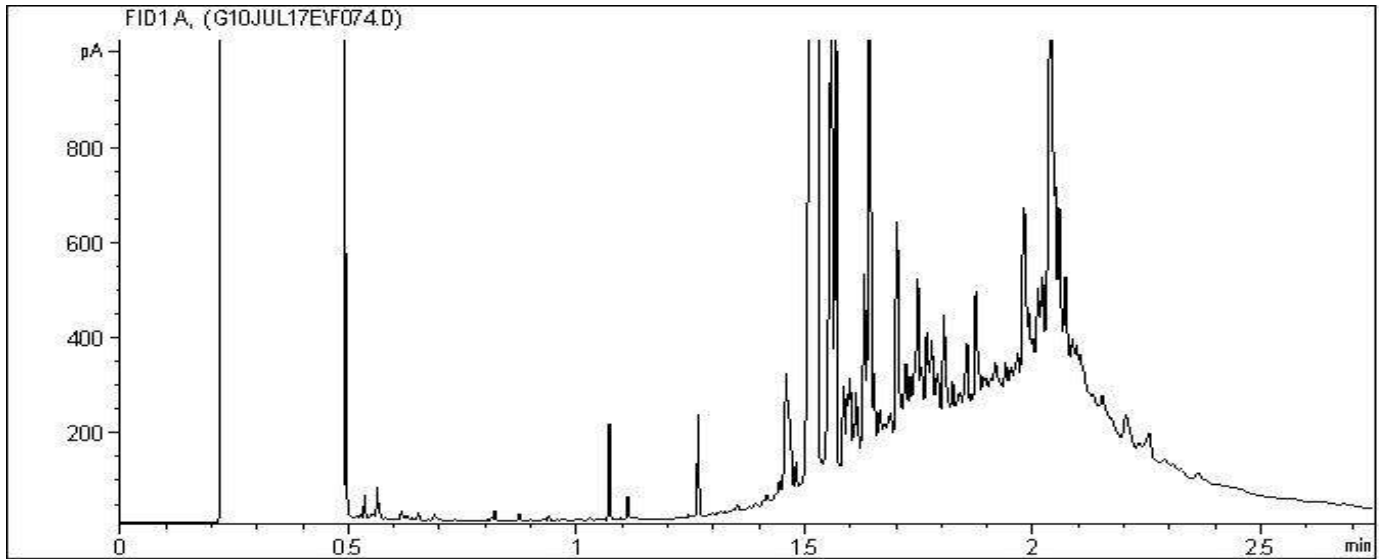
Maxxam Analytics - Partial/Rush Results

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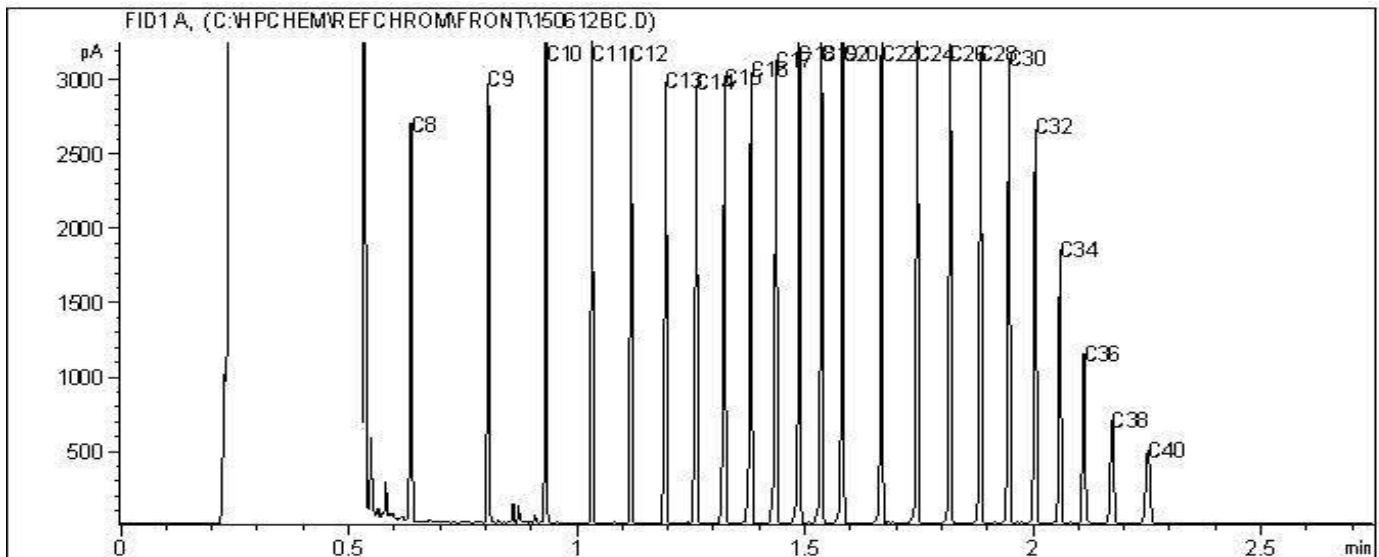
Report Date: 2015/07/20  
Maxxam Job #: B558652  
Maxxam Sample: MQ2856

Client ID: 1612-1

**EPH in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating oils:	C20 - C40

**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

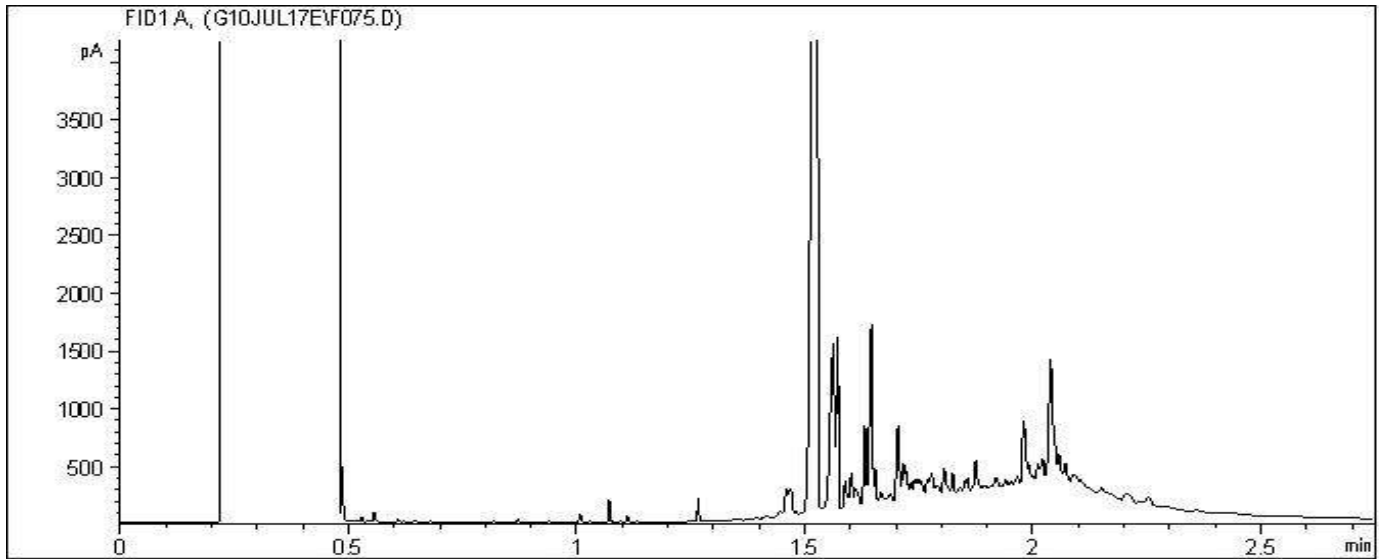
Maxxam Analytics - Partial/Rush Results

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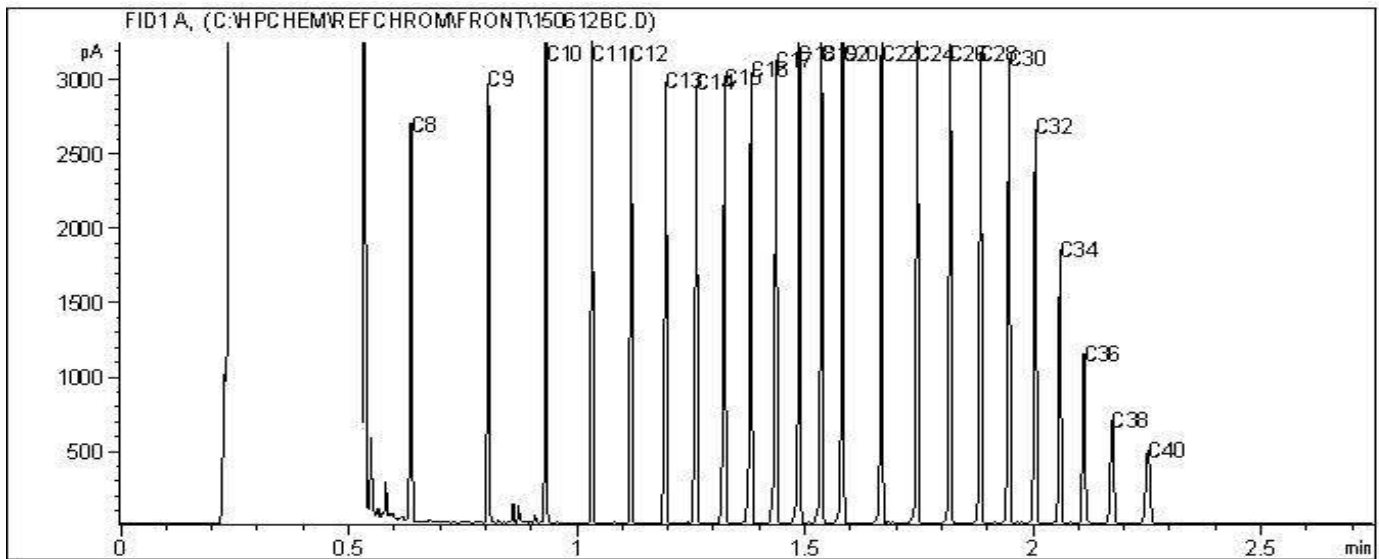
Report Date: 2015/07/20  
Maxxam Job #: B558652  
Maxxam Sample: MQ2857

Client ID: 1612-2

**EPH in Soil by GC/FID Chromatogram**



Carbon Range Distribution - Reference Chromatogram



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating oils:	C20 - C40

**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

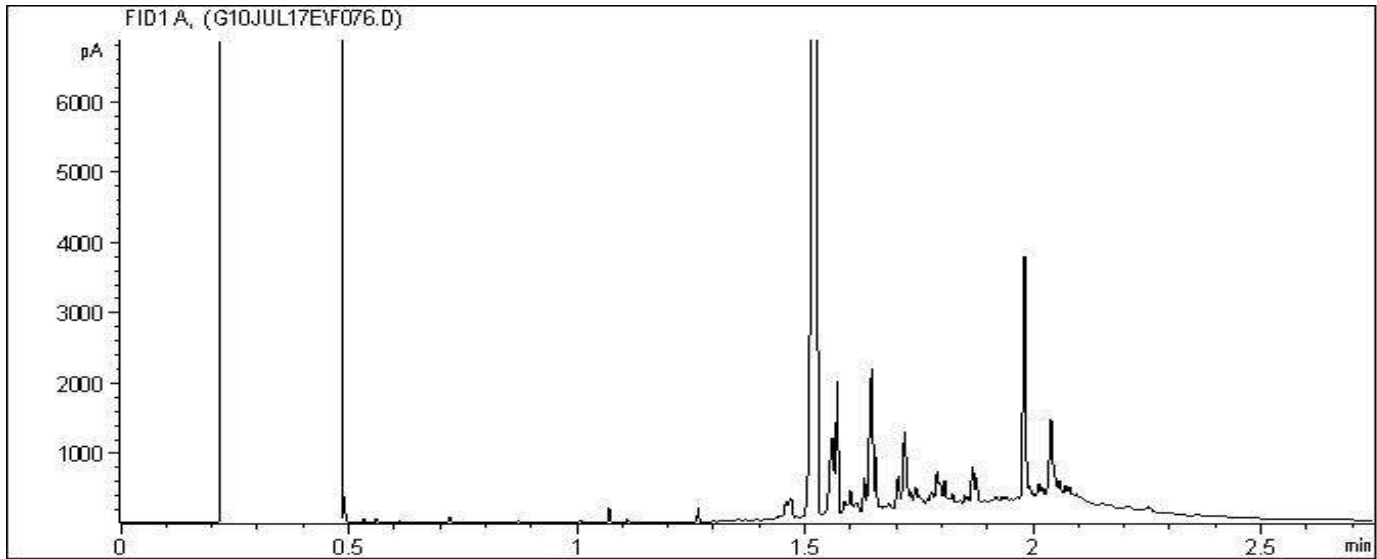
Maxxam Analytics - Partial/Rush Results

Pelagic Technologies Inc.

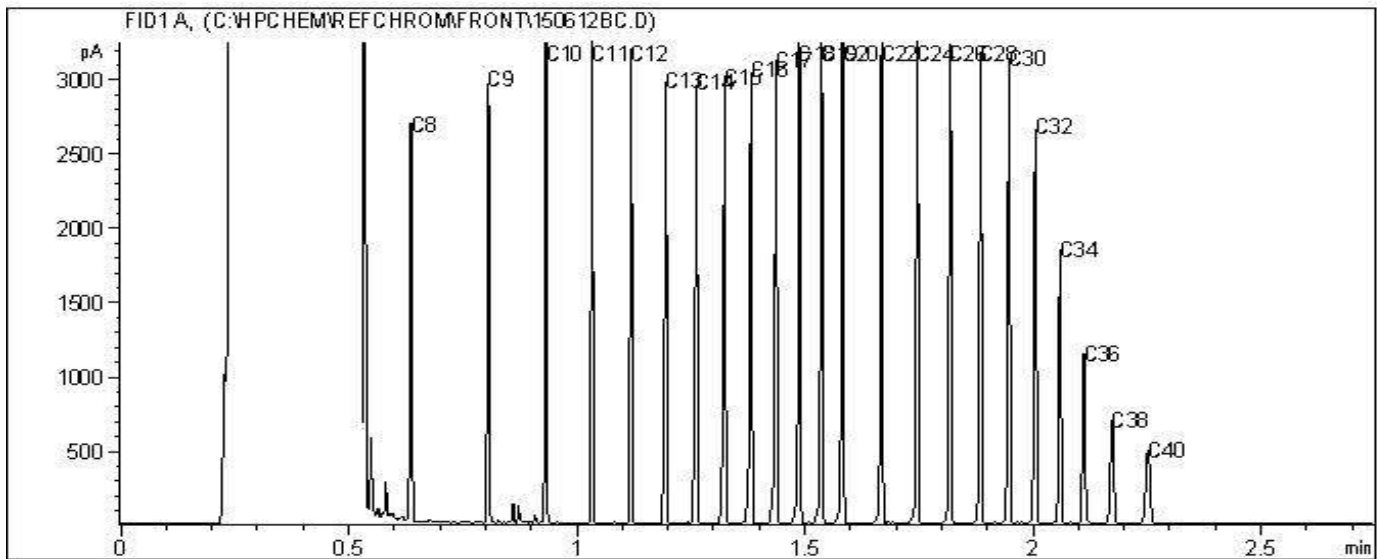
Report Date: 2015/07/20  
Maxxam Job #: B558652  
Maxxam Sample: MQ2858

Client ID: 1612-3

**EPH in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating oils:	C20 - C40

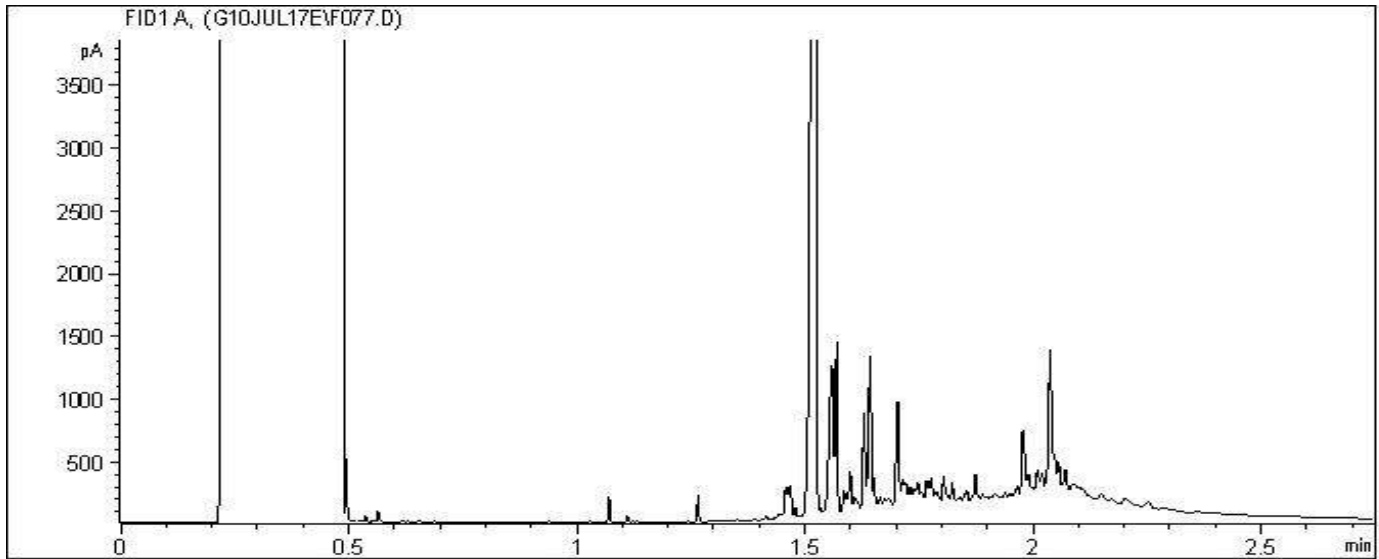
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Maxxam Analytics - Partial/Rush Results

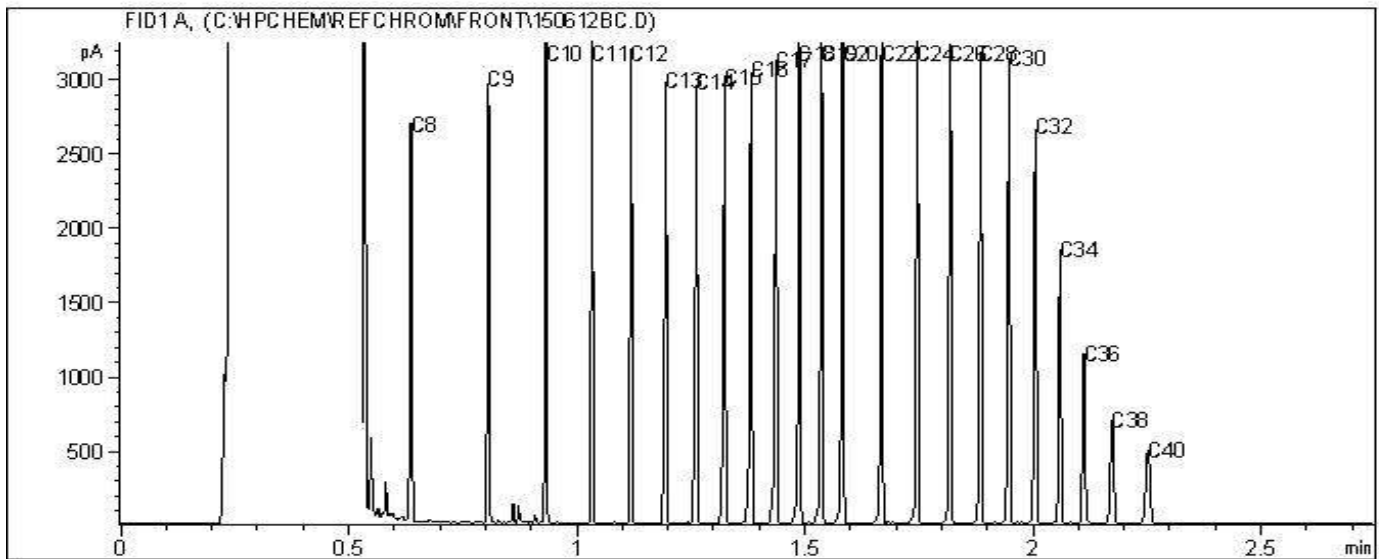
Report Date: 2015/07/20  
Maxxam Job #: B558652  
Maxxam Sample: MQ2859

Client ID: 1612-4

**EPH in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating oils:	C20 - C40

**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Your C.O.C. #: G097686

**Report Date: 2015/07/21**  
Report #: R2000681  
Version: 2 - Partial

**CERTIFICATE OF ANALYSIS – PARTIAL RESULTS**

**MAXXAM JOB #: B558652**

**Received: 2015/07/10, 16:30**

Sample Matrix: Sediment  
# Samples Received: 4

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Elements by ICPMS (total)	3	2015/07/13	2015/07/14	BBY7SOP-00001	EPA 6020a R1 m
Elements by ICPMS (total)	1	2015/07/14	2015/07/15	BBY7SOP-00001	EPA 6020a R1 m
Moisture	4	N/A	2015/07/14	BBY8SOP-00017	OMOE E3139 3.1 m
Benzo[a]pyrene Equivalency	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
PAH in Soil by GC/MS Lowlevel (Extended)	3	2015/07/13	2015/07/18	BBY8SOP-00022	EPA 8270d R4 m
PAH in Soil by GC/MS Lowlevel (Extended)	1	2015/07/13	2015/07/20	BBY8SOP-00022	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
Polychlorinated Biphenyls in Soil	4	N/A	2015/07/16	BBY8SOP-00036	EPA 8082a R1 m
pH (2:1 DI Water Extract)	3	2015/07/13	2015/07/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
pH (2:1 DI Water Extract)	1	2015/07/14	2015/07/15	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	4	2015/07/13	2015/07/17	BBY8SOP-00029	BCMOE EPH s 07/99 m
TOC Soil Subcontract (1)	4	2015/07/21	2015/07/21		

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

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Ontario (From Burnaby)

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Shanaz Akbar, Project Manager

Email: SAKbar@maxxam.ca

Phone# (604)639-2618

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.

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**RESULTS OF CHEMICAL ANALYSES OF SEDIMENT**

<b>Maxxam ID</b>		MQ2856	MQ2857	MQ2858	MQ2859	
<b>Sampling Date</b>		2015/07/03	2015/07/03	2015/07/03	2015/07/03	
<b>COC Number</b>		G097686	G097686	G097686	G097686	
	<b>Units</b>	<b>1612-1</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>QC Batch</b>
<b>Parameter</b>						
Subcontract Parameter	N/A	ATTACHED	ATTACHED	ATTACHED	ATTACHED	7974211

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)**

Maxxam ID		MQ2856	MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03	2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686	G097686	G097686	G097686		
	Units	1612-1	1612-2	1612-3	1612-4	RDL	QC Batch
<b>Polychlorinated Biphenyls</b>							
Aroclor 1242	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1248	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1254	mg/kg	0.023	ND	ND	ND	0.020	7967442
Aroclor 1260	mg/kg	ND	ND	ND	ND	0.020	7967442
Total PCB	mg/kg	0.023	ND	ND	ND	0.020	7967442
<b>Surrogate Recovery (%)</b>							
Hexabromobiphenyl (sur.)	%	86	104	105	109		7967442
RDL = Reportable Detection Limit ND = Not detected							

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Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**PHYSICAL TESTING (SEDIMENT)**

<b>Maxxam ID</b>		MQ2856		MQ2857	MQ2858	MQ2859		
<b>Sampling Date</b>		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
<b>COC Number</b>		G097686		G097686	G097686	G097686		
	<b>Units</b>	<b>1612-1</b>	<b>QC Batch</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Physical Properties</b>								
Moisture	%	65	7964186	72	63	62	0.30	7964188
RDL = Reportable Detection Limit								

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**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857		MQ2858		MQ2859		
Sampling Date		2015/07/03		2015/07/03		2015/07/03		2015/07/03		
COC Number		G097686		G097686		G097686		G097686		
	Units	1612-1	RDL	1612-2	RDL	1612-3	RDL	1612-4	RDL	QC Batch
<b>Calculated Parameters</b>										
Index of Additive Cancer Risk(IARC)	N/A	11	0.10	8.4	0.10	5.7	0.10	5.0	0.10	7963471
Benzo[a]pyrene equivalency	N/A	0.76	0.10	0.55	0.10	0.38	0.10	0.34	0.10	7963471
<b>Polycyclic Aromatics</b>										
Naphthalene	mg/kg	0.014 (1)	0.0028	0.018 (1)	0.0031	0.013 (1)	0.0027	0.012 (1)	0.0023	7970777
2-Methylnaphthalene	mg/kg	ND (2)	0.022	ND (2)	0.045	ND (2)	0.022	ND (2)	0.023	7970777
Acenaphthylene	mg/kg	0.055 (1)	0.0014	0.066 (1)	0.0016	0.039 (1)	0.0014	0.031 (1)	0.0012	7970777
Acenaphthene	mg/kg	0.013 (1)	0.0014	0.012 (1)	0.0016	0.0079 (1)	0.0014	0.0072 (1)	0.0012	7970777
Fluorene	mg/kg	0.062 (1)	0.0028	ND (2)	0.051	ND (2)	0.052	ND (2)	0.041	7970777
Phenanthrene	mg/kg	0.38 (1)	0.0028	0.18 (1)	0.0031	0.13 (1)	0.0027	0.12 (1)	0.0023	7970777
Anthracene	mg/kg	0.22 (1)	0.0028	0.16 (1)	0.0031	0.12 (1)	0.0027	0.11 (1)	0.0023	7970777
Fluoranthene	mg/kg	0.76 (1)	0.0028	0.61 (1)	0.0031	0.35 (1)	0.0027	0.26 (1)	0.0023	7970777
Pyrene	mg/kg	1.1 (1)	0.0028	0.62 (1)	0.0031	0.51 (1)	0.0027	0.33 (1)	0.0023	7970777
Benzo(a)anthracene	mg/kg	0.56 (1)	0.0028	0.36 (1)	0.0031	0.27 (1)	0.0027	0.27 (1)	0.0023	7970777
Chrysene	mg/kg	0.85 (1)	0.0028	0.63 (1)	0.0031	0.42 (1)	0.0027	0.45 (1)	0.0023	7970777
Benzo(b)fluoranthene	mg/kg	0.56 (1)	0.0028	0.48 (1)	0.0031	0.31 (1)	0.0027	0.25 (1)	0.0023	7970777
Benzo(k)fluoranthene	mg/kg	0.33 (1)	0.0028	0.22 (1)	0.0031	0.16 (1)	0.0027	0.13 (1)	0.0023	7970777
Benzo(a)pyrene	mg/kg	0.49 (1)	0.0028	0.33 (1)	0.0031	0.24 (1)	0.0027	0.21 (1)	0.0023	7970777
Indeno(1,2,3-cd)pyrene	mg/kg	0.20 (1)	0.0056	0.19 (1)	0.0062	0.12 (1)	0.0054	0.098 (1)	0.0046	7970777
Dibenz(a,h)anthracene	mg/kg	0.069 (1)	0.0014	0.061 (1)	0.0016	0.038 (1)	0.0014	0.034 (1)	0.0012	7970777
Benzo(g,h,i)perylene	mg/kg	0.21 (1)	0.0056	0.20 (1)	0.0062	0.13 (1)	0.0054	0.11 (1)	0.0046	7970777
Low Molecular Weight PAH's	mg/kg	0.74	0.022	0.44	0.051	0.31	0.052	0.29	0.041	7963472
High Molecular Weight PAH's	mg/kg	3.8	0.0028	2.6	0.0031	1.8	0.0027	1.5	0.0023	7963472
Total PAH	mg/kg	4.5	0.022	3.0	0.051	2.1	0.052	1.8	0.041	7963472
<b>Calculated Parameters</b>										
LEPH (C10-C19 less PAH)	mg/kg	ND	100	ND	100	ND	100	ND	100	7963473
HEPH (C19-C32 less PAH)	mg/kg	384	100	522	100	544	100	295	100	7963473
<b>Hydrocarbons</b>										
EPH (C10-C19)	mg/kg	ND	100	ND	100	ND	100	ND	100	7970740
EPH (C19-C32)	mg/kg	387	100	525	100	546	100	297	100	7970740
<b>Surrogate Recovery (%)</b>										
D10-ANTHRACENE (sur.)	%	96		89		88		91		7970777
D8-ACENAPHTHYLENE (sur.)	%	95		84		84		87		7970777
D8-NAPHTHALENE (sur.)	%	108		87		86		84		7970777
TERPHENYL-D14 (sur.)	%	93		85		84		86		7970777
O-TERPHENYL (sur.)	%	105		100		103		100		7970740
RDL = Reportable Detection Limit ND = Not detected (1) Detection limit raised due to high moisture content. (2) Detection limits raised due to matrix interference.										

**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686		G097686	G097686	G097686		
	Units	1612-1	QC Batch	1612-2	1612-3	1612-4	RDL	QC Batch
<b>Physical Properties</b>								
Soluble (2:1) pH	pH	7.67	7967161	7.75	7.82	7.90	N/A	7964504
<b>Total Metals by ICPMS</b>								
Total Aluminum (Al)	mg/kg	19600	7966903	22900	23900	22400	100	7964499
Total Antimony (Sb)	mg/kg	0.59	7966903	0.47	0.64	0.48	0.10	7964499
Total Arsenic (As)	mg/kg	30.0	7966903	17.7	26.5	23.2	0.50	7964499
Total Barium (Ba)	mg/kg	18.5	7966903	19.9	16.7	19.8	0.10	7964499
Total Beryllium (Be)	mg/kg	ND	7966903	ND	ND	ND	0.40	7964499
Total Bismuth (Bi)	mg/kg	0.21	7966903	0.14	0.15	0.16	0.10	7964499
Total Cadmium (Cd)	mg/kg	0.983	7966903	0.474	0.900	0.757	0.050	7964499
Total Calcium (Ca)	mg/kg	16800	7966903	16300	14800	19500	100	7964499
Total Chromium (Cr)	mg/kg	52.5	7966903	47.2	50.5	55.6	1.0	7964499
Total Cobalt (Co)	mg/kg	15.0	7966903	13.1	16.5	13.2	0.30	7964499
Total Copper (Cu)	mg/kg	158	7966903	112	114	126	0.50	7964499
Total Iron (Fe)	mg/kg	37000	7966903	31800	39800	34900	100	7964499
Total Lead (Pb)	mg/kg	65.6	7966903	35.4	37.2	35.2	0.10	7964499
Total Lithium (Li)	mg/kg	42.1	7966903	34.9	43.7	42.2	5.0	7964499
Total Magnesium (Mg)	mg/kg	15200	7966903	17500	18300	16600	100	7964499
Total Manganese (Mn)	mg/kg	317	7966903	302	348	295	0.20	7964499
Total Mercury (Hg)	mg/kg	0.204	7966903	0.119	0.117	0.144	0.050	7964499
Total Molybdenum (Mo)	mg/kg	9.23	7966903	4.47	14.5	7.05	0.10	7964499
Total Nickel (Ni)	mg/kg	41.6	7966903	37.7	45.0	37.2	0.80	7964499
Total Phosphorus (P)	mg/kg	2040	7966903	1110	981	1130	10	7964499
Total Potassium (K)	mg/kg	1750	7966903	2080	1910	1960	100	7964499
Total Selenium (Se)	mg/kg	1.73	7966903	1.11	0.86	1.12	0.50	7964499
Total Silver (Ag)	mg/kg	0.212	7966903	0.143	0.163	0.171	0.050	7964499
Total Sodium (Na)	mg/kg	16400	7966903	21300	17700	19400	100	7964499
Total Strontium (Sr)	mg/kg	109	7966903	110	76.7	115	0.10	7964499
Total Thallium (Tl)	mg/kg	0.149	7966903	0.112	0.156	0.157	0.050	7964499
Total Tin (Sn)	mg/kg	8.31	7966903	4.72	6.15	5.76	0.10	7964499
Total Titanium (Ti)	mg/kg	1550	7966903	1520	1920	1710	1.0	7964499
Total Uranium (U)	mg/kg	4.67	7966903	2.74	3.99	3.52	0.050	7964499
Total Vanadium (V)	mg/kg	92.7	7966903	84.3	93.0	85.6	2.0	7964499
Total Zinc (Zn)	mg/kg	152	7966903	85.6	103	107	1.0	7964499
Total Zirconium (Zr)	mg/kg	5.00	7966903	5.26	7.29	5.85	0.50	7964499
RDL = Reportable Detection Limit								
N/A = Not Applicable								
ND = Not detected								

Maxxam Analytics - Burnaby/Seattle/Portland

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**GENERAL COMMENTS**

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7964186	LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
7964186	LO1	RPD	Moisture	2015/07/14	1.0		%	20
7964188	LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
7964188	LO1	RPD	Moisture	2015/07/14	3.1		%	20
7964499	DJ	Matrix Spike	Total Antimony (Sb)	2015/07/14		89	%	75 - 125
			Total Arsenic (As)	2015/07/14		87	%	75 - 125
			Total Barium (Ba)	2015/07/14		NC	%	75 - 125
			Total Beryllium (Be)	2015/07/14		103	%	75 - 125
			Total Cadmium (Cd)	2015/07/14		90	%	75 - 125
			Total Chromium (Cr)	2015/07/14		99	%	75 - 125
			Total Cobalt (Co)	2015/07/14		98	%	75 - 125
			Total Copper (Cu)	2015/07/14		100	%	75 - 125
			Total Lead (Pb)	2015/07/14		102	%	75 - 125
			Total Lithium (Li)	2015/07/14		105	%	75 - 125
			Total Manganese (Mn)	2015/07/14		NC	%	75 - 125
			Total Mercury (Hg)	2015/07/14		85	%	75 - 125
			Total Molybdenum (Mo)	2015/07/14		101	%	75 - 125
			Total Nickel (Ni)	2015/07/14		99	%	75 - 125
			Total Selenium (Se)	2015/07/14		81	%	75 - 125
			Total Silver (Ag)	2015/07/14		99	%	75 - 125
			Total Strontium (Sr)	2015/07/14		103	%	75 - 125
			Total Thallium (Tl)	2015/07/14		100	%	75 - 125
			Total Tin (Sn)	2015/07/14		92	%	75 - 125
			Total Titanium (Ti)	2015/07/14		NC	%	75 - 125
			Total Uranium (U)	2015/07/14		99	%	75 - 125
			Total Vanadium (V)	2015/07/14		NC	%	75 - 125
			Total Zinc (Zn)	2015/07/14		NC	%	75 - 125
7964499	DJ	QC Standard	Total Aluminum (Al)	2015/07/14		122	%	70 - 130
			Total Antimony (Sb)	2015/07/14		88	%	70 - 130
			Total Arsenic (As)	2015/07/14		88	%	70 - 130
			Total Barium (Ba)	2015/07/14		105	%	70 - 130
			Total Cadmium (Cd)	2015/07/14		91	%	70 - 130
			Total Calcium (Ca)	2015/07/14		104	%	70 - 130
			Total Chromium (Cr)	2015/07/14		101	%	70 - 130
			Total Cobalt (Co)	2015/07/14		93	%	70 - 130
			Total Copper (Cu)	2015/07/14		90	%	70 - 130
			Total Iron (Fe)	2015/07/14		96	%	70 - 130
			Total Lead (Pb)	2015/07/14		98	%	70 - 130
			Total Magnesium (Mg)	2015/07/14		103	%	70 - 130
			Total Manganese (Mn)	2015/07/14		96	%	70 - 130
			Total Mercury (Hg)	2015/07/14		94	%	70 - 130
			Total Molybdenum (Mo)	2015/07/14		101	%	70 - 130
			Total Nickel (Ni)	2015/07/14		97	%	70 - 130
			Total Phosphorus (P)	2015/07/14		81	%	70 - 130
			Total Silver (Ag)	2015/07/14		99	%	60 - 140
			Total Strontium (Sr)	2015/07/14		110	%	70 - 130
			Total Thallium (Tl)	2015/07/14		91	%	70 - 130
			Total Titanium (Ti)	2015/07/14		102	%	70 - 130
			Total Uranium (U)	2015/07/14		107	%	70 - 130
			Total Vanadium (V)	2015/07/14		99	%	70 - 130
			Total Zinc (Zn)	2015/07/14		81	%	70 - 130
7964499	DJ	Spiked Blank	Total Antimony (Sb)	2015/07/14		92	%	75 - 125

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Arsenic (As)	2015/07/14		94	%	75 - 125
			Total Barium (Ba)	2015/07/14		99	%	75 - 125
			Total Beryllium (Be)	2015/07/14		106	%	75 - 125
			Total Cadmium (Cd)	2015/07/14		99	%	75 - 125
			Total Chromium (Cr)	2015/07/14		99	%	75 - 125
			Total Cobalt (Co)	2015/07/14		99	%	75 - 125
			Total Copper (Cu)	2015/07/14		99	%	75 - 125
			Total Lead (Pb)	2015/07/14		100	%	75 - 125
			Total Lithium (Li)	2015/07/14		100	%	75 - 125
			Total Manganese (Mn)	2015/07/14		99	%	75 - 125
			Total Mercury (Hg)	2015/07/14		99	%	75 - 125
			Total Molybdenum (Mo)	2015/07/14		95	%	75 - 125
			Total Nickel (Ni)	2015/07/14		97	%	75 - 125
			Total Selenium (Se)	2015/07/14		98	%	75 - 125
			Total Silver (Ag)	2015/07/14		99	%	75 - 125
			Total Strontium (Sr)	2015/07/14		95	%	75 - 125
			Total Thallium (Tl)	2015/07/14		101	%	75 - 125
			Total Tin (Sn)	2015/07/14		89	%	75 - 125
			Total Titanium (Ti)	2015/07/14		94	%	75 - 125
			Total Uranium (U)	2015/07/14		95	%	75 - 125
			Total Vanadium (V)	2015/07/14		98	%	75 - 125
			Total Zinc (Zn)	2015/07/14		99	%	75 - 125
7964499	DJ	Method Blank	Total Aluminum (Al)	2015/07/14	ND, RDL=100		mg/kg	
			Total Antimony (Sb)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Arsenic (As)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Barium (Ba)	2015/07/14	0.16, RDL=0.10		mg/kg	
			Total Beryllium (Be)	2015/07/14	ND, RDL=0.40		mg/kg	
			Total Bismuth (Bi)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Cadmium (Cd)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Calcium (Ca)	2015/07/14	ND, RDL=100		mg/kg	
			Total Chromium (Cr)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Cobalt (Co)	2015/07/14	ND, RDL=0.30		mg/kg	
			Total Copper (Cu)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Iron (Fe)	2015/07/14	ND, RDL=100		mg/kg	
			Total Lead (Pb)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Lithium (Li)	2015/07/14	ND, RDL=5.0		mg/kg	
			Total Magnesium (Mg)	2015/07/14	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Manganese (Mn)	2015/07/14	ND, RDL=0.20		mg/kg	
			Total Mercury (Hg)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Molybdenum (Mo)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Nickel (Ni)	2015/07/14	ND, RDL=0.80		mg/kg	
			Total Phosphorus (P)	2015/07/14	ND, RDL=10		mg/kg	
			Total Potassium (K)	2015/07/14	ND, RDL=100		mg/kg	
			Total Selenium (Se)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Silver (Ag)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Sodium (Na)	2015/07/14	ND, RDL=100		mg/kg	
			Total Strontium (Sr)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Thallium (Tl)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Tin (Sn)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Titanium (Ti)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Uranium (U)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Vanadium (V)	2015/07/14	ND, RDL=2.0		mg/kg	
			Total Zinc (Zn)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Zirconium (Zr)	2015/07/14	ND, RDL=0.50		mg/kg	
7964499	DJ	RPD	Total Aluminum (Al)	2015/07/14	1.5		%	35
			Total Antimony (Sb)	2015/07/14	NC		%	30
			Total Arsenic (As)	2015/07/14	7.8		%	30
			Total Barium (Ba)	2015/07/14	0.93		%	35
			Total Beryllium (Be)	2015/07/14	NC		%	30
			Total Bismuth (Bi)	2015/07/14	NC		%	30
			Total Cadmium (Cd)	2015/07/14	NC		%	30
			Total Calcium (Ca)	2015/07/14	2.9		%	30
			Total Chromium (Cr)	2015/07/14	2.0		%	30
			Total Cobalt (Co)	2015/07/14	2.9		%	30
			Total Copper (Cu)	2015/07/14	0.60		%	30
			Total Iron (Fe)	2015/07/14	1.1		%	30
			Total Lead (Pb)	2015/07/14	1.2		%	35
			Total Magnesium (Mg)	2015/07/14	1.2		%	30
			Total Manganese (Mn)	2015/07/14	0.78		%	30
			Total Molybdenum (Mo)	2015/07/14	NC		%	35
			Total Nickel (Ni)	2015/07/14	7.6		%	30
			Total Phosphorus (P)	2015/07/14	0.43		%	30

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Potassium (K)	2015/07/14	0.33		%	35
			Total Selenium (Se)	2015/07/14	NC		%	30
			Total Silver (Ag)	2015/07/14	NC		%	35
			Total Sodium (Na)	2015/07/14	NC		%	35
			Total Strontium (Sr)	2015/07/14	1.6		%	35
			Total Thallium (Tl)	2015/07/14	NC		%	30
			Total Tin (Sn)	2015/07/14	NC		%	35
			Total Titanium (Ti)	2015/07/14	0.26		%	35
			Total Vanadium (V)	2015/07/14	1.6		%	30
			Total Zinc (Zn)	2015/07/14	0.26		%	30
			Total Zirconium (Zr)	2015/07/14	NC		%	30
7964504	TMB	Spiked Blank	Soluble (2:1) pH	2015/07/14		100	%	97 - 103
7964504	TMB	RPD	Soluble (2:1) pH	2015/07/14	0.73		%	N/A
7966903	DJ	Matrix Spike	Total Antimony (Sb)	2015/07/15		NC	%	75 - 125
			Total Arsenic (As)	2015/07/15		113	%	75 - 125
			Total Barium (Ba)	2015/07/15		NC	%	75 - 125
			Total Beryllium (Be)	2015/07/15		101	%	75 - 125
			Total Cadmium (Cd)	2015/07/15		101	%	75 - 125
			Total Chromium (Cr)	2015/07/15		NC	%	75 - 125
			Total Cobalt (Co)	2015/07/15		100	%	75 - 125
			Total Copper (Cu)	2015/07/15		NC	%	75 - 125
			Total Lead (Pb)	2015/07/15		NC	%	75 - 125
			Total Lithium (Li)	2015/07/15		101	%	75 - 125
			Total Manganese (Mn)	2015/07/15		NC	%	75 - 125
			Total Mercury (Hg)	2015/07/15		103	%	75 - 125
			Total Molybdenum (Mo)	2015/07/15		114	%	75 - 125
			Total Nickel (Ni)	2015/07/15		NC	%	75 - 125
			Total Selenium (Se)	2015/07/15		102	%	75 - 125
			Total Silver (Ag)	2015/07/15		92	%	75 - 125
			Total Strontium (Sr)	2015/07/15		NC	%	75 - 125
			Total Thallium (Tl)	2015/07/15		99	%	75 - 125
			Total Tin (Sn)	2015/07/15		NC	%	75 - 125
			Total Titanium (Ti)	2015/07/15		NC	%	75 - 125
			Total Uranium (U)	2015/07/15		104	%	75 - 125
			Total Vanadium (V)	2015/07/15		NC	%	75 - 125
			Total Zinc (Zn)	2015/07/15		NC	%	75 - 125
7966903	DJ	QC Standard	Total Aluminum (Al)	2015/07/15		107	%	70 - 130
			Total Antimony (Sb)	2015/07/15		103	%	70 - 130
			Total Arsenic (As)	2015/07/15		98	%	70 - 130
			Total Barium (Ba)	2015/07/15		106	%	70 - 130
			Total Cadmium (Cd)	2015/07/15		112	%	70 - 130
			Total Calcium (Ca)	2015/07/15		92	%	70 - 130
			Total Chromium (Cr)	2015/07/15		110	%	70 - 130
			Total Cobalt (Co)	2015/07/15		99	%	70 - 130
			Total Copper (Cu)	2015/07/15		100	%	70 - 130
			Total Iron (Fe)	2015/07/15		96	%	70 - 130
			Total Lead (Pb)	2015/07/15		103	%	70 - 130
			Total Magnesium (Mg)	2015/07/15		93	%	70 - 130
			Total Manganese (Mn)	2015/07/15		103	%	70 - 130
			Total Mercury (Hg)	2015/07/15		88	%	70 - 130
			Total Molybdenum (Mo)	2015/07/15		110	%	70 - 130
			Total Nickel (Ni)	2015/07/15		104	%	70 - 130
			Total Phosphorus (P)	2015/07/15		94	%	70 - 130
			Total Silver (Ag)	2015/07/15		101	%	60 - 140



Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7966903	DJ	Spiked Blank	Total Strontium (Sr)	2015/07/15		109	%	70 - 130
			Total Thallium (Tl)	2015/07/15		95	%	70 - 130
			Total Titanium (Ti)	2015/07/15		112	%	70 - 130
			Total Uranium (U)	2015/07/15		115	%	70 - 130
			Total Vanadium (V)	2015/07/15		107	%	70 - 130
			Total Zinc (Zn)	2015/07/15		96	%	70 - 130
			Total Antimony (Sb)	2015/07/15		96	%	75 - 125
			Total Arsenic (As)	2015/07/15		98	%	75 - 125
			Total Barium (Ba)	2015/07/15		98	%	75 - 125
			Total Beryllium (Be)	2015/07/15		97	%	75 - 125
			Total Cadmium (Cd)	2015/07/15		104	%	75 - 125
			Total Chromium (Cr)	2015/07/15		101	%	75 - 125
			Total Cobalt (Co)	2015/07/15		102	%	75 - 125
			Total Copper (Cu)	2015/07/15		106	%	75 - 125
			Total Lead (Pb)	2015/07/15		103	%	75 - 125
			Total Lithium (Li)	2015/07/15		99	%	75 - 125
			Total Manganese (Mn)	2015/07/15		102	%	75 - 125
			Total Mercury (Hg)	2015/07/15		103	%	75 - 125
			Total Molybdenum (Mo)	2015/07/15		96	%	75 - 125
			Total Nickel (Ni)	2015/07/15		105	%	75 - 125
			Total Selenium (Se)	2015/07/15		102	%	75 - 125
			Total Silver (Ag)	2015/07/15		86	%	75 - 125
			Total Strontium (Sr)	2015/07/15		97	%	75 - 125
			Total Thallium (Tl)	2015/07/15		101	%	75 - 125
			Total Tin (Sn)	2015/07/15		93	%	75 - 125
			Total Titanium (Ti)	2015/07/15		98	%	75 - 125
			Total Uranium (U)	2015/07/15		102	%	75 - 125
			Total Vanadium (V)	2015/07/15		99	%	75 - 125
Total Zinc (Zn)	2015/07/15		107	%	75 - 125			
7966903	DJ	Method Blank	Total Aluminum (Al)	2015/07/15	ND, RDL=100		mg/kg	
			Total Antimony (Sb)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Arsenic (As)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Barium (Ba)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Beryllium (Be)	2015/07/15	ND, RDL=0.40		mg/kg	
			Total Bismuth (Bi)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Cadmium (Cd)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Calcium (Ca)	2015/07/15	ND, RDL=100		mg/kg	
			Total Chromium (Cr)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Cobalt (Co)	2015/07/15	ND, RDL=0.30		mg/kg	
			Total Copper (Cu)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Iron (Fe)	2015/07/15	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Lead (Pb)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Lithium (Li)	2015/07/15	ND, RDL=5.0		mg/kg	
			Total Magnesium (Mg)	2015/07/15	ND, RDL=100		mg/kg	
			Total Manganese (Mn)	2015/07/15	ND, RDL=0.20		mg/kg	
			Total Mercury (Hg)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Molybdenum (Mo)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Nickel (Ni)	2015/07/15	ND, RDL=0.80		mg/kg	
			Total Phosphorus (P)	2015/07/15	ND, RDL=10		mg/kg	
			Total Potassium (K)	2015/07/15	ND, RDL=100		mg/kg	
			Total Selenium (Se)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Silver (Ag)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Sodium (Na)	2015/07/15	ND, RDL=100		mg/kg	
			Total Strontium (Sr)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Thallium (Tl)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Tin (Sn)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Titanium (Ti)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Uranium (U)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Vanadium (V)	2015/07/15	ND, RDL=2.0		mg/kg	
			Total Zinc (Zn)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Zirconium (Zr)	2015/07/15	ND, RDL=0.50		mg/kg	
7966903	DJ	RPD	Total Aluminum (Al)	2015/07/15	0.13		%	35
			Total Antimony (Sb)	2015/07/15	21		%	30
			Total Arsenic (As)	2015/07/15	27		%	30
			Total Barium (Ba)	2015/07/15	15		%	35
			Total Beryllium (Be)	2015/07/15	NC		%	30
			Total Bismuth (Bi)	2015/07/15	NC		%	30
			Total Cadmium (Cd)	2015/07/15	14		%	30
			Total Calcium (Ca)	2015/07/15	3.0		%	30
			Total Chromium (Cr)	2015/07/15	0.46		%	30
			Total Cobalt (Co)	2015/07/15	0.53		%	30
			Total Copper (Cu)	2015/07/15	8.9		%	30
			Total Iron (Fe)	2015/07/15	0.60		%	30

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Lead (Pb)	2015/07/15	10		%	35
			Total Lithium (Li)	2015/07/15	NC		%	30
			Total Magnesium (Mg)	2015/07/15	0.25		%	30
			Total Manganese (Mn)	2015/07/15	0.77		%	30
			Total Mercury (Hg)	2015/07/15	NC		%	35
			Total Molybdenum (Mo)	2015/07/15	6.5		%	35
			Total Nickel (Ni)	2015/07/15	3.3		%	30
			Total Phosphorus (P)	2015/07/15	2.8		%	30
			Total Potassium (K)	2015/07/15	0.45		%	35
			Total Selenium (Se)	2015/07/15	NC		%	30
			Total Silver (Ag)	2015/07/15	1.5		%	35
			Total Strontium (Sr)	2015/07/15	3.8		%	35
			Total Thallium (Tl)	2015/07/15	NC		%	30
			Total Tin (Sn)	2015/07/15	30		%	35
			Total Titanium (Ti)	2015/07/15	2.0		%	35
			Total Uranium (U)	2015/07/15	1.4		%	30
			Total Vanadium (V)	2015/07/15	0.020		%	30
			Total Zinc (Zn)	2015/07/15	10		%	30
			Total Zirconium (Zr)	2015/07/15	NC		%	30
7967161	TMB	Spiked Blank	Soluble (2:1) pH	2015/07/15		99	%	97 - 103
7967161	TMB	RPD	Soluble (2:1) pH	2015/07/15	0.95		%	N/A
7967442	MY4	Matrix Spike [MQ2856-02]	Hexabromobiphenyl (sur.)	2015/07/16		94	%	60 - 130
			Aroclor 1254	2015/07/16		80	%	70 - 110
7967442	MY4	Spiked Blank	Hexabromobiphenyl (sur.)	2015/07/16		108	%	60 - 130
			Aroclor 1254	2015/07/16		104	%	70 - 110
7967442	MY4	Method Blank	Hexabromobiphenyl (sur.)	2015/07/16		105	%	60 - 130
			Aroclor 1242	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1248	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1254	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1260	2015/07/16	ND, RDL=0.020		mg/kg	
			Total PCB	2015/07/16	ND, RDL=0.020		mg/kg	
7967442	MY4	RPD [MQ2858-02]	Aroclor 1242	2015/07/16	NC		%	50
			Aroclor 1248	2015/07/16	NC		%	50
			Aroclor 1254	2015/07/16	NC		%	50
			Aroclor 1260	2015/07/16	NC		%	50
			Total PCB	2015/07/16	NC		%	50
7970740	IT1	Matrix Spike	O-TERPHENYL (sur.)	2015/07/17		97	%	50 - 130
			EPH (C10-C19)	2015/07/17		86	%	50 - 130
			EPH (C19-C32)	2015/07/17		95	%	50 - 130
7970740	IT1	Spiked Blank	O-TERPHENYL (sur.)	2015/07/17		105	%	50 - 130
			EPH (C10-C19)	2015/07/17		85	%	50 - 130
			EPH (C19-C32)	2015/07/17		95	%	50 - 130
7970740	IT1	Method Blank	O-TERPHENYL (sur.)	2015/07/17		90	%	50 - 130
			EPH (C10-C19)	2015/07/17	ND, RDL=100		mg/kg	
			EPH (C19-C32)	2015/07/17	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7970740	IT1	RPD	EPH (C10-C19)	2015/07/17	NC		%	40
			EPH (C19-C32)	2015/07/17	NC		%	40
7970777	JP1	Matrix Spike [MQ2856-01]	D10-ANTHRACENE (sur.)	2015/07/18		90	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/18		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/18		92	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/18		88	%	60 - 130
			Naphthalene	2015/07/18		99	%	50 - 130
			2-Methylnaphthalene	2015/07/18		103	%	50 - 130
			Acenaphthylene	2015/07/18		94	%	50 - 130
			Acenaphthene	2015/07/18		100	%	50 - 130
			Fluorene	2015/07/18		97	%	50 - 130
			Phenanthrene	2015/07/18		97	%	60 - 130
			Anthracene	2015/07/18		100	%	60 - 130
			Fluoranthene	2015/07/18		NC	%	60 - 130
			Pyrene	2015/07/18		NC	%	60 - 130
			Benzo(a)anthracene	2015/07/18		NC	%	60 - 130
			Chrysene	2015/07/18		NC	%	60 - 130
			Benzo(b)fluoranthene	2015/07/18		102	%	N/A
			Benzo(k)fluoranthene	2015/07/18		101	%	60 - 130
			Benzo(a)pyrene	2015/07/18		97	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/18		108	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/18		113	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/18		103	%	60 - 130
7970777	JP1	Spiked Blank	D10-ANTHRACENE (sur.)	2015/07/20		103	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/20		96	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/20		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/20		100	%	60 - 130
			Naphthalene	2015/07/20		87	%	50 - 130
			2-Methylnaphthalene	2015/07/20		86	%	50 - 130
			Acenaphthylene	2015/07/20		82	%	50 - 130
			Acenaphthene	2015/07/20		85	%	50 - 130
			Fluorene	2015/07/20		80	%	50 - 130
			Phenanthrene	2015/07/20		83	%	60 - 130
			Anthracene	2015/07/20		88	%	60 - 130
			Fluoranthene	2015/07/20		87	%	60 - 130
			Pyrene	2015/07/20		87	%	60 - 130
			Benzo(a)anthracene	2015/07/20		88	%	60 - 130
			Chrysene	2015/07/20		94	%	60 - 130
			Benzo(k)fluoranthene	2015/07/20		93	%	60 - 130
			Benzo(a)pyrene	2015/07/20		86	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/20		74	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/20		65	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/20		81	%	60 - 130
7970777	JP1	Method Blank	D10-ANTHRACENE (sur.)	2015/07/20		102	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/20		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/20		98	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/20		103	%	60 - 130
			Naphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
			2-Methylnaphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Acenaphthylene	2015/07/20	ND, RDL=0.00050		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Acenaphthene	2015/07/20	ND, RDL=0.00050		mg/kg	
			Fluorene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Phenanthrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(a)anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Chrysene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(b)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(k)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(a)pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Indeno(1,2,3-cd)pyrene	2015/07/20	ND, RDL=0.0020		mg/kg	
			Dibenz(a,h)anthracene	2015/07/20	ND, RDL=0.00050		mg/kg	
			Benzo(g,h,i)perylene	2015/07/20	ND, RDL=0.0020		mg/kg	
7970777	JP1	RPD [MQ2856-01]	Naphthalene	2015/07/18	NC (1)		%	50
			2-Methylnaphthalene	2015/07/18	NC (2)		%	50
			Acenaphthylene	2015/07/18	20 (1)		%	50
			Acenaphthene	2015/07/18	4.3 (1)		%	50
			Fluorene	2015/07/18	21 (1)		%	50
			Phenanthrene	2015/07/18	18 (1)		%	50
			Anthracene	2015/07/18	24 (1)		%	50
			Fluoranthene	2015/07/18	23 (1)		%	50
			Pyrene	2015/07/18	5.7 (1)		%	50
			Benzo(a)anthracene	2015/07/18	15 (1)		%	50
			Chrysene	2015/07/18	22 (1)		%	50
			Benzo(b)fluoranthene	2015/07/18	5.2 (1)		%	50
			Benzo(k)fluoranthene	2015/07/18	3.5 (1)		%	50
			Benzo(a)pyrene	2015/07/18	4.8 (1)		%	50
			Indeno(1,2,3-cd)pyrene	2015/07/18	6.0 (1)		%	50
			Dibenz(a,h)anthracene	2015/07/18	4.6 (1)		%	50

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(g,h,i)perylene	2015/07/18	4.3 (1)		%	50
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).</p> <p>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 &lt; 5x RDL).</p> <p>(1) Detection limit raised due to high moisture content.</p> <p>(2) Detection limits raised due to matrix interference.</p>								

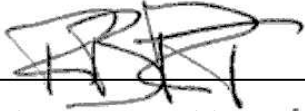
Maxxam Analytics International Corporation - Environmental & Water Resources

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

### VALIDATION SIGNATURE PAGE

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



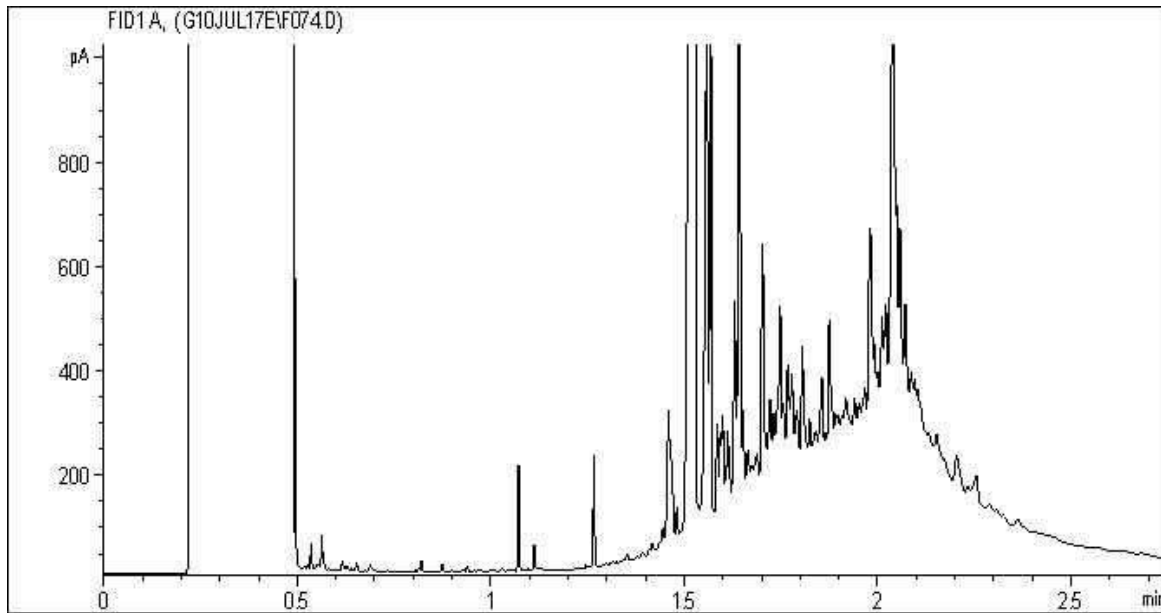
Rob Reinert, Data Validation Coordinator

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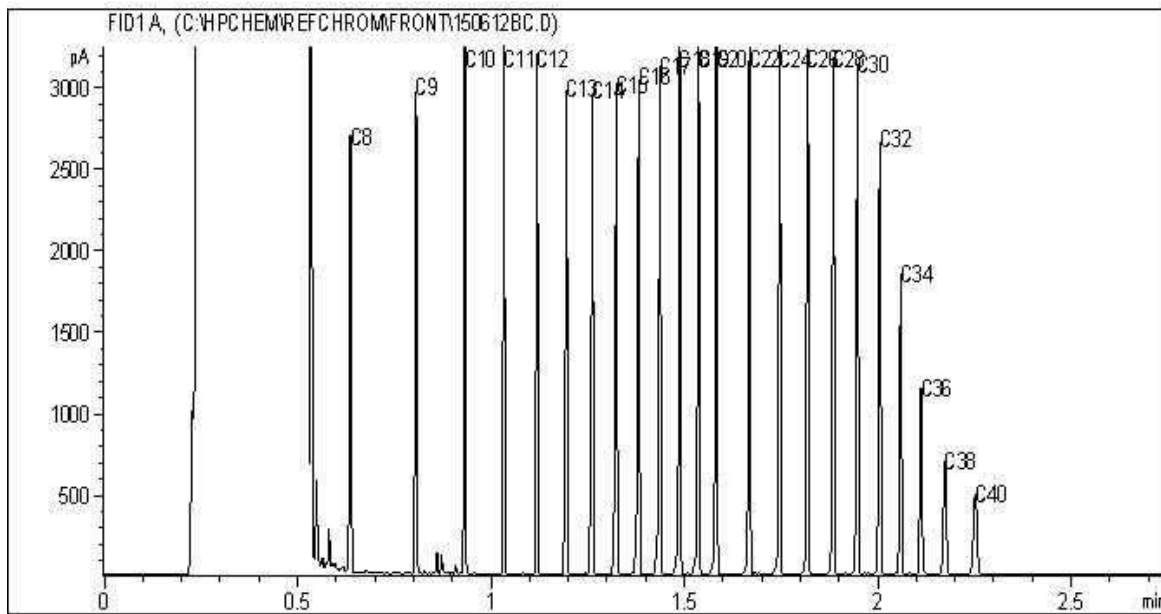
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation - 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



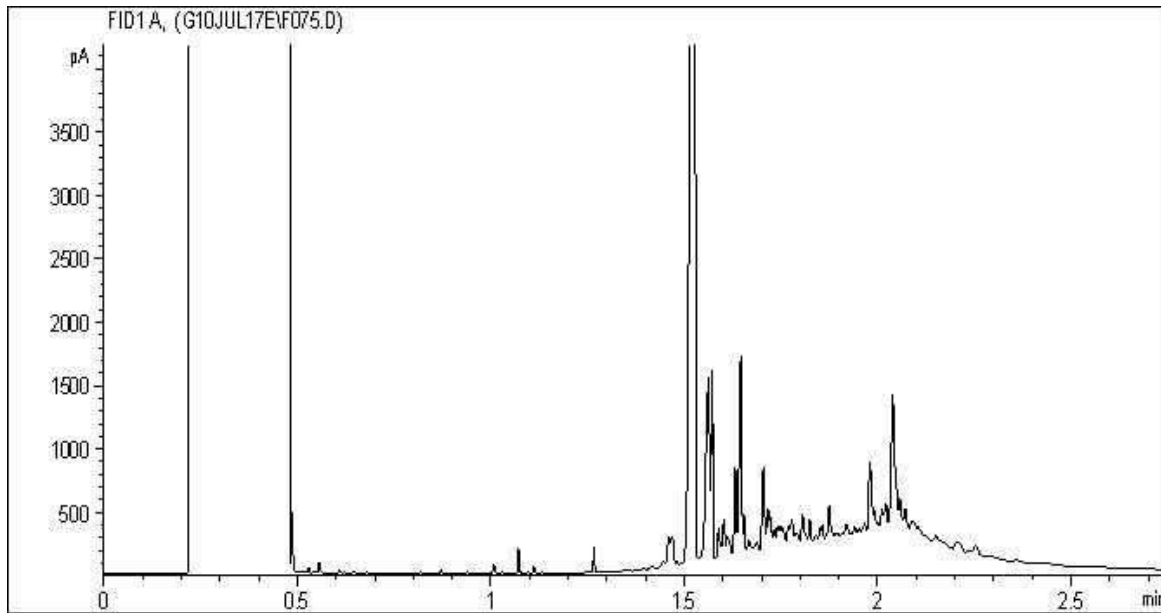
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

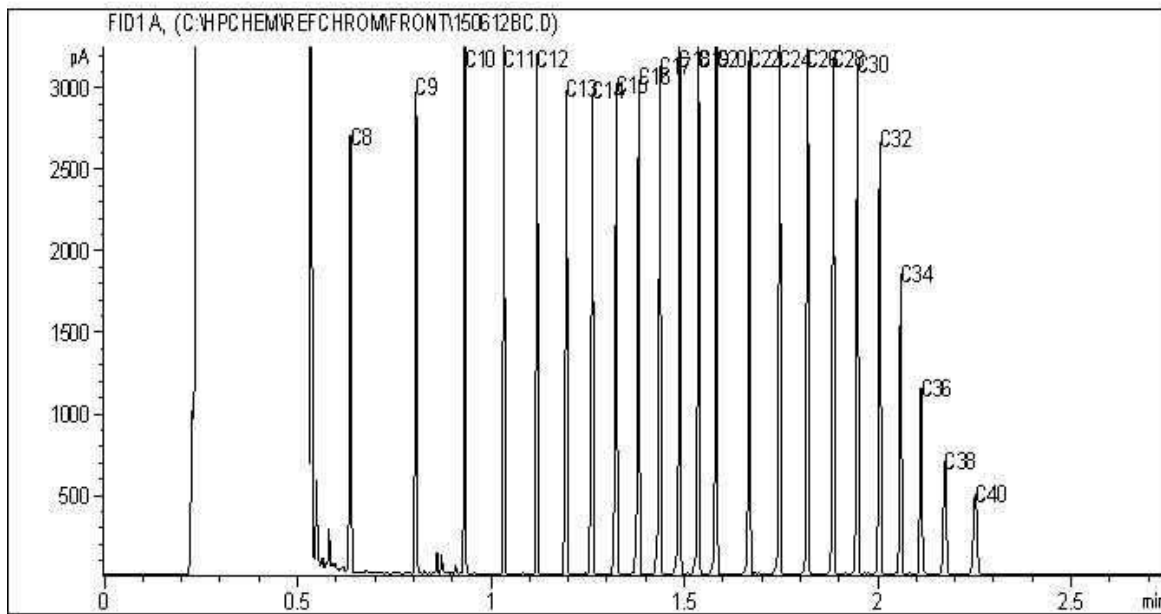
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram

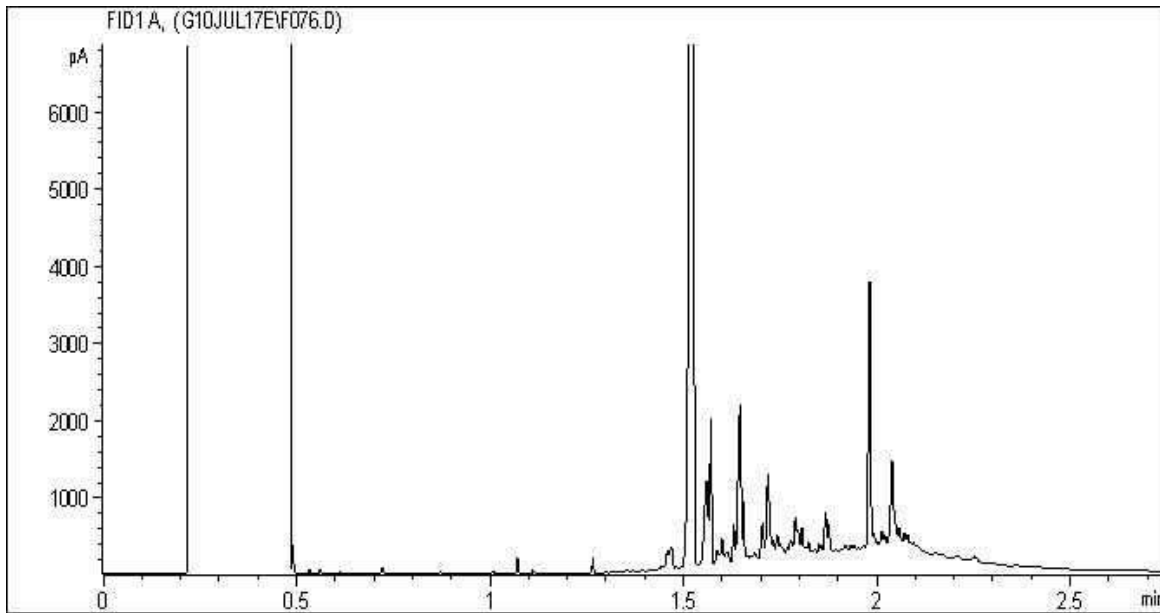


TYPICAL PRODUCT CARBON NUMBER RANGES

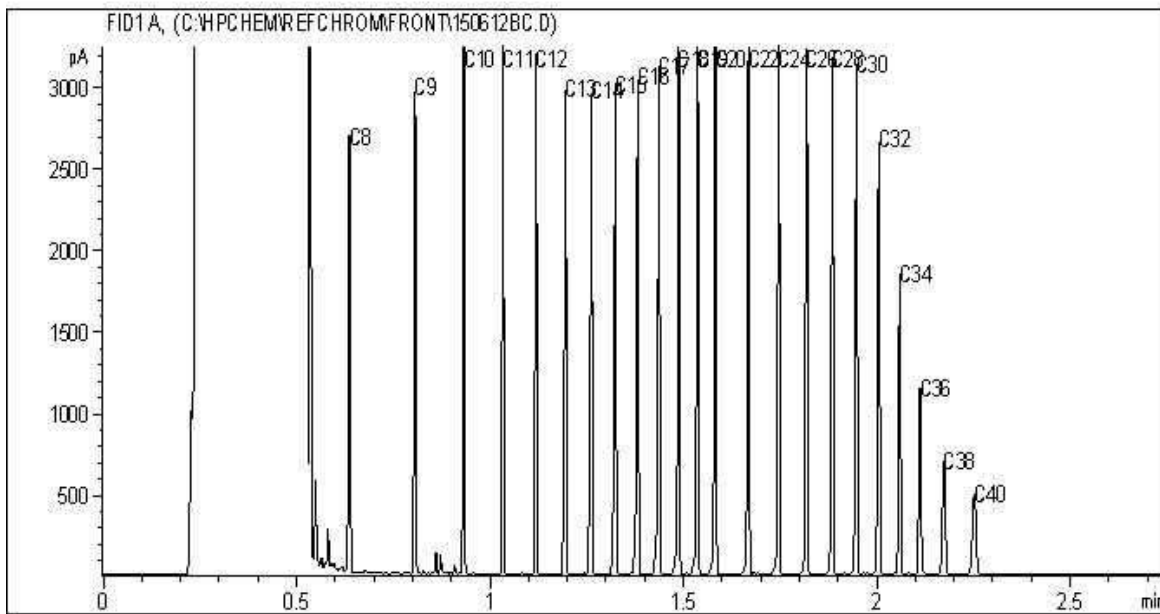
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram

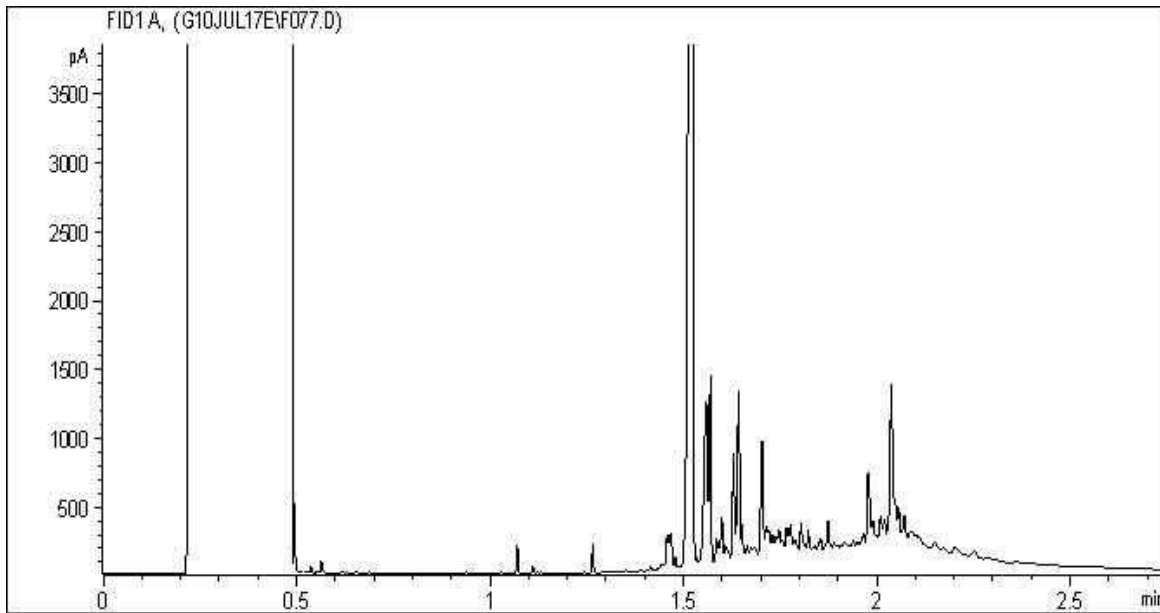


TYPICAL PRODUCT CARBON NUMBER RANGES

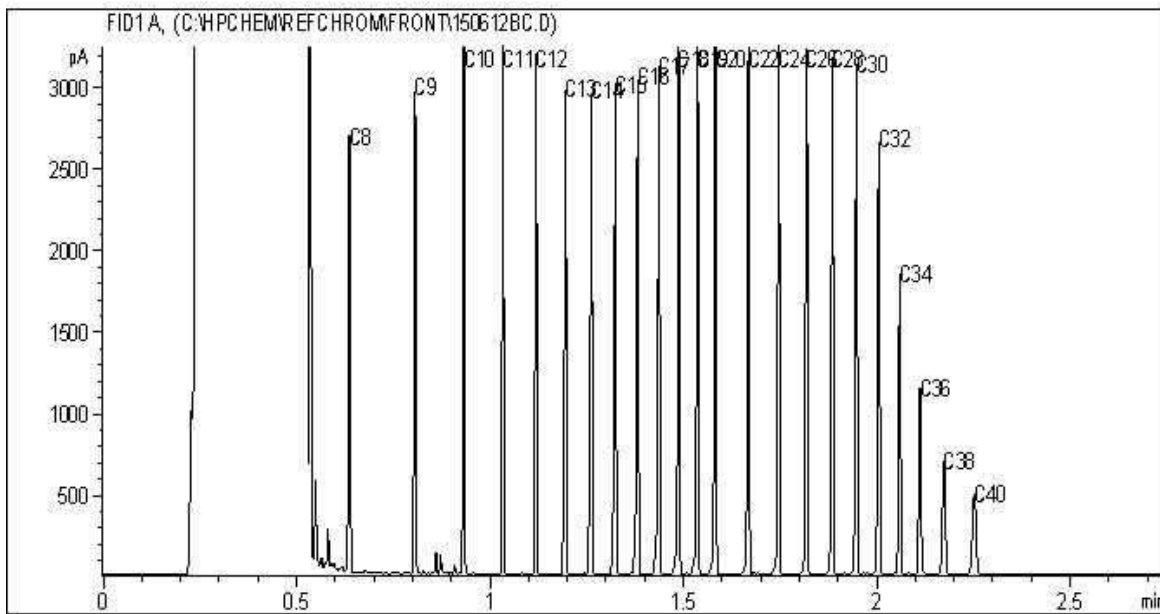
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your C.O.C. #: G097686

**Report Date: 2015/07/21**  
Report #: R2000866  
Version: 3 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B558652**  
**Received: 2015/07/10, 16:30**

Sample Matrix: Sediment  
# Samples Received: 4

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
Elements by ICPMS (total)	3	2015/07/13	2015/07/14	BBY7SOP-00001	EPA 6020a R1 m
Elements by ICPMS (total)	1	2015/07/14	2015/07/15	BBY7SOP-00001	EPA 6020a R1 m
Moisture	4	N/A	2015/07/14	BBY8SOP-00017	OMOE E3139 3.1 m
Benzo[a]pyrene Equivalency	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
PAH in Soil by GC/MS Lowlevel (Extended)	3	2015/07/13	2015/07/18	BBY8SOP-00022	EPA 8270d R4 m
PAH in Soil by GC/MS Lowlevel (Extended)	1	2015/07/13	2015/07/20	BBY8SOP-00022	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
Polychlorinated Biphenyls in Soil	4	N/A	2015/07/16	BBY8SOP-00036	EPA 8082a R1 m
pH (2:1 DI Water Extract)	3	2015/07/13	2015/07/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
pH (2:1 DI Water Extract)	1	2015/07/14	2015/07/15	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	4	N/A	2015/07/20	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	4	2015/07/13	2015/07/17	BBY8SOP-00029	BCMOE EPH s 07/99 m
Ocean Disposal Complete Package SubC (1)	4	N/A	2015/07/21		
TOC Soil Subcontract (2)	4	2015/07/21	2015/07/21		

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

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Bedford(From Burnaby)

(2) This test was performed by Maxxam Ontario (From Burnaby)

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Shanaz Akbar, Project Manager

Email: SAkbar@maxxam.ca

Phone# (604)639-2618

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.

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**RESULTS OF CHEMICAL ANALYSES OF SEDIMENT**

<b>Maxxam ID</b>		MQ2856	MQ2857	MQ2858	MQ2859	
<b>Sampling Date</b>		2015/07/03	2015/07/03	2015/07/03	2015/07/03	
<b>COC Number</b>		G097686	G097686	G097686	G097686	
	<b>Units</b>	<b>1612-1</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>QC Batch</b>
<b>Parameter</b>						
Subcontract Parameter	N/A	ATTACHED	ATTACHED	ATTACHED	ATTACHED	7974459

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)**

Maxxam ID		MQ2856	MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03	2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686	G097686	G097686	G097686		
	Units	1612-1	1612-2	1612-3	1612-4	RDL	QC Batch
<b>Polychlorinated Biphenyls</b>							
Aroclor 1242	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1248	mg/kg	ND	ND	ND	ND	0.020	7967442
Aroclor 1254	mg/kg	0.023	ND	ND	ND	0.020	7967442
Aroclor 1260	mg/kg	ND	ND	ND	ND	0.020	7967442
Total PCB	mg/kg	0.023	ND	ND	ND	0.020	7967442
<b>Surrogate Recovery (%)</b>							
Hexabromobiphenyl (sur.)	%	86	104	105	109		7967442
RDL = Reportable Detection Limit ND = Not detected							

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**PHYSICAL TESTING (SEDIMENT)**

<b>Maxxam ID</b>		MQ2856		MQ2857	MQ2858	MQ2859		
<b>Sampling Date</b>		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
<b>COC Number</b>		G097686		G097686	G097686	G097686		
	<b>Units</b>	<b>1612-1</b>	<b>QC Batch</b>	<b>1612-2</b>	<b>1612-3</b>	<b>1612-4</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Physical Properties</b>								
Moisture	%	65	7964186	72	63	62	0.30	7964188
RDL = Reportable Detection Limit								

**LEPH & HEPH IN SEDIMENT WITH LL PAH (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857		MQ2858		MQ2859		
Sampling Date		2015/07/03		2015/07/03		2015/07/03		2015/07/03		
COC Number		G097686		G097686		G097686		G097686		
	Units	1612-1	RDL	1612-2	RDL	1612-3	RDL	1612-4	RDL	QC Batch
<b>Calculated Parameters</b>										
Index of Additive Cancer Risk(IARC)	N/A	11	0.10	8.4	0.10	5.7	0.10	5.0	0.10	7963471
Benzo[a]pyrene equivalency	N/A	0.76	0.10	0.55	0.10	0.38	0.10	0.34	0.10	7963471
<b>Polycyclic Aromatics</b>										
Naphthalene	mg/kg	0.014 (1)	0.0028	0.018 (1)	0.0031	0.013 (1)	0.0027	0.012 (1)	0.0023	7970777
2-Methylnaphthalene	mg/kg	ND (2)	0.022	ND (2)	0.045	ND (2)	0.022	ND (2)	0.023	7970777
Acenaphthylene	mg/kg	0.055 (1)	0.0014	0.066 (1)	0.0016	0.039 (1)	0.0014	0.031 (1)	0.0012	7970777
Acenaphthene	mg/kg	0.013 (1)	0.0014	0.012 (1)	0.0016	0.0079 (1)	0.0014	0.0072 (1)	0.0012	7970777
Fluorene	mg/kg	0.062 (1)	0.0028	ND (2)	0.051	ND (2)	0.052	ND (2)	0.041	7970777
Phenanthrene	mg/kg	0.38 (1)	0.0028	0.18 (1)	0.0031	0.13 (1)	0.0027	0.12 (1)	0.0023	7970777
Anthracene	mg/kg	0.22 (1)	0.0028	0.16 (1)	0.0031	0.12 (1)	0.0027	0.11 (1)	0.0023	7970777
Fluoranthene	mg/kg	0.76 (1)	0.0028	0.61 (1)	0.0031	0.35 (1)	0.0027	0.26 (1)	0.0023	7970777
Pyrene	mg/kg	1.1 (1)	0.0028	0.62 (1)	0.0031	0.51 (1)	0.0027	0.33 (1)	0.0023	7970777
Benzo(a)anthracene	mg/kg	0.56 (1)	0.0028	0.36 (1)	0.0031	0.27 (1)	0.0027	0.27 (1)	0.0023	7970777
Chrysene	mg/kg	0.85 (1)	0.0028	0.63 (1)	0.0031	0.42 (1)	0.0027	0.45 (1)	0.0023	7970777
Benzo(b)fluoranthene	mg/kg	0.56 (1)	0.0028	0.48 (1)	0.0031	0.31 (1)	0.0027	0.25 (1)	0.0023	7970777
Benzo(k)fluoranthene	mg/kg	0.33 (1)	0.0028	0.22 (1)	0.0031	0.16 (1)	0.0027	0.13 (1)	0.0023	7970777
Benzo(a)pyrene	mg/kg	0.49 (1)	0.0028	0.33 (1)	0.0031	0.24 (1)	0.0027	0.21 (1)	0.0023	7970777
Indeno(1,2,3-cd)pyrene	mg/kg	0.20 (1)	0.0056	0.19 (1)	0.0062	0.12 (1)	0.0054	0.098 (1)	0.0046	7970777
Dibenz(a,h)anthracene	mg/kg	0.069 (1)	0.0014	0.061 (1)	0.0016	0.038 (1)	0.0014	0.034 (1)	0.0012	7970777
Benzo(g,h,i)perylene	mg/kg	0.21 (1)	0.0056	0.20 (1)	0.0062	0.13 (1)	0.0054	0.11 (1)	0.0046	7970777
Low Molecular Weight PAH's	mg/kg	0.74	0.022	0.44	0.051	0.31	0.052	0.29	0.041	7963472
High Molecular Weight PAH's	mg/kg	3.8	0.0028	2.6	0.0031	1.8	0.0027	1.5	0.0023	7963472
Total PAH	mg/kg	4.5	0.022	3.0	0.051	2.1	0.052	1.8	0.041	7963472
<b>Calculated Parameters</b>										
LEPH (C10-C19 less PAH)	mg/kg	ND	100	ND	100	ND	100	ND	100	7963473
HEPH (C19-C32 less PAH)	mg/kg	384	100	522	100	544	100	295	100	7963473
<b>Hydrocarbons</b>										
EPH (C10-C19)	mg/kg	ND	100	ND	100	ND	100	ND	100	7970740
EPH (C19-C32)	mg/kg	387	100	525	100	546	100	297	100	7970740
<b>Surrogate Recovery (%)</b>										
D10-ANTHRACENE (sur.)	%	96		89		88		91		7970777
D8-ACENAPHTHYLENE (sur.)	%	95		84		84		87		7970777
D8-NAPHTHALENE (sur.)	%	108		87		86		84		7970777
TERPHENYL-D14 (sur.)	%	93		85		84		86		7970777
O-TERPHENYL (sur.)	%	105		100		103		100		7970740
RDL = Reportable Detection Limit ND = Not detected (1) Detection limit raised due to high moisture content. (2) Detection limits raised due to matrix interference.										



**CSR/CCME METALS IN SOIL (SEDIMENT)**

Maxxam ID		MQ2856		MQ2857	MQ2858	MQ2859		
Sampling Date		2015/07/03		2015/07/03	2015/07/03	2015/07/03		
COC Number		G097686		G097686	G097686	G097686		
	Units	1612-1	QC Batch	1612-2	1612-3	1612-4	RDL	QC Batch
<b>Physical Properties</b>								
Soluble (2:1) pH	pH	7.67	7967161	7.75	7.82	7.90	N/A	7964504
<b>Total Metals by ICPMS</b>								
Total Aluminum (Al)	mg/kg	19600	7966903	22900	23900	22400	100	7964499
Total Antimony (Sb)	mg/kg	0.59	7966903	0.47	0.64	0.48	0.10	7964499
Total Arsenic (As)	mg/kg	30.0	7966903	17.7	26.5	23.2	0.50	7964499
Total Barium (Ba)	mg/kg	18.5	7966903	19.9	16.7	19.8	0.10	7964499
Total Beryllium (Be)	mg/kg	ND	7966903	ND	ND	ND	0.40	7964499
Total Bismuth (Bi)	mg/kg	0.21	7966903	0.14	0.15	0.16	0.10	7964499
Total Cadmium (Cd)	mg/kg	0.983	7966903	0.474	0.900	0.757	0.050	7964499
Total Calcium (Ca)	mg/kg	16800	7966903	16300	14800	19500	100	7964499
Total Chromium (Cr)	mg/kg	52.5	7966903	47.2	50.5	55.6	1.0	7964499
Total Cobalt (Co)	mg/kg	15.0	7966903	13.1	16.5	13.2	0.30	7964499
Total Copper (Cu)	mg/kg	158	7966903	112	114	126	0.50	7964499
Total Iron (Fe)	mg/kg	37000	7966903	31800	39800	34900	100	7964499
Total Lead (Pb)	mg/kg	65.6	7966903	35.4	37.2	35.2	0.10	7964499
Total Lithium (Li)	mg/kg	42.1	7966903	34.9	43.7	42.2	5.0	7964499
Total Magnesium (Mg)	mg/kg	15200	7966903	17500	18300	16600	100	7964499
Total Manganese (Mn)	mg/kg	317	7966903	302	348	295	0.20	7964499
Total Mercury (Hg)	mg/kg	0.204	7966903	0.119	0.117	0.144	0.050	7964499
Total Molybdenum (Mo)	mg/kg	9.23	7966903	4.47	14.5	7.05	0.10	7964499
Total Nickel (Ni)	mg/kg	41.6	7966903	37.7	45.0	37.2	0.80	7964499
Total Phosphorus (P)	mg/kg	2040	7966903	1110	981	1130	10	7964499
Total Potassium (K)	mg/kg	1750	7966903	2080	1910	1960	100	7964499
Total Selenium (Se)	mg/kg	1.73	7966903	1.11	0.86	1.12	0.50	7964499
Total Silver (Ag)	mg/kg	0.212	7966903	0.143	0.163	0.171	0.050	7964499
Total Sodium (Na)	mg/kg	16400	7966903	21300	17700	19400	100	7964499
Total Strontium (Sr)	mg/kg	109	7966903	110	76.7	115	0.10	7964499
Total Thallium (Tl)	mg/kg	0.149	7966903	0.112	0.156	0.157	0.050	7964499
Total Tin (Sn)	mg/kg	8.31	7966903	4.72	6.15	5.76	0.10	7964499
Total Titanium (Ti)	mg/kg	1550	7966903	1520	1920	1710	1.0	7964499
Total Uranium (U)	mg/kg	4.67	7966903	2.74	3.99	3.52	0.050	7964499
Total Vanadium (V)	mg/kg	92.7	7966903	84.3	93.0	85.6	2.0	7964499
Total Zinc (Zn)	mg/kg	152	7966903	85.6	103	107	1.0	7964499
Total Zirconium (Zr)	mg/kg	5.00	7966903	5.26	7.29	5.85	0.50	7964499
RDL = Reportable Detection Limit N/A = Not Applicable ND = Not detected								

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**GENERAL COMMENTS**

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

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT**

QA/QC			Parameter	Date	Value	Recovery	Units	QC Limits
Batch	Init	QC Type		Analyzed				
7964186	LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
7964186	LO1	RPD	Moisture	2015/07/14	1.0		%	20
7964188	LO1	Method Blank	Moisture	2015/07/14	ND, RDL=0.30		%	
7964188	LO1	RPD	Moisture	2015/07/14	3.1		%	20
7964499	DJ	Matrix Spike	Total Antimony (Sb)	2015/07/14		89	%	75 - 125
			Total Arsenic (As)	2015/07/14		87	%	75 - 125
			Total Barium (Ba)	2015/07/14		NC	%	75 - 125
			Total Beryllium (Be)	2015/07/14		103	%	75 - 125
			Total Cadmium (Cd)	2015/07/14		90	%	75 - 125
			Total Chromium (Cr)	2015/07/14		99	%	75 - 125
			Total Cobalt (Co)	2015/07/14		98	%	75 - 125
			Total Copper (Cu)	2015/07/14		100	%	75 - 125
			Total Lead (Pb)	2015/07/14		102	%	75 - 125
			Total Lithium (Li)	2015/07/14		105	%	75 - 125
			Total Manganese (Mn)	2015/07/14		NC	%	75 - 125
			Total Mercury (Hg)	2015/07/14		85	%	75 - 125
			Total Molybdenum (Mo)	2015/07/14		101	%	75 - 125
			Total Nickel (Ni)	2015/07/14		99	%	75 - 125
			Total Selenium (Se)	2015/07/14		81	%	75 - 125
			Total Silver (Ag)	2015/07/14		99	%	75 - 125
			Total Strontium (Sr)	2015/07/14		103	%	75 - 125
			Total Thallium (Tl)	2015/07/14		100	%	75 - 125
			Total Tin (Sn)	2015/07/14		92	%	75 - 125
			Total Titanium (Ti)	2015/07/14		NC	%	75 - 125
			Total Uranium (U)	2015/07/14		99	%	75 - 125
			Total Vanadium (V)	2015/07/14		NC	%	75 - 125
			Total Zinc (Zn)	2015/07/14		NC	%	75 - 125
7964499	DJ	QC Standard	Total Aluminum (Al)	2015/07/14		122	%	70 - 130
			Total Antimony (Sb)	2015/07/14		88	%	70 - 130
			Total Arsenic (As)	2015/07/14		88	%	70 - 130
			Total Barium (Ba)	2015/07/14		105	%	70 - 130
			Total Cadmium (Cd)	2015/07/14		91	%	70 - 130
			Total Calcium (Ca)	2015/07/14		104	%	70 - 130
			Total Chromium (Cr)	2015/07/14		101	%	70 - 130
			Total Cobalt (Co)	2015/07/14		93	%	70 - 130
			Total Copper (Cu)	2015/07/14		90	%	70 - 130
			Total Iron (Fe)	2015/07/14		96	%	70 - 130
			Total Lead (Pb)	2015/07/14		98	%	70 - 130
			Total Magnesium (Mg)	2015/07/14		103	%	70 - 130
			Total Manganese (Mn)	2015/07/14		96	%	70 - 130
			Total Mercury (Hg)	2015/07/14		94	%	70 - 130
			Total Molybdenum (Mo)	2015/07/14		101	%	70 - 130
			Total Nickel (Ni)	2015/07/14		97	%	70 - 130
			Total Phosphorus (P)	2015/07/14		81	%	70 - 130
			Total Silver (Ag)	2015/07/14		99	%	60 - 140
			Total Strontium (Sr)	2015/07/14		110	%	70 - 130
			Total Thallium (Tl)	2015/07/14		91	%	70 - 130
			Total Titanium (Ti)	2015/07/14		102	%	70 - 130
			Total Uranium (U)	2015/07/14		107	%	70 - 130
			Total Vanadium (V)	2015/07/14		99	%	70 - 130
			Total Zinc (Zn)	2015/07/14		81	%	70 - 130
7964499	DJ	Spiked Blank	Total Antimony (Sb)	2015/07/14		92	%	75 - 125

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Arsenic (As)	2015/07/14		94	%	75 - 125
			Total Barium (Ba)	2015/07/14		99	%	75 - 125
			Total Beryllium (Be)	2015/07/14		106	%	75 - 125
			Total Cadmium (Cd)	2015/07/14		99	%	75 - 125
			Total Chromium (Cr)	2015/07/14		99	%	75 - 125
			Total Cobalt (Co)	2015/07/14		99	%	75 - 125
			Total Copper (Cu)	2015/07/14		99	%	75 - 125
			Total Lead (Pb)	2015/07/14		100	%	75 - 125
			Total Lithium (Li)	2015/07/14		100	%	75 - 125
			Total Manganese (Mn)	2015/07/14		99	%	75 - 125
			Total Mercury (Hg)	2015/07/14		99	%	75 - 125
			Total Molybdenum (Mo)	2015/07/14		95	%	75 - 125
			Total Nickel (Ni)	2015/07/14		97	%	75 - 125
			Total Selenium (Se)	2015/07/14		98	%	75 - 125
			Total Silver (Ag)	2015/07/14		99	%	75 - 125
			Total Strontium (Sr)	2015/07/14		95	%	75 - 125
			Total Thallium (Tl)	2015/07/14		101	%	75 - 125
			Total Tin (Sn)	2015/07/14		89	%	75 - 125
			Total Titanium (Ti)	2015/07/14		94	%	75 - 125
			Total Uranium (U)	2015/07/14		95	%	75 - 125
			Total Vanadium (V)	2015/07/14		98	%	75 - 125
			Total Zinc (Zn)	2015/07/14		99	%	75 - 125
7964499	DJ	Method Blank	Total Aluminum (Al)	2015/07/14	ND, RDL=100		mg/kg	
			Total Antimony (Sb)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Arsenic (As)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Barium (Ba)	2015/07/14	0.16, RDL=0.10		mg/kg	
			Total Beryllium (Be)	2015/07/14	ND, RDL=0.40		mg/kg	
			Total Bismuth (Bi)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Cadmium (Cd)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Calcium (Ca)	2015/07/14	ND, RDL=100		mg/kg	
			Total Chromium (Cr)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Cobalt (Co)	2015/07/14	ND, RDL=0.30		mg/kg	
			Total Copper (Cu)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Iron (Fe)	2015/07/14	ND, RDL=100		mg/kg	
			Total Lead (Pb)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Lithium (Li)	2015/07/14	ND, RDL=5.0		mg/kg	
			Total Magnesium (Mg)	2015/07/14	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Manganese (Mn)	2015/07/14	ND, RDL=0.20		mg/kg	
			Total Mercury (Hg)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Molybdenum (Mo)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Nickel (Ni)	2015/07/14	ND, RDL=0.80		mg/kg	
			Total Phosphorus (P)	2015/07/14	ND, RDL=10		mg/kg	
			Total Potassium (K)	2015/07/14	ND, RDL=100		mg/kg	
			Total Selenium (Se)	2015/07/14	ND, RDL=0.50		mg/kg	
			Total Silver (Ag)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Sodium (Na)	2015/07/14	ND, RDL=100		mg/kg	
			Total Strontium (Sr)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Thallium (Tl)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Tin (Sn)	2015/07/14	ND, RDL=0.10		mg/kg	
			Total Titanium (Ti)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Uranium (U)	2015/07/14	ND, RDL=0.050		mg/kg	
			Total Vanadium (V)	2015/07/14	ND, RDL=2.0		mg/kg	
			Total Zinc (Zn)	2015/07/14	ND, RDL=1.0		mg/kg	
			Total Zirconium (Zr)	2015/07/14	ND, RDL=0.50		mg/kg	
7964499	DJ	RPD	Total Aluminum (Al)	2015/07/14	1.5		%	35
			Total Antimony (Sb)	2015/07/14	NC		%	30
			Total Arsenic (As)	2015/07/14	7.8		%	30
			Total Barium (Ba)	2015/07/14	0.93		%	35
			Total Beryllium (Be)	2015/07/14	NC		%	30
			Total Bismuth (Bi)	2015/07/14	NC		%	30
			Total Cadmium (Cd)	2015/07/14	NC		%	30
			Total Calcium (Ca)	2015/07/14	2.9		%	30
			Total Chromium (Cr)	2015/07/14	2.0		%	30
			Total Cobalt (Co)	2015/07/14	2.9		%	30
			Total Copper (Cu)	2015/07/14	0.60		%	30
			Total Iron (Fe)	2015/07/14	1.1		%	30
			Total Lead (Pb)	2015/07/14	1.2		%	35
			Total Magnesium (Mg)	2015/07/14	1.2		%	30
			Total Manganese (Mn)	2015/07/14	0.78		%	30
			Total Molybdenum (Mo)	2015/07/14	NC		%	35
			Total Nickel (Ni)	2015/07/14	7.6		%	30
			Total Phosphorus (P)	2015/07/14	0.43		%	30

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC			Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
Batch	Init	QC Type						
			Total Potassium (K)	2015/07/14	0.33		%	35
			Total Selenium (Se)	2015/07/14	NC		%	30
			Total Silver (Ag)	2015/07/14	NC		%	35
			Total Sodium (Na)	2015/07/14	NC		%	35
			Total Strontium (Sr)	2015/07/14	1.6		%	35
			Total Thallium (Tl)	2015/07/14	NC		%	30
			Total Tin (Sn)	2015/07/14	NC		%	35
			Total Titanium (Ti)	2015/07/14	0.26		%	35
			Total Vanadium (V)	2015/07/14	1.6		%	30
			Total Zinc (Zn)	2015/07/14	0.26		%	30
			Total Zirconium (Zr)	2015/07/14	NC		%	30
7964504	TMB	Spiked Blank	Soluble (2:1) pH	2015/07/14		100	%	97 - 103
7964504	TMB	RPD	Soluble (2:1) pH	2015/07/14	0.73		%	N/A
7966903	DJ	Matrix Spike	Total Antimony (Sb)	2015/07/15		NC	%	75 - 125
			Total Arsenic (As)	2015/07/15		113	%	75 - 125
			Total Barium (Ba)	2015/07/15		NC	%	75 - 125
			Total Beryllium (Be)	2015/07/15		101	%	75 - 125
			Total Cadmium (Cd)	2015/07/15		101	%	75 - 125
			Total Chromium (Cr)	2015/07/15		NC	%	75 - 125
			Total Cobalt (Co)	2015/07/15		100	%	75 - 125
			Total Copper (Cu)	2015/07/15		NC	%	75 - 125
			Total Lead (Pb)	2015/07/15		NC	%	75 - 125
			Total Lithium (Li)	2015/07/15		101	%	75 - 125
			Total Manganese (Mn)	2015/07/15		NC	%	75 - 125
			Total Mercury (Hg)	2015/07/15		103	%	75 - 125
			Total Molybdenum (Mo)	2015/07/15		114	%	75 - 125
			Total Nickel (Ni)	2015/07/15		NC	%	75 - 125
			Total Selenium (Se)	2015/07/15		102	%	75 - 125
			Total Silver (Ag)	2015/07/15		92	%	75 - 125
			Total Strontium (Sr)	2015/07/15		NC	%	75 - 125
			Total Thallium (Tl)	2015/07/15		99	%	75 - 125
			Total Tin (Sn)	2015/07/15		NC	%	75 - 125
			Total Titanium (Ti)	2015/07/15		NC	%	75 - 125
			Total Uranium (U)	2015/07/15		104	%	75 - 125
			Total Vanadium (V)	2015/07/15		NC	%	75 - 125
			Total Zinc (Zn)	2015/07/15		NC	%	75 - 125
7966903	DJ	QC Standard	Total Aluminum (Al)	2015/07/15		107	%	70 - 130
			Total Antimony (Sb)	2015/07/15		103	%	70 - 130
			Total Arsenic (As)	2015/07/15		98	%	70 - 130
			Total Barium (Ba)	2015/07/15		106	%	70 - 130
			Total Cadmium (Cd)	2015/07/15		112	%	70 - 130
			Total Calcium (Ca)	2015/07/15		92	%	70 - 130
			Total Chromium (Cr)	2015/07/15		110	%	70 - 130
			Total Cobalt (Co)	2015/07/15		99	%	70 - 130
			Total Copper (Cu)	2015/07/15		100	%	70 - 130
			Total Iron (Fe)	2015/07/15		96	%	70 - 130
			Total Lead (Pb)	2015/07/15		103	%	70 - 130
			Total Magnesium (Mg)	2015/07/15		93	%	70 - 130
			Total Manganese (Mn)	2015/07/15		103	%	70 - 130
			Total Mercury (Hg)	2015/07/15		88	%	70 - 130
			Total Molybdenum (Mo)	2015/07/15		110	%	70 - 130
			Total Nickel (Ni)	2015/07/15		104	%	70 - 130
			Total Phosphorus (P)	2015/07/15		94	%	70 - 130
			Total Silver (Ag)	2015/07/15		101	%	60 - 140

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7966903	DJ	Spiked Blank	Total Strontium (Sr)	2015/07/15		109	%	70 - 130
			Total Thallium (Tl)	2015/07/15		95	%	70 - 130
			Total Titanium (Ti)	2015/07/15		112	%	70 - 130
			Total Uranium (U)	2015/07/15		115	%	70 - 130
			Total Vanadium (V)	2015/07/15		107	%	70 - 130
			Total Zinc (Zn)	2015/07/15		96	%	70 - 130
			Total Antimony (Sb)	2015/07/15		96	%	75 - 125
			Total Arsenic (As)	2015/07/15		98	%	75 - 125
			Total Barium (Ba)	2015/07/15		98	%	75 - 125
			Total Beryllium (Be)	2015/07/15		97	%	75 - 125
			Total Cadmium (Cd)	2015/07/15		104	%	75 - 125
			Total Chromium (Cr)	2015/07/15		101	%	75 - 125
			Total Cobalt (Co)	2015/07/15		102	%	75 - 125
			Total Copper (Cu)	2015/07/15		106	%	75 - 125
			Total Lead (Pb)	2015/07/15		103	%	75 - 125
			Total Lithium (Li)	2015/07/15		99	%	75 - 125
			Total Manganese (Mn)	2015/07/15		102	%	75 - 125
			Total Mercury (Hg)	2015/07/15		103	%	75 - 125
			Total Molybdenum (Mo)	2015/07/15		96	%	75 - 125
			Total Nickel (Ni)	2015/07/15		105	%	75 - 125
			Total Selenium (Se)	2015/07/15		102	%	75 - 125
			Total Silver (Ag)	2015/07/15		86	%	75 - 125
			Total Strontium (Sr)	2015/07/15		97	%	75 - 125
			Total Thallium (Tl)	2015/07/15		101	%	75 - 125
			Total Tin (Sn)	2015/07/15		93	%	75 - 125
			Total Titanium (Ti)	2015/07/15		98	%	75 - 125
			Total Uranium (U)	2015/07/15		102	%	75 - 125
Total Vanadium (V)	2015/07/15		99	%	75 - 125			
Total Zinc (Zn)	2015/07/15		107	%	75 - 125			
7966903	DJ	Method Blank	Total Aluminum (Al)	2015/07/15	ND, RDL=100		mg/kg	
			Total Antimony (Sb)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Arsenic (As)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Barium (Ba)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Beryllium (Be)	2015/07/15	ND, RDL=0.40		mg/kg	
			Total Bismuth (Bi)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Cadmium (Cd)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Calcium (Ca)	2015/07/15	ND, RDL=100		mg/kg	
			Total Chromium (Cr)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Cobalt (Co)	2015/07/15	ND, RDL=0.30		mg/kg	
			Total Copper (Cu)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Iron (Fe)	2015/07/15	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Lead (Pb)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Lithium (Li)	2015/07/15	ND, RDL=5.0		mg/kg	
			Total Magnesium (Mg)	2015/07/15	ND, RDL=100		mg/kg	
			Total Manganese (Mn)	2015/07/15	ND, RDL=0.20		mg/kg	
			Total Mercury (Hg)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Molybdenum (Mo)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Nickel (Ni)	2015/07/15	ND, RDL=0.80		mg/kg	
			Total Phosphorus (P)	2015/07/15	ND, RDL=10		mg/kg	
			Total Potassium (K)	2015/07/15	ND, RDL=100		mg/kg	
			Total Selenium (Se)	2015/07/15	ND, RDL=0.50		mg/kg	
			Total Silver (Ag)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Sodium (Na)	2015/07/15	ND, RDL=100		mg/kg	
			Total Strontium (Sr)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Thallium (Tl)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Tin (Sn)	2015/07/15	ND, RDL=0.10		mg/kg	
			Total Titanium (Ti)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Uranium (U)	2015/07/15	ND, RDL=0.050		mg/kg	
			Total Vanadium (V)	2015/07/15	ND, RDL=2.0		mg/kg	
			Total Zinc (Zn)	2015/07/15	ND, RDL=1.0		mg/kg	
			Total Zirconium (Zr)	2015/07/15	ND, RDL=0.50		mg/kg	
7966903	DJ	RPD	Total Aluminum (Al)	2015/07/15	0.13		%	35
			Total Antimony (Sb)	2015/07/15	21		%	30
			Total Arsenic (As)	2015/07/15	27		%	30
			Total Barium (Ba)	2015/07/15	15		%	35
			Total Beryllium (Be)	2015/07/15	NC		%	30
			Total Bismuth (Bi)	2015/07/15	NC		%	30
			Total Cadmium (Cd)	2015/07/15	14		%	30
			Total Calcium (Ca)	2015/07/15	3.0		%	30
			Total Chromium (Cr)	2015/07/15	0.46		%	30
			Total Cobalt (Co)	2015/07/15	0.53		%	30
			Total Copper (Cu)	2015/07/15	8.9		%	30
			Total Iron (Fe)	2015/07/15	0.60		%	30



Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Lead (Pb)	2015/07/15	10		%	35
			Total Lithium (Li)	2015/07/15	NC		%	30
			Total Magnesium (Mg)	2015/07/15	0.25		%	30
			Total Manganese (Mn)	2015/07/15	0.77		%	30
			Total Mercury (Hg)	2015/07/15	NC		%	35
			Total Molybdenum (Mo)	2015/07/15	6.5		%	35
			Total Nickel (Ni)	2015/07/15	3.3		%	30
			Total Phosphorus (P)	2015/07/15	2.8		%	30
			Total Potassium (K)	2015/07/15	0.45		%	35
			Total Selenium (Se)	2015/07/15	NC		%	30
			Total Silver (Ag)	2015/07/15	1.5		%	35
			Total Strontium (Sr)	2015/07/15	3.8		%	35
			Total Thallium (Tl)	2015/07/15	NC		%	30
			Total Tin (Sn)	2015/07/15	30		%	35
			Total Titanium (Ti)	2015/07/15	2.0		%	35
			Total Uranium (U)	2015/07/15	1.4		%	30
			Total Vanadium (V)	2015/07/15	0.020		%	30
			Total Zinc (Zn)	2015/07/15	10		%	30
			Total Zirconium (Zr)	2015/07/15	NC		%	30
7967161	TMB	Spiked Blank	Soluble (2:1) pH	2015/07/15		99	%	97 - 103
7967161	TMB	RPD	Soluble (2:1) pH	2015/07/15	0.95		%	N/A
7967442	MY4	Matrix Spike [MQ2856-02]	Hexabromobiphenyl (sur.)	2015/07/16		94	%	60 - 130
			Aroclor 1254	2015/07/16		80	%	70 - 110
7967442	MY4	Spiked Blank	Hexabromobiphenyl (sur.)	2015/07/16		108	%	60 - 130
			Aroclor 1254	2015/07/16		104	%	70 - 110
7967442	MY4	Method Blank	Hexabromobiphenyl (sur.)	2015/07/16		105	%	60 - 130
			Aroclor 1242	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1248	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1254	2015/07/16	ND, RDL=0.020		mg/kg	
			Aroclor 1260	2015/07/16	ND, RDL=0.020		mg/kg	
			Total PCB	2015/07/16	ND, RDL=0.020		mg/kg	
7967442	MY4	RPD [MQ2858-02]	Aroclor 1242	2015/07/16	NC		%	50
			Aroclor 1248	2015/07/16	NC		%	50
			Aroclor 1254	2015/07/16	NC		%	50
			Aroclor 1260	2015/07/16	NC		%	50
			Total PCB	2015/07/16	NC		%	50
7970740	IT1	Matrix Spike	O-TERPHENYL (sur.)	2015/07/17		97	%	50 - 130
			EPH (C10-C19)	2015/07/17		86	%	50 - 130
			EPH (C19-C32)	2015/07/17		95	%	50 - 130
7970740	IT1	Spiked Blank	O-TERPHENYL (sur.)	2015/07/17		105	%	50 - 130
			EPH (C10-C19)	2015/07/17		85	%	50 - 130
			EPH (C19-C32)	2015/07/17		95	%	50 - 130
7970740	IT1	Method Blank	O-TERPHENYL (sur.)	2015/07/17		90	%	50 - 130
			EPH (C10-C19)	2015/07/17	ND, RDL=100		mg/kg	
			EPH (C19-C32)	2015/07/17	ND, RDL=100		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7970740	IT1	RPD	EPH (C10-C19)	2015/07/17	NC		%	40
			EPH (C19-C32)	2015/07/17	NC		%	40
7970777	JP1	Matrix Spike [MQ2856-01]	D10-ANTHRACENE (sur.)	2015/07/18		90	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/18		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/18		92	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/18		88	%	60 - 130
			Naphthalene	2015/07/18		99	%	50 - 130
			2-Methylnaphthalene	2015/07/18		103	%	50 - 130
			Acenaphthylene	2015/07/18		94	%	50 - 130
			Acenaphthene	2015/07/18		100	%	50 - 130
			Fluorene	2015/07/18		97	%	50 - 130
			Phenanthrene	2015/07/18		97	%	60 - 130
			Anthracene	2015/07/18		100	%	60 - 130
			Fluoranthene	2015/07/18		NC	%	60 - 130
			Pyrene	2015/07/18		NC	%	60 - 130
			Benzo(a)anthracene	2015/07/18		NC	%	60 - 130
			Chrysene	2015/07/18		NC	%	60 - 130
			Benzo(b)fluoranthene	2015/07/18		102	%	N/A
			Benzo(k)fluoranthene	2015/07/18		101	%	60 - 130
			Benzo(a)pyrene	2015/07/18		97	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/18		108	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/18		113	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/18		103	%	60 - 130
7970777	JP1	Spiked Blank	D10-ANTHRACENE (sur.)	2015/07/20		103	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/20		96	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/20		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/20		100	%	60 - 130
			Naphthalene	2015/07/20		87	%	50 - 130
			2-Methylnaphthalene	2015/07/20		86	%	50 - 130
			Acenaphthylene	2015/07/20		82	%	50 - 130
			Acenaphthene	2015/07/20		85	%	50 - 130
			Fluorene	2015/07/20		80	%	50 - 130
			Phenanthrene	2015/07/20		83	%	60 - 130
			Anthracene	2015/07/20		88	%	60 - 130
			Fluoranthene	2015/07/20		87	%	60 - 130
			Pyrene	2015/07/20		87	%	60 - 130
			Benzo(a)anthracene	2015/07/20		88	%	60 - 130
			Chrysene	2015/07/20		94	%	60 - 130
			Benzo(k)fluoranthene	2015/07/20		93	%	60 - 130
			Benzo(a)pyrene	2015/07/20		86	%	60 - 130
			Indeno(1,2,3-cd)pyrene	2015/07/20		74	%	60 - 130
			Dibenz(a,h)anthracene	2015/07/20		65	%	60 - 130
			Benzo(g,h,i)perylene	2015/07/20		81	%	60 - 130
7970777	JP1	Method Blank	D10-ANTHRACENE (sur.)	2015/07/20		102	%	60 - 130
			D8-ACENAPHTHYLENE (sur.)	2015/07/20		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2015/07/20		98	%	50 - 130
			TERPHENYL-D14 (sur.)	2015/07/20		103	%	60 - 130
			Naphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
			2-Methylnaphthalene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Acenaphthylene	2015/07/20	ND, RDL=0.00050		mg/kg	

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Acenaphthene	2015/07/20	ND, RDL=0.00050		mg/kg	
			Fluorene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Phenanthrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(a)anthracene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Chrysene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(b)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(k)fluoranthene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Benzo(a)pyrene	2015/07/20	ND, RDL=0.0010		mg/kg	
			Indeno(1,2,3-cd)pyrene	2015/07/20	ND, RDL=0.0020		mg/kg	
			Dibenz(a,h)anthracene	2015/07/20	ND, RDL=0.00050		mg/kg	
			Benzo(g,h,i)perylene	2015/07/20	ND, RDL=0.0020		mg/kg	
7970777	JP1	RPD [MQ2856-01]	Naphthalene	2015/07/18	NC (1)		%	50
			2-Methylnaphthalene	2015/07/18	NC (2)		%	50
			Acenaphthylene	2015/07/18	20 (1)		%	50
			Acenaphthene	2015/07/18	4.3 (1)		%	50
			Fluorene	2015/07/18	21 (1)		%	50
			Phenanthrene	2015/07/18	18 (1)		%	50
			Anthracene	2015/07/18	24 (1)		%	50
			Fluoranthene	2015/07/18	23 (1)		%	50
			Pyrene	2015/07/18	5.7 (1)		%	50
			Benzo(a)anthracene	2015/07/18	15 (1)		%	50
			Chrysene	2015/07/18	22 (1)		%	50
			Benzo(b)fluoranthene	2015/07/18	5.2 (1)		%	50
			Benzo(k)fluoranthene	2015/07/18	3.5 (1)		%	50
			Benzo(a)pyrene	2015/07/18	4.8 (1)		%	50
			Indeno(1,2,3-cd)pyrene	2015/07/18	6.0 (1)		%	50
			Dibenz(a,h)anthracene	2015/07/18	4.6 (1)		%	50

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(g,h,i)perylene	2015/07/18	4.3 (1)		%	50

N/A = Not Applicable

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.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

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).

(1) Detection limit raised due to high moisture content.


(2) Detection limits raised due to matrix interference.

Maxxam Job #: B558652  
Report Date: 2015/07/21

Pelagic Technologies Inc.

### VALIDATION SIGNATURE PAGE

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

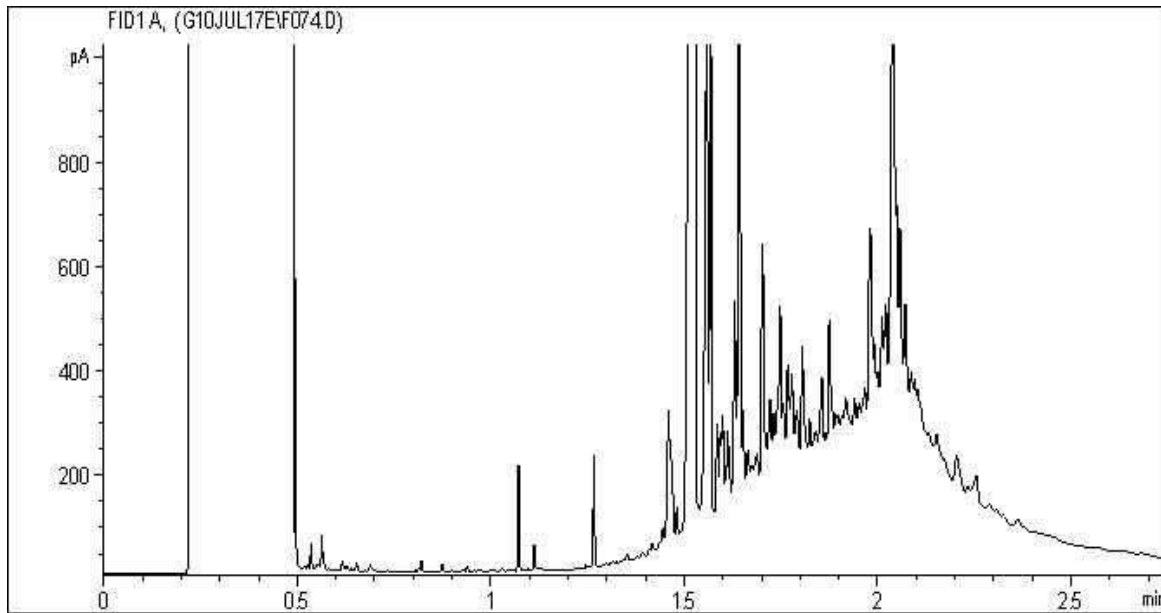


Rob Reinert, Data Validation Coordinator

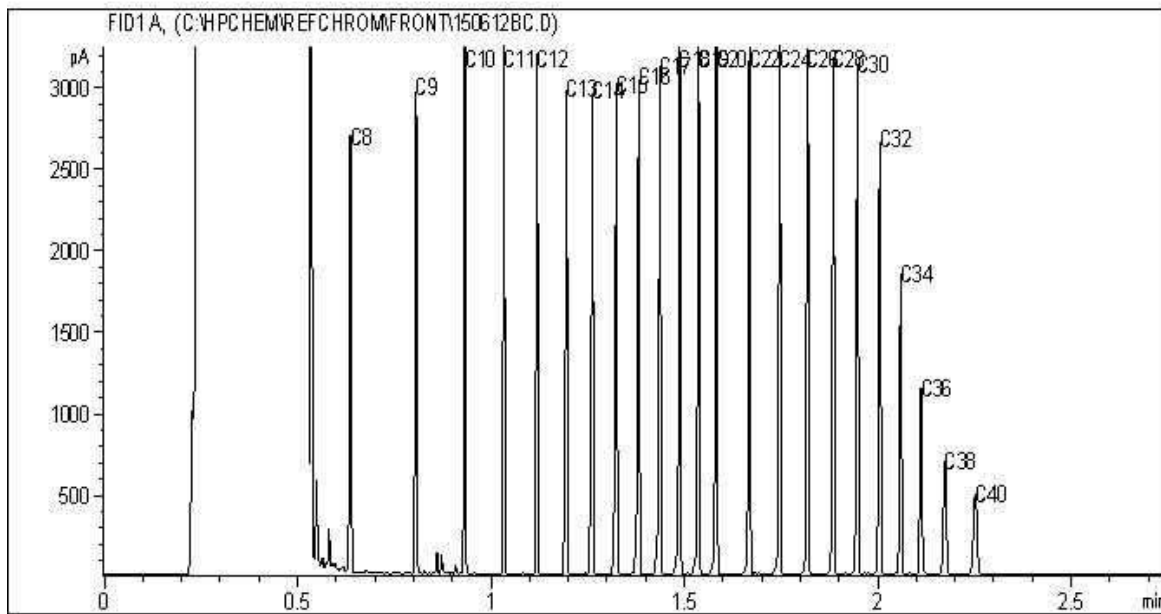
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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to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

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram

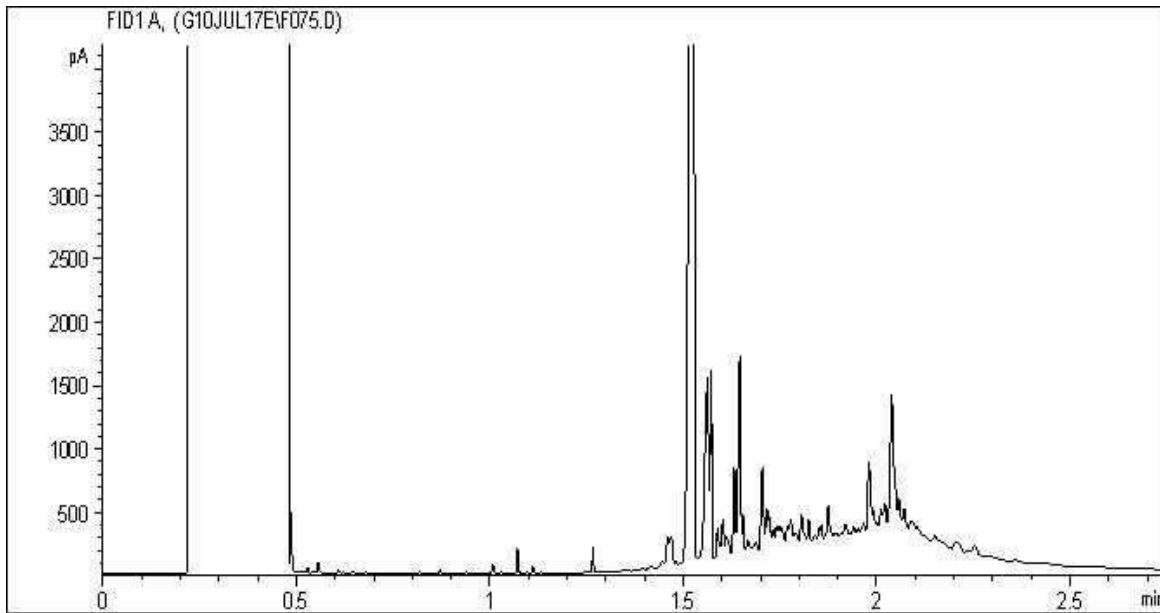


TYPICAL PRODUCT CARBON NUMBER RANGES

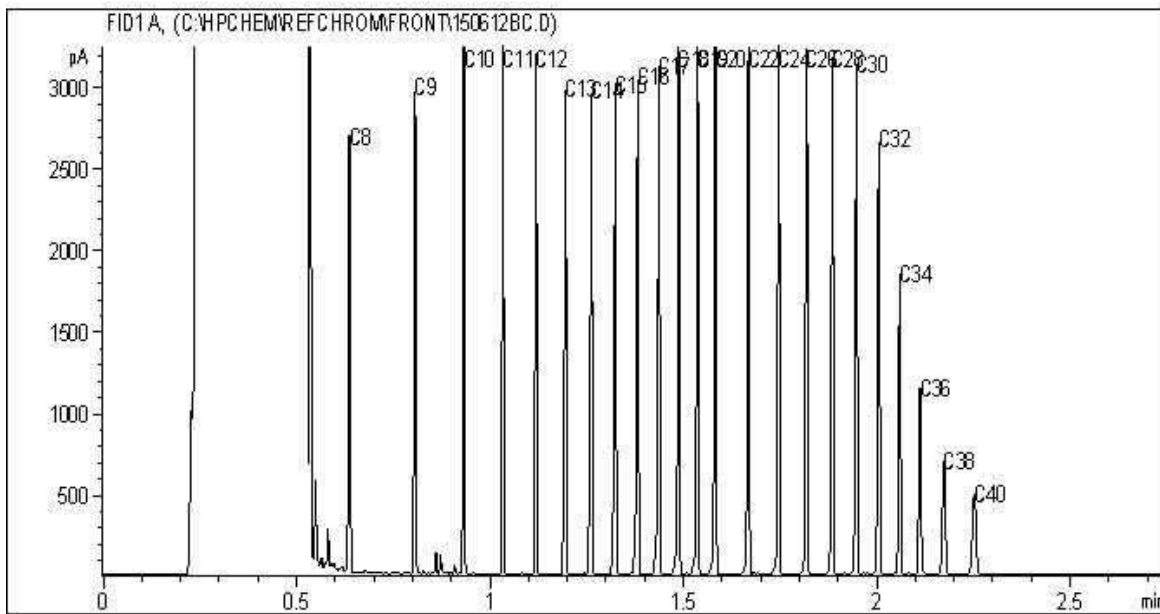
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram

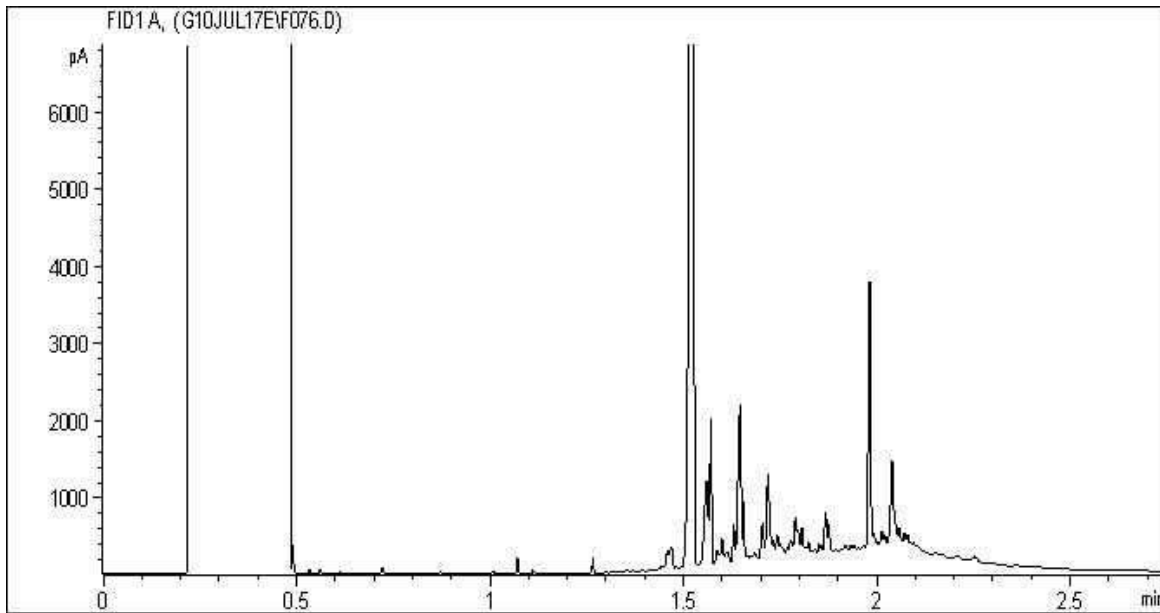


TYPICAL PRODUCT CARBON NUMBER RANGES

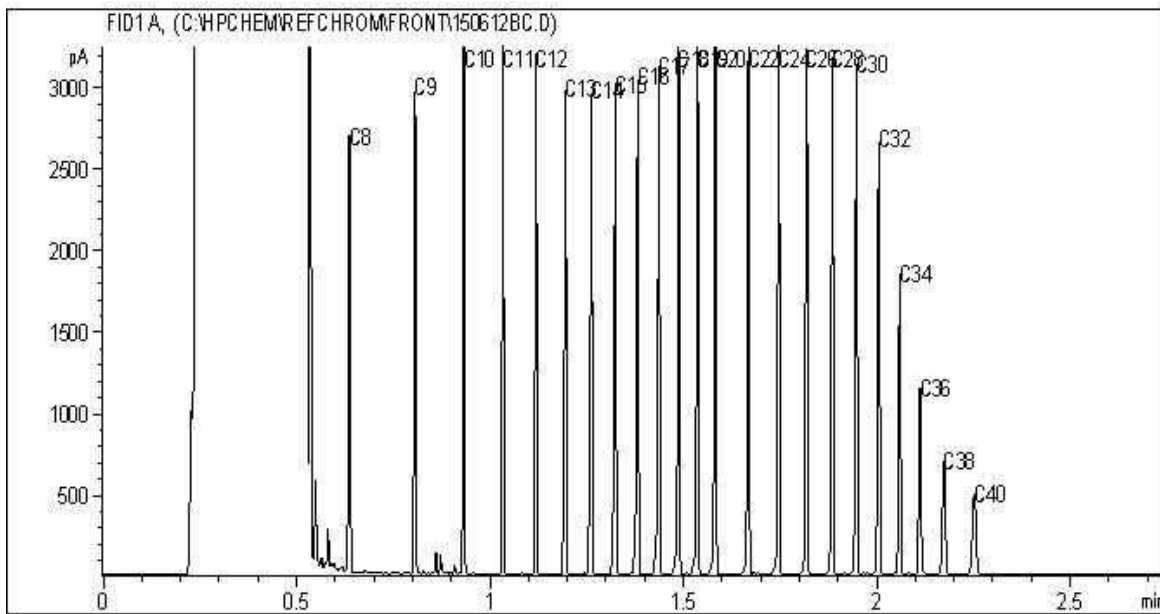
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



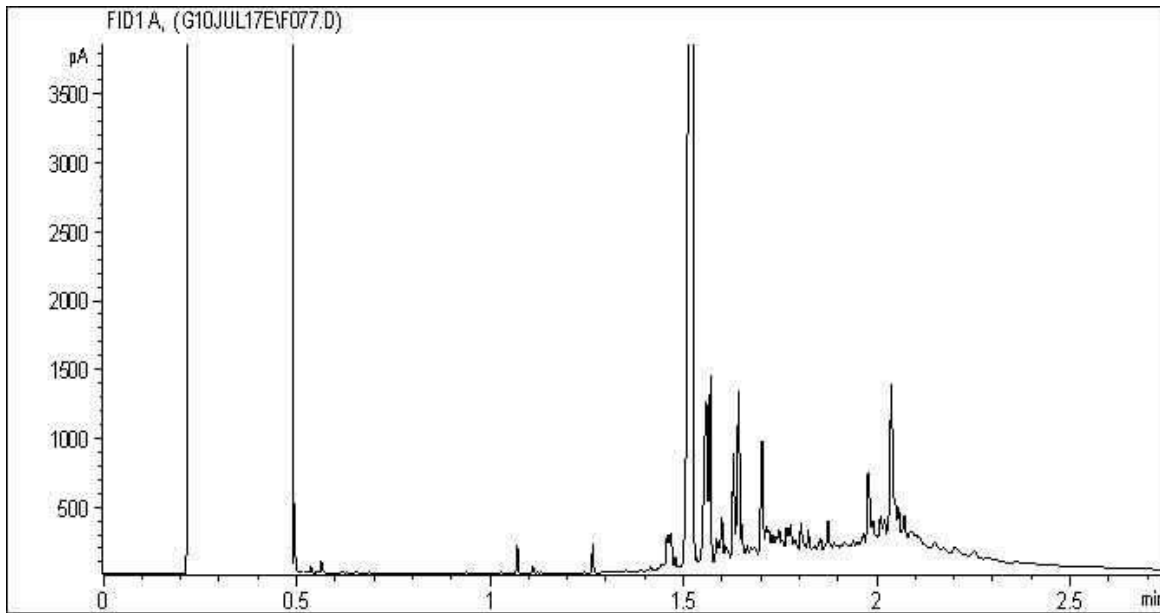
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

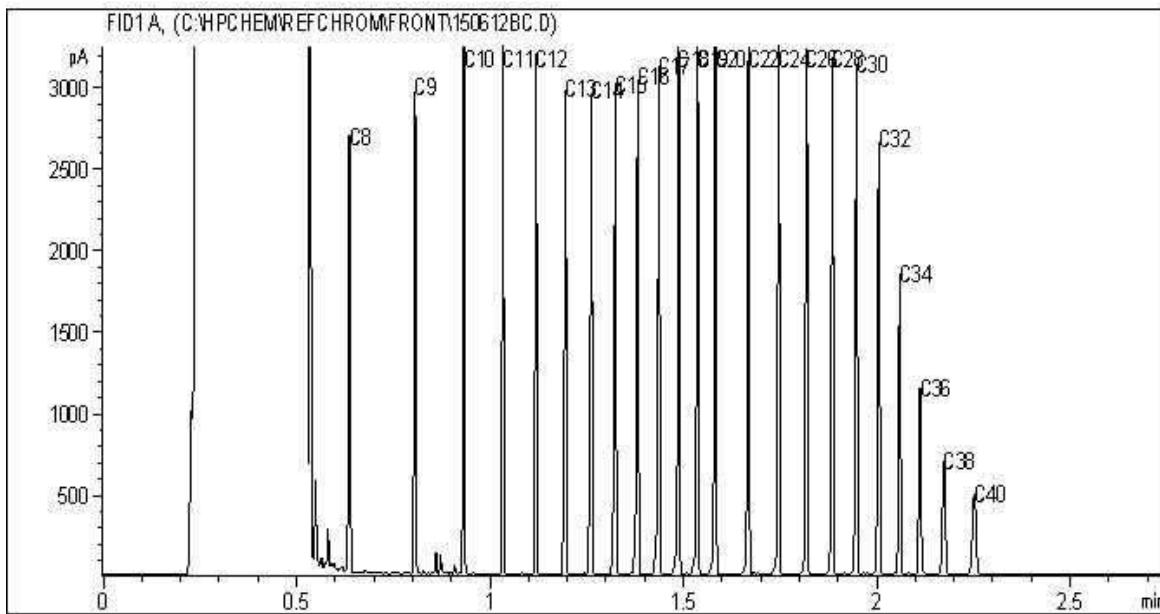
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

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