



1941 Reymet Road • Richmond, Virginia 23237 • Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 24H1425

Client Name: APEX Companies, LLC. - Richmond VA
203 Wylderose Court
Midlothian, VA 23113

Date Received: August 26, 2024 8:10

Date Issued: August 27, 2024 16:27

Project Number: 24009604

Submitted To: [REDACTED]

Purchase Order:

Client Site I.D.: Rapidan WTP Wilderness

Enclosed are the results of analyses for samples received by the laboratory on 08/26/2024 08:10. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

[REDACTED]

[REDACTED]

Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Enthalpy Analytical.



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VELAP ID 460021

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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Purchase Order:
 Midlothian VA, 23113
 Submitted To: ██████████
 Client Site I.D.: Rapidan WTP Wilderness

ANALYTICAL REPORT FOR SAMPLES
Laboratory Order ID 24H1425

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0823249604-6 Wet Well	24H1425-01	Non-Potable Water	08/23/2024 14:00	08/26/2024 08:10
0823249604-7 Rapidan WTP Surface Water Intake	24H1425-02	Non-Potable Water	08/23/2024 14:10	08/26/2024 08:10
0823249604-8 Hunting Run Reservoir Surface Water Intake	24H1425-03	Non-Potable Water	08/23/2024 17:15	08/26/2024 08:10



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-6 Wet Well Laboratory Sample ID: 24H1425-01
 Grab Date/Time: 08/23/2024 14:00
 Field Residual Cl: Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
1,2,4,5-Tetrachlorobenzene	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1,2,4-Trichlorobenzene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1,2-Dichlorobenzene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1,2-Diphenylhydrazine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1,3-Dichlorobenzene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1,3-Dinitrobenzene	01	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 19:27	BMS
1,4-Dichlorobenzene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
1-Naphthylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,3,4,6-Tetrachlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4,5-Trichlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4,6-Trichlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4-Dichlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4-Dimethylphenol	01	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4-Dinitrophenol	01	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,4-Dinitrotoluene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,6-Dichlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,6-Dinitrotoluene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Chloronaphthalene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Chlorophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Methylnaphthalene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Naphthylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Nitroaniline	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2-Nitrophenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
3,3'-Dichlorobenzidine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
3-Methylcholanthrene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
3-Nitroaniline	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-6 Wet Well Laboratory Sample ID: 24H1425-01
 Grab Date/Time: 08/23/2024 14:00
 Field Residual Cl: Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
4,6-Dinitro-2-methylphenol	01	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Aminobiphenyl	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Bromophenyl phenyl ether	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Chloroaniline	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Chlorophenyl phenyl ether	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Nitroaniline	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
4-Nitrophenol	01	SW8270E	<50.0 ug/L	C	50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
7,12-Dimethylbenz (a) anthracene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Acenaphthene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Acenaphthylene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Acetophenone	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Aniline	01	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Anthracene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzidine	01	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzo (a) anthracene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzo (a) pyrene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzo (b) fluoranthene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzo (g,h,i) perylene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzo (k) fluoranthene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzoic acid	01	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Benzyl alcohol	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
bis (2-Chloroethoxy) methane	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
bis (2-Chloroethyl) ether	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
2,2'-Oxybis (1-chloropropane)	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
bis (2-Ethylhexyl) phthalate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS



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Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-6 Wet Well	Laboratory Sample ID: 24H1425-01
Grab Date/Time: 08/23/2024 14:00	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
Butyl benzyl phthalate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Chrysene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Dibenz (a,h) anthracene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Dibenz (a,j) acridine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Dibenzofuran	01	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:27	BMS
Diethyl phthalate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Dimethyl phthalate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Di-n-butyl phthalate	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Di-n-octyl phthalate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Diphenylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Ethyl methanesulfonate	01	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Fluoranthene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Fluorene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Hexachlorobenzene	01	SW8270E	<1.00 ug/L		1.00	1	08/26/24 08:15	08/26/24 19:27	BMS
Hexachlorobutadiene	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Hexachlorocyclopentadiene	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Hexachloroethane	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Indeno (1,2,3-cd) pyrene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Isophorone	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
m+p-Cresols	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Methyl methanesulfonate	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Naphthalene	01	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:27	BMS
Nitrobenzene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
n-Nitrosodimethylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
n-Nitrosodi-n-butylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
n-Nitrosodi-n-propylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-6 Wet Well Laboratory Sample ID: 24H1425-01
 Grab Date/Time: 08/23/2024 14:00
 Field Residual Cl: Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
n-Nitrosodiphenylamine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
n-Nitrosopiperidine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
o+m+p-Cresols	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
o-Cresol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
p-(Dimethylamino) azobenzene	01	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 19:27	BMS
p-Chloro-m-cresol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Pentachloronitrobenzene (quintozene)	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Pentachlorophenol	01	SW8270E	<20.0 ug/L	C	20.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Phenacetin	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Phenanthrene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Phenol	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Pronamide	01	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Pyrene	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Pyridine	01	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:27	BMS
Surr: 2,4,6-Tribromophenol (Surr)	01	SW8270E	46.6 %		5-136		08/26/24 08:15	08/26/24 19:27	BMS
Surr: 2-Fluorobiphenyl (Surr)	01	SW8270E	59.0 %		9-117		08/26/24 08:15	08/26/24 19:27	BMS
Surr: 2-Fluorophenol (Surr)	01	SW8270E	27.7 %		5-60		08/26/24 08:15	08/26/24 19:27	BMS
Surr: Nitrobenzene-d5 (Surr)	01	SW8270E	60.4 %		5-151		08/26/24 08:15	08/26/24 19:27	BMS
Surr: Phenol-d5 (Surr)	01	SW8270E	24.7 %		5-60		08/26/24 08:15	08/26/24 19:27	BMS
Surr: p-Terphenyl-d14 (Surr)	01	SW8270E	47.1 %		5-141		08/26/24 08:15	08/26/24 19:27	BMS
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	01	SW8015C	<0.500 mg/L		0.500	1	08/26/24 14:45	08/26/24 19:29	RFH
Surr: n-Triacontane (Surr)	01	SW8015C	70.6 %		50-125		08/26/24 14:45	08/26/24 19:29	RFH



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Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-7 Rapidan WTP Surface Water Intake Laboratory Sample ID: 24H1425-02

Grab Date/Time: 08/23/2024 14:10

Field Residual Cl: Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
1,2,4,5-Tetrachlorobenzene	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1,2,4-Trichlorobenzene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1,2-Dichlorobenzene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1,2-Diphenylhydrazine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1,3-Dichlorobenzene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1,3-Dinitrobenzene	02	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 19:57	BMS
1,4-Dichlorobenzene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
1-Naphthylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,3,4,6-Tetrachlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4,5-Trichlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4,6-Trichlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4-Dichlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4-Dimethylphenol	02	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4-Dinitrophenol	02	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,4-Dinitrotoluene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,6-Dichlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,6-Dinitrotoluene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Chloronaphthalene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Chlorophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Methylnaphthalene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Naphthylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Nitroaniline	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2-Nitrophenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
3,3'-Dichlorobenzidine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
3-Methylcholanthrene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
3-Nitroaniline	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS



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Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-7 Rapidan WTP Surface Water Intake	Laboratory Sample ID: 24H1425-02
Grab Date/Time: 08/23/2024 14:10	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
4,6-Dinitro-2-methylphenol	02	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Aminobiphenyl	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Bromophenyl phenyl ether	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Chloroaniline	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Chlorophenyl phenyl ether	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Nitroaniline	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
4-Nitrophenol	02	SW8270E	<50.0 ug/L	C	50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
7,12-Dimethylbenz (a) anthracene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Acenaphthene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Acenaphthylene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Acetophenone	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Aniline	02	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Anthracene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzidine	02	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzo (a) anthracene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzo (a) pyrene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzo (b) fluoranthene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzo (g,h,i) perylene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzo (k) fluoranthene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzoic acid	02	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Benzyl alcohol	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
bis (2-Chloroethoxy) methane	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
bis (2-Chloroethyl) ether	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
2,2'-Oxybis (1-chloropropane)	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
bis (2-Ethylhexyl) phthalate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-7 Rapidan WTP Surface Water Intake Laboratory Sample ID: 24H1425-02

Grab Date/Time: 08/23/2024 14:10

Field Residual Cl: Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
Butyl benzyl phthalate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Chrysene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Dibenz (a,h) anthracene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Dibenz (a,j) acridine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Dibenzofuran	02	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:57	BMS
Diethyl phthalate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Dimethyl phthalate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Di-n-butyl phthalate	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Di-n-octyl phthalate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Diphenylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Ethyl methanesulfonate	02	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Fluoranthene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Fluorene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Hexachlorobenzene	02	SW8270E	<1.00 ug/L		1.00	1	08/26/24 08:15	08/26/24 19:57	BMS
Hexachlorobutadiene	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Hexachlorocyclopentadiene	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Hexachloroethane	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Indeno (1,2,3-cd) pyrene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Isophorone	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
m+p-Cresols	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Methyl methanesulfonate	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Naphthalene	02	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 19:57	BMS
Nitrobenzene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
n-Nitrosodimethylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
n-Nitrosodi-n-butylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
n-Nitrosodi-n-propylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-7 Rapidan WTP Surface Water Intake	Laboratory Sample ID: 24H1425-02
Grab Date/Time: 08/23/2024 14:10	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
n-Nitrosodiphenylamine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
n-Nitrosopiperidine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
o+m+p-Cresols	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
o-Cresol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
p-(Dimethylamino) azobenzene	02	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 19:57	BMS
p-Chloro-m-cresol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Pentachloronitrobenzene (quintozene)	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Pentachlorophenol	02	SW8270E	<20.0 ug/L	C	20.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Phenacetin	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Phenanthrene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Phenol	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Pronamide	02	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Pyrene	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Pyridine	02	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 19:57	BMS
Surr: 2,4,6-Tribromophenol (Surr)	02	SW8270E	56.7 %		5-136		08/26/24 08:15	08/26/24 19:57	BMS
Surr: 2-Fluorobiphenyl (Surr)	02	SW8270E	64.2 %		9-117		08/26/24 08:15	08/26/24 19:57	BMS
Surr: 2-Fluorophenol (Surr)	02	SW8270E	32.6 %		5-60		08/26/24 08:15	08/26/24 19:57	BMS
Surr: Nitrobenzene-d5 (Surr)	02	SW8270E	64.8 %		5-151		08/26/24 08:15	08/26/24 19:57	BMS
Surr: Phenol-d5 (Surr)	02	SW8270E	26.1 %		5-60		08/26/24 08:15	08/26/24 19:57	BMS
Surr: p-Terphenyl-d14 (Surr)	02	SW8270E	59.3 %		5-141		08/26/24 08:15	08/26/24 19:57	BMS
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	02	SW8015C	<0.500 mg/L		0.500	1	08/26/24 14:45	08/26/24 19:51	RFH
Surr: n-Triacontane (Surr)	02	SW8015C	83.0 %		50-125		08/26/24 14:45	08/26/24 19:51	RFH



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Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-8 Hunting Run Reservoir Surface Water Intake	Laboratory Sample ID: 24H1425-03
Grab Date/Time: 08/23/2024 17:15	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
1,2,4,5-Tetrachlorobenzene	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1,2,4-Trichlorobenzene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1,2-Dichlorobenzene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1,2-Diphenylhydrazine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1,3-Dichlorobenzene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1,3-Dinitrobenzene	03	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 20:26	BMS
1,4-Dichlorobenzene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
1-Naphthylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,3,4,6-Tetrachlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4,5-Trichlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4,6-Trichlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4-Dichlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4-Dimethylphenol	03	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4-Dinitrophenol	03	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,4-Dinitrotoluene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,6-Dichlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,6-Dinitrotoluene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Chloronaphthalene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Chlorophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Methylnaphthalene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Naphthylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Nitroaniline	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2-Nitrophenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
3,3'-Dichlorobenzidine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
3-Methylcholanthrene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
3-Nitroaniline	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS



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Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-8 Hunting Run Reservoir Surface Water Intake	Laboratory Sample ID: 24H1425-03
Grab Date/Time: 08/23/2024 17:15	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
4,6-Dinitro-2-methylphenol	03	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Aminobiphenyl	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Bromophenyl phenyl ether	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Chloroaniline	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Chlorophenyl phenyl ether	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Nitroaniline	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
4-Nitrophenol	03	SW8270E	<50.0 ug/L	C	50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
7,12-Dimethylbenz (a) anthracene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Acenaphthene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Acenaphthylene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Acetophenone	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Aniline	03	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Anthracene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzidine	03	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzo (a) anthracene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzo (a) pyrene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzo (b) fluoranthene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzo (g,h,i) perylene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzo (k) fluoranthene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzoic acid	03	SW8270E	<50.0 ug/L		50.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Benzyl alcohol	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
bis (2-Chloroethoxy) methane	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
bis (2-Chloroethyl) ether	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
2,2'-Oxybis (1-chloropropane)	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
bis (2-Ethylhexyl) phthalate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-8 Hunting Run Reservoir Surface Water Intake	Laboratory Sample ID: 24H1425-03
Grab Date/Time: 08/23/2024 17:15	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
Butyl benzyl phthalate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Chrysene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Dibenz (a,h) anthracene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Dibenz (a,j) acridine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Dibenzofuran	03	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 20:26	BMS
Diethyl phthalate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Dimethyl phthalate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Di-n-butyl phthalate	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Di-n-octyl phthalate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Diphenylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Ethyl methanesulfonate	03	SW8270E	<20.0 ug/L		20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Fluoranthene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Fluorene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Hexachlorobenzene	03	SW8270E	<1.00 ug/L		1.00	1	08/26/24 08:15	08/26/24 20:26	BMS
Hexachlorobutadiene	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Hexachlorocyclopentadiene	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Hexachloroethane	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Indeno (1,2,3-cd) pyrene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Isophorone	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
m+p-Cresols	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Methyl methanesulfonate	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Naphthalene	03	SW8270E	<5.00 ug/L		5.00	1	08/26/24 08:15	08/26/24 20:26	BMS
Nitrobenzene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
n-Nitrosodimethylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
n-Nitrosodi-n-butylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
n-Nitrosodi-n-propylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Laboratory Order ID: 24H1425

Analytical Results

Sample I.D. 0823249604-8 Hunting Run Reservoir Surface Water Intake	Laboratory Sample ID: 24H1425-03
Grab Date/Time: 08/23/2024 17:15	
Field Residual Cl:	Field pH:

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D F	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
n-Nitrosodiphenylamine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
n-Nitrosopiperidine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
o+m+p-Cresols	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
o-Cresol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
p-(Dimethylamino) azobenzene	03	SW8270E	<2.50 ug/L		2.50	1	08/26/24 08:15	08/26/24 20:26	BMS
p-Chloro-m-cresol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Pentachloronitrobenzene (quintozene)	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Pentachlorophenol	03	SW8270E	<20.0 ug/L	C	20.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Phenacetin	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Phenanthrene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Phenol	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Pronamide	03	SW8270E	<10.0 ug/L	C	10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Pyrene	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Pyridine	03	SW8270E	<10.0 ug/L		10.0	1	08/26/24 08:15	08/26/24 20:26	BMS
Surr: 2,4,6-Tribromophenol (Surr)	03	SW8270E	69.9 %		5-136		08/26/24 08:15	08/26/24 20:26	BMS
Surr: 2-Fluorobiphenyl (Surr)	03	SW8270E	79.0 %		9-117		08/26/24 08:15	08/26/24 20:26	BMS
Surr: 2-Fluorophenol (Surr)	03	SW8270E	54.0 %		5-60		08/26/24 08:15	08/26/24 20:26	BMS
Surr: Nitrobenzene-d5 (Surr)	03	SW8270E	78.5 %		5-151		08/26/24 08:15	08/26/24 20:26	BMS
Surr: Phenol-d5 (Surr)	03	SW8270E	32.3 %		5-60		08/26/24 08:15	08/26/24 20:26	BMS
Surr: p-Terphenyl-d14 (Surr)	03	SW8270E	67.0 %		5-141		08/26/24 08:15	08/26/24 20:26	BMS
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	03	SW8015C	<0.500 mg/L		0.500	1	08/26/24 14:45	08/26/24 20:12	RFH
Surr: n-Triacontane (Surr)	03	SW8015C	80.4 %		50-125		08/26/24 14:45	08/26/24 20:12	RFH



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Hydrocarbons by GC		Preparation Method: SW3510C/EPA600-FID			
24H1425-01	1070 mL / 1.00 mL	SW8015C	BHH1107	SHH1042	AH40250
24H1425-02	1070 mL / 1.00 mL	SW8015C	BHH1107	SHH1042	AH40250
24H1425-03	1070 mL / 1.00 mL	SW8015C	BHH1107	SHH1042	AH40250
Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS		Preparation Method: SW3510C/EPA600-MS			
24H1425-01	1020 mL / 1.00 mL	SW8270E	BHH1067	SHH1043	AH40297
24H1425-02	1020 mL / 1.00 mL	SW8270E	BHH1067	SHH1043	AH40297
24H1425-03	1070 mL / 1.00 mL	SW8270E	BHH1067	SHH1043	AH40297



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
203 Wylderose Court Project Number: 24009604
Midlothian VA, 23113 Purchase Order:
Submitted To: [REDACTED]
Client Site I.D.: Rapidan WTP Wilderness

QC Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Hydrocarbons by GC			Preparation Method:	SW3510C/EPA600-FID	
BHH1107-BLK1	1000 mL / 1.00 mL	SW8015C	BHH1107	SHH1042	AH40250
BHH1107 BS1	1000 mL / 1.00 mL	SW8015C	BHH1107	SHH1042	AH40250

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS			Preparation Method:	SW3510C/EPA600-MS	
BHH1067-BLK1	1000 mL / 1.00 mL	SW8270E	BHH1067	SHH1032	AH40174
BHH1067-BS1	1000 mL / 1.00 mL	SW8270E	BHH1067	SHH1032	AH40174
BHH1067-MS1	1010 mL / 1.00 mL	SW8270E	BHH1067	SHH1032	AH40174
BHH1067-MSD1	1070 mL / 1.00 mL	SW8270E	BHH1067	SHH1032	AH40174



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Purchase Order:
 Midlothian VA, 23113
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Blank (BHH1067-BLK1)

Prepared & Analyzed: 08/26/2024

1,2,4,5-Tetrachlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2,4-Trichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2-Diphenylhydrazine	<10.0 ug/L	10.0	ug/L							
1,3-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,3-Dinitrobenzene	<2.50 ug/L	2.50	ug/L							
1,4-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1-Naphthylamine	<10.0 ug/L	10.0	ug/L							
2,3,4,6-Tetrachlorophenol	<10.0 ug/L	10.0	ug/L							
2,4,5-Trichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4,6-Trichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4-Dichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4-Dimethylphenol	<5.00 ug/L	5.00	ug/L							
2,4-Dinitrophenol	<50.0 ug/L	50.0	ug/L							
2,4-Dinitrotoluene	<10.0 ug/L	10.0	ug/L							
2,6-Dichlorophenol	<10.0 ug/L	10.0	ug/L							
2,6-Dinitrotoluene	<10.0 ug/L	10.0	ug/L							
2-Chloronaphthalene	<10.0 ug/L	10.0	ug/L							
2-Chlorophenol	<10.0 ug/L	10.0	ug/L							
2-Methylnaphthalene	<10.0 ug/L	10.0	ug/L							
2-Naphthylamine	<10.0 ug/L	10.0	ug/L							
2-Nitroaniline	<20.0 ug/L	20.0	ug/L							
2-Nitrophenol	<10.0 ug/L	10.0	ug/L							
3,3'-Dichlorobenzidine	<10.0 ug/L	10.0	ug/L							
3-Methylcholanthrene	<10.0 ug/L	10.0	ug/L							
3-Nitroaniline	<20.0 ug/L	20.0	ug/L							
4,6-Dinitro-2-methylphenol	<50.0 ug/L	50.0	ug/L							
4-Aminobiphenyl	<10.0 ug/L	10.0	ug/L							
4-Bromophenyl phenyl ether	<10.0 ug/L	10.0	ug/L							
4-Chloroaniline	<10.0 ug/L	10.0	ug/L							
4-Chlorophenyl phenyl ether	<10.0 ug/L	10.0	ug/L							



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Purchase Order:
 Midlothian VA, 23113
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Blank (BHH1067-BLK1)

Prepared & Analyzed: 08/26/2024

4-Nitroaniline	<20.0 ug/L	20.0	ug/L							
4-Nitrophenol	<50.0 ug/L	50.0	ug/L							
7,12-Dimethylbenz (a) anthracene	<10.0 ug/L	10.0	ug/L							
Acenaphthene	<10.0 ug/L	10.0	ug/L							
Acenaphthylene	<10.0 ug/L	10.0	ug/L							
Acetophenone	<20.0 ug/L	20.0	ug/L							
Aniline	<50.0 ug/L	50.0	ug/L							
Anthracene	<10.0 ug/L	10.0	ug/L							
Benzidine	<50.0 ug/L	50.0	ug/L							
Benzo (a) anthracene	<10.0 ug/L	10.0	ug/L							
Benzo (a) pyrene	<10.0 ug/L	10.0	ug/L							
Benzo (b) fluoranthene	<10.0 ug/L	10.0	ug/L							
Benzo (g,h,i) perylene	<10.0 ug/L	10.0	ug/L							
Benzo (k) fluoranthene	<10.0 ug/L	10.0	ug/L							
Benzoic acid	<50.0 ug/L	50.0	ug/L							
Benzyl alcohol	<20.0 ug/L	20.0	ug/L							
bis (2-Chloroethoxy) methane	<10.0 ug/L	10.0	ug/L							
bis (2-Chloroethyl) ether	<10.0 ug/L	10.0	ug/L							
2,2'-Oxybis (1-chloropropane)	<10.0 ug/L	10.0	ug/L							
bis (2-Ethylhexyl) phthalate	<10.0 ug/L	10.0	ug/L							
Butyl benzyl phthalate	<10.0 ug/L	10.0	ug/L							
Chrysene	<10.0 ug/L	10.0	ug/L							
Dibenz (a,h) anthracene	<10.0 ug/L	10.0	ug/L							
Dibenz (a,j) acridine	<10.0 ug/L	10.0	ug/L							
Dibenzofuran	<5.00 ug/L	5.00	ug/L							
Diethyl phthalate	<10.0 ug/L	10.0	ug/L							
Dimethyl phthalate	<10.0 ug/L	10.0	ug/L							
Di-n-butyl phthalate	<10.0 ug/L	10.0	ug/L							
Di-n-octyl phthalate	<10.0 ug/L	10.0	ug/L							
Diphenylamine	<10.0 ug/L	10.0	ug/L							
Ethyl methanesulfonate	<20.0 ug/L	20.0	ug/L							



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Blank (BHH1067-BLK1)

Prepared & Analyzed: 08/26/2024

Fluoranthene	<10.0 ug/L	10.0	ug/L							
Fluorene	<10.0 ug/L	10.0	ug/L							
Hexachlorobenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<10.0 ug/L	10.0	ug/L							
Hexachlorocyclopentadiene	<10.0 ug/L	10.0	ug/L							
Hexachloroethane	<10.0 ug/L	10.0	ug/L							
Indeno (1,2,3-cd) pyrene	<10.0 ug/L	10.0	ug/L							
Isophorone	<10.0 ug/L	10.0	ug/L							
m+p-Cresols	<10.0 ug/L	10.0	ug/L							
Methyl methanesulfonate	<10.0 ug/L	10.0	ug/L							
Naphthalene	<5.00 ug/L	5.00	ug/L							
Nitrobenzene	<10.0 ug/L	10.0	ug/L							
n-Nitrosodimethylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodi-n-butylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodi-n-propylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodiphenylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosopiperidine	<10.0 ug/L	10.0	ug/L							
o+m+p-Cresols	<10.0 ug/L	10.0	ug/L							
o-Cresol	<10.0 ug/L	10.0	ug/L							
p-(Dimethylamino) azobenzene	<2.50 ug/L	2.50	ug/L							
p-Chloro-m-cresol	<10.0 ug/L	10.0	ug/L							
Pentachloronitrobenzene (quintozene)	<10.0 ug/L	10.0	ug/L							
Pentachlorophenol	<20.0 ug/L	20.0	ug/L							
Phenacetin	<10.0 ug/L	10.0	ug/L							
Phenanthrene	<10.0 ug/L	10.0	ug/L							
Phenol	<10.0 ug/L	10.0	ug/L							
Pronamide	<10.0 ug/L	10.0	ug/L							
Pyrene	<10.0 ug/L	10.0	ug/L							
Pyridine	<10.0 ug/L	10.0	ug/L							
Surr: 2,4,6-Tribromophenol (Surr)	60.6		ug/L	100		60.6	5-136			
Surr: 2-Fluorobiphenyl (Surr)	27.7		ug/L	50.0		55.4	9-117			



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Blank (BHH1067-BLK1)

Prepared & Analyzed: 08/26/2024

Surr: 2-Fluorophenol (Surr)	41.1		ug/L	100		41.1	5-60			
Surr: Nitrobenzene-d5 (Surr)	35.4		ug/L	50.0		70.7	5-151			
Surr: Phenol-d5 (Surr)	26.0		ug/L	100		26.0	5-60			
Surr: p-Terphenyl-d14 (Surr)	29.0		ug/L	50.0		57.9	5-141			

LCS (BHH1067-BS1)

Prepared & Analyzed: 08/26/2024

1,2,4-Trichlorobenzene	22.3 ug/L	10.0	ug/L	50.0	ug/L	44.6	57-130			L
1,2-Dichlorobenzene	20.8 ug/L	10.0	ug/L	50.0	ug/L	41.6	22-115			
1,3-Dichlorobenzene	20.3 ug/L	10.0	ug/L	50.0	ug/L	40.7	22-112			
1,4-Dichlorobenzene	21.4 ug/L	10.0	ug/L	50.0	ug/L	42.8	13-112			
2,4,6-Trichlorophenol	30.0 ug/L	10.0	ug/L	50.0	ug/L	59.9	52-129			
2,4-Dichlorophenol	31.0 ug/L	10.0	ug/L	50.0	ug/L	62.0	53-122			
2,4-Dimethylphenol	34.8 ug/L	5.00	ug/L	50.0	ug/L	69.6	42-120			
2,4-Dinitrophenol	<50.0 ug/L	50.0	ug/L	50.0	ug/L	88.3	48-127			
2,4-Dinitrotoluene	40.5 ug/L	10.0	ug/L	50.0	ug/L	80.9	10-173			
2,6-Dinitrotoluene	36.1 ug/L	10.0	ug/L	50.0	ug/L	72.1	68-137			
2-Chloronaphthalene	24.2 ug/L	10.0	ug/L	50.0	ug/L	48.3	65-120			L
2-Chlorophenol	29.2 ug/L	10.0	ug/L	50.0	ug/L	58.4	36-120			
2-Nitrophenol	34.7 ug/L	10.0	ug/L	50.0	ug/L	69.4	45-167			
3,3'-Dichlorobenzidine	27.1 ug/L	10.0	ug/L	50.0	ug/L	54.2	10-213			
4,6-Dinitro-2-methylphenol	<50.0 ug/L	50.0	ug/L	50.0	ug/L	88.4	53-130			
4-Bromophenyl phenyl ether	26.9 ug/L	10.0	ug/L	50.0	ug/L	53.8	65-120			L
4-Chlorophenyl phenyl ether	27.3 ug/L	10.0	ug/L	50.0	ug/L	54.6	38-145			
4-Nitrophenol	<50.0 ug/L	50.0	ug/L	50.0	ug/L	38.5	13-129			
Acenaphthene	26.8 ug/L	10.0	ug/L	50.0	ug/L	53.6	60-132			L
Acenaphthylene	28.5 ug/L	10.0	ug/L	50.0	ug/L	57.1	54-126			
Acetophenone	29.1 ug/L	20.0	ug/L	50.0	ug/L	58.1	0-200			
Anthracene	28.6 ug/L	10.0	ug/L	50.0	ug/L	57.2	43-120			
Benzo (a) anthracene	31.5 ug/L	10.0	ug/L	50.0	ug/L	63.0	42-133			
Benzo (a) pyrene	33.2 ug/L	10.0	ug/L	50.0	ug/L	66.5	32-148			
Benzo (b) fluoranthene	35.4 ug/L	10.0	ug/L	50.0	ug/L	70.8	42-140			
Benzo (g,h,i) perylene	35.8 ug/L	10.0	ug/L	50.0	ug/L	71.6	10-195			



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Purchase Order:
 Midlothian VA, 23113
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

LCS (BHH1067-BS1)

Prepared & Analyzed: 08/26/2024

Benzo (k) fluoranthene	27.6 ug/L	10.0	ug/L	50.0	ug/L	55.3	25-146			
bis (2-Chloroethoxy) methane	30.3 ug/L	10.0	ug/L	50.0	ug/L	60.7	49-165			
bis (2-Chloroethyl) ether	28.6 ug/L	10.0	ug/L	50.0	ug/L	57.3	43-126			
2,2'-Oxybis (1-chloropropane)	24.4 ug/L	10.0	ug/L	50.0	ug/L	48.7	63-139			L
bis (2-Ethylhexyl) phthalate	26.8 ug/L	10.0	ug/L	50.0	ug/L	53.7	29-137			
Butyl benzyl phthalate	27.7 ug/L	10.0	ug/L	50.0	ug/L	55.3	10-140			
Chrysene	29.4 ug/L	10.0	ug/L	50.0	ug/L	58.8	44-140			
Dibenz (a,h) anthracene	34.4 ug/L	10.0	ug/L	50.0	ug/L	68.8	10-200			
Diethyl phthalate	33.6 ug/L	10.0	ug/L	50.0	ug/L	67.1	10-120			
Dimethyl phthalate	31.1 ug/L	10.0	ug/L	50.0	ug/L	62.2	10-120			
Di-n-butyl phthalate	30.9 ug/L	10.0	ug/L	50.0	ug/L	61.8	10-120			
Di-n-octyl phthalate	31.7 ug/L	10.0	ug/L	50.0	ug/L	63.4	19-132			
Fluoranthene	34.9 ug/L	10.0	ug/L	50.0	ug/L	69.9	43-121			
Fluorene	30.4 ug/L	10.0	ug/L	50.0	ug/L	60.7	70-120			L
Hexachlorobenzene	28.4 ug/L	1.00	ug/L	50.0	ug/L	56.8	10-142			
Hexachlorobutadiene	23.2 ug/L	10.0	ug/L	50.0	ug/L	46.4	38-120			
Hexachlorocyclopentadiene	23.3 ug/L	10.0	ug/L	50.0	ug/L	46.6	10-76			
Hexachloroethane	24.2 ug/L	10.0	ug/L	50.0	ug/L	48.3	55-120			L
Indeno (1,2,3-cd) pyrene	33.8 ug/L	10.0	ug/L	50.0	ug/L	67.6	10-151			
Isophorone	22.1 ug/L	10.0	ug/L	50.0	ug/L	44.2	47-180			L
Naphthalene	20.3 ug/L	5.00	ug/L	50.0	ug/L	40.6	36-120			
Nitrobenzene	33.0 ug/L	10.0	ug/L	50.0	ug/L	65.9	54-158			
n-Nitrosodimethylamine	22.0 ug/L	10.0	ug/L	50.0	ug/L	44.0	10-85			
n Nitrosodi n propylamine	28.8 ug/L	10.0	ug/L	50.0	ug/L	57.5	14-198			
n-Nitrosodiphenylamine	26.2 ug/L	10.0	ug/L	50.0	ug/L	52.4	12-97			
p Chloro m cresol	31.6 ug/L	10.0	ug/L	50.0	ug/L	63.3	10-142			
Pentachloronitrobenzene (quintozene)	<10.0 ug/L	10.0	ug/L		ug/L		0-200			
Pentachlorophenol	25.7 ug/L	20.0	ug/L	50.0	ug/L	51.5	38-152			
Phenanthrene	32.6 ug/L	10.0	ug/L	50.0	ug/L	65.2	65-120			
Phenol	14.8 ug/L	10.0	ug/L	50.5	ug/L	29.3	17-120			
Pyrene	25.6 ug/L	10.0	ug/L	50.0	ug/L	51.1	70-120			L



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Certificate of Analysis

Final Report

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 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

LCS (BHH1067-BS1)

Prepared & Analyzed: 08/26/2024

Pyridine	21.3 ug/L	10.0	ug/L	50.0	ug/L	42.7	10-103			
Surr: 2,4,6-Tribromophenol (Surr)	59.4		ug/L	100	ug/L	59.4	5-136			
Surr: 2-Fluorobiphenyl (Surr)	26.0		ug/L	50.0	ug/L	51.9	9-117			
Surr: 2-Fluorophenol (Surr)	34.6		ug/L	100	ug/L	34.6	5-60			
Surr: Nitrobenzene-d5 (Surr)	33.7		ug/L	50.0	ug/L	67.4	5-151			
Surr: Phenol-d5 (Surr)	26.8		ug/L	100	ug/L	26.8	5-60			
Surr: p-Terphenyl-d14 (Surr)	26.1		ug/L	50.0	ug/L	52.2	5-141			

Matrix Spike (BHH1067-MS1)

Source: 24H1151-04

Prepared & Analyzed: 08/26/2024

1,2,4-Trichlorobenzene	26.8 ug/L	10.0	ug/L	49.5	<10.0 ug/L	54.1	44-142			
1,2-Dichlorobenzene	25.9 ug/L	10.0	ug/L	49.5	<10.0 ug/L	52.3	22-115			
1,3-Dichlorobenzene	25.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	50.7	22-112			
1,4-Dichlorobenzene	26.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	52.9	13-112			
2,4,6-Trichlorophenol	34.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	68.6	37-144			
2,4-Dichlorophenol	35.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	70.7	39-135			
2,4-Dimethylphenol	36.6 ug/L	5.00	ug/L	49.5	<5.00 ug/L	74.0	32-120			
2,4-Dinitrophenol	<50.0 ug/L	50.0	ug/L	49.5	<50.0 ug/L	94.2	39-139			
2,4-Dinitrotoluene	44.8 ug/L	10.0	ug/L	49.5	<10.0 ug/L	90.4	10-191			
2,6-Dinitrotoluene	41.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	83.0	50-158			
2-Chloronaphthalene	31.7 ug/L	10.0	ug/L	49.5	<10.0 ug/L	64.0	60-120			
2-Chlorophenol	31.5 ug/L	10.0	ug/L	49.5	<10.0 ug/L	63.6	23-134			
2-Nitrophenol	39.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	78.9	29-182			
3,3'-Dichlorobenzidine	24.4 ug/L	10.0	ug/L	49.5	<10.0 ug/L	49.3	10-262			
4,6-Dinitro-2-methylphenol	<50.0 ug/L	50.0	ug/L	49.5	<50.0 ug/L	95.7	10-181			
4-Bromophenyl phenyl ether	32.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	65.0	53-127			
4-Chlorophenyl phenyl ether	32.7 ug/L	10.0	ug/L	49.5	<10.0 ug/L	66.0	25-158			
4-Nitrophenol	<50.0 ug/L	50.0	ug/L	49.5	<50.0 ug/L	25.2	10-132			
Acenaphthene	34.5 ug/L	10.0	ug/L	49.5	<10.0 ug/L	69.8	47-145			
Acenaphthylene	35.3 ug/L	10.0	ug/L	49.5	<10.0 ug/L	71.3	33-145			
Acetophenone	36.8 ug/L	20.0	ug/L	49.5	<20.0 ug/L	74.3	0-200			
Anthracene	32.9 ug/L	10.0	ug/L	49.5	<10.0 ug/L	66.5	27-133			
Benzo (a) anthracene	36.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	72.9	33-143			



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 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Matrix Spike (BHH1067-MS1)

Source: 24H1151-04

Prepared & Analyzed: 08/26/2024

Benzo (a) pyrene	38.8 ug/L	10.0	ug/L	49.5	<10.0 ug/L	78.4	17-163			
Benzo (b) fluoranthene	41.5 ug/L	10.0	ug/L	49.5	<10.0 ug/L	83.9	24-159			
Benzo (g,h,i) perylene	43.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	87.3	10-219			
Benzo (k) fluoranthene	33.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	66.8	11-162			
bis (2-Chloroethoxy) methane	33.3 ug/L	10.0	ug/L	49.5	<10.0 ug/L	67.2	33-184			
bis (2-Chloroethyl) ether	33.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	66.6	12-158			
2,2'-Oxybis (1-chloropropane)	30.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	60.8	36-166			
bis (2-Ethylhexyl) phthalate	30.9 ug/L	10.0	ug/L	49.5	<10.0 ug/L	62.4	10-158			
Butyl benzyl phthalate	32.4 ug/L	10.0	ug/L	49.5	<10.0 ug/L	65.4	10-152			
Chrysene	33.5 ug/L	10.0	ug/L	49.5	<10.0 ug/L	67.7	17-169			
Dibenz (a,h) anthracene	40.3 ug/L	10.0	ug/L	49.5	<10.0 ug/L	81.3	10-227			
Diethyl phthalate	37.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	74.7	10-120			
Dimethyl phthalate	36.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	72.6	10-120			
Di-n-butyl phthalate	36.6 ug/L	10.0	ug/L	49.5	<10.0 ug/L	74.0	10-120			
Di-n-octyl phthalate	37.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	74.8	10-146			
Fluoranthene	38.7 ug/L	10.0	ug/L	49.5	10.0 ug/L	78.2	26-137			
Fluorene	36.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	73.2	59-121			
Hexachlorobenzene	33.3 ug/L	1.00	ug/L	49.5	1.00 ug/L	67.3	10-152			
Hexachlorobutadiene	27.6 ug/L	10.0	ug/L	49.5	<10.0 ug/L	55.8	24-120			
Hexachlorocyclopentadiene	28.0 ug/L	10.0	ug/L	49.5	10.0 ug/L	56.5	10-90			
Hexachloroethane	28.6 ug/L	10.0	ug/L	49.5	<10.0 ug/L	57.7	40-120			
Indeno (1,2,3 cd) pyrene	41.2 ug/L	10.0	ug/L	49.5	10.0 ug/L	83.2	10-171			
Isophorone	25.0 ug/L	10.0	ug/L	49.5	<10.0 ug/L	50.6	21-196			
Naphthalene	25.5 ug/L	5.00	ug/L	49.5	5.00 ug/L	51.6	21-133			
Nitrobenzene	33.6 ug/L	10.0	ug/L	49.5	<10.0 ug/L	67.9	35-180			
n Nitrosodimethylamine	17.2 ug/L	10.0	ug/L	49.5	10.0 ug/L	34.7	10-85			
n-Nitrosodi-n-propylamine	32.1 ug/L	10.0	ug/L	49.5	<10.0 ug/L	64.9	10-230			
n-Nitrosodiphenylamine	29.3 ug/L	10.0	ug/L	49.5	<10.0 ug/L	59.2	12-111			
p-Chloro-m-cresol	37.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	75.2	10-127			
Pentachloronitrobenzene (quintozene)	<10.0 ug/L	10.0	ug/L		<10.0 ug/L		0-200			
Pentachlorophenol	30.1 ug/L	20.0	ug/L	49.5	<20.0 ug/L	60.8	14-176			



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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Matrix Spike (BHH1067-MS1)		Source: 24H1151-04			Prepared & Analyzed: 08/26/2024					
Phenanthrene	39.8 ug/L	10.0	ug/L	49.5	<10.0 ug/L	80.3	54-120			
Phenol	14.1 ug/L	10.0	ug/L	50.0	<10.0 ug/L	28.2	10-120			
Pyrene	31.5 ug/L	10.0	ug/L	49.5	<10.0 ug/L	63.7	52-120			
Pyridine	18.2 ug/L	10.0	ug/L	49.5	<10.0 ug/L	36.9	10-110			

Surr: 2,4,6-Tribromophenol (Surr)	69.4		ug/L	99.0	ug/L	70.1	5-136			
Surr: 2-Fluorobiphenyl (Surr)	29.9		ug/L	49.5	ug/L	60.4	9-117			
Surr: 2-Fluorophenol (Surr)	27.4		ug/L	99.0	ug/L	27.6	5-60			
Surr: Nitrobenzene-d5 (Surr)	36.3		ug/L	49.5	ug/L	73.3	5-151			
Surr: Phenol-d5 (Surr)	25.6		ug/L	99.0	ug/L	25.8	5-60			
Surr: p-Terphenyl-d14 (Surr)	24.8		ug/L	49.5	ug/L	50.2	5-141			

Matrix Spike Dup (BHH1067-MSD1)		Source: 24H1151-04			Prepared & Analyzed: 08/26/2024					
1,2,4-Trichlorobenzene	29.5 ug/L	10.0	ug/L	46.7	<10.0 ug/L	63.1	44-142	9.55	20	
1,2-Dichlorobenzene	30.0 ug/L	10.0	ug/L	46.7	<10.0 ug/L	64.2	22-115	14.8	20	
1,3-Dichlorobenzene	29.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	62.9	22-112	15.7	20	
1,4-Dichlorobenzene	31.2 ug/L	10.0	ug/L	46.7	<10.0 ug/L	66.8	13-112	17.6	20	
2,4,6-Trichlorophenol	32.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	69.3	37-144	4.76	20	
2,4-Dichlorophenol	33.9 ug/L	10.0	ug/L	46.7	<10.0 ug/L	72.4	39-135	3.31	20	
2,4-Dimethylphenol	34.3 ug/L	5.00	ug/L	46.7	<5.00 ug/L	73.4	32-120	6.53	20	
2,4-Dinitrophenol	<50.0 ug/L	50.0	ug/L	46.7	<50.0 ug/L	94.6	39-139	5.28	20	
2,4-Dinitrotoluene	41.6 ug/L	10.0	ug/L	46.7	<10.0 ug/L	89.0	10-191	7.37	20	
2,6-Dinitrotoluene	38.0 ug/L	10.0	ug/L	46.7	<10.0 ug/L	81.2	50-158	7.91	20	
2-Chloronaphthalene	29.7 ug/L	10.0	ug/L	46.7	<10.0 ug/L	63.7	60-120	6.36	20	
2-Chlorophenol	31.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	67.2	23-134	0.204	20	
2-Nitrophenol	38.0 ug/L	10.0	ug/L	46.7	<10.0 ug/L	81.4	29-182	2.75	20	
3,3'-Dichlorobenzidine	25.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	54.4	10-262	4.15	20	
4,6-Dinitro-2-methylphenol	<50.0 ug/L	50.0	ug/L	46.7	<50.0 ug/L	92.5	10-181	9.12	20	
4-Bromophenyl phenyl ether	30.9 ug/L	10.0	ug/L	46.7	<10.0 ug/L	66.1	53-127	4.12	20	
4-Chlorophenyl phenyl ether	29.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	62.6	25-158	11.1	20	
4-Nitrophenol	<50.0 ug/L	50.0	ug/L	46.7	<50.0 ug/L	19.8	10-132	29.8	20	P
Acenaphthene	32.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	69.3	47-145	6.40	20	
Acenaphthylene	33.2 ug/L	10.0	ug/L	46.7	<10.0 ug/L	71.1	33-145	6.11	20	



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Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1067 - SW3510C/EPA600-MS

Matrix Spike Dup (BHH1067-MSD1)

Source: 24H1151-04

Prepared & Analyzed: 08/26/2024

Acetophenone	32.3 ug/L	20.0	ug/L	46.7	<20.0 ug/L	69.1	0-200	13.0	20	
Anthracene	30.5 ug/L	10.0	ug/L	46.7	<10.0 ug/L	65.4	27-133	7.53	20	
Benzo (a) anthracene	33.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	71.3	33-143	7.90	20	
Benzo (a) pyrene	35.9 ug/L	10.0	ug/L	46.7	<10.0 ug/L	76.9	17-163	7.78	20	
Benzo (b) fluoranthene	38.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	81.9	24-159	8.08	20	
Benzo (g,h,i) perylene	42.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	90.8	10-219	1.77	20	
Benzo (k) fluoranthene	29.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	62.6	11-162	12.2	20	
bis (2-Chloroethoxy) methane	32.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	69.1	33-184	2.95	20	
bis (2-Chloroethyl) ether	32.9 ug/L	10.0	ug/L	46.7	<10.0 ug/L	70.5	12-158	0.168	20	
2,2'-Oxybis (1-chloropropane)	32.7 ug/L	10.0	ug/L	46.7	<10.0 ug/L	70.0	36-166	8.41	20	
bis (2-Ethylhexyl) phthalate	30.6 ug/L	10.0	ug/L	46.7	<10.0 ug/L	65.5	10-158	1.02	20	
Butyl benzyl phthalate	32.6 ug/L	10.0	ug/L	46.7	<10.0 ug/L	69.8	10-152	0.708	20	
Chrysene	31.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	67.3	17-169	6.33	20	
Dibenz (a,h) anthracene	40.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	86.4	10-227	0.264	20	
Diethyl phthalate	36.0 ug/L	10.0	ug/L	46.7	<10.0 ug/L	77.0	10-120	2.82	20	
Dimethyl phthalate	34.2 ug/L	10.0	ug/L	46.7	10.0 ug/L	73.2	10 120	5.03	20	
Di-n-butyl phthalate	33.0 ug/L	10.0	ug/L	46.7	<10.0 ug/L	70.6	10-120	10.4	20	
Di n octyl phthalate	33.6 ug/L	10.0	ug/L	46.7	10.0 ug/L	71.9	10 146	9.72	20	
Fluoranthene	35.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	75.6	26-137	9.15	20	
Fluorene	33.0 ug/L	10.0	ug/L	46.7	10.0 ug/L	70.7	59 121	9.24	20	
Hexachlorobenzene	31.3 ug/L	1.00	ug/L	46.7	<1.00 ug/L	66.9	10-152	6.39	20	
Hexachlorobutadiene	31.4 ug/L	10.0	ug/L	46.7	10.0 ug/L	67.1	24 120	12.7	20	
Hexachlorocyclopentadiene	26.6 ug/L	10.0	ug/L	46.7	<10.0 ug/L	56.9	10-90	5.06	20	
Hexachloroethane	34.3 ug/L	10.0	ug/L	46.7	10.0 ug/L	73.5	40 120	18.4	20	
Indeno (1,2,3-cd) pyrene	40.9 ug/L	10.0	ug/L	46.7	<10.0 ug/L	87.5	10-171	0.685	20	
Isophorone	23.1 ug/L	10.0	ug/L	46.7	10.0 ug/L	49.4	21 196	8.13	20	
Naphthalene	27.8 ug/L	5.00	ug/L	46.7	<5.00 ug/L	59.4	21-133	8.34	20	
Nitrobenzene	39.4 ug/L	10.0	ug/L	46.7	10.0 ug/L	84.3	35 180	15.8	20	
n-Nitrosodimethylamine	16.1 ug/L	10.0	ug/L	46.7	<10.0 ug/L	34.4	10-85	6.81	20	
n Nitrosodi n propylamine	31.6 ug/L	10.0	ug/L	46.7	10.0 ug/L	67.6	10 230	1.67	20	
n-Nitrosodiphenylamine	27.7 ug/L	10.0	ug/L	46.7	<10.0 ug/L	59.4	12-111	5.47	20	



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Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------

Batch BHH1067 - SW3510C/EPA600-MS

Matrix Spike Dup (BHH1067-MSD1)	Source: 24H1151-04			Prepared & Analyzed: 08/26/2024						
p-Chloro-m-cresol	36.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	77.9	10-127	2.22	20	
Pentachloronitrobenzene (quintozene)	<10.0 ug/L	10.0	ug/L		<10.0 ug/L		0-200		20	
Pentachlorophenol	28.7 ug/L	20.0	ug/L	46.7	<20.0 ug/L	61.4	14-176	4.79	20	
Phenanthrene	36.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	78.0	54-120	8.72	20	
Phenol	13.7 ug/L	10.0	ug/L	47.2	<10.0 ug/L	29.0	10-120	3.07	20	
Pyrene	33.3 ug/L	10.0	ug/L	46.7	<10.0 ug/L	71.3	52-120	5.59	20	
Pyridine	17.4 ug/L	10.0	ug/L	46.7	<10.0 ug/L	37.2	10-110	4.85	20	

Surr: 2,4,6-Tribromophenol (Surr)	67.5		ug/L	93.5	ug/L	72.2	5-136			
Surr: 2-Fluorobiphenyl (Surr)	26.9		ug/L	46.7	ug/L	57.5	9-117			
Surr: 2-Fluorophenol (Surr)	26.1		ug/L	93.5	ug/L	28.0	5-60			
Surr: Nitrobenzene-d5 (Surr)	37.8		ug/L	46.7	ug/L	80.9	5-151			
Surr: Phenol-d5 (Surr)	24.7		ug/L	93.5	ug/L	26.4	5-60			
Surr: p-Terphenyl-d14 (Surr)	19.9		ug/L	46.7	ug/L	42.6	5-141			



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 Midlothian VA, 23113
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Semivolatile Hydrocarbons by GC - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BHH1107 - SW3510C/EPA600-FID

Blank (BHH1107-BLK1)

Prepared & Analyzed: 08/26/2024

TPH-Semi-Volatiles (DRO)	<0.500 mg/L	0.500	mg/L							
Surr: <i>n</i> -Triacontane (Surr)	0.222		mg/L	0.250		88.8	50-125			

LCS (BHH1107-BS1)

Prepared & Analyzed: 08/26/2024

TPH-Semi-Volatiles (DRO)	4.4 mg/L	0.500	mg/L	5.00	mg/L	87.8	70-130			
Surr: <i>n</i> -Triacontane (Surr)	0.219		mg/L	0.250	mg/L	87.4	50-125			

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. - Richmond VA 203 Wylderose Court Midlothian VA, 23113	Date Issued:	August 27, 2024 16:27
Submitted To:	██████████	Project Number:	24009604
Client Site I.D.:	Rapidan WTP Wilderness	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8015C in Non-Potable Water	
TPH-Semi-Volatiles (DRO)	VELAP,PADEP,NCDEQ,WVDEP
SW8270E in Non-Potable Water	
1,2,4,5-Tetrachlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
1,2,4-Trichlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
1,2-Dichlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
1,2-Diphenylhydrazine	NCDEQ,WVDEP,VELAP,PADEP
1,3-Dichlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
1,3-Dinitrobenzene	NCDEQ,WVDEP,VELAP,PADEP
1,4-Dichlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
1-Naphthylamine	NCDEQ,WVDEP,VELAP,PADEP
2,3,4,6-Tetrachlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2,4,5-Trichlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2,4,6-Trichlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2,4-Dichlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2,4-Dimethylphenol	NCDEQ,WVDEP,VELAP,PADEP
2,4-Dinitrophenol	NCDEQ,WVDEP,VELAP,PADEP
2,4-Dinitrotoluene	NCDEQ,WVDEP,VELAP,PADEP
2,6-Dichlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2,6-Dinitrotoluene	NCDEQ,WVDEP,VELAP,PADEP
2-Chloronaphthalene	NCDEQ,WVDEP,VELAP,PADEP
2-Chlorophenol	NCDEQ,WVDEP,VELAP,PADEP
2-Methylnaphthalene	NCDEQ,WVDEP,VELAP,PADEP
2-Naphthylamine	NCDEQ,WVDEP,VELAP,PADEP
2-Nitroaniline	NCDEQ,WVDEP,VELAP,PADEP
2-Nitrophenol	NCDEQ,WVDEP,VELAP,PADEP
3,3'-Dichlorobenzidine	NCDEQ,WVDEP,VELAP,PADEP
3-Methylcholanthrene	NCDEQ,WVDEP,VELAP,PADEP
3-Nitroaniline	NCDEQ,WVDEP,VELAP,PADEP
4,6-Dinitro-2-methylphenol	NCDEQ,WVDEP,VELAP,PADEP
4-Aminobiphenyl	NCDEQ,WVDEP,VELAP,PADEP
4-Bromophenyl phenyl ether	NCDEQ,WVDEP,VELAP,PADEP
4-Chloroaniline	NCDEQ,WVDEP,VELAP,PADEP
4-Chlorophenyl phenyl ether	NCDEQ,WVDEP,VELAP,PADEP
4-Nitroaniline	NCDEQ,WVDEP,VELAP,PADEP
4-Nitrophenol	NCDEQ,WVDEP,VELAP,PADEP
7,12-Dimethylbenz (a) anthracene	NCDEQ,WVDEP,VELAP,PADEP
Acenaphthene	NCDEQ,WVDEP,VELAP,PADEP

Certificate of Analysis

Final Report

Client Name: APEX Companies, LLC. - Richmond VA Date Issued: August 27, 2024 16:27
 203 Wylderose Court Project Number: 24009604
 Purchase Order:
 Midlothian VA, 23113
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Certified Analyses included in this Report

Analyte	Certifications
Acenaphthylene	NCDEQ,WVDEP,VELAP,PADEP
Acetophenone	NCDEQ,WVDEP,VELAP,PADEP
Aniline	NCDEQ,WVDEP,VELAP,PADEP
Anthracene	NCDEQ,WVDEP,VELAP,PADEP
Benzidine	NCDEQ,WVDEP,VELAP,PADEP
Benzo (a) anthracene	NCDEQ,WVDEP,VELAP,PADEP
Benzo (a) pyrene	NCDEQ,WVDEP,VELAP,PADEP
Benzo (b) fluoranthene	NCDEQ,WVDEP,VELAP,PADEP
Benzo (g,h,i) perylene	NCDEQ,WVDEP,VELAP,PADEP
Benzo (k) fluoranthene	NCDEQ,WVDEP,VELAP,PADEP
Benzoic acid	NCDEQ,WVDEP,VELAP,PADEP
Benzyl alcohol	NCDEQ,WVDEP,VELAP,PADEP
bis (2-Chloroethoxy) methane	NCDEQ,WVDEP,VELAP,PADEP
bis (2-Chloroethyl) ether	NCDEQ,WVDEP,VELAP,PADEP
2,2'-Oxybis (1-chloropropane)	NCDEQ,WVDEP,VELAP,PADEP
bis (2-Ethylhexyl) phthalate	NCDEQ,WVDEP,VELAP,PADEP
Butyl benzyl phthalate	NCDEQ,WVDEP,VELAP,PADEP
Chrysene	NCDEQ,WVDEP,VELAP,PADEP
Dibenz (a,h) anthracene	NCDEQ,WVDEP,VELAP,PADEP
Dibenz (a,j) acridine	NCDEQ,WVDEP,VELAP,PADEP
Dibenzofuran	NCDEQ,WVDEP,VELAP,PADEP
Diethyl phthalate	NCDEQ,WVDEP,VELAP,PADEP
Dimethyl phthalate	NCDEQ,WVDEP,VELAP,PADEP
Di-n-butyl phthalate	NCDEQ,WVDEP,VELAP,PADEP
Di-n-octyl phthalate	NCDEQ,WVDEP,VELAP,PADEP
Diphenylamine	NCDEQ,WVDEP,VELAP,PADEP
Ethyl methanesulfonate	NCDEQ,WVDEP,VELAP,PADEP
Fluoranthene	NCDEQ,WVDEP,VELAP,PADEP
Fluorene	NCDEQ,WVDEP,VELAP,PADEP
Hexachlorobenzene	NCDEQ,WVDEP,VELAP,PADEP
Hexachlorobutadiene	NCDEQ,WVDEP,VELAP,PADEP
Hexachlorocyclopentadiene	NCDEQ,WVDEP,VELAP,PADEP
Hexachloroethane	NCDEQ,WVDEP,VELAP,PADEP
Indeno (1,2,3-cd) pyrene	NCDEQ,WVDEP,VELAP,PADEP
Isophorone	NCDEQ,WVDEP,VELAP,PADEP
m+p-Cresols	NCDEQ,WVDEP,VELAP,PADEP
Methyl methanesulfonate	NCDEQ,WVDEP,VELAP,PADEP
Naphthalene	NCDEQ,WVDEP,VELAP,PADEP



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Certificate of Analysis

Final Report

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 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: XXXXXXXXXX
 Client Site I.D.: Rapidan WTP Wilderness

Certified Analyses included in this Report

Analyte	Certifications
Nitrobenzene	NCDEQ,WVDEP,VELAP,PADEP
n-Nitrosodimethylamine	NCDEQ,WVDEP,VELAP,PADEP
n-Nitrosodi-n-butylamine	NCDEQ,WVDEP,VELAP,PADEP
n-Nitrosodi-n-propylamine	NCDEQ,WVDEP,VELAP,PADEP
n-Nitrosodiphenylamine	NCDEQ,WVDEP,VELAP,PADEP
n-Nitrosopiperidine	NCDEQ,WVDEP,VELAP,PADEP
o+m+p-Cresols	NCDEQ,WVDEP,VELAP
o-Cresol	NCDEQ,WVDEP,VELAP,PADEP
p-(Dimethylamino) azobenzene	NCDEQ,WVDEP,VELAP,PADEP
p-Chloro-m-cresol	NCDEQ,WVDEP,VELAP,PADEP
Pentachloronitrobenzene (quintozene)	NCDEQ,WVDEP,VELAP,PADEP
Pentachlorophenol	NCDEQ,WVDEP,VELAP,PADEP
Phenacetin	NCDEQ,WVDEP,VELAP,PADEP
Phenanthrene	NCDEQ,WVDEP,VELAP,PADEP
Phenol	NCDEQ,WVDEP,VELAP,PADEP
Pronamide	NCDEQ,WVDEP,VELAP,PADEP
Pyrene	NCDEQ,WVDEP,VELAP,PADEP
Pyridine	NCDEQ,WVDEP,VELAP,PADEP

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2024
NCDEQ	North Carolina DEQ	495	12/31/2024
NCDOH	North Carolina Department of Health	51714	07/31/2025
NYDOH	New York DOH Drinking Water	12069	04/01/2025
PADEP	NELAP-Pennsylvania Certificate #009	68-03503	10/31/2024
SCDHEC	South Carolina Dept of Health and Environmental	93016	09/14/2024
TXCEQ	Texas Comm on Environmental Quality #T104704	T104704576	05/31/2025
VELAP	NELAP-Virginia Certificate #12969	460021	06/14/2025
WVDEP	West Virginia DEP	350	11/30/2024



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203 Wylderose Court Project Number: 24009604
Midlothian VA, 23113 Purchase Order:
Submitted To: [REDACTED]
Client Site I.D.: Rapidan WTP Wilderness

Summary of Data Qualifiers

- C Continuing calibration verification response for this analyte is outside specifications.
 - L LCS recovery is outside of established acceptance limits
 - P Duplicate analysis does not meet the acceptance criteria for precision
 - RPD Relative Percent Difference
 - Qual Qualifiers
 - RE Denotes sample was re-analyzed
 - D.F. Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
 - TIC Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
- PCBs, Total Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.



Apex Companies, LLC
 203 Wyderose Court
 Midlothian, VA 23113
 (804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.		JOB NAME					PROJECT MANAGER		PARAMETERS							TURN-AROUND TIME	
24009604		Rapidan WTP Wilderness					[Redacted]		[Diagonal Lines]								24 Hr
SAMPLER(S): (Signature(s))							(Printed)		NO. OF CONTAINERS							REMARKS	
SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION		TPH - 1720 8015	VOCs 8260	VOCs 8270						
823249604-5	8/10/24	955	X	X	W	HCL 40c	TAP BLANK		2	X							
823249604-6	8/23/24	1400		X	W	HCL 40c	Wet WELL		5	X	X	X					
823249604-7	8/23/24	1410		X	W	HCL 40c	UP Gradient Surface Sample		5	X	X	X					
823249604-8	8/23/24	1715		X	W	HCL 40c	DOWN Gradient Surface Sample		5	X	X	X					
TOTALS									17	3	4	3					

APEX-Richmond 24H1425
Rapidan WTP Wilderness
Recd: 08/26/2024 Due: 08/27/2024
v130325002

Relinquished by: (Signature) [Redacted]	Date/Time 8/26/24	Received by: (Signature) ② [Redacted]	Relinquished by: (Signature) ③ [Redacted]	Date/Time 8/10	Received by: (Signature) ④ [Redacted]
(Printed)		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature) ⑤ [Redacted]	Date/Time	Received by: (Signature) ⑥ [Redacted]	Remarks * STATE LEAD * * VOCs SAME DAY *		
(Printed)		(Printed)			



Sample Preservation Log

Order ID: 24H1425

Date Performed: 8/26/24

Analyst Performing Check: HB

Sample ID	Container ID	Metals		Cyanide		Sulfide		Ammonia		TKN		Phos, Tot		NO3+NO2		DRO		Pesticide (8081/608/508) PCB DW only		SVOC (525/6270/825)		CrVI * **		Pest/PCB (508) / SVOC(525)		pH as Received	Final pH	pH as Received	Final pH										
		pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	Received	Final	Received	Final	Received	Final	Received	Final																
		< 2	Other	> 12	Other	> 9	Other	< 2	Other	< 2	Other	< 2	Other	< 2	Other	< 2	Other	+	-	+	-	Received	Final	< 2	Other					Final	Other	Final							
1	A																																						
1	B																																						
2	A																																						
2	B																																						
3	A																																						
3	B																																						

NaOH ID: _____
 H2SO4 ID: _____
 HCL ID: 4E02353

HNO3 ID: _____
 Na2S2O3 ID: _____
 Na2SO3 ID: _____

CrVI preserved date/time: _____
**pH must be adjusted between 9.3 - 9.7*
 Ammonia Buffer Sol'n ID: _____
 5N NaOH ID: _____

Analyst Initials: _____

**W.Va only certifies DISS CrVI and not T CrVI as an approved analyte under 40CFR136 for waste water.



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Certificate of Analysis

Final Report

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 203 Wylderose Court Project Number: 24009604
 Midlothian VA, 23113 Purchase Order:
 Submitted To: [REDACTED]
 Client Site I.D.: Rapidan WTP Wilderness

Sample Conditions Checklist

Samples Received at:	3.20°C
How were samples received?	Walk In
Were Custody Seals used? If so, were they received intact?	No
Are the custody papers filled out completely and correctly?	No
Do all bottle labels agree with custody papers?	Yes
Is the temperature blank or representative sample within acceptable limits or received on ice, and recently taken?	Yes
Are all samples within holding time for requested laboratory tests?	Yes
Is a sufficient amount of sample provided to perform the tests included?	Yes
Are all samples in appropriate containers for the analyses requested?	Yes
Were volatile organic containers received?	Yes
Are all volatile organic and TOX containers free of headspace?	Yes
Is a trip blank provided for each VOC sample set? VOC sample sets include EPA8011, EPA504, EPA8260, EPA624, EPA8015 GRO, EPA8021, EPA524, and RSK 175	Yes
Are all samples received appropriately preserved? Note that metals containers do not require field preservation but lab preservation may delay analysis. In addition, field parameters are always received outside holding time and will be marked accordingly.	No

Remaining analysis found on work order 24H1424. HEG 8/26/24 0838

[REDACTED] notified via email for the GA1000mL preserved with HCl for sample "Hunting Run Reservoir Surface Water Intake" was received with a pH of 4 and preserved in the lab to a pH<2. HEG 8/26/24 0907

Per [REDACTED] via phone
Analyze for SVOC 8270 and VOC 8260
JNH 8/26/24 0920