

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN072419\  
 Data File : VN056893.D  
 Acq On : 23 Jul 2019 23:06  
 Operator : JC/SP  
 Sample : K3591-09  
 Misc : 5.00mL/MSVOA N/WATER  
 ALS Vial : 31 Sample Multiplier: 1

Instrument :  
 MSVOA\_N  
 ClientSampleId :  
 MDL-MDL-WATER-03-QT3-2019

Manual Integrations  
 APPROVED

MMDadoda  
 7/25/2019 2:20:20 PM

Quant Time: Jul 24 04:23:50 2019  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA N\METHODS\624N072419W.M  
 Quant Title : METHOD 624 VOLATILE ORGANIC ANALYSIS  
 QLast Update : Wed Jul 24 04:16:26 2019  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 7.20  | 128  | 55472    | 30.00 | ug/l  | 0.00     |
| 28) 1,4-Difluorobenzene | 8.59  | 114  | 300230   | 30.00 | ug/l  | 0.00     |
| 57) Chlorobenzene-d5    | 11.41 | 117  | 236332   | 30.00 | ug/l  | 0.00     |

## System Monitoring Compounds

|                           |        |       |          |          |      |         |
|---------------------------|--------|-------|----------|----------|------|---------|
| 27) 1,2-Dichloroethane-d4 | 8.03   | 65    | 111343   | 30.67    | ug/l | 0.00    |
| Spiked Amount             | 30.000 | Range | 50 - 169 | Recovery | =    | 102.23% |
| 60) 4-Bromofluorobenzene  | 12.40  | 95    | 91097    | 25.72    | ug/l | 0.00    |
| Spiked Amount             | 30.000 | Range | 56 - 143 | Recovery | =    | 85.73%  |
| 63) Toluene-d8            | 10.09  | 98    | 360907   | 32.33    | ug/l | 0.00    |
| Spiked Amount             | 30.000 | Range | 66 - 137 | Recovery | =    | 107.77% |

## Target Compounds

|                               |      |     |        |        | Ovalue    |
|-------------------------------|------|-----|--------|--------|-----------|
| 2) Dichlorodifluoromethane    | 1.85 | 85  | 7868   | 2.372  | ug/l 98   |
| 3) Chloromethane              | 2.06 | 50  | 11007  | 2.720  | ug/l 96   |
| 4) Vinyl Chloride             | 2.18 | 62  | 10145  | 2.600  | ug/l 94   |
| 5) Bromomethane               | 2.56 | 94  | 8766   | 3.659  | ug/l 95   |
| 6) Chloroethane               | 2.70 | 64  | 5655   | 2.613  | ug/l # 86 |
| 7) Trichlorofluoromethane     | 3.01 | 101 | 12754  | 2.684  | ug/l 92   |
| 8) Diethyl Ether              | 3.40 | 74  | 4963   | 2.803  | ug/l 51   |
| 9) 1,1,2-Trichlorotrifluoroet | 3.74 | 101 | 8161   | 2.735  | ug/l 96   |
| 10) 1,1-Dichloroethene        | 3.73 | 96  | 8499   | 2.870  | ug/l 94   |
| 11) Methyl Iodide             | 3.95 | 142 | 9330   | 2.130  | ug/l 98   |
| 12) Methyl Acetate            | 4.33 | 43  | 13147  | 3.627  | ug/l 94   |
| 13) Acrolein                  | 3.61 | 56  | 5340m  | 13.019 | ug/l      |
| 14) Acrylonitrile             | 4.99 | 53  | 16713m | 11.957 | ug/l      |
| 15) Acetone                   | 3.83 | 58  | 4843   | 13.402 | ug/l 99   |
| 16) Carbon Disulfide          | 4.05 | 76  | 21373m | 2.676  | ug/l      |
| 17) Allyl chloride            | 4.31 | 41  | 12214  | 2.465  | ug/l 93   |
| 18) Methylene Chloride        | 4.55 | 84  | 9573   | 2.777  | ug/l 99   |
| 19) trans-1,2-Dichloroethene  | 5.04 | 96  | 8115   | 2.589  | ug/l 90   |
| 20) Diisopropyl ether         | 5.95 | 45  | 25884  | 2.573  | ug/l 93   |
| 21) 1,1-Dichloroethane        | 5.84 | 63  | 15549m | 2.659  | ug/l      |
| 22) cis-1,2-Dichloroethene    | 6.83 | 96  | 9483   | 2.611  | ug/l 97   |
| 23) tert-Butyl Alcohol        | 4.80 | 59  | 6184m  | 13.258 | ug/l      |
| 24) Methyl tert-Butyl Ether   | 5.04 | 73  | 22732m | 2.539  | ug/l      |
| 25) Chloroform                | 7.37 | 83  | 16717  | 2.931  | ug/l 86   |
| 26) Cyclohexane               | 7.65 | 56  | 13511  | 2.515  | ug/l # 99 |
| 29) 1,1-Dichloropropene       | 7.79 | 75  | 10358  | 2.431  | ug/l 99   |
| 30) 2-Butanone                | 6.85 | 43  | 21030  | 12.286 | ug/l # 95 |
| 31) 2,2-Dichloropropane       | 6.82 | 77  | 9453m  | 2.391  | ug/l      |
| 32) 1,1,1-Trichloroethane     | 7.57 | 97  | 11689  | 2.497  | ug/l 98   |
| 33) Carbon Tetrachloride      | 7.77 | 117 | 9894   | 2.421  | ug/l 89   |
| 34) Benzene                   | 8.04 | 78  | 34935  | 2.602  | ug/l # 9  |
| 35) Methacrylonitrile         | 7.17 | 41  | 4052   | 2.370  | ug/l 87   |
| 36) 1,2-Dichloroethane        | 8.12 | 62  | 11473  | 2.749  | ug/l 100  |
| 37) Trichloroethene           | 8.84 | 130 | 9979   | 2.773  | ug/l 93   |
| 38) Methylcyclohexane         | 9.08 | 83  | 13722  | 2.532  | ug/l 98   |
| 39) 1,2-Dichloropropane       | 9.12 | 63  | 9825   | 2.742  | ug/l 100  |
| 40) Dibromomethane            | 9.21 | 93  | 5931   | 2.698  | ug/l 96   |

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 Quant Title : METHOD 624 VOLATILE ORGANIC ANALYSIS  
 QLast Update : Wed Jul 24 04:16:26 2019  
 Response via : Initial Calibration

| Internal Standards             | R.T.  | QIon | Response | Conc   | Units  | Dev(Min) |
|--------------------------------|-------|------|----------|--------|--------|----------|
| -----                          |       |      |          |        |        |          |
| 41) Bromodichloromethane       | 9.40  | 83   | 10334    | 2.446  | ug/l   | 97       |
| 42) Vinyl Acetate              | 5.90  | 43   | 85969    | 11.278 | ug/l # | 87       |
| 43) Ethyl Acetate              | 6.94  | 43   | 7916     | 2.256  | ug/l # | 94       |
| 44) Isopropyl Acetate          | 8.17  | 43   | 15386    | 2.630  | ug/l # | 57       |
| 45) 1,4-Dioxane                | 9.20  | 88   | 2698     | 48.452 | ug/l   | 98       |
| 46) Methyl methacrylate        | 9.20  | 41   | 7115     | 2.438  | ug/l   | 97       |
| 47) n-amyl Acetate             | 12.07 | 43   | 9433     | 2.015  | ug/l   | 99       |
| 48) t-1,3-Dichloropropene      | 10.38 | 75   | 9757     | 2.220  | ug/l   | 93       |
| 49) cis-1,3-Dichloropropene    | 9.84  | 75   | 11372    | 2.220  | ug/l   | 98       |
| 50) 1,1,2-Trichloroethane      | 10.56 | 97   | 8247     | 2.613  | ug/l   | 95       |
| 51) Ethyl methacrylate         | 10.43 | 69   | 10003    | 2.191  | ug/l   | 95       |
| 52) 1,3-Dichloropropane        | 10.71 | 76   | 13672    | 2.567  | ug/l   | 99       |
| 53) Dibromochloromethane       | 10.90 | 129  | 7449     | 2.271  | ug/l   | 96       |
| 54) 1,2-Dibromoethane          | 11.00 | 107  | 7798     | 2.422  | ug/l   | 99       |
| 55) 2-Chloroethyl vinyl ether  | 9.69  | 63   | 19983    | 10.107 | ug/l   | 98       |
| 56) Bromoform                  | 12.12 | 173  | 4297     | 1.893  | ug/l # | 96       |
| 58) 4-Methyl-2-Pentanone       | 9.99  | 43   | 44980    | 14.183 | ug/l   | 97       |
| 59) 2-Hexanone                 | 10.75 | 43   | 27862    | 12.892 | ug/l   | 94       |
| 61) Tetrachloroethene          | 10.63 | 164  | 10070    | 3.040  | ug/l   | 97       |
| 62) Toluene                    | 10.16 | 91   | 37298    | 2.902  | ug/l   | 98       |
| 64) Chlorobenzene              | 11.43 | 112  | 21295    | 2.750  | ug/l   | 91       |
| 65) 1,1,1,2-Tetrachloroethane  | 11.51 | 131  | 8095     | 2.760  | ug/l   | 97       |
| 66) Ethyl Benzene              | 11.51 | 91   | 34414    | 2.541  | ug/l   | 98       |
| 67) m/p-Xylenes                | 11.62 | 106  | 24741    | 4.898  | ug/l   | 98       |
| 68) o-Xylene                   | 11.95 | 106  | 12648    | 2.547  | ug/l   | 97       |
| 69) Styrene                    | 11.96 | 104  | 16653    | 2.069  | ug/l   | 96       |
| 70) Isopropylbenzene           | 12.25 | 105  | 32647    | 2.497  | ug/l   | 99       |
| 71) 1,1,2,2-Tetrachloroethane  | 12.50 | 83   | 10074    | 2.751  | ug/l   | 97       |
| 72) 1,2,3-Trichloropropane     | 12.55 | 75   | 9014m    | 2.797  | ug/l   |          |
| 73) Bromobenzene               | 12.53 | 156  | 8091     | 2.398  | ug/l   | 99       |
| 74) n-propylbenzene            | 12.59 | 91   | 31564    | 2.208  | ug/l   | 99       |
| 75) 2-Chlorotoluene            | 12.67 | 91   | 20693    | 2.387  | ug/l   | 100      |
| 76) 1,3,5-Trimethylbenzene     | 12.73 | 105  | 26547    | 2.412  | ug/l   | 97       |
| 77) t-1,4-Dichloro-2-butene    | 12.30 | 75   | 1713     | 1.693  | ug/l   | 82       |
| 78) 4-Chlorotoluene            | 12.77 | 91   | 16666    | 2.023  | ug/l   | 99       |
| 79) tert-butylbenzene          | 12.99 | 119  | 24100    | 2.537  | ug/l   | 98       |
| 80) 1,2,4-Trimethylbenzene     | 13.04 | 105  | 22709    | 2.116  | ug/l   | 97       |
| 81) sec-Butylbenzene           | 13.17 | 105  | 28700    | 2.314  | ug/l   | 98       |
| 82) p-Isopropyltoluene         | 13.29 | 119  | 24421    | 2.193  | ug/l   | 99       |
| 83) 1,3-Dichlorobenzene        | 13.28 | 146  | 9615     | 1.810  | ug/l   | 97       |
| 84) 1,4-Dichlorobenzene        | 13.36 | 146  | 9355     | 1.862  | ug/l   | 97       |
| 85) n-Butylbenzene             | 13.61 | 91   | 15964    | 1.825  | ug/l   | 95       |
| 86) Hexachloroethane           | 13.87 | 117  | 4250     | 2.280  | ug/l   | 95       |
| 87) 1,2-Dichlorobenzene        | 13.65 | 146  | 10916    | 2.069  | ug/l   | 96       |
| 88) 1,2-Dibromo-3-Chloropropan | 14.27 | 75   | 1151     | 2.032  | ug/l   | 96       |
| 89) 1,2,4-Trichlorobenzene     | 14.91 | 180  | 3069     | 1.205  | ug/l   | 95       |
| 90) Hexachlorobutadiene        | 15.00 | 225  | 5309     | 2.737  | ug/l   | 94       |
| 91) Naphthalene                | 15.13 | 128  | 8618     | 1.303  | ug/l   | 98       |
| 92) 1,2,3-Trichlorobenzene     | 15.32 | 180  | 4267     | 1.530  | ug/l   | 94       |
| -----                          |       |      |          |        |        |          |

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(#) = qualifier out of range (m) = manual integration (+) = signals summed

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