

V&M Analytical Toxicology Laboratory Services (Pty) Ltd

83 Victoria Street, George, 6529 • PostNet Suite 254, P. Bag X6590, George, 6530
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TEST REPORT

Date	02 September 2021	Report No.	210902 VM24719
To	Marine & Estuarine Research (MER)	Sample(s) received	20 August 2021
Contact Person	Nicolette Forbes Managing Director & Senior Scientist	Tel. No.	031 572 2705
Email	nicolette@mer.co.za		

Background

For the pesticides, we cast the net as wide as we could, screening for more than 60 different pesticides (including herbicides). As indicated earlier we do not have reference standards available for all but were able to screen for presence/ absence using data published in the open literature. This is done based upon the technique used (LC-MS/MS) and the specific instrument model utilised whereby the unique molecular transitions creating daughter ions from the parent ion (under specific conditions), can be predicted, and hence monitored. For confirmation it would be preferable to run an authentic standard and verify both the retention time and the molecular fragmentation under the applied MS/MS conditions.

Accurate quantification without an authentic standard is unfortunately not possible. In some cases, a structurally similar compound can be used as reference, but the result is tentative at best.

We included your specific compounds you requested:

Group 1 plus if possible can you add the following Tebuthiuron*, Oxamyl, Picloram*, Terbufos, MSMA** (if you can)

*authentic reference standard not available at time of analysis

**could not test for this using LC-MS/MS. Total arsenic to be detected using ICP-MS

Description of samples received:

Purchase Order: (awaiting)

VM no.	Date	Project Code	Site Code	Type
24719/01	18/8/2021	UL21/21	B2N	Water
24719/02	18/8/2021	UL21/21	B2N	Sediment
24719/03	17/8/2021	UL21/21	B3N	Water
24719/04	17/8/2021	UL21/21	B3N	Sediment
24719/05	17/8/2021	UL21/21	B4N	Water
24719/06	17/8/2021	UL21/21	B4N	Sediment
24719/07	17/8/2021	UL21/21	B5N	Water
24719/08	17/8/2021	UL21/21	B5N	Sediment
24719/09	17/8/2021	UL21/21	B6N	Water
24719/10	17/8/2021	UL21/21	B6N	Sediment
24719/11	17/8/2021	UL21/21	B7N	Water
24719/12	17/8/2021	UL21/21	B7N	Sediment
24719/13	17/8/2021	UL21/21	B8N	Water
24719/14	17/8/2021	UL21/21	B8N	Sediment
24719/15	17/8/2021	UL21/21	B9N	Water
24719/16	17/8/2021	UL21/21	B9N	Sediment
24719/17	18/8/2021	UL21/21	B1S	Water

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VM no.	Date	Project Code	Site Code	Type
24719/18	18/8/2021	UL21/21	B1S	Sediment
24719/19	18/8/2021	UL21/21	B2S	Water
24719/20	18/8/2021	UL21/21	B2S	Sediment
24719/21	17/8/2021	UL21/21	B3S	Water
24719/22	17/8/2021	UL21/21	B3S	Sediment
24719/23	17/8/2021	UL21/21	B4S	Water
24719/24	17/8/2021	UL21/21	B4S	Sediment
24719/25	17/8/2021	UL21/21	B5S	Water
24719/26	17/8/2021	UL21/21	B5S	Sediment
24719/27	17/8/2021	UL21/21	B6S	Water
24719/28	17/8/2021	UL21/21	B6S	Sediment
24719/29	17/8/2021	UL21/21	B7S	Water
24719/30	17/8/2021	UL21/21	B7S	Sediment
24719/31	18/8/2021	UL21/21	UE1	Water
24719/32	18/8/2021	UL21/21	UE1	Sediment
24719/33	18/8/2021	UL21/21	UE5	Water
24719/34	18/8/2021	UL21/21	UE5	Sediment
24719/35	18/8/2021	UL21/21	UE1/CS	Sediment

Analysis requested: Multi residue pesticide analysis using LC-MS/MS

Analysis results: **Date Tested:** 2021-08-31 **Test Method:** WIN-VM-061

VM no.	Date	Project Code	Site Code	Type	Result
24719/01	18/8/2021	UL21/21	B2N	Water	ND
24719/02	18/8/2021	UL21/21	B2N	Sediment	ND
24719/03	17/8/2021	UL21/21	B3N	Water	ND
24719/04	17/8/2021	UL21/21	B3N	Sediment	ND
24719/05	17/8/2021	UL21/21	B4N	Water	ND
24719/06	17/8/2021	UL21/21	B4N	Sediment	ND
24719/07	17/8/2021	UL21/21	B5N	Water	ND
24719/08	17/8/2021	UL21/21	B5N	Sediment	ND
24719/09	17/8/2021	UL21/21	B6N	Water	ND
24719/10	17/8/2021	UL21/21	B6N	Sediment	ND
24719/11	17/8/2021	UL21/21	B7N	Water	ND
24719/12	17/8/2021	UL21/21	B7N	Sediment	ND
24719/13	17/8/2021	UL21/21	B8N	Water	ND
24719/14	17/8/2021	UL21/21	B8N	Sediment	ND
24719/15	17/8/2021	UL21/21	B9N	Water	ND
24719/16	17/8/2021	UL21/21	B9N	Sediment	ND
24719/17	18/8/2021	UL21/21	B1S	Water	Tebuthiuron <LOQ
24719/18	18/8/2021	UL21/21	B1S	Sediment	ND
24719/19	18/8/2021	UL21/21	B2S	Water	Tebuthiuron <LOQ
24719/20	18/8/2021	UL21/21	B2S	Sediment	ND
24719/21	17/8/2021	UL21/21	B3S	Water	ND
24719/22	17/8/2021	UL21/21	B3S	Sediment	ND
24719/23	17/8/2021	UL21/21	B4S	Water	ND
24719/24	17/8/2021	UL21/21	B4S	Sediment	ND
24719/25	17/8/2021	UL21/21	B5S	Water	ND
24719/26	17/8/2021	UL21/21	B5S	Sediment	ND
24719/27	17/8/2021	UL21/21	B6S	Water	ND

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VM no.	Date	Project Code	Site Code	Type	Result
24719/28	17/8/2021	UL21/21	B6S	Sediment	ND
24719/29	17/8/2021	UL21/21	B7S	Water	ND
24719/30	17/8/2021	UL21/21	B7S	Sediment	ND
24719/31	18/8/2021	UL21/21	UE1	Water	Picloram <LOQ Acetamiprid <LOQ Tebuthiuron 807 ng/ml Metolachlor 107 ng/ml
24719/32	18/8/2021	UL21/21	UE1	Sediment	Tebuthiuron 106 ng/g Metolachlor <LOQ
24719/33	18/8/2021	UL21/21	UE5	Water	Picloram <LOQ Acetamiprid <LOQ Tebuthiuron 745 ng/ml Metolachlor 90 ng/ml
24719/34	18/8/2021	UL21/21	UE5	Sediment	Tebuthiuron 168 ng/g Metolachlor <LOQ
24719/35	18/8/2021	UL21/21	UE1/CS	Sediment	Tebuthiuron 194 ng/g Metolachlor <LOQ

LOD – Limit of detection, **LOQ** – Limit of quantification

Note:

- A reading of between LOQ and LOD is reported as **<LOQ**
- As indicated a reference standard for Tebuthiuron was not available at time of analysis. To tentatively quantify the concentrations detected, acetamiprid was used as reference for Tebuthiuron.

Specific pesticide test list

The pesticides specifically tested for using this method are listed in Table 1. The instrumental technique (LC-MS/MS) as applied here is very sensitive and very specific. It must be noted however, that because of such high specificity, other compounds not listed in Table 1 but present in the samples, will not be detected.

The method quantitation limits (MQL) for each of the compounds listed is at least 30 ng/g or lower.

Table 1

No.	Pesticide	No.	Pesticide	No.	Pesticide
1	Acetamiprid	18	Fenitrothion	35	Picloram
2	Aldicarb	19	Fenthion	36	Piperonyl butoxide
3	Aldicarb sulfone	20	Hexaconazole	37	Pirimicarb
4	Aldicarb sulfoxide	21	Imazalil	38	Pirimiphos-methyl
5	Azinphos-methyl	22	Indoxacarb	39	Prochloraz
6	Azoxystrobin	23	Kresoxim-methyl	40	Procymidone
7	Boscalid	24	Malathion	41	Profenofos
8	Bupirimate	25	Metalaxyl	42	Propiconazole
9	Buprofezin	26	Methiocarb	43	Propoxur
10	Carbaryl	27	Metolachlor	44	Pyrimethanil
11	Carbofuran	28	Methomyl	45	Tebuconazole

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No.	Pesticide	No.	Pesticide	No.	Pesticide
12	Chlorpyrifos	29	Mevinphos	46	Tebuthiuron
13	Deltamethrin	30	Myclobutanil	47	Terbufos
14	Diazinon	31	Oxamyl	48	Terbutryn
15	Dichlorvos	32	Paclobutrazole	49	Trifloxystrobin
16	Ethion	33	Parathion-ethyl		
17	Fenamiphos	34	Parathion-methyl		

Should you have any queries about the test results, please contact V&M-ATLS.

Kind regards

Mauritz Wentzel (Ph. D.) Pr. Sci. Nat.

This report relates to the specific sample(s) as received and tested as identified herein. It does not imply V&M ATLS approval of the quality of the samples in question and the test results do not apply to any similar sample(s) that has (have) not been tested.
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